

# Fertility as a major driving force for Ethiopian demographic transition: Current challenges and opportunities

## An insight

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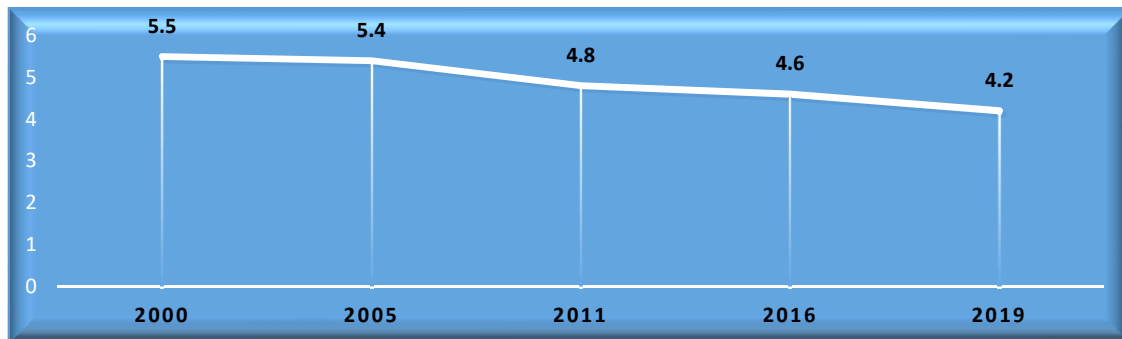
### ABOUT THE INSIGHT

The main goal of this insight paper is to generate evidence-based information on Ethiopian fertility as a major driving force for the current and future demographic transition. The insight builds on evidence emerging from a review of available national and regional level data and some policy documents. A major part of the paper focuses on synthesizing the overall level of fertility, regional disparities, direct and indirect drivers of fertility, challenges and gaps, and priority areas of intervention.

### I. Background

Ethiopia is the 12<sup>th</sup> most populous country in the world (UN, 2017), mainly due to its high fertility and fast declining mortality rates. Fertility, which denotes the actual childbearing performance of a population, is a major explanatory force in population dynamics in Ethiopia and a key counteracting force to population attrition through mortality. When there is no significant migration, the declining mortality and high fertility levels exert a powerful influence on the age structure and determine the population growth dynamics. Total Fertility Rate (TFR) is the most used measure of fertility represented by the number of births per woman if she were to pass through the childbearing years, bearing children according to a current schedule of age-specific fertility rates. During the last two decades, Ethiopia has experienced a significant decline in fertility rate at the national level (Figure 1). The Ethiopian TFR dropped from about 7 children per woman in 1990 to 4.2 children per woman in 2019 (CSA and ICF, 2019). This suggests that fertility transition has recently begun at the general population level.

**Figure** Error! No text of specified style in document.: Total Fertility Rate, Ethiopia, 2000–2019



However, such decline could also be misleading as it is overshadowed by the huge disparities in fertility rate among the various regions and population groups within the country. There are two distinct transitions: the urban is very advanced (TFR = 2.4), with below replacement fertility in Addis Ababa since the late 1990s; and the rural is in its incipient stage with a slight decline but still with a TFR > 5.5 (Teklu et al, 2013; Assefa et al, 2011). In addition to the huge urban-rural fertility differentials, there had also been unacceptably high regional disparities in fertility rates arising mainly from differences in demographic, cultural, and socioeconomic characteristics (Teklu et al, 2013). Factors such as the value the society gives to children, preferences relating to the sex of a child and family size, the social position and role of women in society, economic needs and old age security schemes, and the prevalence of sexually transmitted diseases are some of the drivers affecting the fertility differentials (Asresie et

al, 2020; Teklu et al, 2013; Teller and Assefa, 2011). For instance, the peripheral regions (such as Somali and Afar) seem to have experienced increasing fertility rates during the last two decades, suggesting that these regions are still experiencing closer to a natural fertility regime (i.e., TFR > 6% and contraceptive prevalence < 20%). Down to the local/district levels, there could be several population groups experiencing purely a natural marital fertility regime.

Based on the levels and trends of TFR computed from the five Ethiopian Demographic and Health Surveys (2000 to 2019), three groups of regions emerge (Figure 2). The first group comprises regions that show high and stagnant fertility rates (Somali and Afar regions). The second group comprises regions that are showing a declining trend in fertility rates over the last two decades. These regions are Tigray, Amhara, Oromia, SNNP, Benishangul Gumuz, Gambela, Harari, and Dire Dawa city administrations. Addis Ababa is in the third category, exhibiting no significant change over the last two decades and has already attained a below- replacement fertility regime (TFR < 2).

**Table 2:** Total Fertility Rate of Ethiopia, 2000–2016

Region	2000	2005	2011	2016
Somali	5.7	6.0	7.1	7.2
Afar	4.9	4.9	5.0	5.5
Oromia	6.4	6.2	5.6	5.4
Tigray	5.8	5.1	4.6	4.7
SNNPR	5.7	5.6	4.9	4.4
Benishangul Gumuz	5.4	5.2	5.2	4.4
Harari	4.4	3.8	3.8	4.1
Amhara	5.9	5.1	4.2	3.7
Gambella	4.5	4.0	4.0	3.5
Dire Dawa	3.6	3.6	3.4	3.1
Addis Ababa	1.9	1.4	1.5	1.8
Ethiopia	5.9	5.4	4.8	4.6

Source: Ethiopian Economics Association (EEA) (2021)

The highest decline in fertility rate was observed for the Amhara region which experienced a decline of 2.2 children per woman for the period 2000–2016 (Figure 2). This is followed by a decline of 1.5 and 1.1 children per woman in the SNNP and Tigray regions, respectively. During the same period, Oromia, Benishangul Gumuz, and Gambela regions dropped one child per woman. In contrast, Somali and Afar regions exhibited a significant increment in fertility (1.5 and 0.6 children per woman, respectively).

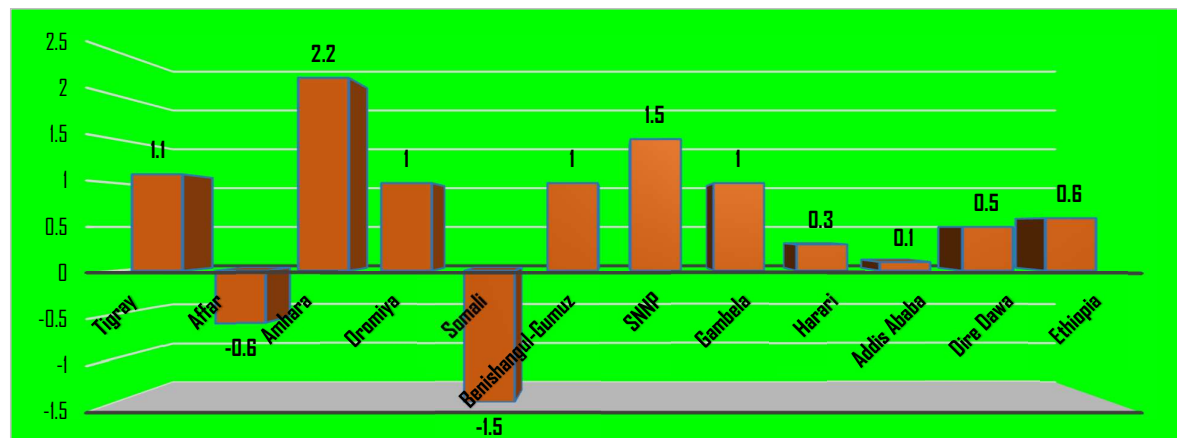
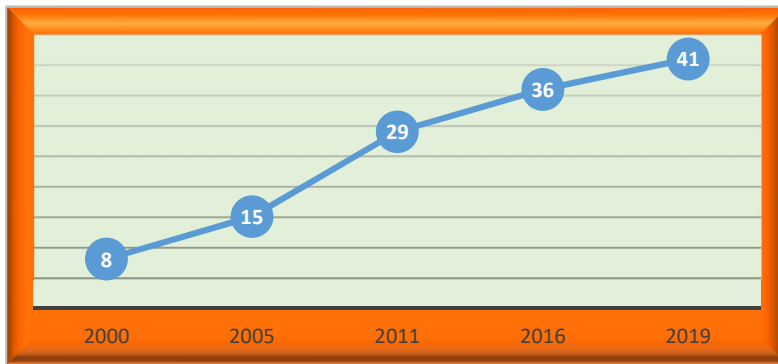


Figure 2: Decrement in Ethiopian fertility rate (per woman) between 2000 and 2016

Davis and Blake (1956) outlined two types of factors that determine human fertility: The “direct” or “proximate” determinants and “indirect” determinants or background factors. The background factors (socio-economic or structural variables) operate through the proximate determinants to influence fertility; they do not influence fertility directly. The major direct determinants of fertility in Ethiopia are two: Contraception and marriage. Most of the decline in fertility in sub-Saharan Africa is attributable to increases in the proportions of unmarried women and increases in contraceptive use (Medhavan, 2014). Contraception is universally accepted as a major intermediate variable responsible for fertility decline in both developing and developed countries (Teklu et al, 2013). Ethiopia was able to increase the prevalence of contraceptive use among women of reproductive age from as low as 8% in the year 2000 to as high as 41% in 2019 (CSA and ICF, 2019) (Figure 3). However, there is still substantial resistance and negative attitudes towards the use of contraceptives among women in Ethiopia. For instance, a recent national level study (based on data drawn from about 15000 respondents living in five regions and two city administration) has indicated that 54% of the respondents oppose the use of contraceptives due to a range of cultural and religious reasons. The same study indicated that only one-third (34.4%) of women had discussions and were involved in decision making on the use of family planning methods to avoid pregnancy (YGHC, 2022).



**Figure 3:** Trends in contraceptive use in Ethiopia, 2000–2019.

According to the 2019 EDHS, Contraceptive Prevalence Rate (CPR) increased by more than sevenfold in Amhara and SNNPR regions between 2000 and 2019 (CSA and ICF, 2000–2019). In contrast, the CPR of the Somali region showed no change over the last two decades (remained only < 5%). The unacceptably low CPR in Somali and Afar regions suggests that reproductive-age women who might not want more children or might want to space births are not using family planning methods/services. This is further corroborated by the very low demand for FP in the two regions, which is unacceptably poor (i.e. less than 30%).

Recent national level studies attributed such huge regional disparities to a wide range of factors. For example, a study conducted on fecund women (n = 2,859) attributed the difference in accessing contraceptives and cultural reasons related to fertility. Partner and religious oppositions for contraceptives were found to be more problematic for women in Afar and Somali regions compared to those in Addis Ababa and Amhara regions (Asresie et al, 2020).

The unmet need for family planning is an important barrier to FP programs in Ethiopia. Close to a quarter of Ethiopian women in the reproductive age group have unmet need for family planning, meaning they desire to stop or delay childbearing but are not using any method of contraceptive (Figure 8). Further analysis of the 2016 EDHS data of fecund women who need no more children indicated that half of them were not using modern contraceptives, while about 85% wanted to use contraceptives to limit birth (Asresie et al, 2020). This study further revealed that the use of contraceptives is higher among women leading affluent lives, working women living in urban areas, and those visited by health workers during the 12 months prior to the survey (Asresie et al, 2020).

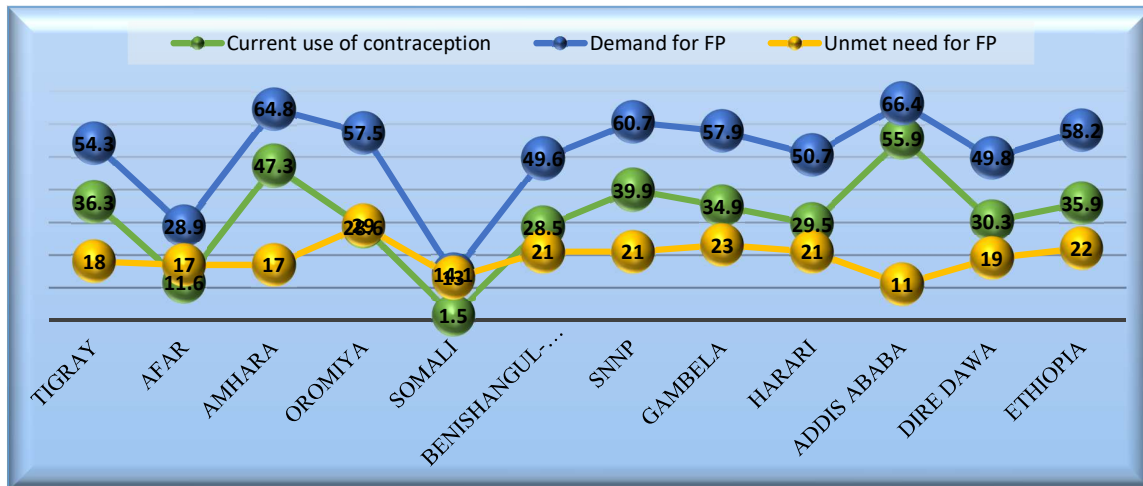


Figure 4: Contraceptive use, demand for FP, and unmet need for FP

In Ethiopia, the early onset of fertility transition and attainment of below replacement fertility in Addis Ababa (TFR = 2) was possible due to rapid increase in delayed marriage rates and contraceptive use (Laelago et al, 2019). The results of a decomposition analysis of data from Addis Ababa indicate a significant decline in the age-specific proportions of marriage, followed by an increase in contraceptive use, which are considered the most important factors for rapid fertility decline in Addis Ababa. The study associated the delayed marriage with the ever increasing unemployment rate and relatively high housing costs (Amson et al, 2003). On the contrary, the very high marital fertility rate and continued resistance to fertility decline in some of the regions in Ethiopia (such as Afar and Somali regions) are attributed to early age at first marriage, desire for more children, and extremely low use of contraceptives.

In addition to the two key drivers of fertility, there are multiple other socioeconomic and demographic determinants. Studies in Ethiopia documented that rural-urban difference, women education and empowerment, wealth and level of mortality are the major background variables affecting the level of fertility at national level and disparities across regions. The inverse relationship between women's education and fertility level in Ethiopia is well established (Gebremedhin and Betre, 2009; Alene & Worku, 2008; Fitaw et al, 2004). Studies revealed that women who had many years of education have significantly lower fertility rate than those who had never been enrolled into any formal education system. This may be attributable to the postponement of marriage and childbirth due to longer schooling time (Wubegzier and Alemayehu, 2011). The higher educational level of women gives an opportunity for social and economic empowerment and brings about change in their knowledge and attitude towards low fertility (Wubegzier and Alemayehu, 2011). Women's education and household wealth are also the main factors behind the huge regional disparities in CPR (CSA & ICF, 2019). For instance, 58% of women with more than secondary education use any contraceptive method compared with 32% of women with no education. Likewise, 28% of women in the lowest wealth quintile are using any contraceptive method compared to 53% of women in the highest quintile (CSA & ICF, 2019). These factors are heavily impacted by religious/cultural practices. Previous studies conducted in different regions (Amhara and SNNP) of Ethiopia attributed the huge urban-rural difference in fertility to disparities in contraceptive prevalence, age at first marriage, access to media, general knowledge of services, and positive attitude towards smaller family size between urbanites and rural residents (Wubegzier and Alemayehu, 2011; Gebremedhin and Betre, 2009; Fitaw et al, 2004).

Most of the fertility factors/drivers described above have significant statistical associations with fertility. As can be seen from Table II.2, the simple bivariate associations of TFR with access to radio, women's education, access to health, women's labor force participation and contraceptive use are significant ( $p < 0.05$ ).

**Table 1:** Bivariate relationship between total fertility rate (TFR) and key regional disparity indicators, Ethiopia

<b>Regional disparity indicators</b>	<b>Bivariate relationship with TFR (p-values)</b>
Percentages with access to radio	-0.709(0.015) *
Percentages with access to any media	-0.654 (0.029) *
Level of income inequality (Gini coefficient)	0.294 (0.380)
Proportion of women with no education	0.902 (0.000) **
Proportion who completed primary education	-0.712 (0.014) *
Female labor force participation rate	-0.773(0.005) **
Median age of marriage	-0.512 (0.107)
Percentages of teen age pregnancy	0.747 (0.008) **
Contraceptive Prevalence Rate (CPR)	-0.860 (0.001) **
Proportion of demand for family planning	-0.787 (0.004) **
Infant Mortality Rate (IMR per 1000 live births)	0.562 (0.072)
Under-five mortality rates (per 1000 children)	0.527 (0.096)
Proportion of women having access to antenatal care (ANC)	0.840 (0.001) **
Percentage of women who had institutional delivery of the last birth	-0.786 (0.004) **

Note: Computed based on recent national data (2016).

### III. Priority intervention areas

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The growing concern about the rapid population growth and the desire to intervene more directly in the process of fertility decline has prompted a greater focus on the direct determinants of fertility (more specifically on contraceptive use and marriage). Experiences of other countries, which scored rapid decline in fertility rates, have shown that social and economic processes have also invariably been significant in accelerating fertility decline since the inception of the demographic transition. The following list of priority areas are medium-long term interventions that would shape the fertility levels of the country:

***Improve access to family planning and other RH services:*** Although women's use of FP methods has increased from 8% to 41% during the last 20 years, about a quarter of currently married women in the reproductive age group have an unmet need for contraception (CSA and ICF, 2019). Improving access to services, widening FP choices, reducing barriers, and improving the role of husbands in FP areas will play a significant role. The use of continuous community dialogue, individual counseling and behavioral change communication would be a useful tool to bring about changes in attitude and practices. Such interventions are particularly more important in regions with very low CPR (Somali and Afar).

***Improving Education:*** Gender parity in primary enrollment has substantially improved, but access to secondary and tertiary education continues to be skewed heavily toward males (Zerihun, 2015). Local government authorities should play a pivotal role in making women stay more years at school, thereby increasing the age at first marriage to reduce fertility in the high fertility regions. Special attention should also be given to increasing enrollment of women/girls in secondary education to reduce fertility significantly and sustainably in rural communities. The very low literacy rate in some regions (Afar, Somali, SNNPR and Amhara) remains to be major concern. The respective regions should launch and strengthen voluntary literacy programs.

***Improving Health:*** Achieving lower infant and child mortality is essential for fertility transition. This can be done by considering the main causes of early death (such as the huge undernutrition, poor sanitation and hygiene) and narrowing down the gap in accessing antenatal and delivery care services in the high fertility regions. Given most pastoral communities in the peripheral regions do not have adequate access to health, FP and reproductive health services, the respective regional governments should strive to strengthen and deploy health extension workers, build the capacities of traditional birth attendants and community volunteers.

***Empowering women:*** Greater female participation in the social and economic sphere is a key engine that is needed to capture the potential benefits of a demographic dividend. Enabling women and girls to have the autonomy to make informed choices regarding their sexual lives, age at marriage and timing of pregnancy. The provision of skill-building training for women enables women to generate income and build assets, enhance their decision-making power over household resources. With the integration of FP/RH messages, such skill substantially improves their communication and power balance with their partners/husbands.

***Socio-cultural change:*** Continued efforts should be made to make sure younger generations in the small towns and villages change their community norms of family formation and high fertility expectations. It is a pervasive process of changing the value of children, early marriage, and weakening kinship ties. This is particularly important in regions where the use of contraceptives is unacceptably low, and women marry early.

***Reducing the disparity in the regional economy and income inequality:*** Neoclassical economists believe that changes in family income and in the relative cost of children would bring about changes in the demand for children and trade-off between quantity and quality of children (Becker and Lwis, 1973). Investment in longer education (human capital), implying higher costs of children, and opportunity costs for child-rearing

women in job markets (“motherhood wage penalty). Families are therefore expected to invest in more highly educated but fewer children, and hence TFR declines (Galor,2012). It is important to design programs and strategies that promote an equitable distribution of income across various socioeconomic groups. Women-sensitive social reforms in the high fertility regions would also be instrumental in inducing income-sensitive demand for fertility and FP.

***Speeding up urbanization to narrow down demographic inequalities:*** Urban life has long been found by analysts as the main factor in fertility decline as it provides better access to education, health services, information, and other modern facilities (Shapiro & Tambashi, 2002; Beine et al, 2009). Urbanization would help reduce demographic inequities with vulnerable populations that have been based on rural-urban, pastoral-agricultural, social class, gender, ethnicity, and region (Shapiro & Tambashi, 2002; Beine et al, 2009). The very high TFR in Afar, Somali and Benishangul regions can significantly benefit from rapid urbanization measures as more than 90% of their population is residing in rural areas.

It is concluded that Ethiopia can attain sustained fertility transition, and consequently a demographic transition and then dividend, only through narrowing down the regional disparities in fertility rates. This can be achieved if the country continuously implements socioeconomic programs targeting women of reproductive age. The priority intervention areas outlined above would help address the huge gap in RH /FP service utilization and uptake.

## References

- Alene GD; Worku A. Differentials of fertility in North and South Gondar zones, northwest Ethiopia: a comparative cross-sectional study. BMC Public Health. 2008; 8:397.
- Amson Sibanda; Zewdu Woubalem; Dennis Hogan; David Lindstrom. The Proximate Determinants of the Decline to Below-Replacement Fertility in Addis Ababa, Ethiopia. Stud Fam Plann. 2003;34(1):1-7.
- Asresie MB; Fekadu GA; Dagnaw GW. Contraceptive use among women with no fertility intention in Ethiopia. PLoS One. 2020;15(6):e0234474. doi:<https://doi.org/10.1371/journal.pone.0234474>.
- Assefa FMA. Assessment of Clients’ satisfaction with health service deliveries at Jimma university specialized hospital. Ethiop J Health Sci. 2011;21(2):101–10.
- Assefa Hailemariam; Solomon Alayu; Charles T. The National Population Policy of Ethiopia: Achievements, Challenges and Lessons Learned 1993-2010.. In The Demographic Transition and Development in Africa: The Unique Case of Ethiopia. Edited by C. Teller and Assefa Hailemariam. Dordrecht: Springer. 2011:303-322.
- Becker G. and H. Lewis. On the Interaction between the Quantity and Quality of Children. J Polit Econ. 1973;81(2):279-288.
- Beine Michel; F. Docquier and M. Schiff. International Migrations, Transfer of Norms and Home Country Fertility.; 2009.
- Ethiopia%20faces%20the%20challenge%20of%20not%20being%20able%20to%20supply,in%20the%20lower%20income%20brackets.
- Central Statistics Authority and ICF/ CSA. Demographic and Health Survey of Ethiopia. Addis Ababa.; 2019.
- Central Statistics Authority and ICF/ CSA. Demographic and Health Survey of Ethiopia. Addis Ababa.; 2016.
- Davis K. and J. Blake. Social Structure and Fertility: An Analytic Framework. Econ Dev Cult Change. 1956;4(4):112-135.
- Ethiopian Economics Association (EEA). 2021. Economic Development, Population Dynamics, and Welfare. Addis Ababa, Ethiopia. ISBN – 978-99944-54-81-5
- Fitaw Y; Berhane Y;Worku A. Impact of child mortality and fertility preferences on fertility status in rural Ethiopia. East Afr Med J. 2004;81(6):300-306.
- Galor O. The demographic transition: causes and consequences. Cliometrica. 2012;6(1-28). doi:<https://doi.org/10.1007/s11698-011-0062-7>.
- Gebremedhin S; Betre M. Level and differentials of fertility in Awassa town, Southern Ethiopia. Afr J Reprod Heal. 2009;13(1):93-112.

- LaelagoT, Habtu, Y, Yohannes S. Proximate determinants of fertility in Ethiopia; an application of revised Bongaarts model. *Reprod Health*. 2019;16(13). doi: <https://doi.org/10.1186/s12978-019-0677-x>
- Madhavan S. *An Analysis Of The Proximate Determinants Of Fertility In Sub-Saharan Africa With A Focus On Induced Abortion*. Baltimore: JHU; 2014.
- Shapiro David;Tambashi B. Fertility transition in urban and rural areas of sub-Saharan Africa: preliminary evidence of a three-stage process. *J African Policy Stud*. 2002;8(2):103-127.
- Teklu Hailemariam; Alula Sebhatu;Tesfayi Gebreselassie. *Components of Fertility Change in Ethiopia. Further Analysis of the 2000, 2005, and 2011 Demographic and Health Surveys. DHS Further Analysis Reports No.80*. Calverton, Maryland, USA: ICF International; 2013.
- Teller C. and Assefa Hailemariam. *The Demographic Transition and Development in Africa*. Springer, Sci Media. 2011. doi:10.1007/978-90-481-8918-2\_2
- United Nations, Department of Economic and Social Affairs, Population Division (2017). *World Population Prospects: The 2017 Revision, DVD Edition*.
- World Bank. *Population Growth-Annual*. <https://data.worldbank.org/indicator/SP.POP.GROW?locations=ET>. Published 2019.
- Wubegzier Mekonnen and Alemayehu Worku. Determinants of fertility in rural Ethiopia: the case of Butajira Demographic Surveillance System (DSS). *BMC Public Health*. 211AD;11:782.
- Yonsei Global Health Center (YGHC). 2022. *Baseline Survey for the National Campaign for Promoting Knowledge, Attitude, and Behavior Change in Population and Reproductive Health in Ethiopia (SHaPE Phase 2) for Target Groups in Two Cities and Five Regions*.
- Zerihun Admit W; Haile Kibret and James Wakiaga. *Ethiopia: 2015. African Economic Outlook.*; 2015. [http://www.africaneconomicoutlook.org/fileadmin/uploads/aeo/2015/CN\\_data/CN\\_Long\\_EN/Ethiopia\\_GB\\_2015.pdf](http://www.africaneconomicoutlook.org/fileadmin/uploads/aeo/2015/CN_data/CN_Long_EN/Ethiopia_GB_2015.pdf).