

Skills and employability in Mozambique: Implications for Education and Training Policies

By Yoonyoung Cho and Kebede Feda

April 2015



The World Bank

Acknowledgements

We are grateful to guidance and support from the Africa Education team led by Elizabeth Ninan and Ana Ruth Menezes. We also thank Enrique Blanco Armas, Margo Hoftijzer, Victoria Levin, Ramahatra Rakotomalala, and Alexandria Valerio for their valuable comments and contributions. The product benefited from generous support of BNPP grant. The views in this paper are those of the authors and should not be taken to reflect those of the World Bank or affiliated institutions. All errors are our own.

Authors

Yoonyoung Cho is a Labor Economist at the Social Protection and Labor Unit and Kebede Feda is an Education Economist at the Education Unit at the World Bank. The corresponding author is Yoonyoung Cho and can be reached at ycho1@worldbank.org.

Executive Summary

Mozambique is experiencing significant population growth, increasing the number of youth in the labor market. The surge of the raw number of individuals, particularly young people, opens both challenges and opportunities: challenges, because of the need to create sufficient jobs to employ new entrants; opportunities, because if well managed, the country will benefit from a young, dynamic labor market where innovations and creative activities serve as an engine of growth, driving up per capita income and standards of living.

Although most of the labor force is engaged in the labor market activities and the official unemployment rates are low, in part due to outstanding growth over the past couple of decades, the quality of jobs has been disappointing. Many of the jobs created have been in subsistence agriculture, which generates low earnings. Many individuals are under-employed, and unable to provide sufficient earnings to lift workers and their families out of poverty. The movements from agriculture into industry and services, and from non-wage to wage employment, have been very slow.

In order for workers to access better earning opportunities, policy efforts to facilitate the creation of more and better jobs, and to improve the quality of labor, are critical. There is a demonstrated need for sound macroeconomic and fiscal policies conducive to private-sector job creation, and education and training policies to improve the skill level of workers- current and future. This note focuses on policies relating to skills and quality of labor, based on a labor market analysis in Mozambique.

Low levels of education and a lack of skills among the work force comprise the main issues associated with poor labor market performance. Despite major progress in access to primary schooling, three quarters of the workforce have not completed primary education. The retention rate is low, and drop-outs are prevalent, across all education levels. Poor quality of education, opportunity costs of schooling, and delayed entry to school and repetition in part explain the low levels of education in Mozambique. Compounding matters, Technical and Vocational Education and Training (TVET) has been limited in availability and of poor quality.

This note recommends four areas of interventions in the skills agenda that can be emphasized and implemented in the relatively short term. First, policies which increase the completion rates and the quality of primary education are needed. While Mozambique has made a substantial

progress in an expansion of primary education through supply side reforms involving increases in school infrastructure and removal of school fees, issues of high drop-out and poor learning still remain. This is largely due to demand side barriers to school attendance. Thus, demand side policy measures including cash transfers, parental involvement, and the dissemination of information on returns to schooling that have proven effective from international experiences need to be explored in Mozambique.

Second, policies to improve the relevancy and coverage of TVET are important. Mozambique has already begun to reform the TVET system from a supply-driven to a demand-driven training approach. The curricula, materials, and pedagogy have been updated to meet the demand from a changing global environment and labor market. Evidence suggests that financing and governance have been gaining efficiency and transparency. Building upon such commitment and reform initiatives, further efforts are needed to achieve impact. In particular, efforts need to be made to expedite the execution of reform, monitor its progress, and evaluate the results in coming years.

Third, focus on skills development for agricultural workers merits an emphasis. With 80% of the labor force in agriculture, a sector which likely continues to absorb a large share of workers, modernizing and upgrading the productivity of the agriculture sector should become a natural focus. It is important to improve fundamental skills for agricultural workers, promote adoption of new technology, and foster agribusiness. New approaches including the Farmers Fields School as well as traditional extension services can be further piloted.

Finally, policies to promote entrepreneurship by improving the productivity of household enterprises and non-farm business activities merit attention. For this purpose, a combination of skills training as well as financial support and advisory services can be put in place.

The challenge of skills development in Mozambique is daunting and requires interventions at various levels. However, the accelerated economic growth since the mid-1990s, political stability, prospect for continued high growth, and the emergence of the energy sector provides a positive outlook for Mozambique. A skills development strategy, when well planned and executed, will equip the workforce with skills needed for the emerging jobs in diversified, modern economic sectors.

Introduction

1. Mozambique is experiencing significant population growth with a growing number of youth (ages 15-34) into the labor market.¹ The surge of the raw number of individuals, particularly young people, opens both challenges and opportunities: challenges, because of the need to create sufficient jobs to employ new entrants; opportunities, because if well managed, the country will benefit from a young, dynamic labor market where innovations and creative activities serve as an engine of growth, driving up per capita income and standards of living.

2. Although the quantity of employment has increased rapidly, as most of the labor force is engaged in some forms of labor market activities, the quality of employment has been disappointing in Mozambique. As typically seen in Sub-Saharan Africa, the labor force participation and employment rates are very high leaving few individuals indeed inactive or unemployed. However, many of the jobs created have been in low productivity agriculture, which generates low earnings. Information on the hours of work indicates that many individuals are under-employed.² The majority of jobs are unable to provide sufficient earnings to lift the employed from poverty, let alone access to social insurance and appropriate worker protection. Movements from agriculture into industry and services, and from non-wage to wage employment, have been limited.

3. Low levels of education and a lack of skills among the work force are some of the main issues associated with disappointing labor market outcomes. This is particularly worrisome for youth, women, and rural workers. Despite major progress in access to primary schooling, with 95 percent of school-aged children reporting that they have attended school by age 13, three quarters of the work force still have not completed primary education. The retention rate is low and drop-outs are prevalent across all education levels. The extent to which individuals drop out of the school system is substantially higher in Mozambique than other Sub-Saharan African countries. Access to higher education and particularly to Technical and Vocational Education and Training (TVET) is quite limited, and only one percent of working age population mostly from urban areas have obtained such opportunities.

¹ Following Mozambique's conventional definition on youth, in this note youth are defined as individuals aged between 15 and 34.

² Household surveys indicated that the average hours of worked per week among non-wage workers are only 26 hours partly due to high seasonality of their employment patterns.

4. Delayed entry to school, repetition, poor quality of education, and the opportunity costs of schooling in part explain the low levels of schooling in Mozambique. Only about a quarter of students enter school on time at age six, and prolonged schooling is commonplace due to dropout and reentry, repeating grades, and combining work and schooling. Many students combine schooling and working from early ages. This is more pronounced for youth in rural areas. With respect to the quality of education, several measures of the students' performance and outcomes point to the fact that learning outcomes lag behind in international tests. Even fundamental skills such as basic literacy and numeracy are not well fostered.

5. There are several types of interventions that will improve labor market outcomes with respect to the skills development for the workforce, while promoting private sector led job creation including through macro-economic, fiscal and trade policies. This requires increasing completion rates of primary education. Indeed, the returns to education in obtaining better quality jobs in the form of wage employment and higher productivity sectors seem highest for primary school completion. Moreover, improving skills through TVET is also an important area to improve labor market outcomes. For this purpose, more targeted and focused interventions are needed for the TVET system so that their curricula, materials, and teaching can be up-to-date to meet the demand from a changing global environment and labor market.

6. Over the short-term, Mozambique should consider Active Labor Market Programs (ALMPs) to improve the labor market opportunities of those who are already in the labor force, either working in low productivity jobs or in transition to a job. Particular attention should be paid to youth and rural workers who are faced with greater constraints to access good jobs. Interventions to improve the productivity of agriculture can benefit a large number of workers, as most of jobs are currently being generated in the sector. In addition, targeted interventions are needed to improve skills and employability to facilitate the creation of small scale entrepreneurship to diversify the source of earnings and increase income.

7. This paper provides an in-depth assessment of skills and labor markets in Mozambique, and outlines policy recommendations in the selected areas to improve skills of the work force.³

³ One caveat of skills assessment in this note is that an explicit measurement of skills of the labor force is unavailable in Mozambique, and the analysis focuses mainly on education variables such as enrollment and completion rates. Recently, efforts to measure skills --cognitive, socio-emotional, and technical components -- and to identify the heterogeneous impacts of different type of skills on the labor market outcomes are being made (e.g., the World Bank's STEP skills measurement program). Such skills

The paper is organized as follows. The first two sections describe the supply and demand side diagnostics of the labor market, respectively, by analyzing the profiles of workers and by examining where jobs are being created. The next section discusses the determinants of employment, type of work, and earnings. Based on this analysis of the trends and labor market outcomes, the last section identifies and discusses key areas of policy interventions.

Profiles of Workforce

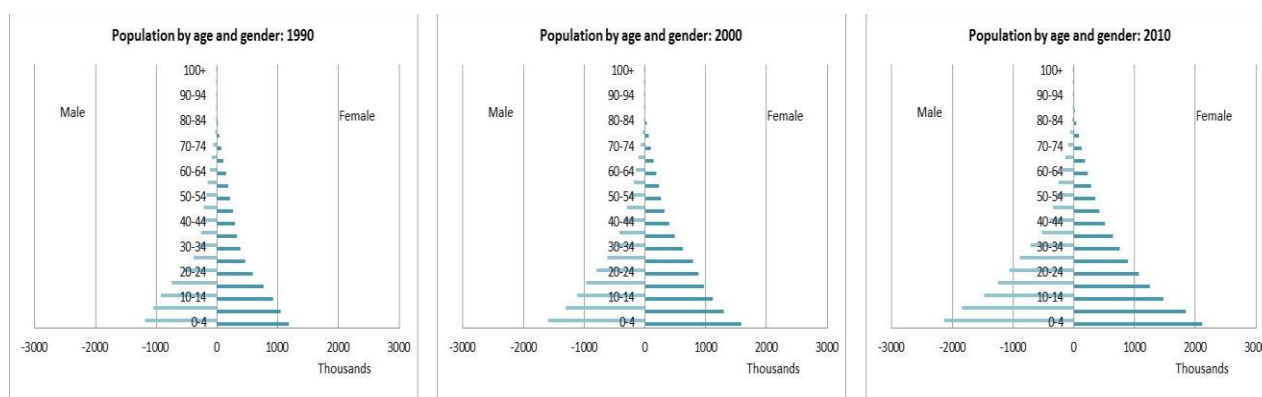
8. This section first looks at the profiles of current and future workforce with particular attention to: (i) the size of workforce determined by the demographic changes; (ii) the current status of education and skills development; and (iii) skills prospect of the workforce. This will provide background of discussions on the agenda of skills and employability in Mozambique.

Demographics and Labor Force Participation

9. Like many other Sub-Saharan African (SSA) countries, Mozambique is still in the phase of population growth. A demographic bulge is typically observed during transitional periods when the fertility rates substantially decline and the previous large birth cohorts become working aged, so that the share of working age population increases. With relatively small changes in the fertility rate and demographic structure, however, Mozambique is in the phase of population growth with a large proportion of youth population (See Figure 1). Between 1990 and 2010 the population grew by 70 percent from 13 to 22 million, but practically no changes took place in the demographic structure with 78 percent of population aged under 34 and about a half of population being working age.

Figure 1 Change of Demographic Structure: 1990-2010

measurement, assessing skills from both supply (individuals/households) and demand (employers) sides, could further inform skills policy in Mozambique. See Pierre et al. (2014) for more information.



Source: United Nations (2013). *World Population Prospects: The 2012 Revision, CD-ROM Edition*.

10. The labor force participation rate, another determinant of the size of the labor force as well as the number of working aged population, seems to have little impact on the size of the labor force in Mozambique. Like many other countries in the region, the labor force participation rates are quite high, and almost the entire working age population is engaged in either economic or job search activities in the labor market. In 2009, the labor force participation rates among men and women were 97.2 and 96.7 percent, respectively.⁴ With little contribution from the participation rates, the demographic structure is immediately translated into the structure of labor force.

11. Considering the demographics, in order for Mozambique to promote and sustain growth through productive employment, two (supply side) conditions are important: (i) fertility declines conducive to demographic dividends, and (ii) improvement in the quality of labor. The first is deemed to be a critical factor for an economy to take off as learned from the East Asian experience (particularly in Hong Kong, Korea, Singapore, and Taiwan) and from China and India more recently.⁵ The second concurs with the declines in fertility by households and society investing more in human capital of children. Although these two are inter-related and equally important for growth, the report focuses on the second aspect.

12. Improving quality of labor in this context means equipping individuals with the foundational, technical, and non-cognitive skills to enable them to make a living through labor market activities and meet the demands from the modern economy. The foundational skills such as basic numeracy and literacy are fundamental in any economic activities. Helping farmers read and follow the directions on a fertilizer bag, for instance, can be rudimentary but a great

⁴ The statistics are coming from Income and Expenditure Surveys (IAF 2003, and IOF 2009) unless specified otherwise.

⁵ See Cho and Tien (2013).

step toward productivity gains. Technical skills including vocational and occupational skills are the core functional skills for one's occupation. Finally, the importance of non-cognitive skills is increasingly recognized particularly in modern employment. These types of skills are relevant for the economic activities in the labor market, and should be fostered through the education system as well as labor market experiences.

Education and Skills

13. Low levels of education in part explain the lack of skills among the workforce in Mozambique, which threatens the growth of better-paying jobs (Table 1).⁶ Among the working age population (age 15-64), over three quarters has less than primary education. Youth's education attainment is slightly higher than adults mainly because the proportion of those with no education has declined. However, about 72 percent of youth have not completed primary schooling in 2009. Women and rural residents present even lower outcomes. Moreover, access to Technical and Vocational Education and Training (TVET) for the skills relevant for the labor market is quite limited: only 1 percent of working age population mostly from urban areas has received such opportunities.

Table 1 Educational Attainment by Age, Gender, and Region in 2009 (%) – based on completion

2009	no education	incomplete primary	completed primary	completed lower secondary	completed upper secondary	TVET	Some post-secondary
Total	27.7	50.3	15.3	3.2	1.6	1.0	0.9
Age 15-34	21.8	50.4	19.8	4.0	1.9	1.1	1.0
Age 35-64	36.8	50.1	8.3	2.0	1.2	0.9	0.8
Female	37.6	46.8	11.1	2.3	1.0	0.6	0.6
Male	15.8	54.5	20.3	4.3	2.4	1.5	1.3
Rural	34.9	54.2	8.9	1.2	0.4	0.3	0.0
Urban	14.4	42.9	27.1	6.9	3.9	2.3	2.6

Source: Authors' calculation from the Income and Expenditure Survey (IOF 2009).

14. Although education attainment in Mozambique has recently improved, it is far lower than the regional average. Between 2003 and 2009, the average years of schooling in Mozambique improved from 2.8 to 3.9 (Table 2). The progress is particularly noticeable among male and urban individuals with greater advantages for the non-poor. Despite such progress, the

⁶ See Box 1 for Educational System in Mozambique.

average years of schooling in 2009 in Mozambique were lower than the regional average (4.7 years in 2009) and far below that of Southern African countries (8.1 years in 2009) geographically close to Mozambique.⁷

Box 1**Educational System in Mozambique**

Mozambique's basic education cycle comprises two primary levels: lower and upper primary. Students who complete upper primary can go on to secondary school. There are various technical and vocational education and training opportunities for graduates of lower and upper primary, or lower secondary. Tertiary education (university) is open only to graduates of secondary schools. The levels of education in Mozambique and grade requirements for entry are as follows:

Primary education with intended entry at age 6

- EP1 (*Ensino Primário do 1º Grau*): grades 1–5 (ages 6–10)
- EP2 (*Ensino Primário do 2º Grau*): grades 6–7 (ages 11–12)

Secondary education

- ES1 (*Ensino Secundário do 1º Ciclo*): grades 8–10 (ages 13–15)
- ES2 (*Ensino Secundário do 2º Ciclo*): grades 11–12 (ages 16–17)

Technical and vocational education and training

- Professional (grade 7 required, 2–3-year programs)
- Medium (grade 10 required, 2-year program, equivalent to grade 12 upon completion)

Teacher education

- Middle (grade 10 required, 1–3 year programs)

Tertiary education (university)

- Grade 12 required

Mozambique's education system includes both public and private schools. The vast majority (98 percent) of primary students attend public schools in 2013. The private sector, however, plays an important role in secondary education, with around 12 percent of students attending private schools.

Source: Updated from Box 1.3 in Fox et al. (2012)

⁷ The Southern African countries used here include Botswana, South Africa, Lesotho, and Zimbabwe, based on data availability.

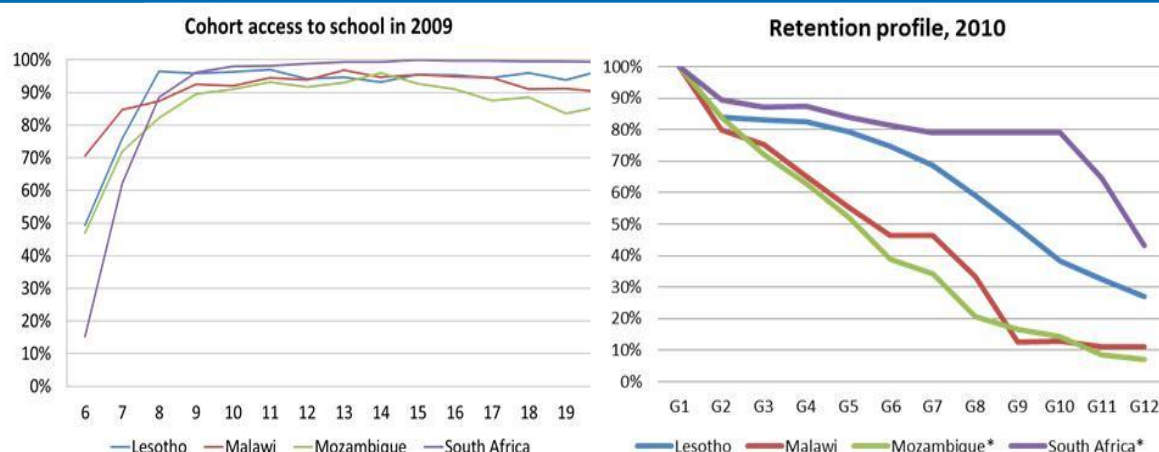
15. Low levels of education appear to be strongly associated with high drop-out and low retention rates, rather than limited accessibility. With respect to access, universal access to primary schooling seems possible with the majority of children between 6 and 19 indicating that “they have attended school.” Although the entry age in Mozambique is slightly older compared to a few neighboring countries such as Lesotho and Malawi, the access rates are not far lower (Figure 2 left). The retention rates, however, are much lower than those of Lesotho, as many of the students rapidly drop out of school as they get older and fail to continue their schooling (Figure 2 right).

Table 2 Years of Schooling over Time: 2003-2009

	2003			2009			Difference		
	Female	Male	Average	Female	Male	Average	Female	Male	Average
Total	2.2	3.4	2.8	3.0	4.9	3.9	0.8	1.5	1.1
Youth(15-34)	2.6	3.6	3.0	3.7	5.4	4.5	1.1	1.8	1.5
	Rural	Urban	Average	Rural	Urban	Average	Rural	Urban	Average
Total	2.1	4.0	2.8	2.8	5.9	3.9	0.7	1.9	1.1
Youth(15-34)	2.3	4.1	3.0	3.2	6.6	4.5	0.9	2.5	1.5
	Poor	Non-poor	Average	Poor	Non-poor	Average	Poor	Non-poor	Average
Total	2.4	3.2	2.8	3.3	4.6	3.9	0.9	1.4	1.1
Youth(15-34)	2.6	3.5	3.0	3.9	5.2	4.5	1.3	1.7	1.5

Source: Authors' compilation from Income and Expenditure Surveys (IAF 2003, and IOF 2009)

16. The enrollment and completion rates have improved over time, but high drop-out persists (Table 3). The Gross Enrollment Rate (GER) at all levels has substantially improved especially after the education reform in 2003/04, which introduced free primary education. In particular, the gross enrollment and intake rates for primary schools since 2005 demonstrate that the opportunities for primary schooling are widely available. Completion of primary schooling and progress to secondary education, however, still remain low despite its progress over time: in 2012, slightly over half of the students had completed their primary schooling and only a third of the secondary school aged children pursued a higher level of schooling.

Figure 2 Access and Retention of Schooling by Age and Grade

Source: Authors' computation using UNESCO Institute of Statistics (UIS) and IOF 2009 for Mozambique; 2011 Household Survey for Lesotho; 2010 LSMS for Malawi; and 2012 Labor force survey for South Africa.

Table 3 Access and Completion Rates by Education Level over Time

Year	2000	2002	2005	2008	2009	2010	2011	2012
Primary								
Gross Enrollment Rate (GER)	74.40%	83.60%	100.50%	112.50%	111.80%	111.70%	107.00%	105.60%
Gross Intake rate (GIR)	110.40%	110.60%	144.30%	153.90%	151.30%	155.30%	152.20%	154.70%
Completion rate (PCR G6)	22.80%	29.90%	44.90%	64.60%	68.40%	66.30%	61.70%	58.30%
Completion rate (PCR G7)	16.10%	22.20%	41.20%	58.70%	56.30%	60.30%	55.80%	52.30%
Lower secondary								
GER	7.30%	10.50%	17.20%	26.50%	29.80%	32.30%	33.70%	33.60%
Gross Intake rate	7.90%	11.20%	20.10%	29.00%	33.60%	34.10%	35.20%	32.90%
Completion rate	5.40%	7.30%	12.20%	22.70%	24.60%	27.40%	27.00%	28.40%
Upper secondary								
GER	1.50%	2.30%	3.70%	7.30%	8.60%	10.50%	11.10%	11.90%
Gross Intake rate	3.80%	5.60%	9.60%	17.40%	19.60%	21.20%	23.00%	23.80%
Completion rate	1.10%	1.70%	2.90%	5.60%	6.80%	8.20%	8.80%	9.90%

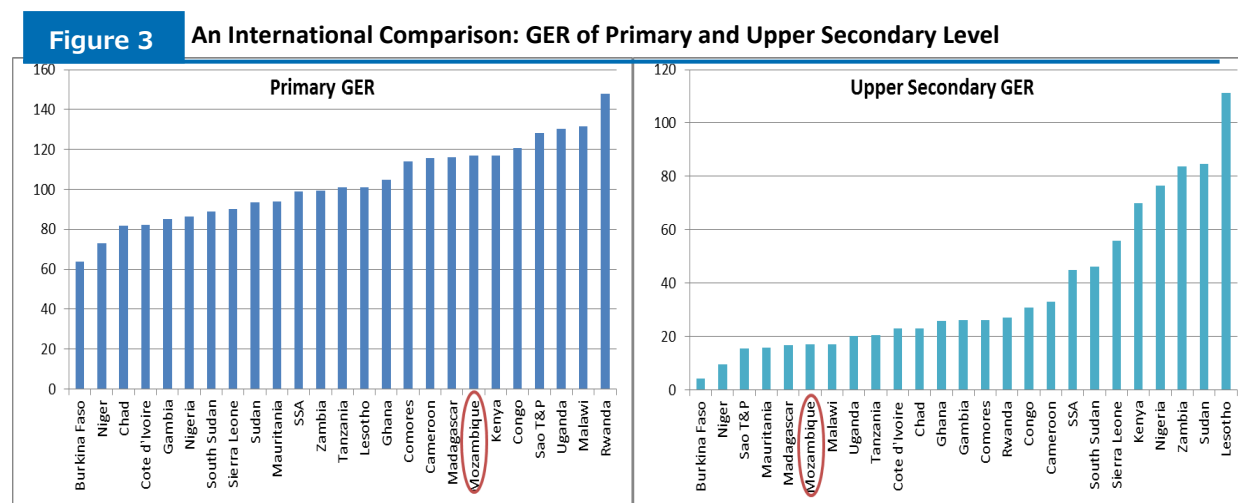
Source: Authors' calculation based on UIS data and UN population figures for Mozambique.

Note: For GER calculation for the primary school level, the base population group is children aged 6 to 12. Due to repetition and reentry, GER and GIR rates can be above 100 percent.

17. An international comparison of GERs at different levels also highlights this pattern (Figure 3). GER of the primary educational level in Mozambique is above the regional average indicating that primary schooling is quite accessible, but the completion rates of primary schooling are far below regional average (52.3% for Mozambique vs. 72% for SSA average).⁸

⁸ Estimates from recent household surveys and UIS show the average primary completion rates for SSA is 71.4% and 72% for 2011 respectively.

When it comes to the upper secondary level of GER, Mozambique ranks at the bottom six among 24 SSA countries selected with the rate lower than 20 percent.⁹ This suggests that a large number of students drop out and fail to progress to higher education between primary and upper secondary schools.

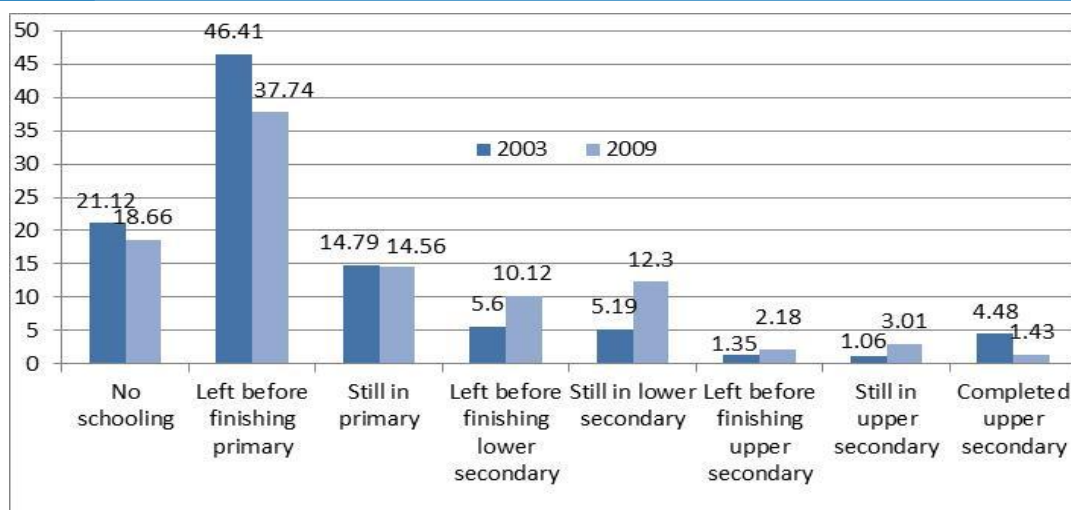


Source: Authors' computation from IOF 2009 for Mozambique and similar household surveys in other countries: Burkina Faso (2010), Cameroon (2007), Chad (2011), Cote d'Ivoire (2008), Comoros (2004), Congo, Rep. (2011), Ethiopia (2005), Gambia (2009), Ghana (2005), Guinea (2012), Kenya (2005), Lesotho (2011), Madagascar (2010), Malawi (2010), Mali (2010), Mauritania (2008), Mozambique (2009), Niger (2011), Nigeria (2010), Rwanda (2010), Sao T&P (2010), Senegal (2005), Sierra Leone (2011), South Africa (2007), South Sudan (2009), Sudan (2009), Tanzania (2010), Uganda (2010), and Zambia (2010)

18. A large number of students fail to remain in school to complete their education, although there has been improvement between 2003 and 2009 (Figure 4). Compared to youth in 2003, youth in 2009 are more likely to have progressed to secondary education. Nevertheless, almost 15 percent of youth remain in primary school suggesting late entry and repeating grades. The proportion of students attending school substantially drops at the upper secondary level.

⁹ Statistics from 24 SSA countries where household data available are presented in Figure 3.

Figure 4 Schooling Profiles among Youth (aged 15-34)

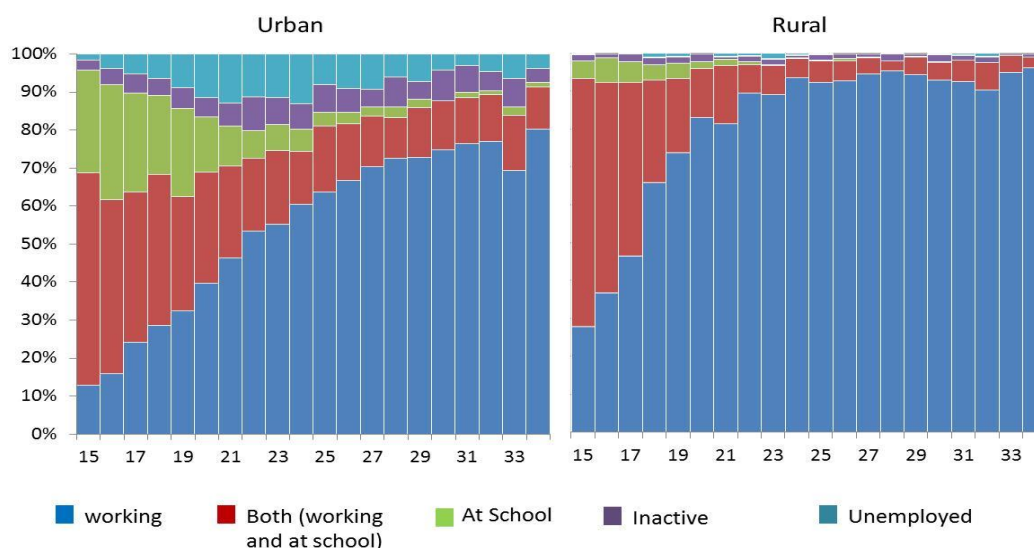


Source: Authors' compilation from the Income and Expenditure Surveys (IAF 2003 and IOF 2009)

19. The main reason for school drop-out, particularly among the poor and old students, appears to be the opportunity costs of education: loss of employment and earnings. As shown in Figure 5, by age 15, about 70 and 90 percent of youth in urban and rural areas, respectively, are engaged in labor market activities part or full time.¹⁰ The proportion of students in school rapidly declines as children get older and working replaces schooling. In urban areas, more youth combine both activities at the same time and prolonged schooling is common. Most of rural youth (90 percent and above), however, have left school by their early 20s and work without attending school. When families are resource constrained and in need of children's labor income, it is difficult to forego earnings by sending their children to school, even for fairly altruistic and forward looking parents. When the returns to education are uncertain or unknown, and quality of education is in question, the demand side incentive for schooling must be even less.

¹⁰ For more detailed information on employment rates by age and region, see National Institute of Statistics (2013).

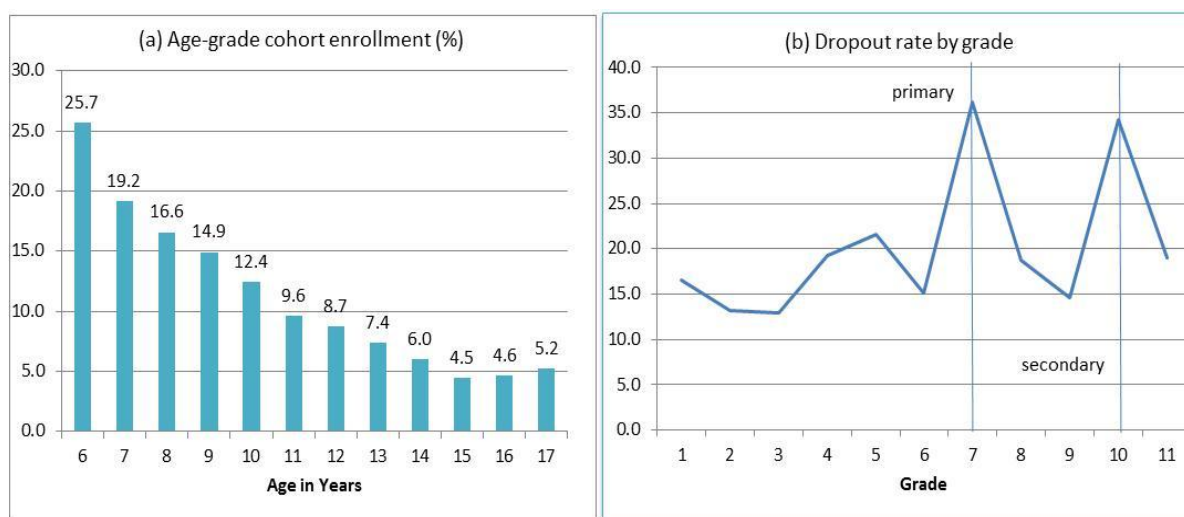
Figure 5 Activities of Youth by Region



Source: Authors' compilation from the Income and Expenditure Surveys (IOF 2009)

20. Apart from labor market opportunities, delayed entry, barriers to progress, and low quality education are likely associated with high drop-out and low retention rates in Mozambique. Estimates of age-grade cohorts using IOF 2009 show that only 26% of grade one students were on time at age six, and the figure sharply declines afterwards with the age of students (Figure 6(a)). Delayed entry into school is not necessarily translated into less education completed. It is, however, generally associated with high drop-out and repetition rates, lower school achievement, shortened duration in the labor market, and thus lower lifetime earnings.¹¹ Considering that drop-out and repetition is more frequent at the end of the education cycle (Figure 6(b)) – grade 7 and grade 10 of the end of primary and secondary cycle respectively – exogenous factors such as screening exams or availability of schools seem to also affect school progress.

¹¹ See Fox (2012) and Wils (2004) based on Mozambique, and McEwan and Shapiro (2006) based on developing countries for discussion on the effects of late entry.

Figure 6 Entry and Drop out Patterns by Age and Grade

Source: Authors' computation using IOF 2009 (a), and UIS 2012 (b)

21. Quality of education is weak at all levels and learning achievements are low. According to the World Economic Forum (2012), the quality of Mozambique's primary education ranked 133 out of 144 countries, while that of higher education was slightly better. Indicators of the math and science scores from Southern and Eastern African Consortium for Monitoring Educational Quality (SACMEQ) suggest that quality of education has not improved between 2000 and 2007. The education reform in 2004 which emphasized universal schooling and thus increased the supply of schools may have contributed to lowering school quality (Fox et al. 2012). This translates into many youth exiting the education system with some foundational skills, but few or almost no marketable skills. Without marketable skills, school leavers would not be able to find employment opportunities given the limited formal sector jobs.

22. In addition, accessibility to higher education and TVET is an issue (Ministry of Education, 2012). The enrollment in higher education recently experienced large growth by almost 66 percent from 63,500 to 105,500 students between 2007 and 2010, with the number of students in private institutions more than doubling (Table 4). In 2010, about 32 thousand new students enrolled in higher education. However, this is still strikingly low considering that the number of individuals aged 15-19 was almost 2.5 million in 2010. Likewise, TVET is available only to a limited segment of population. Although close to 250 technical education institutes are operating for the areas including basic, administration and management, industrial maintenance, agriculture, hospitality and tourism, mining, and ICT (Information and Communication Technology), the number of trained students was only about 32 thousand in

2012.¹² Regarding the quality of TVET, there is a lack of information as data are limited about the effectiveness or responsiveness of the TVET system and its curricula. However, there is suggestive evidence that the quality of TVET is perceived to be low because teachers are not required to update their skills, inefficient management at TVET is not conducive to quality training, and adoption of new curricula or new equipment is slow. Further research is needed for assessment of the TVET system particularly with respect to the evaluation of its recent reform.

Table 4 Number of Institutions and Students in Higher Education: 2007-2010

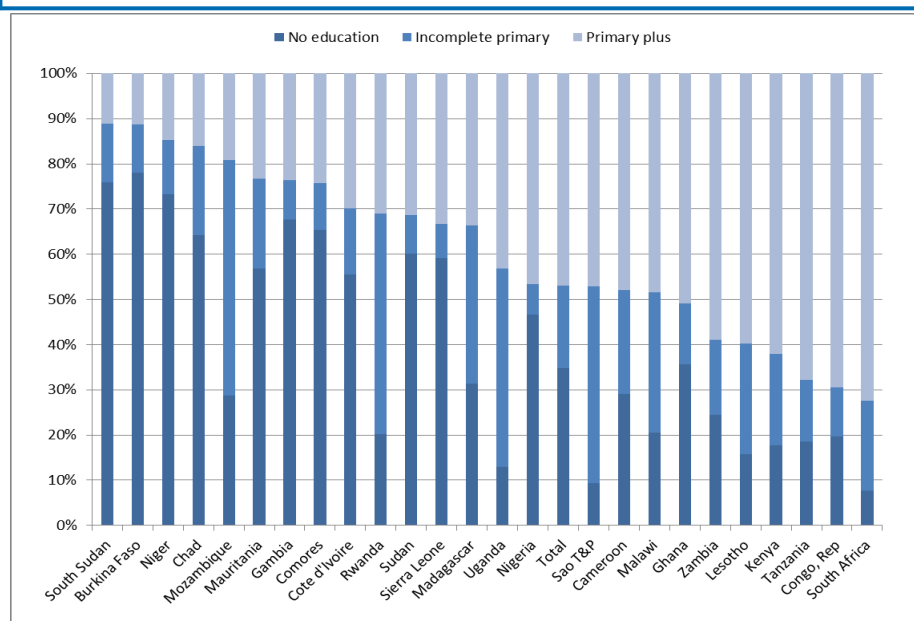
	<u>Institutions</u>			<u>Students</u>		
	Public	Private	Total	Public	Private	Total
2010	17	19	36	75,705	29,778	105,483
2009	14	18	32	60,949	20,301	81,250
2008	13	12	25	58,643	16,780	75,423
2007	12	11	23	51,377	12,099	63,476

Source: Statistical Data on Higher Education, Ministry of Education, Directorate for Coordination of Higher Education

23. As a result, there are a large stock of unskilled workers already in labor force and a flow of unskilled youth entering labor market. Only slightly over a half of the labor force, for instance, is literate (can read and write). Literacy rates are significantly higher for men (71 percent for men; 42 percent for women), and those in urban areas (77 percent for urban; 43 percent for rural areas). Among youth, 62 percent can read and write. The proportion of the labor force with no or incomplete primary education in Mozambique is higher than many other SSA countries (Figure 7). With the population growth, this amounts to a tremendous education and training challenge.

¹² This figure includes 95 institutes under Ministry of Education; 13 institutes under Ministry of Labour; and 135 private institutes.

Figure 7 International Comparison of School Attainment among the Labor Force



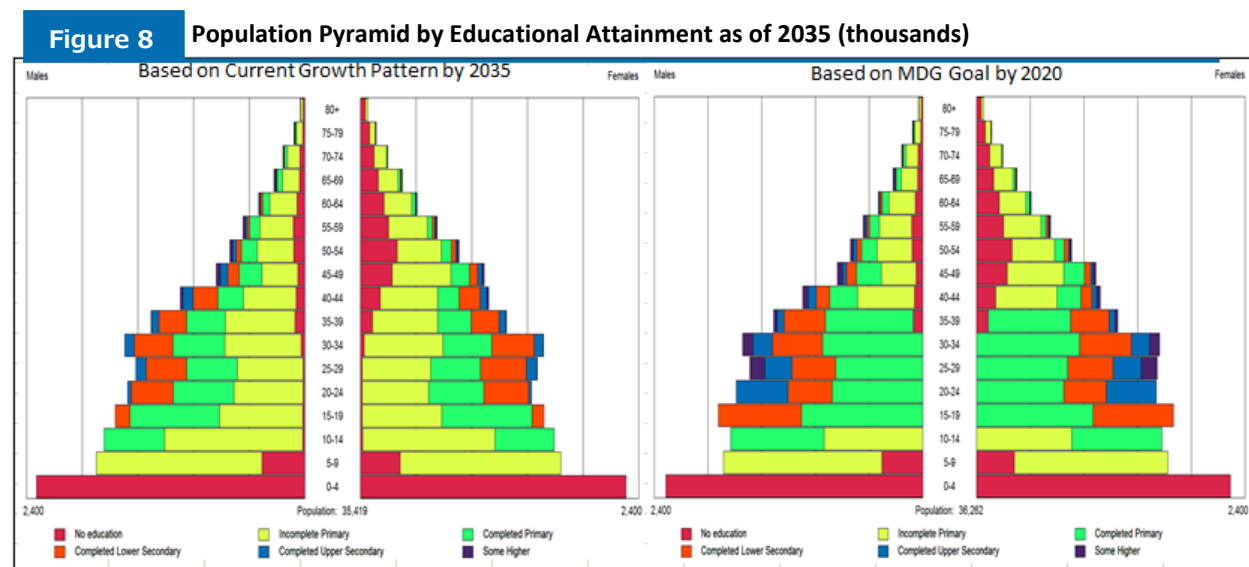
Source: Authors' compilation from various household surveys; see Figure 3 for sources of data.

Skills Prospects

24. Based on the existing issues in education described above, Mozambique is unlikely to meet the millennium Development Goal (MDG) of universal primary schooling by 2015, despite the efforts to expand access to basic education in the past ten years. In order for the universal primary education to be met by 2015, the dropout and repetition rates need to be lowered from the current double-digit rates to far below 5%. This would require enormous efforts to address the issues of the opportunity costs of education, delayed entry, and quality of education as well as the entry tests systems.

25. In order to show the skills prospect in 2035, the size of labor force by education level is simulated considering two scenarios: (i) the trend of drop-out and retention remains the same until 2035; and (ii) the MDG of universal primary education is achieved by 2020. The first scenario assumes that no major investments or reforms take place to change the trend of the current retention rates at all levels of education cycle; the second is more ambitious yet achievable assumption that the MDG is met by 2020 with major investments and reforms in

education.¹³ These projections make clear how the composition of the workforce can be modified dramatically if major investments and reforms are undertaken. For instance, if the current trend persists, more than 75 percent of youth enter the labor market without completing primary education. To the contrary, when, with sufficient investment in the educational system, the MDG is met by 2020, the share of the work force with at least a secondary education becomes substantial among youth (Figure 8).¹⁴



Source: Authors' computation using IAF 2003 and IOF 2009

Dynamics of Labor Demand

26. Turning to the demand side of labor, it is concerning that job creation is concentrated in low productivity activities. Most of economic activities are concentrated around agriculture and there has been little progress in structural transformation. Wage employment is still very limited and probably rationed. This section provides detailed information on where individuals work, where jobs are created, and how education affects them.

Employment Creation

27. Mozambique has been experiencing strong economic growth, far above the regional average (Table 5), and employment has managed to absorb the large increase in the workforce.

¹³ The first scenario assumes that the transition rates between two five-year consecutive levels of education remain constant over time; and the second scenario assumes universal primary education by 2020 by improving retention rates.

¹⁴ For technical details of the projections, see the Annex 1.

As presented, the average growth rate of GDP per capita in Mozambique is around 4.5 percent per year between 1995 and 2010. Most of them are associated with high output per worker growth. Due to the strong economy, it appears that providing employment opportunities has not been a great challenge. The unemployment rates (based on the ILO definition) were around 2.7 and 2.4 percent in 2003 and 2009, respectively.

Table 5 Macroeconomic Indicators of Mozambique and the Region Average: 1990-2010

Period	GDP growth	Population growth	GDP per capita Growth	Output per worker growth
<u>Mozambique</u>				
1990-1995	3.41	3.25	0.16	-0.99
1995-2000	7.20	2.66	4.54	4.08
2000-2005	8.26	2.64	5.62	5.83
2005-2010	6.51	2.38	4.13	4.23
<u>Region Average (32 countries)</u>				
1990-1995	1.19	2.35	-1.16	-1.52
1995-2000	3.42	2.61	0.81	0.43
2000-2005	4.30	2.43	1.87	1.47
2005-2010	4.71	2.30	2.41	2.00

Source: Authors' compilation from Cho and Tien (2013)

28. The quality of jobs and employment opportunities, however, poses a significant challenge to Mozambique. The majority of individuals work in the agriculture sector, about 81 percent of the employed in 2009 (Table 6).¹⁵ It is a serious concern, then, that the contribution of agriculture in GDP is only 24 percent while most of the workers find their employment in agriculture.¹⁶ This indicates that the productivity of agriculture is very low, and individuals are in the low productivity sector. Moreover, the share of agriculture in employment has increased from 78 to 81 percent between 2003 and 2009 despite the country's overall strong economic performance, suggesting that the impacts from economic growth are not realized in employment gain. Moreover, the discrepancy between rural and urban areas in obtaining better earning opportunities (e.g., availability of non-agricultural jobs) is quite large.

¹⁵ The share of wage employment among agricultural workers is negligible, and thus employment status is categorized into wage employment, household enterprises, and agricultural (self employment).

¹⁶ See UN statistics for sector contribution to GDP.

Table 6 Employment Sector and Status by Region in 2003 and 2009

	Employment status			Employment sector		
	Wage	HE	Agriculture	Agriculture	Industry	Services
<u>2003</u>						
Rural	3.8	4.2	92.0	92.0	1.9	6.1
Urban	33.8	23.0	43.2	43.2	8.2	48.6
Total	12.6	9.7	77.7	77.7	3.7	18.6
<u>2009</u>						
Rural	3.4	2.9	93.7	93.7	1.8	4.4
Urban	26.8	19.9	53.3	53.4	10.2	36.4
Total	10.9	8.4	80.7	80.8	4.5	14.7

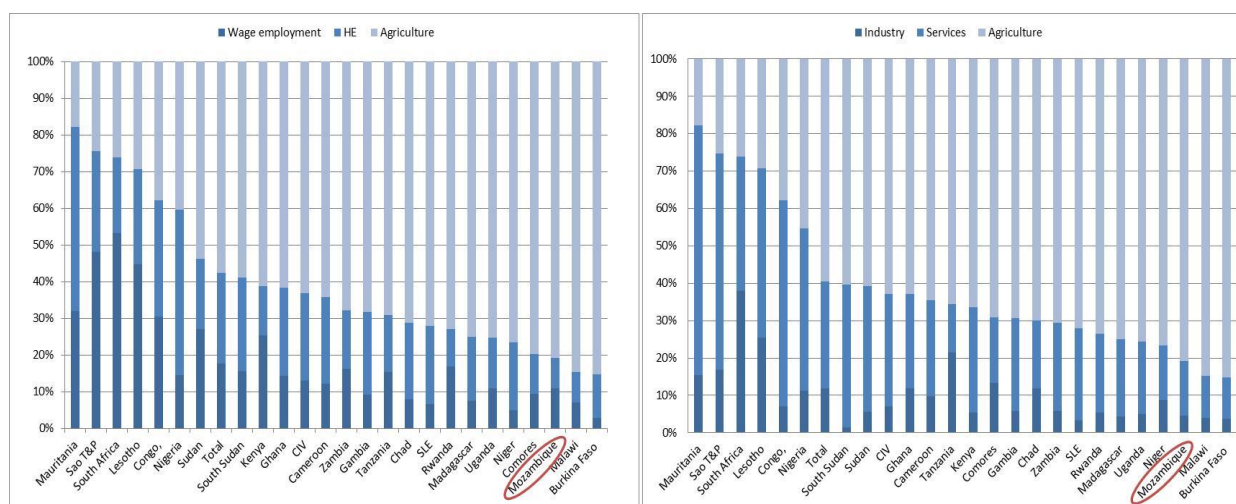
Source: Authors' calculation from the Income and Expenditure Surveys (IAF, IOF)

29. The shares of the industry and service sectors to employment and GDP reveal similar concerns of labor productivity.¹⁷ While contribution of the industry sector to GDP in 2009 was 32 percent, its employment share is merely 4.5 percent. Likewise, the GDP and employment shares of service were 44 and 15 percent, respectively, in 2009. This indicates that productivity in the industry and service sectors is far greater than the agricultural sector, but the opportunities are not sufficient. A striking discrepancy between urban and rural areas in the shares of industry and services in employment is also observed. A lack of skills mentioned above is likely to limit one's ability to work in the modern industry or service sector.

30. An international comparison shows that the share of agriculture in Mozambique's employment is higher than other countries in the region, while the shares of household enterprises (HE) and industry are lower (see Figure 9). In particular, the share of HE in Mozambique is less than 10 percent of total employment, among the lowest, although the share of wage employment is around the median level among the 22 countries. This suggests that there is significant room for interventions to promote income diversification through HE, particularly for agricultural workers.

¹⁷ We use the UN GDP data for the shares of each sector to GDP. The UN GDP data are disaggregated according to the following sectors: agriculture, hunting, forestry, and fishing (ISIC A-B); mining, manufacturing, and utilities (ISIC C-E); manufacturing (ISIC D); construction (ISIC F); wholesale, retail trade, restaurants, and hotels (ISIC G-H); transport, storage, and communication (ISIC I); and other activities (ISIC J-P).

Figure 9 International Comparison of by the Sector and Status of Employment



Source: Authors' compilation from various household surveys; See Figure 3 for the sources

31. The employment sector and status by age group (not shown here) indicates that the share of agriculture is indeed higher among youth. In 2009, about 82 percent of working youth and 79 percent of working adults engaged in agriculture. The different patterns between youth and adults in employment sector and status are observed only in urban areas, while the distribution is similar across age groups in rural areas. In urban areas, 58 percent of working youth are in the agriculture sector while the figure is 46 percent for adults. This suggests that better job opportunities available in urban areas tend to be taken by adults, while youth find a relatively easy entry into the labor market through agriculture despite their improved education.

Education and Labor Market Outcomes

32. Indeed, the type and earnings of jobs are determined by one's education. This section investigates the relationship between education and type and earnings of jobs.

Types of Jobs

33. Not surprisingly, higher educational attainment is associated with better employment arrangements including wage employment and industry and service sectors (Table 7). When an individual has less than primary education, agriculture seems to be the best available option. Completion of primary schooling is significantly correlated with lower likelihood of working in agriculture, although the extent to which this association holds has gone down over time. This is

probably due to the fact that more students progressed to secondary education in 2009 compared to 2003.

Table 7 Employment Sector and Status by Education in 2003 and 2009

	Wage	HE	Agriculture	Agriculture	Industry	Services
<u>2003</u>						
no education	1.7	3.9	94.4	94.5	1.0	4.6
incomplete primary	11.0	11.5	77.5	77.7	4.4	18.0
completed primary	44.0	23.8	32.2	33.0	9.7	57.3
completed lower secondary	74.3	13.4	12.3	12.6	7.8	79.7
completed upper secondary	88.5	8.0	3.5	3.5	5.4	91.1
TVET	86.2	5.8	8.0	8.6	11.5	79.9
Some post secondary	97.5	0.0	2.5	4.2	12.1	83.8
<u>2009</u>						
no education	2.0	3.2	94.9	94.9	1.5	3.6
incomplete primary	7.1	8.6	84.3	84.3	4.2	11.5
completed primary	24.6	15.6	59.9	60.0	10.0	30.1
completed lower secondary	51.0	16.6	32.5	32.5	9.6	57.9
completed upper secondary	65.6	13.7	20.7	20.7	9.8	69.5
TVET	65.7	14.7	19.6	20.0	14.0	66.0
Some post secondary	88.1	8.0	3.9	4.7	10.2	85.0

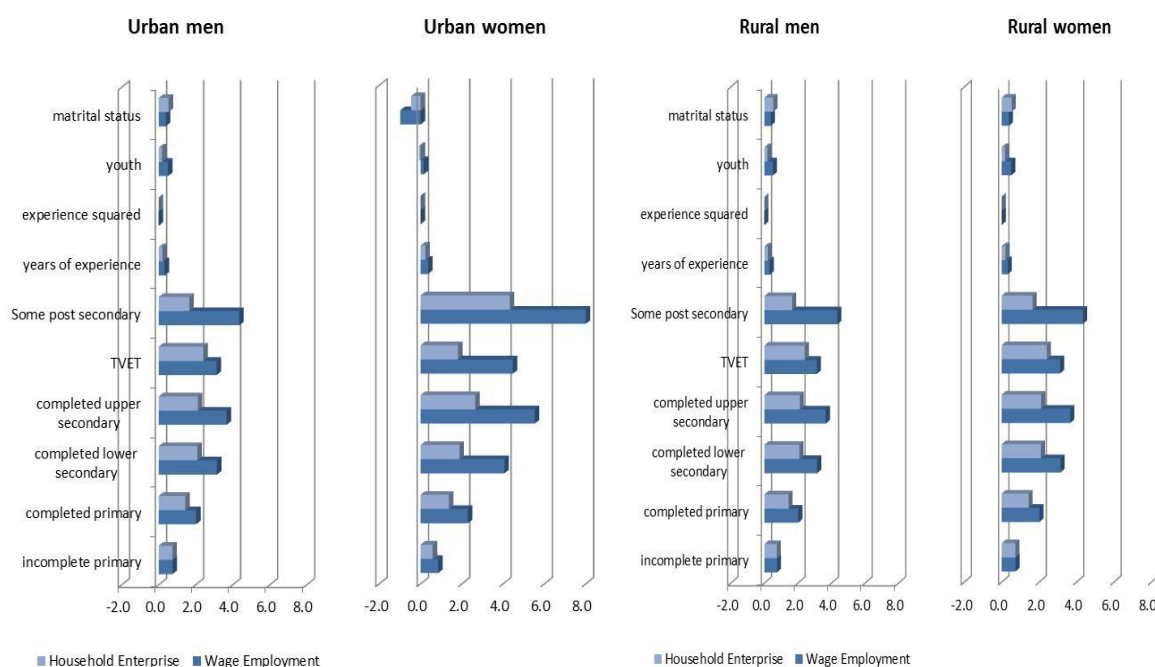
Source: Authors' calculation from the Income and Expenditure Surveys (IAF 2003, IOF 2009)

34. A series of multinomial logit regressions, controlling for the main observable characteristics confirm the importance of education in determining the sector and status of employment. With agriculture as the base category, the likelihood of working in wage employment and household enterprises is investigated separately for men and women in urban and rural areas. Indicators of education level as well as years of labor market experience, indicator of age group, marital status, and province dummies are included in the explanatory variables. The coefficients reflect contribution of one variable to the likelihood of working at a certain employment state relative to agriculture.

35. It is clear that educational attainment is a major determinant of employment arrangement, but the extent to which education affects varies across different groups (see Figure 10). The contribution of education is far greater than other observable variables in determining employment status. There is a clear order in employment arrangements that higher education is more associated with wage employment, then household enterprises, and lastly agriculture. Completion of primary schooling can make the most significant difference in employment status. Completed upper secondary education is generally more favorable to obtaining wage employment than TVET, suggesting that training through the TVET system may not be well

appreciated in the market. The returns to higher education in facilitating individuals to obtain better employment status seem the greatest among urban women.

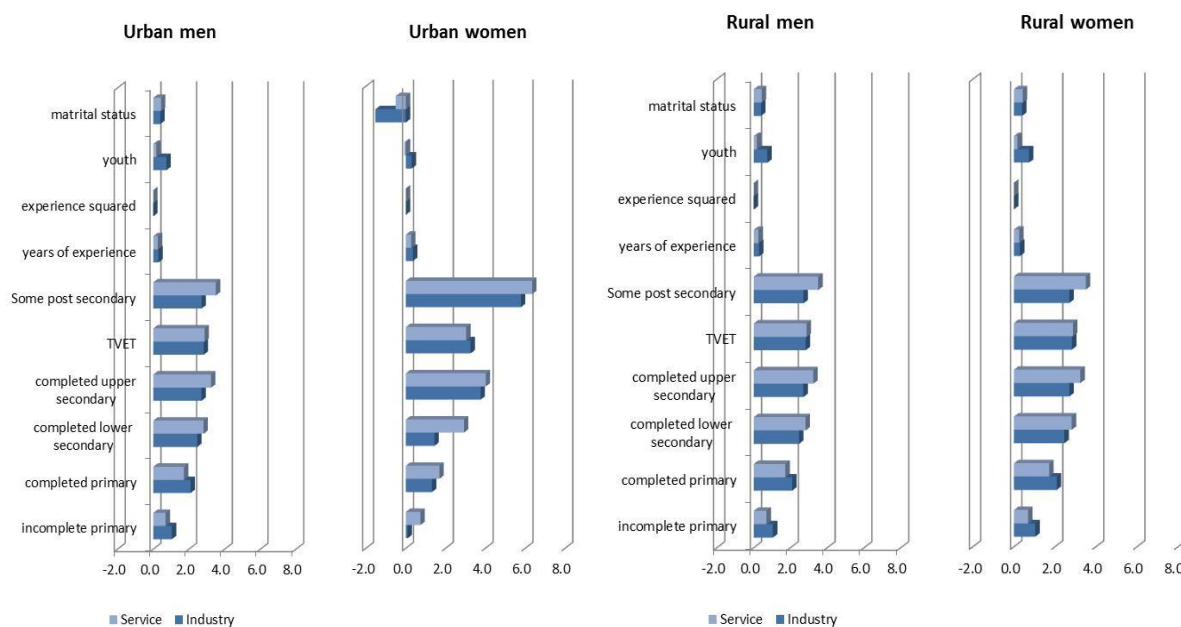
Figure 10 The Determinants of Employment Status by Gender and Region



Source: Multinomial Logit Regression from the Income and Expenditure Surveys in 2009 (IOF)

36. With respect to the sector of employment, similar patterns emerge (see Figure 11). The contribution of education is more significant than other variables in determining employment sector. Higher education has a greater association with service and industry than with agriculture. The educational attainment makes the most difference among urban women. The returns to education in facilitating individuals to select a better quality employment sector are largest among urban women and those with completed primary or lower secondary education.

Figure 11 The Determinants of Employment Sector by Gender and Region



Source: Multinomial Logit Regression from the Income and Expenditure Surveys in (IOF 2009)

Earnings and Returns to Education

37. Finally, we look into the role of education in determining earnings from the labor market. Research evidence both in advanced and developing countries has shown the positive impact of education on individuals' earnings and productivity,¹⁸ and furthermore on economic growth.¹⁹ One way of measuring the value of education is to calculate its internal rate of return to inform whether education (and training) is a good investment given its costs and benefits, and how much is an optimal level of attainment. Unfortunately, information on earnings is available only for wage workers, excluding all agricultural workers and HE in Mozambique, and the calculation of the costs of education is difficult given limited data.

38. Thus, we estimate the returns to education using the Mincerian regression only to infer the incremental effect of an additional year of schooling on earnings. We first limit our sample to salaried workers whose earnings information is available, and then extend the estimation using household consumption. When estimating the returns based on household consumption,

¹⁸ See Almeida et al. (2012).

¹⁹ See Hanushek and Woßmann (2010), for instance.

the education level of household head, or that of median or average working adults in the household are used. In addition, we separately estimate using both measures of education -- years of education and categorical dummies of education level.

39. The result shows that, among salaried workers, an additional one year of education is associated with an average increase of 12.4 percent in monthly earnings. When the estimates were expanded based on household consumption, the returns ranged from 8.5 to 13.4 percent depending on the measure of education used.²⁰ As shown in Table 8, additional education is associated with better earnings at all education levels. Apart from higher education, completed lower secondary education seems to have the highest incremental yields for wage earnings, while completion of primary school generally yields high returns regardless of specifications.

Table 8 Returns to Education

	Wage		HH Consumption		
	Individual's education	Household head's education	Average working member education	Median working member education	Average working member rounded to
Years of schooling	12.4	8.5	11.1	10.9	13.4
Level of schooling					
Incomplete primary vs. No education	39.0	13.2	20.5	23.1	25.1
Completed primary vs. incomplete	15.1	29.0	47.3	45.9	53.8
Completed lower secondary vs. complete primary	49.5	27.5	37.3	26.9	38.9
Completed upper secondary vs. complete lower secondary	36.2	30.8	17.0	53.7	36.1
TVET vs. completed upper secondary	10.4	10.4	7.2	22.6	11.4
Higher education vs. TVET	52.8	92.4	79.5	55.2	70.2

Source: Mincerian regressions from the Income and Expenditure Surveys in (IOF 2009)

Policy Agenda

40. As discussed above, creating quality jobs that enable workers and their families to escape out of poverty while absorbing a large portion of the workforce is a challenge in Mozambique. A large share of the working age population, mainly in rural areas, is participating in low productivity agriculture. Engagement in non-agricultural activities remains low. Particularly, industry or HE, that have potential for greater earnings and income diversification, are underutilized. Despite strong economic performance in the 2000s, little change to the distribution of workers by employment sector has occurred, presenting stagnant structural

²⁰ These results are consistent with Simione (2011) that estimate the returns based on different specification than ours.

transformation. The situation is not any better for youth despite their advanced education, and because their numbers are rapidly increasing, the overall situation can further deteriorate.

41. Addressing these problems requires interventions at various levels. First, education policies need to be prioritized to improve the overall skills level among the (future) labor force. In particular, given low retention and high drop-out rates at primary education, interventions to improve school retention need to be considered. Along with the efforts to expand primary education with better quality, the post primary education especially the TVET system merits more attention. In order for the TVET system to train skilled workers for the modern economy, improving TVET's relevance to the labor market is a priority. Another area that merits careful planning is agriculture. Given that agriculture absorbs most of the workforce in Mozambique, improving its productivity so that the economic activities can generate sufficient income for individuals' livelihood is crucial, while efforts to transition individuals from agriculture to other productive sectors should run in parallel. Finally, considering that HE is an important strategy for income diversification, policies promoting self-employment and entrepreneurship need to be developed. A large knowledge gap still exists as to what programs work for whom, and why many of them are not successful. However, based on the lessons from existing evaluations, targeted programs designed according to the needs of target groups show promise.²¹

Education Policies

42. Efforts to increase completion rates especially at the primary level are needed. Demand side issues related to high drop-out, as mentioned above, include delayed entry, costs of education such as foregone labor income as opportunity costs, direct expenses of school tuition, uniform, and supplies, time costs (often due to a long walk), low regards on the benefits of education, and psychological costs of taking progress tests. Meanwhile, supply side issues include the lack of schools, space, materials, and teachers, and pedagogical efforts in general, which can be the main sources of low quality education. The relative importance of demand and supply side issues may differ across different levels of education. Visser (2013) suggests that the supply side factors, particularly accessibility, may not be as binding as demand side issues at the lower primary level, but increasingly affect schooling decisions at higher levels.

²¹ See Cho and Honorati (2013) for a meta analysis of existing impact evaluations of entrepreneurship programs in developing countries.

43. Focusing on primary school completion, Visser and Hodges (2013) review international evidence on demand side interventions and assess the experiences of similar approaches in Mozambique. Demand side interventions include: school fee abolition, free distribution of school uniforms and materials, and school vouchers to reduce the direct costs of education; conditional and unconditional cash transfers to relieve budget constraints for households; and school feeding and health related interventions to provide parents with extra incentives to send their children to school. Several of such interventions have been implemented in Mozambique except for cash transfers. Among those programs implemented in Mozambique, the report suggests, that removing school fees have had the greatest impacts in improving enrollment and completion at primary school level. Building upon the findings, we discuss a few under-explored areas that have the potential to keep students in school: cash transfer; parental involvement; information campaigns; and quality enhancement.

44. Cash Transfer (CT) is widely accepted as an effective policy measure to reduce poverty and improve human capital investment. Recognizing households' poverty and credit constraints as a main barrier to children's schooling, CT programs transfer resources to the poor in the hopes for increased investment in schooling. CT can be unconditional leaving the allocation of additional resources up to the households' decision, or be conditional requiring behavioral changes including sending children to school. International evidence has shown great impacts of Conditional Cash Transfer (CCT) on school attendance (See Box 2). Recent studies, however, weigh in that unconditional cash transfer programs show equivalently positive impacts. To date, there is no consensus regarding the relative effectiveness between conditional versus unconditional cash transfer in human capital investment. Some are more supportive on conditionality, arguing that investment in children's human capital tends to be too low when the decision is left to households and moreover promoting "good behavior" in social programs is desirable. Others, to the contrary, are skeptical about conditionality particularly in low income countries due to the limited administrative capacity in enforcing conditionality.

45. A few pilot CCT programs have shown promising results in Sub Saharan Africa.²² For instance, in Malawi, the education bonus attached to the cash transfers for the poorest households has significantly reduced missed days at school. Zambian cash transfers have reduced the drop-out rates of youth by half among the recipients.²³ Qualitative evaluations of Mali's Bourse Mamans program, a cash transfer program contingent upon primary school

²² Contribution of conditionality in these CCT programs is controversial as conditionality was not enforced well, in which case CCT is equivalent to unconditional cash transfer.

²³ See Schubert (2005, 2007) for Zambia and Malawi, respectively.

attendance, also shows promises in improving enrollment. In addition, the Zomba Cash Transfer program in Malawi, which pays for school fees and monthly cash payments to young women aged 13 to 22, has improved school attendance and noticed positive effects on delayed pregnancy and marriage.²⁴ Weak enforcement on conditionality and equivalent effectiveness of unconditional cash transfer compared to CCT again raises the question on the role of conditionality especially in a setting where administrative capacity is limited.

Box 2 Conditional Cash Transfer (CCT) for Education

Background: CCT make payments to poor households on the condition that those households invest in the human capital of their children in certain pre-specified ways. Starting from Mexico's PROGRESA (Program for Education, Health and Nutrition) in 1997, CCT programs have grown exponentially. As of 2008, virtually almost all Latin America and Caribbean countries and other parts of the world such as India, Indonesia, Kenya, and the Philippines adopted CCT programs. While the effectiveness between conditional vs. unconditional cash transfer in human capital investment and poverty reduction is being debated, there are two sets of arguments supporting conditionality to transfers: (i) private investment in children's human capital is thought to be too low, and (ii) pro-poor redistribution policies can draw political support only when they promote "good behavior."

Program:

- Target group: Poor households (usually based on proxy means test, sometimes combined with geographic targeting) with young children from 0 to 3 (for health and nutrition) and school-aged children (education)
- Conditionality: Transfers made upon the use of health and nutrition services, and school attendance. With respect to school attendance, usually 85 percent or higher attendance rates are required.
- Amount of transfer: Factors such as the income elasticity of behavior change, the size of opportunity gap between the poor and non-poor, opportunity costs of foregone income (from child labor), and gender disparities need to be considered to set the level of benefits. Many programs provide greater amount for higher grades and girls.

Impacts: There are two broad sets of outcomes that have greatly benefited from CCT programs: (i) due to the transfer of resources, CCTs generally have positive effects on households' consumption and poverty reduction, and (ii) due to the conditionality as well as the transfers, education and health of children have significantly improved. In particular, there are significant impacts on school attendance and completion although the size of impacts varies by initial enrollment level, and the amount and timing (e.g., lump sum bonus upon graduation) of transfer.

Source: Authors' articulation based on Fiszbein and Shady (2009)

²⁴ The impact evaluation of a small CT in Malawi's Zomba district illustrates the power of an experimental design to determine a CT's effects, as well as to parse out nuances of impacts relevant for program design. The Zomba CT, which was designed explicitly for research purposes, tested the impact of conditional and unconditional transfers on educational, marriage, and fertility outcomes for female adolescents (Baird et al. 2011; Marito Garcia and Charity M. T. Moore, 2012).

46. Given that Mozambique would benefit from demand side interventions to improve schooling at the primary level, and that international evidence suggests strong impacts of cash transfers, it would be worth investigating the feasibility and potential impacts of cash transfer in Mozambique. Program parameters including conditionality, benefit level, eligible criteria, recipient of benefits among members of households, and combinations with other interventions need to be thought through. Many factors such as costs associated with education including opportunity costs, household income, and degree of gender disparity among others, need to be considered.

47. Like in cash transfer programs, incentivizing parents to send their children to school is indeed important in improving student's schooling outcomes as well as attendance. There is evidence that parental involvement in children's learning processes and in influencing school management can significantly contribute to student success. For example, between 2003 and 2008, Mali implemented the Support for the Quality and Equity of Education Program—a community based program with components of parents' participation in an adult literacy program and school management. Literacy and motivational training for parents were conducted at community centers by volunteer facilitators. Guinea and Uganda have also implemented smaller scale parent education programs that require participation in school management. These programs, although not rigorously evaluated, report higher levels of parental involvement in school management, increases in school attendance and decreases in drop-out rates among children, as well as increased civic participation and decreased incidence of domestic violence and early marriage.²⁵ Intervening at an earlier stage is likely to bring larger impacts. Martinez et al. (2012) suggested that the pre-school intervention in Mozambique had strong positive impacts on pre-school enrollment as well as child development outcomes.

48. Along with providing incentives to send children to school, improving perceived returns to education of both parents and students through provision of correct labor market information can help improve school attendance. Some students or parents may not have correct information on the labor market returns to education. Information that the completion of primary school can significantly improve student's chances in obtaining wage employment, for instance, can incentivize children to stay longer to complete their primary education. Jensen (2010) conduct an experiment where accurate information on the returns to secondary education in the market is distributed to a randomly selected subsample of students, given that

²⁵ See <http://agsp.worlded.org/support.htm> for Mali and Guinea; See Rotheram-Borus et al. (2011), for Uganda.

the perceived returns to secondary education in the Dominican Republic among 8th grade boys were far lower than actual returns. The study finds that the students at the schools where correct information is provided are more likely to stay and complete schooling.

49. Supply side efforts to improve quality of education should continue as well. At the very least, fundamental skills including basic literacy and numeracy skills, and soft skills should be fostered at the primary level. In addition, addressing constraints such as distance to school, availability of adequate school infrastructure, and teacher absenteeism would be important. Resource constraints often serve as impediments to implement interventions and reforms addressing education challenges, but research suggests that there are some relatively low cost interventions that are associated with significant improvements in schooling. For instance, community based teacher training programs that motivate teachers and enhance their skills are found to help retain students.²⁶

Skills Development for Wage Employment

50. While prioritizing basic skills acquisition through primary and secondary school reforms, it is important to have interventions that support TVET and higher education institutions to produce more technically skilled workers needed by employers in the labor market. Focusing on the TVET system, we discuss a few areas where TVET policies and institutions should pay more attention. By no means an exhaustive list of policy agenda, these topics are nonetheless highly pertinent to further reform in TVET, building upon the experience of PIREP (Programa Integrado de Reforma da Educação Profissional).²⁷

51. **Economic policy and TVET:** With a small modern wage sector (slightly above 10 percent of the workforce worked in wage employment in 2009), the demand for workers with sophisticated skills has been weak in Mozambique. This makes investment in skills training programs challenging. A lack of skilled workers, in turn, discourages the creation of productive jobs and the development of a modern, high-skill wage sector. Such coordination failure and vicious cycles can be broken by strong government-led initiatives to incentivize individuals and firms to invest in skills development, as manifested in the experience of the early stage of

²⁶ See Perezniето and Diallo (2009) for the Mali program.

²⁷ PIREP stands for Integrated Reform Program for Professional Education See Gondwe (2011) for the PIREP agenda.

industrialization and economic take-off in East Asian countries.²⁸ Alignment of training policy with priorities of skills development based on an overall economic and industrial policy is critical to success of this approach. Therefore, TVET programs need to be effectively linked to the overall strategy for industrialization, considering not only the current sectoral distribution (e.g., agriculture's dominance) but also promising emerging sectors (e.g., the mining and construction sector) and the areas where Foreign Direct Investment and innovations take place more actively.

52. **TVET reform:** In line with this, the ongoing TVET reform in Mozambique more specifically aims to increase access to and retention in TVET, provide quality training, and improve the system of management and coordination (See Box 3 for the major progress in TVET Reform to date).²⁹ The reform agenda recognizes the challenges including the financing of the TVET system, teacher training, governance, and management. With all the right ingredients and intention of the reform, further emphasis should be given to acceleration of implementation and monitoring and evaluation of the reform. The TVET reform introduced in 2006 has not been rolled out as rapidly as anticipated. While the Government continues their efforts in catching up, the following agenda is worth highlighting.

53. **Curriculum:** In order for the curriculum of TVET to be responsive to the demand from local labor markets, it is important for the institutions to have autonomy to design their own curriculum and a system to integrate employers' needs. In the TVET system, increasing curriculum autonomy would allow institutions to improve the quality of skills provision by more directly collaborating with employers and increasing the use of local internships and on-the-job training. Involvement of local employers and other private sector actors, in addition government bodies, can improve the performance of the education and training institutions and provide checks and balances. Collaboration can take the form of Public-Private Partnerships (PPPs), joint management of skills provision. For instance, Korea's recent efforts (so called a Bridge model) in skills development mainly for small and medium enterprises (SMEs) in collaboration with large leading enterprises and university/TVET institutions, with active public supervision and subsidies, are deemed to be a promising PPP approach, giving more autonomy for curriculum and achieving synergy among collaborators.³⁰

²⁸ See Tan and Nam (2012).

²⁹ Ministry of Education (2012) for detailed education strategic plan for Mozambique.

³⁰ See Almeida and Cho (2012).

Background:

In 2006, the government of Mozambique introduced a 15 year plan to reform its TVET system, through the Integrated Professional Education Reform Program (PIREP).

The implementation of PIREP is led by an inter-ministerial commission for the Professional Education Reform (CIREP) chaired by prime minister and represented by ministers of education, labour, finance, planning and development, trade and industry, science and technology, public administration, and agriculture. The stakeholder body, the Executive Commission of Professional Education Reform (COREP), which includes government representatives (particularly from ministers of education and labour), trade unions, private sectors, and civil society, manages implementation and monitoring of the reform process.

The areas of reform include: Development of an Institutional Framework; Standards-based Qualification and Training System with involvement industry; Improvement of Quality in Training Institutions; and a competitive fund to cater for Skills Development Fund.

Progress:

So far the ongoing reform has made good progress with respect to the development of curricula, a qualification framework, and their validation by stakeholders particularly the private sector. It has also developed a proposal for the new governance and financing mechanism, which was positively appreciated by the Council of Ministers in November 2013 and remains to be approved by the National Assembly.

In particular, a National Vocational Qualifications Framework has been developed and approved by COREP in December 2008. The process was well designed and executed with good representation from the private sector, civil society, and the government. Technically, the Framework was based on experiences from other countries and adapted to the Mozambique requirements, and validated by the Mozambican stakeholders. Products include policies, strategies, guides and manuals in the following areas:

- Design, governance, quality assurance arrangements
- Standards and curriculum
- Assessment
- Certification and accreditation
- Quality assurance

An independent evaluation confirmed that the process of curricula development – from activities of the STACs (Sector Training Advisory Committee), Standards Working Team, and Validation Panel to approval by COREP – was well designed with relevant representation and checks and balances.

The rehabilitation and equipment of institutions as well as training of teachers is underway. It has also been able to use competitive funding under FUNDEC to support professional and vocational training programs by formal and informal training institutions and in reaching out to underserved populations in rural areas.

Source: Authors' consultation with the government of Mozambique

54. **Performance Management:** Performance management in the TVET system is too often overlooked, as most monitoring efforts are devoted to keep track of inputs and outputs such as the numbers of incoming and graduating students, teachers, and courses, and hours of

training, for instance. There are many other activities to concur to ensure quality training in TVET: (a) developing policies and standards for quality assurance; (b) supporting and incentivizing all training providers, public and private, to assure the quality of services through the development of common competency standards, instructional materials and instructor-training programs; (c) constructing information and data not only on inputs and outputs but also on outcomes such as placement results, earnings of graduates, and satisfaction of students toward teachers, courses, and institutions; and (d) informing the public regarding the options for skills training with information on the quality, outcomes and costs of training options, in both the public and private sectors.

55. **Governance and financing:** Governance structure, which defines the roles and responsibilities of multiple agencies involved in TVET for public and private training provision, financing, regulation, and quality assurance, is critical in improving the system's efficiency.³¹ An autonomous apex authority that oversees and regulates the system can take the responsibility of setting a standard, monitoring the performance of training providers, and managing the system, in a centralized manner, while training delivery is decentralized to individual institutions provided with autonomy. For this, the TVET authority indeed needs a system of collecting and constructing data for supervision.

56. Due to the limited availability, many individuals do not have access to formal education or TVET. Although the current reform emphasizes expanding access to TVET, it is deemed unlikely to provide the level of skills required to fill in all positions during upcoming years.³² Particularly, vulnerable populations from disadvantaged backgrounds may not fulfill the academic requirements to enter the TVET system and likely work in low skilled informal sector. In order to assist these groups, many countries have invested in Active Labor Market Programs (ALMPs) to improve their employability. International evidence shows that comprehensive training programs that offer practical on-the-job experience and links with employers as well as job search assistance in addition to in-class training can be quite successful in improving

³¹ International experiences show that when private providers are not discouraged by stringent laws, regulatory uncertainty, or unfair competition, rapid industrial growth can lead to a strong private supply of technical training. In the Czech Republic where manufacturing employment has grown rapidly since 1993, all new technical programs are privately provided (see Chhoeda et al., 2010).

³² The huge level of investments in the area of mining and gas is already generating the demand for non-existent skills. This increased demand of labor was unforeseen and likely result in a huge gap between demand and supply despite the implementation of the reform. One of important labor policies to address the shortage of labor is immigration policy on foreign labor. While a number of countries rely on foreign labor to address the labor shortage, there exist huge implications of immigration policies on the labor market. Therefore, the issue needs to be delved deeper and is left to be an area of further research.

employability of the participants (See box 4).

Box 4 Training program for vulnerable youth for wage employment

Background:

In the late 1990s, labor market conditions for youth in Colombia were quite pessimistic. The youth unemployment rate was almost three times higher than the adult rate, and the gap between low and high income quintiles was large. Colombia was experiencing a hard-hit recession. In response to such situation, the government introduced an emergency training program for youth, Jovenes en Accion in 2001.

Program:

Jovenes en Accion reached about 80 thousand young people (aged between 18 and 25) over four cohorts during the years of 2002-05. The program targeted unemployed youth whose families were in the lowest two deciles of income distribution in the 7 largest cities of the country. The program consisted of 3 months of classroom and 3 months of on-the-job training (OJT). In-class training was provided by training institutions and OJT was provided by legally registered companies concentrated in the manufacturing, retail, and service sectors. During the 6 months of training, participants were given a stipend (USD 2.2 per day) with the exception of women with children under 7 who were given higher stipend (USD 3.0 per day) -- when the average monthly earnings of participating youth were about USD 42 and 60 per month for women and men respectively.

Impacts:

The program significantly increased the likelihood of having a formal job with a written contract and other non-wage benefits. There was a positive impact on salaries, mostly driven by increases in formal sector work. Returns to training increases with the intensity of OJT, but not with in-class training, which suggests that OJT is the critical component of the success of the program. The returns to the training package were larger for women (18%) than men (8%), and the program was cost-effective for women.

Source: Attanasio et al. (2012)

57. The following guidelines need to be considered in designing a training program as part of ALMPs for wage employment.³³ First, profiling beneficiaries and understanding the main constraints is a pre-condition. Target groups are often based on the demographic characteristics (e.g., youth, women, orphans), skills level and experience (e.g., unskilled, school dropout, long-term unemployed), region (e.g., urban, rural), and socioeconomic status (e.g., poor, social assistance beneficiaries). Depending on the profiles of beneficiaries, their target goals, labor market conditions, and specific constraints to employment need to be considered. Second, based on the specific constraints diagnosed, the content and delivery modes of training can be

³³ See Cho (2013) for more detailed information.

diversified beyond in-class, institution-based training for selected occupations. Training soft and non-cognitive skills (e.g., team work, problem solving, inter-personal relations) can be incorporated in the curriculum. Also, complementary interventions including intermediation, advisory services, and On-the-Job Training (OJT)/internships are found to be critical in improving the effectiveness of training programs. Third, a governance structure that ensures a transparent selection of and payment to players (e.g., training providers, private firms and businesses, NGOs) needs to be set up based on the program design. Instruments such as performance-based financing (with a clear set of indicators of performance) and vouchers (with sufficient competition) can be considered. Finally, there needs to be a built-in M&E system with clear indicators of inputs, outputs, and outcomes as well as a standardized and routine process of data collection. More rigorous evaluation and performance assessment can be done by an independent, third-party entity.

58. In addition, second chance equivalency programs are promising ALMPs that offer out-of-school youth to obtain credentials while continuing with their work or family obligations. An example is Tanzania's Complementary Basic Education (COBET) program. In response to a significant reduction in school enrollment and attendance beginning from 1980s, Ministry of Education and Culture implemented the COBET program in 1999 as a means to provide part time education to out-of-school children, with a particular emphasis on girls.³⁴ The program was designed in a way that students could participate while working without any out-of-pocket expenses. The program provided numeracy and literacy skills, as well as vocational training for older students, for three years. Communities, in collaboration with NGOs, religious groups and the private sector, were involved in implementing, monitoring, and evaluating of the program. Anecdotal evidence suggests that the COBET program helped students enhance their skills while remaining working.³⁵

Skills Development for Productive Agriculture

59. Given that the large majority of the labor force (81 percent in 2009) works in agriculture, which is more prominent in rural areas (94 percent in rural areas), policies need to emphasize skills development in the agriculture sector. Typically, with economic development, activities

³⁴ It is estimated about three million children aged 7-13 (primary school age children) are out-of-school, almost half of the school-aged population. For more detailed information on COBET (Complementary Basic Education in Tanzania), see Linda Helgesson (2001).

³⁵ See Macpherson (2007).

with higher productivity and larger added value such as the modern manufacturing sector with great potential of exports replace traditional agriculture. At the same time, an increasing number of workers migrate from rural to urban areas and shift from agriculture to other sectors. Thus agricultural policies tend to be closely aligned with the structural transformation of the economy as well as urbanization and migration. However, in SSA, such structural transformation has been quite slow and began to emerge only after the mid-1990s.³⁶ Considering the pace of the transformation, in the relatively short run, agriculture will continue to be the major source of jobs and income to many individuals and families. Accordingly, policies to improve the productivity of agriculture should be carefully devised.

60. Many interventions have targeted rural workers and farmers. They include land policies,³⁷ banking schemes for credits, savings, and insurance,³⁸ and measures for transmission of technologies.³⁹ Interrelated to these interventions, this note focuses on a skills development agenda for productive agriculture. Skills development in agriculture should involve three areas: (i) foundational skills; (ii) new technology in agriculture; and (iii) skills for agribusiness and entrepreneurship.

61. Fostering foundational skills including literacy and numeracy through primary education is critical in agriculture. Basic literacy and numeracy skills can be a basis for adopting new technology and achieving innovation in agriculture including through new seeds, practices, fertilizers, and animal breeds. The importance of education in agriculture is larger when the sector is in the midst of modernizing.⁴⁰ Moreover, since technological diffusion in rural areas tends to be based on social networks from more educated, skilled farmers to lesser ones, there are large spillover effects of education in agriculture.⁴¹ Therefore, universal primary schooling with adequate learning outcomes highlighted above should also be reemphasized when considering skills development in agriculture.

62. Sophisticated skills and modern technologies are often delivered by agricultural extension services through trained workers to inform farmers. Several models have been tried to test which modes deliver the services more effectively, and among them farmer field schools

³⁶ See Cho and Tien (2013).

³⁷ See World Bank (2012).

³⁸ See IFPRI and World Bank (2010) for an overview of financing options in SSA.

³⁹ See Conley and Udry (2010), for example.

⁴⁰ See Welch (1978).

⁴¹ See Huffman (1997; 2001); Besley and Case (1993); Feder et al. (1985).

(FFSs) are deemed to be a promising approach for education and extension services in rural areas.⁴² FFSs use a group setting and a participatory method of learning so that a group of farmers can collectively learn and interact with each other. One of the distinguishable features of FFSs, different from traditional extension services or education, is that the contents of training are adapted to the specific ecological environment faced with the participating farmers. Given the success of FFSs in other countries in SSA, Mozambique can adopt this practice for skills training in agriculture. Past experiences with the Junior Farmer Field and Life Schools in Mozambique can also inform future programming and scaling up of FFSs.⁴³

63. In addition, diversifying the sources of income through agribusiness and entrepreneurship can contribute to the structural transformation and poverty reduction among agricultural workers.⁴⁴ Agribusiness and household enterprises likely require not only technical skills in the area of specific occupations but also business and entrepreneurial skills to set up and run the business. Business skills include knowledge and capability to assess market demand and price, calculate profits, make inter-temporal decisions on investment, and engage with various partners in the value chain they operate in, among others. As will be discussed in the following section, however, skills training alone would not be sufficient to facilitate individuals to successfully transition to entrepreneurial activities. Therefore, a package intervention that includes capital and skills seems promising in promoting entrepreneurship among the rural poor (See Box 5 for an example in Bangladesh).

Supporting Entrepreneurship

64. Household enterprises that are non-farm business run by self-employed individuals and families, often play an important role in improving income and reducing poverty in Africa.^{45 46}

⁴² Davis et al (2010) shows that FFSs implemented in Tanzania, Kenya, and Uganda improved production, productivity, and income; Godtland et al. (2004) based on an evaluation in Peru find that FFSs significantly improved the knowledge and productivity of farmers.

⁴³ The Junior Farmer Field and Life Schools approach is a FFS model adapted to youth focusing on agriculture and life skills.

⁴⁴ Many studies have emphasized the importance of agribusiness and entrepreneurship in rural areas for income generation and poverty reduction. See World Bank (2008); Filmer et al. (2013); and World Bank (2013), for example.

⁴⁵ Household enterprises are equivalent with self-employment that includes own account workers and employers although the majority of them are own account workers. Given their size, they are often referred to as microenterprises. Recognizing their innovative and somewhat risky nature of business setup, they are also referred as (small scale) entrepreneurs. Throughout this paper, they are used interchangeably.

⁴⁶ Fox and Sohnesen (2012); Filmer and Fox (2014).

The average share of household enterprises in non-farm employment among low income SSA countries is about 60 percent, while that of Mozambique is relatively small (less than half). Recognizing that household enterprises can be an extra source of income, and they can indeed create jobs, policies need to promote household enterprises by reducing constraints.

Box 5

Entrepreneurship for Rural Ultra Poor Households in Bangladesh

Background:

Considering the difficulty in the shift of rural laborers into the modern manufacturing and service sectors, BRAC implemented a program in an attempt to promote occupational changes within the sector to more secure and less volatile activities in Bangladesh. The program targeted the ultra poor in rural areas and provided a package of capital in the form of business assets and skills training.

Program:

The program targeted ultra poor women in rural areas of Bangladesh, who are chosen by BRAC officers out of the list of poor households compiled by community members. The beneficiaries could choose business activities from livestock to small retail operations, and receive training and complementary counseling service in their chosen business activities. A substantial amount of capital transfer was made in the form of business assets, amounting to roughly 10 times of baseline livestock wealth. Program recipients can retain the assets for two years before liquidating as needed. Training is followed by frequent visits of livestock specialists for 2 years. The impacts of the BRAC program were examined two and four years after program implementation under randomized controlled trial.

Impacts:

The most prominent impacts of the program are the shifts of wage employment mostly based on piecemeal labor to business activities more stable with little seasonal variations. The effects of the program remain strong even four years after program implementation. The dramatic change in occupational choice led to total earnings increase by 34 and 38 percent after two and four years since baseline. In addition, the program significantly improved beneficiaries' savings, non-food consumption, and psycho-social well-being.

Source: Author's articulation from Bandiera et al. (2013)

65. Multiple constraints exist to establishing businesses and operating household enterprises. Low education and lack of adequate skills is among the primary barriers, and basic education is often seen as the best pathway for an individual to transition into entrepreneurship. However, lack of skills is not the only constraint faced by many individuals in the market. Limited access to finance due to weak financial market, poor business environment, limited connection to networks of business, and lack of information on inputs and outputs market, consumers, and new technology also discourage entrepreneurship. The extent to which such

constraints hinder business activities varies widely including across rural and urban areas and different population groups.

66. There have been many interventions to tackle these constraints and promote business activities. Since interventions specifically designed for supporting self-employment and entrepreneurship have received relatively less attention than other active labor market programs, little was known about their effectiveness. Recently, with accumulated experiences and research, patterns regarding the type of programs and their effects began to emerge. Table 9 summarizes international evidence in those programs and their effectiveness.

Table 9 Programs to support household enterprises and their effectiveness

Constraints	Programs	Examples	Effectiveness
Lack of Adequate Skills	1) Technical skills training (mainly for new entrants)	<ul style="list-style-type: none"> Vocational and/or business training often combined with financing and counseling (Liberia Adolescent Girls Initiative; Nicaragua vocational training for social assistance beneficiaries). 	<ul style="list-style-type: none"> Emerging patterns indicate that youth benefit most especially from technical skills training; and combining either counseling or financing support in addition to technical skills training can make a difference.
	2) Business training and advisory services (for existing enterprises and microfinance clients)	<ul style="list-style-type: none"> Advisory services for existing SMEs (India, Mexico) or microenterprises (Dominican Republic, Ghana). Business training for microfinance clients (Pakistan, Peru, Tanzania). 	<ul style="list-style-type: none"> In many cases, business training or advisory services are quite effective in improving business practices and sales. Such improvement does not automatically lead to business expansion and employment increases within the period of study (usually less than two years).
Limited Access to Finance, Banking	3) Microfinance and grants	<ul style="list-style-type: none"> Microfinance: Many countries, including: Bangladesh, India, Morocco, Mongolia, Pakistan. Grants/in-kind transfers: Ghana, Mexico, Sri Lanka. Access to banking (e.g., Indian social banking, savings account in Kenya, Malawi). 	<ul style="list-style-type: none"> Mixed results between different target groups with different goals (setup vs. expansion). Larger effects usually can be observed among prospects rather than existing entrepreneurs. Programs can be more effective for financially-constrained enterprises. Little differences exist between cash and in-kind benefits. Access to banking and savings can improve consumption smoothing, but little evidence exists as yet with respect to the impacts on employment.

Limited access to skills, finance, networks, advisory services, information	4) Package programs including training and financing (for the ultra-poor/self-employed)	<ul style="list-style-type: none"> • BRAC's entrepreneurship model for the ultra-poor, IRC's microfranchising, Ethiopia's Productive Safety Net Program 	<ul style="list-style-type: none"> • Promising, but more evidence is needed.
	5) Advisory services as part of training or value chain integration (self-employment)	<ul style="list-style-type: none"> • Counseling, psycho-social support, mentoring, role model setting, and consulting for social assistance beneficiaries (Argentina, Chile, Nicaragua), for youth (Ashoka, Endeavor), and for women (SEWA). 	<ul style="list-style-type: none"> • Useful to complement training; rigorous evaluation and evidence is needed.
	6) Information on market demand/price and new technology	<ul style="list-style-type: none"> • Market/price info: India. • Information on new technology for framers: Ghana, Malawi 	<ul style="list-style-type: none"> • Though promising, information alone has limited impacts on business performance (India).

Source: Author's articulation based on Cho and Honorati (2014)

67. Programs often address lack of skills or limited access to finance or both (See Box 5). Skills that are deemed to be relevant for entrepreneurship include technical skills for certain sectors and occupations, and business skills such as business mindsets, ability to set up and run business, financial literacy and capability, among others. Widely used measures to address limited access to credits include microfinance (access to loans), grants and in-kind transfer, and access to banking service. A package of interventions is often provided to address complex and multiple constraints. They tend to incorporate skills training and microfinance as well as counseling and mentoring, and business consulting. In addition, innovative approaches are being tried to help link individuals to market and networks. Examples include provision of information on market demand, price, and new technology.

68. A recent study indicates that there are about 27 registered entrepreneurship programs being implemented in Mozambique (see Martinas et al., 2013; Robb et al., 2014). They include programs by international organizations and NGOs such as the United Nation Industrial Development Organization (UNIDO), International Labour Organization (ILO), and Technoserve. About half of them target nascent entrepreneurs to set up their own businesses, while the other half supports existing entrepreneurs to improve their performance. However, Robb et al. (2014) concludes that little is known about the quality, appropriateness, or effectiveness of these programs in Mozambique. Many of them have a poor monitoring and evaluation system and weak capacity to assess their performance. In addition, programs tend to

provide a narrow set of services rather than comprehensive packages, which likely effects only limited outcomes.

Box 5

Example of Skills Development for Entrepreneurship: Liberia and Peru

A program for nascent entrepreneurs: Liberia Adolescent Girls Initiative

Background:

Launched on October, 2008, as part of the World Bank Group's Gender Action Plan, the Adolescent Girls Initiative (AGI) aims to help adolescent girls and young women (aged 16-24) make a successful transition from school to work. The AGIs are currently being implemented in 8 countries around the world, and early results from Liberia are available.

Program:

Private sector training providers and NGOs provide vocational training to 2,500 girls in Greater Monrovia who possessed basic literacy and numeracy skills and were not in school. The program had two-tracks: one for wage employment (30%) and the other for self-employment (70%). For the self-employment track, participants were provided with 6 months of training and 6 months of follow up service including microenterprise advisory services. Training included vocational skills as well as life skills training to address girls' needs, and financial literacy and business development service was combined to provide entrepreneurial skills as well. Trainees received small stipends contingent upon attendance and were assisted in opening savings account at local banks. Girls who completed the training were awarded with a bonus.

Impacts:

The program had great impacts in employment: the likelihood of working increased from 39 to 67 per cent for treatment group, while that of control group increased from 38 to 45 per cent between baseline and midline survey. The positive employment outcome was much stronger among the business skills trainees (76 per cent among trainees in self-employment track vs. 52 per cent among those in wage employment track). The earnings conditional upon employment significantly increased, and so did trainees' savings.

A program for existing entrepreneurs: Peru business training to microcredit clients

Background:

Recognizing that microfinance alone may not be effectively promoting self-employment and one of the bottlenecks is lack of business skills, a business training program was introduced in 2002 to provide business training to Peru's FINCA (a microcredit institution) clients.

Program:

Out of 240 FINCA affiliated banks, about 140 banks were randomly selected, and about 4,600 female members of selected banks were offered to receive business training. The program included general business skills and strategy training, not client-specific problem-solving. The training aims to improve basic business practices such as how to treat clients, how to use profits, where to sell, the use of special discounts, credit sales, and the goods and services produced. The training lasted 22 weeks as part of their loan meetings.

Impacts:

The impacts of outcomes measured in 4 dimensions: (i) business practice and knowledge; (ii) business performance; (iii) female empowerment and child labor in households; and (iv) results on microcredit institutions. The program was found to have modest impacts on business practice and knowledge, but that did not automatically lead to improved business performance. Thus little evidence was provided whether the program improved female empowerment and reduced child labor. From institutional point of view, the program appeared to benefit the banks by improving loan repayment rates.

Source: Source: <http://go.worldbank.org/FM7OIULT70> for Liberia, Karlan and Valdiva (2012) for Peru.

Conclusion

69. The challenge of skills development conducive to the creation of productive jobs and economic growth in Mozambique is substantial and requires interventions and reforms. Huge demographic pressure characterized by a large share of youth needs to be considered. The key issue in labor supply is that the education level of the majority of work force is low, lacking even fundamental skills. Thus jobs created tend to be concentrated around low productivity agriculture with little progress toward modern sectors. Productivity, and therefore earnings, in many jobs are low, and poverty reduction has been slow despite the unprecedented economic growth experienced recently in Mozambique.

70. Economic growth has accelerated since the mid-1990s, and with political stability, there is an optimistic outlook that it is likely to continue. The emergence of the gas and oil sector is

expected to support Mozambique's rapid growth in coming years. The challenge looking forward is to strategize skills development in Mozambique so that the workforce is equipped with the knowledge needed for emerging jobs in modern economic sectors.

Table 10 Summary: Policy Implications

Key policy areas	Rationales	Policy measures	Impact on the labor market
Education (Primary level)	- Low retention, high drop-out rates in primary schools are more prominent in Mozambique than other countries in the region	- (Conditional) Cash Transfer, parental involvement, preschool intervention, etc. - Fundamental skills (basic numeracy and literacy) as well as soft skills training	Med-Long term
Skills for modern wage employment	- Modern wage employment sector is currently small, but will determine the economy's competitiveness in the future	- TVET reform to facilitate better linkage with employers - Skills training intervention with employers involved and on-the-job training opportunities fostered.	Med-Long term (policy reform) Short-Med term (intervention)
Productive agriculture	- Currently the majority of workers engage in agriculture, and improving its productivity can improve the livelihoods of many workers	- Interventions for farmers' skills development and income diversification such as agribusiness	Short-Med term
Entrepreneurship	- Non-farm business and household enterprises are important source of incomes	- Interventions for business development and financing as well as skills	Short-Med term

Notes: Short-med term impacts may be materialized within 5 years since the completion of interventions, while med-long term policies likely aim to have impacts on the labor market in roughly 5-10 years.

71. This note, based on careful diagnostics of the labor market situation in Mozambique, has provided four policy areas that need more thinking and planning --two in the relatively short term, and the other two in the longer term (Table 10). They include education policies promoting universal primary schooling and fostering foundational skills development; skills development for modern wage sector particularly through TVET; skills development for productive agriculture; and support to promote entrepreneurship. Throughout the four areas, the emphasis on basic education was reiterated, and ample international evidence was provided. Given that completion rates of primary school are significantly lower than that of other SSA countries even though access to primary schooling is widely available, active demand side measures such as cash transfer and removal of schooling costs should be considered. Ensuring acquisition of fundamental skills from primary schooling through quality education and learning should also be highlighted. In addition, TVET and innovative approaches such as FFSs should promote higher and more specialized skills acquisition. Finally, encouraging diversification of the sources of income and types and sectors of jobs is critical to employment and economic growth in Mozambique.

References

- Almeida, R., J. Behrman, and D. Robalino. (2012). *The Right Skills for the Job? Rethinking Training Policies for Workers*. World Bank.
- Almeida, R. and Y. Cho (2012) “Employer Provided Training: Patterns and Incentives for Building Skills for Higher Productivity” in *The Right Skills for the Job? Rethinking Training Policies for Workers* (eds. Almeida, Behrman, and Robalino). The World Bank.
- Attanasio, O., A. Kugler, and C. Meghir (2011). "Subsidizing Vocational Training for Disadvantaged Youth in Developing Countries: Evidence from a Randomized Trial," *American Economic Journal: Applied Economics* 3:188-220.
- Baird, S, C. McIntosh, and B. Ozler. (2011) “Cash or Condition: Evidence from a Cash Transfer Experiment,” *Quarterly Journal of Economics*, Vol. 126(4).
- Bandiera, O., R. Burgess, N. Das, Selim Gulesci, I. Rasul, and M. Sulaiman (2013). “Can Basic Entrepreneurship Transform the Economic Lives of the Poor?” mimeo, London School of Economics.
- Batistay, Catia, Tara McIndoe-Calderz, Pedro C. Vicentex (2012). “Return Migration and Entrepreneurship in Mozambique,” mimeo, Trinity College Dublin.
- Chhoeda, T., Dar, A. and Tan, H. (forthcoming). *Vocational Education and Technical Training in South Asian Countries: Summary of Issues and Recommended Policy Reforms*.
- Cho, Y (2013) “Improving Jobs and Earnings Opportunities: Activation and Graduation Strategy.” mimeo, World Bank.
- Cho. Y and M. Honorati (2014). “Entrepreneurship Programs in Developing Countries: A Meta Regression Analysis.” *Labour Economics*. Vol 28.
- Cho. Y and B. Tien (2013) “Africa’s Recent Growth Spurt: An Analysis of the Sources of Growth,” mimeo, World Bank.
- Conley, T., and C. Udry. (2010). “Learning about a New Technology: Pineapple in Ghana.” *American Economic Review* 100(1): 35–69.

- Davis, K., E. Nkonya, E. Kato, D. Mekonnen, M. Odendo, R. Miiro, and J. Nkuba. (2010). "Impact of Farmer Field Schools on Agricultural Productivity and Poverty in East Africa" *mimeo*. IFPRI Discussion Paper
- Eichhorst, W., N. Rodriguez-Planas, R. Schmidl, and K. Zimmermann (2012). "A Roadmap to Vocational Education and Training Systems Around the World" IZA Working Paper, 7110.
- Erulkar, Annabel S. and Erica Chong (2005). "Evaluation of a Savings and Micro-Credit Program for Vulnerable Young Women in Nairobi." The Population Council. Nairobi.
- Feder, G., R. Just, and D. Zilberman. (1985). "Adoption of Agricultural Innovations in Developing Countries: A Survey." *Economic Development and Cultural Change*, Vol. 33 (2).
- Filmer, Deon and Louise Fox. (2014) "Youth Employment in Sub-Saharan Africa." *Africa Development Series*.: World Bank.
- Fiszbein, A. and N. Shady, (2009). *Conditional Cash Transfers: Reducing Current and Future Poverty*. World Bank Policy Research Report, World Bank.
- Fox, Louise and Thomas Pave Sohnesen. (2012). "Household Enterprises in Sub-Saharan Africa: Why They Matter for Growth, Jobs, and Livelihoods." Policy Research Working Paper No. 6184. World Bank, Washington, DC.
- Garcia, Marito and Charity M. T. Moore (2012). "The Cash Dividend: The Rise of Cash Transfer Programs in Sub-Saharan Africa". *Directions in Human Development*, No. 67208. Washington, DC.
- Gondwe, Mtinkheni (2011). "Alignment of higher professional education with the needs of the local labour market: The case of Mozambique." Netherlands Organisation for International Cooperation in Higher Education (Nuffic).
- Godtland, E., E. Sadoulet, A. de Janvry, R. Murgai, and O. Ortiz (2004). "The Impact of Farmer-Field-Schools on Knowledge and Productivity: A Study of Potato Farmers in the Peruvian Andes." *Mimeo*. University of California at Berkeley.

- Hanushek, E. and L. Woßmann (2010). "Education and Economic Growth." In: Penelope Peterson, Eva Baker, Barry McGaw, (Editors), International Encyclopedia of Education. volume 2, pp. 245-252. Oxford: Elsevier
- Helgesson, Linda (2001). "(E)Quality: Girls' and Boys' Basic Education in Masasi and Kisarawe Districts". Ministry of Education and Culture and UNICEF Tanzania, Dar es Salaam.
- Huffman, W.E. (1977). "Allocative Efficiency: The Role of Human Capital." *Quarterly Journal of Economics* 91: 59–79.
- Huffman, W.E. (2001). Chapter 7 Human capital: Education and agriculture. In Handbook of Agricultural Economics (Edited by Bruce L. Gardner and Gordon C. Rausser)
- IFPRI (International Food Policy Research Institute) and World Bank. (2010). "Innovations in Rural and Agriculture Finance: Focus 18." Washington, DC
- Jensen, R. (2010) "The (Perceived) Returns to Education and the Demand for Schooling" *Quarterly Journal of Economics* 125(2).
- Jones, S. and F. Tarp. (2012) "Jobs and Welfare in Mozambique" Background paper for the World Development Report 2013.
- Karlan, D. and M. Valdivia (2011). "Teaching Entrepreneurship: Impact of Business Training on Microfinance Clients and Institutions," *The Review of Economics and Statistics* 93(2):510-527.
- Lutz, W., Goujon, A., KC, S., and Sanderson, W. (2007). Reconstruction of populations by age, sex and level of educational attainment for 120 countries for 1970–2000. Vienna Yearbook of Population Research 2007: 193-235.
- Lutz, W., Goujon, A., KC, S., Sanderson, W., Barakat, B., and Skirbekk V. (2010). Projection of populations by level of educational attainment, age, and sex for 120 countries for 2005-2050. www.demographic-research.org/Volumes/Vol22/15/: 383-472.
- Macpherson, Ian (2007). "Tanzania Non-Formal Education," Country Profile Prepared for the Education for All Global Monitoring Report.

- Martinas, Z., C. Marrengula, and M. Sanchez (2013). "Mozambique Entrepreneurial Context: Historical Facts, Opportunities, and Challenges," Prepared for the Entrepreneurship Education and Training (EET) Study. Mimeo. World Bank.
- Martinez, S., S. Naudeau, and V. Pereira (2012). "The Promise of Preschool in Africa: A Randomized Impact of Early Childhood Development in Rural Mozambique," mimeo. World Bank.
- Ministry of Education (2012). "Education Strategic Plan: 2012-2016," Ministry of Education, Republic of Mozambique.
- National Institute of Statistics (2013). Quarterly Bulletin, National Institute of Statistics, Republic of Mozambique.
- Pereznieto, P. and V. Diallo (2009). "La Protection sociale et les enfants en Afrique de l'Ouest et du Centre: le cas du Mali. Bamako": UNICEF, ODI and Ministere du Développement Social, de la Solidarité et des Personnes Agées.
- Pierre, G., Sanchez-Puerta, M.L., Valerio, A., and Rajadel, T. (2014). "STEP Skills Measurement Surveys: Innovative Tools for Assessing Skills" World Bank, Washington, DC.
- Robb, A., A. Valerio, and B. Parton (2014). Entrepreneurship Education and Training: Insights from Ghana, Kenya, and Mozambique. World Bank.
- Rotheram-Borus, Mary Jane, Marguerita Lightfoot, Rogers Kasirye and Katherine Desmond (2011). "Vocational Training with HIV Prevention for Ugandan Youth." *AIDS and Behavior* 16(5).
- Schubert, Bernd (2005). "The Pilot Social Cash Transfer Scheme, Kaloma District - Zambia," CPRC Working Paper 52.
- Schubert, Bernd (2007). "Piloting the Scale Up of the Malawi Social Cash Transfer Scheme". Report on Consultancy Financed by UNICEF, June, 2007. February 2, 2013.
- Simione, Félix (2011): "Labor Market Returns to Education in Mozambique: Learning from a Quasi-Experiment" mimeo.
- United Nations (2002). Methods for Estimating Adult Mortality. New York: United Nations, Department of Economic and Social Affairs, Population Division. ESA/P/WP .175

- Visser, M. (2013) Report on Demand and Supply Side Barriers to Education in Mozambique. Mimeo. Oxford Policy Management.
- Visser. M and A. Hodges (2013) Demand Side Interventions in Education – What We Know from International Evidence and Experience in Mozambique.
- Welch, Finis (1978) “The Role of Investment in Human Capital in Agriculture.” In Distortion of Agricultural Incentives, edited by T.W. Shultz. Bloomington: Indiana University Press.
- Wils, A., Goujon, A. and Dippolt, M. (2004). Software for Population-Development-Environment (PDE) Analysis. User’s Manual.
- World Bank (2010). "Empowering Girls and Young Women in Liberia: Adolescent Girls Initiative," Project Brief.
- World Bank (2008). World Development Report: Agriculture for Development. World Bank.
- World Bank (2012). “Land Administration and Reform in Sub-Saharan Africa: From Piloting to Scaling Up.” Washington, DC.
- World Bank (2013). *Growing Africa: Unlocking the Potential of Agribusiness*. The World Bank.

Annex 1: Technical Details for Projections on Labor Force by Education in 2035

Educational attainment projections depend on both supply and demand factors. From the demand side, household's decisions on investment in children may vary and can suddenly change over time as demographic structure affects the quality and quantity dynamics of children; families obtain better information on the benefits of education; countries are more exposed to global competition; and increased income resulting from economic growth reduces the need to rely on children's earnings. From the supply side, education policy and public investment in skills may change school and teacher supplies and the quality of education. This will likely lead to increased number of schools and expanded access to education. While it is difficult to know how the demand and supply side factors would dynamically change the education outcomes, the objective of the simulation is to quantitatively project the education profile of labor force by changing the transition rates between levels of education without inferring the causes such changes.

For the projection we employ a software called *Population-Development-Environment (PDE)* developed by the International Institute for Applied Systems Analysis (IIASA). The projection is conducted based on several assumptions according to the requirement of each module as described below:

Migration: Estimation of migrants by age and educational attainment is complex as the cause of migration varies widely by cases. For many countries which provide no information on age specific migration rates by education level, UN estimates use coefficients of pooled regression on migration patterns by age, and distribute educational attainment among respective age groups. However, UN's age-specific migration model is often criticized that the assumption creates bias for some countries because migration patterns also depend on education. Furthermore, the correction/adjustment made to the UN's estimation is also not free of bias: Lutz et al. (2010), for instance, discussed the specificity of the biases. Unlike other countries, however, Mozambique has very small volume of net migration: International Organization for Migration (IOM) estimated net migration rate 0.2 immigrants/1,000 population in 2012. Similarly, the demographic background of emigrants and immigrants are almost similar in sense that most of the emigrants are from neighboring countries and insignificant to affect the education profile of

the labor force.⁴⁷ Therefore, for the projection of labor force in Mozambique by education, the impact of migration is not considered.

Mortality: In advanced economies, adult mortality can be measured using data from death registration systems. However, in most developing countries complete death registration system is not available. Among various methods to overcome the limitation (See United Nations, 2002), this paper adopts the census survival approach to estimate adult mortality rates based on the two household surveys -- IAF (2003) and IOF (2009). This data is used as an input into the UN's life table model to estimate age-specific mortality rate. For life expectancy, we adopt the differences estimated by Lutz et al (2007; 2010) for different education levels. Their model suggests that education is positively associated with longer life expectancy. Following the methodology and applying to the education system in Mozambique, we assume that life expectancy increases with education by one year for each category of education: no education, incomplete primary, completed primary, completed lower secondary, and completed upper secondary.

Fertility: Women's education attainment is significantly associated with their marriage and child bearing behavior. Causality between fertility and women's education can be both ways, and is not easily decipherable. For our projection, we consider fertility as a demographic determinant of future educational profile of population particularly for women. Using 2009 Mozambique Demographic and Health Survey (DHS), following DHS methodology, we estimate age-specific fertility rates (ASFR) as well as the total fertility rate (TFR). ASFRs is calculated by identifying live births that occur in the three-year period preceding the survey and classifying them by the age of the mother (in five-year age groups) at the time of the child's birth. The TFR refers to the number of live births a woman would have if she were subject to the current age-specific fertility rates throughout her reproductive years (15-49 years).

Transition: Transition rate is calculated based on the assumption that transitions take place from one educational category to a higher one with a possibility of repetition, and there is no reverse transition. The rate is based on the UNESCO's formula based on age-grade enrollment patterns. One issue associated with this method is a bias due to late entry, which is very common in Mozambique. To account for such age distortion in transition estimation, this paper adopts a remedial method suggested by IIASA. That is, the transition rate from one level of education to another is distributed by the proportion of the age groups relevant to that

⁴⁷ See Batistay et al. (2012).

education level. The detailed procedures and its specific assumption can be referred from Lutz et al (2007; 2010).

Age: Five years age group is used as an input to the IIASA's population projection module for estimation. Given the gap between the beginning of primary school to labor market entry – about 7 to 10 years, our projection starts from 2020 to reflect the current stock of human capital in the effective labor force age.