

ETHIOPIA | National Human Development Report 2018

Industrialization with a Human Face



*Empowered lives.
Resilient nations.*





Ethiopia National Human Development Report 2018

Industrialization with a Human Face



*Empowered lives.
Resilient nations.*

For the
United Nations
Development
Programme
(UNDP)

Foreword

The 2018 National Human Development Report (NHDR) on the theme ‘Industrialization with a Human Face’ is a major contribution to the policy discourse on inclusive industrialization in Ethiopia, and in the region as a whole. By examining the nexus between inclusive industrialization and sustainable human development, the report identifies critical policy imperatives that could foster the creation of decent jobs for youth, address the current predominance of informal employment patterns and promote sustainable urbanization. It acknowledges the rapid growth that Ethiopia has achieved over the past 13 years, with significant poverty reduction and human development. It also underscores how the slow pace of structural transformation could be accelerated by investing in industrial growth and highlights critical policy choices that must be made to achieve sustainable human development.

The report recognizes that for economic transformation to enhance human development very much depends on the emergence of a modern economy that can generate wealth and by extension fulfill individual and collective needs by expanding human capabilities and extending human choices and freedoms. This report rightly argues that the benefits and costs of the industrialization process in Ethiopia must be managed for inclusive growth to advance human development and uphold the basic human rights of all as a means to end poverty and expand the choices of Ethiopians. The investments made by the Government in social sectors such as health, education and safety nets have reduced the incidence of poverty from a high of 44.2 percent in 2000 to the current level of 23.5 percent. Significant progress has also been achieved in human development and among the 40 countries in the ‘low human development’ category, Ethiopia has sustained strong progress in the last 15 years. In fact, as part of the main findings, the report establishes that the HDI for all regions has increased since the 2012/13 period and that the Health Sub-Index remains the driver of human development levels across all regional states. While recognizing that education attainment has been improving, the overall level of education still remains low coupled with high gender and rural-urban disparity; this is an area that will require special attention.

This report reinforces the point that the industrialization process must be undertaken with human development as

the primary goal. While industrialization, as measured by the industrialization intensity index (a measure of manufacturing value added per capita, and the complexity of industrialization by the value added of technology to manufacturing) is positively associated with countries with higher levels of human development, the relationship between industrialization and human development is not an automatic one. Disaggregating the national experience to the level of Ethiopia’s regional states shows similar results. When correlated with an available measure of industrialization—the number of manufacturing industries by region—the Regional HDIs in Ethiopia show a complex non-linear, not automatic relationship as well and this supports the notion that industrialization must be accompanied by deliberate policies that promote human development.

The Report must be commended for paying special attention to the gender dynamics in the industrial sector and positing a strong and positive relationship between gender inequality and industrialization. Indeed, both the analytical framework of the report and the evidence available clearly show that the industrialization process must be managed in order to ensure gender-responsive outcomes in human development that benefit women and girls, but also society at large, through the removal of barriers to equity.

Finally, this report presents readers with a set of concrete policy recommendations for accelerated and competitive industrial/manufacturing growth. It proffers actions that could spur an inclusive industrialization process as an instrument for sustainable human development. We therefore encourage policymakers and practitioners to read the report and generate policy dialogue and debate about the issues raised in order to inform policy choices that could advance and sustain human development in Ethiopia.



H.E. Dr. Yinager Dessie
Commissioner
National Planning Commission



Ahunna Eziakonwa-Onochie
Resident Representative
UNDP

Acknowledgements

The 2018 National Human Development entitled ‘Industrialization with a Human Face’ is a product of United Nations Development Programme (UNDP) Ethiopia in collaboration and with the support of the National Planning Commission (NPC). This is an independent report that has been produced by the Country Office with the support of national and international consultants and it underwent a rigorous consultative process. The views, main findings and recommendations contained in this report cannot be attributed to UNDP or its Executive Board.

The report was prepared under the overall guidance of Ms. Ahunna Eziakonwa-Onochie, UNDP Resident Representative and Ms. Louise Chamberlain, UNDP Country Director. The UNDP Policy Advisory Unit (PAU) was responsible for the commissioning of the report and provided the technical and intellectual guidance for the formulation of this report, led by James Wakiaga, Senior Economist, Haile Kibret, National Economist, Roza Mamuye, Economics Associate, Nebyu Mehari, Policy Specialist (Gender, SDGs and Inclusive Growth) and Fekadu Terefe, Policy Specialist, Inclusive Growth and Human Development. The lead authors, Mr. Christopher Kuonqui and Dr. Berhe Mekonnen, provided the overall content and narrative of the report, working closely with the PAU team. The National Planning Commission (NPC) team led by Mr. Sisay Alemayehu, Director for Human Resource Development and Employment Planning, provided extensive comments and technical inputs that helped to shape the focus of the report. We are also indebted to the guidance and support received from H.E. Mr. Getachew Adem, Deputy Commissioner of the NPC with the rank of State Minister, and his invaluable comments.

The report has also benefitted from wide consultations including two roundtables that were held on October 13, 2017 and May 30, 2018 and we wish to single out a few of the prominent institutions and individuals that were represented, including: Dr. Tadele Ferede, Chair of the Department of Economics, Addis Ababa University; Dr. Tewdros Mekonnen, International Growth Centre (IGC); Mr. Berhanu Lakew, Economist at the Department for International Development (DFID); Mr. Asegid Adane, Programme Officer at UNIDO; Mr. Wube Mengist, Deputy Secretary-General, Ethiopian Chamber of Commerce; Mr. Adrian Gauci, Economic Affairs Officer, Economic Commission for Africa (ECA); Mr. George Kararach, Senior Regional Economist, Africa Development Bank (AfDB); Dr. Amdisa Teshome, Forum of Social Studies; and Mr. Ahmed Nuru, formerly Senior Adviser, Ministry of Industry.

In addition to the consultations, interviews with leaders in industrialization debates in Ethiopia were undertaken, including with Government, think-tank and donor officials throughout the course of the research process for the preparation of this Report.

Background studies were commissioned to support the research findings and UNDP Ethiopia would like to recognize the intellectual contribution of Professor Abbi Kedir, Senior Lecturer/Associate Professor in the International Business Management School, University of Sheffield, and Mr. Getahun Taffesse, independent consultant, whose work helped to shape the content. The NHDR also benefitted from a recent study commissioned by the Ministry of Industry and UNDP entitled ‘Women in Manufacturing’, which contributed to shaping the narrative on the role of women in the industrialization agenda in Ethiopia.

The Background Paper by Professor Abbi Kedir also conducted over 30 individual interviews with women, youth, and industrial sector managers and employees, broadening the presentation of human interest stories quoted throughout the Report.

In addition, the report received technical guidance from the Human Development Report Office (HDRO) and Peer Review team that provided invaluable insights and comments throughout the drafting process. Mr. Jonathan Hall, Technical Adviser, HDRO was especially helpful during the conceptualization and finalization of the report. The peer review team comprised: Mr. Rogers Dhliwayo, UNDP Senior Economist (Kenya); Mr. Fredrick Mugisha, Senior Economist (South Sudan); Dr. Abbi Kedir, Senior Lecturer/Associate Professor in the International Business Management School, University of Sheffield; and Ms. Angela Lusigi, Senior Strategic Adviser, UNDP-Regional Bureau for Africa.

Special thanks goes to the Communication team led by Martha Mogus, Communication Specialist and Nardos Mengesha, Communication Analyst for diligently supporting the editing, designing and messaging of the report. The Team Leaders, led by Mr. Shimels Assefa, Governance team and Mr. Gizachew Sisay, Inclusive Growth and Sustainable Development, provided important insights to the report. Nor would the report be possible without the support of the staff of UNDP Ethiopia and we would like to mention Ms. Soria Sewasew, Administrative Associate, for diligently supporting all the administrative work, including organizing all the roundtables and many other colleagues who may not have been specifically mentioned in the report.

Abbreviations and Acronyms

ADLI	Agricultural Development Led Industrialization	GTP	Growth and Transformation Plan
AGOA	African Growth and Opportunity Act	HDI	Human Development Index
AIDS	Acquired Immune Deficiency Syndrome	HIP	Hawassa Industrial Park
ANC	Antenatal Care	HIV	Human Immunodeficiency Virus
BAU	Business as Usual	ICT	Information and Communications Technology
BoLSA	Bureau of Labour and Social Affairs	IGAD	Intergovernmental Authority on Development
Br	Ethiopian Birr	ILO	International Labour Organization
CAR	Central African Republic	IPDC	Industrial Parks Development Corporation
COMESA	Common Market for Eastern and Southern Africa	Kebele	Ethiopian (Amharic) name for a village or community
CRGE	Climate Resilient Green Economy	LMMI	Large and Medium Manufacturing Industry
CSA	Central Statistics Agency	MoE	Ministry of Education
DHS	Demographic and Health Survey	MoI	Ministry of Industry
EBA	Everything But Arms	MoLSA	Ministry of Labour and Social Affairs
EDRI	Ethiopian Development Research Institute	MoYSC	Ministry of Youth Sports and Culture
EIO	Ethiopian Institute of Ombudsman	NBE	National Bank of Ethiopia
ESAP	Ethiopia Social Accountability Programme	NEPS	National Employment Policy and Strategy
FDI	Foreign Direct Investment	NGO	Non-Governmental Organization
FDRE	Federal Democratic Republic of Ethiopia	NHDR	National Human Development Report
FGM/C	Female Genital Mutilation/ Cutting	NLA	National Learning Assessment
GDI	Gender Development Index	NLFS	National Labour Force Survey
GDP	Gross Domestic Product	NPEW	National Policy on Ethiopian Women
GEM	Gender Empowerment Measure	NPC	National Planning Commission
GHG	Green House Gas	NYP	National Youth Policy
GII	Gender Inequality Index	OSH	Occupational Safety and Health
GPI	Gender Parity Index		

PASDEP	Plan for Accelerated and Sustained Development to End Poverty	UEE	University Entrance Examination
PPCE	Personal Protective Clothing and Equipment	UEUS	Urban Employment Unemployment Survey
PPP	Purchasing Power Parity	ULG	Urban Local Government
PSNP	Productive Safety Net Programme	UNDP	United Nations Development Programme
PVH	Phillips-Van Heusen	UNECA	United National Economic Commission for Africa
SDGs	Sustainable Development Goals	UNIDO	United Nations Industrial Development Organization
SSA	Sub-Sahara Africa	USA	United States of America
STDS	Sexually Transmitted Disease	USD	United States Dollar
STEM	Science, Technology, Engineering and Mathematics	UN	United Nations
TIDI	Textile Industry Development Institute	WB	World Bank
TVET	Technical and Vocational Education and Training	Woreda	Ethiopian (Amharic) name for a district

4.3	Urbanization in historical context in Ethiopia	69
4.4	Urban areas as sites for voice and accountability	71
4.5	Services leapfrog industry in urban centres	72
4.6	Urban infrastructure investment	73
5.1	Indirect benefits of garment jobs in Bangladesh	80
5.2	Will the robots steal Ethiopia's industrial jobs?	82
5.3	Industrial Clusters as a source of innovation and competitiveness	83

FIGURES

1.1	Conceptual framework: human development and industrialization linkages	9
1.2	Ethiopia's structural transformation aspiration—from agriculture to industry	13
1.3	Industrial, Manufacturing, and GDP per capita, annual growth rate, %, 2000-2016	13
1.4	Percentage distribution of value added by industrial group	13
1.5	Number of persons engaged by major industrial group – public and private (2011/2012 – 2015/2016)	14
1.6	Distribution of Large and Medium Scale Manufacturing Industries, by region, % of total, 2015	14
2.1	Comparison of human development and gender inequality indices, Ethiopia, Sub-Saharan Africa and the World, 2015	21
2.2	Human Development Index for Low HDI countries, total value, 2000-2015	22
2.3	Average annual HDI growth (%), 2000-2010 & 2010-2015, Ethiopia, Sub-Saharan Africa and HDI neighbors	22
2.4	Human Development Index for Ethiopia, by sex, 2015	23
2.5	Human Development Index components for bottom 15 HDI countries, 2015	23
2.6	HDI for Ethiopia's Regions, 2012/2013 and 2016/2017	24
2.7	HDI components for Ethiopia's Regions, 2012/13 and 2016/17	24
2.8	Human development and industrialization in global perspective	25
2.9	Ethiopia's Regional HDI and Number of Manufacturing Industries	25
2.10	Distribution of population aged ten years and above by educational attainment in 2013: country total (by sex)	26
2.11	Distribution of population aged ten years and above by educational attainment in 2013: urban (by sex)	26
2.12	Distribution of population aged ten years and above by educational attainment in 2013: rural (by sex)	27
2.13	Illiteracy rate for those aged 15 to 49 by region	27
2.14	Percentage of students who scored below 50% in NLA tests, 2010-28	
2.15	Government expenditure on education, total (% of government expenditure), 2013	30
2.16	Student to textbook ratio by region (2015/6)	31
2.17	Percentage of children under 5 whose births are registered, by wealth quintile	31
2.18	Modern contraceptive use for married women in Sub-Saharan Africa, latest year, 2010-2016	32

2.19	Use of modern contraception methods by Ethiopia's Regions	32
2.20	Under-5, infant and neonatal mortality rates, 2000-2016	33
2.21	Infant mortality rate by mother's education level	33
2.22	Percentage of children under age 5 who are malnourished, 2000-2016	33
2.23	Current health expenditure and external resources for health (% of total government expenditure), Top 10 Sub-Saharan African countries, 2014	34
2.24	Gender Inequality Index for Ethiopia, 2000-2013	35
2.25	Percentage of ever-married women age 15-49 who have ever experienced physical, sexual, or emotional violence committed by their husband/partner	36
2.26	Percentage of women 15-49 subjected to FGM/C, by region, 2016	37
2.27	Gender inequality and industrialization: global perspective	38
2.28	Trends of national and rural/urban poverty	39
2.29	Trends in Regional poverty	39
2.30	Trends of national and rural/urban Gini Coefficients	39
2.31	Income Inequality in Sub-Saharan Africa, Gini Index, latest year, 2010-2016	40
3.1	Age distribution of population (2015/16): Rural, urban and country total	45
3.2	Population projections, age groups, 2008-2037	46
3.3	Share of informal employment in urban Ethiopia by sex: 2003, 2016	49
3.4	Trends in unemployment by sex and age: country total	49
3.5	Trends in unemployment by sex and age: urban areas	50
3.6	Share of employment by sector: country total (1999 and 2013)	51
3.7	Share of employment by sector: urban total (2003 and 2016)	51
3.8	Average monthly wage by sex in Birr: country total (2013)	52
3.9	Average monthly wage by sex in Birr: urban areas (2016)	52
3.10	Percentage of textile and garment enterprises who have the required facilities	53
3.11	Percentage of female workers who reported their work place has the required facilities	53
3.12	Micro, small and medium enterprises: quality of jobs their offer	54
3.13	Share of females in total and the three top employment categories in 2016: urban	55
3.14	Distribution of male and female workers in textile and garment industries by employment type	56
4.1	Change in the proportion of farmers using improved seeds (2004/5 and 2013/14)	65
4.2	Trends in crop productivity (yield in quintals per hectare): 2004/5 to 2013/2014	65
4.3	Maize and wheat yield (tons/ha): comparison with different countries	66
4.4	Urbanization growth, national level and Addis Ababa	69
5.1	Share of relevant laws in area that protect or advance gender equality and women's empowerment, 2015 (%)	81
5.2	Time required to start a business (days), 2003-2017	84

TABLES

2.1	Degree of difficulty to find workers with the specific skill attributes	29
2.2	Government expenditure per student (in PPP\$), 2009-2012	31
3.1	Labour force participation (activity) rate for those age 10 years and above in 2013: by sex, location and age group	46
3.2	National level proportion of paid (wage) versus unpaid (non-wage) employment by sex: 1999, 2005, 2013	48
3.3	Proportion of paid versus unpaid employment for urban areas by sex: 2006, 2016	48
4.1	Environmental costs of business as usual industrialization in Ethiopia	67

Executive Summary



Executive Summary

This report explores the relationship between inclusive industrialization and sustainable human development in fostering decent jobs for women and youth, addressing informality and promoting sustainable urbanization. The slow pace of structural transformation could be counteracted by investing in industrial growth. For economic transformation to enhance human development will require the emergence of a modern economy that can generate wealth and by extension fulfill individual and collective needs by expanding human capabilities and extending human freedoms.

The NHDR 2018 argues that the benefits and costs of the industrialization process in Ethiopia must be managed for inclusive growth: to advance human development; uphold the basic human rights of all as a means to end poverty; and expand the choices of Ethiopians.

At the heart of the framework is the important role of policy, public financing and interventions to spur positive feedback loops between industrialization and human development, and to minimize negative effects. These are influenced by strengthening private sector development, including support to small- and medium-size enterprises, by infrastructural development including better services on energy, roads, schools and health, and through stimulating the agricultural growth that provides the foundation for industry. Relevant policies, financing and interventions are needed to strengthen human development outcomes that will reinforce inclusive industrialization: through better education and health systems; and by improving the standard of living, from quality housing to road infrastructure, that provides the foundation for industrial work.

Ensuring that women both participate in and provide leadership for the industrialization process is critical. Human development for all is enriched when more equal outcomes occur and barriers to gender equality and women's empowerment are diminished—and removed.

While industrialization as measured by the industrialization intensity index (a measure of the manufacturing value added per capita, and of the complexity of industrialization by the value added of technology to manufacturing) is positively associated with countries with higher levels of human development, the relationship between industrialization and human development is not automatic.

Disaggregating national experience to the regional level shows similar results. When correlated with an available measure of industrialization—the number of manufacturing industries by region—the Regional HDIs in Ethiopia show a complex non-linear, not automatic relationship as well. The report reinforces the need to undertake the industrialization process with the achievement of human development as the primary goal.

The patterns of human development

The report establishes the two-way relationship between human development and industrial development and looks at national and sub-national trends. All regions have moved forward, with Harari having experienced the largest increase relative to the 2012/13 period (albeit from a low base), while Addis Ababa region has seen the slowest rise, having dropped from the highest ranked region to fifth.

Among the the 40 countries in UNDP's low human development category (those countries with a human development index value below 0.500), available data show that Ethiopia has sustained relatively strong progress in the last 15 years. The evolution of Ethiopia's HDI is mainly driven by health outcomes, with life expectancy contributing more than the Education Sub-Index and the Income Index. When ranked by the value of the Health Sub-Index, Ethiopia is among the top seven countries with low HDI values. By

Ensuring that women both participate and provide leadership for the industrialization process is critical and human development for all is enriched when more equal outcomes occur and barriers to gender equality and women's empowerment are diminished—and removed.

contrast, adult illiteracy is a factor holding back Ethiopia's human development within the Education Sub-Index.

The HDI for all regions has increased since the 2012/13 period and the Health Sub-Index remains the driver of human development levels across all sub-regions. Harari is the only region to have slipped backwards on the Health Sub-Index, but has made the strongest progress on the Education and Income Sub-Indices.

While educational attainment has been improving, the overall level of education still remains low and there are high gender and rural-urban disparities. About 32 percent of men and 51 percent of women aged 10 years and above were illiterate in 2013; only 1.8 percent had completed secondary education. Education spending remains relatively high—yet learning outcomes remain low and this has affected the quality of education.

Modern contraceptive use for married women has steadily increased over the last 16 years in Ethiopia from 6 percent in 2000 to 35 percent in 2016 and is slightly above the sub-Saharan Africa (SSA) regional average (excluding high-income countries) of 24.7 percent. This is likely to have played a significant role in the decline in fertility. However, disparities exist across regions with married women in Somali (aged 15-49) having the lowest use of modern contraception (1 percent), followed by Affar (12 percent).

Women are nearly three times as likely as men to be unemployed. Women's gross national income per capita stands at US\$1,161 compared with US\$1,886 for men (in 2016 purchasing power parity, PPP, terms). This leaves women to take on vulnerable forms of employment that fail to protect their basic labour rights. A set of long-standing barriers stand against gender equality and women's empowerment, including inter-alia: violence against women and girls; female genital mutilation/cutting; and an unequal care burden.

The relationship between reducing gender inequality and industrialization is generally strong and positive: industrialization provides avenues forward into greater gender equality. But again, it is neither automatic nor necessary. The evidence available makes it clear that the industrialization process must

be managed in order to ensure gender-responsive outcomes in human development that benefit women and girls, but also society at large, through the removal of barriers to equity.

How can industrialization drive decent work for youth and women?

By assessing the state of the labour market, skills development and employment within the context of industrialization in the country, the report establishes that youth and women remain most disadvantaged in the job market. The gender wage gap underpaying women and their segregation into lower-level roles across all sectors including manufacturing reveal priority areas for action in making industrialization work for human development in Ethiopia.

Wages in general have remained stagnant or been decreasing in real terms. The average wage is also lower in industry (and manufacturing) and much lower for women compared with the national average. This limits the extent to which employment generation is translated into improvements in living standards and poverty reduction.

Given that unemployment in Ethiopia is by and large an urban phenomenon, increasing the efficiency of urban labour markets is not only key for structural transformation but also to ensure that its benefits reach all segments of the population. The current social protection arrangements in urban areas are inadequate in addressing the needs of youth and children.

While employment is the most direct channel through which industrialization can affect human development, it is not automatic unless industrialization is capable of creating sufficient new jobs which are decent and inclusive. With significant labour participation for the working-age group aged 15-64, reaping the demographic dividend depends heavily on the policy environment. A well thought out and coordinated policy framework is needed both to speed the demographic transition and to realize the demographic dividend.

While employment is the most direct channel through which industrialization can affect human development, it is not automatic unless industrialization is capable of creating sufficient new jobs which are decent and inclusive.

The interaction of industrialization and agriculture, the environment and urbanization—reducing costs, maximizing results

The report explores the potentially adverse consequences on areas of life that can result from an overwhelming focus on industrial development, stressing inter-alia: the need to safeguard increasing production and productivity of agriculture as the labour market moves into industrial jobs; the need to mitigate the downside effects on the environment and climate change and to maintain the commitment to zero-carbon growth in light of achieving industrialization targets; and the consequences of informal and unfettered urbanization.

The Ethiopia Climate Resilient Green Economy commitment provides an opportunity to build a green industry sector by leapfrogging to modern technologies and prioritizing the development of eco-industrial parks with clean energy, waste treatment and energy-efficient technologies. But still the country needs effective and coordinated environmental management to deal with the challenge of on-site waste treatment and dumping of wastes in nearby water bodies.

Conclusions and recommendations

The reports present a set of concrete policy recommendations for accelerated and competitive industrial/manufacturing growth as an instrument for inclusive and sustainable human development. The proposed policy actions are as follows:

- Promote creation of decent jobs that are reasonably paid, are secure, safe and have minimal environmental/health hazards and simultaneously accelerate skills

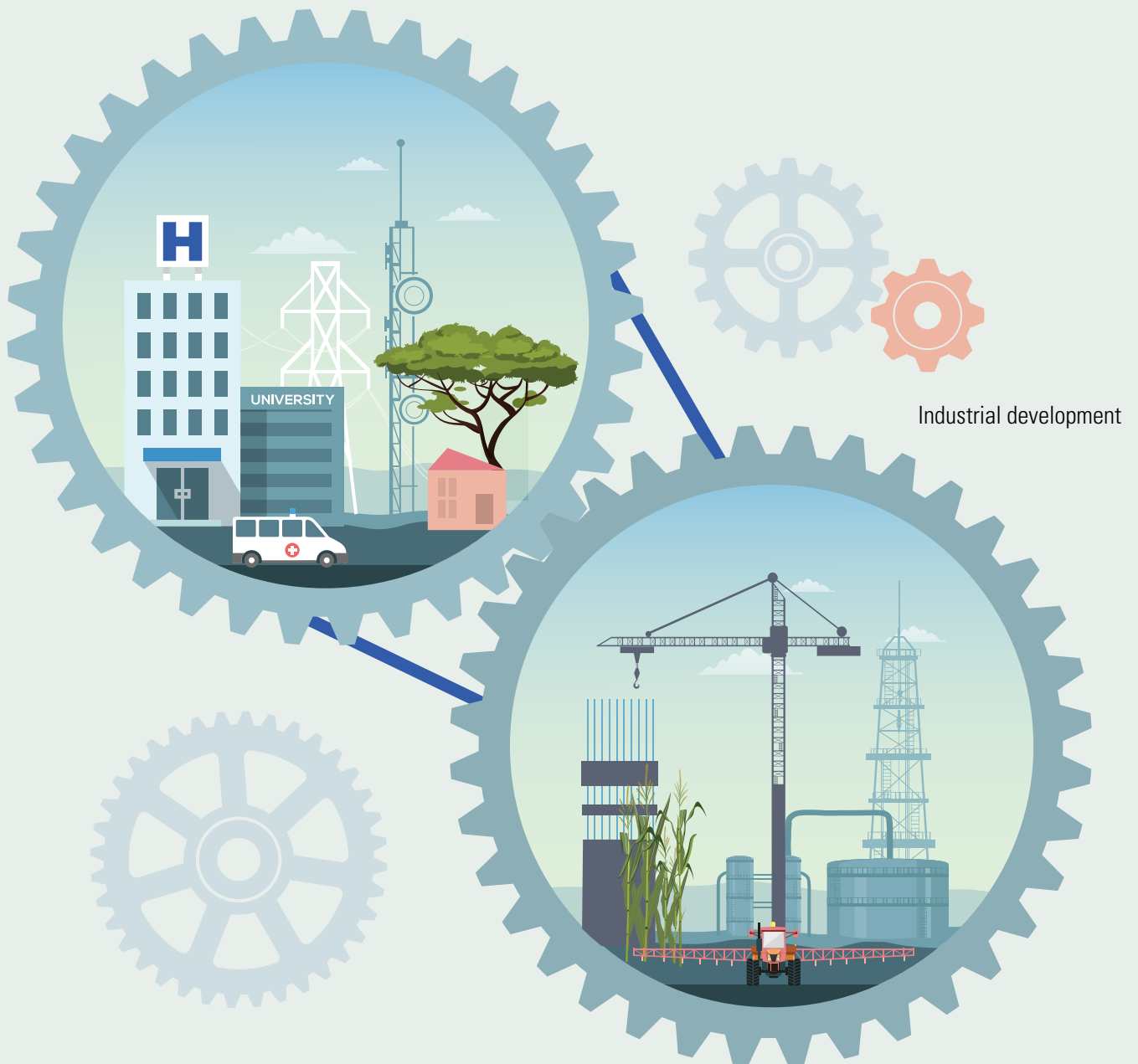
development for youth by ensuring high quality education at all levels including Technical and Vocational Education and Training that meets the needs of an industrializing economy. This entails a well-functioning labour market with effective information systems and employment services coupled with a safety net/ social protection for low income earners.

- Remove barriers to women's equitable roles and the benefits from industrialization by: narrowing the gender-based gaps in education and health; strict enforcement of gender-related laws and regulations; strengthening women's associations that lobby for women's rights; and increasingly addressing the social/family related challenges that prevent women from benefiting from industrial jobs and entrepreneurship.
- Leverage innovation in industrial parks and new technologies by harnessing new approaches such as establishing innovation labs to re-design public service delivery, drawing on the data revolution to implement and monitor progress on both the national and international commitments such as the Sustainable Development Goals (SDGs) and prepare the industrial workforce for the jobs of the future using Artificial Intelligence.
- Encourage industrial value chains in a range of locations through industrial clustering to leverage innovation, competition and complementarity across the value chain system.
- Ensure an integrated approach across agriculture, the environment and urban planning to foster more inclusive industrialization that fosters human development.
- Promote private sector development as a critical driver for industrial transformation by revamping infrastructure, financial access and institutional arrangements for competitive industrial growth.

Human choice and industrial development in Ethiopia

The report establishes the two-way relationship between human development and industrialization but the benefits are not automatic and require managed processes to ensure positive outcomes in terms of employment, gender equity and environmental sustainability.

Human development



1. Human choice and industrial development in Ethiopia

The aim of human development is to expand the choices every human being can make in their life, and to improve their opportunities. Through this simple concept, economic growth and income are best understood as means to human development but not ends in themselves. It is the richness of their lives, and not their economies, that people value.

The industrialization process in Ethiopia must be understood in these same terms. While it is the cornerstone of economic transformation, industrial development must be seen as a means to the end of human development—as a pathway to enlarge the choices and opportunities people have, but not the end goal in itself. This report explores how industrial development can be understood, not as the sole aim of development policy, but as a way to enrich the lives of Ethiopians while limiting negative consequences on their quality of life.

Ethiopia has seen remarkable economic growth, poverty reduction and progress in social development in the last decade and a half. But the country remains among the set of low human development countries around the world and has seen little change relative to others. A key concern is that economic growth has been driven by the growth in agriculture and services sectors, contributing 37 and 47 percent of GDP in 2015/16.¹ Education continues to lag with close to half of Ethiopians unable to read or write and a low mean years of schooling rate. And significant barriers to gender equality and women's economic empowerment remain, with high unemployment and segregation into low-skilled and informal work.² In order to accelerate human development progress, structural transformation to higher value-added and more sustainable growth patterns is needed.

To achieve this aim, industrial growth has moved to the centre of Ethiopia's ambition to reach lower middle income status and be carbon neutral by 2025. Industrial development holds the potential to create more decent jobs, raise living standards and

promote sustainable human development. An inclusive industrialization process is pivotal for providing work for the growing youth population, for shifting from an informal to formal economy with decent work for all and to transform unfettered urbanization into sustainable urban planning.

More than 70 percent of Ethiopians are under 30 years of age, with urban youth unemployment at 22 percent compared to 17 percent for all ages. Moreover, more than a quarter of all urban jobs are informal.³ While informal jobs provide one avenue out of poverty, limited working conditions (working hours, workers' rights, and exposure to risks) imply that informality is unsustainable.

Yet the performance of the industrial sector during the First Growth and Transformation Plan (GTP I) (2010/2011 to 2014/2015) indicated that the sector has not been able to achieve the hoped-for changes in terms of the structure of the economy as it grapples with multiple challenges. These include:

- Limited performance of the manufacturing sector and poor growth performance of micro- and small-scale manufacturing industries as well as delays in the implementation of large manufacturing projects.
- Challenges in attracting new and high-quality export-oriented private investments into the manufacturing sector. Ethiopia is currently one of the most attractive destinations for FDI in Eastern Africa. The future challenge is to attract not only foreign private investors but also to develop the domestic private sector.
- Limited management, technology and capital capacity leading to poor quality, inefficient and low productivity and challenges in competing in global markets.

- Unreliable energy supply and inadequate financial services.

This report extends the series of NHDRs in Ethiopia (Box 1.1). It explores the nexus between industrialization and sustainable human development in fostering decent jobs for youth, addressing informality and promoting sustainable urbanization. The slow pace of structural transformation could be countenanced by investing in industrial growth. For economic transformation to enhance human development requires the emergence of a modern economy that can generate wealth and by extension fulfill individual and collective needs by expanding human capabilities and extending human freedoms.⁴ In addition, integrating and deepening value-chain systems, especially in agriculture, through an

inclusive process of industrialization could enhance human development as new technology and innovation expand the benefits of integration and provide opportunities for the poor and marginalized.⁵

1.1 Pathways of impact: a conceptual framework for industrialization and human development

The conceptual framework for this report depicts the link between industrialization and sustainable human development by highlighting the existing and potential interrelationships between inclusive industrialization and sustainable human development

BOX 1.1

Ethiopia NHDRs in context

NHDRs crystallize local movements for change, with the production process contributing to national capacity-building in the gathering and analysis of data relevant to human development. Editorially independent from both national and United Nations policies, human development reporting transforms goals for poverty reduction and human development into benchmarks, plans and approaches for regional, national, and international action. The reports make recommendations for change that generate attention and debate among stakeholders and policymakers, and they raise public awareness of ideas about human development.

This report is the fourth National Human Development Report (NHDR) for Ethiopia, building on the foregrounding of these critical assessments for human development policy in the last NHDR, in 2014:

- **NHDR 1997** introduced the concept of human development to the Ethiopia policy debate. The theme of the report was entitled ‘Restoring a Post-Conflict Ethiopia through Human Resource Development’. The Report distinguished between human development as the expansion of human choice and ‘human resource development’ as a key to developing the skills of a people to live the life they wish to live. The report went on to analyse several government programmes, including the Emergency Recovery and Reconstruction Programme, the Ethiopian Social Rehabilitation Fund and the Safety Net Programme.
- **NHDR 1998**. The 1998 edition provided an overview of the human development situation in Ethiopia by breaking new ground in presenting the first-ever regional human development index (HDI), a measure of human development across Ethiopia’s main regions. As such, the report was able to show the human development situation at regional and urban/rural levels to give policymakers and analysts a more granular sense of human development challenges beyond national averages.

- **NHDR 2014**. After a long hiatus, this report returned human development concepts and measurements back to the centre of policy dialogue in Ethiopia. It updated the regional HDI progress assessment, noting advances in economic development and health, but also underscoring deficits in education. The report also advocated recognition of key lingering human development challenges, including large pockets of poverty and gender inequality remaining in the country.

The NHDR 2018 builds on this tradition to explore for the first time in a Human Development Report the interlinkage between the industrialization process and the expansion of inclusive human development. A key contribution is the new conceptual framework explored in the next section of this chapter. And it builds on an important concept defined in the NHDR 2014, of inclusive growth as a pathway to connect the industrialization process and human development. As the NHDR 2014 states, “Inclusive growth is seen as a sustainable pathway out of poverty. It entails exploring policy options which could have the greatest impact on poverty reduction and human development. According to UNDP, development can be inclusive and reduce poverty only if all people contribute to creating opportunities, share the benefits of development, and participate in decision-making. As such, inclusive growth is critical for advancing human development and integrates the standards and principles of human rights.”

It is in this same vein that the NHDR 2018 argues that the benefits and costs of the industrialization process in Ethiopia must be managed for inclusive growth; to advance human development; uphold the basic human rights of all; and as a means to end poverty and expand the choices of Ethiopians.

Sources: UNDP 1997, 1998 and 2014; UNDP Human Development Report Office, (n.d.) (HDRO).

(Figure 1.1). The framework emphasizes that policies, financing and interventions need to strengthen the pathways through which industrialization advances human development, and sustainable human development advances inclusive industrialization.

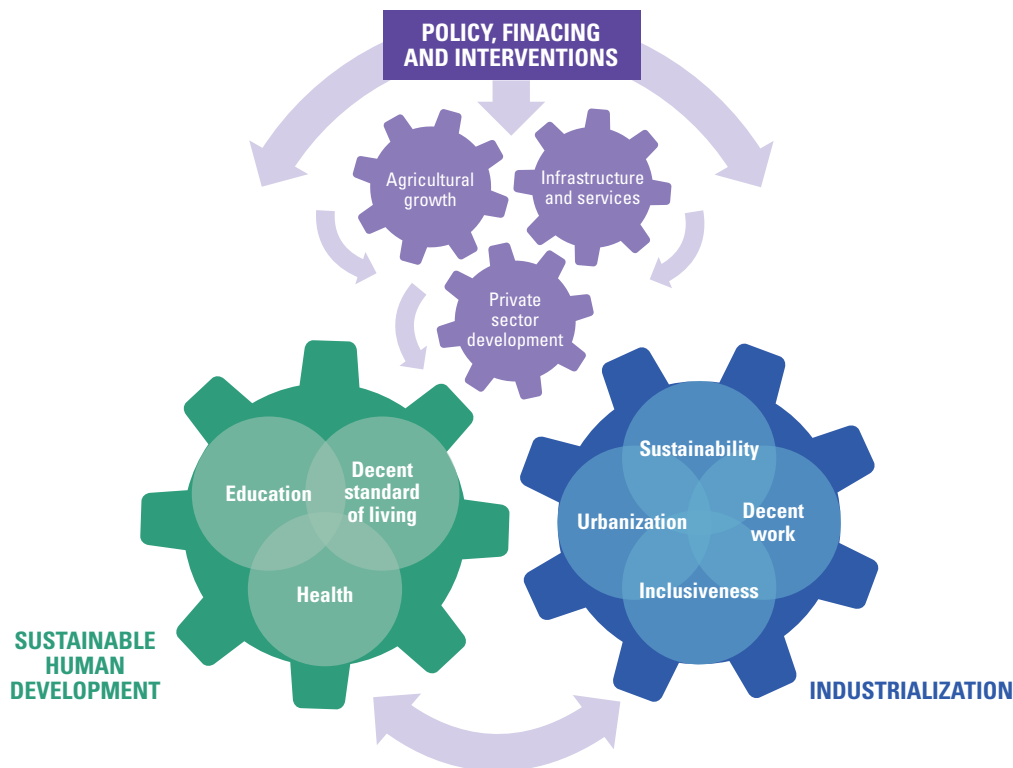
At the heart of the framework are the key roles of policy and public financing and interventions to spur positive feedback loops between industrialization and human development and to minimize negative effects. These are influenced by: strengthening private sector development including support to small- and medium-size enterprises; infrastructural development including better services with respect to energy, roads, schools and health; and through agricultural growth that provides the foundation for industry. Policies, financing and other interventions are also critical to lay pathways of industrial development that can result in improvements in sustainability by: limiting pollution and other potential environmental harms that industry

can cause; creating decent work which raises living standards and income; ensuring inclusiveness and leaving no one behind; and establishing patterns for sustainable urbanization. Similarly, policies, financing and interventions are needed to strengthen human development outcomes that can reinforce inclusive industrialization through better education and health systems and improving the standard of living that raises incomes and stimulates demand for industrial output.

Gender equality and women’s empowerment emerge as a primary issue of concern within this framework, given the role women play in agriculture, services and industry. Ensuring that women participate in and exercise leadership the industrialization process is critical. It is important to emphasize underscore the many opportunities for both equal outcomes and for the removal of barriers to gender equality and women’s empowerment that the industrialization process can potentially foster.

FIGURE 1.1

Conceptual framework: human development and industrialization linkages



Source: Authors of the report.

The lynchpin between industrialization and human development is work and different types of work hold different potential for either thwarting or enabling human development.

Inclusive industrialization, in the first place, implies industrialization. Inclusiveness points to no one being left behind and to equitably shared gains from progress for all without discrimination, injustice or exclusion. As well as furthering human development goals, it also means that industrial development is sustainable from social, economic and environmental perspectives. Overall, industrialization as measured by the industrialization intensity index (a measure of the manufacturing value added per capita, and the complexity of industrialization by the value added of technology to manufacturing) is positively associated with countries with higher levels of human development. But the evidence shows a diversity of experience for any given level of industrialization or human development. This suggests the relationship between industrialization and human development is not automatic or necessary, and that the industrialization process must be undertaken with human development as the primary goal.

Industrialization is a key driver of economic growth. Promoting inclusive industrialization contributes to ending poverty and hunger, achieving food security, achieving gender equality and promoting empowerment of women and girls, fostering inclusive and sustainable growth, and providing productive employment.⁶ It absorbs surplus labour in agriculture, which results in reduction in the agricultural labour force. This in turn contributes to increased productivity of those employed in agriculture and results in increases in their incomes. Those who enter industry also earn relatively higher incomes. Thus, the lynchpin between industrialization and human development is work (Box 1.2). This process also promotes urbanization and the development of the service sector which also employs the agricultural labour force and contributes to poverty reduction.⁷ Key terms as used in this report are defined in Box 1.3.

BOX 1.2

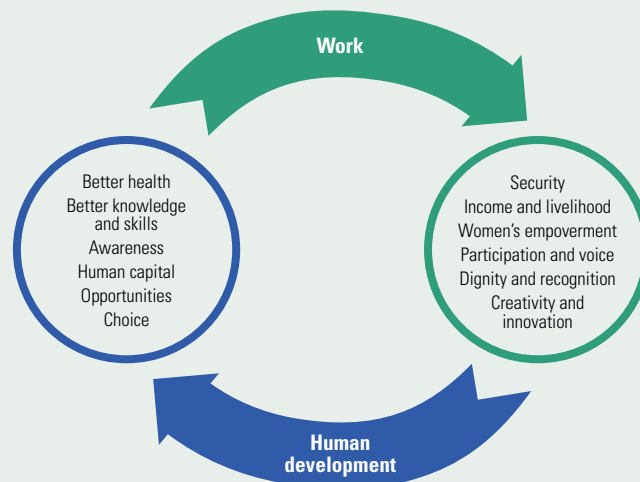
Work and human development

The 2015 *Human Development Report* focused on the ways to strengthen the interrelationships between work and human development. It found that work engages people all over the world in different ways, from those in forced labour and the working poor to those in school and the employed non-poor. And different types of work hold different potential for either thwarting or enabling human development.

The report produced a conceptual framework as follows:

This framework shows the importance of work for various dimensions of human development – and in turn, the channels through which expanded human development can advance work.

Our Ethiopia National Human Development Report (NHDR) builds on this framework by detailing the linkages through which industrial work can thwart or enable human development in Ethiopia’s emerging human development future.



Sources: UNDP 2015a, Human Development Report.

Defining key concepts in human development and industrialization

Human Development: Human development, or the human development approach, is about expanding the richness of human life, rather than simply the richness of the economy in which human beings live. It is an approach that is focused on people and their opportunities and choices.

People: Human development focuses on improving the lives people lead rather than assuming that economic growth will lead, automatically, to greater wellbeing for all. Income growth is seen as a means to development, rather than an end in itself.

Opportunities: Human development is about giving people more freedom to live lives they value. In effect this means developing people's abilities and giving them a chance to use them. For example, educating a girl would build her skills, but it is of little use if she is denied access to jobs, or does not have the right skills for the local labour market. Three foundations for human development are to live a long, healthy and creative life, to be knowledgeable, and to have access to the resources needed for a decent standard of living. Many other things are important too, especially in helping to create the right conditions for human development. Once the basics of human development are achieved, they open up opportunities for progress in other aspects of life.

Choice: Human development is, fundamentally, about more choice. It is about providing people with opportunities, not insisting that they make use of them. No one can guarantee human happiness, and the choices people make are their own concern. The process of development—human development—should at the least create an environment for

people, individually and collectively, to develop to their full potential and to have a reasonable chance of leading productive and creative lives that they value.

Industrialization: The process by which an economy is transformed from primarily agricultural to one based on the manufacturing of goods.

Manufacturing: Is the production of goods for use or sale using machines, tools and labour. It refers to a series of human activities, from handicraft to high tech, but is most commonly applied to industrial production, in which raw materials are transformed into new products/finished goods on a large scale. The new products of a manufacturing establishment may be finished in the sense that they are ready for utilization or consumption, or they may be semi-finished to become inputs for other establishments engaged in further manufacturing and then sold to wholesalers, retailers, and consumers.⁸

Inclusive Industrialization: Inclusive industrialization is industrialization where no one is left behind and all parts of society benefit from industrial progress, which also provides the means for tackling critical social and humanitarian needs.

Decent jobs: Opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.

Sources: ILO 2018; CSA 2015/2016.

1.2 Limits to growth: industrialization for structural transformation in Ethiopia

Industrialization has entered the Ethiopian development discourse as the solution to many challenges. First and foremost, is the need to sustain inclusive economic growth, in a context of several years of strong economic performance. Without structural transformation, however, economic stagnation threatens and achievement of the country's aspirations to become a lower middle income and zero carbon society is challenged. What are the structural limitations to economic growth in Ethiopia? And how can industrialization with a human face be undertaken as a new development model in Ethiopia?

1.2.1 Shift from agricultural to industrial growth

Across several African economies, research shows that economic growth is largely 'job-less'. Youth unemployment remains a component of Africa's growth owing to persistent low productivity and underemployment in the informal sector. The resultant implication of this is manifested through persistent inequality, poverty, and migration of young people to industrialized nations in search of livelihood opportunities. There is a need for multilevel and multinational partnerships in the fight against corruption and social conflict to attract foreign direct investment. Investment in social security programmes will also assist the poor and vulnerable people on the continent.

In Ethiopia, public investments in extension services and infrastructure have produced a significant increase in agricultural productivity and incomes. This results in growth-promoting structural change, as increased demand spills over to the non-agricultural sectors. But the evidence in Ethiopia suggests that non-agricultural labour productivity is being driven down as a by-product, as returns to capital diminish and less productive firms are drawn in.

Rapid productivity growth in agriculture, the traditional sector, is important. Studies suggest that agriculture has played a key role in Africa not only on its own account, but also as a driver of growth-increasing structural change. Diversification into non-traditional products and adoption of new production techniques can transform agriculture into a quasi-modern activity.

But there are limits to how far this process can carry an economy. In part because of low income-elasticity of demand for agricultural products, outflows of labour from agriculture are an inevitable outcome during the process of development. The labour that is released must be absorbed in modern activities. And if productivity is not growing in these modern sectors, economy-wide growth ultimately will stall. The contribution that the structural-change component can make is necessarily self-limiting if the modern sector does not experience rapid productivity growth on its own.

Low-income African countries can sustain moderate rates of productivity growth into the future, on the back of steady improvements in human capital and governance. Continued convergence with rich country income levels seems achievable. But the evidence suggests that the growth rates brought about recently by rapid structural change are exceptional and may not last.

1.2.2 Services leapfrogging manufacturing?

Services in sub-Saharan Africa have been absorbing workers faster than output in the sector has been increasing. The relative

productivity of African market services fell from 3.0 times the economy-wide average in 1990 to 1.8 in 2010, suggesting that the marginal productivity of new services workers is low and possibly negative.⁹

As corporate and private solutions fill gaps left by the government, the continent may be missing out on the bigger picture of economic transformation. The ‘leapfrogging’ of landlines in favour of mobile phones is a noted success in Africa. However, as Africa’s economies become service-heavy, the continent may be missing out on the learning by doing and especially the organizational skills that come from making things. Despite adoption of new technologies, Africa lags behind in manufacturing and an increase in the production of technologies has yet to take place. Africa should invest in the core infrastructure and engineering capabilities that would enable it to meet the needs of other sectors such as health, education, and agriculture.

Yet industrial development is still a critical step in Africa’s socioeconomic development. The danger and current reality is that the structural transformation now taking place in Africa is from a low-paying or low productivity agricultural sector to a lower paying services sector which is predominantly informal. Mobile phone usage, for example, has soared faster in Africa than anywhere in the world. According to the Pew Research Centre, mobile phone penetration in Ghana rose from just 8 percent in 2002 to 128 percent in 2018.

If firms and investors are equipped with understanding of what success might entail and the tools to achieve it, they can then find locally-appropriate solutions that will contribute to gaining their objectives. Governments should set clear, realistic milestones that allow projects to be completed on schedule while increasing local participation. Governments must create attractive environments, schools have to impart the right knowledge and skills, and businesses need to orient themselves to long-term value creation.

1.3 Emerging patterns of industrial development in Ethiopia

Industrial development in Ethiopia is not new. Ethiopia has seen three regimes over the last eight decades. These successive regimes adopted different policies for the development of industry in the country. The industrial policies have distinctive features when looking at the guiding vision (policy), ownership structure, and market orientation. Broadly, they can be characterized as the import substitution and private sector-led (from early 1950s to 1974); the import substitution and state-led (from 1974 to 1991), and the export-orientated and private sector-led from 1991. What is different today is the focus of making industry the largest contributing sector to the economy (Figure 1.2).

1.3.1 Industrialization, manufacturing and GDP per capita growth rates

Industrial value added per capita has been showing strong annual growth since 2010. By contrast, growth in GDP per capita slowed slightly (Figure 1.3). Even if the share of industrial value added remains relatively low, the growth patterns show promising trends for emerging transformation.

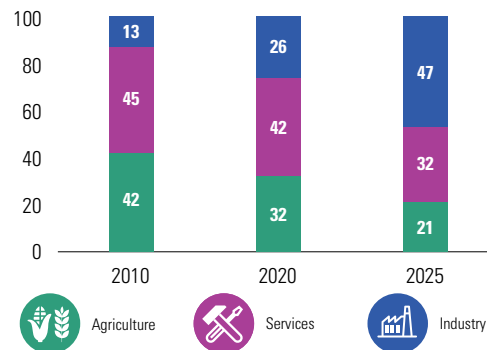
1.3.2 Largest sectors in industrial activity

Industrial development in Ethiopia is led by food and beverages manufacturing (Figure 1.4). Roughly 47 percent of the value added by manufacturing industries to the national accounts was contributed by the food and beverages manufacturing industry; about 16 percent by the non-metallic minerals industry; and about 8 percent by machinery and equipment in 2015/16.

The total number of persons employed by various manufacturing industries was

FIGURE 1.2

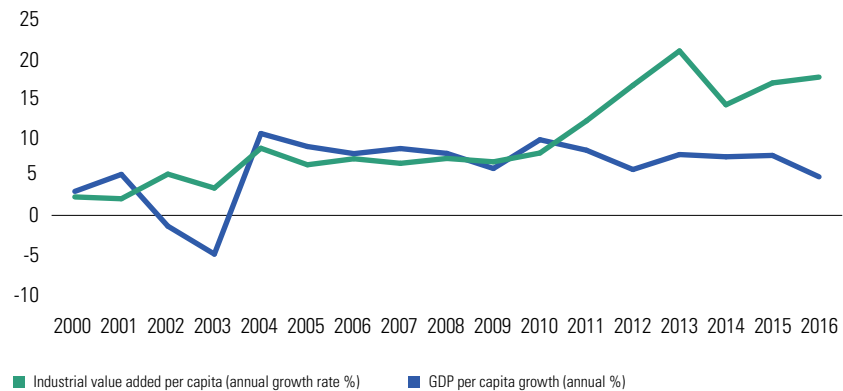
Ethiopia's structural transformation aspiration —from agriculture to industry (%)



Source: World Bank 2017.

FIGURE 1.3

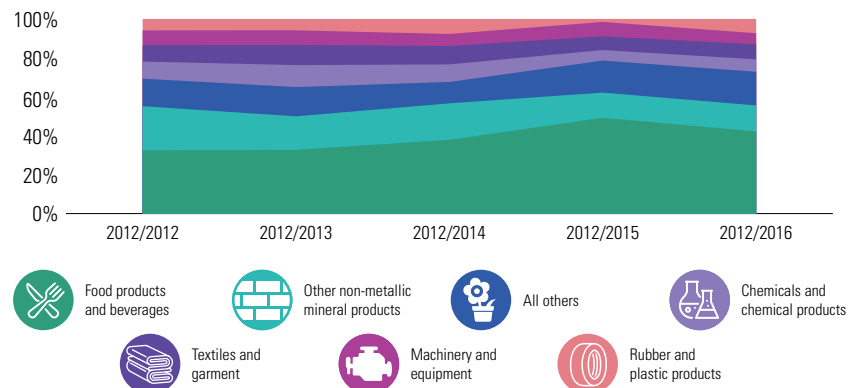
Industrial and GDP per capita, annual growth rate, %, 2000-2016



Source: Calculated based on World Bank 2018a.

FIGURE 1.4

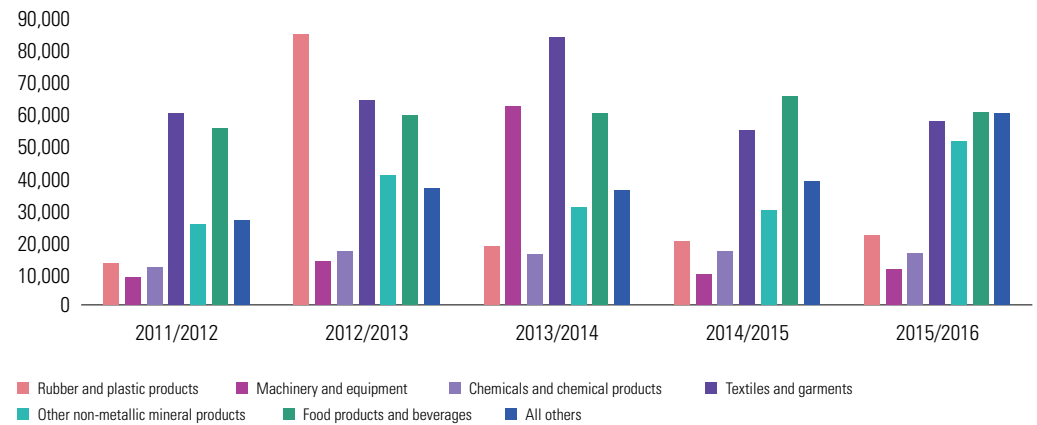
Percentage distribution of value added by industrial group



Source: CSA 2017.

FIGURE 1.5

Number of persons employed by major industrial group – public and private (2011/2012 – 2015/2016)



Source: CSA 2017.

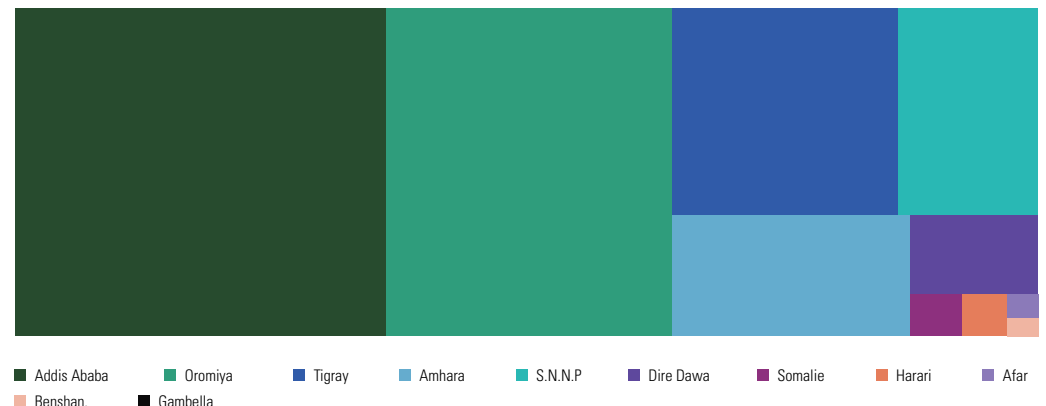
reported as over 329,000 in 2015/16 (Figure 1.5). This represents a continually increasing trend in the number of employees working in all industries over the last five years. But there is as yet no clear pattern to the availability of jobs by industrial group. Textiles and garments increased from 2011/2012 to 2013/2014, but then declined. The number of persons engaged in machinery and equipment grew tremendously from 2012/2013 to 2013/2014, but then contracted just as rapidly to 2014/2015.

1.3.3 Concentration of industrial activity in specific regions

Industrial activities concentrate in specific regions within Ethiopia. The total number of large and medium scale manufacturing industries reported in 2015/16 was 3,596. About 37 percent of the manufacturing industries were located in Addis Ababa followed by Oromia with more than 27 percent and Tigray with about 14 percent of the industries. Many of the industries in Oromia are located around Addis Ababa. There could

FIGURE 1.6

Distribution of large and medium scale manufacturing industries, by region, % of total, 2015



Source: CSA 2017.

be many reasons as to why industries concentrate in and around Addis Ababa including bureaucratic hurdles; those firms located

close to Addis Ababa can quickly contact relevant higher officials to address challenges related to doing business.

BOX 1.4

The promise of industrial parks

Ethiopia is located at the crossroads of Africa, the Middle East and Asia. With a large population, Ethiopia is one of the largest domestic markets in Africa. Through its membership of the Common Market for Eastern and Southern Africa (COMESA), embracing 19 countries with a population of over 400 million, Ethiopia can also enjoy preferential market access to these countries, and it also qualifies for preferential access to the European Union market under the EU's Everything-But-Arms (EBA) initiative and to US markets under the African Growth and Opportunity Act (AGOA). Moreover, competitive investment incentive packages including tax holidays are offered to investors.

One of the core strategies of the GTP II (2010/2011 to 2014/2015) is the establishment of industrial parks. With the manufacturing sector expected to grow by 25 percent per year for the next decade and to grow by an additional US\$30 billion in the textiles sector alone by 2030, the goal is that the manufacturing sector would contribute 20 percent of Ethiopia's GDP and 50 percent of the export volume by 2025. Industrial Parks have the potential to address key constraints to industrialization and transformation including the lack of capital, foreign exchange, and knowledge as well as specific constraints related to the manufacturing sector, including those related to land acquisition, customs and logistic services and weak capacity and absence of coordinated effort in the development and provision of infrastructure and public services.

The development and construction of industrial parks started in 2014 when the Ethiopian Industrial Parks Development Corporation (IPDC) was established. It gained momentum in 2015 with the Industrial Parks proclamation 886/2015. In less than three years, several industrial parks were built, inaugurated and opened for operations. Bole Lemi I and Hawassa industrial parks were inaugurated in 2016. In 2017, Ethiopia inaugurated two additional parks in Kombolcha and Mekele. Together, these two new sites are expected to create around 40,000 new jobs. About 10 more

parks are under construction and are expected to be operational within 2018. In addition, industrial parks developed by private investors, such as the Huajian Group which developed a shoe cluster industrial park, are being built throughout the country.

Job creation is taking place in Hawassa Industrial Park (HIP). Since opening, HIP's 52 units have been leased out by 18 firms, including Phillips-Van Heusen (PVH), the US owner of brands such as Calvin Klein and Tommy Hilfiger. PVH suppliers occupy about a third of the sheds at HIP. As well as profiting from cheap overheads and labour costs, PVH—whose US\$8.2bn turnover in 2016 was close to Ethiopia's projected 2017/18 tax revenue (US\$8.5bn)—will also benefit from duty-free access to US and European markets under deals for poorer nations.

Industrial Parks are key policy instruments in enhancing economic transformation by attracting investment, promoting technological learning, upgrading and innovation and generating stable and decent employment. However, the challenge is that industrial park development requires not only setting realistic goals but also designing feasible pathways towards their effective achievement. Institutional options that consider specific features of Ethiopia, its comparative advantage, international experiences in industrial park development and the prevailing international opportunities are essential.

Industrial Parks also have potential to address environmental issues from the outset, branding them as 'Eco-Industrial Parks' to reap the substantial benefits. Ethiopia can use Industrial Parks as laboratories to pilot key reforms before they are adopted as national policies. Examples include participation of foreigners in logistic services, innovation in the financial sector to address the shortage of foreign currency, labour laws and so on. To realize these, options on how to target policy incentive and clear and unambiguous legal framework at federal, regional and park levels are needed.

Sources: Embassy of Ethiopia, Brussels 2017; William Davison 2017; Weldesilassie and others, 2017.

BOX 1.5

High industrialization costs in Africa?

A study using World Bank data to look at 5,500 firms in 29 countries compared labour and capital costs, and productivity and efficiency of manufacturing in sub-Saharan Africa with similar countries outside Africa.

The study found factories in Africa were almost always more expensive to start and run. Looking at overall costs, small African firms were 39

percent more expensive than comparative firms elsewhere while medium and large firms were around 50 percent more expensive.

These findings present critical issues that Ethiopia's unfolding industrialization process should look to manage—and to do so for the ends of an inclusive human development process that leaves no one behind.

Source: Söderbom 2015.

Global lessons: how to make industrial growth rapid and competitive

Recent industrialization findings establish four key factors critical for industrialization success in the developing world.

- ‘The basics’: Ensuring fundamental infrastructure including basic access to water, sanitation and roads, and human capital including basic health and education achievements.
- Manufacturing exports.
- Industrial clusters.
- Foreign Direct Investment.

Institutions, human capital, international integration or trade openness and geography are considered to be the key determinants of a successful industrialization process. The literature also emphasizes the importance of these factors along with state capacity to design and implement effective policies. Included among these factors are infrastructure, human capital, domestic markets, and entrepreneurship as four structural determinants that must be addressed in order to enhance the likelihood of industrialization through manufacturing. Indeed, institutions can play a vital role in creating incentives for increased long-term investment that can lead to innovation and diffusion of new technology, which is the backbone of every industrialization success. Evidence exists that the quality of institutions has a strong impact on promoting industrialization through infrastructure development, which will help local industries to reduce costs and enhance competitiveness.

Industrial and trade policy can stimulate economic growth and restructuring by assisting new industries to emerge, improving the competitiveness of local industry and attracting foreign investment in manufacturing

through fiscal, exchange rate and credit policies that reduce costs and enhance productivity and profitability. Effective industrial and trade policy must be underpinned by an improved institutional and policy environment that reduces costs, creates comparative advantages for new industries, and leads to reallocation of resources in favour of more competitive industries.

Human capital enables countries to industrialize through investment in high-skill products and improvements in productivity and by generating significant externalities including attracting FDI and transfer of technology. To benefit from these positive externalities domestic firms must have sufficient high human capital levels that increase their absorptive capacity. Basu and Bhattarai (2012) used 2006 data on cognitive skills, measured by international test scores in mathematics and science, as a proxy for human capital development to explain cross country differences in growth and effectiveness of liberalization policies in 75 developed, emerging and developing countries over 1971-2006. Their panel regression results showed that cognitive skills have positive and significant effects on trade openness and growth and strongly explain cross-country differences in trade and growth performance.

Trade openness through regional and international integration is essential in determining the success of industrialization by creating export opportunities for domestic firms and helping them reap economies of scale and become more efficient as they compete with foreign producers. It can also create opportunities for domestic firms to earn foreign exchange, increasing their ability to import capital goods at international prices that may be lower than those offered at home.

Source: Söderbom 2015.

1.4 The report ahead

This report comes at a time when Ethiopia seeks to become a lower middle income and carbon neutral country, to establish green pathways for progress, and to achieve the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs).

Chapter 2 reviews the latest status and trends in human development in Ethiopia. It focuses on understanding gender-based differences, and how human development including in economic freedom, literacy and the right to a long and healthy life can serve as the foundation for industrial development. It also discusses how industrialization can drive faster and more

inclusive progress on human development for all in Ethiopia.

Chapter 3 probes the most critical factor linking human development and industrialization: jobs. It assesses key employment patterns and the employment differences between men, women and youth in Ethiopia. The chapter argues that placing decent work at the centre of industrial policy is critical for Ethiopia to achieve its aspirations and global commitments.

Interrogating the interrelationships between key challenges to human development and industrial growth, Chapter 4 explores issues in agriculture, green growth and urbanization. Each of these areas must be carefully managed to maximize the number of winners and minimize the losers from the

industrialization process—and to ensure that industrialization expands human choice in Ethiopia, and does not limit it.

Chapter 5 distills the analysis of the report into priority policy and strategic recommendations within Ethiopia’s policy landscape.

BOX 1.7

Industrial development and the Sustainable Development Goals

The SDGs constitute the core of the 2030 Agenda for Sustainable Development adopted by the international community on 25 September 2015, the new development framework that seeks to transform our world and will guide all global, regional and national development endeavours for the next 15 years. These Goals, and their associated targets, frame the 2030 Agenda with the vision and ambition to achieve a balance between the three dimensions of sustainable development—environmental, social and economic—and integrate them into a universal and visionary commitment.

Industrial development has taken a lead role in the SDGs in the form of Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. Goal 9 encompasses three important aspects of sustainable development: infrastructure, industrialization and innovation. Infrastructure provides the basic physical systems and structures essential to the operation of a society or enterprise. Industrialization

drives economic growth, creates job opportunities and thereby reduces income poverty. Innovation advances the technological capabilities of industrial sectors and prompts the development of new skills.

Building resilient and sustainable infrastructure and achieving SDG 9 offers the potential to improve the quality of life of people around the world, while addressing climate change and other forms of environmental degradation.

In addition to Goal 9, other SDGs include some industry-related aspects and targets. As a core driver of the global development agenda to eradicate poverty and advance sustainable development, inclusive industrial and sustainable development makes a critical contribution towards addressing the economic, social and environmental dimensions of development in a systemic and holistic manner.

Globally, industrialization has a job multiplier effect: every single job in manufacturing creates 2.2 jobs in other sectors.

Sources: UNIDO n.d; UN n.d.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



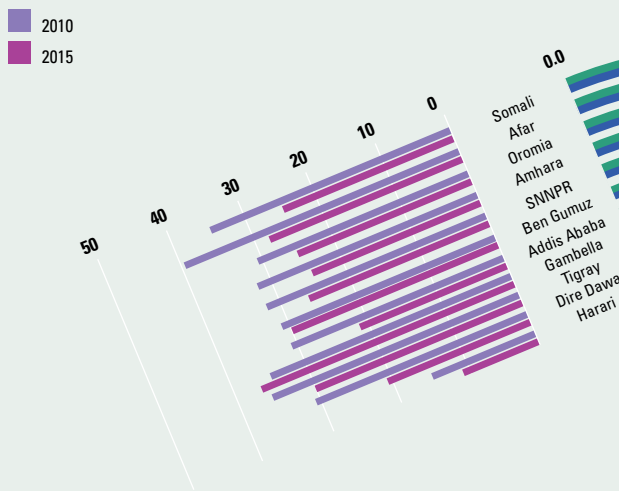
Human development trends and linkages to industrialization



The report looks at national and sub-national trends of Human Development where all regions moved forward, with Harari Regional State having experienced the largest increase relative to the 2012/13 period (low base), while Addis Ababa city administration has seen the slowest rise having dropped from the highest ranked region to fifth.

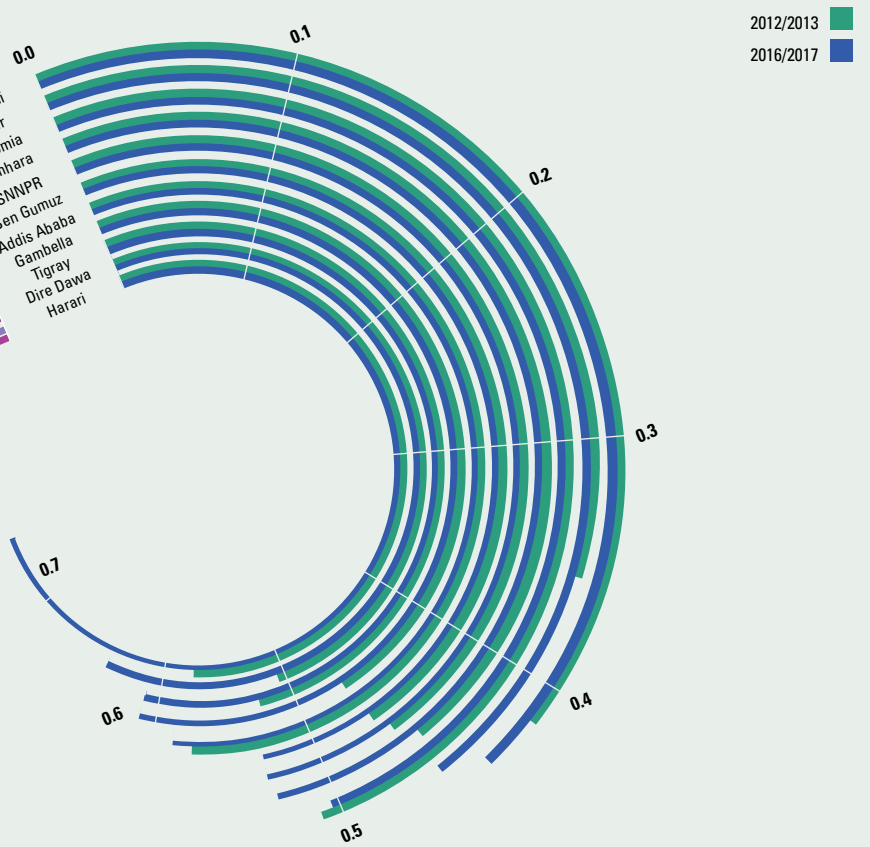
While poverty has decreased remarkably in general, the rate of decrease in recent years is slower in rural areas while stronger decreases have occurred in urban areas.

Trends in regional poverty 2010 and 2015



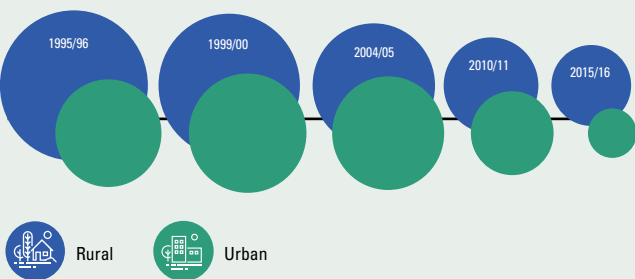
All regions have moved forward. Harari has experienced the largest increase while Addis Ababa Region dropped from the highest ranked region to fifth.

HDI for Ethiopia's regions, 2012/2013 and 2016/2017



Poverty has decreased remarkably in general, but the gap between rural and urban poverty is still large.

Trends of rural and urban poverty



Compared to the region Ethiopia has maintained inequality at a low level. However, due attention should be given to rising inequality observed recently, especially in urban areas.

Rural/urban Gini Coefficient, 2015/2016



2. Human development trends and linkages to industrialization

Chapter 1 establishes the two-way relationship between human development and industrial development. This chapter reviews the status and trends in Ethiopia's human development indicators. While areas of progress must be recognized, indicators that suggest stagnation and expose challenges must also be understood. What fundamentally matters for undertaking inclusive industrialization is the quality of human development progress it helps facilitate.

Ethiopia's Gross Domestic Product (GDP) per capita increased from US\$129 in 1999/00 to US\$ 863 in 2016/2017.¹⁰ The share of the population living below the national poverty line halved between 1995/96 and 2015/16, from 45.5 percent to 23.5 percent. Disparities in poverty among regions have narrowed, indicating a better balance in regional development. Agriculture still plays an important role in the economy and accounts for 37 percent of the nation's GDP, contributes over 70 percent of the export receipts and employs 73 percent of the labour force.

Ethiopia has achieved considerable progress in bridging gender gaps and supporting initiatives to support the empowerment of women. There has been notable achievement of gender parity in girls' enrolment at primary education, improved maternal health, high political representation of women at national and federal levels, and reduction in the incidences of harmful traditional practices particularly Female Genital Mutilation/Cutting (FGM/C) and child marriages. In strengthening women's economic empowerment, Ethiopia has focused on access to and control over productive resources, especially on land, through land certification and property ownership policy.¹¹

This chapter assesses the status and trends in human development at the national and sub-national level in Ethiopia. While noting progress in education and health as key dimensions of human development, the chapter analyses lagging areas. As an often-overlooked component of national human development, we provide a detailed look into the status of gender equality and

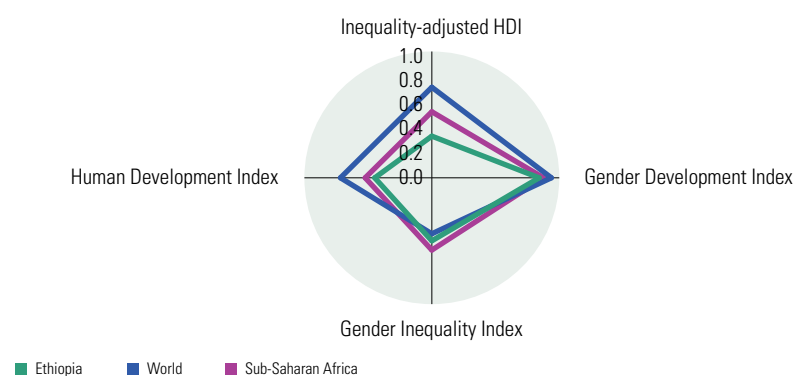
women's and girls' empowerment. And based on available data and measures, we review the pattern of linkages between human development, gender equality and industrial development.

2.1 Patterns of human development

A closer look at the human development situation in Ethiopia sheds additional light on the situation of women and men across the country. A set of human development indices facilitates this: the Human Development Index; the Inequality-adjusted Human Development Index; the Gender Development Index; and the Gender Inequality Index (Figure 2.1).

FIGURE 2.1

Comparison of human development and gender inequality indices, Ethiopia, Sub-Saharan Africa and the World, 2015



Source: UNDP 2016.

Note: While all indices are on a scale of 0-1, a higher value for the gender inequality index indicates a relatively worse situation.

2.1.1 Ethiopia's human development progress and challenges

Overall human development trends in Ethiopia have shown improvement in recent years. The human development index (HDI) increased from 0.283 in 2000 to 0.448 in 2015. This puts Ethiopia at a rank of 174 out of 188 countries. Life expectancy stands at 64.6 years at birth and mean years of schooling at 2.6 years. Compared with other low human development countries, Ethiopia's life expectancy stands among the highest in a set of 40 countries, but mean years of schooling is only one-third that of the country with the

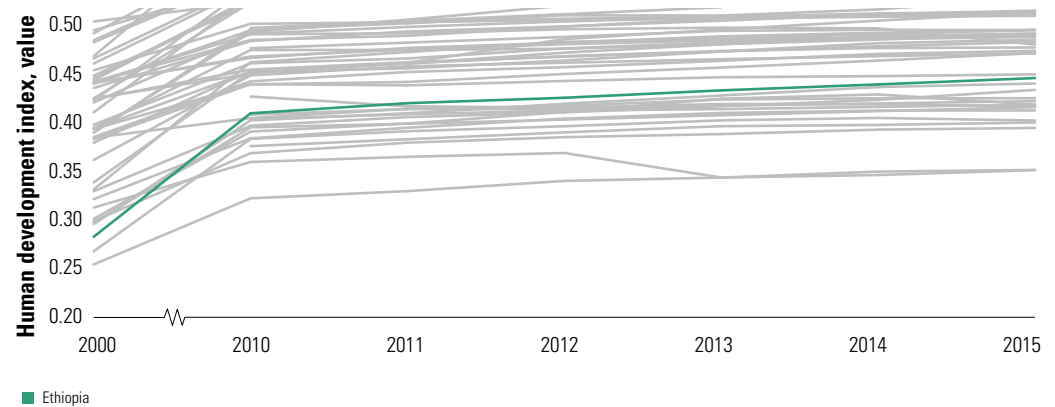
largest number of mean years of schooling in Africa, Swaziland at 6.8 years.

Among the 40 countries in the low human development category (those countries with a human development index value below 0.500), Ethiopia has sustained strong progress in the last 15 years, according to available data (Figure 2.2).

From 2000-2010, Ethiopia registered an annual HDI growth of 3.79 percent, the fastest among countries with similar HDI values in the 2000s—but also the fastest HDI growth in the world. Relative to this growth rate, the rate of improvement in 2010-2015 period appears to have slowed down, for all countries including Ethiopia (Figure 2.3).

FIGURE 2.2

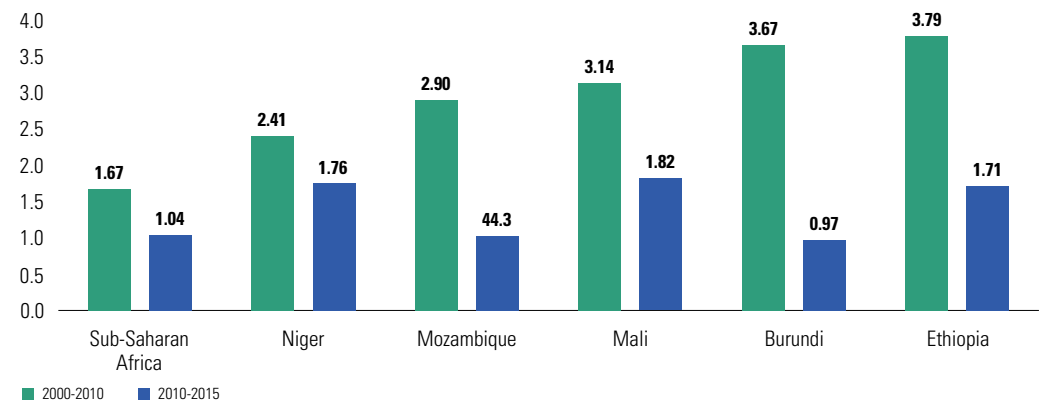
Human Development Index for Low HDI countries, total value, 2000-2015



Source: UNDP 2016.

FIGURE 2.3

Average annual HDI growth (%), 2000-2010 and 2010-2015, Ethiopia, sub-Saharan Africa and HDI neighbours



Source: UNDP 2016.

The HDI decomposes to reveal differences in the positioning of women and men. In 2015, the HDI for women and girls in Ethiopia stood at 0.408, while for men and boys it was 0.484 (Figure 2.4).

One in four Ethiopians live below the national poverty line.¹² Ethiopia's multidimensional poverty index stands significantly higher than its income poverty, with 88.2 percent of Ethiopians experiencing multiple dimensions of deprivation—and 67 percent in severe multidimensional poverty.¹³ In terms of income inequality, the richest fifth in the economy have incomes five times greater than the poorest segment of Ethiopian society.

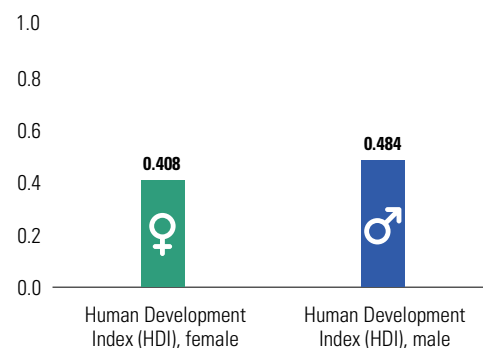
What drives human development growth for Ethiopia? The value on the Health Sub-Index is the highest. When ranked by Health Sub-Index value, Ethiopia is among the top seven countries with low HDI values. By contrast, adult illiteracy is a factor holding back Ethiopia's human development, within the Education Sub-Index (Figure 2.5).

2.1.2 All regions are rising —but at different rates

The 2016/17 Regional HDI for Ethiopia shows continual progress for all 11 regions of the country relative to the 2012/13 HDI presented in the Ethiopia *National Human*

FIGURE 2.4

Human Development Index for Ethiopia, by sex, 2015



Source: UNDP 2016.

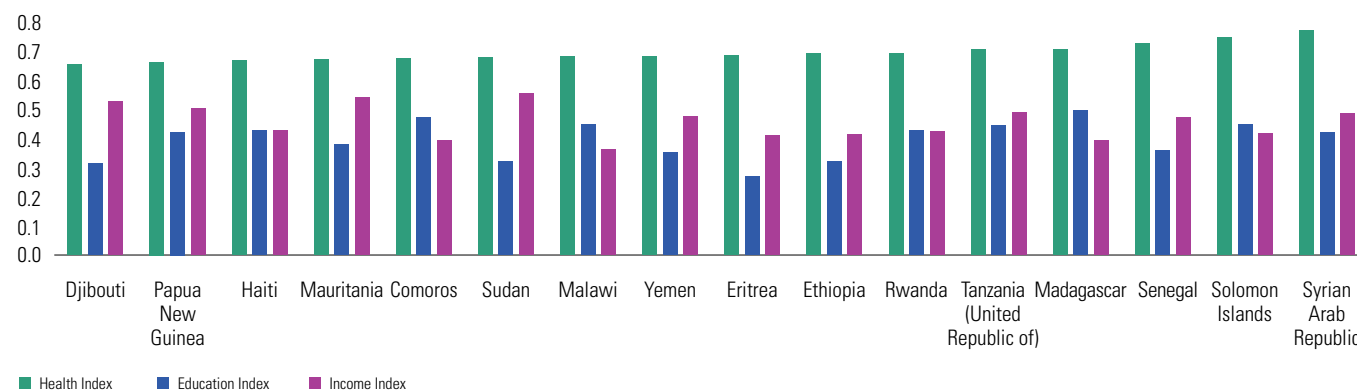
Development Report 2014 (Figure 2.6). All regions have moved forward. Harari has experienced the largest increase relative to the 2012/13 period (albeit from a low base), while Addis Ababa has seen the slowest rise. Addis Ababa Region dropped from the highest ranked region to fifth.

Looking at the sub-components of the Regional HDI, the drivers of progress become more visible. As seen at the national HDI level, the Health Sub-Index remains the driver of human development progress across all regions and has increased since the 2012/13 period (Figure 2.7). Harari, however, is the only region to have slipped

What drives human development growth for Ethiopia? The value on the Health Sub-Index is the highest. By contrast, adult illiteracy is a factor holding back Ethiopia's human development, within the Education Sub-Index.

FIGURE 2.5

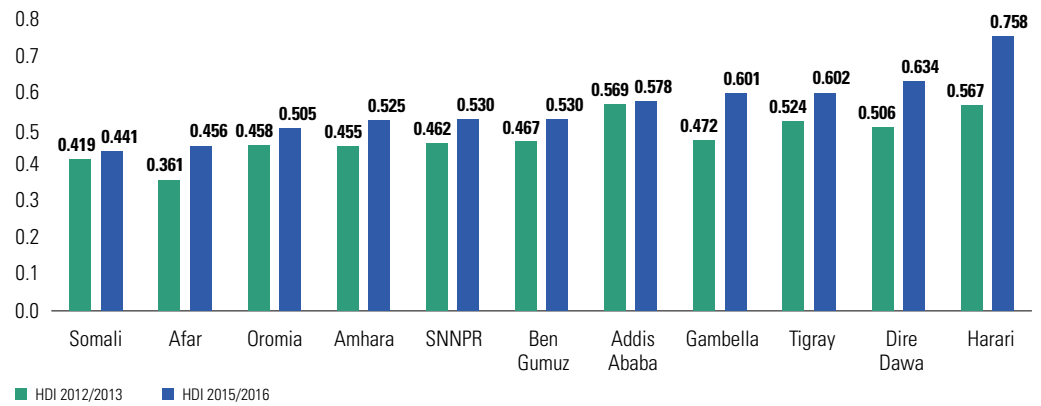
Human Development Index components for bottom 15 HDI countries, 2015



Source: Calculated based on data UNDP 2016. Sorted by Life Expectancy Index value.

FIGURE 2.6

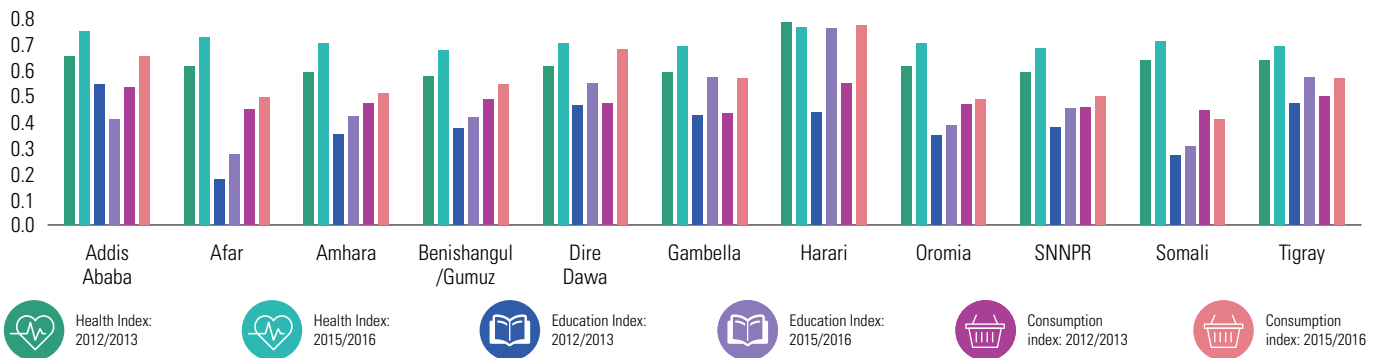
HDI for Ethiopia's regions, 2012/2013 and 2016/2017



Source: Calculated based on CSA 2013, CSA 2017 and CSA 2018.

FIGURE 2.7

HDI components for Ethiopia's regions, 2012/13 and 2016/17



Source: Calculated based on CSA 2013, CSA 2017 and CSA 2018.

backwards on the Health Sub-Index but has made the strongest progress on the Education and Income Sub-Indices. Addis Ababa has slipped backwards.

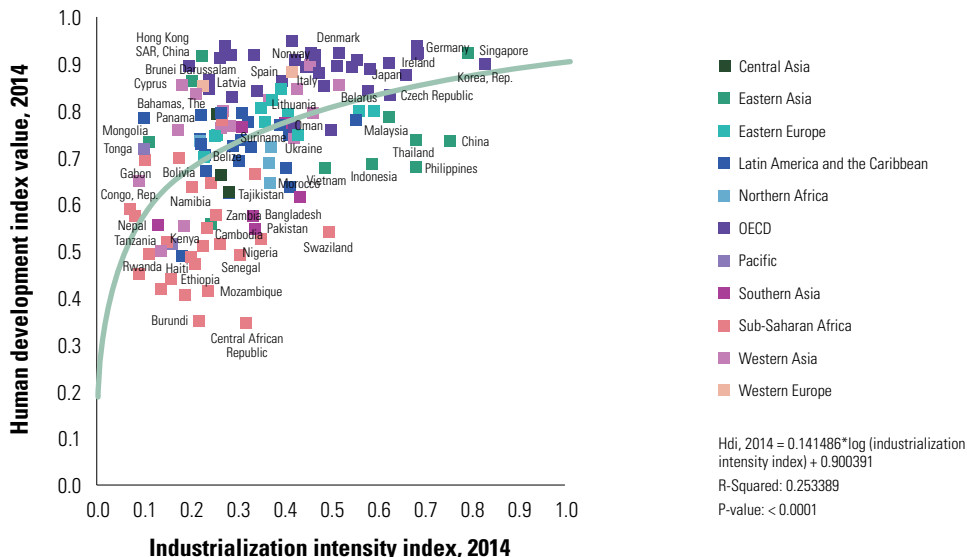
2.1.3 No automatic relationship between human development and industrialization

The concept of inclusive industrialization requires that there be industrialization. Inclusiveness encompasses no one being left behind and equitably shared gains from progress for all without discrimination, injustice or exclusion.

Overall, industrialization as measured by the industrialization intensity index (a measure of manufacturing value added per capita, and the complexity of industrialization by the value added of technology to manufacturing) is positively associated with countries with higher levels of human development. But the evidence shows a diversity of experience for any given level of industrialization or for human development (Figure 2.8). This suggests the relationships are neither automatic nor necessary, and that the industrialization process, to be inclusive, must be undertaken with human development as the primary goal.

FIGURE 2.8

Human development and industrialization in global perspective



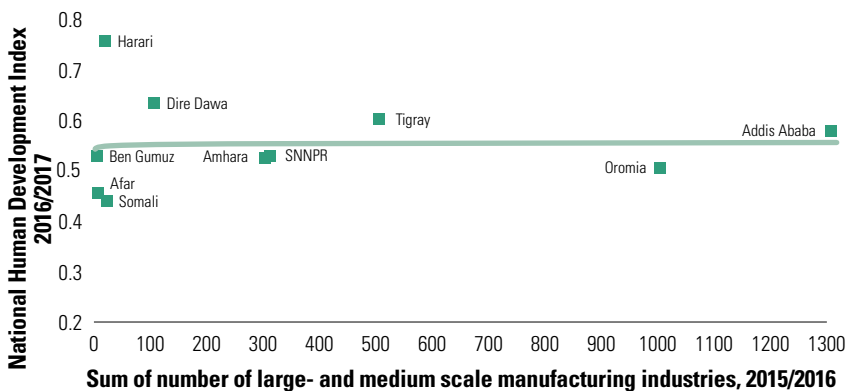
Sources: UNDP 2016; UNIDO 2015.

Disaggregating the national experience shows similar results. When correlated with an available measure of industrialization—the number of manufacturing industries by region—the Regional HDIs in Ethiopia show a non-linear, not automatic relationship as well (Figure 2.9).

The above analysis explores the broad inter-relationships between human development and industrialization. The following sections examine the key patterns and determinants of human development, exploring in detail the status and trends in education, health, poverty and gender equality and women’s and girls’ empowerment.

FIGURE 2.9

Ethiopia’s Regional HDI and number of manufacturing industries



Source: Calculated based on CSA 2017; CSA 2015/2016.

2.2 Slow progress in education and skills development

The Ethiopian government has been investing heavily to expand access to education at all levels and significant strides have been made. For example, the proportion of illiterate people—people who have not attended any form of education including non-formal education—aged 10 years and above decreased from 70 percent to 42 percent between 1999

and 2013.¹⁴ These shares decreased from 59 percent to 32 percent and from 81 percent to 51 percent, respectively for men and women. There is also some evidence that the gender gap is narrowing; the gender parity index (GPI) of secondary education gross enrolment significantly improved between 2009/10 and 2015/16 (it increased from 0.8 to 0.94 and from 0.57 to 0.87 for grades 9-10 and grades 11-12, respectively).¹⁵

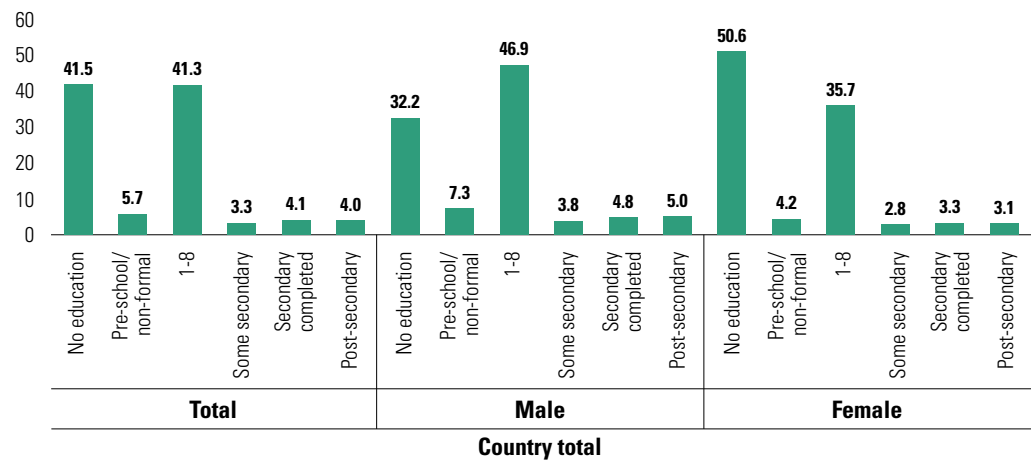
2.2.1 Education attainment improving but low

However, the overall level of education still remains low. There is also high gender and rural-urban disparity: 32 percent of men and 51 percent of women aged 10 years and above were illiterate in 2013; nationally only 8.1 percent (9.8 percent for men and 6.4 percent for women) had at least completed secondary education (Figure 2.10). While the level of

education is better for urban areas, it is still low in general; only 28 percent had a high school certificate or above while 17 percent had no education (Figure 2.11, Figure 2.12). The picture in 2016 is similar: 48 percent and 30 percent of all men and women aged 15 to 49 years respectively were illiterate, and regional variations are high (Figure 2.13). There is a large difference between the illiteracy rate of rural and urban women—57 percent versus 16 percent.

FIGURE 2.10

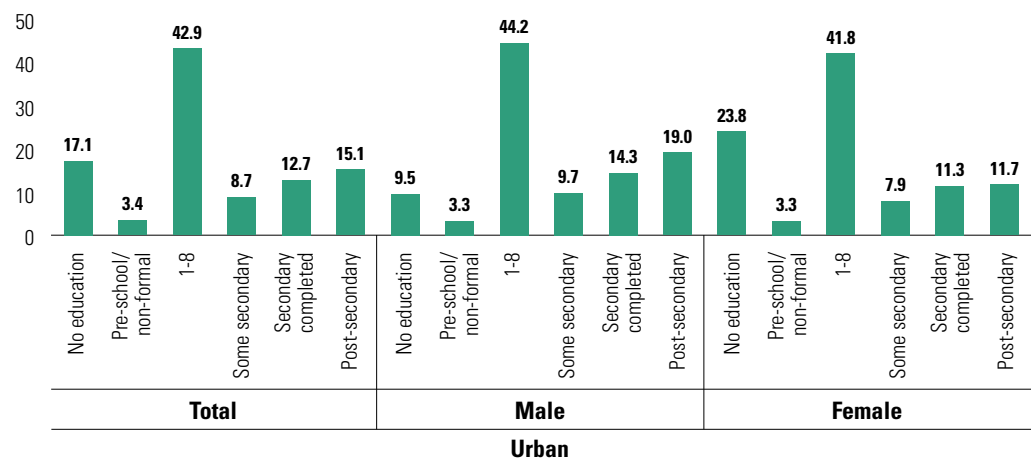
Distribution of population aged ten years and above by educational attainment in 2013: country total (by sex) (%)



Source: CSA 2014.

FIGURE 2.11

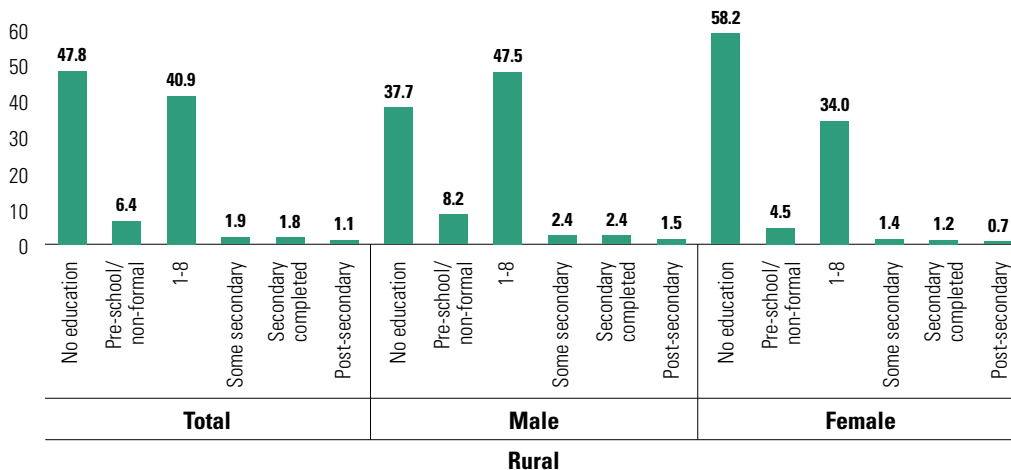
Distribution of population aged ten years and above by educational attainment in 2013: urban (by sex) (%)



Source: CSA 2014.

FIGURE 2.12

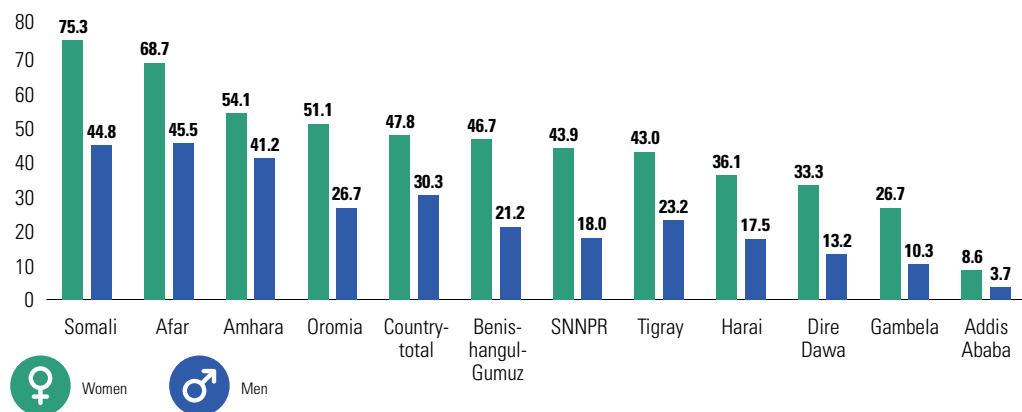
Distribution of population aged ten years and above by educational attainment in 2013: rural (by sex) (%)



Source: CSA 2014.

FIGURE 2.13

Illiteracy rate for those aged 15 to 49 by region in 2016 (%)



Source: CSA 2017.

2.2.2 Limited quality learning in schooling

There are also serious quality problems. The completion rate in primary education is very low while the quality of education in secondary school is very poor and most students grasp only a small part of the knowledge and skill they are expected to acquire.¹⁶ The vast majority of grade 10 students scored below 50 percent in each of the five subjects in the National Learning Assessment (NLA) tests in 2010 in English, Mathematics, Physics,

Chemistry and Biology (Figure 2.14). Though the result for grade 12 students is better, a significant proportion still score below 50 percent in each of the subjects, which is worrying given that most of them would enter tertiary education.

There is also evidence that employers are not happy with the skills of technical and vocational education and training (TVET) and university graduates.¹⁷ Lack of skilled labour is believed to be one of the most significant barriers to foreign direct investment (FDI) in Ethiopia. Primary data collected

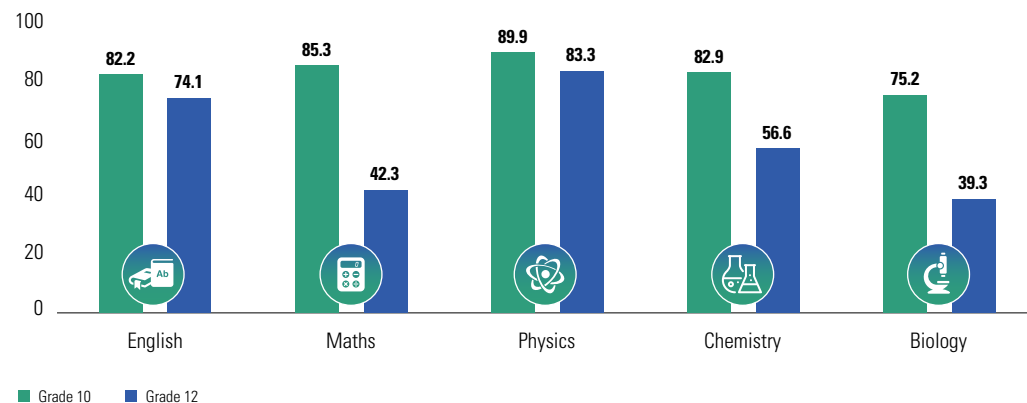
We are getting electrical software training all the time from foreign experts. I know there are trained Ethiopians, but the pay and the incentive structure drove them away from the country.

37-year old electrical engineer working for a textile and food and beverage packaging medium sized enterprise attributed the lack of skilled trainers/teachers to a brain drain

Source: UNDP 2018a.

FIGURE 2.14

Percentage of students who scored below 50% in NLA tests, 2010



Source: Joshi and Vespoor 2013.

from workers and teachers show that the trainings provided by technical schools and universities do not match those required by industries. Interviews with managers of manufacturing firms reveal that the training given by technical schools is very theoretical and irrelevant. Similarly, a technical school instructor argues that the schools focus too much on theory while practical skill is not given due emphasis. A sample of managers of manufacturing firms confirms this.¹⁸

2.2.3 Secondary education curriculum and TVET skills mismatch

While there could be various reasons for the low education quality, including unqualified teachers, poor school facilities and the like, there are also problems associated with the curriculum, particularly in secondary school. The secondary school curriculum is not appropriate for universal access to education and fails to meet the demands of students who will not enter higher education. It is very demanding academically and is designed as a university level entry requirement; hence it is not appropriate for those who will enter the labour market or go to technical schools after secondary education.

In terms of difficulty, the general secondary school curriculum (grades 9-10) is equivalent

to that of the curriculum of grades 11-12 in most countries. The conceptual demands are not age-appropriate for the average student. The curriculum is also too heavy in irrelevant topics; there is too much detail in specific topics and repetitions between curriculum years are common. Inappropriately difficult topics are not restricted to secondary education, but they are also found in primary education curriculum.¹⁹

The inappropriate curriculum and problems, including the low quality of teachers, means that secondary education in Ethiopia is not only ineffective at preparing those who join the labour market or go to technical schools after grade 10, but also it does not prepare those who continue to preparatory education (grades 11 -12). There are also additional problems that are specific to preparatory education; for example, while students are expected to master subjects that used to be taught at first year in university in the previous education policy, the quality of many of the teachers in preparatory schools is not up to standard. This is reflected in the poor university entrance examination (UEE) results. For example, in 2008/9, 63 percent of the students who sat for the UEE scored below 50 percent but 86 percent of them were admitted to public universities. This suggests that many students enter university without adequate academic preparation.²⁰ A

Secondary education curriculum: universal access versus entry for higher education

The current secondary education curriculum in Ethiopia does not aim to achieve universal access to education; it is very theoretical and academically demanding and its main objective is to serve as a preparation for university. This type of curriculum is not appropriate for the industrial transformation the country is envisioning. The focus should be shifted towards universal secondary education which will result in a large number of students with a much wider range of abilities and aspirations than has been the case so far. To provide all students the opportunity to

succeed and develop the human capital necessary for a rapidly growing economy, the curriculum should allow for content differentiation. This will allow students to study subjects at varying levels of depth and choose elective courses that prepare them for different career options, including entrepreneurship. The content differentiation should start in grades 9–10 and increase further in grades 11–12, where some students will prepare for university, some for TVET programmes, and others for the job market.

Source: Joshi and Verspoor 2013.

shortage of qualified and experienced staff is also a common problem, particularly in new regional universities. The motivation of academic staff is poor and low remuneration is mentioned as the major reason for that.²¹

TVET colleges have challenges in producing workers with the required soft and hard skills. There is also gap between what TVET graduates expect and what they find in work places. For example, there is a strong preference for white collar jobs as opposed to blue collar jobs. Limited engagement between firms and TVET schools is one of the major problems.²² Employers report that finding workers with the required skills is a serious challenge. According to a World Bank survey done on Ethiopian firms in 2013, close to half of the firms report that they face difficulty finding workers with the required technical skills while 43 percent of them face problems finding workers with the essential work ethic and commitment (Table 2.1).

However, only a third of the firms report that they provide training to their workers. Another recent study observes problems related to commitment, ethics and attitude are more common among the youth.²³ The preference for white collar jobs over blue collar jobs is very prevalent among youth; it is also ingrained in the culture of the society. Furthermore, the study shows that one of the reasons firms are reluctant to train their workers is that many of them, especially youth, leave after taking the training.

The availability of skilled labour is also important for the public sector. Improved

TABLE 2.1

Degree of difficulty in finding workers with the specific skill attributes

Attributes	Proportions with degree of difficulty			Total
	Easy to find (%)	Neither easy nor difficult (%)	Difficult to find (%)	
Ethics and commitment	23.81	33.33	42.86	100
Computer Skills	33.87	38.71	27.42	100
Technical Skills	23.81	30.16	46.03	100

Source: Adapted from Beyene and Tekleselassie 2018.

human development requires improved public services, which in turn requires skilled and motivated public servants. As experience from East Asia tells us, a public sector that is staffed with capable and motivated staff is also a pre-requisite to boost the private sector in general and industry in particular, by providing efficient services and effectively implementing policies.²⁴ However, the public sector faces a shortage of skilled staff. Motivation is also in general low. Many public servants complain that their salary (combined with their benefits) is very low compared to the private sector. While the government periodically raises wages, in the face of the rising cost of living, real wages are sluggish or decreasing. Thus, improving the capacity of public servants by providing relevant trainings and revising the incentive structure and hiring/promotion policy is in order.²⁵

BOX 2.2

Poor quality skills an impediment for manufacturing

The production of a labour force with poor skills and qualifications that do not match the requirements of the industrial sector can have adverse long term consequences for the economy and slow the currently fast growth rate. A recent World Bank study identified lack of a skilled workforce in Ethiopia as one of the most significant barriers to foreign direct investment (FDI) from China. Poor skills among youth can discourage investment in new and high-quality export-oriented areas in

the manufacturing sector. To avoid the potential damage of poor quality skills, the Government has to treat improving the human resources of the country as a priority policy area and to implement effective interventions to develop the right skills and improve educational quality to satisfy job requirements. A strategic overhaul of the education system from primary school to higher education should be carefully and seriously considered.

Source: UNDP 2018a.

2.2.4 Education spending is relatively high—yet learning outcomes remain low

In 2013, the latest year with cross-country comparative data for the SSA region, 27 percent of Ethiopian government expenditure went to education (Figure 2.15). Ethiopia stood second in SSA. The top three countries were already above the 2018 Global Partnership for Education target of spending at least 20 percent of the national budget on education.

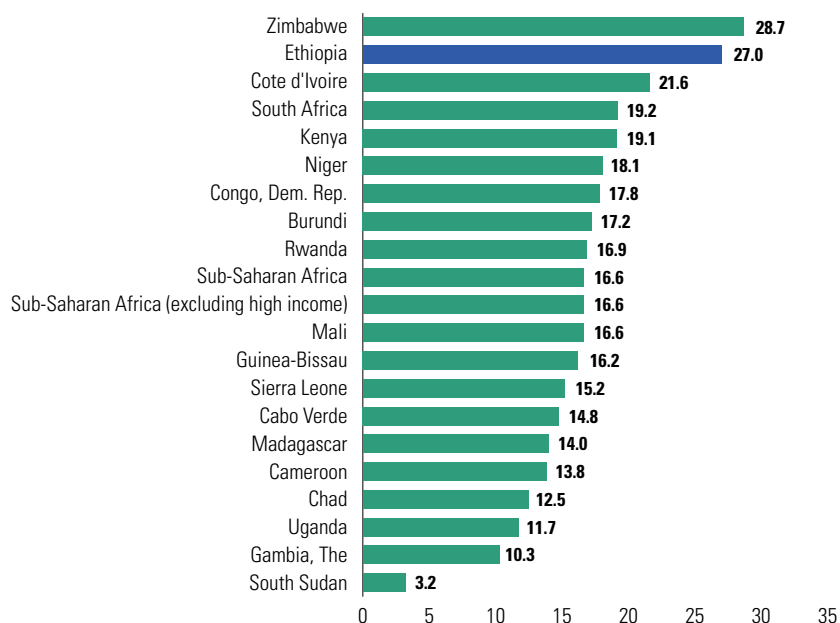
However, while the amount of education spending may appear relatively high, spending per student remains a challenge given Ethiopia's large population size. The student population has increased significantly accordingly: in just a few years, the number of primary school pupils alone nearly doubled, from 8.6 million in 2003 to 14.7 million in 2008.²⁶

One challenge for education spending is visible in the supplies needed to ensure quality learning for students. The student to text books ratio showed large variation across Ethiopia's regions (Figure 2.16). In 2015/16 the ratio varied from 0.59 (Somalia) to 6.41 (Harari) in elementary school and from 0.38 (Somalia) to 14.92 (Oromia) in secondary education. This shows that there is still a long way to go in terms of education if Ethiopia is going to reap the dividend offered by the forthcoming demographic transition and succeed in the industrial transformation it envisions—despite relatively higher spending in this sector.

Where spending is going is another issue as well. In purchasing power parity (PPP) US dollar terms for 2012, government expenditure per student in tertiary education was 51 times expenditure per student in primary school and 16 times that of secondary school students (Table 2.2). A rebalance that is needed within the context of producing increasingly skilled industrial workers; with more and better resources are required at the primary and secondary school education levels to develop skills that match labour market demand.

FIGURE 2.15

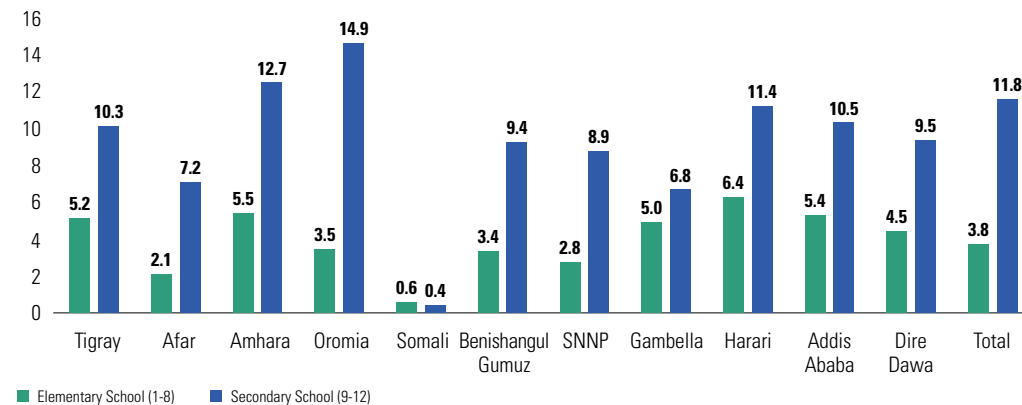
Government expenditure on education, total (% of government expenditure), 2013



Source: World Bank 2018a.

FIGURE 2.16

Student to textbook ratio by region (2015/16)



Source: Joshi and Vespoor 2013.

TABLE 2.2

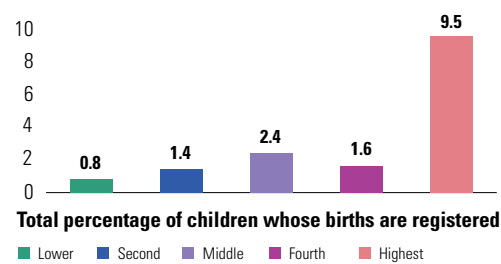
Government expenditure per student (in PPPUS\$), 2009-2012

	2009	2010	2011	2012
Primary education	80.52	75.14	93.58	67.32
Secondary education	198.63	208.02	266.16	210.39
Tertiary education	3109.14	2644.63	3280.71	3490.77

Source: UNESCO 2018.

FIGURE 2.17

Percentage of children under 5 whose births are registered, by wealth quintile



Source: CSA 2017, p. 26.

2.3 Strong progress in women's and children's health—but health system challenges remain

A healthy workforce is a precondition for industrial development and achieving human development progress. Overall, Ethiopia's health progress has been strong and rapid—the country achieved the Millennium Development Goal 4, to reduce child mortality three years ahead of target date.

Yet few in Ethiopia are covered by health insurance, with 95 percent of women and 94 percent of men lack any health insurance coverage.²⁷ Very few are registered at birth, whereas a comprehensive health system begins with gaining access to healthcare from

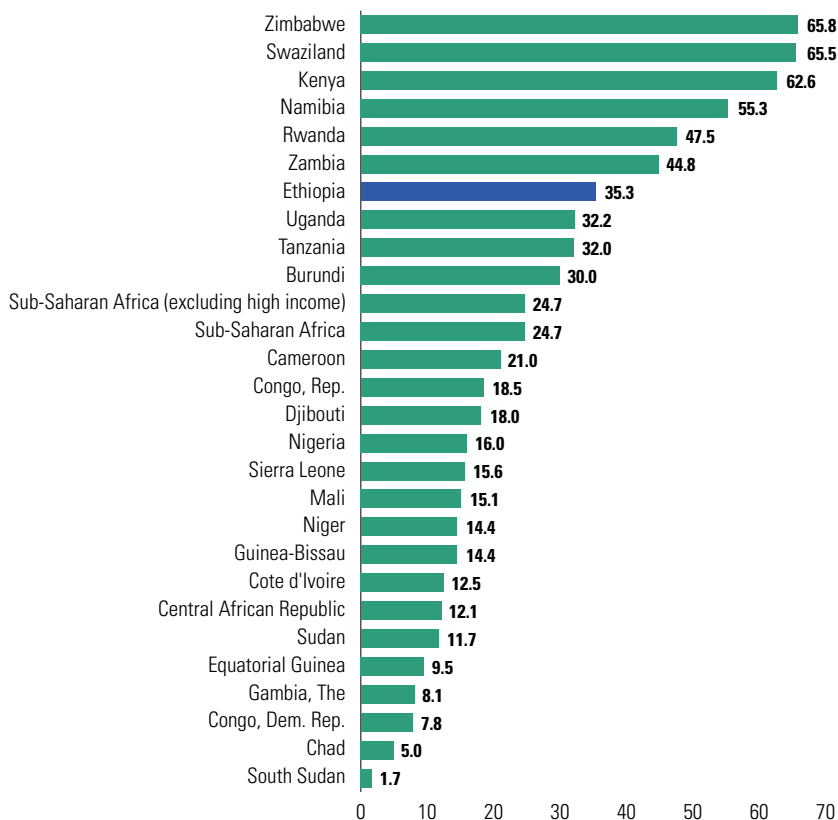
birth. In Ethiopia, two stark findings on birth registrations stand out: one is the overall low percentage of under 5-year-old births that are registered—2.7 percent overall.²⁸ The other is that deep wealth-based inequalities begin to be visible from birth: births among the wealthiest quintile in Ethiopia are 12 times as likely to be registered. Yet even among the income grouping with the most registered births, only 9.5 percent are registered (Figure 2.17).

Progress in women's and children's health and choices is visible through reviews of status and trends in:

- Modern contraceptive use;
- Maternal mortality rates; and
- Child mortality, malnutrition and immunization trends.

FIGURE 2.18

Modern contraceptive use for married women in SSA, latest year, 2010-2016



Source: World Bank 2018a.

2.3.1 Modern contraceptive use increasing to give women more choice—with wide differences across Regions

Modern contraceptive use for married women has steadily increased over the last 16 years in Ethiopia from 6 percent in 2000 to 35 percent in 2016.²⁹ Ethiopia is slightly above the SSA regional average (excluding high-income countries) at 24.7 percent (Figure 2.18). This probably plays a significant role in the decline in fertility.

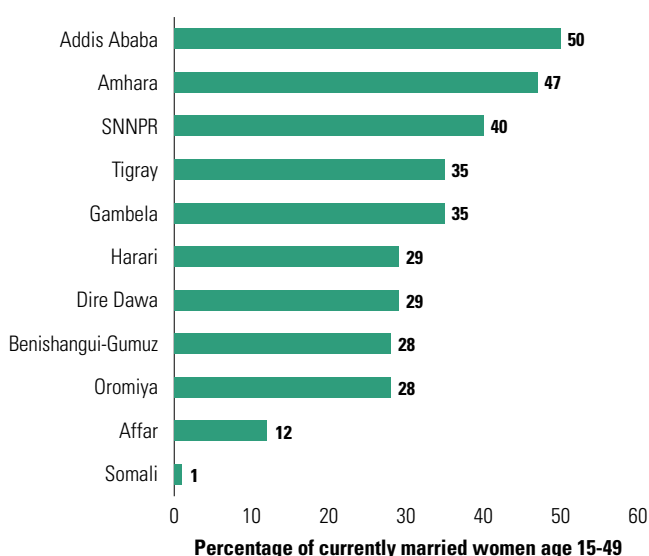
Current use of modern contraception for married women is higher in urban areas (50 percent) than in rural areas (32 percent). By region in Ethiopia married women in Somali have the lowest use of modern contraception (1 percent), followed by Affar (12 percent). The highest use of modern contraception among currently married women is observed in Addis Ababa (50 percent) followed by Amhara (47 percent) (Figure 2.19).

2.3.2 Maternal mortality rates on the decline—while women aged 30-34 most at-risk

Maternal mortality indicators can be used to assess the health status of a population, especially in developing countries such as Ethiopia. Estimates from Demographic and Health Survey (DHS) surveys indicate a substantial decline in the pregnancy-related mortality in Ethiopia since 2000, from 871 deaths per 100,000 live births in the seven years before the 2000 DHS survey to 673 deaths per 100,000 live births in the seven years before the 2005 DHS survey, 676 deaths per 100,000 live births in the seven years before the 2011 DHS survey, and 412 deaths per 100,000 live births in the seven years before the 2016 DHS survey. For every 1,000 live births in Ethiopia during the seven years before the 2016 DHS, approximately four women died during pregnancy, childbirth, or within two months of childbirth. By 5-year age groups, the pregnancy-related mortality rate is highest among women in the 30-34 age group (1.10), followed by women in the 40-44 age group (0.78).

FIGURE 2.19

Use of modern contraception methods by Ethiopia's regions, (%)



Source: CSA 2017.

2.3.3 Strong improvements in child mortality, malnutrition and immunization trends

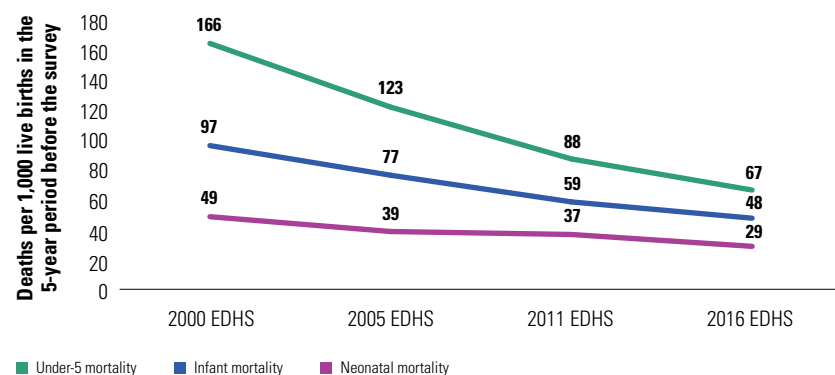
All child mortality trends are rapidly declining in Ethiopia. Under-5 mortality fell from 166 deaths per 1,000 live births in 2000 to 67 deaths per 1,000 live births in 2016 (Figure 2.20). This represents a 60 percent decrease in under-5 mortality over a period of 16 years. Infant mortality also declined from 97 deaths per 1,000 live births in 2000 to 48 deaths per 1,000 live births in 2016, which is about a 50 percent reduction in the last 16 years. Neonatal mortality declined from 49 deaths per 1,000 live births in 2000 to 29 deaths per 1,000 births in 2016, a reduction of 41 percent over the past 16 years. In Ethiopia 1 in every 35 children dies within the first month; 1 in every 21 children dies before celebrating the first birthday; and 1 of every 15 children dies before reaching the fifth birthday.³⁰

A central driver of progress on child mortality is the rise of women's education. The infant mortality rate declines with increases in the mother's education, falling from 64 deaths per 1,000 live births among children whose mothers have no education to 35 deaths per 1,000 live births among children whose mothers have more than secondary education (Figure 2.21). This is probably due to better health awareness on the behalf of mothers.

Thirty-eight per cent of children under 5 years of age are stunted or too short for their age, and 10 percent severely stunted. Ten percent are wasted or too thin for their height, including 3 percent who are severely wasted. Twenty-four per cent of children under 5 are underweight or too thin for their age, with 7 percent severely underweight. The prevalence of overweight children is low at 1 percent. The prevalence of stunting has decreased considerably from 58 percent in 2000 to 38 percent in 2016, an average decline of more than 1 percent per year. On the other hand, the prevalence of wasting changed little over the same time period, with a wasting rate of 10 percent at the time of the DHS 2016, which was the same level as in 2011 (Figure 2.22). The prevalence of underweight has consistently decreased from 41 percent to 24 percent over the 16-year period.

FIGURE 2.20

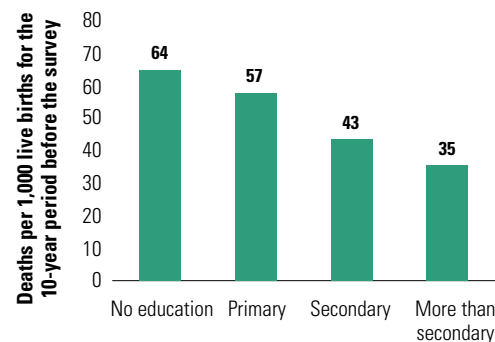
Under-5, infant and neonatal mortality rates, 2000-2016



Source: CSA 2017. EDHS represents Ethiopia Demographic and Health Survey.

FIGURE 2.21

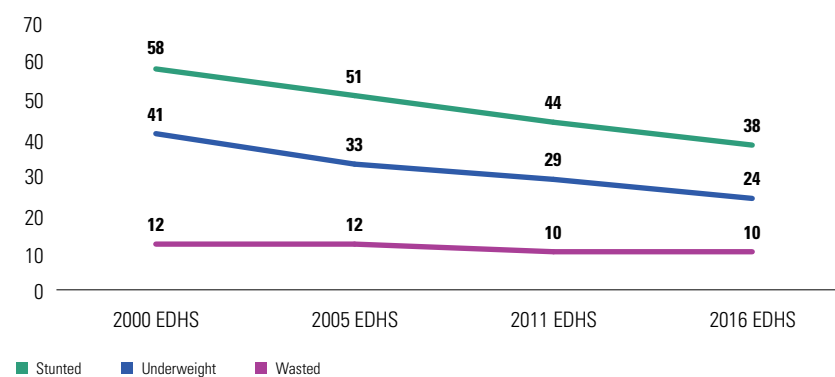
Infant mortality rate by mother's education level



Source: CSA 2017.

FIGURE 2.22

Percentage of children under age 5 who are malnourished, 2000-2016



Source: CSA 2017. EDHS represents Ethiopia Demographic and Health Survey.

Gender inequality exacts a significant toll on multiple dimensions of development in Ethiopia.

2.3.4 Health system spending and resources

In 2014, the latest data year for which there is country-level data, the 10 SSA countries with the highest public expenditure on health were: Burundi; the Central African Republic (CAR), Djibouti, Ethiopia, Gambia, Malawi, Namibia, South Africa, Swaziland and Tunisia, all of them spending over 13.2 percent of their total government expenditure on health (Figure 2.23). Five of these—Burundi, CAR, Ethiopia, Gambia and Malawi—are also among the 10 countries with the highest share of external financing in their total health expenditure. External resources for health in Ethiopia contributed 41.7 per cent.

Antenatal Care (ANC) is a powerful indicator of the strength of the health system in a country. The 2016 DHS shows that 62 percent of women who had a live birth in the five years before the survey received ANC from a skilled provider at least once for their last birth. The proportion of women age 15-49 who received any ANC from a skilled provider has increased from 27 percent in 2000, to 28 percent in 2005, 34 percent in 2011, and 62 percent in 2016. Higher order births are less likely to receive ANC than lower order births. Only 50 percent of women giving birth to their sixth or higher

order child received ANC from a skilled provider, compared with 78 percent giving birth to their first child. Use of a skilled provider for ANC services varies by residence: urban women are more likely than rural women to receive any ANC from a skilled provider (90 percent and 58 percent, respectively). Among regions, ANC coverage from a skilled provider is highest in Addis Ababa (97 percent) and lowest in Somali (44 percent).

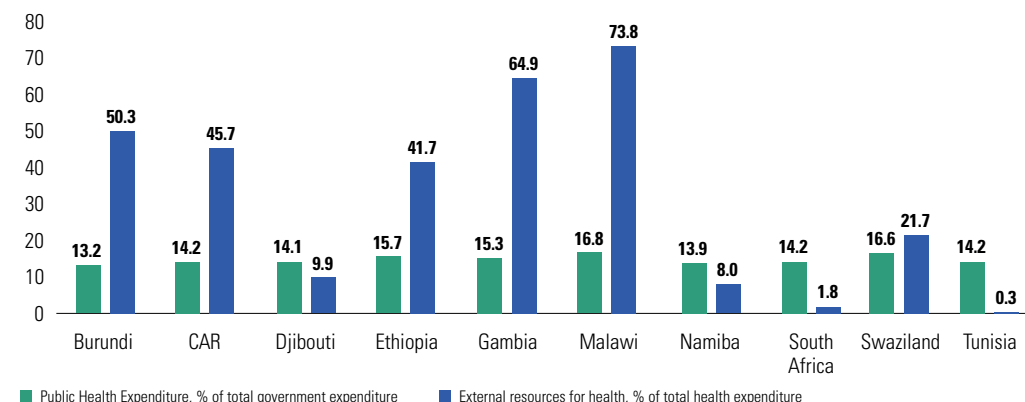
While progress has been strong for antenatal care, the availability of physicians for Ethiopia's growing population remains constrained. Indeed, the number of physicians per 1,000 people has largely remained the same, standing at 0.021 in 2000 and at just 0.022 in 2010 (the year for which latest data are available). It peaked in 2005 at 0.032 but has declined again since. Ethiopia's physician availability is worrisome, as it stands among the bottom in a ranking of SSA countries, using data for the year 2010.³¹

2.4 Gender inequality and barriers to progress

The following section detail the unequal economic and human development outcomes between women and men in Ethiopia, then goes on to assess the major barriers that produce gender inequality in the country.

FIGURE 2.23

Current health expenditure and external resources for health (% of total government expenditure), Top 10 SSA countries, 2014



Source: World Bank 2018a.

2.4.1 Gender inequality in economic and human development

Gender inequality exacts a significant toll on multiple dimensions of development in Ethiopia. More than 58 percent of girls between the ages of 15 and 19 give birth. Mean years of schooling³² for females is just 1.6, less than half of the already low mean years of schooling for males, at 3.7 years.³³ There is also a gap at the secondary school level; enrolment rates are 10.8 percent for women, and 20.7 percent for men in 2016.

In the economic sphere, women are acutely affected by discriminatory policies and gender norms. The economic empowerment of women is a critical gateway for many other development results. Women are nearly three times as likely as men to be unemployed. Women's gross national income per capita stands at US\$1,161 compared to men's at US\$1,886 (in purchasing power parity, PPP, terms) in 2016. Women are obliged to take on vulnerable forms of employment that fail to protect their basic labour rights. Unpaid care and domestic work also serve as a severe constraint to gender equality and women's empowerment.

These and other drivers of inequality between women and men and girls and boys determine gender inequality trends in Ethiopia. Long-term trends show a

narrowing of the gender gap³⁴ in key measures of development between women and men—yet progress has been slow, and there is still a distance to go to close gender gaps (Figure 2.24).

That all in a society should enjoy equality in development of human capabilities is a prerequisite for human progress. Pathways between empowerment, gender equality and human development are several—and go in both directions. Women who have a greater ability to make strategic life choices are more likely to have fewer children, to delay childbearing and to face less risk of maternal morbidity and mortality. Their children are more likely to be born healthy, to survive childhood, to be less food insecure and to have better access to vital health services such as immunizations and well-child check-ups. Increasing literacy levels and educational opportunities are instrumental in improving health outcomes among women. In short, addressing barriers to gender equality and women's empowerment is necessary for inclusive human development.

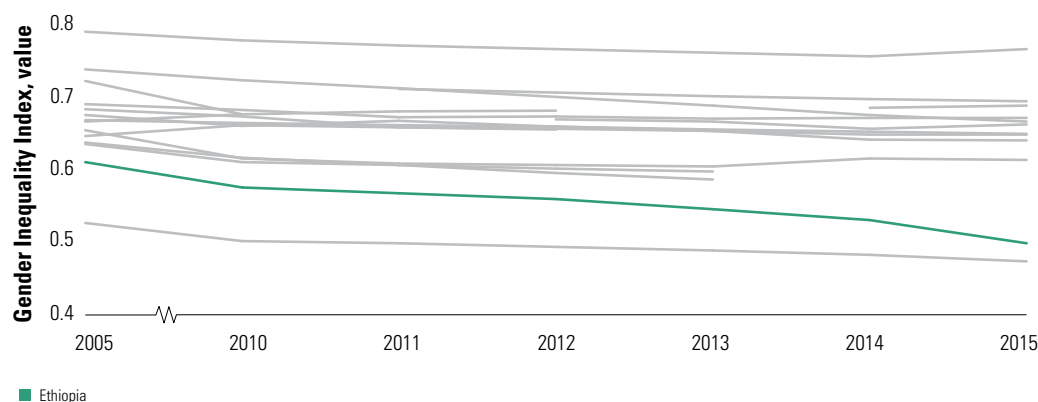
A set of long-standing factors serve as barriers to gender equality and women's empowerment. These include:

- Violence against women and girls;
- Female genital mutilation/cutting;
- Unequal care burden.

Women are obliged to take on vulnerable forms of employment that fail to protect their basic labour rights. Unpaid care and domestic work also serve as a severe constraint to gender equality and women's empowerment.

FIGURE 2.24

Gender Inequality Index for Ethiopia, 2000-2013



Source: UNDP 2016.

2.4.2 Violence against women

The consequences of violence on women and girls are significant. Violence against women inhibits physical and mental health and women's quality of life. It restricts women's movement and their income earning capability as well as the productivity and profitability of the economy as a whole. Violence against women and girls is among the most pervasive direct and indirect barriers to women's empowerment. Investing in ending violence against women and girls has transformative effects in advancing gender equality and human development.

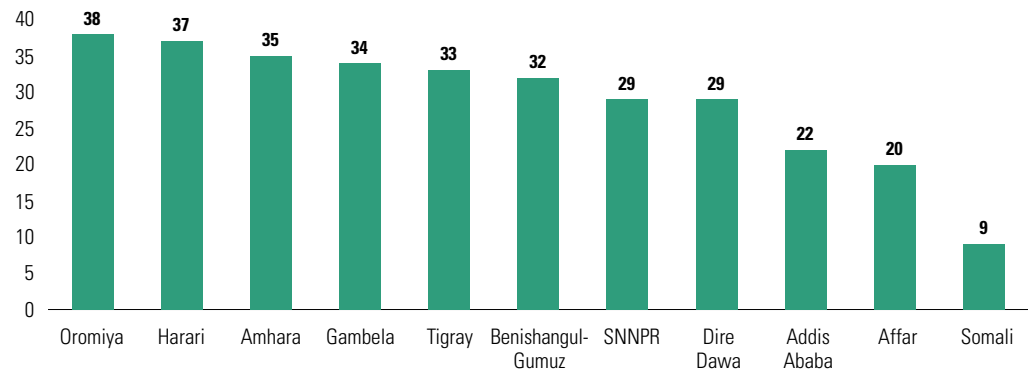
In Ethiopia for 2015/16, among women age 15-49, 23 percent of those who have ever married women aged 15-49 have experienced

spousal physical, sexual, or emotional violence. Physical and emotional violence were experienced by 24 percent of women, and sexual violence by 10 percent. Fully 27 percent of ever-married women experienced physical, sexual, or emotional violence in the past 12 months either sometimes (20 percent) or often (7 percent).

Never-married women are least likely to experience physical violence—pointing to domestic and intimate partner violence as a leading challenge in preventing violence against women. By region, spousal violence (physical, sexual or emotional) is most prevalent in Oromiya (38 percent) and Harari (37 percent), and least prevalent in Somali (9 percent) (Figure 2.25).

FIGURE 2.25

Percentage of ever-married women age 15-49 who have ever experienced physical, sexual, or emotional violence committed by their husband/partner, 2015/16



Source: CSA 2017.

BOX 2.3

Does more work for women lead to more domestic violence?

Evidence suggests that the challenges of gender-based violence must be addressed within emerging industrial and economic activity zones in Ethiopia. Among a group of female applicants for jobs in the flower industry, the baseline value was on average 0.96 violent incidents a month, including pushes, slaps, punches or sexual assault. For the women who get the jobs, this gets significantly worse: they are 13 percent more likely to experience physical abuse, 34 percent more likely to experience emotional abuse, and the number of violence incidents experienced per month

goes up by 32 percent. Flower industry jobs thus appear to generate more domestic violence in the household.

Domestic violence is about men reinstating control over their wives. The authors argue that these results are consistent with a story that the improvement in the relative economic standing of women generates an emotional cost for their husbands, and the violence is the way men act on these costs.

As more women enter the labour market, ways to prevent violence against them must be provided to reduce gender-based violence.

Source: Markus Goldstein 2012.

2.4.3 Female genital mutilation/cutting

Female genital mutilation/cutting (FGM/C) involves removing some of the clitoris or the labia for nontherapeutic reasons, usually as part of a rite of passage into adolescence. The practice is widely acknowledged as a violation of human rights, and serious medical complications can result. In Ethiopia, there is a slightly downward trend in the proportion of women 15-49 years old who have been subjected to FGM/C, declining from 80 percent in 2000 to 65 percent in 2016. The prevalence of FGM/C is highest in Somali (99 percent) and lowest in Tigray (23 percent); 49 percent of circumcized women age 15-49 were subjected to FGM/C before age 5, and 24 percent were subjected at age 10 or older (Figure 2.26).

According to mothers responding to the Demographic and Health Survey, 16 percent of girls aged 0-14 are subject to FGM/C. Girls are five times more likely to have been subjected to FGM/C if their mothers were also subjected, compared with girls of women who were not. Among women who have heard of FGM/C, 24 percent believe that the practice is required by their religion, and 18 percent believe that the practice should be continued.³⁵

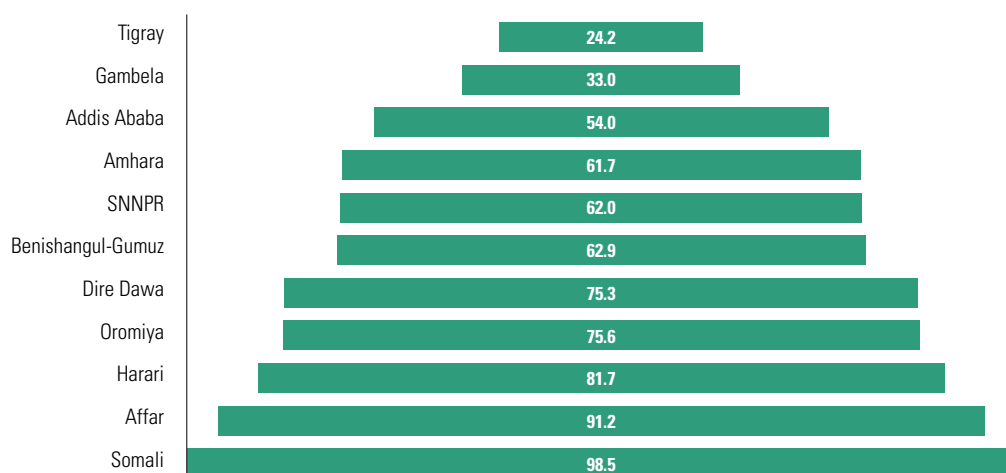
2.4.4 Unequal, unpaid care burden

Unpaid domestic and care work makes visible the consequences of gender inequality in the economic sphere. The household, childcare, farming and elderly care that goes unremunerated in society is a factor that pushes women into invisibility and exclusion from their local and national economies.

Women in Ethiopia tend to bear the burden of care for children, housework, the sick and elderly. Currently married women were asked whether their husbands participated in household chores and, if so, the frequency with which the husbands helped with such chores. Only slightly more than one-third (37 percent) of husbands provide any help with household chores. Most of these husbands do not help out on a regular basis; 63 percent rarely participate in household chores, and only 18 percent assist with chores almost every day. Half of urban women say their husbands participate in household chores compared with 34 percent of rural women. Husbands in the Somali Region (12 percent) are least likely and those in Addis Ababa (60 percent) are most likely to participate in household chores. Generally, the more educated and the wealthier the woman, the more likely it is that her husband participates in the household chores.³⁶

FIGURE 2.26

Percentage of women 15-49 subjected to FGM/C, by region, 2015/16



Source: CSA 2017.

Data on care work are scant around the world, with only four SSA countries holding nationally-representative statistics. Relative to these societies with latest available data in the 2006-2014 period, Ethiopian women and men spend more of their time on unpaid domestic and care work, with the gap between the share of time spent between women and men largest in Ethiopia (13.4 percentage points compared to 12 percentage points difference in Tanzania, 10.9 in Ghana, and the lowest in South Africa with a 9.2 percentage point difference).

The global situation comparing UNDP's gender inequality index—which measures the substantive gaps in human development outcomes between women and men in a society, where a higher number illustrates greater gender-based inequality and a lower value lesser inequality— and the industrialization intensity index shows a mixed relationship (Figure 2.27).

2.5 Poverty reduction and economic growth

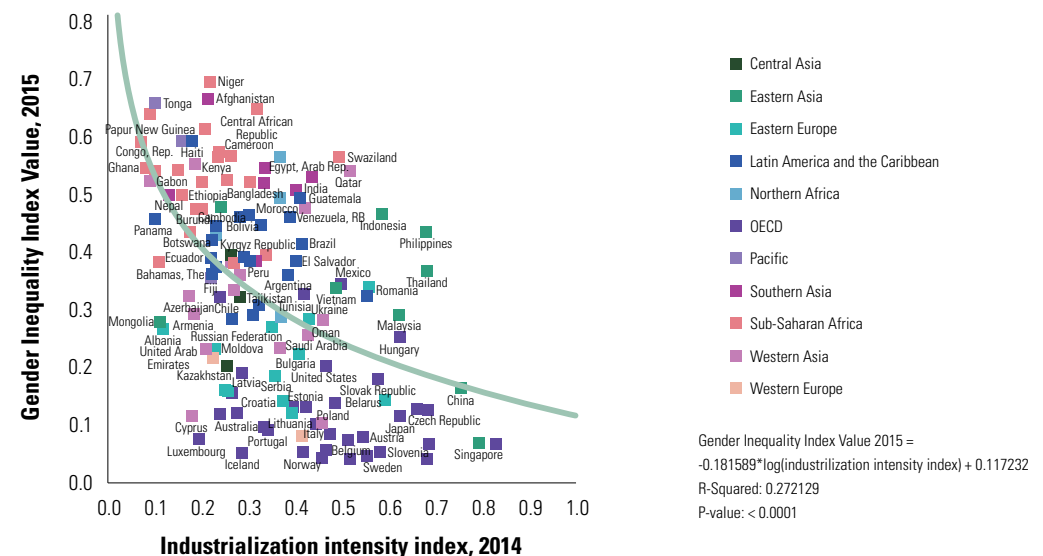
2.4.5 Does gender inequality decline with increasing industrialization?

The relationship between gender inequality and industrialization is generally strong and positive: industrialization provides avenues towards greater gender equality. But again, it is not automatic nor necessary. The framework and evidence available underscore that the industrialization process must be managed in order to ensure gender-responsive outcomes in human development that benefit women and girls, but also society at large through the removal of barriers to equity.

Economic growth is necessary to achieve significant improvements in living standards and poverty reduction. But for economic growth to be effective in reducing poverty it has to be inclusive, so the poor are not left out of the process. Development policies and strategies should aim at increasing the earnings of low-income households. There should also be programmes that are pro-poor and directly benefit those who have limited capacity to take advantage of the growth process. This is a difficult task for developing countries with various institutional and financial constraints.

FIGURE 2.27

Gender inequality and industrialization: global perspective



Sources: UNDP 2016; UNIDO 2015.

2.5.1 Rapid decline in poverty but inequality increasing

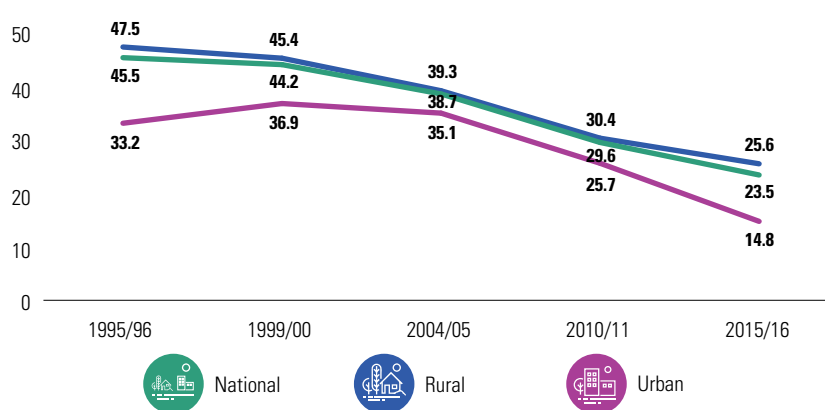
From 1995-2015, the proportion of poor people (based on the national poverty line) decreased from 46 percent to 24 percent, from 48 percent to 26 percent and from 33 percent to 15 percent nationally, for rural areas and for urban areas, respectively (Figure 2.28). Inequality showed a modest increase though it is still low by international standard (Figure 2.30). Even compared with sub-Saharan African countries, inequality in Ethiopia is low (Figure 2.31).

While poverty has decreased remarkably in general, the rate of decrease in recent years is slower in rural areas while stronger decreases have occurred in urban areas; the gap between rural and urban poverty is still large. Poverty decreased in all regions and the gap among them is also getting narrower (Figure 2.29). Afar and Somali, which traditionally lag in socioeconomic indicators, registered high poverty reduction and are not among the poorest regions any more.

While low poverty and inequality are good in and of themselves, they are also important for continued economic growth and prosperity. In an economy that has high inequality and poverty levels it is difficult to produce the healthy and well-educated labour force that is required for industrialization and structural transformation. The demand for industrial goods will also be limited when a large fraction of the population is poor.

FIGURE 2.28

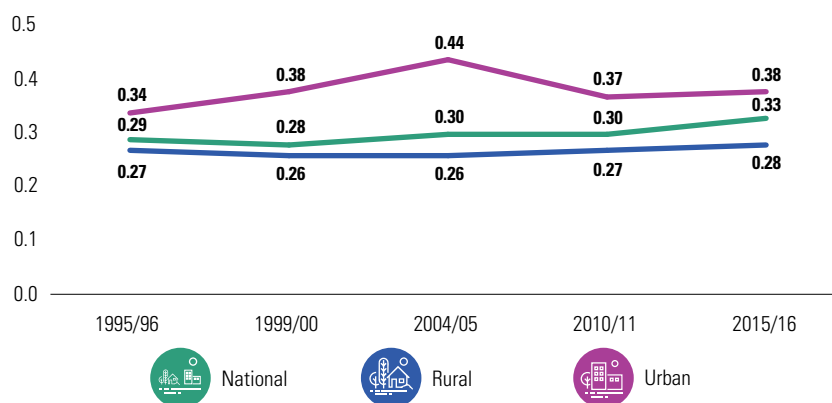
Trends of national and rural/urban poverty (%)



Source: NPC 2017.

FIGURE 2.30

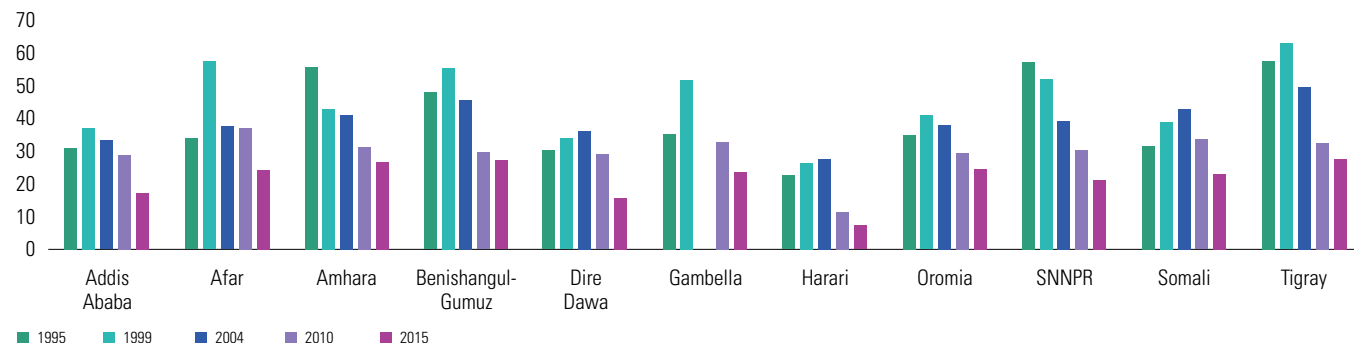
Trends of national and rural/urban Gini Coefficients



Source: NPC 2017.

FIGURE 2.29

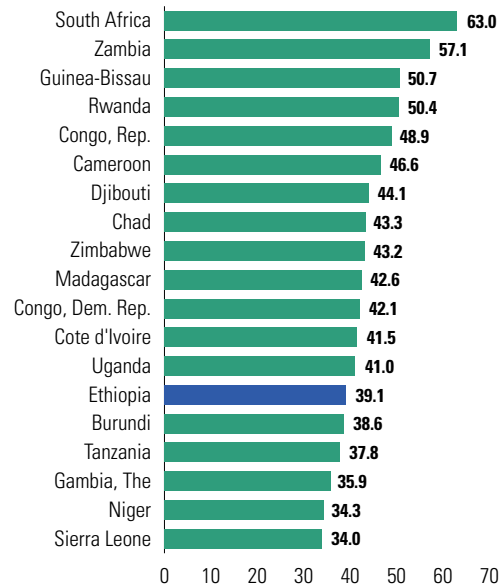
Trends in Regional poverty (%)



Source: NPC 2017.

FIGURE 2.31

Income Inequality in sub-Saharan Africa, Gini Index, latest year, 2010-2016



Source: World Bank 2018a.

High inequality and poverty lower investment in both human, physical capital and lower growth. This also makes pro-poor growth policies less successful as the poor will be less likely to benefit from growth.

When fewer people are poor and inequality is low, more people will be less constrained financially and will be investing in physical and human capital, which will promote economic growth.³⁷ High inequality and poverty on the contrary lower investment in both human and physical capital and lower growth.³⁸ This also makes pro-poor growth policies less successful as the poor will be less likely to benefit from growth.³⁹ Coupled with some sociocultural factors, high inequality may also trigger polarization and conflict which will in turn will harm economic activities and institutions.⁴⁰ In the long run, high inequality may lead to the subversion of legal, political, and regulatory institutions by the rich especially in countries where institutions are weak.⁴¹

That Ethiopia achieved fast economic growth while reducing poverty significantly and maintaining inequality at a low level is commendable. However, due attention should be given to rising inequality observed recently, especially in urban areas. Inequality in rural areas is still low and that is the reason why national inequality is also low. If the inequality trend that is observed in urban areas

continues, there may be higher inequality nationally given the prospect that proportionally more people will be living in urban areas. If labour intensive manufacturing flourishes, this will contribute to falling or at least stabilizing inequality, as evidence from a recent study on African countries shows.⁴²

2.5.2 Pro-poor investments and development policy

Ethiopia has been working to strike a balance by having a development policy that is at the same time pro-poor. In addition to the huge investment on social infrastructure and mega projects, the government has also been allocating large funds to pro-poor sectors, namely, education, health, agriculture, roads and water. The share of these five pro-poor sectors in GDP rose from 10.9 percent in 2008/09 to 12.1 percent in 2015/16. The share of pro-poor spending was 66 percent of the total public expenditure in 2015/2016.⁴³

The Ethiopian government has also initiated social protection programmes that aim to help the poor maintain some minimum level of living standard. A case in point is the Productive Safety Net Programme (PSNP), which covers several million lower potential farmers and has been implemented for over a decade. Ethiopia has also started implementing an urban safety net programme recently, which is expected to reduce poverty further and keep inequality from increasing. The evidence so far indicates encouraging results. The economy has been growing at double digits for over a decade, poverty has decreased significantly, and inequality remains low even by low income countries' standards.

2.6 The need to advance human development for all

This chapter has reviewed areas of progress and remaining gaps in multiple dimensions of human development in Ethiopia. While health continues to be a driver of growth across Ethiopia's regions, education and income remain challenges. Skills gaps in

education require investment to meet market demand as well as the demand for inclusive industrialization. And barriers to gender equality, while diminishing, effectively limit women's and girls' ability to participate in and enjoy the benefits of an inclusive industrialization process capable of achieving Ethiopia's human development aspirations. These areas highlight priorities in the need to advance human development for all—with the need for particular attention to groups at risk of being left behind including youth and women.

The chapter also shows that the relationship between human development and

industrialization is not automatic, whether within Ethiopia's regional growth patterns or at the cross-country level. This suggests that the management of the industrialization process and the emerging patterns of human development could mutually benefit from an integrated approach. A key factor in shaping the relationship between human development and industrialization is the development of skills that help youth and women gain decent work opportunities. How to advance youth employment, women's higher-level roles, and decent work for all through Ethiopia's industrialization process is the subject of the next chapter.

How industrialization
can drive decent work
for youth and women

3

While industrialization, as measured by the industrialization intensity index* is positively associated with countries with higher levels of human development, the relationship between industrialization and human development is not an automatic one. Disaggregating the national experience to Ethiopia's sub-national patterns shows similar results.

* A strong measure of the manufacturing value added per capita, and the complexity of industrialization by the value added of technology to manufacturing.

When correlated with the number of manufacturing industries by region, the Regional HDIs in Ethiopia show a non-linear, not automatic relationship. And looking at the sub-components of the Regional HDI, the drivers of progress become more visible. As seen at the national HDI level, the Health Sub-Index remains the driver of human development progress across all regions.



3. How industrialization can drive decent work for youth and women

Employment is the most direct channel through which industrialization can affect human development. Creating jobs can improve living standards and reduce poverty. However, this is not automatic and depends on the extent to which industry creates sufficient new jobs which are decent and inclusive.

This chapter presents the performance of the economy in general and industry in particular in creating decent and inclusive jobs focusing on youth and women. It also discusses the challenges and opportunities in that regard. It starts by laying out the demographic situation of the country and associated challenges and opportunities. It then presents the performance of the economy in creating decent and inclusive jobs, which is followed by the role of industry. It also discusses the role of women in industrial development. Finally, it explores issues related to policy and strategy pertinent to creating decent and inclusive jobs.

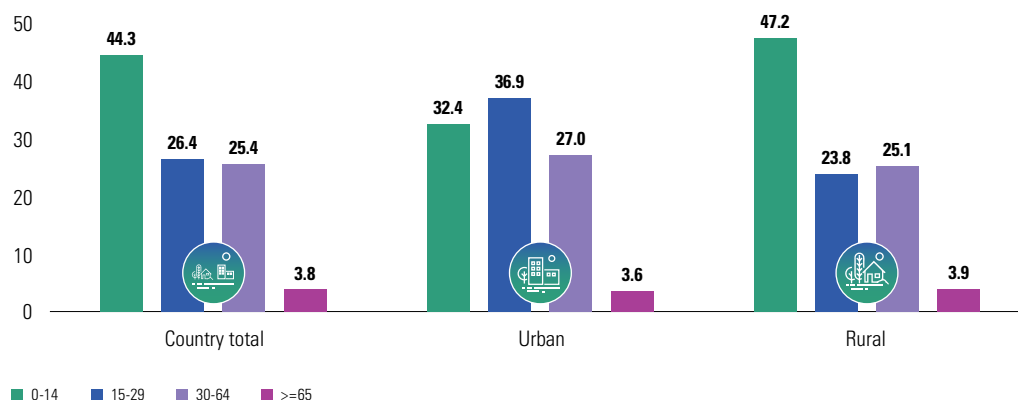
3.1 The demographic challenge and opportunities

With an estimated population of about 95 million in 2017,⁴⁴ Ethiopia is one of the

largest countries in Africa. The population is also growing at a fast rate of 2.3 percent.⁴⁵ Although urbanization has been occurring in recent years, the vast majority of people (80 percent) still live in rural areas. The population is dominated by the young; in 2015/16 44.3 percent of the population was below 15 years old while those below 30 years constitute more than 70 percent (Figure 3.1). The large population, which is growing fast and getting younger, brings various challenges for the country, including provision of services like health and education and employment. However, this can also create huge potential for Ethiopia in its endeavour to achieve structural transformation and industrialization. A large population brings in train a large labour force that can provide a sustainable labour supply at a relatively cheap wage, which in turn can attract the foreign direct investment (FDI) that Ethiopia needs.

FIGURE 3.1

Age distribution of population (2015/16): Rural, urban and country total (%)



Source: Calculated based on CSA 2018.

Ethiopia is in a demographic transition that will lead to a population structure dominated by the working age group. Mortality and fertility rates are decreasing, and this is likely to change the population structure favourably. The size of the working age population will increase relative to the dependent population. This transition has already started to be observed in urban areas. The share of the population aged 15 to 29 is larger than the share of those who are below 15 though the latter group is still large (Table 3.1). The transition is predicted to continue and the share of the working age population is expected to increase sharply in the near future (Figure 3.2).

3.1.1 The youth bulge and labour force participation

Labour force participation is also significantly higher for those in the working age group (15-64) than for older groups. However, the benefit of this demographic transition—the demographic dividend (Box 3.1)—does not occur automatically and heavily depends on the policy environment.⁴⁶ A well thought out and coordinated policy framework is needed both to quicken the demographic transition and to realize the demographic dividend.

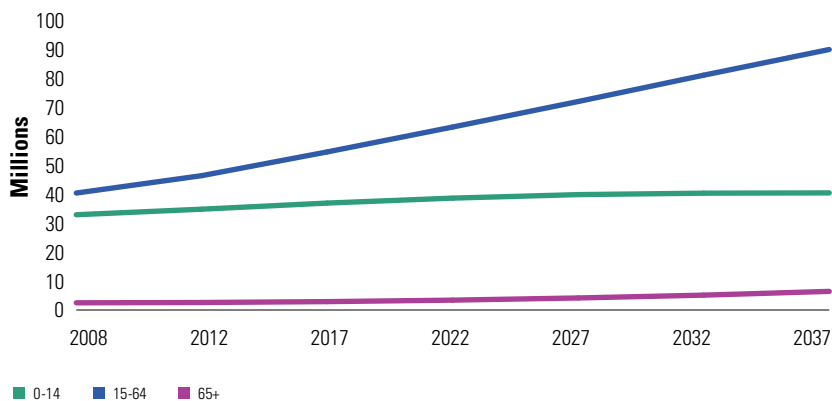
The data also point to children’s labour force participation being very high—with more than 67 percent and 61 percent, respectively, of boys and girls aged 10-14 working. While child labour may be viewed as necessary for household income security, this also drives children away from schooling. Enhancing education options and opportunities for children is an area that requires attention (Table 3.1).

One of the prerequisites to translate the demographic transition into a benefit is education. Education coverage should be improved at all levels and be more inclusive. Improvement in the quality of education is also essential. As discussed in Chapter 2, while Ethiopia has registered significant achievements in improving access to education, the general level of education remains low and quality and inequality are big issues.

Similarly, while significant improvements have been made in terms of health and family planning outcomes, more work is still needed. There are also large gaps between urban and rural areas and across regions, which need special attention. For example, the fertility rate in rural areas is significantly higher than in urban areas (5.2 versus 2.3). Contraceptive use is very low and fertility very high in some regions, including Afar and Somalia.⁴⁷

FIGURE 3.2

Population projections, age groups, 2008-2037



Source: CSA 2013.

TABLE 3.1

Labour force participation (activity) rate for those age 10 years and above in 2013: by sex, location and age group

	Total	Age groups				Location	
		10-14	15-24	25-64	>=65	Urban	Rural
Country total	79.8	64.3	77.9	89.8	53.5	66.5	83.3
Male	85	67.2	81	96.8	68.6	73.3	87.8
Female	74.6	61.2	74.9	83.2	34.8	60.5	78.6

Source: CSA 2014.

3.2 Overall employment and wage trends

While the Ethiopian economy has been growing at a remarkable rate for the last several years. It is important to assess how the growth has been translated into more jobs that are of better quality and inclusive.

Realizing demographic transition benefits—the demographic dividend

Developing countries are experiencing a decrease in fertility and mortality and this demographic transition will change the population structure (it is already happening in some countries) and create a boom generation. As the boom generation reaches working age, the relative size of the active labour force will increase, while the proportion of children and elderly will decrease. This will create significant opportunities to achieve economic growth and transformation—the demographic dividend. The demographic dividend works through various channels; the major ones are the following:

1. **Labour supply:** The demographic transition leads to an increase in the labour supply in two ways. First, as the boom generation reaches working age, the active labour force will increase. Second, as fertility falls and family size decreases, the time needed for child bearing and rearing will decrease and as a result more women will join the labour force. As long as the labour market is able to absorb more people, these effects will lead to an increase in national production and average production/income will increase.
2. **Savings:** The propensity to save tends to be smaller (or negative) at young and old ages while those of middle age usually save more. Thus, as the boom generation reaches middle age, savings will increase. Furthermore, improved health makes saving easier by decreasing health expenses while longer life increases the benefit of

saving (for retirement). As private savings increase, there will be more investment and economic growth.

3. **Human capital:** The demographic transition leads to changes in the way people think and live. Attitudes towards education and the role of women change. As life expectancy increases, parents will have more reason to invest in their children's education. A decrease in fertility also means that parents will have more resources to invest in the education of each child. Furthermore, healthier children learn better than less healthy ones. As a result, the labour force becomes more productive.

However, the demographic dividend does not come automatically and depends on the policies countries take. To facilitate the demographic transition and realize the benefits, a coordinated policy approach is needed. As mortality starts falling, implementation of effective family planning policy becomes imperative. This will not only quicken the demographic transition but also has a multiplier effect by providing women with more time to work and improving their health. Improving access to and the quality of education is essential. Implementing a practical, relevant and dynamic curriculum is needed to prepare those who have not yet reached working age for the labour market. A well-working and flexible labour market is needed to allocate labour efficiently and encourage private investment in human capital. There should be macroeconomic policies that encourage private sector development and people also need to have adequate and rewarding saving mechanisms.

Source: Bloom, Canning and Sevilla 2002.

3.2.1 Non-wage employment dominates urban and rural work

One aspect of employment that is closely related to the quality of jobs an economy is producing is the relative share of wage jobs versus non-wage jobs. Wage jobs tend to be more secure and better paid and wage workers are also believed to be more productive and contribute more to economic growth. Table 3.2 presents the trends in paid and unpaid employment by sex for the whole country.

The economy is dominated by non-wage employment; the two most important non-wage sources of employment are self-employment and unpaid family work. The percentage of employed people without waged jobs in 1999 was 92 percent, falling only marginally in 2013, to 90 per cent. In 1999, the private sector was the most important sources of wage employment (4.3 percent) followed by the government (2.9

percent). In 2013, the two contributed roughly the same. The share of wage employment is in general higher for males relative to females (12 percent versus 8 percent in 2013).

When it comes to urban areas (Table 3.3), the share of wage and non-wage employment are more or less similar though the latter's share is slightly higher. In 2006, 54 percent of the employed people had non-wage jobs while the rest 46 percent were in wage employment. The relative share of wage employment increased modestly in 2016 to 49 percent. The share of government employment increased, particularly for women. Proportionally more males have wage jobs than females though the difference is not large (51% versus 47% in 2016).

With wage employment dominant and the share of those who work in the informal sector still high despite recent progress, industry can potentially contribute greatly to the

The demographic dividend does not come automatically and depends on the policies countries take. One of the prerequisites to translate the demographic transition into a benefit is education.

TABLE 3.2

Country level employment by wage and non-wage category, (%), by sex: 1999, 2005, 2013

		Wage employment					Non-wage employment				
		Government	NGO	Private	Other-wage	Total wage	Self-employment	Unpaid family work	Employer	Other non-wage	Total non-wage
Total	1999	2.9	0	4.3	0.9	8.1	43.5	47.0	0.8	0.4	91.7
	2005	3.2	0.5	2.9	1.4	8	40.9	50.3	0.6	0.3	92.1
	2013	4.4	0.2	4.2	1.2	10	40.1	48.7	0.4	0.7	89.9
Female	1999	2.1	0	3.4	0.9	6.4	29.2	63.6	0.3	0.4	93.5
	2005	2.4	0.3	1.6	1.8	6.1	24.8	68.5	0.2	0.2	93.7
	2013	3.4	0.2	2.9	1.4	7.9	26.9	64.4	0.1	0.7	92.1
Male	1999	3.5	0	5.1	0.9	9.5	54.5	34.3	1.2	0.5	90.5
	2005	3.8	0.5	4	0.9	9.2	54.8	34.6	0.9	0.4	90.7
	2013	5.3	0.3	5.3	1.1	12	51.4	35.3	0.7	0.8	88.2

Source: CSA 2014.

TABLE 3.3

Employment by wage and non-wage category in urban areas, (%), by sex, 2006 and 2016

		Wage employment					Non-wage employment					
		Government	NGO	Private	Domestic	Other-wage	Total wage	Self-employment	Unpaid family work	Employer	Other non-wage	Total non-wage
Total	2006	18.8	1.9	18.2	6.5	0.9	46.3	41.8	10.0	0.7	1.1	53.6
	2016	22.0	1.2	20.2	4.3	1.4	49.1	41.4	7.4	0.6	1.5	50.9
Female	2006	14.5	1.4	13.8	12.4	0.5	42.7	43.4	12.7	0.4	0.8	57.3
	2016	20.4	1.0	16.4	8.2	0.7	46.7	42.0	10.1	0.4	0.8	53.3
Male	2006	22.3	2.3	21.8	1.6	1.3	49.3	40.5	7.8	1.0	1.4	50.6
	2016	23.3	1.3	23.2	1.3	2.0	51.0	41.0	5.2	0.7	2.1	49.0

Sources: CSA 2006; CSA 2016.

creation of wage and formal jobs and pave the way towards higher human development in Ethiopia.

The results show that the employment structure of the country has not significantly changed despite the rapid economic growth recorded in the recent past. The fact that non-wage employment is still dominant, even in urban areas is particularly alarming. It is also notable that the share of government

in formal paid/wage employment was large in 2006 (41 percent) and further increased in 2016 (45 percent).

The share of the private sector in wage employment remains more or less the same, at about 40 percent. While this is consistent with the huge and employment-focused government investment in the economy which has played an important role in reducing unemployment and poverty, if the economy is

to continue creating jobs for the increasing labour force, the private sector will need to start playing a dominant role. Job security does not seem to be a big problem among wage workers. Based on the 2014 Urban Employment Unemployment Survey (UEUS), 59 percent of them are permanent employees while 26 percent of them have temporary employment. Contract and casual workers constitute 9 percent and 5 percent, respectively.

3.2.2 Urban informal work has declined significantly in recent years

While generating new jobs is essential, whether jobs created are in the formal or informal sector is equally important. In countries like Ethiopia, the informal sector plays an important role in employment creation and poverty reduction. However, jobs created by the informal sector tend to be insecure, pay is low and work is less sustainable.

The share of informal employment has significantly decreased; close to 70 percent of the employed had informal jobs in 2003 but in 2016 only of the employed had informal jobs.⁴⁸ Females are more represented in the informal sector. Though a significantly smaller share of women worked in the informal sector in 2016 than in 2003, the decline is slower

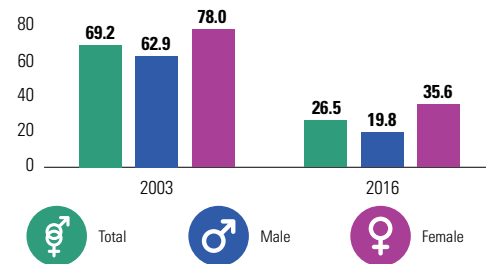
than that of males (the proportion of males and females in the informal sector respectively decreased by 67 percent and 54 percent) (Figure 3.3).

3.2.3 Youth and women disproportionately unemployed

The unemployment rate for the whole country fell from 8 percent in 1999 to 4.5 percent in 2013. Unemployment is in general higher for females and youth, though it decreased for all groups. Females' unemployment fell faster than that of males; however, the difference in unemployment between males and females remains large (Figure 3.4).

FIGURE 3.3

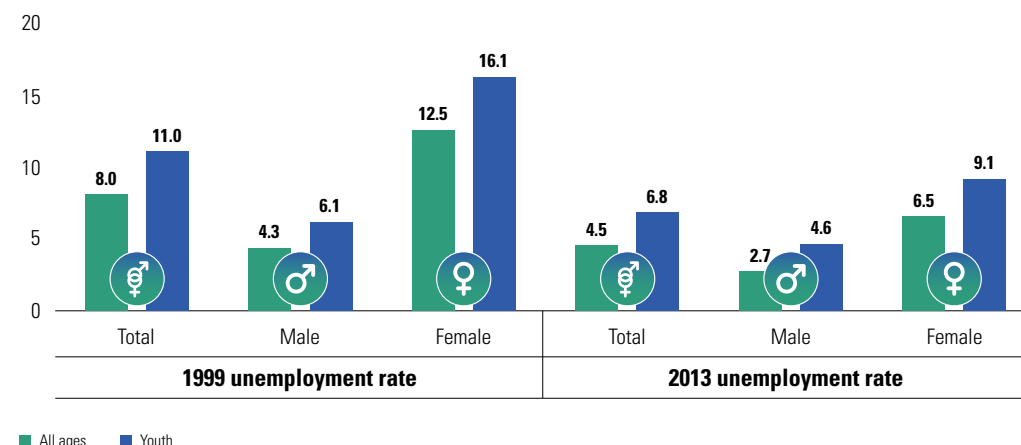
Share of informal employment in urban Ethiopia by sex: 2003 and 2016 (%)



Sources: CSA 2004; CSA 2016.

FIGURE 3.4

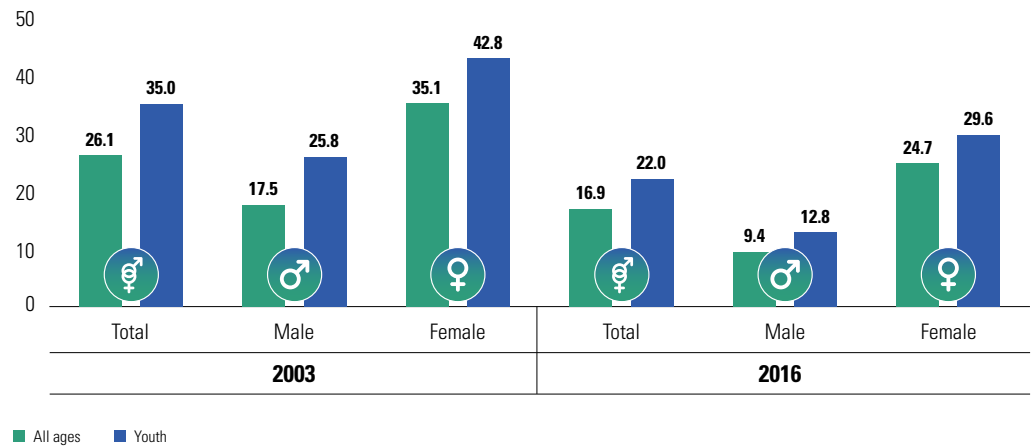
Trends in unemployment by sex and age: country total 1999 and 2013 (%)



Sources: CSA 1999; CSA 2014.

FIGURE 3.5

Trends in unemployment by sex and age: urban areas, 2003 and 2016 (%)



Sources: CSA 2003; CSA 2016.

Unemployment is in general higher in urban areas, but it also showed a significant decrease between 2003 (26 percent) and 2016 (17 percent). It is also higher among females and youth though it has decreased for all groups. But the rate at which unemployment fell is smaller for females than for males—contrary to the result for the whole country (Figure 3.5). This implies that the rural sector has been generating more jobs for females relative to the urban sector.

3.2.4 Despite economic growth, overall wages remain stagnant

Another feature of the urban labour market is that real wages have been stagnant or decreasing until recently. They started increasing after 2012, especially for temporary and casual workers (who also tend to earn low incomes).⁴⁹ While it is good that wages of low-income earners increased, the fact that real wages remain sluggish in the face of a remarkable economic growth means that wage earners are not benefiting much. This will make the transition to a labour market dominated by paid employment more difficult.

Real wages are not responsive to productivity differences and rather seem to be driven by the rigid government wages and general price levels.⁵⁰ This will be a serious

challenge for the country's goal of structural transformation; a successful structural transformation requires allocating resources, including labour, from less productive sectors (or firms) to more productive ones. A labour market that responds to productivity also encourages employees to invest in their human capital through education and training.

3.3 Role of industry in creating inclusive and decent work

Employment is a key measure of structural transformation and industrialization. A successful industrialization that can lead to improvements in human development should be accompanied by increasing employment generation. In this section we look at the evolving role of industry in employment nationally and in urban areas.

3.3.1 Jobs concentrate in agriculture and services—with growth in industry still low

Agriculture was the most dominant source of employment (80 percent) in 1999 nationally. With an employment share of 14.7 percent, services represented the second most important sector; industry's share was only 5.5

percent. While agriculture remained the dominant source of employment in 2013, its share had fallen to about 72. percent. The shares of services and industry increased to 19.9 percent and 7.4 percent, respectively (Figure 3.6).

Comparison between male and female employment shows that men are relatively overrepresented in agriculture while proportionally more females worked in services and industry in 1999. The pattern remains the same in 2013. The fact that females’ participation in industry is more than that of males may suggest that the industrialization process is and will be inclusive. However, it is also important to look into the type of work women most do relative to men. The health and social challenges associated with industrial work should also be taken into account.

Within industry, manufacturing is the dominant sub-sector. However, there has been no visible increase between 1999 and 2013 (its share out of total employment was 4.4 percent in 1999 and 4.5 percent in 2013). (However, the share is higher for females.) The increase in the share of employment in industry came primarily from the construction sub-sector. The focus given by the government to the manufacturing sector notwithstanding, the number of jobs in this sector has been growing at the same pace as the growth of the whole economy, showing

that much remains to be done to make the manufacturing sub-sector more competitive and able to contribute significantly to employment creation.

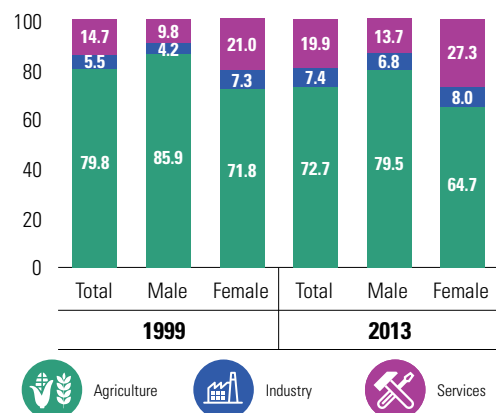
In urban areas services is the most important source of employment followed by industry (Figure 3.7). Services accounted for 69 percent of the jobs in 2003 and its share slightly increased to 71 percent in 2016. The share of industry remains the same at 22 percent. Agriculture’s share decreased from 9 percent to 7 percent. Females are under-represented in industry relative to males. Similar to the pattern for national employment, manufacturing is the most dominant sub-sector within industry though its relative share decreased between 2006 and 2016.

3.3.2 Industry wages are lower than average wages —and lowest for women

The average wage in industry is slightly lower than the total average: Br1,259 versus Br1,305 (Figure 3.8). While females in general earn less on average than males, the wage gap is higher in industry than in the economy as a whole. Females earn 69 percent of what males earn in the whole economy and 63 percent in industry. Within industry, manufacturing pays the least, with an average

FIGURE 3.6

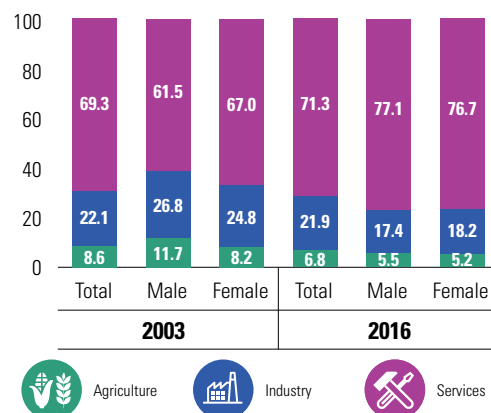
Share of employment by sector: country total, 1999 and 2013 (%)



Source: Calculated based on CSA 1999 and CSA 2014.

FIGURE 3.7

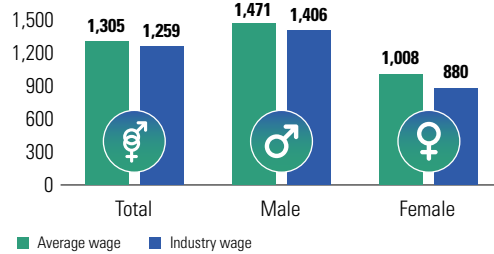
Share of employment by sector: urban total (2003 and 2016) (%)



Source: Calculated based on CSA 2003 and CSA 2016.

FIGURE 3.8

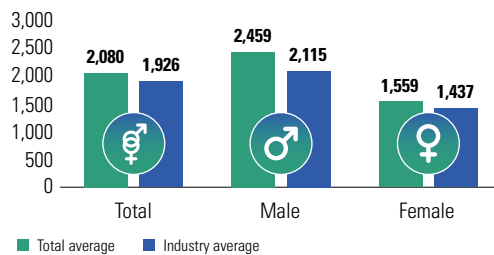
Average monthly wage by sex in Birr: country total (2013)



Source: Calculated based on CSA 2014.

FIGURE 3.9

Average monthly wage by sex: urban areas (2016) (Birr)



Source: Calculated based on CSA 2016.

monthly wage of Br1,098. While females earn less on average than males (Br1,098 vs. Br1,238), the gap is slightly smaller than the industry average; females on average earn 67 percent of what males earn in manufacturing.

The result for urban areas is roughly similar (Figure 3.9). The average wage for industry is lower than the average for the whole urban economy. The pattern within industry is similar to the national one. Women in general earn less than men. Women are on average less educated and experienced than men and that could be one reason why they earn less. But other factors may also be in play. A recent study on manufacturing firms in Ethiopia found that even after accounting for education and experience, men earn 23 percent more on average. Due to lack of information, cultural barriers and the like, women tend to work in low paying and labour-intensive sectors and value chains.⁵¹

As discussed, wages in general have remained stagnant or were decreasing in real terms. The average wage is also lower in industry (and manufacturing) compared to the national average. This limits the extent to which employment generation is translated into improved living standards and poverty reduction and could partly be the reason why the decrease in poverty is not as pronounced as the growth in the economy.

3.4 More and better quality industrial jobs needed for human development

While economic growth has led to job creation, unemployment remains high—especially in urban areas and for youth and women. The share of industry in employment has hardly increased. For unemployment to decline in the face of an increasing working age population, industry in general and manufacturing in particular have to play significant roles in Ethiopia’s economic transformation.

Improving the quality of jobs must accompany this. For industry to have a meaningful impact in poverty reduction and human development, it must create jobs that offer decent pay, are secure and safe. This section reviews trends and lessons learned on the quality of industrial jobs with a focus on the manufacturing sub-sector.

3.4.1 Mixed working conditions for manufacturing sector workers

Industrial jobs can improve human development by providing formal employment. Yet they also have their own downside. These include a range of health problems and can negatively affect family relationship.

A recent study on garment enterprises shows that the average working hours and days are not too long and are not very far from the maximum set by the labour law of the country; workers normally (without overtime) work for 8.3 hours in a day and 5.9 days a week on average. The average overtime worked is 6.8 hours a week.⁵²

The study also assessed other factors that are related to the quality of work, including the working environment. The results show that while health and safety services/equipment are put in place in many of them, there is room for improvement. For example, more than one third and half of the enterprises respectively do not effectively train their workers who are exposed to dangerous materials and do not cover their workers medically. Only 13 percent of them give breast feeding breaks (Figure 3.10).

Another study by the Ministry of Industry (MoI) shows deficiencies in health and safety conditions in seven priority manufacturing sub-sectors⁵³, especially for women workers.⁵⁴ Only 60 percent of the female workers work in industries with separate changing rooms for each sex while 14 percent of them work in enterprises which do not have separate toilets. One third of the female workers reported that there are not enough toilets. More than a quarter of them reported that their work place does not have good ventilation and health and safety measures (Figure 3.11). Even when the services are available, there are challenges in usage. For example, in some enterprises, females do not have privacy when they use toilets.

The Ethiopian Development Research Institute (EDRI) has undertaken a nationally representative survey of micro, small and medium enterprises and covered information related to the quality of jobs among other things. Only about 16 percent of all enterprises give written contracts and the share of

FIGURE 3.10

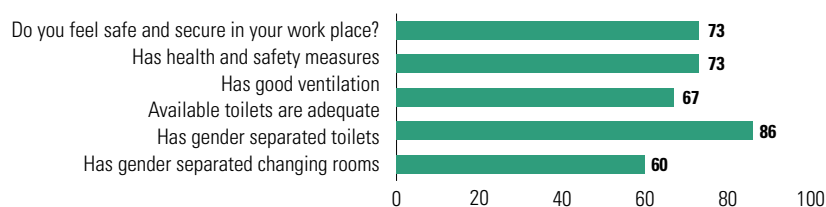
Percentage of textile and garment enterprises who have the required facilities



Source: ILO 2016.

FIGURE 3.11

Percentage of female workers who reported their work place has the required facilities



Source: MoI 2017.

permanent workers is only 14 percent. More than one third of all enterprises do not give occupational safety training while only 16 percent offer Personal Protective Clothing and Equipment (PPCE). In general, the quality of jobs improves as size increases.

BOX 3.2

Challenges faced by young female industrial workers

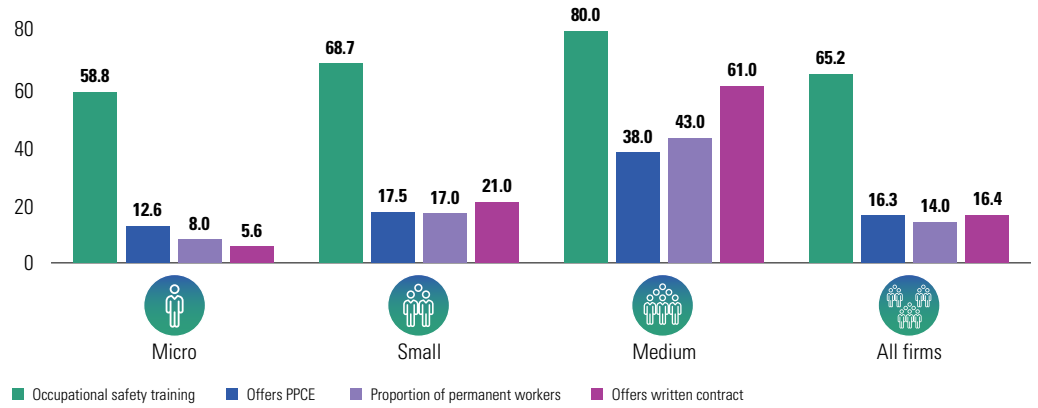
The number of women who work in the factories is increasing, especially at the low skill, low payment level. While this opens job opportunities for them and can help improve their and their families' welfare, they also face various challenges. Most of them are very young, less educated, and migrants from rural areas. They are not well informed about the possible challenges and family planning and health services available at their work place or outside. As a result they are subject to various risks, including unplanned pregnancy and HIV/AIDS. Due to the limited health and other support services,

combined with their limited awareness even when such services are available, they hardly get the support they need under such circumstances. The problem is aggravated by existing financial hardship resulting from low pay and the high cost of living, especially house rent. They tend to rent (usually in groups) houses that are not safe or cohabit with male partners in an informal relationship. The challenges the female workers face are becoming more common and are seriously affecting their health and future economic opportunities as well as industry's future sustainability.

Source: MoI 2017.

FIGURE 3.12

Micro, small and medium enterprises: quality of jobs they offer, 2016



Source: Gebrehiwot and others (2018).

For example, the percentages of firms that give written contracts are 5.6 percent, 21 percent and 61 percent for micro, small and medium size enterprises, respectively. The study also found that enterprises operated by more experienced and more educated people tend to provide more decent jobs; this suggests that improvement in the human capital of entrepreneurs leads to improvement in the quality of jobs as well as increasing productivity and competitiveness.⁵⁵

A recent randomized evaluation covering light manufacturing and agribusiness enterprises also reveals the challenges associated with the quality of jobs. They took a sample of roughly 1,000 job applicants to five enterprises and assigned them to three groups. The first group got a job offer, the second group participated in an entrepreneurial programme which included five days of business training and a grant of US\$300, while the third group got nothing (i.e., it serves as a comparison group).⁵⁶ One year after the interventions were put in place, they found that those who were given an industrial job did not earn significantly more than the control group and were subject to substantial health risks. On the other hand, the entrepreneurship programme group increased earnings by a third and did not incur any significant health problems. The study also found that turnover in industrial firms is high and that possible reasons

include better wages in the informal sector and unpleasant and risky industrial jobs. Similarly, other anecdotal evidence shows that turnover is high even in the recently opened industrial parks.⁵⁷

3.5 Role of women in manufacturing

For industry to serve as an engine of growth and transformation, it must use the available skills and talents of all—including women. Industry should also be inclusive of women if it is to bring about significant improvement in living standards and human development. Women’s participation should not be limited to low skill production work and they should also actively participate in professional and management positions.

3.5.1 Women underrepresented in top level positions

Women’s share of total urban employment in 2016 was 44 percent. The share in industry is even lower (37 percent) though their employment share in manufacturing (47.1 percent) is slightly higher than their overall share (47 percent). The share of females in high top jobs is significantly lower than their share in total urban employment.

Only 30 percent of managers are females and the ratio is even lower for management positions in production and specialized services (and manufacturing, mining, construction and distribution which is a sub-section within production and specialized services). Their shares in professional and technical and associate professional jobs are also low, particularly in areas which are related to industry. For example, only 20 percent of professional engineers are females (Figure 3.13). This shows that despite the efforts of the government in trying to bridge the gender gap in high skill jobs by expanding higher education institutions and mainstreaming gender in its education and training policies, a lot remains to be done.

3.5.2 Women segregated to low skilled production work

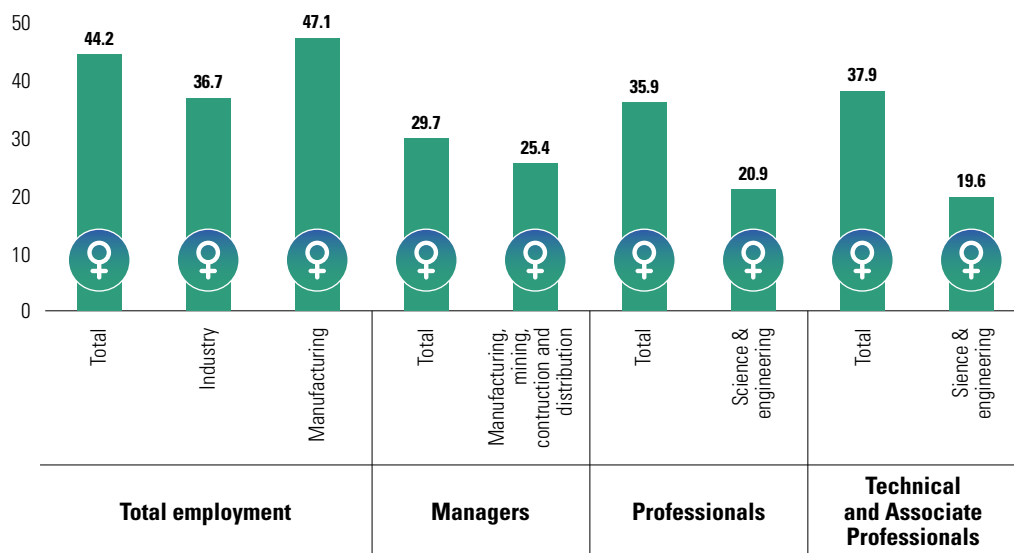
Women tend to concentrate in unskilled production work while their participation in management is very low.⁵⁸ Among women employed in the textile and garment industries 81 percent are production workers

while the proportion for males is 63 percent. More importantly, close to 60 percent of the female production workers are unskilled production workers (as opposed to 28 percent for males). The proportion of females who work as production managers or department heads is less than 4 percent, whereas that for males is about 13 percent (Figure 3.14). Women in general concentrate in low skill, low paying and labour-intensive sub-sectors like agro-processing, textiles and apparel, leather and leather products. Even with a given sub-sector, women concentrate in lower skill jobs along the value chain. For instance, in the garment industry, women constitute 60 percent and 95 percent respectively of the workers in the cutting and sewing stages of production while they account for only 15 percent of the workforce in the finishing stage.⁵⁹

There are multiple reasons why women concentrate in low skill jobs and are underrepresented in managerial positions. Historically women are less educated and trained. But there are also cultural and social factors that aggravate the problem. For example, the view that women are not good

FIGURE 3.13

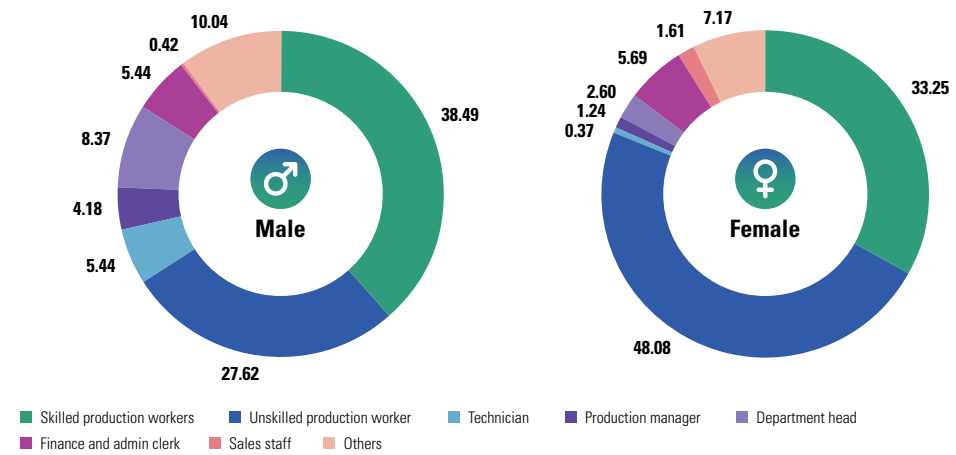
Share of females in total and the three top employment categories in 2016: urban



Source: Calculated based on CSA 2016. As classified by CSA, 'managers', 'professionals', and 'technical and associate professionals' represent the three most senior job types. In 'Manufacturing, mining, construction and distribution', 'distribution' designates workers in the services category.

FIGURE 3.14

Distribution of male and female workers in the textile and garment industries by employment type



Source: Mol 2017.

The formal education does not teach you anything about entrepreneurship. Therefore, we do undertake our activities on the basis of trial and error. Particularly, training in leadership and interpersonal skills are lacking and we need it badly.

26-year-old first degree graduate employee of an industry

Source: UNDP 2018a.

for high level positions in society in general and among those with decision-making power makes it difficult for women to assume managerial positions even when they have the required skills, experience and personal traits.

The job search process, which is very informal and highly dependent on various social networks, is also not favourable for women. Because of cultural values and additional assignments at home, women's participation in social networks is limited. The fact that there are few women in management positions to begin with also reinforces the gender gap because women's voices are not sufficiently heard at top level.⁶⁰

3.5.3 Limited entrepreneurial roles

The participation of women in ownership of manufacturing enterprises is limited, especially among medium and large-scale enterprises. Women own about 20 percent of all micro, small and medium sized manufacturing firms.⁶¹ Female-owned enterprises tend to be smaller and have lower productivity and growth. They are concentrated in textile and garment and agro-processing industries.

Women-owned enterprises face higher financial, informational and other constraints

compared with males. As a result, they tend to enter sectors where entry barriers are low—increasing the chances of being less productive and profitable.⁶² They also face cultural and social barriers, with care responsibilities for children exacerbating them. When women do manage to operate in male dominated sectors they do significantly better than when they operate in female-dominated sectors, which suggests that with the appropriate support women entrepreneurs can be competitive and productive.⁶³

3.6 Provisions for inclusive and decent jobs in Ethiopia's policies and strategies

For economic transformation in general and industrial transformation in particular to be successful and have a sustainable impact on living standards, poverty reduction and human development, a strong institutional/policy framework is required. Among other enabling factors, well-functioning labour market institutions are needed, which include labour and employment related policies, laws and systems.

The institutional framework should also account for traditionally marginalized groups

in a bid to make the transformation inclusive and have maximum impact on human development. In this section, we review the labour market related policies, laws and institutions, with a focus on youth and women. First, we will consider the place of decent and inclusive jobs in the legal system of Ethiopia. Then we will discuss relevant policies and strategies. Finally, we will give an overview of how effective the institutional framework is and what limitations exist.

3.6.1 Workers' protections in the Constitution and the labour Proclamation

Ethiopian laws provide several protections for job creation and workers' rights. The constitution of the country recognizes that the state has a responsibility for creating job opportunities for its citizens. For example, Articles 41 (6 and 7) state that "The State shall pursue policies which aim to expand job opportunities for the unemployed and the poor and shall accordingly undertake programs and public work projects" and "The State shall undertake all measures necessary to increase opportunities for citizens to find gainful employment."

The constitution additionally recognizes workers' rights to form trade unions and other associations so that they can protect their interests by collective bargaining with employers and other relevant bodies. It also has provisions that are meant to protect workers from unacceptable work conditions and arrangements; among other things, it recognizes the right of workers for reasonable work hours, paid leave, and a healthy and safe work environment.

The constitution also prohibits any form of discrimination, including based on sex. It particularly stipulates that women should be treated equally in the labour market, including in the areas of employment, pay and promotion. Women workers are also entitled to paid maternity leave. Furthermore, the constitution mandates affirmative action measures that can narrow the gap between women and men in economic and other areas.

Several additional protections are provided by the comprehensive Labour Proclamation (Proclamation 377/2003) that governs employment issues.

- **Minimum working age and maximum hours set.** The Proclamation sets the minimum working age at 14 years and those between 14 and 18 years are defined as 'young'. The maximum normal working hour is established at eight hours per day (seven for young workers) and 48 hours per week.
- **Prevention of gender-based discrimination.** The Proclamation has provisions that prevent women from any form of employment-related discrimination, including prohibiting termination of their contracts due to pregnancy and birth. It also details their rights related to pregnancy and maternity, including three months of maternity leave and paid leave for medical examination related to pregnancy. Pregnant women are also protected against assignment to jobs deemed dangerous, including night shift work.
- **Supporting job-seekers.** The Employment Services article in the Labour Proclamation outlines services to assist the unemployed to obtain jobs, employers to fill vacancies with suitable workers, and sets a framework for relevant bodies to prepare training programmes.
- **Occupation safety regulations outlined.** The Ministry of Labour and Social Affairs (MoLSA) issued the Occupational Safety and Health (OSH) Directive in 2008, setting out occupational safety and health requirements and the corresponding responsibilities of employers, workers and concerned government bodies (like the Ministry of Labour and Social Affairs, MoLSA and the Bureau of Labour and Social Affairs, BoLSA). The directive specifies employers' responsibilities for making sure the work place is safe for workers, including the provision of personal protective devices. The OSH Directive specifies special risk reduction measures for the construction and manufacturing sectors. Ethiopia has also ratified 22 ILO conventions, including the occupational safety and health convention.⁶⁴

Despite these protections, the Labour Proclamation does not establish a minimum wage standard, leaving wages to be determined by the employer or by collective agreement between the employer and workers' union. While the Constitution and the Labour Proclamation set specific legal parameters, a range of policy and strategy plans and frameworks establish areas of government commitment to address identified development challenges.

3.6.2 Policies and strategies related to inclusive and decent jobs

Employment creation is an integral part of the national policy agenda. Productive employment is rightly considered both as an input and output of development. All the development plans give due attention to employment creation with special emphasis for youth and women. Furthermore, the government has formulated various policies and strategies that particularly focus on employment and the labour market. Improving the efficiency of the labour market in allocating the available jobs is also given attention.

- **The Plan for Accelerated and Sustained Development to End Poverty (PASDEP).** The five-year National Development Plan for 2005/2006 to 2009/2010 underscored unemployment and underemployment challenges, especially for youth and women. It presented employment generation strategies including promoting private sector development focused on micro- and small enterprises (MSEs) and public work.
- **Growth and Transformation Plans (GTP I and II).** GTPs I (2010/2011 to 2014/2015) and II (2015/2016 to 2019/2020) aim to address unemployment and labour market issues. Private sector development and improving access to and quality of education remain important strategies for employment generation. As emphasized in GTP II, industry is given priority as an engine of growth. Within industry, light manufacturing is prioritized partly because the sector is believed to

generate large numbers of employment opportunities. For example, job creation is usually mentioned as one of the justifications for the government's efforts to promote manufacturing industry by establishing industrial parks.

- **National Employment Policy and Strategy (NEPS, 2009).** Ethiopia developed the NEPS to provide a guiding policy framework to address the problems of unemployment, underemployment and the working poor. It presents various strategies to address issues of labour demand, labour supply and labour market institutions, including creating decent and productive jobs through private sector development and labour-intensive government projects with emphasis on youth and women. It also details measures aimed at improving the functioning of labour market institutions.
- **National Policy on Ethiopian Women (NPEW) in 1993.** The NPEW not only recognizes the role and potential of women in development and improving welfare, but also the challenges in tapping their potential for the benefit of the country and themselves due to political, economic and cultural discriminations. The policy aims to ensure women are treated equally in the labour market; they should not be discriminated against in hiring, pay and promotion. It also stipulates government support to bridge opportunities and skills gaps with better access to education and training, career and vocational guidance.
- **National Youth Policy (NYP, 2004).** The NYP aims at building the capacity of youth by providing education and trainings. The Ministry of Youth Sports and Culture (MoYSC) was established to direct and coordinate youth related activities and programs at federal level while regional Youth Bureaus are established to lead regional programs and initiatives related to the youth.

These policies represent a set of decent work standards to protect workers and job-seekers, including in industry and manufacturing. How well implemented is this framework?

3.7 Making the institutional framework for work more effective

This chapter assessed the state of the labour market, skills development and employment within the context of industrialization in the country. Youth and women remain most disadvantaged in the job market. The gender wage gap, underpaying women and their segregation into lower-level roles across all sectors including manufacturing demonstrate priority areas for action in making industrialization work for human development in Ethiopia.

With this focus, creating inclusive employment, especially with a focus on youth and women, has been at the centre of Ethiopian policy and legislation for several years. But gaps in implementation and outcomes for youth and women remain to be filled. These must include the following issues:

- **Limited private sector job promotion.** Firstly, job creation for the unemployed is needed by promoting private sector employment generation. The government's recent efforts to boost light manufacturing by providing various incentives and facilities like the industrial parks are expected to generate jobs, particularly for youth and women.
- **Workers' rights.** While the policies and laws that aim to ensure the rights of workers are respected and the work environment is generally safe and conducive, gaps remain in their application, especially in manufacturing. The rights of women who work in manufacturing are not respected fully, as evidenced by the fact some women lose their jobs when they become pregnant. This requires more effort to enforce the law and to build capacity and awareness among manufacturing workers in general and women in particular in defending their rights. Low unionization rates, especially among women, suggest many believe they

need permission from their bosses to join unions.⁶⁵ Government programmes place inadequate emphasis on the generation of decent jobs; for example, when the government tries to encourage employment generation by small and micro enterprises, the incentives put in place fail to generate more decent jobs.

- **Close the gender wage gap.** Wage inequality between men and women remains high and women's participation in professional and management positions is also limited. This requires further work both in terms of fighting explicit and implicit discrimination and building of women's capacity.
- **Job allocation improvements.** Improvement is needed in the functioning of the labour market. Well-developed employment service and information systems are needed to allocate jobs created by the economy in an efficient manner where skill is rewarded properly and productivity is maximized. While labour-market related policies and laws recognize the importance of employment services, in reality, they are very poor. Informal methods like personal networks are common ways of hiring.
- **Matching job-seekers with firms.** Employers struggle to find workers with the required skills, while job search is expensive and time taking, especially for women and youth who tend to be less experienced and less connected. There is also a mismatch between the skills required by firms, especially manufacturing firms and the ones possessed by job applicants.⁶⁶ There is limited university-industry linkage and institutional support for school to job transition.⁶⁷

The next chapter explores the interactions, challenges and opportunities in agriculture, environmental sustainability and urbanization that need to be managed to make Ethiopia's industrialization process inclusive and sustainable for all.

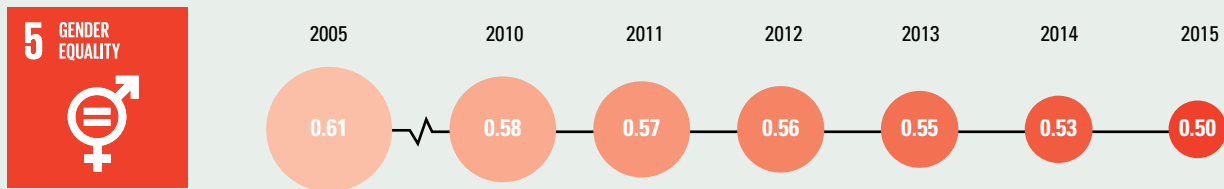
Managing the interaction of industrial transformation with agriculture, environmental change and urbanization

4

The relationship between gender equality and industrialization is generally strong and positive with industrialization providing avenues forward into greater equality. The framework and evidence available underscore that the industrialization process must be managed in order to ensure gender-responsive outcomes in human development to benefit women and girls, and society at large through the removal of barriers to equity.

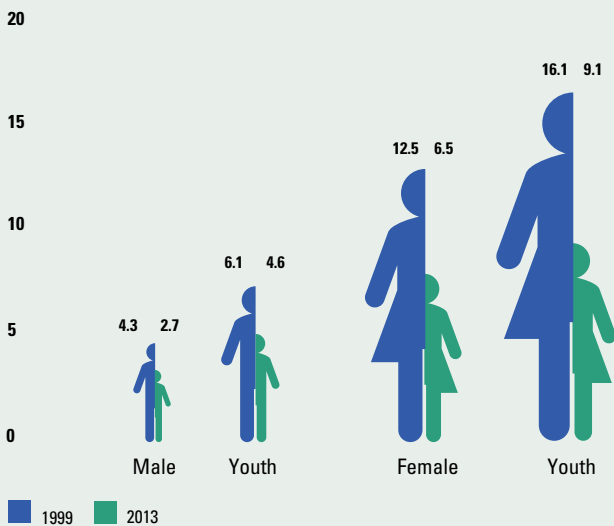
Long-term trends show a narrowing of the gender gap in key measures of development between women and men—yet progress has been slow, and there is still a distance to go to close gender gaps.

Gender Inequality Index for Ethiopia, 2005-2015



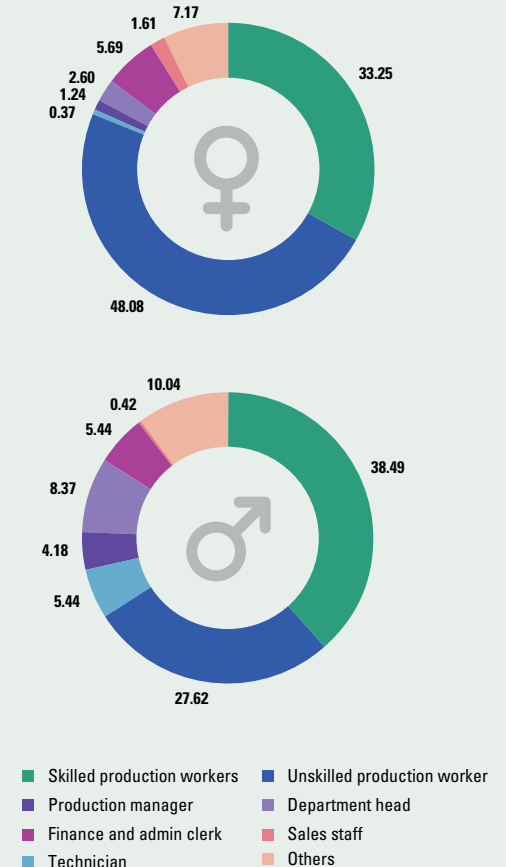
Unemployment is in general higher for females and youth, though it decreased for all groups. Females' unemployment fell faster than that of males; however, the difference in unemployment between males and females remains large.

Trends in unemployment by sex and age: country total 1999 and 2013 (%)

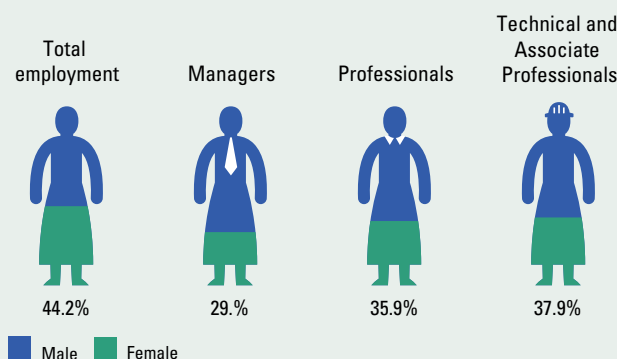


Women tend to concentrate in unskilled production work while their participation in management is very low.

Distribution of male and female workers in the textile and garment industries by employment type (%)



Share of females in total and the three top employment categories in 2016: Urban



4. Managing the interaction of industrial transformation with agriculture, environmental change and urbanization

Chapters 1-3 discussed the relationships between human development and industrialization, reviewed the status and trends of human development in Ethiopia, and focused on the existing and potential roles of jobs, and the importance of decent and inclusive work for industrial and human development. In short, these chapters interrogate the role of human development in the industrialization process, and the benefits to human development from inclusive industrial development.

Chapter 4 considers how to make the industrialization process inclusive and sustainable by managing its interaction with agriculture, the environment and urbanization. It explores the potentially negative consequences on areas of Ethiopian life that can result from an overwhelming focus on industrial development. Areas of concern include:

- Ensuring increasing work opportunities and enhancing the productivity of agriculture as industrial demand for labour rises;
- Mitigating the downside effects on environment and climate change as well as ways to maintain the commitment to a zero-carbon growth while achieving industrialization targets; and
- The potential consequences of informal and unfettered urbanization.

The chapter concludes with a framework to seeking ways to mitigate the interactions between industrial development and each of these issues.

4.1 Role of agriculture in promoting inclusive industrialization

Agriculture is the most important sector in the Ethiopian economy. It accounts for

close to 40 percent of the country's GDP and contributes over 70 percent of the national employment and over 70 percent of export earnings. The vast majority of the population lives in rural areas. Thus, significant economic growth and living standards improvement cannot be achieved unless the agriculture sector grows and its productivity increases. Meaningful poverty reduction and improvement in human development cannot be achieved if agriculture is ignored.

4.1.1 Thriving agriculture necessary for inclusive industrialization

A flourishing agriculture is good for the urban sector and can serve as a foundation for industrial transformation. When agriculture grows and income of farm households increases, demand for urban services and industrial products will rise. Agriculture also provides raw materials for industry and food for industrial workers.⁶⁸ Agriculture also serves as a reliable source of foreign currency until industry and manufactured exports mature.

As industry grows its demand for labour will be satisfied by the labour force that agriculture releases because of increasing productivity. More importantly, the labour released from agriculture will be more healthy, educated and productive. Increases in rural income will also complement sustainable urbanization by avoiding the emergence of mega cities with huge slums (informal areas) and promoting diffused pattern of urbanization.⁶⁹ When there is high rural-urban income inequality, people will migrate to urban areas in the hope of finding urban jobs. Even if they know that they may not find jobs quickly, they will still be willing to migrate

Landlessness, agriculture and Ethiopia's youth

While the national level land use survey shows that the average household farm size in Ethiopia is 1.22 hectares, 57 percent of the households have farm sizes less than one hectare. The majority of young people in rural Ethiopia do not have their own farmland despite their constitutional right to access land in the community in which they live. The 2012 national level land use survey shows that the youth (18–29 years of age, in this case) account for 21 percent of the rural landholders in Ethiopia.

Just 3 percent of all landholders in Ethiopia are young women despite the Ethiopian land laws providing for equal land acquisition and

use rights to male and female citizens. Whether young women practically have equal access to land depends on their ability to obtain land from their parents, who are now the main source of land access.

One survey of household heads reveals that most girls and women will not inherit land from their parents: three-fourths of household heads surveyed admit that none of their daughters will ever inherit land from them. The same survey shows that only 9 percent of rural youth plan to pursue agriculture as their livelihood, with econometric analysis finding that lack of land access is forcing youth away from an agricultural livelihood.

Sources: CSA 2012; Bezu and Holden 2014.

and wait in the informal sector until they get a better job.⁷⁰ But if agriculture grows and becomes more productive, the rural-urban income gap will be smaller and people will only migrate if they expect even higher and more stable income in urban areas—migration will be driven more by pull factors ('better' life in urban areas) than by push factors (rural poverty).

4.1.2 Rising agricultural productivity

Recognizing agriculture's role in raising living standards, reducing poverty and as a foundation for the structural transformation endeavour, the Ethiopian government has long given emphasis to the sector as reflected in its policies and strategies. A few years after the current government came to power, it formulated the Agriculture Development Led Industrialization (ADLI) policy which stipulates that agricultural development should be a priority. By improving agricultural productivity and increasing rural incomes, not only would the lives of rural people improve, but also other sectors, including industry, would benefit.

Subsequent policies also gave due emphasis to agriculture. For example, the Growth and Transformation Plans (GTPs I and II) identified agriculture as one of the most important sectors for investment. Accordingly, the government has been investing heavily in the provision of rural public services, including

education, health, infrastructure, extension services and agricultural research. Access to finance and improved land security were also given emphasis. As a result of the huge investment made by the government, there has been remarkable improvement in access to various rural services including roads. The percentage of rural people who lived more than five hours from a city fell from 67 percent to 26 percent between 1979/98 and 2010/11.⁷¹

Fertilizer use by smallholder farmers increased by 144 percent between 2004/5 and 2013/14. The increase in fertilizer use was particularly high for cereals. During the same period, the number of cereal growing farmers who use fertilizer increased from 2.1 million (46 percent) to 5.5 million (76 percent); the cereal area where fertilizer was applied increased from 2.7 million hectares (36 percent) to 5.2 million (53 percent) and the intensity of fertilizer use increased from 92 kg/hectare to 122/hectare. The area covered by pesticides increased from 13 percent to 21 percent during the same period.⁷² More and more farmers are also using improved seeds (Figure 4.1). The proportion for all cereals increased from 10 percent to 21 percent while for maize it rose from 12 percent to 28 percent.

The increases in access to and adoption of modern agricultural inputs were accompanied by significant improvement in productivity. In a decade, the productivity of cereals increased from 12.7 quintals to 21.4 quintals

per hectare (Figure 4.2). The cultivated area and labour employed in agriculture have also increased, leading to further rises in agricultural output.

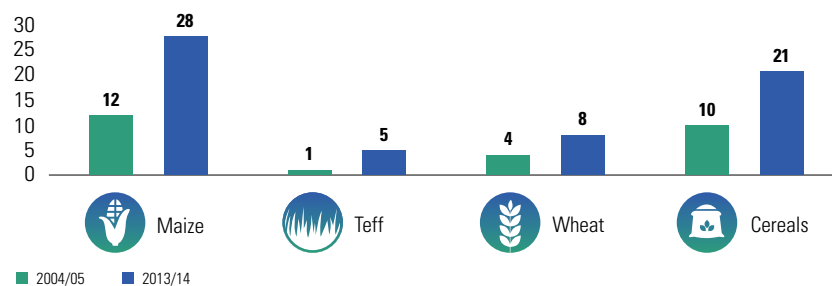
Agriculture has shown significant growth over the last fifteen years and that has contributed to rapid economic growth and poverty reduction. It has also arguably made the environment for the country's industrial transformation plan more conducive. As discussed in Chapter 1, the food and beverages sector makes the highest contribution to manufacturing value added, which underlines the importance of agriculture as a source of supply to industry. At the moment, there is little concrete evidence on the actual contribution of agriculture to industry and a study examining the agriculture-industry linkages would be of value. Understanding the role of agri-business in the transition from an agriculture dominated economy to an industry led economy is of particular importance.

4.1.3 Can agriculture grow further? The way forward

While agriculture has been growing remarkably, there are also challenges and areas where more can be done. Growth in non-crop products (like animal farming, hunting and forestry) has not been as rapid as in crops; while crop production grew by an average 8.8 percent a year between 2004/5 and 2013/14, production arising from other activities grew by 5 percent a year over the same period. Diversifying investment to non-crop areas can therefore be an additional source of growth. There have also been differences in modern input use even within crops. Fertilizer and pesticide use was high, particularly for cereals, but low for other crops. Use of improved seeds for cereals other than wheat and maize is still low and there are challenges relating to delays in delivery, quantity and quality. Irrigation and mechanization rates are also still very low.⁷³ Addressing these issues related to technology usage can also be an additional impetus for more growth. Although there has been remarkable growth in productivity of cereals,

FIGURE 4.1

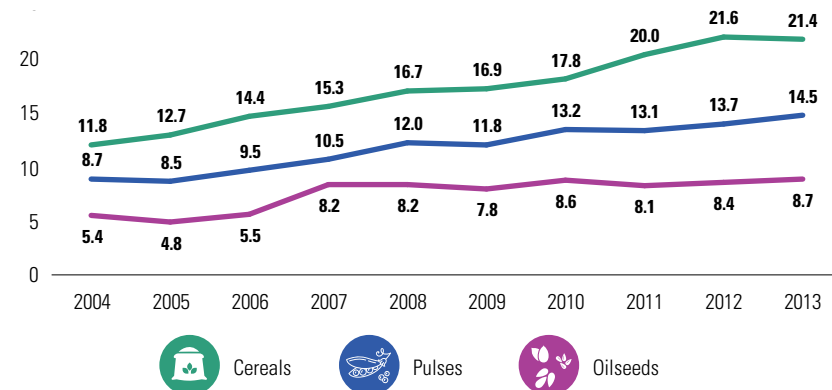
Change in the percentage of farmers using improved seeds (2004/5 and 2013/14)



Source: Bachew and others 2015.

FIGURE 4.2

Trends in crop productivity (yield in quintals per hectare): 2004/5 to 2013/2014



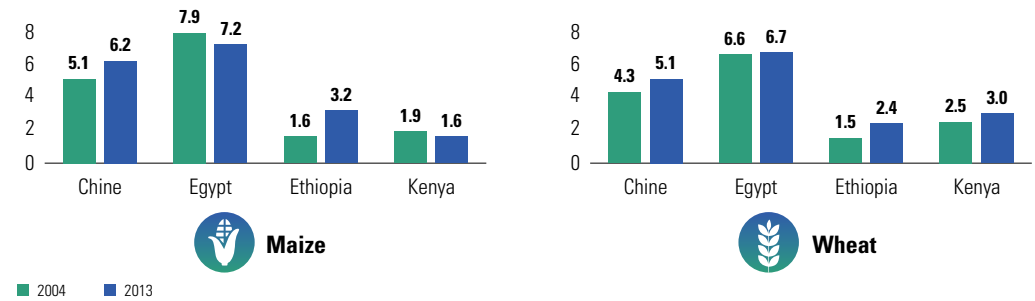
Source: Bachew and others 2015.

compared to other countries, there is still long way to go (Figure 4.3).

Apart from the investment in extension services, investment on rural services like infrastructure and education has also played important role in raising productivity. Roads increase access to market centres and agricultural inputs. Similarly, more educated people are more likely to adopt modern technologies like fertilizer and improved seeds. There is still room for improvement in these areas and government should continue investing in them. Enough emphasis should also be given to climate change; not only can it reduce agricultural growth but also lead to food insecurity and famine. It is therefore essential to incorporate and mainstream climate change mitigation and adaptation into rural development and agricultural policies.

FIGURE 4.3

Maize and wheat yield (tons/ha): comparison with different countries



Source: Bachew and others 2015.

More access to irrigation can be particularly important in minimizing the problem associated with unpredictable rainfall due to climate change.⁷⁴ Furthermore, gender issues should be emphasized. While there have been agricultural programmes that try to mainstream gender and there is some evidence that female headed households are also able to take advantage of better access to modern technologies, because of the initial huge gap in wealth, networks and the like, it will be a long time before the gap between male and female farmers narrows (if not vanishes).⁷⁵ Thus, on top of continuing to make all agricultural programmes and policies gender conscious, special programmes targeted on women farmers may also be needed.

4.2 Making inclusive green growth possible through industrialization

From a global perspective, Ethiopia's overall and per capita greenhouse gas emissions (GHG) are very low. CO₂ emissions decreased from 0.64 kg per dollar of GDP in 2000 to 0.32 in 2010. At 87 percent of emissions, agriculture dominates, with power, transport, and industry and buildings contributing roughly 3 percent each.

Ethiopia's Climate Resilient Green Economy (CRGE) Strategy is an ambitious one. If industrialization is not regulated and managed properly, a direct consequence of

BOX 4.2

Availability of versus entitlement to food

The human development and capabilities approach provides a powerful framework with which to understand food security, as evidenced by Amartya Sen's classic work on famines.

With this approach, it is important to distinguish between a decline of food *availability* and that of *direct entitlement* to food. The former is about how much food is available in an economy, while the latter is related to the amount of food each household is entitled to consume directly. In a rural setting, drought would reduce both availability and the direct entitlement to food of the farmers. But insofar as a farm household typically lives on its own production of food and has no ability to buy food from the market anyway, the immediate reason for its starvation would be lack of a direct entitlement and not a decline

in food availability in the market. For example, if household's own crop fails while those of others do not, the supply in the market may be large while it starves.

Similarly, if its crop harvest is large while that of others fail, it may still do well despite the decrease in overall supply. While the two phenomena may happen simultaneously like in a general drought, it is still important to make a distinction between the two. Though drought is normally taken as a crisis of food availability, it is worth noting that usually something more than food availability is involved during droughts. From a policy perspective, it should be recognized that just moving food into a drought affected region will not help the people and that the affected households need to be given an entitlement to food, for example, through food aid.

Source: Sen 1981, p. 165.

the expansion of industrial production can be air, water and toxic pollution and other environmental impacts.

To address these challenges, Ethiopia aims to build a green industry sector by leap-frogging to modern technologies and prioritizing the development of eco-industrial parks with clean energy, waste treatment and energy-efficient technologies. Shifting the trajectory while the industrial sector is still young is an opportunity to avoid the environmental, economic and human costs of business as usual (BAU) paths adopted by the patterns of industrialization in countries elsewhere.

4.2.1 Environmental costs of industrialization

Even at the current low level of industrialization, Ethiopia's industrial sector causes water, soil, and air pollution. Without effective and coordinated environmental management, this is projected to grow. A key challenge is that Ethiopia's existing industries use old technologies and lack facilities for on-site waste treatment. Roughly 90 percent of existing industries dump their wastes in nearby water bodies.⁷⁶ In particular, tanneries, textiles and coffee processing plants cause significant soil and water pollution as their liquid wastes pollute aquatic ecosystems and harm water users.⁷⁷

The fact that these industries are priority sectors for Ethiopia's industrial development suggests the scale of the green growth challenge. GTP II indicators show a general lack of safe removal of dangerous chemicals and limited to no cleaning of polluted areas. Yet sparseness of data prevent a full accounting of these challenges—and of what can be done to strengthen green industrialization.

Expanding industrial production in a conventional way will result in substantial environmental impacts, including GHG emissions and other pollutants. Industrial GHG emissions in Ethiopia are projected to grow by 16 per cent per year under a BAU scenario and reach 71 Mt CO₂e in 2030, compared to 4 Mt CO₂e in 2010.⁷⁸ This is the largest GHG emissions growth rate of all economic

TABLE 4.1

Environmental costs of business as usual industrialization in Ethiopia

Sectors	Contribution to GDP (%)	Major environmental challenges	Cost of degradation
Industry and Manufacturing	<ul style="list-style-type: none"> • 13% and 4% in 2012 • 27% and 17% by 2025 	Water, soil, air pollution	<p>Industrial GHG emissions growth projections: under business as usual: 16% per year to reach 71 Mt CO₂e in 2030.</p> <p>Emissions from water pollutants: from existing industries have increased from 18,543 kg to 32,182 kg per day</p>

Source: Adapted from World Bank 2017.

sectors. For subsectoral shares, the baseline measurement of emissions carried out by the Ministry of Industry (MoI) (2015) showed that the cement, chemical, textile and leather, food and beverage, and metal industries emit substantial GHG. Cement production is the largest contributor to Ethiopia's industrial CO₂e emissions (50 percent), followed by mining (32 percent, mainly due to gold mining and processing, coal, extraction of potash and others) and leather and textiles (17 percent).⁷⁹

4.2.2 Sustainable energy and making rural landscapes more resilient

To achieve the transformative change Ethiopia envisions it will need to make rural landscapes not only four times as productive, but also more resilient to climate and other shocks. The transition of labour from rural to urban areas which is already under way will also need to accelerate; and labour needs to be channeled into the development of a green industrial sector along with modern service sectors. Urbanization will also demand a transformation to greater sustainability through the creation of environmentally and socially sustainable living conditions and transportation systems. Underlying these transformations is the need for sustainable energy access to ensure the welfare of rural people now dependent on fuelwood, the

provision of reliable green energy for the industrial sector and the fuels for the rapidly growing transport sector.

Managing land, water, agriculture and forest resources more effectively is critical to achieving the country's green and resilient economy objectives. GTP II recognizes the need for integrated approaches in the rural landscape to balance competing uses of land and water, aiming to create sustainability and resilience.

4.2.3 Environment and industrialization interactions: way forward

A set of challenges must be overcome to construct a green industrialization process in Ethiopia. A range of responses include:

- **Comprehensive, coordinated and inter-sectoral green industrialization strategy.** Institutional challenges for green industrialization include the need for a comprehensive green industrialization strategy, clarified vertical and horizontal coordination, reduced bottlenecks in the private sector business enabling environment, and structural difficulties in greening micro and small enterprises.
- **Stronger enforcement of existing environmental policies.** The enforcement of existing environmental policies is also not well-coordinated among responsible ministries and regional and local bodies. Addressing the limited capacity of the enforcing bodies and corruption are expected to be useful.
- **More and better incentives and access to finance for the private sector.** The lack of incentives to pursue improved environmental performance and adopt new and clean technologies is a challenge for greening Ethiopia's industrialization trajectory. For example, firms may need preferential support to build waste treatment facilities and import clean technologies. Lack of access to finance also affects firms' decisions to adopt new technologies. Use of market-based signals is a way to reward firms for improved environmental performance and reduced emissions.

- **Raise private sector awareness of benefits.** The information challenge for greening industrialization includes lack of awareness and knowledge in Ethiopia's private sector about the benefits of green industry. Another challenge is the lack of commonly agreed guidelines (minimum requirements and consolidated frameworks) for development of new or upgraded eco-industrial parks. The lack of data on the scale, practices and environmental impacts of micro and small enterprises is another informational challenge.
- **More private sector investments in infrastructure, power and transportation.** Increasing private investments in industrial projects depends on improving the adequacy and reliability of infrastructure. Despite recent improvements, the supply of power and connectivity of transportation are insufficient to attract or promote industrial investments and enhance productivity. Another investment challenge is lack of capability of micro and small enterprises to invest in environment-friendly initiatives.

4.3 Challenging informal urbanization

Ethiopia's current population is estimated to be about 95 million⁸⁰, at least 80 percent of whom live in rural areas. With an annual population growth rate of 2.3 percent (2017), Ethiopia's population is expected to reach 150 million by 2035.⁸¹ The population will continue to exert serious pressure on the environment, basic services provision, infrastructure facilities and agriculture. Rapid population growth, declining land holding size, soil erosion, deforestation, poor technical know-how and rainfall-dependent agriculture are some of the root causes of poverty and destitution in Ethiopia.

4.3.1 Existing urbanization trends in Ethiopia

Though currently the urbanization rate is very low, Ethiopia is destined to become

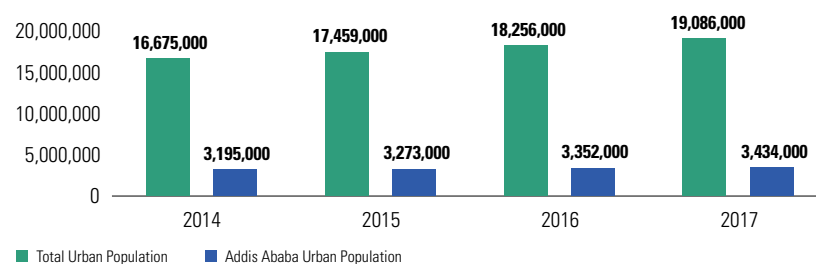
more urbanized due to ever increasing migration from rural areas, which results from both pull and push factors. The economic growth literature argues that as an economy grows, the location and structure of labour transits from primarily rural, agriculture-focused activities to more urbanized activities in industry and service sectors. This structural transformation improves the livelihood of those who earn higher wages in employment that offers better wages, but it also increases land to labour ratios of those who remain in agriculture, providing capital to spur innovation and agricultural productivity growth in rural areas.

Currently, only about one-fifth of the population is living in urban areas. Moreover, a significant proportion of the urban population is found only in one city, in Addis Ababa. Migration and sectoral labour transitions have occurred, but they have been limited. From 2005 to 2013, the share of the workforce in agriculture fell from 80.2 percent to 77.3 percent.⁸² About 1 in 10 rural workers migrates in Ethiopia, in contrast to 1 in 5 rural workers in China, which shows that physical transition, which is the precondition for labour to move between sectors is rather limited in Ethiopia.

The urbanization rate is expected to reach 27-30 percent (30-35 million people) by 2025 and 37-40 percent (49-54 million people) by 2035. Most of the growth in

FIGURE 4.4

Urbanization growth, national level and Addis Ababa



Source: UNDP 2018b.

urban areas is expected to be in secondary cities, which are currently relatively small. For example, the next biggest city after Addis Ababa, which has about 4 million people, is Mekelle with about 300,000 people. Even though they are relatively smaller in size, Ethiopia does have a significant number of secondary cities that are spatially distributed across the country. The government expects that the rapid growth of secondary cities will continue, especially as it pursues a policy of balanced regional growth by promoting industrial development outside the Addis Ababa region. At the same time, Addis Ababa is still expected to continue to play an important role in national growth, as the main city that can currently provide economies of scale and agglomeration economies.

BOX 4.3

Urbanization in historical context in Ethiopia

In Ethiopia, urban centres developed primarily as administrative centres in contrast to urban centres in current developed countries which mainly developed as centres of industrial activities. The economic base of urban centres in Ethiopia as a result is very weak. The meagre economic activities in urban areas mainly relate to trade and services in contrast to major urban centres say in Europe where their economic base has often historically been manufacturing. A key primary challenge in Ethiopia is, therefore, how to breathe economic life into the existing urban centres.

As government administration gradually modernized, structures of administrations were formed, around which the urban centres grew. The

size and dominance of these centres reflected their administrative significance as centres of district, zonal, and regional administrations.

Semi-urban centres also proliferated along major highways as service points for the traffic passing along each highway. Such services primarily constituted vehicle service (tyre repair, maintenance, refueling, etc.), meal service, goods trade and accommodation. Over time, garages, restaurants, hotels, shops and markets will develop. The choice of administrative seats has presumably been guided by vibrancy of such centres and their attractiveness for tax collection, which consequently turned these into major urban centres.

Source: UNDP 2018b.

4.3.2 Economic and social challenges of urbanization

A series of challenges come hand-in-hand with increased urbanization:

- **Job creation given limited private sector growth.** Job creation is a growing challenge—particularly creating private sector jobs—given the rapid shift in the age structure of Ethiopian population and the slow pace of industrial development. Ethiopia’s demographic transition has been expedited by a decline in fertility rates which fell from seven children per woman in 1995 to 4.6 in 2016. There has not been commensurate impetus to propel industrial development, at least until recently. While this demographic transition offered the potential for reaping huge benefits in terms of enhanced growth, it has mainly ended up presenting the daunting challenge of finding employment for new entrants into the labour market.
- **Unemployment rises.** Unemployment in Ethiopia is higher than the average expected by comparison with other African economies, and is mainly an urban phenomenon, particularly in Addis Ababa. The unemployment rate is 17 percent in urban Ethiopia and 24 percent in Addis Ababa. In rural areas, fewer than 5 percent of all households have an unemployed adult. However, in urban areas, 15 percent of all households report an adult member—male or female—as unemployed. Unemployment increases in large cities as the size of formal labour market supply increases. In particular, there are high unemployment rates in Addis Ababa; 23.5 percent of households there report an unemployed adult, versus 11 percent of households in other urban areas
- **Growing informal sector.** The informal sector, which provides most employment in Sub-Saharan Africa, provides a smaller share of employment in Ethiopia (37 percent) than in SSA (60 percent). Manufacturing employment only accounts for 3 percent of total employment. Most jobs are in firms that are small, or in self-employment but these firms tend to stay small.

- **Poverty takes on an urban face.** As Ethiopia urbanizes, poverty becomes more urban. Poverty in urban areas is strongly correlated with labour market outcomes: in Addis Ababa 48 percent of households with an unemployed male live in poverty (compared with a 29 percent city-wide poverty rate). Creating job opportunities in urban areas will be essential if Ethiopia is to exploit its demographic dividend.
- **Demand for urban land.** The rapid growth of the urban population will entail an unprecedented growth in demand for urban land and housing. A significant transformation of the urban landscape has been observed in secondary cities as well as in Addis Ababa. However, much of the transformation has been informal and can be categorized as low-density, spatially fragmented, and spread out. Informal settlements, mostly with very limited access to basic services and poor living conditions, are growing, including on the periphery of Addis Ababa. Urban development and growth strategy is focused on compulsory expropriation and re-allocation of peri-urban land. This approach has resulted in a wave of dispossessions and the intensification of land-related conflicts, with large numbers of peri-urban land holders losing their use right.

While jobs are being created, there are not enough jobs available for those with primary and secondary education. Labour market analysis indicate the high cost of job search is a factor in the high urban unemployment rate. Addressing major obstacles in the labour market would enable Ethiopia to accelerate structural transformation, ensure inclusive growth and lead to further poverty reduction.

Well-functioning and efficient urban labour markets are a key ingredient for this transformation to take place and to ensure that its benefits reach all segments of the population. As unemployment in Ethiopia is by and large an urban phenomenon, increasing the efficiency of urban labour markets is not only key for structural transformation but also for overall economic development. Current social protection arrangements in urban areas are inadequate in addressing the needs of the youth and children.

Urban areas as sites for voice and accountability

Ethiopia has undertaken an extensive decentralization which has devolved fiscal, administrative and political power and at the same time has increased level of public engagement in decision-making at regional and district levels. So, the increased role of sub-national governments has led to more public participation.

In relation to building citizen awareness, more than 90 percent of all *woredas* and city administrations across the country are now posting information on their local budgets in public places. For the promotion of citizen voice, service standards and citizen charters have been developed and there is a national commitment to hold pre-budget and end of year monitoring public meetings which so far being is implemented in more than 35 percent of *woredas* and city administrations. To contribute to state responsiveness, the Government has established the federal Ethiopian Institute of Ombudsman (EIO), and all regions also have their own grievance redress offices to hear citizen complaints.

Through the Ethiopia Social Accountability Programme (ESAP), citizens' representatives and service providers have been given the with skills to apply social accountability tools in about 25 percent of *woredas*, a process that has led to interface meetings and agreement on joint basic service delivery action plans in all the 223 participating *woredas*—the latter are being implemented with significant benefits for the quantity and quality of basic services.

It is also important the Government strengthens citizen participation and representation in design and implementation of policies, strategies and programmes. Key incentives for the Government to engage with citizens include:

- An understanding that proactive, positive and constructive engagement with citizens can avert more confrontational forms of engagement;
- A strong Government commitment to deliver services for its citizens coupled with constrained frontline monitoring capacity—meaning that citizen participation in identifying needs and giving feedback can play a key role in enabling the Government to deliver its objectives;
- An interest in increasing community financial and in-kind contributions (because of limited Government resources as well as a belief in the intrinsic value of such community involvement).

Constraining factors that need to be addressed include: i) limited human capacities to engage citizens—both in terms of the numbers of staff and the specific soft skills required; ii) inadequate space for citizens to provide feedback on how agreed policies/strategies are being delivered at local level; and iii) absence of a systematic approach to guide feedback to the citizens in a timely and constructive way that builds lasting trust among the citizenry.

Source: World Bank 2015c.

4.3.3 Urbanization without proper industrial development

Available evidence suggests that urban and industrial development in Africa are disconnected, resulting in lost opportunities for job creation and improved well-being.⁸³ The United Nations Economic Commission for Africa reports most countries in Africa are urbanizing rapidly amid declining or stagnant industrial output and low agricultural productivity. The informal sector—often services—where jobs remain concentrated remains dominant in the urban areas.

The poverty rate in urban Ethiopia is almost as high as the rural poverty rate. Those who are unable to work—the elderly and disabled—live in similar or poorer conditions than their counterparts in rural areas. They are less likely to access a loan or gift from relatives when needed, reflecting weaker social structures, and they receive no public safety net transfers,

which are exclusively focused on rural areas. As urban areas grow, the need to strengthen urban safety nets will become an increasing priority to address poverty and vulnerability.

Economic activity is growing faster in cities surrounding the capital region, but less rapidly in Addis Ababa. By using nightlights as a rough measure of economic activity, a World Bank assessment depicts changes in GDP per capita between 1994 and 2012 for more than 20 Ethiopian cities. Despite its primacy, Addis Ababa has experienced relatively low growth in economic activity compared with other cities in the country. Given the caveats associated with using nightlights data as a proxy for GDP, these findings should be treated with great caution, and need to be supplemented with data on employment and other measures of activity. There is evidence of a decline in GDP per capita in the capital between 2007 and 2012. Yet cities close to Addis Ababa, including Sebeta, Bishoftu

Services leapfrog industry in urban centres

In classical understanding, structural transformation occurs as workers move out of agriculture into manufacturing. In Ethiopia, economic activity (output and jobs) has shifted from agriculture and into construction and services, largely by-passing the critical phase of industrialization. The growth acceleration period in Ethiopia is so far marked by the rise of the services sector and expansion of infrastructure. Services have overtaken

agriculture to become the largest economic sector, the biggest contributor to economic growth, and the second biggest employer. Within services, commerce, 'other services' and the public sector were the most important contributors to output and jobs. So, economic vibrancy in urban centres in Ethiopia is marked by rise of the service sector and expansion of infrastructure.

(Debre Zeyit), and Mojo, have experienced very large increases in economic growth. In contrast, economic activity in other cities in the north of the country seems to be declining, even between 1994–2012.

4.3.4 Urbanization and industrialization interactions: way forward

A number of key areas need to be addressed in order for industrialization to benefit sustainable urban development.

- **Major investment in infrastructure and services is required.** The rapid growth of people and jobs in urban areas means large new needs for infrastructure in cities.
 - **Prioritize roads.** Road density is below the African average, although higher in urban areas than country as a whole. Water provision is especially challenging—low rates of per capita consumption. And population growth plus increasing per capita consumption will require significant increases in water supply. Deliberate efforts are needed to link urban and industrial development in the context of national development planning.
 - **Urban land consumption is increasing fast.** Cities are growing faster than population growth, driving up the costs of infrastructure and service delivery. But many Ethiopian cities have vacant or underused land in prime locations. Hence, these areas need to be developed by putting them up for auction in private market. Proceeds from the sale of such plots should be used to subsidize the basic needs of low income groups, especially those living in slum areas. More fundamental reforms seem to be needed at
- the national level with regard to fast processing of land for investment and putting more available land on the market, thereby reducing price pressure on urban land.
- **Improve licensing, permitting and tax systems.** Expand the supply of serviced land and infrastructure. Reform the institutional structure of urban local government (ULG) to expand their autonomy through: powers to determine their own structures and attract the necessary human resources; and to set tariffs and recover service delivery costs to finance municipal services as mandated.
 - **Build capacity through strengthening systems and enhancing human resources** in areas such as: planning, project execution and financial management and procurement. ULGs have been allocated very limited own sources of revenues, but these revenues are supposed to finance most urban development expenditure.
 - **Increase investment in urban development** through expanded fiscal transfers and expand coverage of secondary cities. Invest in key strategic infrastructure and services for Addis as well as other key urban centres. Reform and strengthen the property tax system, ensuring that it is well sequenced and does not lead to perverse incentives. Incentivize improved local revenue collection by allowing local governments to keep state revenues generated in excess of targets. Improve accounts, budget accounting and reporting processes, including municipal revenue collection reporting. Enable (i) recovering the true cost of services through user fees and (ii) automatic inflation adjustments for municipal fees and charge.

Urban infrastructure investment

The Government has invested heavily in transport infrastructure including a light railway in Addis, a ring-road, regional highways, as well as power, and communications. These investments have brought employment opportunities such as in construction and services. The infrastructure expansion in turn has led to growth in manufacturing, albeit limited. This includes smart shoe manufacturing, leather products (handbags, wallets, etc). Urbanization is central, therefore, to Ethiopia's aspirations towards industrialization and balanced regional economic growth.

Public investment as a share of GDP (%)

	2009	2010	2011	2012	2013
Ethiopia	11.8	14.9	19.6	26.5	20.2
SSA	7.1	7.0	6.8	7.6	7.5

Source: UNDP 2018b.

Investment in infrastructure has been a growth engine for the Ethiopian economy: in 2011 the country's public investment was the third highest in the world as a share of GDP (18.6 percent), exceeded only by Turkmenistan (38.6 percent) and Equatorial Guinea (24.3 percent) (World Bank: 2015a). In 2013 this figure was 20.2 percent. The construction sector as a share of GDP jumped from 4 percent in 2009/10 to 8.5 percent in 2014/15 (GTP II).

The rapid growth of people and jobs in urban areas means large new needs for infrastructure in cities:

- Roads, water, electricity, solid waste management, etc. needed for tripling the urban population 2007-28 from 11.8m to 35.8m (plus coverage of existing backlogs).
- Huge need for housing for new residents and existing backlogs. There is a serious shortage of housing in urban areas, both for the under-housed as well as for the rapidly growing urban population that will increase the need for housing.
- Data indicate that the cheapest formal housing options are only affordable for the middle and upper income groups. Rental (*kebele* and private) is the most affordable option for poorer households.
- Road density is below the African average, although higher in urban areas than the country as a whole. Water provision is especially challenging; there are low rates of per capita consumption. And population growth plus increasing per capita consumption would require a significant increase in water supply. At 70-80 percent, one of the highest percentages of people in SSA are living in slums that lack durability, adequate space, access to safe water and sanitation, or security of tenure. Such needs will accelerate private investment, manufacturing and industrialization.

Nationally, to accommodate new residents, roughly 200,000 new housing units are needed per annum (addressing the backlog requires much more). Increased demand for automobiles, housing, food (supermarkets, restaurants), accommodation (guest houses, hotels, etc.) and infrastructure will all require rising services, manufacturing (value addition), and infrastructure investment which in turn expedite the industrialization process in Ethiopia.

4.4 Towards an integrated approach

This chapter assesses the status and trends in agriculture, the environment and urbanization to establish interlinkages with the unfolding industrialization process in Ethiopia. Strengthening agricultural productivity will be necessary to allow for labour to shift to the industrial and manufacturing sectors and to address the long-standing food insecurity problem.

The positive and negative potential interactions between these factors and

the industrialization process in Ethiopia can pave a way forward for inclusive and sustainable human development. What is critical is that an integrated approach looking across sectors is explored, coordinating functions, mandates, research and ideas. Avoiding silos in policymaking, budget allocations and accountability is crucial to address and minimize the risks that of under-productive agriculture, environmental and climate change, and unfettered urbanization pose to industrial development—and to maximize the potential for opportunities.

How to make industry
thrive for the human
development of all

5

While employment is the most direct channel through which industrialization can affect human development, it is not automatic unless industrialization is capable of creating sufficient new jobs which are decent and inclusive.

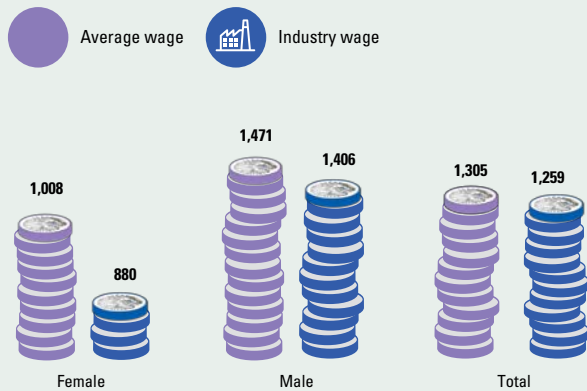
Share of employment by sector: country total, 1999 and 2013 (%)



Share of employment by sector: urban total (2003 and 2016) (%)



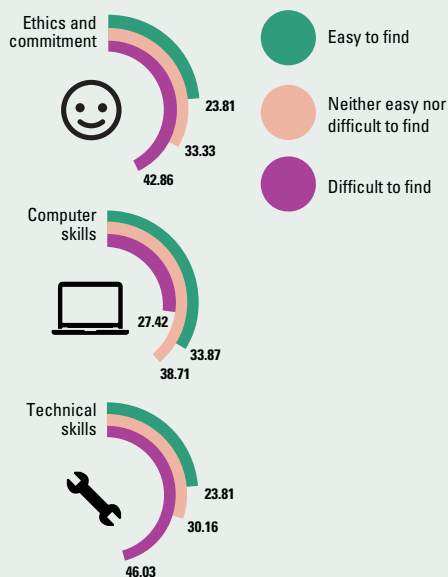
Average monthly wage by sex in Birr: country total (2013)



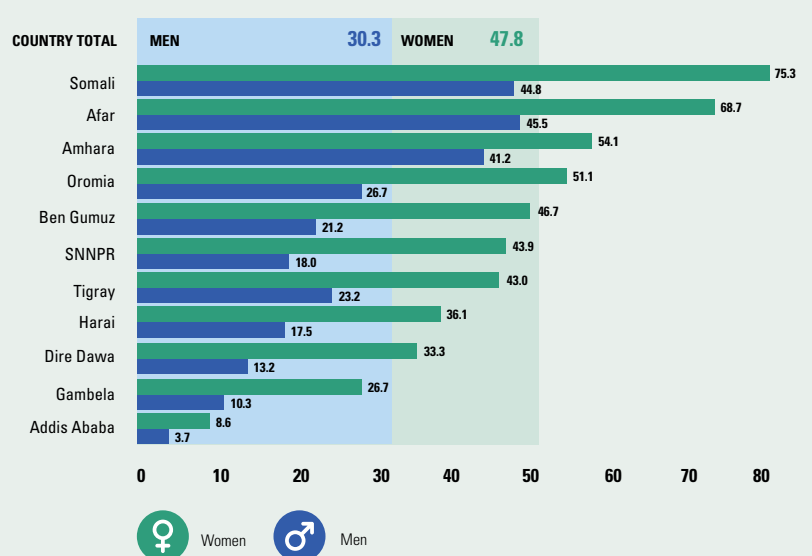
Average monthly wage by sex: urban areas (2016) (Birr)



Degree of difficulty in finding workers with specific skill attributes



Illiteracy rate for those aged 15 to 49 by region in 2016 (%)



5. How to make industry thrive for the human development of all

As this report shows, Ethiopia has recorded remarkable economic growth in the last several years. The growth was accompanied by significant reductions in unemployment and poverty. But there is still high unemployment, particularly among the youth and women.

Chapter 1 establishes the conceptual framework to interrogate the interrelationships between human development and industrialization. It argues:

- Industrialization is a powerful force for economic transformation and, in turn, for accelerating human development in Ethiopia.
- However, there are human development costs to the industrialization process, as well as winners and losers in this process.
- Industrialization has been focused in specific regions and sectors in Ethiopia.
- Industrial Parks offer a positive potential way forward—but managing winners and losers is necessary.

Based on new estimations of human development patterns and trends, Chapter 2 goes on to show that human development continues to improve in Ethiopia. But there are laggard areas:

- The quality of learning is low, illiteracy impacts many, and skills do not match labour demand.
- Barriers to gender equality persist.
- Income inequality is slowly rising.

While an educated and healthy workforce are preconditions for inclusive industrialization that advances human development, the relationships are not automatic. This makes it important to monitor the quality of the industrialization process.

Chapter 3 probes the question of jobs in industrializing Ethiopia. Poverty is experienced differently by different groups (youth, men vs women, segregation of women into vulnerable employment). It argues that Ethiopia needs to turn the demographic dividend into a plus for industrialization.

Moreover, women need to be supported to advance into higher level manufacturing and higher productivity roles.

Through Chapter 4, we review how agricultural productivity has been growing, and the transition from an agriculture-based economy to an industrial-economy needs to be managed, including minimizing the environmental and urbanization costs of industrialization.

In what follows we present a set of policy recommendations to ensure industry, especially manufacturing, grows faster and is both competitive and be an instrument for inclusive and sustainable human development. Six areas of policy action are needed:

- Decent jobs and skills development for youth
- Remove barriers to women's equitable roles and benefits from industrialization
- Leverage innovation in industrial parks and new technologies
- Encourage industrial value chains in a range of locations
- Integrated approaches across agriculture, environment and urban planning
- Strengthen infrastructure, financial access and institutional arrangements for competitive industrial growth.

5.1 Promote decent jobs and skills development for youth

There are also some challenges associated with the quality of jobs the economy has been able to create. We have seen that while industry's share in GDP and employment has been improving, the change is slow. Given the ongoing focus and investment on manufacturing industry, it is likely that the role of industry will increase fast. But there are also some serious challenges that need to be addressed if Ethiopia is going to be successful in its industrial transformation plan.

Challenges related to inclusiveness and job quality are reflected in the whole economy in general and in industry in particular (some of them are more serious in industry). Thus, given that the role of industry is likely to increase in the economy, including in employment creation, it is important to take the lessons so far seriously and prepare for the future.

5.1.1 Promoting decent jobs

If the growth is to bring about significant and sustainable improvement in human development, it has to continue creating more jobs. But the jobs should also be that pay reasonably well, are more secure, are safe and have minimal health impact. Industry can be helpful in creating new jobs, but it also faces challenges creating decent jobs. While industry jobs tend to be more secure and stable, they are also more associated with health risks and social challenges. While there are laws requiring industries to put in place occupational safety and health (OSH) measures at the work place, there is a gap in the enforcement of the laws and regulations.

As industry grows, this challenge is going to increase and will be important to address at an early stage. Improving law enforcement is important. It is also useful to empower workers' unions and associations so that they have a better understanding of their rights and are able to protect them. Working with industrial (sector) associations is also useful. Government should also incorporate the quality of jobs in its policy/strategy about job creation; it can then design incentives that are geared towards creating more decent jobs.

5.1.2 Skills development and training

Skill and education are important both to make the industrialization process more successful and ensure that the workers, especially women and youth, benefit more from industrial jobs. While there has been significant

success in improving access to education due to huge investment in the sector, the level of education is in general low and there are serious quality issues. The gender gap is still large and widening for the age group beyond 18 years.

While expanding access to education, especially at lower levels, is important, investment in the quality of education is also needed. Revision of the secondary education curriculum is needed, so that it serves to support an industrial society; currently its main purpose is satisfying the requirement of entry to higher education. The curriculum is very theoretical and difficult, aggravated by other problems such as low preparedness of teachers and lack of school facilities.

The quality of higher education, including TVET schools, fails to meet expectations. Improving industry-higher institution linkage should be given emphasis. Employers complain that finding skilled workers is challenging and many of their workers lack both hard and soft skills; however, many of them do not provide training to their workers. This may be because of the prevailing high turnover.

Even when workers stay with employers after training, private firms are likely to underinvest in training because the benefits go beyond the firm. When workers get training, they tend to be more productive and that improves the average productivity of the economy and hence competitiveness. Thus, understanding that firms will underinvest in training, it may be important for the Government to step in and take initiatives and strategies to improve access to training. On the job training should also be encouraged. Strengthening the capacity of sectoral institutes like the Textile Industry Development Institute (TIDI) would be useful. Attention should also be given to the alarmingly high illiteracy rate. Literacy is strongly associated with strong human capability. Low skilled industrial jobs also require some level of education to take instruction and get trained. Thus, it is important to make informal education and basic skills training available for those who are no longer in school.

5.1.3 Extend access to employment services

For a successful and inclusive industrialization, it is important to have a well-functioning labour market with effective information systems and employment services. This helps the economy to allocate the available jobs in an efficient manner where skill is rewarded appropriately. In other words, labour will be directed to more productive sectors and firms. This will not only improve productivity and boost employment directly, it will also have an indirect benefit: it will encourage employers to create more jobs and workers to invest in their human capital through training and education.

While there are laws and policies that stipulate that Government has to provide employment services, public employment services are not effective and private ones are not well developed. As a result, the Ethiopian labour market is subject to high information asymmetry where employers lack information about potential workers including their skills and locations and job searchers face shortages of information about the available jobs and their requirements. Job search is particularly expensive in Addis Ababa where vacancy boards, which are common ways of looking for jobs, are located at the centre of the city, while most of the job seekers live far from the city centre.

Women and the young face these challenges more because they have lower experience, network and income. It is important to have well equipped employment centres which are accessible to youth. In these centres, job seekers can get access to jobs advertised in the internet and facilities like printing or photocopying their resumes and credentials. These employment services can also give quick advice on how to prepare a job application and resumé.

5.1.4 Focus the urban safety net programme on low-income wage earners

Wages are low and sluggish in general and especially so in industry. In light of the rising

living costs, this implies that the living standards of many of the waged employed may be deteriorating, despite the fast economic growth; the recent rising trends in inequality, particularly in urban areas also point in that direction. This will challenge efforts to improve human development further and can also be a challenge to the endeavor for economic transformation through labour intensive industrialization. A successful industrialization requires a motivated workforce with an acceptable standard of living. But it also worth noting that raising wages, for example, by setting a minimum wage, may not be feasible currently, as it will make the industries less competitive internationally given the current low productivity level. Thus, addressing this issue requires a number of policy measures including raising productivity through training and education, and making the labour market more competitive and responsive to productivity and skill differences (we will address these two issues next). Given the huge role of Government in wage employment, making civil service hiring procedures and wages more flexible and geared towards productivity and performance can be helpful in improving labour market performance. As these interventions take time to show impact, in the short-term, public transfers may be necessary for low income wage earners.

While the urban safety net programme which started being implemented recently is expected to play an important role in reducing urban poverty and keeping inequality from rising further, it should also include low income wage earners.

5.2 Remove barriers to women's equitable roles and their benefits from industrialization

For industry to thrive and lead to meaningful improvements in human development, it must be inclusive of women—allowing the opportunity for women to play important roles in the industrialization process and to benefit from it. Industry has the potential to improve inclusiveness by providing women access to

jobs. It can also have other indirect benefits like delaying marriage and child bearing.

Achieving an economic transformation in general and industrial transformation in particular that not only takes advantage of the potential contribution of women but also benefits women fairly requires putting in place complementary services and addressing constraints. There have been significant improvements in the participation of women in the economy and respect for women's rights. However, challenges remain. These include:

- **Large gender-based gaps in education and health.** Programmes targeting women should be strengthened and expanded through non-formal education, trainings, and raising awareness on reproductive health. The affirmative action policy being implemented currently has to be strengthened; for example, while admitting girls to higher education with lower entrance exam results is important, there should also be continuous support once they join higher education, including tutorial and mentoring.
- **Limited enforcement of gender-related laws and regulations.** Enforcement of existing laws should be improved in general and those related to women in particular. More effective monitoring and regulation may be needed. Improving the capacity and transparency of the judiciary system in general may also be helpful.
- **Strengthen women's associations and unions** so that they struggle for their rights better. Improving the awareness of women about their rights, including forming associations and unions to struggle for their rights is also useful.
- **Provide special support to address the social/family related challenges** that prevent women from increasingly benefiting from industrial jobs and entrepreneurship. Making daily care more accessible and affordable is critical to this.
- **Working to improve the overall awareness of society** in general about the importance of respecting women's rights and giving them equal opportunities. In this regard, working with civil society associations and non-governmental organizations with an interest in gender issues could be useful.

A review of the state of legislation to ensure gender equality and women's and girls' empowerment reveals areas of priority.

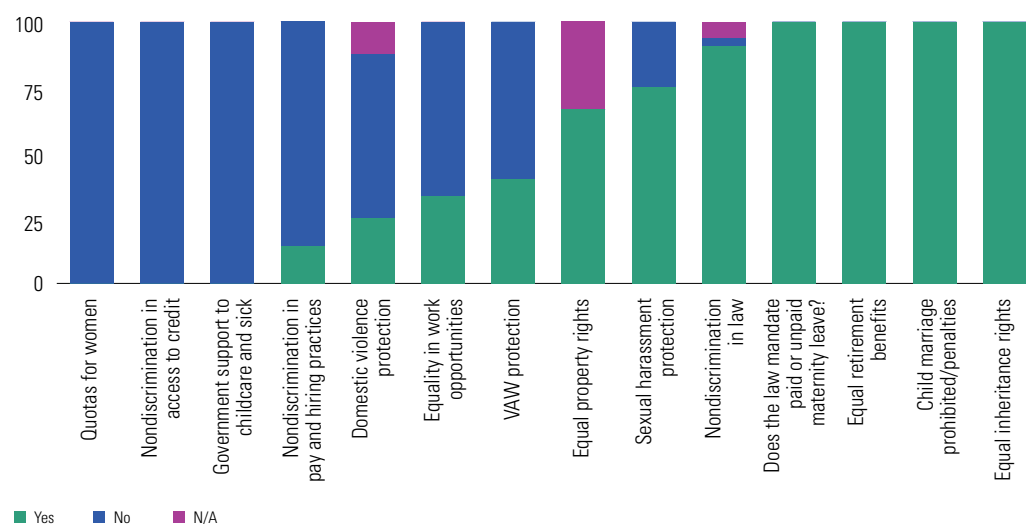
- **Quotas for women.** As of 2015, no quotas exist for women's representation and equal participation in the following areas of business and government:
 - For women on corporate boards.
 - For women representatives in parliament.
 - For women representatives in local government.
 - For women representatives on candidate lists in national elections.
 - For women representatives on candidate lists in local elections.
- **Nondiscrimination in access to credit.** The law in Ethiopia does not currently prohibit discrimination by creditors on the basis of gender in access to credit, nor does the law prohibit discrimination by creditors on the basis of marital status in access to credit. Extension of laws to ensure nondiscrimination in access to credit on the basis of one's gender can significantly improve women's opportunities to benefit from industrialization and entrepreneurship.
- **Government support and protection for childcare.** Of the following four legislative areas that represent government and business support to childcare and the care of sick relatives, none are available in Ethiopia:
 - Does the Government provide a child allowance to parents?
 - Must employers provide leave to care for sick relatives?
 - Is childcare subsidized or publicly provided?
 - Is primary education free and compulsory?

5.3 Leverage innovation in industrial parks and new technologies

Innovation for development is about identifying more effective solutions that add value for the people affected by development challenges. Given the nature of the

FIGURE 5.1

Share of relevant laws in areas that protect or advance gender equality and women's empowerment, 2015 (%)



Source: Calculated based on World Bank 2018b. N/A denotes information not available. The data are as a percentage of all indicators for which data are available in the respective sector.

BOX 5.1

Indirect benefits of garment jobs in Bangladesh

A study in Bangladesh shows that girls that have better access to industrial jobs because a garment factory was established close to their community are less likely to be married and give birth at an early age. The prospect of getting employed

in the factories that require some general skills like numeracy and literacy also leads to higher investment in girls education; the enrolment rate of girls, especially the young ones (5-9 year olds) increased.

Source: Heath and Mobarak 2015.

industrialization and human development challenges facing Ethiopia, new approaches to explore solutions can make the difference between an industrialization process that excludes youth and women and one that is inclusive and sustainable. These new approaches can include establishing innovation labs to re-design public service delivery, drawing on data innovation to implement and monitor the national commitments as well as international ones like the Sustainable Development Goals (SDGs) and exploring emerging and alternative sources of financing to deepen and diversify the resourcing and implementation of the national plans.

Nine key principles can facilitate innovation:

- Design with the User
- Understand the Existing Ecosystem
- Design for Scale
- Build for Sustainability
- Be Data Driven
- Use Open Standards, Open Data, Open Source, and Open Innovation
- Reuse and Improve
- Do no Harm
- Be Collaborative

Two innovations can be explored within this framework to respond to the underlying challenges of mitigating the costs of

industrialization for human development—and to maximize the benefits for all.

- Industrial parks as sites for experimentation and learning.
- Information and communication technologies to connect job-seekers, learners and industrial forms.

One area, however, that will require long-term planning but for which short-term concern should be taken into account is the coming impact of disruptive technologies on industrial jobs in Ethiopia.

5.3.1 Industrial parks for experimentation

Industrial parks are key policy instruments in enhancing economic transformation by attracting investment, promoting technological learning, upgrading and innovation and generating stable and decent employment. Industrial Parks also have a great potential to address environmental issues from the outset,

branding them as ‘Eco–Industrial Parks’ to reap the substantial benefits.

Ethiopia can use Industrial parks as ‘laboratories’ to pilot key reforms prior to being made into national policies. Examples include ‘articulation of foreigners in logistic services, innovation in the financial sector to address shortage of foreign currency, labour laws and so on. To realize these, options on how to ‘target policy incentive’ and ‘clear and unambiguous legal framework at federal, regional and park levels’ are needed.

5.3.2 Incentivizing information and communication technology to connect job-seekers and industries

Testing new smartphone and web-based applications can serve as another innovative way to overcome the key challenge of learning, matching skills and expanding opportunities for decent work.

BOX 5.2

Will the robots steal Ethiopia’s industrial jobs?

New technologies have long been feared as the end of jobs for workers. The evidence, however, suggests these fears are justified but exaggerated. The greater concern is *which* jobs belong to *whom* will be lost due to automation. Adjustment to this loss is challenging as new jobs will require significantly higher levels of human capital. In the absence of adequate policies, some workers are likely to be pushed into lower-wage jobs or temporary spells of unemployment.

Inequality and exclusion are larger concerns. In some sectors robots are indeed replacing workers. But technology absorption rates in many parts of the world are slow. In many sectors, robots enhance worker productivity. Technology also creates new opportunities for work. But technology changes the relative demand for skills, placing greater emphasis on those that cannot be replaced by robots and that help workers be more adaptable. Retooling workers for the future world of work is expensive. As a result, the concern is not mass employment, but potentially rising inequality.

For economies like Ethiopia – lower-income and agriculture-based – foreseeable risks are few. Lower-income countries with agriculture-based economies are less exposed than middle-income countries with large manufacturing bases. Where automation will pose greater challenges is in middle-income countries, as there is a large gap separating high-income countries from those in middle- and lower-income

brackets. Shortcomings in basic skills education, among other weaknesses, will constrain economies that draw on artificial intelligence and robotics to mimic fast growers.

Education policy requires forward-looking reforms. Few countries have begun to address the impact of automation through educational policy. Intelligent automation is expected to boost the importance of education related to science, technology, engineering and mathematics (STEM) and of ‘soft skills’, which allow workers to be employed based on their uniquely human capabilities that robots cannot mimic.

Lifelong learning for all will be necessary. Several governments are pursuing how to incentivize workers to voluntarily reskill. Singapore, for example, is experimenting with funding ‘individual learning accounts’, which adults use to support training courses throughout their lives. As well as helping to achieve SDG 4 on quality lifelong learning for all, ways to ensure learners adapt to disruptive technologies in their sectors can be central to a forward-looking, long-term industrial policy.

What is certain to be required is integrated dialogue across government, private sector and education institutions. As of 2018, even rich, industrialized countries lack engagement between policymakers, industry, educational specialists and other stakeholders. Ethiopia could stay a step ahead of this future by adopting strategies to address these challenges before they strike.

Sources: The Economist Intelligence Unit 2018; World Bank, 2019, forthcoming.

As Ethiopia digitizes, spurring innovation in smartphone applications to access information on industrial jobs, nonformal skills development and lifelong learning opportunities can fill-in a significant information gap.

functionality of cities should be addressed with the intention of enabling industrial productivity, which in turn will support urban sustainability through job creation and revenues to finance investments.

5.4 Encourage industrial value chains in a range of industrial clusters

Industrial value chains exist in a geographic context, so the functionality of cities and the connections between them should be planned to support specific targeted industrial sectors. Ultimately, it is important to redress the tendency of urban primacy in African countries and enable more balanced national urban systems, optimizing the complementary roles of different cities, both large and small.⁸⁴

Industrialization is often not considered in national urban and spatial planning policies and strategies—or where it is reflected, it is not well developed and articulated. Yet, industrial targets should be a foundation and a guiding force for urban planning and spatial policies. The barriers undermining the

5.5 Strengthen infrastructure, financial access and institutional arrangements for competitive industrial growth

Government infrastructure spending is scheduled to be boosted by 20 percent in this budget year (2018/19) to expand infrastructure in one of Africa's fastest-growing economies. Spending will increase to Br223.4 billion (US\$11 billion), with more than half of the Br 84.3 billion set aside for capital expenditure to be spent on roads and higher education. The state will also provide Br12 billion to regional states to support business development and Br3 billion for manufacturing parks. While road infrastructure has grown, only 13.7 percent of roads are paved in Ethiopia.

BOX 5.3

Industrial clusters as a source of innovation and competitiveness

Industrial firms producing similar products tend to be concentrated in a particular location; i.e., they form clusters. Some locations have natural advantages that lead to industrial clusters; for example, firms producing for export tend to concentrate in cities close to the port. But clustering has also its own advantages independent of the natural advantage of the location. The major ones are: 1. Availability of specialized and competitive input supplies: because of economies of scale, clusters make the input supply market very competitive with cheaper prices and more timely delivery. 2. Availability of infrastructure and public services: clusters also make the provision of infrastructure like roads and other public services easier and cheaper. 3. Availability of a specialized labour force; a pool of workers is usually formed around industrial clusters, making it easier to hire new workers and improving the match between workers and jobs. Training costs also decrease as specialized training institutions flourish around industrial clusters; 4. Knowledge spillover: industrial clusters promote innovation due to knowledge spillover. Because of the proximity of firms to each other,

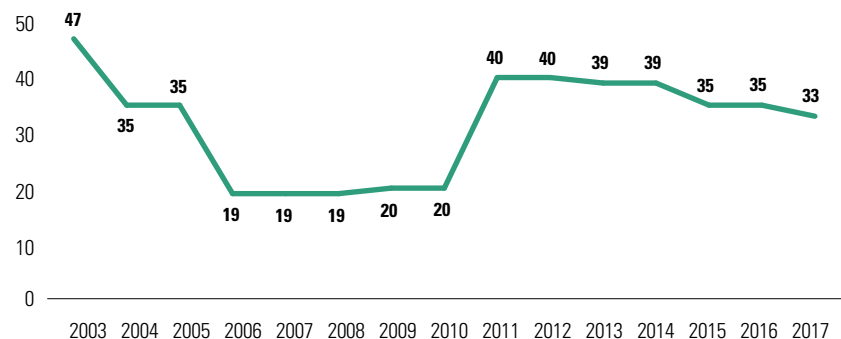
sharing of knowledge and ideas among workers and entrepreneurs becomes easier.

Very often, industrial clusters form organically; a firm establishes itself in a particular location and others follow suit. But clusters can also be the outcome of government policy. Governments try to induce the formation of clusters by developing special industrial zones or parks with easy access to various services. This has been particularly successful in China and other Asian countries. Some African countries have also started developing industrial zones/parks. While industrial zones/parks have the potential to improve productivity and competitiveness, it is essential that they are implemented with care. It is, for example, important to understand that not all firms benefit from clustering equally. It is also important to address all major constraints that may limit the benefit of clustering; while government makes infrastructure and other required services available by developing industrial zones/parks, there could still be other important constraints. For example, if the geographic mobility of workers is restricted, the benefit of industrial clusters will be limited.

Sources: Fijita and Thisse 2002; Söderbom 2015.

FIGURE 5.2

Time required to start a business (days), 2003-2017



Source: World Bank 2018a.

While public infrastructure investment helps firms to become more productive, a number of studies rank credit as the more binding constraint for firms. Expanding access to credit can boost industrial activity.

Simplifying procedures to register manufacturing and other firms will also help spur more and better competition in the sector. The time it takes to start a business in Ethiopia is in slow decline, but has experienced an erratic trend since 2003, dropping from 35 days in 2005 to 19 days in 2006, then rising to 40 days in 2011. A predictable process for business registration is essential.

5.6 Develop integrated approaches across agriculture, the environment and urban planning

Currently the synergy between simultaneous urban and rural growth is not well recognized and maximized. The Government

through its overarching development strategy—Agriculture Development Led Industrialization—has openly been advocating the development of the rural sector as a first step and then the urban sector as a second. But this has led to serious debate and more recently the Government has begun to emphasize simultaneous urban and industrial development.

The cornerstones of an integrated approach should be based on:

- Accelerating agricultural productivity to encourage labour movement into industry to satisfy the expected rise in labour demand in the latter.
- Raising awareness among industrial sector firms of the need to mitigate environmental pollution and greenhouse gas emissions as they continue to grow.
- A focus on sustainable land use in the cities.

* * *

Industrialization must be undertaken with the objective of advancing a robust and full sense of human development. This includes ensuring inclusive and sustainable progress in education, health and incomes for all. This report aims to show that this is not a linear or straightforward relationship. Indeed, there are costs and risks to be mitigated.

But the potential benefits are immense and can serve to raise the quality of choices and opportunities every Ethiopian can make. Providing higher wage jobs for youth, improving the quality of education to match industrial skills demand, strengthening agriculture, the environment and cities rather than degrading them, and breaking down barriers to gender equality stand among the rewards.

Notes

- 1 NPC (2015/16), National Income Accounting Statistics.
- 2 CSA, 2014.
- 3 CSA, 2016.
- 4 AfDB, OECD and UNDP, 2014.
- 5 AfDB, OECD and UNDP, 2014.
- 6 UNECA, 2017.
- 7 Xiaoyun, 2014.
- 8 CSA 2015/2016, p. 19.
- 9 de Vries and others 2016.
- 10 NPC, 2017.
- 11 The Federal Democratic Republic of Ethiopia (FDRE) Rural Land Administration and Use Proclamation (2005) provides women the right to use rural land through the issuance of holding certificates. All nine regional states have followed suit and have issued their own land use and administration laws in conformity with the federal law. By 2013, the total number of women with land holding certificates had reached 8,647,118, with about 60 percent of these rural women and 18 percent of women in the urban centres. The women with certified land included female heads of households and married women. The significance of this is that nearly 9 million Ethiopian women have land that they are able to use for economic purposes, but also with the capacity and choice to transfer, sell and use it as collateral for economic and other purposes (UN Women 2018).
- 12 NPC, 2017.
- 13 UNDP, 2016.
- 14 CSA 1999;201.
- 15 MoE, 2017.
- 16 Joshi and Verspoor, 2013.
- 17 World Bank, 2016b.
- 18 UNDP 2018a. Ethiopia.
- 19 Joshi and Verspoor, 2013.
- 20 The problem is even more serious in private higher education institutions because most of those who enter private higher education institutions do so because they do not have sufficiently good results in the UEE to go to public universities.
- 21 Kahsay, 2012.
- 22 World Bank, 2016b.
- 23 Tafere, 2017.
- 24 Abebe and others, 2018.
- 25 Abebe and others, 2018.
- 26 EDPC, 2014.
- 27 CSA, 2017.
- 28 CSA, 2017.
- 29 CSA, 2017.
- 30 CSA, 2017, p. 124.
- 31 World Development Indicators. Data for 2010 is used as latest year available for Ethiopia.
- 32 Mean years of schooling is the average number of completed years of education of a country's population aged 25 years and older, excluding years spent repeating individual grades.
- 33 All data in this section are based on the UNDP Human Development Report Office database, available from: <http://hdr.undp.org/en/data>.
- 34 The Gender Inequality Index (GII) is an index for measurement of gender disparity that was introduced in the 2010 Human Development Report. According to UNDP, this index is a composite measure which captures the loss of achievement within a country due to gender inequality. It uses three dimensions to do so: reproductive health; empowerment; and labour market participation. The new index (GII) was introduced as an experimental measure to remedy the shortcomings of the previous indicators, the Gender Development Index (GDI) and the Gender Empowerment Measure (GEM), both of which were introduced in the 1995 Human Development Report.
- 35 CSA, 2017.
- 36 CSA, 2017.
- 37 Furman and Stiglitz, 1998.
- 38 Easterly, 2007.
- 39 Ravallion, 2001; 2005.
- 40 Cramer, 2003
- 41 Glaeser et al, 2003
- 42 Cornia, 2017.
- 43 NPC, 2017.
- 44 CSA, 2013.
- 45 NBE (2015/16), Macroeconomic and social indicators
- 46 Bloom, Canning and Sevilla, 2002.
- 47 CSA, 2017.
- 48 There is some variation in the way informality is defined between the two periods and the result may partly be driven by that. In 2003, having an informal job was defined as working in a firm or organization that hires less than ten workers, does not keep accounts and not does not have a license. In 2016, a worker is defined as having an informal job if s/he works in a firm/organization that does not keep accounts, does not have a license, and the product/service of the organization s/he is engaged in is mainly for market. In both years, those who work for government (including government parastatals), NGOs and members of cooperatives are automatically defined as having formal jobs.
- 49 World Bank, 2016b.
- 50 World Bank, 2016b.
- 51 Mol, 2017.
- 52 ILO, 2016.
- 53 The sub-sectors covered are textiles and apparel, leather and leather goods, agro-processing industries, metal, engineering and automotive industries, chemical industries, pharmaceuticals industries, and ICT and electronics manufacturing industries.
- 54 Mol, 2017.
- 55 Gebrehiwot and others (2018).
- 56 Blattman and Dercon, 2016.
- 57 <http://capitalethiopia.com/2017/11/16/employee-turnover-textile-apparel-industry-parks-plagues-performance/>.
- 58 Mol, 2017.
- 59 Mol, 2017.
- 60 Mol, 2017.
- 61 Gebreeyesus and others forthcoming.
- 62 Mol, 2017.
- 63 Alibhai, 2015.
- 64 For detailed discussions on the Proclamation, the OSH Directive, and labour related international conventions that Ethiopia signed, see ILO (2016).
- 65 Mol, 2017.
- 66 Abebe and others, 2016; World Bank, 2016b.
- 67 Tafere, 2017.
- 68 Timmer and Akkus, 2008.
- 69 Mellor and Dorosh, 2010.
- 70 Harris and Todaro, 1970.
- 71 World Bank, 2016a; Bachew and others, 2015.
- 72 World Bank, 2016a.
- 73 World Bank, 2016a.
- 74 Hamza and Iyela, 2012; World Bank, 2016a.
- 75 See for example, Buehren and others, 2017.
- 76 Gebre and others (2009).
- 77 World Bank, 2016a.
- 78 World Bank, 2016a.
- 79 World Bank, 2016a.
- 80 UN (2015) puts Ethiopia's current population size at 100 million.
- 81 UN, 2015.
- 82 Martins (2014).
- 83 ECA, 2017.
- 84 ECA, 2017.

Bibliography

- Abebe, G., and others (2016).** Curse of Anonymity or Tyranny of Distance? The Impact of Job-search Support in Urban Ethiopia. National Bureau of Economic Research Working Paper 22409. Cambridge, MA. Available from: <http://www.nber.org/papers/w22409>.
- Abebe, G., B. Eguand A. Demile (2018).** Industrial Policy Network and Bureaucratic Capacity of Key Public Institutions in Ethiopia. EDRI Memo.
- African Development Bank, Organisation for Economic Cooperation and Development and UNDP (AfDB, OECD and UNDP) (2014).** African Economic Outlook: Global Value Chains and Africa's Industrialisation. Available from: <http://www.saiaa.org.za/value-chains-in-southern-africa/african-economic-outlook-global-value-chains-and-africa-s-industrialisation>.
- Alibhai, S., N. Buehren and S. Papineni (2015).** Female Entrepreneurs Who Succeed in Male-dominated Sectors in Ethiopia. World Bank Gender Innovation Lab Policy Brief Issue No. 12. Available from: <http://documents.worldbank.org/curated/en/956031468185386493/Female-entrepreneurs-who-succeed-in-male-dominated-sectors-in-Ethiopia>.
- Anand, S., and A. Sen (2000).** "The Income Component of the Human Development Index." *Journal of Human Development and Capabilities* (1)1: 83–106. Available from: <https://www.tandfonline.com/doi/abs/10.1080/14649880050008782>.
- Bachewe F.N., G. Berhane, B. Minten and A.S. Tafesse (2015).** Agricultural Growth in Ethiopia (2004 -2014): Evidence and Drivers. Ethiopian Strategy Support Program (ESSP). Working Paper No. 81. Available from: <http://www.ifpri.org/publication/agricultural-growth-ethiopia-2004-2014-evidence-and-drivers>.
- Basu, P. and K. Bhattacharai (2012).** Cognitive Skills, Openness and Growth. *Economic Record*, Vol. 88, Issue 280, pp. 18-38, 2012. Available from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=21010307.
- Beyene, B.M., and T.G. Tekleselassie (2018).** The State, Determinants and Consequences of Skills Mismatch in the Ethiopian Labour market. Working Papers No. 21. EDRI. Addis Ababa. Available from: <https://ideas.repec.org/p/etd/wpaper/021.html>.
- Bezu, S. and S. Holden (2014).** Are Rural Youth in Ethiopia Abandoning Agriculture? *World Development*, vol.64. Available from: <https://www.cmi.no/publications/file/5705-are-rural-youth-in-ethiopia-abandoning-agriculture.pdf>.
- Blattman, Christopher, and S. Dercon (2016).** Occupational Choice in Early Industrializing Societies: Experimental Evidence on the Income and Health Effects of Industrial and Entrepreneurial Work. NBER Working Paper No. 22683. Available from: <http://www.nber.org/papers/w22683>.
- Bloom, D.E., D. Canning and J Sevilla (2002).** The Demographic Dividend: A New Perspective on the Economic Consequences of Population Change. Rand. Santa Monica CA. Available from: https://www.rand.org/content/dam/rand/pubs/monograph_reports/2007/MR1274.pdf.
- Buehren, N., M. Goldstein, E. Molina and J. Vaillant (2017), Buehren N., and others (2017).** The Impact of Strengthening Agricultural Extension Services: Evidence from Ethiopia. World Bank Policy Research Working Paper No. 8169. Available from: <http://documents.worldbank.org/curated/en/874841503060841531/The-impact-of-strengthening-agricultural-extension-services-evidence-from-Ethiopia>.
- Cramer, C. (2003).** Does Inequality Cause Conflict? *Journal of International Development*, vol 15, No. 4, pp 83–106. Available from: <https://onlinelibrary.wiley.com/doi/abs/10.1002/jid.992>
- Central Statistical Agency (1999) (CSA, 1999).** National Labor Force Survey (NLSF) 1999-2000. Analytical Report.
- Central Statistical Agency (2004) (CSA, 2004).** Report on Urban Bi-annual Employment Unemployment Survey 2003. Statistical Bulletin. Available from: <https://www.google.com/url?sa=t&rlct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwj76IP5x6vcAhVKglwKHS80DpoQFggqMAA&url=http%3A%2F%2Fcatalog.ihsn.org%2Findex.php%2Fcatalog%2F1422%2Fdownload%2F41799&usq=AOvVaw1GxSXadhMPeEzTM1Cm5Skp>.
- Central Statistical Agency (2006) (CSA, 2006).** Urban Employment Unemployment Survey 2006. Study Documentation. Available from: [https://www.google.com/search?client=safari&rls=en&q=Central+Statistical+Agency+\(2006\)+\(CSA,+2006\).+Urban+Employment+Unemployment+Survey+2006.+Statistical+Report&ie=UTF-8&oe=UTF-8#](https://www.google.com/search?client=safari&rls=en&q=Central+Statistical+Agency+(2006)+(CSA,+2006).+Urban+Employment+Unemployment+Survey+2006.+Statistical+Report&ie=UTF-8&oe=UTF-8#).
- Central Statistical Agency (2012) (CSA, 2012).** Agricultural sample survey 2011/2012, Volume IV: Report On Land Utilization. Addis Ababa.
- Central Statistical Agency (2013) (CSA, 2013).** Population Projections for Ethiopia 2007-2037. Addis Ababa.
- Central Statistical Agency (2014) (CSA, 2014).** Analytical Report on 2013 National Labour Force Survey. Available from: www.csa.gov.et/survey-report/category/34-nlfs-2013?...analytical-report...labor-force...
- Central Statistical Agency (2015/2016) (CSA 2015/2016).** Statistical Tables on Data of Large and Medium Scale Manufacturing Industries 2004-2008 E.F.Y (2008/09-2015/16).
- Central Statistical Agency (2016) (CSA, 2016).** Urban Employment Unemployment Survey 2016. Statistical Report.
- Central Statistical Agency (2017) (CSA, 2017).** Ethiopia Demographic and Health Survey 2016. Addis Ababa. Available from: <https://dhsprogram.com/pubs/pdf/FR328/FR328.pdf>.
- Central Statistical Agency (2018) (CSA, 2018).** The 2015/16 Ethiopian Household Consumption Expenditure (HCE) Survey. Statistical Report. Addis Ababa. Available from: www.csa.gov.et/ehioinfo-internal?download=854:hce-2016-statistical-report-country.
- Cornia, G. A. (2017).** Inequality Levels, Trends and Determination in sub-Saharan Africa: An Overview of Main Challenges since the Early 1990s. In *Income Inequality Trends in sub-Saharan Africa: Divergence, Determinants and Consequences*, A. Olusola and others, eds. UNDP, New York. Available from: <http://www.africa.undp.org/content/dam/rba/docs/Reports/Overview-Income%20inequality%20Trends%20SSA-EN-web.pdf>.
- Davison, W. (2017).** Park life: workers struggle to make ends meet at Ethiopia's \$250m industrial zone. *The Guardian*, 5 December. Available from: <https://www.google.com/url?q=https://www.theguardian.com/global-development/2017/dec/05/ethiopia-industrial-park-government-investment-boost-economy-low-wages&sa=U&ved=0ahUKEwiDxfrfmK3cAhUK16QKHTfdDiQQFggFMAA&client=internal-uds-cse&cx=007466294097402385199:m2ealvuxh1i&usq=AOvVaw3tgcwF-GjaplwkBpo0q2K>.
- de Vries, M., S. Yigrem, T. Vellinga, (2016) (de Vries and others 2016).** *Greening of Ethiopian Dairy Value Chains: Evaluation of environmental impacts and identification of interventions for sustainable intensification of dairy value chains*. Agricultural Transformation Agency, Ethiopia.
- Easterly, W. (2007).** Inequality does cause underdevelopment: Insights from a new instrument. *Journal of Development Economics*, vol. 84, No. 2, pp. 755-776. Available from: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.692.9356&rep=rep1&type=pdf>.
- Education Policy and Data Center (2014) (EPDC 2014).** Ethiopia. Available from: <https://www.epdc.org/country/ethiopia>.
- Embassy of Ethiopia, Brussels (2017).** Industrial parks and the transformation of Ethiopia's economy. Available from: <http://ethiopianembassy.be/en/2017/12/05/industrial-parks-and-the-transformation-of-ethiopia-s-economy/>.
- Federal Democratic Republic of Ethiopia (2004) (FDRE, 2004).** Labour Proclamation No. 377/2003. Addis Ababa. Available from: <https://chilot.me/2011/08/proclamation-no-3772003-labour-proclamation>.
- Fujita, M. and J.-J. Thisse (2002).** *Economics of Agglomeration. Cities, Industrial Location, and Regional Growth*. Cambridge University Press. Available from: <https://fenix.tecnico.ulisboa.pt/downloadFile/1126518382175106/Economics%20of%20agglomeration.pdf>.
- Furman, J. and J.E. Stiglitz (1998).** Economic consequences of income inequality, in: *Income inequality: Issues and policy options*. Kansas City, Federal Reserve Bank of Kansas City. Available from: <https://www.kansascityfed.org/publications/research/escp/symposiums/escp-1998>.
- Gebrehiwot, B.A., and others (2018).** Job Quality in the Micro and Small Business Sector in Ethiopia: Evidence from firm-level data. EDRI Memo.

- Gebre, G., Rooijen, D.V. and Shaw, R. (2009).** Urban water pollution and irrigated vegetable farming in Addis Ababa. In *Water, Sanitation and Hygiene: Sustainable Development and Multisectoral Approaches*. Proceedings of the 34th WEDC International Conference, United Nations Conference Centre, Addis Ababa, Ethiopia, 18-22 May 2009 (pp. 216-221). Water, Engineering and Development Centre (WEDC), Loughborough University of Technology.
- Gebreyesus, M., and others (2018).** Main Features of Micro and Small Manufacturing Enterprises in Ethiopia: *Baseline Survey Report*. EDRI. Addis Ababa.
- Glaeser, E., Scheinkman, J. and Shleifer, A. (2003).** The injustice of inequality. *Journal of Monetary Economics*, vol. 50, No. 1, pp 199-222.
- Goldstein, M. (2012).** The evil of flowers: women's work and domestic violence in Ethiopia. *Development Impact*, World Bank, 17 January. Available from: <http://blogs.worldbank.org/impactevaluations/the-evil-of-flowers-women-s-work-and-domestic-violence-in-ethiopia>.
- Health, R. and A.M. Mobarak (2015).** Manufacturing growth and the lives of Bangladeshi Women. *Journal of Development Economics*, vol. 115, pp 1-15. Available from: <https://www.sciencedirect.com/science/article/pii/S0304387815000085>.
- Hamza, I.A. and A. Iyela (2012).** Land Use Pattern, Climate Change, and its Implication for Food Security in Ethiopia: A Review. *Ethiopian Journal of Environmental Studies and Management*, vol.5, No.1, pp 26-31. Available from: <https://www.ajol.info/index.php/ejesm/article/view/74149>.
- Harris, J. R. and M.P. Todaro (1970).** Migration, Unemployment and Development: A two-sector Analysis. *American Economic Review*, vol. 60, No. 1, pp 126-142. Available from: https://www.jstor.org/stable/1807860?seq=1#page_scan_tab_contents.
- ILO (2016).** Study on the State of Industrial Relations in Ethiopia – The Case of Large Scale Manufacturing and Construction Sectors. Addis Ababa.
- ILO (2018).** Decent Work. Available from: <http://www.ilo.org/global/topics/decent-work/lang-en/index.htm>.
- Joshi, R. D. and A. Vespoor (2013).** *Secondary Education in Ethiopia: Supporting Growth and Transformation*. The World Bank. Washington D.C. Available from: <http://documents.worldbank.org/curated/en/735741468037146987/Secondary-education-in-Ethiopia-supporting-growth-and-transformation>.
- Kahsay, M.N. (2012).** Quality and Quality Assurance in Ethiopian Higher Education: Critical Issues and Practical Implication. Unpublished PhD Dissertation (University of Twente). Available from: <https://www.utwente.nl/en/bms/cheps/education/phd-page/cheps-alumni-and-their-theses/thesis%20Kahsay%20final.pdf>.
- Eskedar Kifle (2017).** Employee turnover in textile and apparel industry parks plagues performance. *Capital Ethiopia*, 16 November. Available from: <http://capitalethiopia.com/2017/11/16/employee-turnover-textile-apparel-industry-parks-plagues-performance/#>.
- Martins, P. (2014).** Structural Change in Ethiopia. An Employment Perspective. World Bank Policy Research Working Paper 6749.
- Mellor, J.W. and P. Dorosh (2010).** Agriculture and the Economic Transformation of Ethiopia. Ethiopian Strategy Support Program 2, Working Paper No.ESSP2, April. Available from: https://www.google.com/search?client=safari&rls=en&q=ESSP_2__Working_Paper_010&ie=UTF-8&oe=UTF-8.
- Ministry of Education (2013) (MoE, 2013).** Education Statistics Annual Abstract 2008 E.C. (2012/13). Available from: http://www.moe.gov.et/statistics/-/asset_publisher/mlyNIPkHf57h/document/id/48401?inheritRedirect=false&redirect=http%3A%2F%2Fwww.moe.gov.et%2Fstatistics%3Fp_p_id%3D101_INSTANCE_mlyNIPkHf57h%26p_p_lifecycle%3D0%26p_p_state%3Dnormal%26p_p_mode%3Dview%26p_p_col_id%3Dcolumn-1%26p_p_col_count%3D2.
- Ministry of Education (2017) (MoE, 2017).** Education Statistics Annual Abstract 2008 E.C. (2015/16). Available from: <http://www.moe.gov.et/documents/20182/0/ESSA+2008+E.C.+%282015-2016+G.C+%29/9ae19287-21c9-431b-b53a-d4edfb5fb997?version=1.0>.
- Ministry of Industry (2017) (Moi, 2017).** Study on Improved Participation and Benefit of Women in Manufacturing Sector of Industrial Development. Addis Ababa.
- Ministry of Labour and Social Affairs (2009) (MoLSA, 2009).** National Employment Policy and Strategy of Ethiopia. Addis Ababa. Available from: <https://www.ilo.org/dyn/natlex/docs/ELECTRONIC/89584/102962/F1789074138/ETH89584.pdf>.
- Ministry of Youth, Sports and Culture (2004) (MoYSC, 2004).** Youth Policy. Addis Ababa. Available from: <https://chilot.me/wp-content/uploads/2011/08/fdre-youth-policy.pdf>.
- National Bank of Ethiopia (2015/16) (NBE, 2015/16).** Macroeconomic and Social Indicators. Available from : <http://www.nbebank.com/pdf/quartelybulletin/Vol%2032%20Q3/2015-16%20Macroeconomic%20and%20Social%20Indicators.pdf>
- National Planning Commission (2015) (NPC, 2015).** Growth and Transformation Plan II 2015/16–2019/20.
- National Planning Commission (2015/16) (NPC, 2015/16).** National Income Accounting Statistics.
- National Planning Commission (2017) (NPC, 2017).** Ethiopia's Progress towards Eradicating Poverty: An Interim Report on 2015/16 Poverty Analysis Study. Addis Ababa.
- Ravallion, M (2001).** Growth, Inequality and Poverty: Looking Beyond Averages. *World Development*, vol. 29, No. 11, pp 1803-1815. Available from: http://siteresources.worldbank.org/INTPGI/Resources/13996_MR2.pdf.
- Ravallion M (2005).** Inequality isBad for the Poor. World Bank Policy Research Working Paper No. 3677. Washington D.C., World Bank. Available from: <http://documents.worldbank.org/curated/en/456501468330044447/pdf/wps3677.pdf>.
- Sen A. (1981).** Poverty and Famines: An Essay on Entitlement and Deprivation. Clarendon Press, Oxford. Available from: https://www.prismaweb.org/nl/wp-content/uploads/2017/06/Poverty-and-famines_Amartya-Sen_1981.pdf.
- Shleifer, A., E. Glaeser and J. Scheinkman (2003).** The injustice of inequality. *Journal of Monetary Economics*, vol. 50, No. 1, pp 199-222. Available from: <https://scholar.harvard.edu/shleifer/publications/injustice-inequality>.
- Söderbom, M. (2015).** The global economy: Can African firms break in? Learning to Compete Working Papers, Brookings Institute. Available from: <https://www.brookings.edu/blog/africa-in-focus/2015/12/14/the-global-economy-can-african-firms-break-in/>.
- Tafere Y. (2017).** The Role of the Private Sector in Expanding Youth Employment in Ethiopia: Qualitative Evidence. In *Youth Self-employment in Ethiopia: Promoting Micro and Small Enterprises (MSEs) through Government Support Programs*, W. Amha and others, eds.
- The Economist Intelligence Unit (2018).** The Automation Readiness Index: Who is Ready for the Coming Wave of Automation? Available from: <http://www.automationreadiness.eiu.com/static/download/PDF.pdf>.
- Timmer P. and S. Akkus (2008).** The Structural Transformation as a Pathway out of Poverty: Analytics, Empirics and Politics. Center for Global Development (CGD) Working Paper 150. Available from: <https://www.cgdev.org/publication/structural-transformation-pathway-out-poverty-analytics-empirics-and-politics-working>.
- Transitional Government of Ethiopia (1993) (TGE, 1993).** National Policy on Ethiopian Women. Addis Ababa. Available from: <https://www.poline.org/node/337078>.
- United Nations (n.d.).** (UN) Industry, Innovation and Infrastructure: Why It Matters. Available from: http://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/9_Why-it-Matters_Goal-9_Industry_1p.pdf.
- United Nations (UN) (2015).** World Population Prospects: The 2015 Revision. Available from: https://esa.un.org/unpd/wpp/publications/files/key_findings_wpp_2015.pdf.
- UNECA (2017).** Background paper on building resilient infrastructure and promoting inclusive and sustainable industrialization and innovation (E/ECA/ARFSD/3/6); paper prepared for ECA Africa Regional Forum, High level panel on challenges and opportunities arising in achieving inclusive growth and prosperity for all.
- UNDP 1997, 1998, 2015. Ethiopia National Human Development Reports (ENHDR, 1997, 1998, 2015).** Available from: <http://webcache.googleusercontent.com/search?q=cache:qS50p7cn94YJ:hdr.undp.org/en/search/node/ethiopia+&cd=3&hl=en&ct=clnk&gl=uk&client=safari>.
- UNDP Human Development Report Office, (n.d.) (HDRO).** Report Preparation Toolkit. Available from: <http://dev-hdr.pantheon.io/en/content/about-reports>.
- UNDP (2015a).** Human Development Report 2015: Work for Human Development. Available from: http://hdr.undp.org/sites/default/files/2015_human_development_report.pdf.
- UNDP (2015b).** Tanzania Human Development Report 2014: Economic Transformation for Human Development. Available from: <http://hdr.undp.org/sites/default/files/thdr2014-main.pdf>.
- UNDP (2016).** Human Development Report 2016: Human Development for Everyone. Available from: http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf.
- UNDP (2018a).** Abdi Kedir, Ethiopia NHDR Background Report on Industrialization, Skills and Decent Jobs.

- UNDP (2018b)**. Getahun Tafesse, Ethiopia NHDR Background. Background Paper on Urbanization and Industrialization.
- UNESCO (2018)**. Institute for Statistics (UIS, 2018). Ethiopia. Available from: <http://uis.unesco.org/en/country/et>.
- UNIDO 2015**. Industrial Development Report 2016. The Role of Technology and Innovation in Inclusive and Sustainable Industrial Development. Available from: https://www.unido.org/sites/default/files/2015-12/EB00K_IDR2016_FULLREPORT_0.pdf.
- UNIDO (n.d.)**. The 2030 Agenda for Sustainable Development: Achieving the industry-related goals and targets. Available from: https://www.unido.org/sites/default/files/2015-12/ISID_SDG_brochure_final_0.pdf.
- UN Women Moldova (2018)**. Strategic Note Summary. Available from: <http://moldova.unwomen.org/en/biblioteca-digitala/publicatii/2018/03/strategic-note-summary#view>.
- Weldesilassie, A. B. and others (2017)**. Study on Industrial Park Development: Issues, Practices and Lessons for Ethiopia. EDRI Research Report 29. Available from: http://www.edri.org.et/Resources/Research_Reports/Research_Report_029.pdf.
- World Bank (2015a)**. Urban Labor Markets: Trends and Frictions.
- World Bank (2015b)**. Ethiopia Poverty Assessment 2014. Poverty Global Practice Africa Region. Report No. AUS6744. Available from: <https://openknowledge.worldbank.org/handle/10986/21323>.
- World Bank (2015c)**. Ethiopia Social Accountability Mid-term Review Final Report.
- World Bank (2016a)**. Ethiopia's Great Run: The Growth Acceleration and How to Pace it. Addis Ababa. Available from: <https://openknowledge.worldbank.org/handle/10986/23333>.
- World Bank (2016b)**. Why so Idle? Wages and Employment in a Crowded Labor Market. 5th Ethiopia Economic Update. Addis Ababa. Available from: <https://openknowledge.worldbank.org/handle/10986/25747>.
- World Bank (2017)**. Realizing Ethiopia's Green Transformation Country Environmental Analysis 2017. Available from: <http://www.efdiinitiative.org/publications/ethiopia-country-environmental-analysis-cea-realizing-green-transformation>.
- World Bank (2018a)**. World Development Indicators. Available from: <http://databank.worldbank.org/data/reports.aspx?source=World-Development-Indicators>.
- World Bank (2018b)**. Women, Business and the Law. Available from: <https://wbl.worldbank.org/>.
- World Bank (working draft, April 2018)**. World Development Report 2019: The Changing Nature of Work. (World Bank, 2019, forthcoming).
- Xiaoyun, Li (2014)**. China's Industrialization: Overview—Implications for Africa's Industrialization. Background Report, Africa-China Poverty Reduction and Development Conference, Addis Ababa, Ethiopia, 18-20 November 2014.

Annex: Human Development Index Technical Note

The Human Development Index (HDI) is a summary measure of long-term progress in a country along three key dimensions: a long and healthy life, access to knowledge, and a decent standard of living. The HDI is the geometric mean of normalized indices measuring achievements in each of these three dimensions. Methods of tracking and measuring progress along the dimensions have been evolving through time, depending on availability of data and changes and on improvements in the way progress in human development are generally measured.

Data and sources

- Data for life expectancy are taken from CSA, 2013.
- Data on education (primary and secondary school enrolment ratios, number of students enrolled in colleges and universities (undergraduate and masters level in regular programmes) are taken from MoE, Annual Education Statistics Abstracts (2013 and 2017).
- Net tertiary enrolment is calculated based on number of students using data from MoE Annual Education Statistics Abstracts and the number of people below age 25 based on MoE, 2016.

Using the 2016 Global *Human Development Report* HDI computation methodology, we have calculated Ethiopia's HDI as follows:

- Life expectancy at birth is used to capture progress towards achieving a long and healthy life;
- Expected years of schooling and mean years of schooling are used to measure access to knowledge; and
- Gross National Income per capita is used to track the standard of living.

Steps to calculate the Human Development Index

There are two steps in calculating the HDI.

Step 1: Creating the dimension indices

Minimum and maximum values (goalposts) are set in order to transform the indicators expressed in different units into indices on a scale of 0 to 1. These goalposts act as the “natural zeros” and “aspirational targets,” respectively, from which component indicators are standardized (see equation 1 below). They are set at the following values:

Dimension	Indicator	Minimum	Maximum
Health	Life expectancy (years)	20	85
	Expected years of schooling (years)	0	18.0
Education	Mean years of schooling (years)	0	13.8
	For Ethiopia's regions, real consumption per capita (Br)	3,772	28,283

a) Life Expectancy index

For the life expectancy index; minimum value is set at 20 years and the maximum value is the highest observed value during 1980-2013.

The justification for placing the natural zero for life expectancy at 20 years is based on historical evidence that no country in the 20th century had a life expectancy of less than 20 years.

b) Education Index

The minimum value for education variables is zero and the maximum is the highest

observed value. Societies can subsist without formal education, justifying the education minimum of 0 years. The maximum for expected years of schooling, 18, is equivalent to achieving a master's degree.

c) Income Index

Where per capita income is the standard of living index. The minimum value is the subsistence level set at US\$100.00 and the maximum is the highest value observed. Gross National income per capita adjusted to purchasing power parity (PPP) (in 2016 international US dollars), taken from the World Bank, is used for national-level analysis.

For calculation of the Regional HDI, real consumption per capita is used as a proxy for real income per capita. The income index is calculated based on the lower middle-income threshold of Br 28,283 as the maximum and the Food Poverty Line of Br 3,772 from HICES 2016 as the minimum.

Having defined the minimum and maximum values, the dimension indices are calculated as:

$$\text{Dimension index} = \frac{\text{actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}} \quad [\text{equation 1}]$$

For the education dimension, equation 1 is first applied to each of the two indicators, and then the arithmetic mean of the two resulting indices is taken.

Because each dimension index is a proxy for capabilities in the corresponding dimension, the transformation function from income to capabilities is likely to be concave (Anand and Sen (2000))—that is, each additional dollar of income has a smaller effect on expanding capabilities. Thus for income the natural logarithm of the actual, minimum and maximum values is used.

Step 2: Aggregating the sub-indices to produce the HDI.

The HDI is the geometric mean of the three dimension indices:

$$HDI = (I_{Health} \cdot I_{Education} \cdot I_{Income})^{1/3}$$

Example: Addis Ababa

Indicator	Value
Life expectancy at birth (years)	68.2
Expected years of schooling (years)	6.8
Mean years of schooling (years)	6.0
Consumption per capita Br	13,762

$$\text{Health index} = \frac{68.2 - 20}{85 - 20} = 0.742$$

$$\text{Expected years of schooling index} = \frac{6.8 - 0}{18 - 0} = 0.376$$

$$\text{Mean years of schooling index} = \frac{6.0 - 0}{13.8 - 0} = 0.432$$

$$\text{Education index} = \text{average of EYS and MYS} = 0.404$$

$$\text{Income index} = \frac{\ln(13,762) - \ln(3,722)}{\ln(28,283) - \ln(3,722)} = 0.645$$

$$\text{Human Development Index} = (0.376 * 0.432 * 0.404)^{1/3} = 0.578$$

Methodology used to express education

Expected years of schooling:

According to UNESCO, expected years of schooling (EYS) refers to the number of years of schooling that a child of school entrance age can expect to receive if prevailing patterns of age-specific enrolment rates persist throughout the child's life.

Because of lack of availability of data on age specific enrolment, the calculations used proxy indicators. Calculation of EYS is based on net enrolment rates (NERs) of primary and secondary (upper and lower) and tertiary education. Again the enrolment rates used are aggregate instead of grade specific; the net enrolment rates are multiplied by maximum attainable grades in each category to account

for the missing grade levels (MoE, 2013 and MoE, 2017).

$$EYS = \sum x_i * Y_j$$

Where x_i is the net enrolment rate for each category; Y_j is the maximum attainable grade in each category (8 years for primary, 10 for lower secondary, 12 for upper secondary and 14 for tertiary).

The expected years of schooling for regions is calculated with primary and secondary enrolment rates, as enrolment in tertiary education is not available by region.

Mean Years of schooling (MYS)

Calculation of MYS is based on the educational attainment of the population of 25 years old and over, using the demographic health surveys (DHS) of 2011 and 2016. The survey gives the educational attainment of the population according to the following categories: no education, some primary, completed primary, some secondary, completed secondary and more than secondary. Since

the DHSs do not provide information on the educational attainment of the population aged over 49 years old, the educational attainment of those between 45 and 49 years was applied to the population above 49 years old.

$$MYS = \sum x_i * y$$

Where x_i is educational attainment in per cent and Y_j is the maximum number of grades in each category. Maximum grade in primary school is 8 years, maximum grade in secondary school is 12 years and maximum grade in more than secondary is 16 years.

Educational attainment of the population 25 years and older is taken from DHS 2011 and 2016 and the mean years of schooling is calculated using 4 years for “some primary education”, 8 years for “completed primary”, 10 years for “some secondary”, 12 years for “completed secondary” and 14 years for “more than secondary”.

The range of schools in the “more than secondary” category with different maximum grades makes the aggregation of this category less consistent. A maximum grade of 14 is used for this category.



*Empowered lives.
Resilient nations.*

United Nations Development Programme (UNDP)
Ethiopia Country Office
Post Box No. 5580,
Addis Ababa, Ethiopia

🌐 www.et.undp.org
f UNDPinEthiopia
🐦 @undpethiopia