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Somali Poverty Profile 2016

Findings from Wave 1 of the Somali High Frequency Survey

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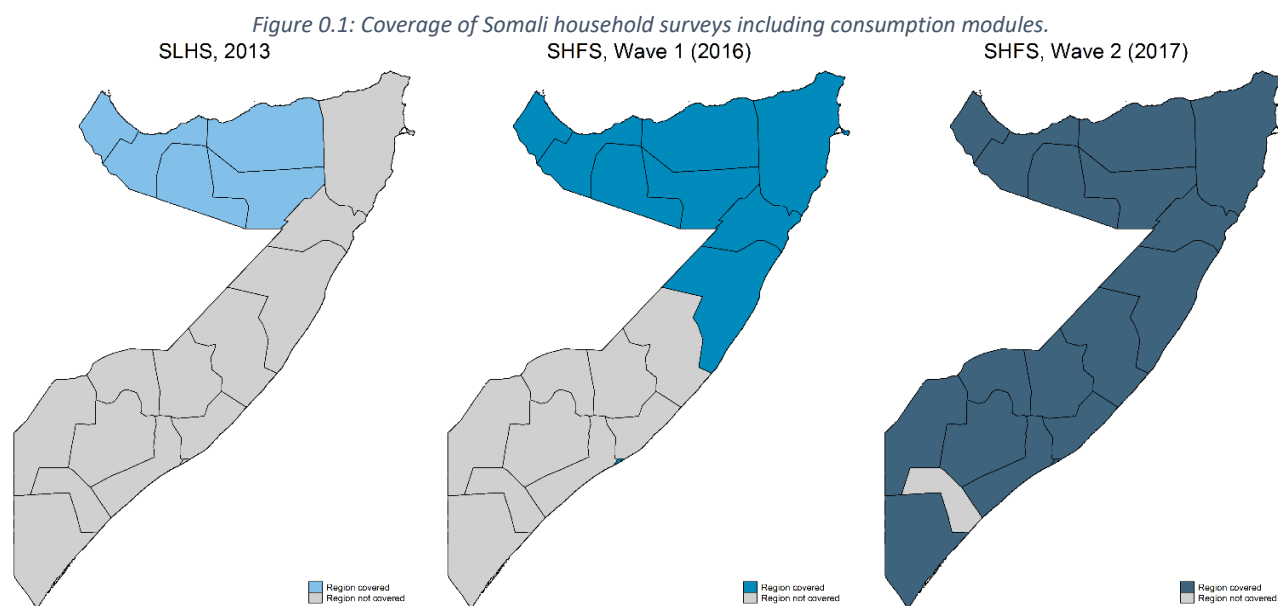
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Executive Summary

1. Somalia is emerging from 25 years of political instability and economic difficulty but hard data is lacking for evidence-based planning. The civil war and ongoing conflict that started in 1991 fragmented the country, undermined political institutions, and created widespread vulnerability. The conflict has eroded the statistical infrastructure and capacity, leaving policy makers and donors to operate in a statistical vacuum due to the lack of reliable data. In the absence of representative household surveys not much was known about poverty. The lack of information poses a threat to the design and implementation of policies and programs needed to support economic resilience and development as well as assistance in the event of shocks.

2. The region is currently facing a severe and prolonged drought, leaving about half of the population at acute risk, mostly in rural areas and IDP settlements. Food security in the region has been deteriorating due to poor rainfall between October, 2016, and March, 2017. With expected rain levels staying below average in the April to June 2017 season, more than 6 million people will remain acutely food insecure. Geographically, the drought is most severely affecting the southern pre-war regions of Bay and Bakool, as well as rangeland in the North East, leading to crop loss and livestock deaths. Output is expected to decline by 10.6 percent in 2017. In combination with high prices for staple foods, households' purchasing power is compromised. More than a quarter of a million people have already been internally displaced as a consequence of the drought.



Note: The boundaries on the map show approximate borders of Somali pre-war regions and do not necessarily reflect official borders, nor imply the expression of any opinion on the part of the World Bank concerning the status of any territory or the delimitation of its boundaries. Source: Authors' calculation.

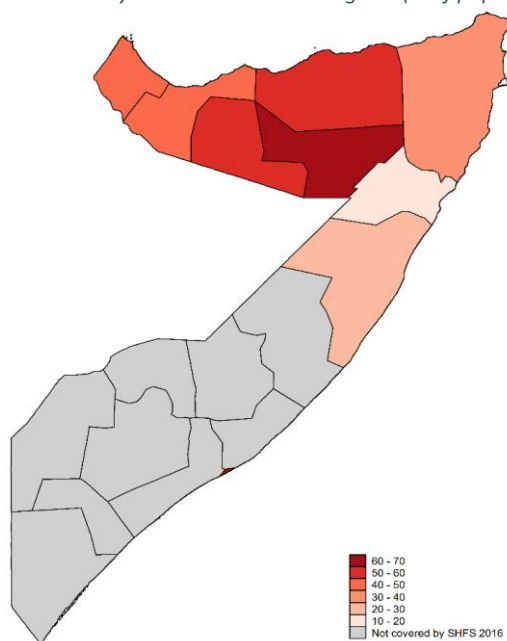
3. The World Bank's Somali High Frequency Survey provides quantitative data to inform essential resilience programs to avoid human disaster in future expected droughts. In 2013, a household budget survey was implemented by the World Bank but covering only the Somali population in the North West. To overcome the lack of data, the World Bank then implemented the first wave of the Somali High

Frequency Survey in Spring, 2016. The survey is representative of 4.9 million Somalis, and does not cover nomadic people and Somalis living in inaccessible conflict-affected areas. This report provides the first poverty-centered profile of the Somali population based on this dataset going beyond but comparing with the results from North West in 2013. It characterizes the poor and their livelihoods, with a focus on social protection and remittances, before the onset of the current crisis. The second wave of the Somali High Frequency Survey is planned for summer, 2017 with expanded coverage including nomads. It will offer a second snapshot capturing the impact of the crisis on livelihoods and inform resilience programs for the future.

Somalia is one of the least developed countries in Sub Saharan Africa.

4. The Somali population lags behind most low-income African countries in availability and access to basic infrastructure. Access to basic infrastructure such as water, sanitation systems, electricity lines and roads would substantially increase the level of development in all Somali regions, particularly in rural areas. Only 58 percent and 10 percent of Somalis have access to an improved source of water and improved sanitation respectively, compared to an average 69 and 25 percent in low-income Sub-Saharan countries. Improvements in access to water and sanitation are key for economic and social development. Water and sanitation are essential for the individual's health, as well for their productive activities, such as agriculture. Inadequate water and sanitation services increase children's exposure to waterborne diseases. In addition, low accessibility to such services affects the time children need to employ to satisfy their basic water and sanitation needs. By affecting children's health and time allocation, low quality water and sanitation services negatively influences their educational attainment.

Figure 0.2: Poverty incidence in Somali regions (% of population).



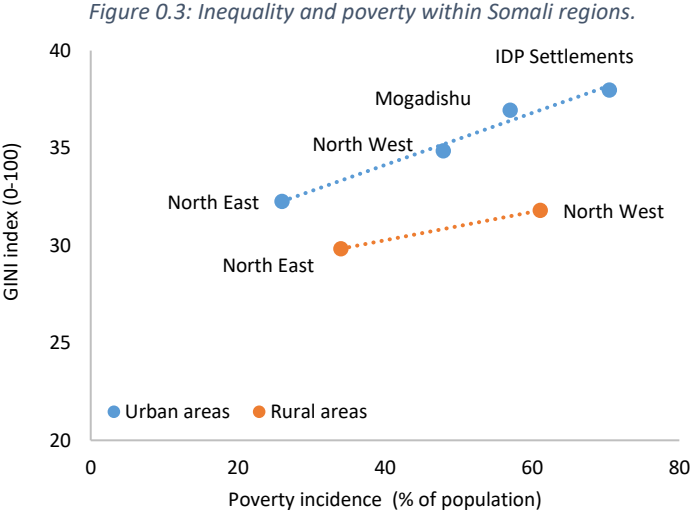
Note: The poverty incidence of each region includes IDP settlements. The boundaries on the map show approximate borders of Somali pre-war regions and do not necessarily reflect official borders, nor imply the expression of any opinion on the part of the World Bank concerning the status of any territory or the delimitation of its boundaries. Source: Authors' calculation.

5. Poverty is widespread with every second Somali living in poverty in 2016 before the onset of the current shock. Poverty, defined as having a total consumption expenditure lower than the international

poverty line of US\$1.90 at 2011 PPP, also varies considerably across the Somali population, ranging from 26 to 70 percent. Regional differences in poverty between the North East (27 percent) and the North West (50 percent) are much larger than urban/rural variation (45/52 percent). In urban areas, poverty ranges from 26 (North East) to 57 percent (Mogadishu). In rural areas, poverty ranges from 34 percent (North East) to 61 percent (North West). Poverty incidence is highest in IDP settlements where seven out of ten people are poor, while more than 1.1 million Somalis, roughly 9 percent of the population, considered internally displaced.

6. Inequality is lower than in low-income Sub-Saharan countries. The Gini index, measuring inequality as the dispersion in consumption expenditure among the population, is 37, compared to an average value of 42 in low-income Sub-Saharan countries. Inequality in low-income Sub-Saharan countries ranges from 33 (Mali) to 56 (Central African Republic), with 16 of 26 countries having an inequality index between 35 and 49. Within the Somali population, inequality is more pronounced for urban than rural households. When taking into account urban and rural areas separately, poverty and inequality are positively correlated: The North East region, where poverty incidence is lowest, has the lowest level of inequality, followed by North West and Mogadishu, and poverty and inequality in IDP settlements are higher than in any other subgroup (Figure 0.3).

7. Poor households are more likely to be deprived beyond monetary poverty, and less likely to participate in the labor market. The poor are more likely to be illiterate, to have lower levels of educational attainment, and to live in dwellings of lower quality, including lack of access to improved water and sanitation facilities. This relationship between monetary poverty and non-monetary indicators of deprivation holds both within and across regions. Poor households further have poor labor market outcomes with low labor force participation and high unemployment.



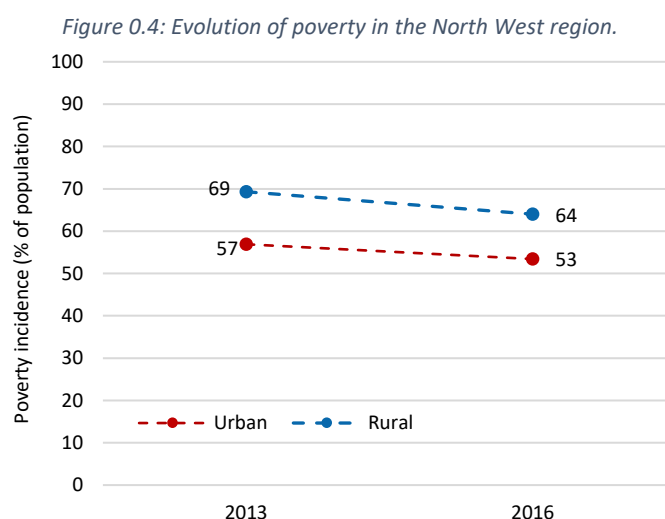
Source: Authors' calculation.

8. Improving active labor market participation, in particular among women, will be important to achieve sustained economic development. With poverty strongly correlated with unwanted labor market outcomes, the different reasons for inactivity need to be addressed by a comprehensive approach. Better access to healthcare can reduce inactivity caused by illness and sickness, which are among the prime causes for inactivity among Somali men. Improved political stability can address the threat of insecurity,

another major reason for inactivity. Among women, household work is the main barrier to better labor force participation and employment outcomes.

Poverty in the North West fell between 2013 and 2016 despite a reduction in remittances but poor rural households are at risk of being left behind.

9. The Somali North West region records moderate welfare gains between 2013 and 2016, with poverty incidence declining around 5 percentage points in urban and rural areas, but a majority remains poor. Trends in poverty can only be studied for the North West region, home to just over a quarter of Somalis, where a survey measuring poverty was conducted in 2013. Poverty incidence decreased for both urban and rural households, but remains more widespread in rural areas: in urban areas, poverty incidence was 52 percent in 2016, down from 57 percent in 2013, compared to rural areas with 64 percent in 2016, down from 69 percent in 2013. Rural households are not only poorer but their average shortfall from the poverty line is also larger at 24 percent than in urban areas at 19 percent in 2016, leaving them further away from overcoming poverty. Yet, average rural shortfall decreased from 29 percent in 2013, more than in urban areas whose shortfall in 2013 was 20 percent, implying that reduction in monetary poverty was somewhat larger in rural areas.

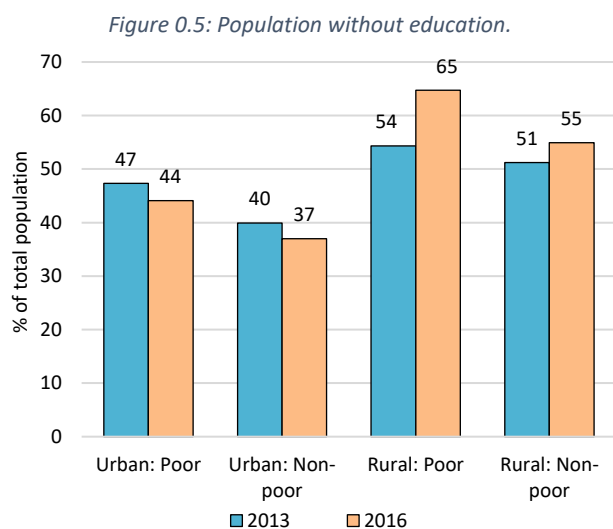


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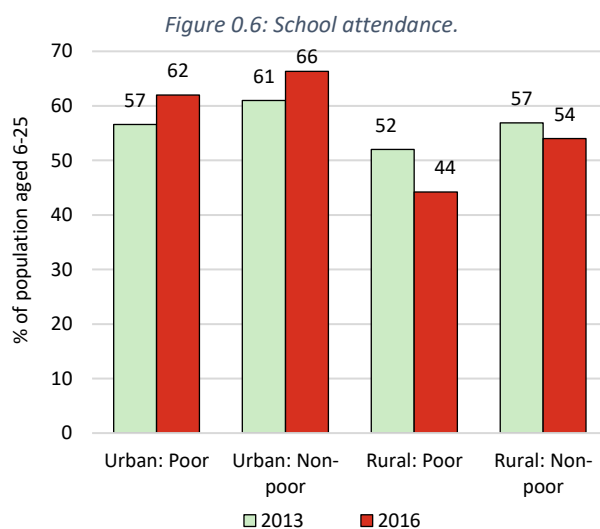
10. The decrease in rural poverty is unlikely to be associated with remittances, while in urban areas poverty increased among recipients. Between 2013 and 2016, poverty incidence increased 8 percentage points among urban households that received remittances, and decreased 9 percentage points among urban non-receivers. In rural areas, poverty incidence decreased largely (23 percentage points) for receivers of remittances and moderately for non-receivers (4 percentage points). The share of poor households receiving remittances was similar in 2013 and 2016 but the average amount received declined. The urban increase in poverty among recipients might be explained by a mixing effect with some urban receivers graduating from poverty not requiring remittances anymore and other urban poor households starting to receive remittances. The reduction in rural poverty is unlikely to be associated with remittances as a similar number of households received remittances, which on average were smaller. Furthermore,

the urban-rural gap in terms of share of households receiving remittances decreased for poor and non-poor households between 2013 and 2016.

11. The rural poor are increasingly left behind in terms of education relative to non-poor and urban populations between 2013 and 2016. Literacy increased by 10 percentage points among the urban poor (from 48 percent to 58 percent) and 6 percentage points for the urban non-poor (from 56 percent to 62 percent) between 2013 and 2016. The increase in the literacy rate in urban areas is likely to be associated with higher levels of education, as the share of people with no education in urban areas decreased from 44 percent to 41 percent during the same period. In rural areas, non-poor households maintained a similar literacy rate (around 47 percent), yet poor households experienced a decreased in literacy of 6 percentage points (from 41 percent to 35 percent). A larger share of the rural poor does not have any education in 2016 (65 percent) compared to 2013 (54 percent). Changes in the levels of education could be associated with a different composition of the population in urban and rural areas. The rural poor in the North West seem to be increasingly excluded in terms of education which complicates their path out of poverty.



Source: Authors' calculation.



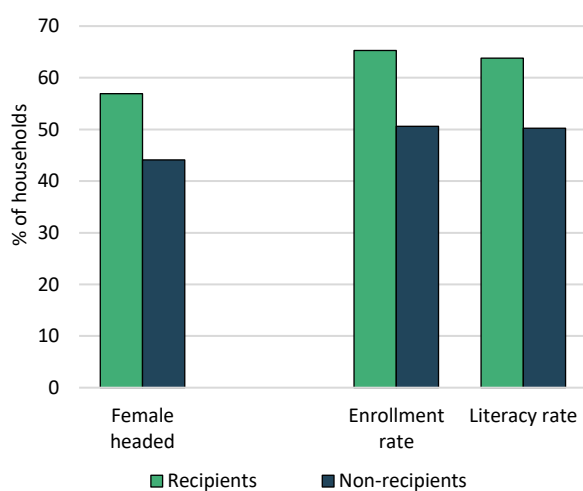
Source: Authors' calculation.

12. In order to reduce inequality and poverty, access to, and availability of, key services, particularly education, must be improved for poor households. Worse educational levels among the rural poor are probably caused by lower school attendance. Between 2013 and 2016, school attendance increased in urban areas, remained relatively constant for the rural non-poor population, while it decreased around 8 percentage points (from 52 percent to 44 percent) among the rural poor. Providing access and means to reap the benefits from education, among other basic services, is crucial to achieve positive labor market outcomes and to ultimately lift these households out of poverty. In 2016, nearly half of the school-aged Somali population did not attend school due to illnesses, absent teachers, the lack of resources, and having to help at home. Attendance is more likely for boys than girls, and similar between households headed by a men and a woman. The emphasis should be on poor and vulnerable households, since their educational achievements are lower, and low achievement tends to be transmitted across generations. Sustained differences in terms of education between poor and non-poor households, together with higher unemployment in rural areas, may continue to increase the gap. Thus, these challenges must be addressed soon with programs targeted at the rural poor that provide access and incentives to improve educational outcomes and create employment opportunities.

Remittances are important and improve socio-economic outcomes but often do not reach the ones most in need.

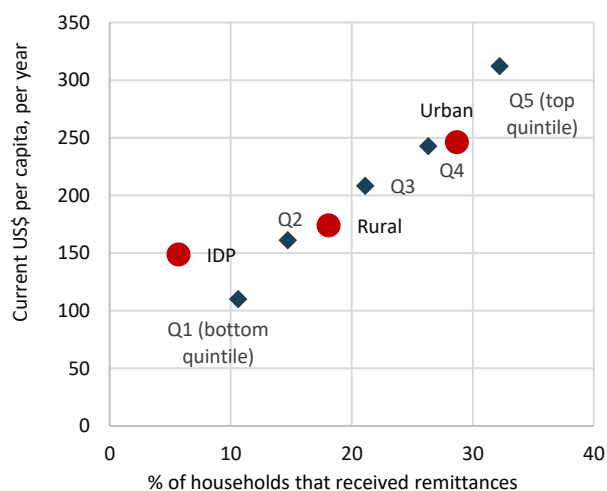
13. Remittances make important contributions to welfare, with 1 in 5 Somali households receiving remittances and many recipients relying heavily on these transfers. Remittances are a critical source of income for one fifth of Somali household who receive them, being the main source of income for more than half of recipient households. With an average annual value of US\$233 per capita among recipients, these transfers make up around 37 percent of household expenditure on average. This suggests that recipients rely heavily on remittances and, consequently, are vulnerable to losing this source of income. Without remittances, many of those households would fall into poverty. In fact, households that receive less remittances than in the previous year are more likely to be poor, suggesting households struggle to adjust to such income shocks. A qualitative study supports the notion that remittances income is critical to households. Many recipient households rely on a single sender and would not know how to afford basic consumption and services without this source of income. Thus, while remittances boost the welfare of households fortunate enough to receive them, the lack of other means for generating income puts them at risk of falling into poverty in case of losing their remittances income.

Figure 0.7: Characteristics of recipient households.



Source: Authors' calculation.

Figure 0.8: Value and incidence of remittances.



Source: Authors' calculation.

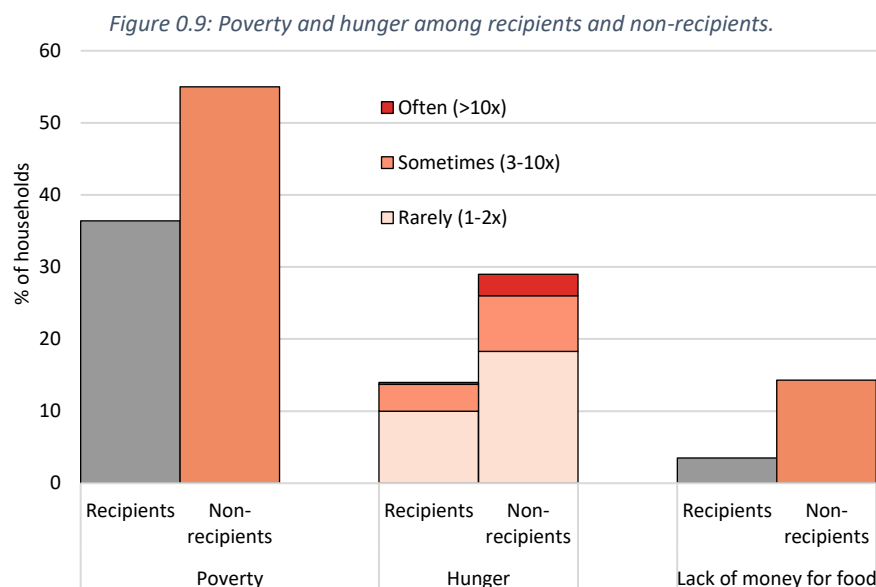
14. Recipient households are typically urban, wealthier, headed by women, and better educated, but their labor market behavior does not differ much from that of non-recipients. 26 percent of households headed by women receive remittances, compared to 17 percent of households headed by men. Wealthier and urban households are more likely to receive remittances and they receive higher amounts. Recipient households are more likely to enroll their children in school and spend more on education, especially poorer recipient households. Through remittances, poor recipients can offset much of their educational disadvantage compared to non-poor households. The effect of receiving remittances on labor market behavior depends on whether household members use these funds to top up income from work or to substitute work activities, if they can rely on income from remittances. The latter use of remittances income implies lower labor force participation (full substitution) and fewer hours on the job (partial substitution). Despite the fact that remittances are the main source of income for many recipients, there

is no significant difference in labor force participation and hours worked between recipients and non-recipients. Thus, households mainly use remittances as a top-up for their income from work.

15. The Somali labor market does not provide many opportunities to substitute for the receipt of remittances. The fact that so many households rely on remittances as their main source of income is testament to a lack of opportunities in the Somali labor market. It further suggests that households cannot simply take up work or work more hours to offset a decrease in remittances, providing additional evidence for their vulnerability. While remittances are a critical source of income for recipients, poor access to decent work opportunities affects many Somali households, recipients or not. Measures to improve access are key to achieve sustainable welfare in the long term.

16. With recipients less vulnerable to poverty and hunger, remittances serve as a resilience mechanism. Poverty incidence is 18 percentage points lower in recipient households (recipients: 37 percent; non-recipients: 55 percent). Recipients have higher consumption levels, experienced hunger in the past month half as often as non-recipients, and are less likely to lack money to buy food. Remittances are providing families with the resources to cushion poverty and hunger. This may become critical in adverse situations like the ongoing drought, where households' purchasing power has declined.

17. Remittances are neither very prevalent nor effective in reducing poverty among the most vulnerable households that are located in IDP settlements. While IDP households are among the poorest households, only around 7 percent receive remittances. Many of the recipient IDP households further suffered from a reduction in the value of the remittances relative to the previous year, which can be hard to compensate. The amounts received are not effective in reducing poverty for recipient IDP households because they are too small relative to the poverty gap: the average daily per capita value of remittances for poor IDP households is only 13 percent of their consumption shortfall relative to the poverty line.



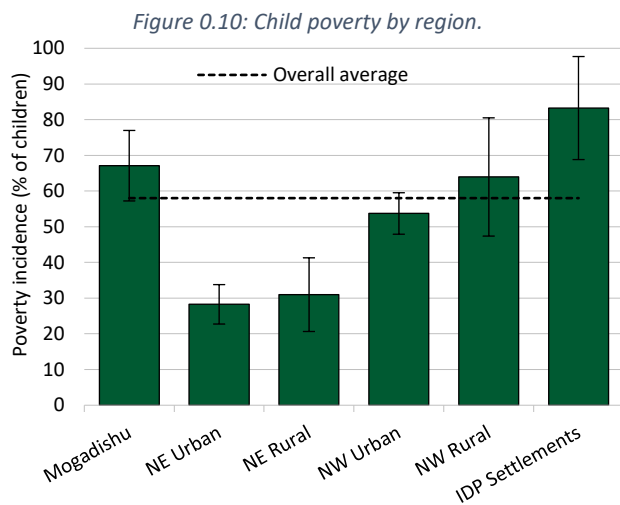
Source: Authors' calculation.

18. Remittances showcase how cash transfers provide an effective means of resilience to adverse shocks, but they remain largely unavailable to the most vulnerable populations, making the case for social protection programs to build resilience more broadly. The total value of remittances received

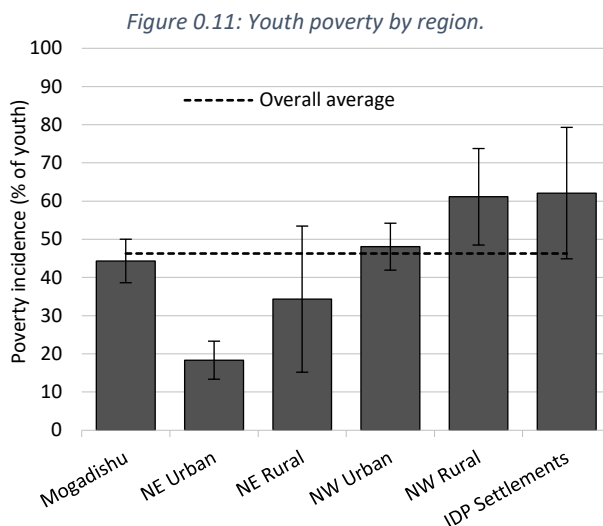
should be interpreted with caution. The reported value is lower than stated by other sources, possibly due to under-reporting but still reveals general patterns. Recipients are better protected from both monetary and non-monetary forms of deprivation, leaving them less at risk in the face of shocks like the ongoing drought. This evidence of beneficial welfare outcomes and resilience derived from remittances receipt shows that they are an apt means for households to deal with such adverse shocks. But recipients' high reliance on remittances leaves these households vulnerable to the volatility of diaspora incomes and the uncertainties around sending money to the region. Policies directed at facilitating and de-risking remittances transfers can reduce this kind of vulnerability but cannot reach far enough. With 15 percent of the poor and only 7 percent of IDP households receiving remittances, access to such assistance excludes many people who most need it. This general lack of resilience mechanisms can be addressed through more formal and predictable forms of cash transfers to mitigate the most urgent shortfalls in basic needs, in particular in the current crisis.

Every second Somali child does not go to school. Especially for children in poor households, this can create a lifetime poverty spell.

19. Like in many parts of the world, Somali children are particularly likely to be poor. 58 percent of children (0-14 years) and 46 percent of youth (15-24 years) live in households with total consumption expenditure below the poverty line. In line with the general finding of better welfare conditions in the North East region, the lowest child and youth poverty incidence are found in that area. Child and youth poverty is substantially lower in small households, households with an educated household head, and households that receive remittances.



Source: Authors' calculation.

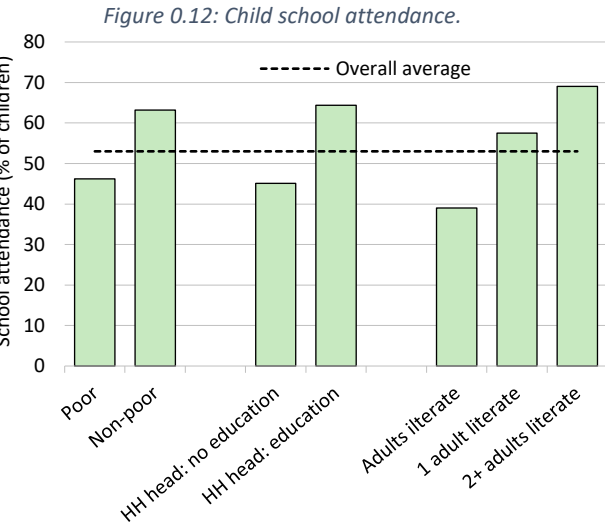


Source: Authors' calculation.

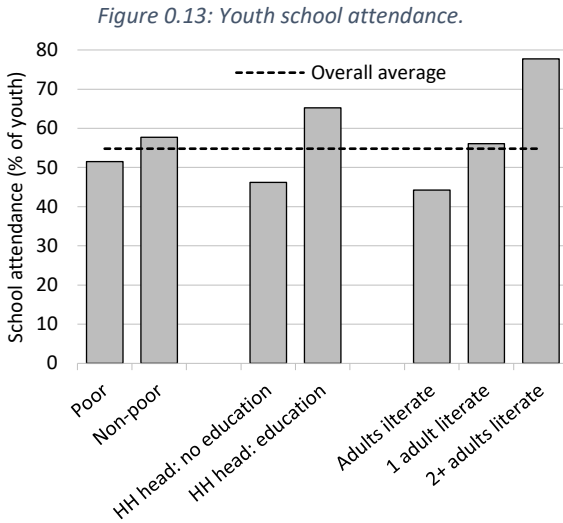
20. Almost 4 out of 5 children are deprived in at least one dimension. 79 percent of children and 85 percent of youth are deprived in at least one dimension, while 47 and 54 percent are deprived in two dimensions or more, respectively. Deprivation is concentrated in rural areas of North West and IDP populations. For children, consumption deprivation is the most common type of deprivation in urban areas and IDP camps, while the lack of access to improved water source is most prevalent in rural areas. Along with the lack of access to information, consumption deprivation is more relevant for youths in

Mogadishu and urban areas of North West. Lack of access to an improved water source is the second most common deprivation in rural areas of North West and North East and in IDP settlements.

21. Nearly half of Somali children and youth do not currently attend school, and school attendance is less likely in poor households. Education is a powerful tool to improve the wellbeing of future generations. However, 47 percent of the children and 45 percent of youth do not attend school, with attendance lower in IDP settlements. Moreover, poor children are less likely to attend school (46 percent) compared to children living in non-poor households (63 percent). Thus, children from poor households face bigger obstacles to overcome poverty in their adult life. Children and youth that live in households that receive remittances have a higher school attendance by 13 and 17 percentage points, respectively, and recipient households spend more on education than non-recipients, particularly among the poorer households. School attendance is further 30 percent less likely for children and youth when the head of their household has no education. The most common reasons for not attending school are illnesses, absent teachers, lack of resources, and, among the youth, having to help at home. Efforts aimed at increasing educational outcomes should be aimed at these constraints to attendance.



Source: Authors' calculation.



Source: Authors' calculation.

22. Poor children and children in IDP settlements often grow up in an environment of poor sanitary conditions, with adverse consequences for their health and future productivity. Less than half of children and youth drink water from a piped source. Children and youth living in rural areas are much less likely to treat the water they use from an unprotected water source. Most children and youth in IDP camps and rural parts of the North West rely on other water sources. Water and sanitation conditions can have large impacts on health and future productivity, and thus, on future poverty status. Regional disparities and dire conditions, especially in IDP settlements and in rural areas in North West, make it more difficult to lift households out of poverty.

23. Breaking the intergenerational poverty cycle requires improving conditions for children and youth, especially with respect to education. In the current environment, children are disadvantaged relative to older generations, with children from poor households facing a particularly severe disadvantage to overcoming poverty and deprivation. This disadvantage will likely translate into poverty in their adult lives. In light of the overwhelmingly young Somali population, this will become an extraordinary development

challenge. Barriers to educational opportunities and basic services must be addressed now with dedicated and specific programs to create enabling environments and opportunities for disadvantaged children and youth. Priority should be given to programs which aim to break the intergenerational transmission of poverty by addressing low levels of education, poor health, and poor housing conditions.

A social protection program could reach the ones most in need, and help break out poverty over generations, but would come at a hefty cost.

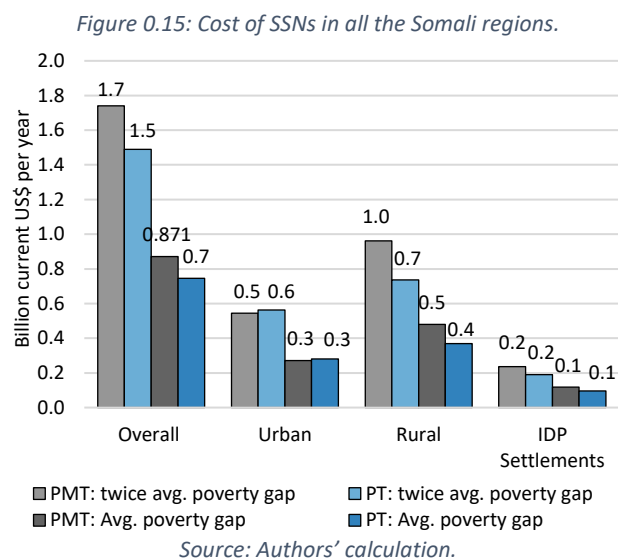
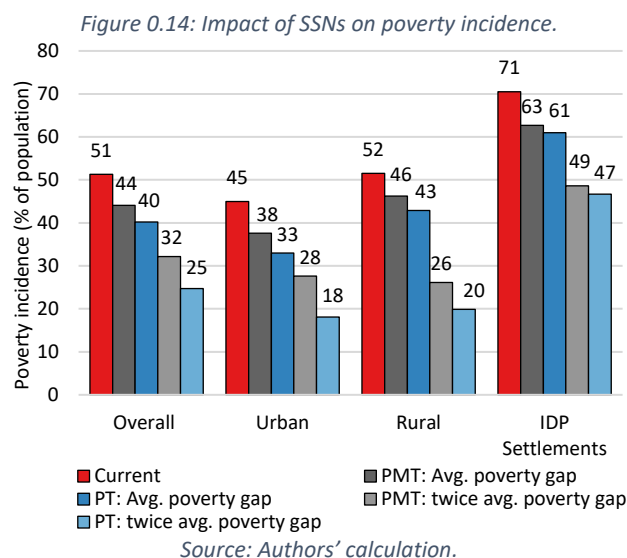
24. The absence of effective, resilience-building social protection programs exacerbates the effect of shocks on livelihoods, putting millions of Somalis at risk in the current severe drought. The data collected in 2016 shows that a large number of vulnerable households lack access to effective mechanisms for coping with shocks. The result of this has manifested in the many people at risk in early 2017 following several severe droughts. Recurrent natural shocks like these droughts caused by El Niño will continue to test the resilience of the Somali population in the future. In the aftermath of the current shock, designing a well-targeted and effective social protection program that can work in the local context will be one of the overarching objectives to avoid repeated famines and, more generally, to open up a sustainable path to poverty reduction and shared prosperity.

25. Remittances can help to smooth shocks and improve welfare conditions, yet they have a limited impact on the most vulnerable. Remittances are de-centralized and not targeted to the most vulnerable households. Often they are distributed within clan networks, excluding exactly those that have lost their social support network. Still, nearly 43 percent of the Somali population is poor and does not receive any remittances. Furthermore, remittances are volatile and, thus, do not necessarily scale with needs. For example, the change in regulations for international bank transfers to Somalia created uncertainty around remittances at the time of the emerging drought.

26. A transparent social protection program like a direct cash transfer can help to reach the most vulnerable population. While donor support for the Somali population is considerable, local capacity to efficiently absorb the investment and deliver services are limited. In addition, political economy challenges can weaken the effectiveness of programs or delay their implementation. Therefore, a transparent social protection program can be a good alternative to reach the most vulnerable. While direct cash transfers have limitations, especially where services are unavailable rather than just inaccessible, simulating the cost and impact of such programs serves as a benchmark helping to better understand fundamental trade-offs that will also apply to alternative social protection programs. Cash transfers are only one alternative, and further analysis is needed given the complexity of designing and implementing a social protection program.

27. A large targeted social protection program to reduce poverty by 19 percentage points, from 51 to 32 percent, would come at a high cost of US\$1.7 billion. Given widespread and deep poverty, a social protection program with considerable impact on poverty would require substantial funding. Using observable household characteristics to target poor households, a uniform annual transfer of US\$ 157 per capita to all eligible households would reduce poverty by 19 percentage points. Poverty among the most vulnerable households in rural areas and IDP settlements would decline by 26 and 22 percentage points, respectively. As for any targeted programs, there would be some leakage: 27 percent of poor households would be excluded while 31 percent of non-poor households would be included into the program. The costs of such a program, US\$ 1.7 billion, representing around 22 percent of GDP, is high but of similar

magnitude as net official development assistance and aid (US\$ 1.3 billion in 2015). This benchmark gives an idea about the effort and resources needed to have substantial impact on poverty.



28. A smaller transfer amount is less costly but cannot lift the very poor out of poverty. Reducing the transfer amount to US\$ 80 per capita will half the overall costs for poverty reduction to US\$ 871 million. However, such a transfer amount will only reduce poverty from 51 percent to 44 percent. 12 percent of those that would be lifted out of poverty with a uniform annual transfer of US\$ 157 would remain poor. Furthermore, the poverty line is an approximate cost-of-living standard and should be treated as such. Thus, the exact amount for a transfer should be derived from a contextual analysis of needs and their costs. Also, the targeting approach needs to emerge from a discussion of the objective of a social protection program. Targeting only the very poor with a larger transfer can be more suitable depending on the objective.

29. Protecting the poor in times of a shock like a drought is more expensive than just lifting poor households out of poverty. Building resilience is important to protect protective assets from being sold in times of a shock. A 10 percent consumption shock across all households would increase the costs of a social protection program to reduce poverty to the same level of 32 percent from US\$ 1.7 billion to around US\$ 2.0 billion. It is worth noting that the 10 percent shock increases the cost of a comparable social protection program by 17 percent. This large elasticity is due to a large number of households that were almost poor in 2016 but are likely to be pushed into poverty by a shock like the current drought.

A more in-depth analysis will provide evidence for more specific policy recommendations towards poverty reduction.

30. A Somali Poverty Assessment is planned to provide more in-depth analysis to better inform policies and programs. This poverty profile focuses on descriptive statistics to provide a snapshot of poverty and other socio-economic indicators. The analysis is used to make general recommendations with respect to poverty reduction programs. A more in-depth analysis along the lines proposed in the chapters' key messages is planned, taking advantage of the second wave of the Somali High Frequency Survey that is implemented in summer, 2017.

Introduction

1. Somalia is emerging from more than two decades of political instability. After independence in 1960, Somalia transitioned towards an autocratic regime that finally collapsed in 1991. The following civil war wiped out the central state and created a power vacuum that was quickly filled by local warring factions. Between 1995 and 2000 Somalia witnessed the emergence of regional administrations. Somaliland self-declared independence in 1991, followed by Puntland in the northeast declaring itself a regional administration in 1998. In this period, security improved and economic development accelerated slightly, while internal displacement increased. The first significant central state institution, the Transitional Federal Government (TFG), was formed in 2004 but political instability and violence continued especially in the southern regions. After several setbacks and the expiration of the transitional mandate of the TFG, the Federal Government of Somalia (FGS) was finally created in 2012 followed by a relatively more stable period. After peaceful elections in 2016, a new Government was formed in 2017 committed to embark on a development trajectory.

2. The prolonged period of instability created a highly vulnerable population of 12 million people. According to the 2012 UNFPA Population Estimation Survey (PESS), 42 percent of Somalis live in urban areas, 23 percent live in rural areas, 26 percent are nomadic, and 9 percent –just above 1 million– internally displaced. Outside of urban areas, three types of livelihood zones make up the vast majority of the landmass: pastoral and agro-pastoral livelihood zones inland, and fisheries zones on the coast. In the South, the Juba and Shabelle rivers provide irrigation for more sustained agriculture.

3. A vibrant but largely informal private sector is the result of the long absence of a functioning state. During the period of civil conflict and in the absence of a central government, the Somali economy continued to grow at a moderate pace.¹ This performance can be explained by statelessness following the collapse of the previous predatory regime:² The lifting of state constraints on private enterprise led not only to improved economic performance but also to private sector provision of services which would otherwise be provided by the public sector. Several economic activities including telecommunications, money transfer businesses, livestock exports, and localized electricity services grew well during this period. The disintegration of the state did not result in a complete economic collapse in part due to the large scale out-migration of skilled Somalis who sent back part of their earnings –created in much more productive foreign environments– as remittances. Remittances grew from a negligible amount in 1990 to about 24 percent of GDP in 2015³. Informal institutions based on clan networks provided the functions of secure property rights and contract enforcement.

4. Somalia's gross domestic product is estimated at US\$6.2 billion in 2016, equivalent to US\$503 per capita.⁴ In current per capita dollar terms, among Sub-Saharan, low-income countries, Somalia's economy is larger than The Gambia, the Democratic Republic of Congo, Liberia, Madagascar, Malawi, Niger, Central African Republic, and Burundi, making it the 9th poorest country of the region (Figure 0.1). Somalia's per

¹ Estimates indicate that the Somali nominal GDP in 2015 was US\$5.9 billion. In 1990, GDP was estimated at US\$1.03 billion. These estimates imply an average annual growth rate in excess of 4 percent during the 25-year period.

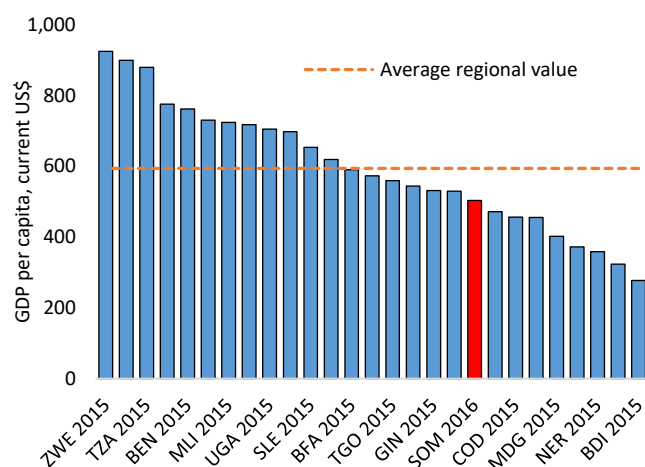
² The positive impact of 'statelessness' on the economy has been well documented See for example, Leeson, Peter T. *J of Comp. Econ.* 2007; Powell, Benjamin et al. *J of Econ. Behav. and Org.* 2008.

³ <http://www.worldbank.org/en/country/somalia/overview>.

⁴ *Idem*.

capita income is on average 20 to 40 percent higher than GDP per capita, as large inflows of remittances allow households to top up own-generated income as measured by GDP per capita. According to the most recent World Bank estimates, Somaliland's GDP was US\$1.6 billion in 2012, while authorities in Puntland put its GDP at US\$1.3 billion in 2010.⁵

Figure 0.1: GDP per capita, Sub-Saharan low income countries.



Source: SHFS 2016 and World Bank dataset.

5. Diaspora remittances are central to Somalia's economy, outweighing both international aid flows and foreign direct investment⁶. Remittances are estimated at between US\$1.2 and US\$2 billion today, equivalent to 23 to 38 percent of GDP. Remittances as a source of income have been important in cushioning household economies, creating a buffer against shocks (drought, trade bans, inter-clan warfare). Remittances fund direct consumption, including education and health, and some investment, mostly in residential construction, and allow Somalia to sustain its high consumption rates and to finance a large trade deficit.

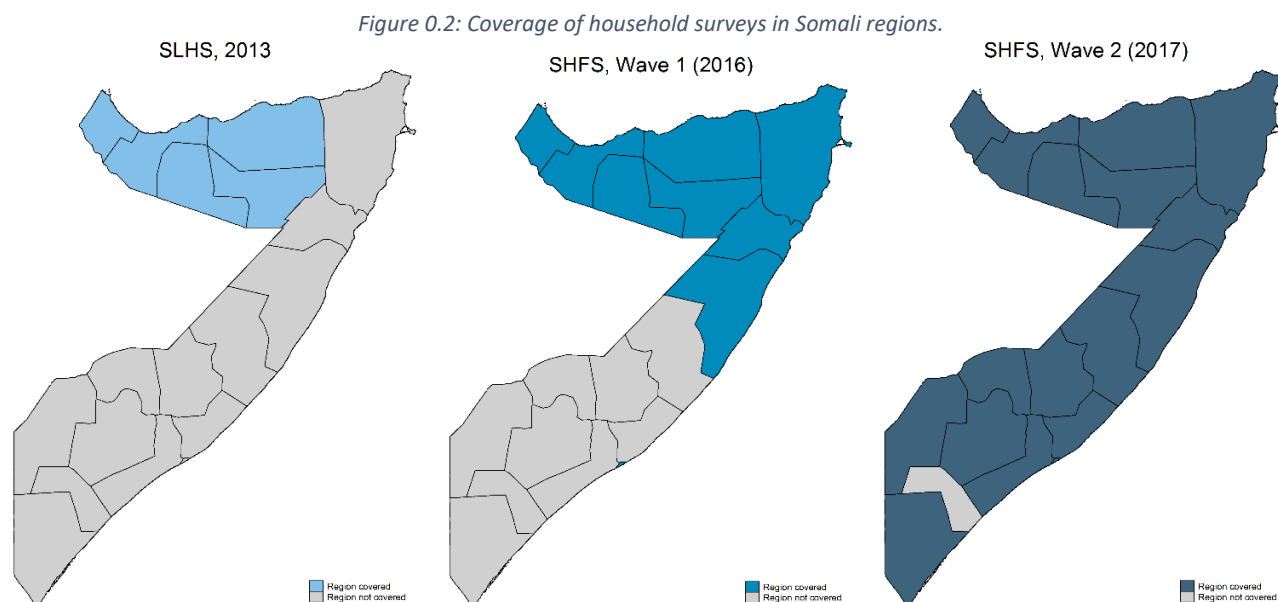
6. The region is currently facing a severe and prolonged drought, leaving about half of the population at acute risk of famine, mostly in rural areas and IDP settlements. Food security in the region has been deteriorating due to poor rainfall in the October-December 2016 season. Low levels of rainfall are forecast for the April to June 2017 season. According to the World Food Programme, in January 2017 around 3 million people were not consuming the minimum food requirements, while 3.3 million more were in need of assistance to avoid the crisis. According to the Famine Early Warning Systems Network (FEWS NET) and Food Security and Nutrition Analysis Unit (FSNAU), famine (IPC Phase 5) is likely if the rain levels are below the average in the April to June 2017 season. Geographically, the drought is most severely affecting the southern pre-war regions of Bay and Bakool, as well as rangeland in the North East, leading to crop loss and livestock deaths, and output is expected to decline by 10.6 percent in 2017 according to World Bank internal estimates. In combination with high prices for staple foods, households' purchasing power is compromised. In addition, 257,000 people have been internally displaced as a consequence of the drought.⁷

⁵ Somalia Economic Outlook.

⁶ FAO (2013).

⁷ <http://reliefweb.int/report/somalia/somalia-drought-response-situation-report-no-1-24-march-2017>.

7. In the absence of representative household surveys not much was known about poverty. The Somalia Socioeconomic Survey 2002 was the last Somalia-wide representative Survey. Existing data sources are mostly limited to food and nutrition survey conducted by FSNAU and FAO, and a range of other smaller surveys implemented by organizations operating in Somalia. In 2012, the first nationwide Population Estimation Survey (PESS) was implemented preparing for a census. Somaliland carried out a household budget survey (SLHS) in 2013, which generated much-needed indicators, including poverty estimates, but the sample is not representative and did not cover nomads and Internally Displaced Persons (IDPs) (Figure 0.2). The lack of data impedes the design and implementation of policies and programs needed to support economic development and assistance in the event of severe shocks.



Note: The boundaries on the map show approximate borders of Somali pre-war regions and do not necessarily reflect official borders, nor imply the expression of any opinion on the part of the World Bank concerning the status of any territory or the delimitation of its boundaries.

Source: Authors' calculation.

8. The World Bank implemented the first wave of the Somali High Frequency Survey in 2016. The survey was administered to 4,117 households distributed among rural and urban areas, and IDP settlements. The geographical coverage has been improved compared to the SLHS in 2013 (Figure 0.2). However, the sample still is not fully representative of the Somali population as it excludes nomadic households and households in insecure areas (Appendix).⁸ Therefore, the presented data should be interpreted with respect to the urban and rural as well as IDP population covered by the survey. Extrapolations towards the overall Somali population should only be made cautiously given that the nomadic population is likely to be different from the urban, rural and IDP population with similar reservations for the population living in insecure and, thus, not covered areas. Even for the safer areas, new solutions had to be developed to overcome challenges created by the fragile context and weak data infrastructure including the absence of a sample frame (Box 1). The success of this established survey infrastructure offers an opportunity to implement additional waves of the survey with expanded coverage. Wave 2 will include for the first time the Somali nomadic population as well as additional urban

⁸ Nomadic households represent about one third of the Somali population.

and rural areas. The survey, funded by the Somali Multi Partner Trust Fund, is expected to be administered in the summer of 2017.

9. Somali regions have been aggregated into distinct geographical areas: North West, North East, Mogadishu and IDP Settlements. North West includes the pre-war regions of Awdal, Sanaag, Sool, Togdheer, and Woqooyi Galbeed. North East includes the regions of Nugal, Bari, and Mudug. IDP settlements include all settlements of internally displaced persons located in Mogadishu, North West and North East. Finally, Mogadishu includes all the households located in the capital with the exception of IDP settlements.⁹ In addition to geographical regions, the Somali population has been further divided into three livelihood types: urban, rural, and internally displaced settlements (IDPs). The Somali High Frequency Survey is representative of 4.9 million Somalis. The nomadic people and Somalis living in inaccessible conflict-affected areas amount to a population of 6.5 million that was not surveyed by Wave 1 of the SHFS (Figure 0.3).¹⁰

Box 1: INNOVATIONS TO OVERCOME DATA COLLECTION CHALLENGES

Data collection in the Somali regions is challenging due to insecurity in some areas. Face-to-face time is limited to about 60 minutes while a full consumption questionnaire usually takes 90 to 120 minutes. Also, limited field access makes monitoring of data quality difficult. These challenges were overcome by a newly developed methodology to collect consumption data in 60 minutes, and with the design of a remote real-time data monitoring system.

The survey was implemented using tablets as survey devices (CAPI). Interviews were conducted using SurveyCTO Collect on the tablet with data transmitted to a secure server in a cloud computing environment. GPS tracker helped to track all devices using a web interface, Barcode Scanner allowed to use barcodes for the identification of enumerators, and a parental control application provided a safe contained working environment for enumerators.

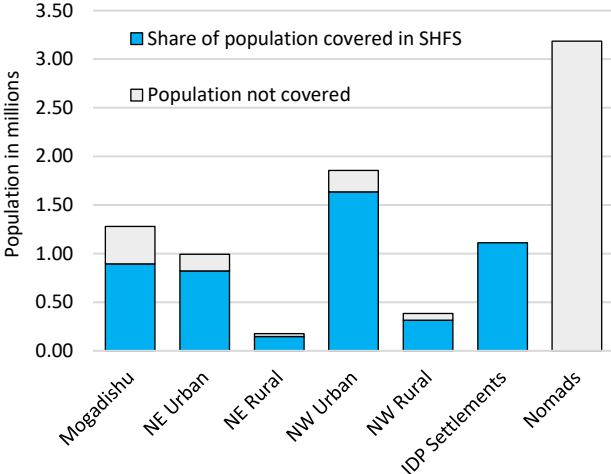
The new solutions were tested in a pilot survey in Mogadishu. Implementing these innovations in the Somali High Frequency Survey ensured high data quality despite limitations for field monitoring, as the infrastructure offers a modern data collection system that can be used to fill the most important data gaps. This set-up enabled remote data quality management, on-the-fly processing and analytics. The newly developed Rapid Consumption methodology was applied to estimate poverty based on short 60-minute interviews. The success of this established survey infrastructure offers an opportunity to implement additional waves of the survey with expanded coverage.

⁹ Wave I of the SHFS covered the following pre-war regions: Awdal, Banadir, Bari, Mudug, Nugaal, Sanaag, Sool, Togdheer, and Woqooyi Galbeed.

¹⁰ The pre-war regions not included in this study are: Bakool, Bay, Galgaduud, Gedo, Hiraan, Lower Juba, Lower Shabelle, Middle Juba and Middle Shabelle. While the survey also did not include all Somali IDPs, the survey's IDP population was deemed representative of all IDPs.

10. The poverty profile presents the first Somali-wide assessment of welfare conditions. The poverty profile is structured in the following way: Part I explores the monetary and non-monetary dimensions of poverty in Somali regions, as well as the evolution of welfare conditions in the North West region between 2013 and 2016. Part II analyzes in detail selected topics: the role and dynamic of remittances, child and youth poverty and social protection measures to increase resilience and reduce poverty.

Figure 0.3: Coverage of the SHFS.



Source: Authors' calculation.

Part I: Overview of poverty

1. Monetary Poverty

KEY MESSAGES

Poverty is wide-spread with every second Somali living in poverty, and almost 1 in 3 facing conditions of extreme poverty. Poverty varies considerably across different segments of the Somali population, ranging from 26 to 70 percent, with regional disparities exceeding differences between urban and rural areas. Widespread poverty and a moderate poverty gap of 22 percent implies many Somalis are far from overcoming poverty.

Somalis living in IDP settlements face most widespread and deepest poverty. 7 out of 10 internally displaced live in poverty and 1 in 2 live in extreme poverty, placing them among the poorest populations in Sub-Saharan low-income countries.

Inequality is lower than in most low-income African countries, but many non-poor are at risk of falling into poverty in case of an adverse shock to consumption. With a Gini index of 37 percent, inequality is considerably below the 42 percent average. Low inequality is owed to homogeneous levels of consumption, leaving even non-poor Somalis not very far from the poverty line. As a result, a 10 percent adverse shock to consumption would raise the poverty rate by 6 percentage points.

A more comprehensive analysis will be included in the Somali Poverty Assessment relying on data from Wave 1 and Wave 2 of the SHFS. The analysis will consider adult equivalent measures of monetary poverty considering within household economies of scale. The analysis will also expand on the profile of the vulnerable population, and the impact of the drought on livelihoods. This will help to draw a more robust and comprehensive picture of poverty.

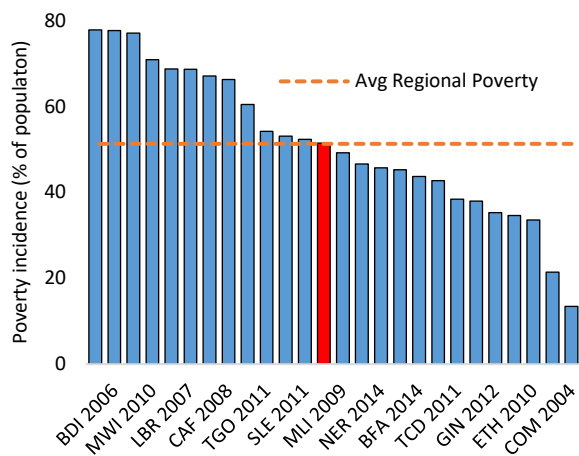
11. 1 in 2 Somali people are poor, with almost one third facing conditions of extreme poverty. 51 percent of the Somali population lives in conditions of poverty (Figure 1.5), as defined by having a total daily per capita consumption expenditure lower than the international poverty line of US\$1.90 at 2011 PPP, which equals 34,341 Somali Shillings per day per person in 2016 (Box 2).¹¹ Further, 31 percent of Somalis have a total daily per capita consumption expenditure of less than US\$1.25, expressed at 2011 PPP, leaving them in conditions of extreme poverty. At 31 percent of the total Somali population, the share of the extreme poor makes up a full 60 percent of the poor population. Hence, while a large share of the Somali population is poor, a majority of the poor face extreme poverty, having to overcome a formidable consumption shortfall if they are to escape poverty (Figure 1.8).

12. Widespread poverty, combined with a moderate poverty gap, leaves many Somalis far from overcoming poverty. The overall poverty gap for the Somali poor is 22 percent of the poverty line or 7,383 Somali Shillings a day, where the poverty gap index measures the average gap between total consumption

¹¹ We compute the value of the international poverty line in 2016 Sh. using the 2011 So.Sh./\$ PPP, the Somali Consumer Price Index increase between 2011 and 2016, and the 2016 nominal exchange rate between the Somali Shilling and the US Dollar.

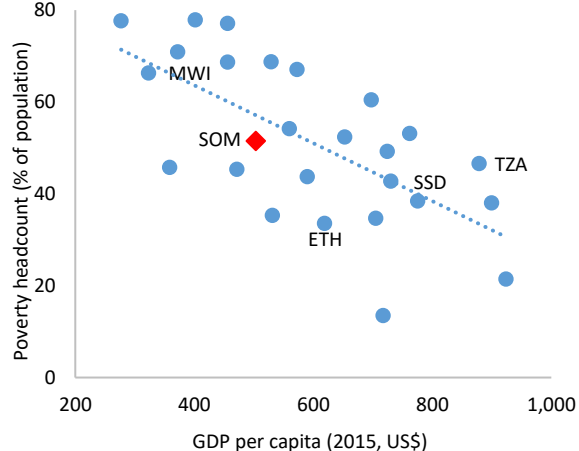
expenditure of the poor and the poverty line, as a percentage of the poverty line. The poverty gap of 22 percent suggests that many of the poor are far from the poverty line and need a significant increase in their consumption to move out of poverty, reflective of the fact that many Somalis live in extreme poverty. The severity of poverty, estimated at 11.4 percent, is further testament to disparities in consumption among the poor population.¹² As a theoretical benchmark for addressing this situation: if the poor could be perfectly targeted, an annual subsidy of around US\$1.3 billion would be necessary to lift all the Somali poor out of poverty (see Chapter 6. Social protection).

Figure 1.1: Cross-country comparison of poverty incidence.



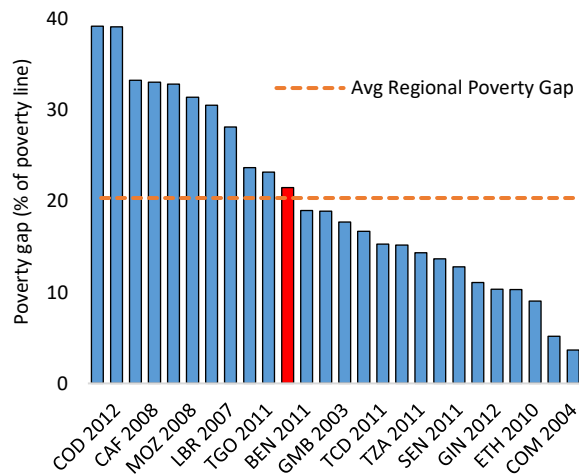
Source: Authors' calculation and World Bank Open Data.

Figure 1.2: Cross-country comparison of poverty and GDP.



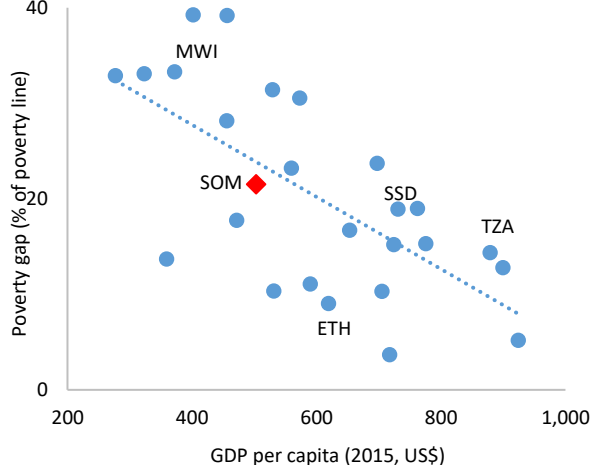
Source: Authors' calculation and World Bank Open Data.

Figure 1.3: Cross-country comparison of poverty gap.



Source: Authors' calculation and World Bank Open Data.

Figure 1.4: Cross-country comparison of poverty gap and GDP.



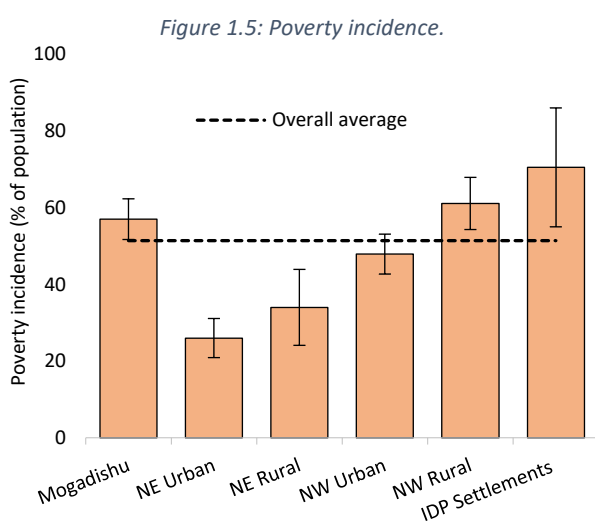
Source: Authors' calculation and World Bank Open Data.

13. At 51 percent, the poverty rate is in line with the regional average of low-income countries across Sub-Saharan Africa. The unweighted average poverty headcount rate of low-income countries in Sub-Saharan Africa, based on the latest available estimates from World Bank Open Data, is 51 percent, equal to the Somali overall poverty headcount rate (Figure 1.1). This relationship also holds when controlling for

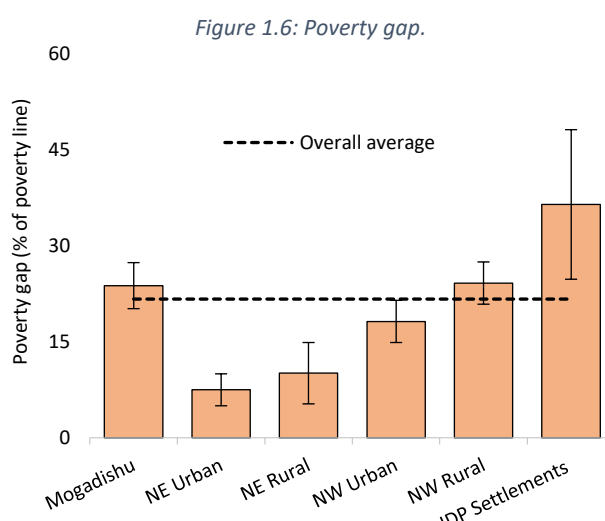
¹² The poverty severity index is defined as the average squared poverty gap.

countries' GDP per capita (Figure 1.2).¹³ However, there is considerable variation in poverty underlying the Sub-Saharan low-income country average. In monetary terms, Somalis are considerably better off than the poorest countries in the sample, Burundi and Malawi, of whose population 78 percent live in poverty. In contrast, the Somali poverty rate is 17 percentage points higher than that of neighboring Ethiopia (34 percent), and 30 percentage points higher than that of Zimbabwe (21 percent). In a similar fashion, the Somali poverty gap index at 22 percent is in keeping with the Sub-Saharan low-income average of 20 percent, where once again there are large differences underlying the regional average (Figure 1.3 and Figure 1.4).

14. Poverty varies considerably across the Somali population, ranging from 26 to 70 percent, with regional disparities exceeding those between urban and rural areas. 1 in 2 people in North West and 57 percent in Mogadishu are below the poverty line, making it about twice as likely to be poor there than in North East at 26 percent (Figure 1.5). This relationship also holds for the poverty gap (Figure 1.6). Indeed, poverty in North East is more similar to poverty in neighboring Ethiopia (34 percent) than to other Somali regions. With a poverty rate of 52 percent and a poverty gap index of 20 percent, the rural population is poorer than the urban population, at 45 percent and 17 percent, respectively. However, this difference is less pronounced than the differences across regions.



Source: Authors' calculation.



Source: Authors' calculation.

15. Poverty is most widespread and deepest in IDP settlements. Almost 3 in 4 people are poor in IDP settlements and 1 in 2 are extremely poor, which is equivalent to two thirds of poor people, and reflected in an average poverty gap of 36 percent (Figure 1.5, Figure 1.6 and Figure 1.8). Consequently, inequality is higher among the displaced population than among the other groups of the Somali population (Figure 1.10). IDP household members are thus among the poorest populations, compared to other low-income

¹³ The countries used for regional comparison are all the African low-income countries as defined by the World Bank: Benin, Burkina Faso, Burundi, Central African Republic, Chad, Comoros, Democratic Republic of Congo, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Liberia, Madagascar, Malawi, Mali, Mozambique, Niger, Rwanda, Senegal, Sierra Leone, South Sudan, Tanzania, Togo, Uganda, and Zimbabwe. For each country, we include the most recent available year for each indicator.

Sub-Saharan African countries (Figure 1.1 and Figure 1.3), and they are at a particularly high-risk before the onset of the current shock and likely in need of urgent assistance.

BOX 2: THE INTERNATIONAL POVERTY LINE

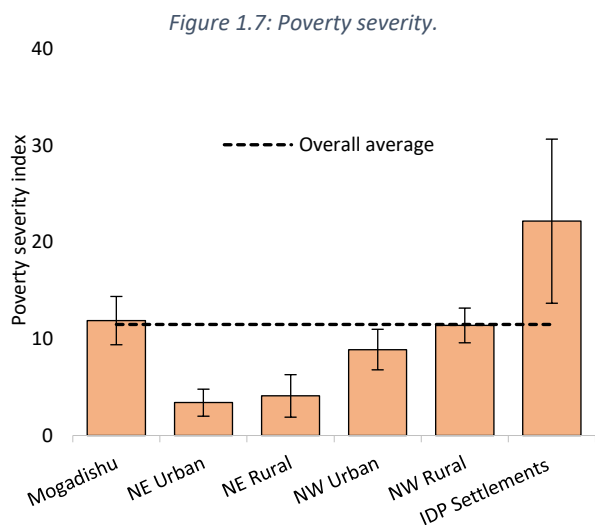
The international poverty line was introduced in the 1990 World Development Report, with the purpose of measuring absolute poverty in a consistent way across different countries. Using data on 33 national poverty lines for the 1970s and 1980s (for both developed and developing economies), Ravallion, Datt, and van de Walle proposed a line of US\$ 0.76 a day at 1985 PPP. That value represented the predicted poverty line for the poorest country in the sample.

Subsequently, they proposed a higher line of US\$ 1.02 a day, which found more international consensus since it was more representative of the poverty lines in low-income countries and it became the US\$1 a day line. Throughout the years, the poverty line has been revised three times, as new set of PPPs have become available. First from US\$ 1 to US\$ 1.08 at 1993 PPPs, then to US\$ 1.25 at 2005 PPPs, and finally to its current value, US\$ 1.90 at 2011 PPPs. The US\$ 1.25 line was originally defined as the unweighted average of the national poverty lines for the fifteen poorest countries (see Ravallion et al. 2009). The computation of the current international poverty line was obtained in a similar fashion by: 1) Taking those national poverty lines considering inflation to 2011; 2) Converting the national poverty lines to real US\$ using the 2011 PPPs; and 3) Computing the simple average of the 15 national poverty lines, resulting in a value of US\$ 1.88 per person per day, rounded up to US\$ 1.90.

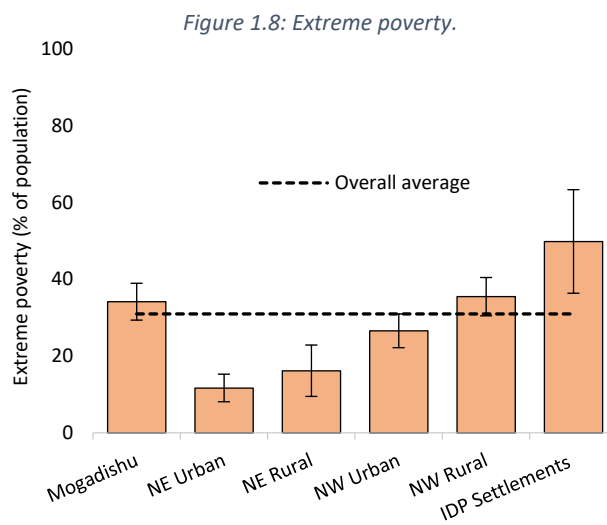
The increase in the value of the international poverty line, from US\$ 1.25 to US\$ 1.90, can be mostly attributed to the lower U.S. dollar purchasing power relative to the purchasing power of the currencies of poorest countries. This is equivalent to saying that US\$ 1.90 in 2011 real terms buys approximately the same basket of goods that could be bought by US\$ 1.25 in 2005.

For the Somali population, poverty is estimated using the standard international poverty line. As the poverty line is defined at US\$ 2011 PPPs, it must be converted to the currency used to measure consumption in the survey. First, US\$ 2011 are converted into Somali Shilling in 2011 using the regression-based PPP estimate for Somalia. Second, the change in purchasing power per Somali Shilling is considered by estimating inflation from 2011 to 2016. Third, the poverty line is converted back to US\$. The resulting poverty line is 1.47 US\$ (2016) per day per person.

16. Large disparities in poverty emerge when comparing different Somali regions. These disparities exceed differences between urban and rural areas. Almost 3 in 4 people live in poverty in IDP camps, with an average poverty gap of 36 percent. Poverty in North West and Mogadishu is about twice as high and twice as deep as poverty in North East (Figure 1.5 and Figure 1.6). Lower poverty incidence in the North East region is supported by other welfare indicators (see Chapter 2. Multidimensional deprivation and Appendix B. Lower poverty incidence in the North East region for a detailed discussion). Poverty in rural areas is both more widespread and deeper than in urban areas, but this difference is less pronounced than the difference between regions.



Source: Authors' calculation.



Source: Authors' calculation.

Inequality and vulnerability to shocks

17. With a sizeable share of the non-poor just above the poverty line, many are vulnerable to fall into poverty in case of adverse shocks. A sizeable part of the Somali population consumes just enough to be currently considered non-poor: The total daily consumption expenditure of around 10 percent of the non-poor is within 10 percent of the poverty line, while that of 19 percent is within 20 percent of the poverty line, implying poverty is highly elastic.¹⁴ Being just above the poverty line and thus barely out of poverty, these segments of the population are defined as 'vulnerable', and are prone to fall back into poverty in case of an unexpected decrease in consumption (Figure 1.9). Consequently, a 10 percent shock to consumption leads to an increase in poverty of 6 percentage points (57 percent), and a 20 percent shock implies an additional 4 percentage points increase (61 percent). This finding is of particular significance in the current crisis, where several seasons of insufficient rains and widening droughts are affecting the purchasing power and food security of large parts of the population, making these scenarios indeed realistic.¹⁵

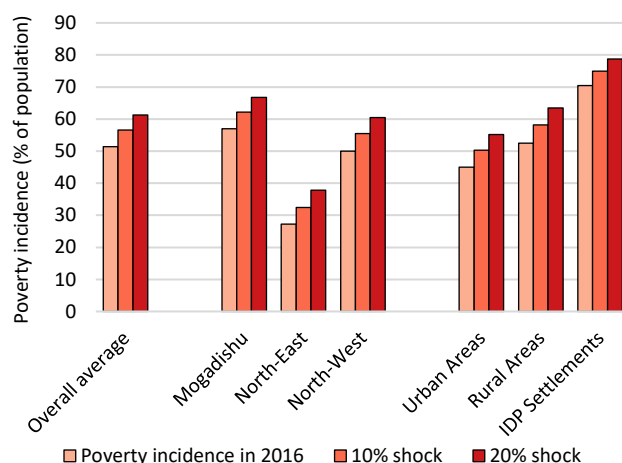
18. Inequality is lower than in most low-income African countries, as Somalis generally share a relatively homogenous level of consumption. Inequality among the Somali population, as measured by the Gini index, is 37 percent (Figure 1.10 and Figure 1.11). Of note, this is significantly lower than the most unequal low-income countries in Sub-Saharan Africa, like Rwanda (50 percent) or the Central African Republic (56 percent). On the contrary, inequality levels are similar to least unequal countries in the comparison sample, such as neighboring Ethiopia (33 percent). Relatively low levels of inequality are owed to rather homogenous levels of consumption across the Somali population, with many poor and most of the non-poor having moderate expenditure levels. In fact, the vast majority of the Somali population, around 79

¹⁴ An increase of 10 percent in the poverty line is equivalent to a 9 percent decrease in households' total consumption, while a 20 percent increase in the poverty line is equivalent to a 17 percent decrease in their consumption. The consumption elasticity is equal to approximately 0.5, meaning that a 2 percent increase in the value of the poverty line results, on average, in a 1 percent increase in the poverty headcount.

¹⁵ According to internal World Bank estimates, the current drought is estimated to affect Somali total production by 10.6 percent.

percent, lives on less than US\$3.10 2011 PPP per day. Of course, one of the implications of moderate inequality owed to homogenously low levels of consumption is significant parts of the population are just above the poverty line and thus corresponds to the high vulnerability to shocks discussed earlier.

Figure 1.9: Impact of a consumption shock on poverty.



Source: Authors' calculation.

Table 1.1: Total average real consumption (per capita, per day in 2016 US\$).

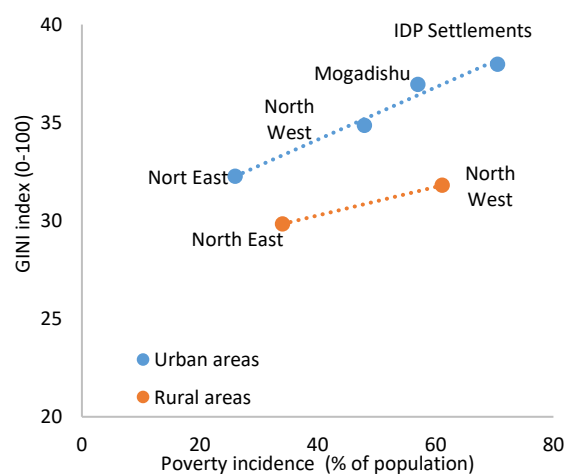
Region	Q1 (Bottom quintile)	Q2	Q3	Q4	Q5 (Top quintile)	Top/bottom quintile ratio
Mogadishu	0.54	0.92	1.20	1.84	3.58	6.6
North East	0.92	1.58	2.09	2.79	4.90	5.3
North West	0.61	1.01	1.43	2.07	3.65	6.0
Urban	0.62	1.09	1.58	2.29	4.09	6.6
Rural	0.65	0.97	1.38	1.93	3.31	5.1
IDP Settlements	0.33	0.62	0.91	1.35	2.53	7.6
Overall average	0.52	0.94	1.38	2.05	3.76	7.2

Source: Author's calculation.

19. Poverty and inequality are positively related. A clear trend emerges when comparing inequality across regions and livelihoods: poorer areas are also more unequal. Poverty is least widespread in the North East, where inequality is also lowest with a Gini index of 32 percent. Here, households in Q5 (the top 20 percent in terms of consumption expenditure) consume around 5 times more than households in Q1 (the bottom 20 percent). In stark contrast, IDP settlements are poorest and at the same time most unequal, where the Gini index is 38 percent and Q5 households have more than 7 times higher consumption than Q1 households (Figure 1.11 and Table 1.1). This relationship between poverty and inequality notably hinges on the consumption levels of the poorest: in regions where poverty is widespread, inequality is high because the poorest consume so little that they are much worse off than wealthier households (Table 1.1). However, while certain some Somali regions are demonstrably more unequal than others, these variations are within a rather small range, especially when compared to the

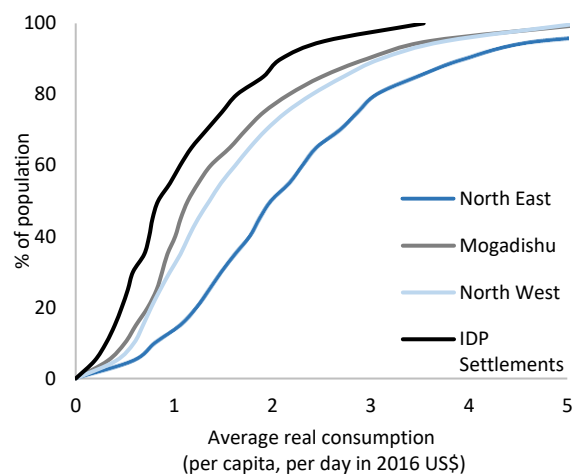
variation in inequality in the sample of low-income Sub-Saharan African countries. As such, even the high inequality found in IDP settlements is still below the average of this comparison group.

Figure 1.10: Poverty and inequality between regions.



Source: Authors' calculation.

Figure 1.11: Consumption distribution.



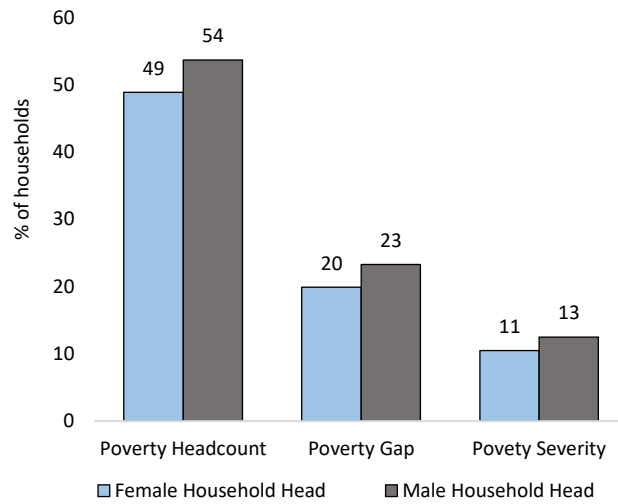
Source: Authors' calculation.

20. Inequality in urban areas is higher than in rural areas, driven by wealthy urban individuals. While rural areas are overall poorer than urban areas (poverty headcount rural: 52 percent, urban: 45 percent), their consumption levels are more homogeneous and hence inequality is lower (Gini rural: 33 percent, urban: 36 percent). This disparity is driven by the wealthier individuals. While Q1 household members (the bottom 20 percent in terms of consumption expenditure) have almost identical consumption expenditure in urban and rural areas (rural: US\$0.65, urban: US\$0.62), members of Q5 households (the top 20 percent) in urban areas consume 24 percent more than in rural areas (rural: US\$3.31, urban: US\$4.09; Table 1.1). Of note, overall trend of a positive correlation between poverty and inequality also holds for urban areas and rural areas individually.

The characteristics of poor households

21. Poor households have more household members than non-poor households. In many economies poverty increases with household size, as an increasing household size is usually indicative of a higher number of dependent household members. The average Somali household has 5.3 members (Table 1.2). The difference in household size between poor and non-poor households is statistically significant both across regions and between rural and urban areas (household size poor: 6.2, non-poor: 4.7; Table A.1 in the Appendix). In IDP settlements the difference in household size between the poor and the non-poor (household size poor: 5.7, non-poor: 5.1) is much smaller than elsewhere and not statistically significant. In part, this may be due to limited statistical power, given that most IDP households are poor. Further, this is plausibly a reflection of disrupted household structure marking IDP settlements. Poor households also have a higher number of dependents than non-poor households (Table 1.3). The age dependency ratio, defined as the ratio of children and old age dependents to working age population, is 1.7 in poor households compared to 1.1 for non-poor households. On average, a poor household has twice as many children (aged 0-14) as a non-poor household, while poor households in IDP settlements have three times as many children as non-poor IDP households. This implies that children are disproportionately affected by poverty, an issue which Chapter 5. Child and youth poverty will explore in depth.

Figure 1.12: Poverty measures by gender of the household head.



Source: Authors' calculation.

Table 1.2: Household demographic attributes: size and age dependency ratio.

Region	Household size			Age dependency ratio		
	All	Poor	Non Poor	All	Poor	Non Poor
North East	5.1	6.5	4.8***	1.5	2.3	1.4
Urban	5.0	6.5	4.7***	1.5	2.4	1.3
Rural	5.3	6.5	5.0*	2.0	1.8	2.0
North West	5.7	7.1	4.8***	1.3	1.7	1.1
Urban	5.81	7.4	4.8***	1.3	1.7	1.0
Rural	5.16	6.0	4.3***	1.5	1.7	1.2
Mogadishu	4.8	5.5	4.0***	1.4	1.9	0.9
Urban	5.3	6.5	4.6***	1.4	1.9	1.1
Rural	5.2	6.1	4.6***	1.6	1.7	1.6
IDP Settlements	5.5	5.7	5.1	1.3	1.6	0.7
Overall average	5.3	6.2	4.7***	1.4	1.7	1.1

*, **, *** indicate significance at the 10%, 5%, and 1% level respectively.

Source: Author's calculation.

22. Households headed by a woman are less poor. Just under half of Somali households are headed by a woman, and those households are 5 percentage points less likely to be poor overall (poverty incidence female household head: 49 percent, male household head: 54 percent; Figure 1.12). One plausible explanation for this finding is that households headed by women are more likely to receive financial remittances, arguably because working-age men may have left to work elsewhere, a theme which Chapter 4. Remittances will further explore. In addition, disaggregation of the overall average reveals considerable heterogeneity across regions and along the rural-urban-IDP divide. Households headed by women are considerably less poor in rural areas and in the North East. In contrast, they are poorer in urban areas and poorer than households headed by men in IDP settlements. Households in IDP settlements are also much

less likely to be headed by a woman in the first place: 6 in 10 households are headed by a woman in rural areas, compared to 5 in 10 in urban areas and 3 in 10 in IDP settlements.

Table 1.3: Real consumption (per capita, per day in 2016 US\$).

Region	Share of households headed by a woman (percent)	Total average real consumption		
		Household head: men	Household head: woman	Difference (percentage points)
North East	61.0	2.4	2.5	4
Urban	59.6	2.5	2.5	1
Rural	69.2	1.5	2.3	51***
North West	56.2	1.76	1.75	0
Urban	56.0	1.84	1.79	-2
Rural	57.2	1.35	1.52	13**
Mogadishu	36.0	1.6	1.6	-4
Urban	51.0	1.9	2.0	4
Rural	60.9	1.4	1.8	31***
IDP Settlements	31.4	1.2	1.0	-21***
Overall average	47.7	1.7	1.8	9

*, **, *** indicate significance at the 10%, 5%, and 1% level respectively.

Source: Author's calculation.

23. Monetary poverty is correlated with worse outcomes along other dimensions of welfare, while it is lower and less deep for recipients of remittances. The Somali poor have worse access to services, poorer educational outcomes, and are less successful in the labor market. Chapter 2. Multidimensional deprivation explores non-monetary dimensions of poverty in detail. In contrast, the poverty headcount rate of recipients of remittances is 18 percentage points lower than that of non-recipient. Similarly, the poverty gap index for recipients is half of that of non-recipients, implying that poor recipients are closer to overcoming poverty. Chapter 4. Remittances further explores the link between remittances, monetary and non-monetary poverty, and resilience.

2. Multidimensional deprivation

KEY MESSAGES

Poverty strongly correlates with labor market outcomes, level of education, and access to improved quality of dwellings and infrastructure. People living in North East, where poverty is less widespread and deep, have highest levels of employment, educational attainment, and access to improved water and sanitation systems. People living in IDP settlements, where poverty is most severe, are most deprived in all dimensions.

Increasing active participation in the labor market is key to improve welfare and decrease inequality. The most serious obstacles affecting labor force participation are conflict-related insecurity and disability, each of these constraints warranting specific intervention through social protection measures.

Investments in basic infrastructure, such as water and sanitation systems, and education, are strongly needed in all Somali regions, particularly in rural areas. The Somali population lags behind most low-income African countries in access to improved water and sanitation, and educational attainment.

The planned Poverty Assessment will provide a more in-depth analysis including a focus on the gender dimension of poverty and a detailed education analysis including the identified education - health nexus. The gender analysis will include non-monetary aspects of poverty and estimate the gender impact on poverty by controlling for observables like education. The gender analysis will also investigate in more detail the role of women in the economy given their contributions in the informal sector and subsistence farming that are not well reflected in the labor market statistics. The education analysis will analyze constraints to education as well as estimate returns to education to better understand potential entry points to improve educational outcomes with a focus on the identified linkages between education and health.

24. Monetary and non-monetary poverty are strongly related with poor households often deprived in multiple dimensions. For the Somali population, lack of access to information is the most common type of deprivation (71 percent of households have no access to information). Monetary poverty is the second most common deprivation, affecting 45 percent of Somali households¹⁶. Lack of access to an improved source of water and to education affect 41 and 36 percent of Somali households, respectively (Figure 2.1). For rural households though, lack of access to an improved source of water is the most common deprivation, with more than 9 in 10 rural households deprived in this dimension. 9 in 10 Somali households are deprived in at least one dimension, while 2 in 3 are deprived in 2 or more dimensions (Figure 2.2). Poverty is a strong indicator of non-monetary deprivation. Households living in rural areas and IDP

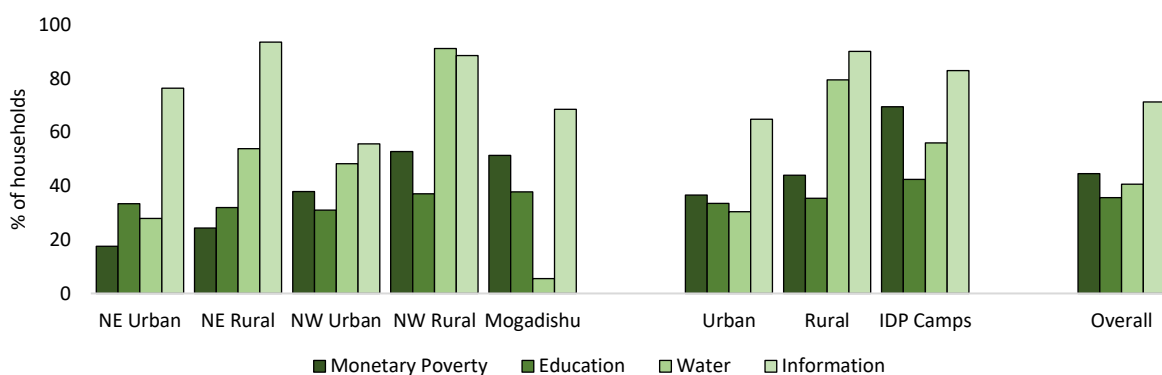
¹⁶ Because household size is larger in poor households, the poverty headcount ratio is 51 percent when counting the single individuals, and 45 percent when considering the single households.

settlements are also much more likely to be more deprived than households living in North East, North West, and Mogadishu (Table A.3 in the Appendix).

Literacy and Education

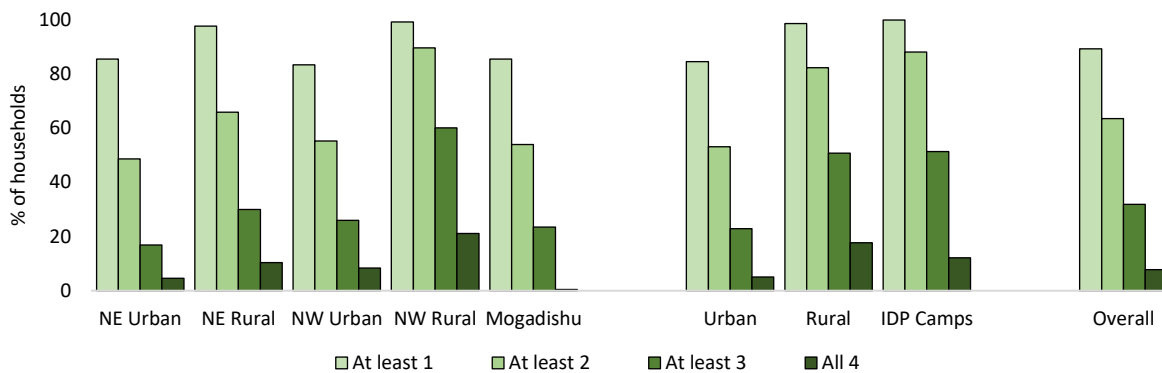
25. The level of literacy and educational attainments of the Somali people is slightly lower than those of African low-income countries, after taking into account differences in GDP. 55 percent of Somali people can read and write, compared to an average value of 56 percent for low-income Sub-Saharan countries. 16 percent of Somali people have completed primary school compared to 34 percent in low-income Sub-Saharan countries, while 7 percent of the population has obtained a secondary education degree compared to 19 percent in low-income Sub-Saharan countries (Figure 2.3, Figure 2.4 and Figure 2.5).¹⁷ The literacy rates presented in the analysis have some limitations, since they are non-functional and were self-reported by interviewed households.

Figure 2.1: Multidimensional deprivation by category.



Source: Authors' calculation.

Figure 2.2: Multidimensional deprivations.



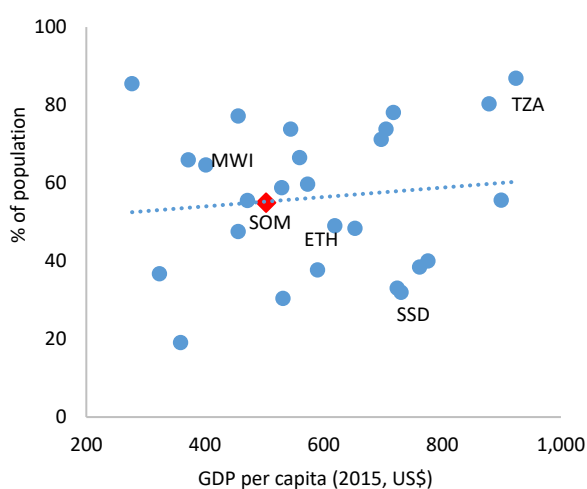
Source: Authors' calculation.

26. Poor Somalis have a lower level of literacy and education than the non-poor population, and the educational gap between regions and between urban and rural areas is even higher, thus it is mostly

¹⁷ Among low-income Sub-Saharan countries, Zimbabwe has the highest literacy rate (87 percent), level of primary education (81 percent) and secondary education (61 percent), while Niger, Burkina Faso, and Chad have the lowest level of literacy (19 percent), primary education (5 percent) and secondary education (6 percent), respectively.

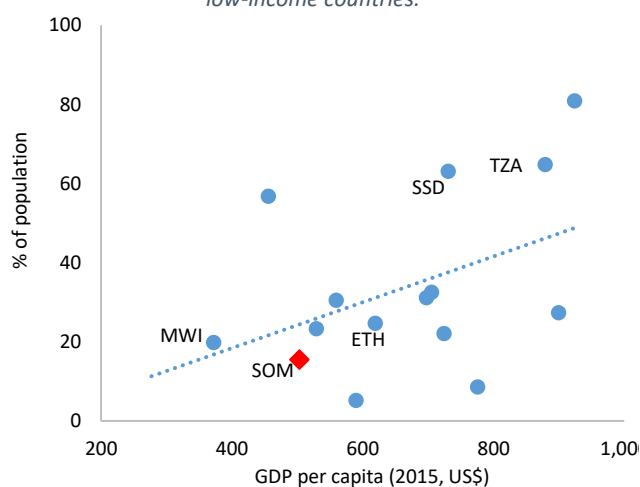
driven by a geographical lack of access. 48 percent of the poor can read and write, compared to 62 percent of the non-poor (Figure 2.7). 13 percent among poor Somalis have completed primary education, compared to 18 percent among the non-poor (Figure 2.8 and Figure A.1 in the Appendix). Only 5 and 3 percent of the poor have completed secondary and tertiary education, respectively, compared to 9 and 8 percent among the non-poor (Figure A.2 in the Appendix). Differences in education between rural and urban areas tend to be larger than differences in education between poor and non-poor, especially for university and secondary education. People living in North East, where poverty is less widespread and deep, have the highest level of literacy and primary education; about 10 percentage points and 3 percentage points higher than the overall average, respectively. Similarly, people living in Mogadishu have the highest level of completed secondary and tertiary education. Rural areas in North East show particularly high level of literacy and primary education when compared to rural areas in North West. People living in IDP households, where the poverty incidence and gap are highest, have the lowest literacy rate, 14 percentage points lower than the overall average.

Figure 2.3: Literacy rate in Sub-Saharan low-income countries.



Source: Authors' calculation and World Bank Open Data.

Figure 2.4: Educational attainment (primary) in Sub-Saharan low-income countries.



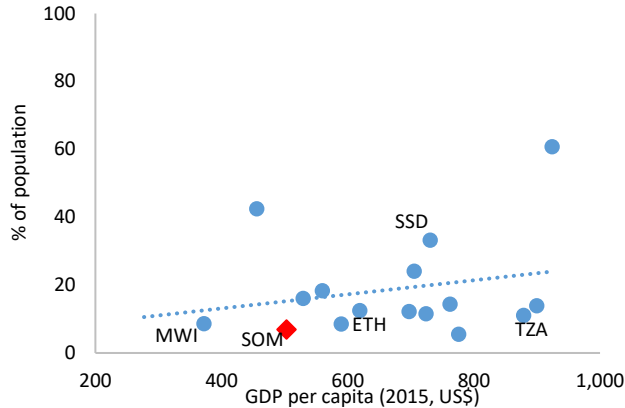
Source: Authors' calculation and World Bank Open Data.

27. Poverty is strongly associated with children enrollment in school, as poor households are less likely to spend on education. Poor household spends on average US\$ 25 per year in education, compared to US\$ 47 for the non-poor (Figure 2.11). Only one in two Somali children (52.9 percent) are enrolled in school against an average of about 70 percent in low-income African countries (Figure 2.6). About 63 percent of children living in non-poor households are enrolled in school, compared to 45 percent for children living in poor households (Figure 2.9). Large disparities emerge when comparing enrollment and educational expenditures across regions. 6 in 10 children are enrolled in school in North East and North West, compared to only 4 in Mogadishu and IDP Settlements. Households living in North East spend on education more than 50 percent and more than 100 percent than households in North West and Mogadishu, respectively.¹⁸ Disparities in school enrollment between gender are less pronounced than between poor and non-poor. On average, school enrollment is 4 percentage points higher among boys,

¹⁸ Differences in non-food expenditures across regions (i.e. expenditures in education, health services, electricity, etc.) may be caused by regional differences in prices, which depend on the relative supply, demand, and degree of tradability for that product/service.

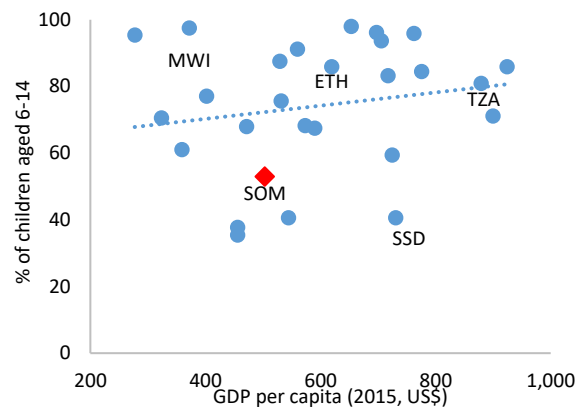
with the lowest gap occurring in Mogadishu and North East. Boys living in IDP settlements have a much lower school enrollment than girls (Figure 2.10). School enrollment in household headed by a woman is much lower than among male-headed households in Mogadishu and in IDP Settlements, where poverty is more severe (Figure 2.12).

Figure 2.5: Educational attainment (secondary) in Sub-Saharan low-income countries.



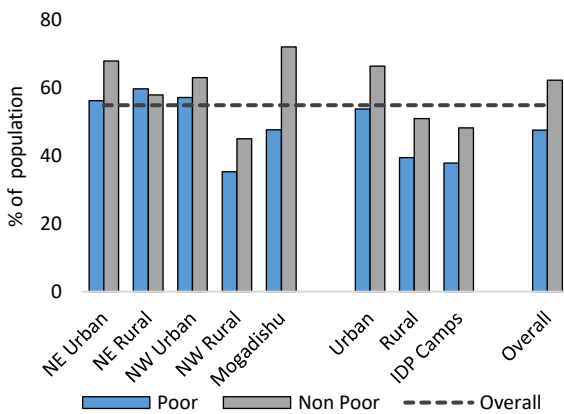
Source: Authors' calculation and World Bank Open Data.

Figure 2.6: School enrollment (primary age) in Sub-Saharan low-income countries.



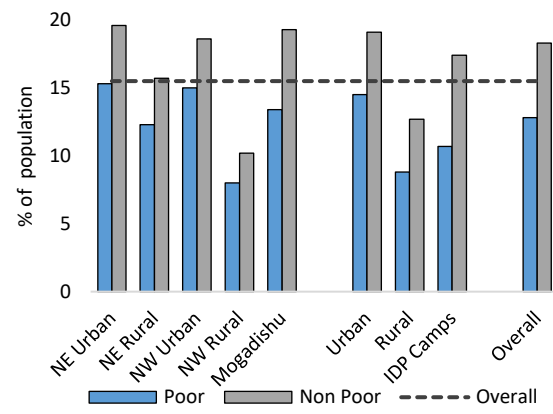
Source: Authors' calculation and World Bank Open Data.

Figure 2.7: Literacy.



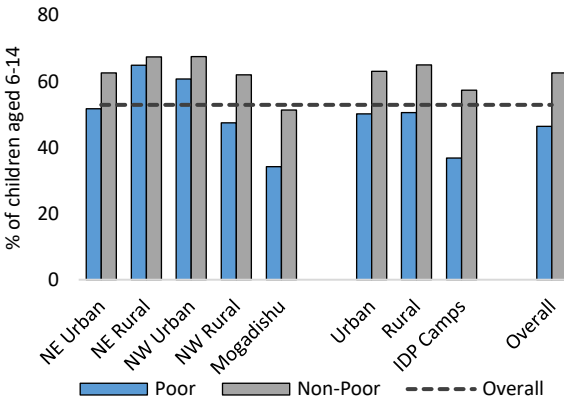
Source: Author's calculation.

Figure 2.8: Educational attainment, primary.



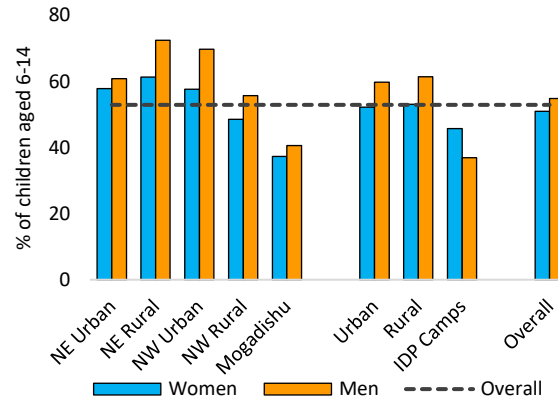
Source: Author's calculation.

Figure 2.9: Net primary school enrollment.



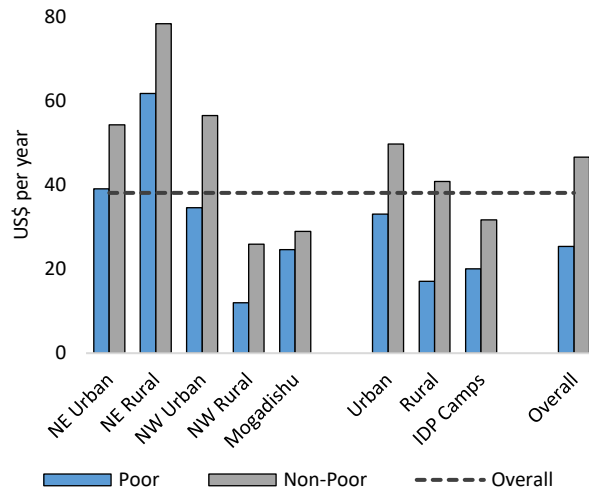
Source: Author's calculation.

Figure 2.10: Net primary school enrollment, by gender.



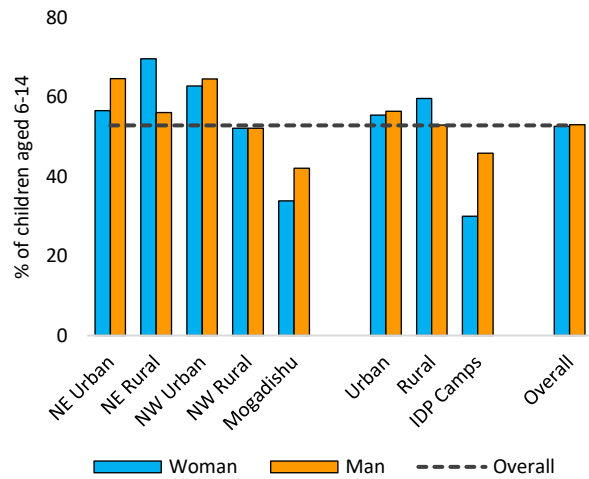
Source: Author's calculation.

Figure 2.11: Mean household expenditures in education.



Source: Author's calculation.

Figure 2.12: Net primary school enrollment by gender of household head.



Source: Author's calculation.

Employment and participation to the labor market

28. Labor force participation and employment rate of Somalis are lowest among African low-income countries. Only 1 in 4 people of working age are active labor participants, having either worked or seeking work in the last seven days, compared to an average 76 percent in low-income Sub-Saharan countries (Figure 2.13). Furthermore, labor force participation ranges between 65 and 88 percent in 21 of the 25 countries used for international comparison. Similarly, only 2 in 10 Somalis are employed, compared to an average 70 percent in low-income Sub-Saharan countries (Figure 2.14). The employment rate ranges between 57 and 83 percent in 22 of the 25 countries used for international comparison.¹⁹

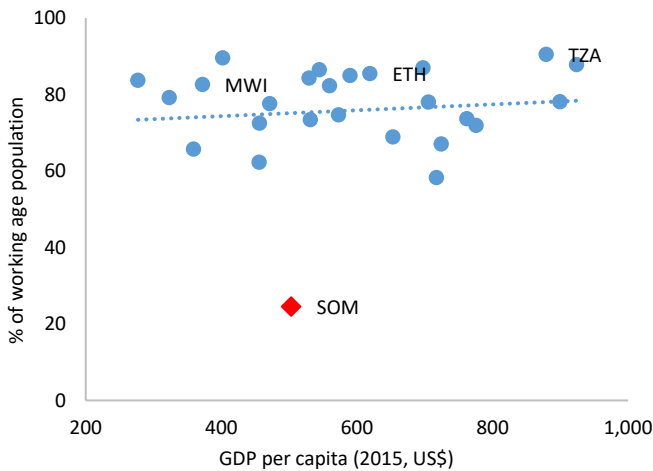
29. Survey limitations warrant some caution in the interpretation of the labor indicators. The reported labor force participation and employment indicators might be unexpectedly low because of two survey limitations: First, the labor indicators were obtained from the household member that responded the survey on behalf of the other members of the household, instead of every person responding on their own. Second, a substantial part of the inactive (20 percent), i.e. those who are not seeking employment nor have worked in the reference period, report “taking care of own household” as the main reason for their status of inactive, which may include economically relevant activities for the household. Both factors may lead to underestimation of labor force participation and employment.

30. Poor households less often find employment compared to non-poor households. On average, employment among the poor is 9 percentage points lower than among non-poor (Figure 2.15). Employment rates in urban and rural areas, as well as across the different regions are not significantly different, despite lower levels of poverty among those living in urban areas. Higher labor force participation is weakly indicative of the level of poverty, with labor force participation being higher among the non-poor in all regions except for the IDP settlements and the rural areas of North East.

¹⁹ The lower and upper bound for labor force participation and employment are obtained by respectively subtracting and adding the standard deviation to the mean value computed for that measure.

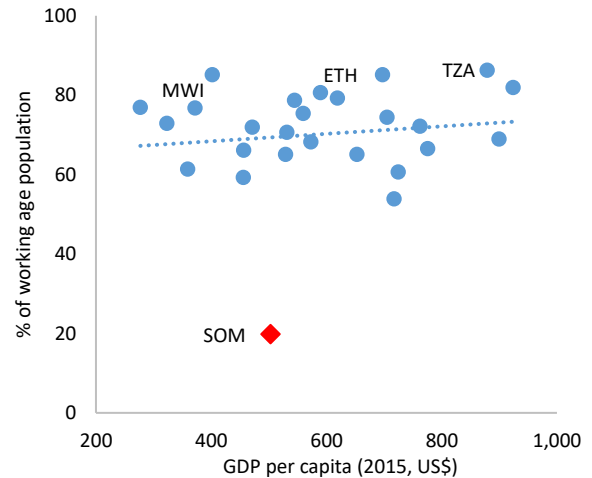
31. 1 in 5 adults are outside the labor force taking care of their own household. Own household work is highest in rural areas. Labor force participation and employment may be underestimated since they do not include Somalis who take care of their own household, which may include economically relevant activities such as agriculture and livestock farming. Indeed, own household work is highest in rural areas (26 percent) and lower in urban areas (18 percent), IDP settlements (15 percent), and Mogadishu (11 percent). Overall, own household work is weakly correlated with poverty and does not vary significantly across regions. In North East and North West, poor households have slightly higher level of own household work, while the relation is reversed in urban areas such as Mogadishu and IDP settlements (Figure 2.17).

Figure 2.13: Labor force participation in Sub-Saharan low-income countries.



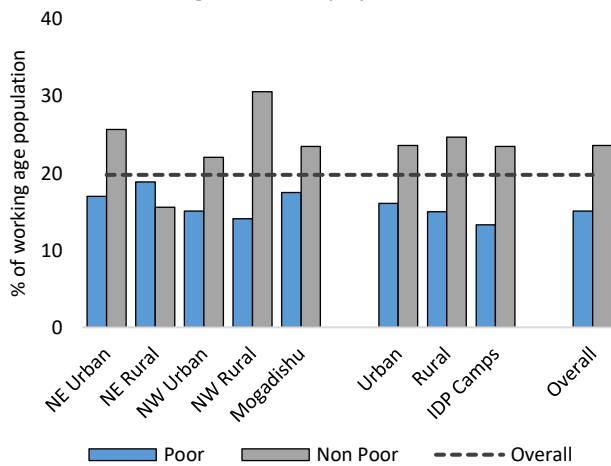
Source: Authors' calculation and World Bank Open Data.

Figure 2.14: Employment in Sub-Saharan low-income countries.



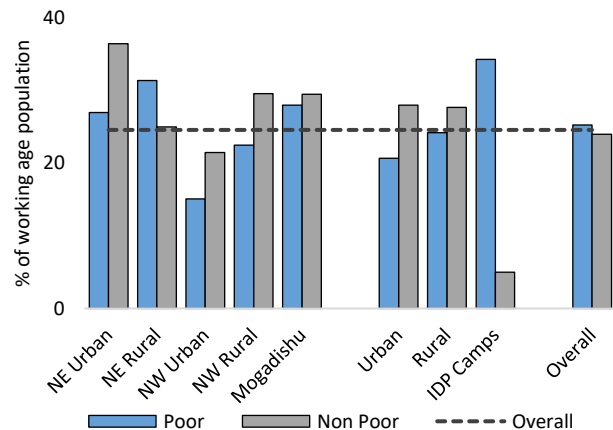
Source: Authors' calculation and World Bank Open Data.

Figure 2.15: Employment.



Source: Author's calculation.

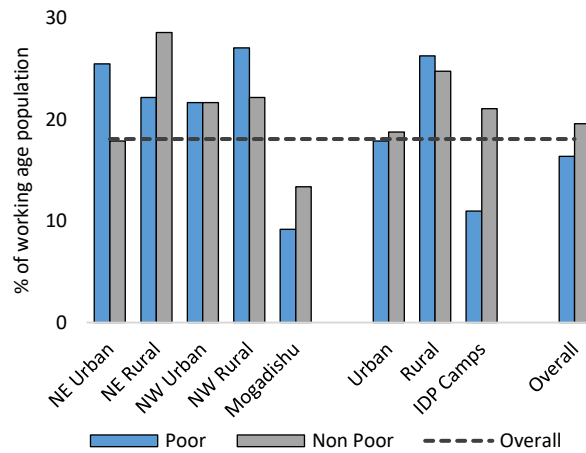
Figure 2.16: Labor force participation.



Source: Author's calculation.

32. The Somali labor market reveals a large gender gap, as evidenced by an extremely low labor force participation rate among women. Labor force participation among men is 32 percent, compared to 18 percent among women. Employment among men is 32 percent, more than three times higher than among women (Figure 2.18). The gender gap in employment (23 percent) is much higher than any regional (4 percent) or urban-rural (3 percent) disparity in employment. The North East region has the lowest level of employment gap between women and men.

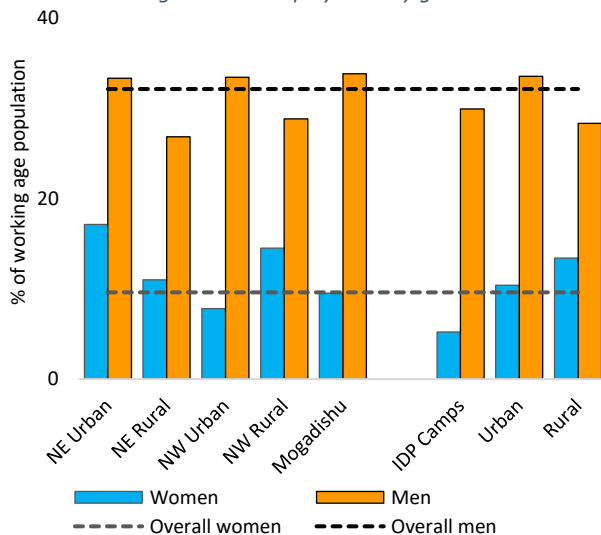
Figure 2.17: Own household work.



Source: Author's calculation.

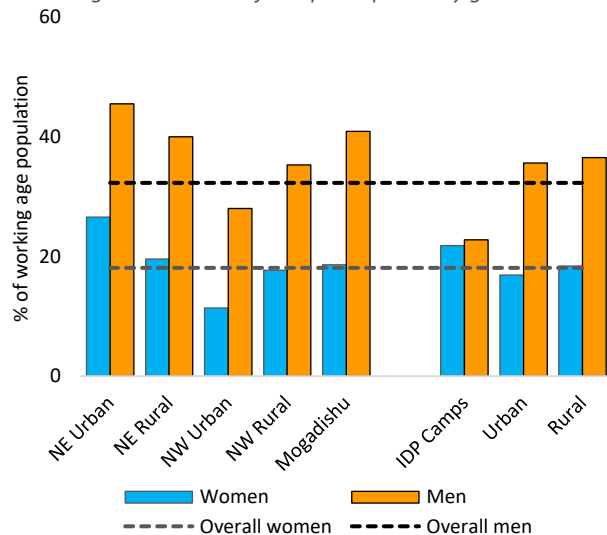
33. Gender disparities are also evident among Somali men and women outside the labor market, as evidenced by different causes for inactivity. In line with employment disparity, inactivity status greatly varies between men and women (Figure A.3 and Figure A.4 in the Appendix). For every second woman, housework is the main reason for being out of the labor force, compared to 6 percent of inactive men. On the other hand, only 19 percent of inactive women report school enrollment as the primary reason behind inactivity, compared to almost 57 percent of inactive men. More than 16 percent of inactive women and 30 percent of inactive women living in Mogadishu report “not being allowed by the husband” as the main reason for inactivity. While the gap in school enrollment between boys and girls (aged 6-14) is relatively small (4 percent, Figure 2.10), the gender gap in school enrollment between inactive men and women is indicative of the lack of educational opportunities for Somali women once they reach adulthood.

Figure 2.18: Employment by gender.



Source: Author's calculation.

Figure 2.19: Labor force participation by gender.



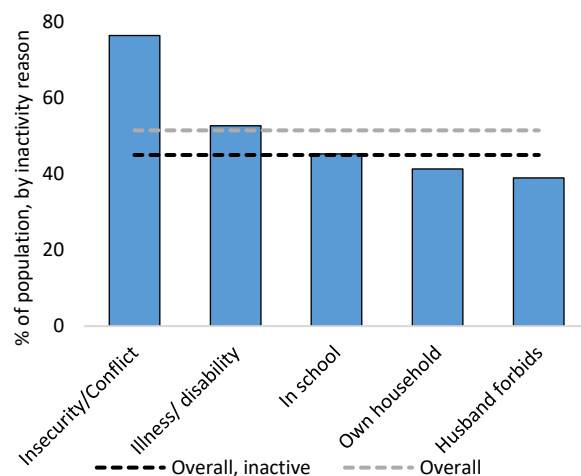
Source: Author's calculation.

34. The reportedly low labor force participation of women is in contrast to the role of women in the economy. While the reported indicators suggest that women are mainly inactive and are working in the

household, other studies suggest a much more active role of Somali women in the private sector.²⁰ They are engaged in the informal sector and micro-enterprises, but also play a role in agricultural production and livestock activities. Data limitations as explained above might contribute to the discrepancy with the reported findings.

35. Illness, disability and fear of conflict are all important factors that prevent men more than women from participating in the labor force. Insecurity due to conflict is reported by 6 percent of inactive men while being negligible for women. Disability or illness is reported by 12 percent of inactive men compared to only 4 percent for inactive women. Not surprisingly, conflicted-related insecurity affects one in four men’s decision to stay out of the labor force in Mogadishu. The relatively high prevalence of illness-related reasons for men’s inactivity is particularly compelling and indicative of the need of health services that can target this group. While disability or illness is not strongly correlated with poverty, insecurity due to conflict is highly indicative of conditions for the Somali population. 3 in 4 Somalis who report insecurity due to conflict as the main reason for inactivity are poor, compared to 1 in 2 at the national level (Figure 2.20).

Figure 2.20: Poverty headcount ratio, by inactivity reason.



Source: Author’s calculation.

Access to infrastructure and quality of dwellings

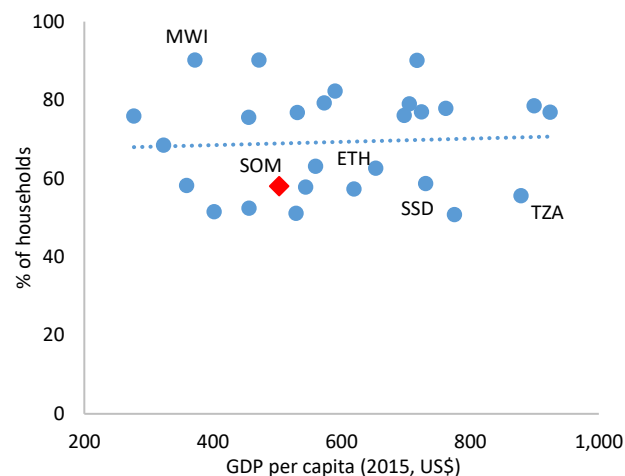
36. Somali households lag behind most low-income countries in access to improved source of water and sanitation facilities. Improvements in access to water and sanitation are key for economic and social development. Water and sanitation are essential for the individual's health, as well for their productive activities, such as agriculture. Inadequate water and sanitation services increase children’s exposure to waterborne diseases. In addition to that, low accessibility to such services affects the time children need to employ to satisfy their basic water and sanitation needs. By affecting children's health and time allocation, low quality water and sanitation services negatively influences their educational attainment.²¹ Only about 60 percent of Somali households have access to an improved source of water, compared to an average of about 70 percent in low-income African countries. Somali households rank eight lowest

²⁰ UNDP (2012) ‘The Role of Somali Women in the Private Sector’, UNON Publishing Services, Nairobi.

²¹ Impact of access to water and sanitation services on educational attainment, 2016, Ortiz-Correa, Filhoa, Dinarb.

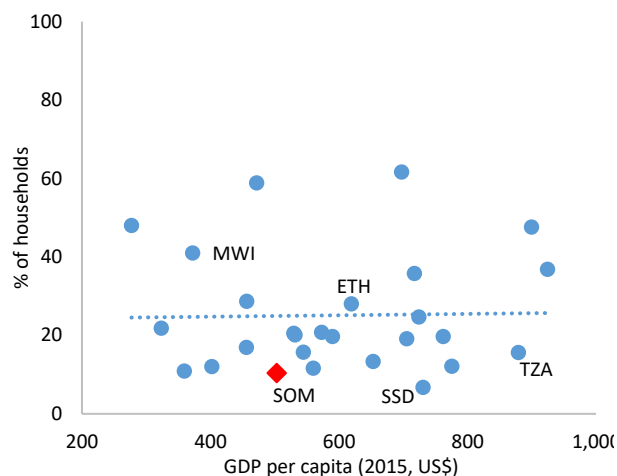
among Sub-Saharan low-income countries in terms of access to improved source of water. About 10 percent of households have access to improved sanitation facilities, compared to an average of 25 percent in low-income African countries. The Somali population rank second lowest among Sub-Saharan low-income countries in terms of access to improved sanitation (Figure 2.21 and Figure 2.22).²²

Figure 2.21: Access to improved source of water in Sub-Saharan low-income countries.



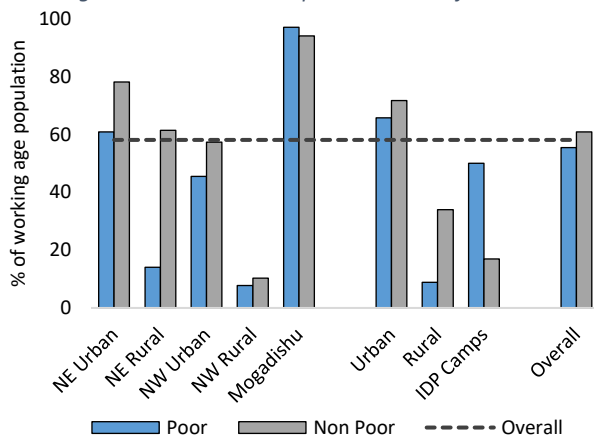
Source: Authors' calculation and World Bank Open Data.

Figure 2.22: Access to improved sanitation in Sub-Saharan low-income countries.



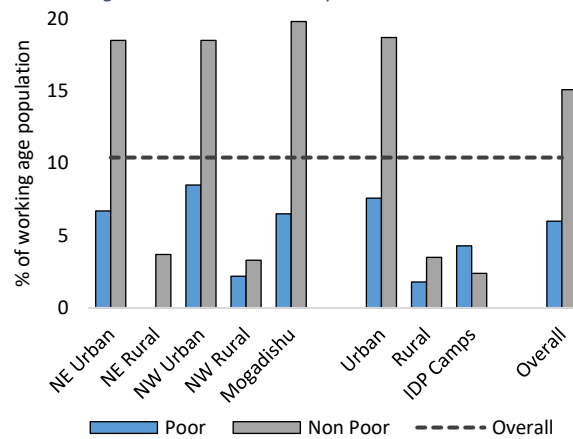
Source: Authors' calculation and World Bank Open Data.

Figure 2.23: Access to improved source of water.



Source: Authors' calculation.

Figure 2.24: Access to improved sanitation.



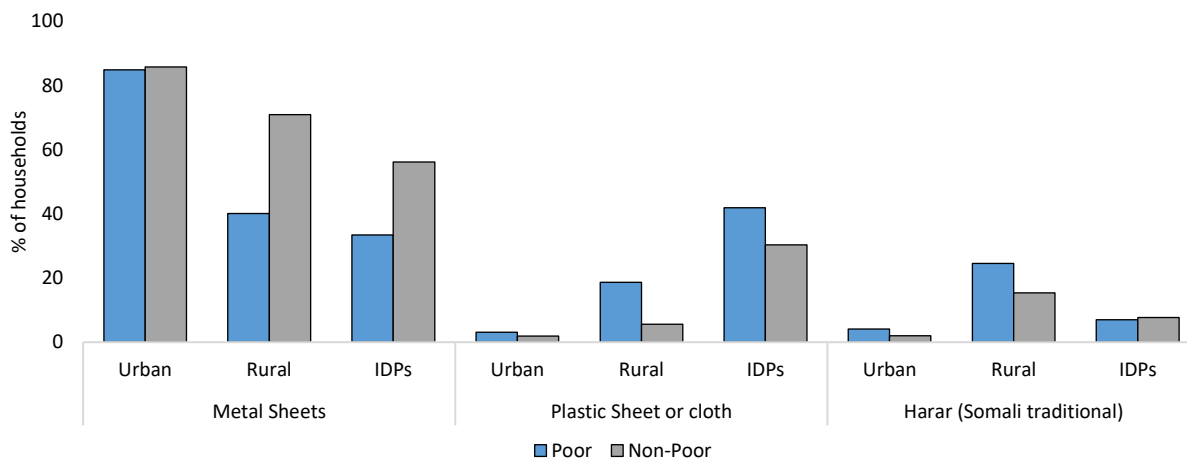
Source: Authors' calculation.

37. Access to an improved source of water greatly varies between urban and rural areas, signaling that lack of infrastructure is the main cause for this deprivation. 70 percent of the population living in urban areas has access to an improved source of water, compared to 21 percent for households living in rural areas and forty percent for households living in IDP settlements. Given such a large gap between urban and rural areas, access to an improved source of water is more strongly correlated to welfare conditions

²² Access to an improved water source refers to the percentage of the population using an improved drinking water source. The improved drinking water source includes piped water on premises (piped household water connection located inside the user's dwelling, plot or yard), and other improved drinking water sources (public taps or standpipes, tube wells or boreholes, protected dug wells, protected springs, and rainwater collection).

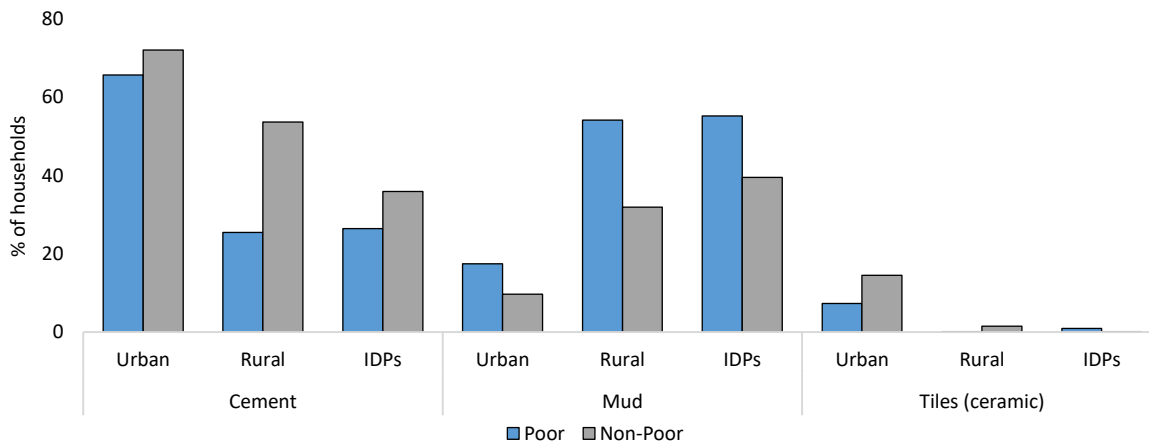
in rural areas, where the access is a relatively scarcer resource. In line with other relevant non-monetary indicators, such as education and employment, households living in North East show a relatively low degree of inequality in access to an improved source of water between urban and rural areas. Indeed, more than seven in ten people living in urban households of North East have access to an improved source of water, against about 5 in ten in rural areas; a stark contrast to the North West region, where only 52 percent of urban dwellers and 9 percent of people living in rural households report access to an improved source of water (Figure 2.23).

Figure 2.25: Quality of the roof.



Source: Authors' calculation.

Figure 2.26: Quality of the floor.



Source: Authors' calculation.

38. Similarly, large disparities are evident in access to improved sanitation facilities, both between poor and non-poor, and between urban and rural areas. The largest variation in access to improved sanitation is observed primarily between people living in rural, urban, and IDP settlements. Only 2 percent of people living in rural areas have access to an improved sanitation system, compared to 13 percent in urban areas. Variation across Somali regions are statistically negligible. About 14, 12 and 11 percent of people living in North East, Mogadishu, and North West respectively, have access to an improved sanitation system. Access to an improved sanitation system strongly correlates with poverty. Overall less than 5 percent of

people living in poor households have access to an improved sanitation system, compared to 15 percent of non-poor households (Figure 2.24).

39. Dwelling quality weakly correlates with poverty. In the vast majority of dwellings among Somali households, roofs are made of metal sheets. In urban areas, 85 and 86 percent of poor and non-poor households have a metal roof, respectively. In rural areas and IDP settlements, a metal roof is an indication of being non-poor. 71 percent of non-poor households living in rural areas have a roof made of metal sheets, compared to 40 percent among poor households. Analogously, 56 percent of non-poor households living in IDP camps have a roof made of metal sheets, compared to 33 percent among poor households (Figure 2.25). In the vast majority of dwellings among Somali households, floors are made of cement, 66 and 72 percent of poor and non-poor households living in urban areas, respectively. Similar to metal roofs, non-poor rural and IDP households often have a cement floor (54 percent vs 25 percent for poor households). Poor households much more often have a floor of mud (54 percent vs 32 percent for non-poor households (Figure 2.26).

40. Expenditures in electrical devices are a strong indicator of welfare among Somali households. Expenditures in electrical devices may be used as a proxy for access to electric infrastructure.²³ The average expenditure on electrical devices is US\$ 31 per person, per year, showing a large variation between poor and non-poor households.²⁴ Non-poor households spend on average US\$ 47 on electricity, compared to a mere US\$ 9 among poor households. Differences within urban non-poor households are less pronounced than differences within urban poor households across different regions. Expenditures on electricity among non-poor urban households range between US\$ 57 (North West) and US\$ 61 (Mogadishu) compared to US\$ 13 (North West) and US\$ 18 (Mogadishu) for urban poor households. As for access to water and sanitation, expenditures on electricity are more indicative of welfare conditions in rural areas, where access to the resource is relatively scarcer. The expenditure on electric devices is US\$ 2 per person per year among poor households living in rural area, compared to US\$ 11 among non-poor households living in rural areas (Figure A.5 in the Appendix).

Access to healthcare

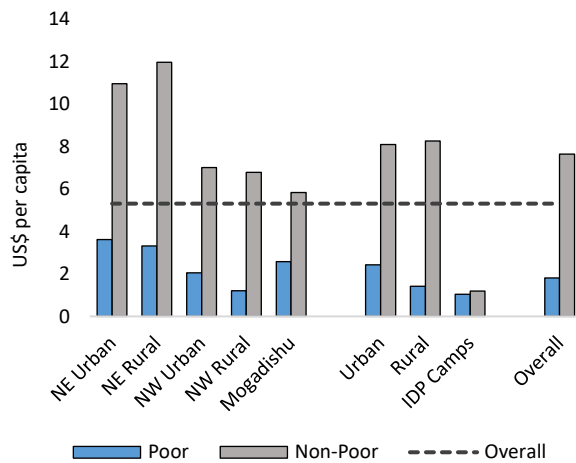
41. Access to healthcare is substantially higher in urban areas. Hospitals seem to be more likely located in urban areas, as children born in urban areas are more likely to have been born in hospitals or clinics compared to children born in rural areas. Similarly, to access to water, sanitation and electricity, access to hospitals or clinic does not significantly vary between poor and non-poor in urban areas, but does significantly vary when considering rural areas and IDP settlements (Figure 2.28). This evidence supports the hypothesis that in areas where the resource is relatively scarcer, only relatively better-off households are able to afford it.

²³ Differences in expenditures on electric devices across regions may be influenced by regional differences in prices, which depend on the relative supply, demand, and degree of tradability. Furthermore, expenditures in electricity may be underestimated in rural areas, where access to electricity is obtained through power generators to a greater extent than in urban areas.

²⁴ Electrical devices include light bulbs, internet/cable TV, expenditures for electricity, music or video cassette or CD/DVD, electric stove or hot plate, Tape or CD/DVD player, HiFi, Television, VCR, Computer equipment & accessories, Satellite dish.

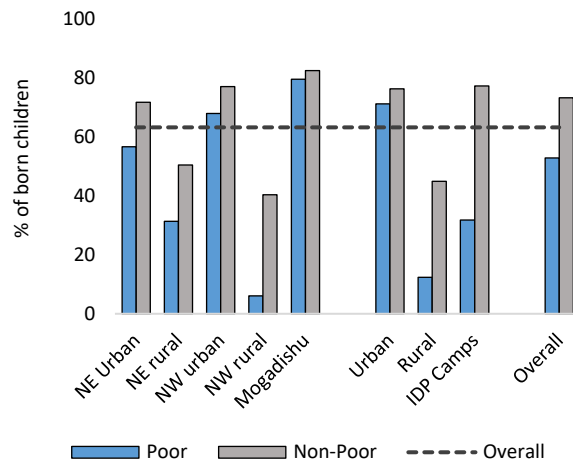
42. Poor households spend significantly less on health care than non-poor households. Average annual expenditures in healthcare are about US\$ 2 and US\$ 8 per person among poor and non-poor households, respectively (Figure 2.7). Non-poor households of North East spend about US\$ 11 (urban) and US\$ 12 (rural), about 60-90 percent more than non-poor households located in North West and Mogadishu. Expenditures in healthcare among the poor is similarly distributed. Poor households of North East spend about US\$ 3.6 (urban) and US\$ 3.3 (rural) per year per person, while households in North West and Mogadishu spend US\$ 2 (North West urban), US\$ 1.2 (North West rural) and 2.6 (Mogadishu). In stark contrast to the poor/non-poor divide, there is very little difference in health care expenditures between poor and non-poor households living in IDP camps (US\$ 1 for poor, US\$ 1.2 for the non-poor). Consistently with the evidence found in the previous chapter (Figure 1.9 and Table 1.1), the relative smaller difference in health care expenditures between poor and non-poor in IDP settlements is indicative of the higher degree of affinity between these two groups and the relatively higher level of vulnerability of non-poor households living in IDP settlements.

Figure 2.27: Average annual health expenditures.



Source: Authors' calculation.

Figure 2.28: Child birth in hospital or clinic.



Source: Authors' calculation.

3. Evolution of welfare conditions in the North West region

KEY MESSAGES

Poverty incidence decreased between 2013 and 2016 from 69 percent to 64 percent in rural areas, and from 57 percent to 52 percent in urban areas. The decrease in poverty incidence was similar in rural and urban areas, but poverty remains more widespread in rural areas. In the same period, the poverty gap decreased from 29 to 24 percent in rural areas, and somewhat in urban areas from 20 to 19 percent. Thus, monetary poverty reduction was stronger in rural than in urban areas.

The decrease in rural poverty is unlikely to be associated with remittances, while in urban areas poverty increased for recipients. Between 2013 and 2016, poverty incidence increased 8 percentage points among urban households that received remittances, and decreased 9 percentage points among urban non-receivers. In rural areas, poverty decreased largely (23 percentage points) for receivers of remittances and moderately for non-receivers (4 percentage points). The urban increase in poverty might be explained by a mixing effect with some urban receivers graduating from poverty not requiring remittances anymore and other urban poor households starting to receive remittances. The reduction in rural poverty is unlikely to be caused by remittances as a similar number of households received remittances, which on average were smaller.

The educational gap has widened for the rural poor between 2013 and 2016. While the population in urban areas became more literate from 2013 to 2016, poor households in rural areas became less literate. The increase in the literacy rate in urban areas is likely to be associated with higher levels of education, since the share of people with no education in urban areas decreased during the same period. In rural areas, non-poor households maintained a similar literacy rate, yet poor households experienced a decrease of 6 percentage points. A larger share of the rural poor does not have any education in 2016 compared to 2013. The rural poor seem to be increasingly excluded in terms of education which complicates their path out of poverty.

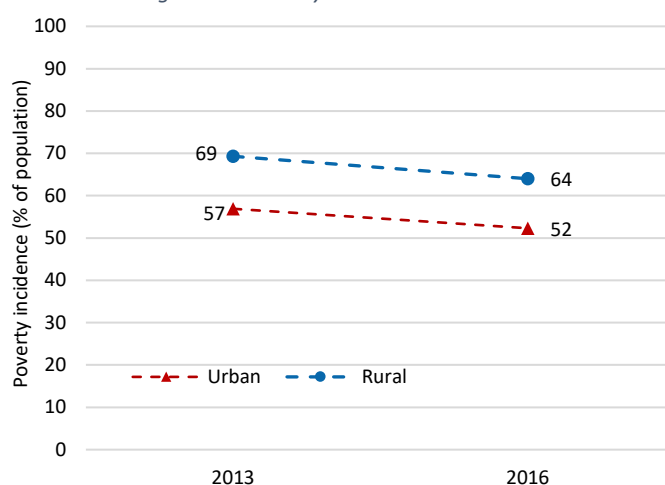
In order to reduce inequality and poverty, access and availability to key services must be improved for poor households, since current programs leave them behind, particularly in terms of education. Worse educational levels for the rural poor are probably caused by lower attendance to school, which decreased around 8 percentage points for this group. School attendance increased in urban areas and remained relatively constant for the rural non-poor. Providing access and means to reap the benefits from education is crucial to achieve positive labor outcomes and to ultimately lift these households out of poverty.

43. The Somali North West region records moderate welfare gains between 2013 and 2016. Only for the North West region, there is a previous survey measuring poverty in 2013. Using comparable figures in 2013 and 2016 (Box 3), poverty incidence decrease from 69 percent to 64 percent in rural areas, while

from 57 to 52 percent in urban areas.²⁵ The magnitude of the decrease in poverty was similar in rural areas than in urban areas (Figure 3.1), but poverty remains more widespread in rural areas. More than one in two people live in poverty in urban areas, as opposed to nearly two in three in rural areas. The annual rate of poverty reduction was 1.5 percentage points in urban areas and 1.8 percentage points in rural areas.

44. Improvements in welfare conditions between 2013 and 2016 benefited more poor households in rural areas than in urban areas. In 2013 the poverty gap was 20 percent in urban areas and 29 percent in rural areas, while 19 percent and 24 percent in 2016 for urban and rural areas respectively. The rural poor still have a larger consumption deficit than their urban counterpart, since on average their consumption is further away from the poverty line. Between 2013 and 2016, the poverty gap in the North West region decreased 5 percentage points in rural areas, and only 1 percentage point in urban areas (Figure 3.2). Thus, rural poor households benefited more than the urban poor from the improvements in welfare conditions in this period, since they had a larger reduction in the poverty gap and a similar reduction in poverty incidence. On average, poor rural households have a higher expenditure and are closer to the poverty line in 2016, compared to 2013.

Figure 3.1: Poverty incidence 2013-2016.



Source: Authors' calculation.

45. Inequality also decreased and is now higher in urban areas than in rural areas. In 2013 the Gini coefficient, a measure of inequality, was estimated at 43 for urban areas and 46 among rural households, while at 34 and 32 in these regions during 2016 (Figure 3.3). Inequality decreased from 2013 to 2016 in both urban and rural areas by 9 percentage points and 14 percentage points respectively. In 2013, inequality was larger in rural than in urban areas, a trend that has been reversed in 2016. Improvements in welfare conditions between 2013 and 2013 in the North West were reflected in smaller poverty incidence, as well as in poor households with an average expenditure closer to the poverty line, which

²⁵ The data from 2013 presented in this chapter was obtained from the datasets of the 2013 Somaliland Household Survey (SLHS). The estimates were revised to ensure comparability with the data collected as part of the Somali High Frequency Survey in 2016. Box 3 describes in more detail the procedure to arrive at comparable poverty estimates. Moreover, due to the sampling design of the 2013 survey, the analysis is conducted separately for urban and urban areas.

ultimately must have helped to a less unequal distribution of total expenditure. Nonetheless, large inequality figures in 2013 relative to 2016 could also be driven artificially by outliers in the consumption aggregate estimates from 2013.

Box 3: CREATING COMPARABLE POVERTY ESTIMATES FOR 2013 AND 2016

This chapter uses data from SLHS 2013 to understand changes in poverty and other socio-economic characteristics in the three years to 2016. The SLHS 2013 employed pen-and-paper interviewing (PAPI) and a separate sampling frame for urban and rural areas. In contrast, the SHFS 2016 was implemented using computer-assisted personal interviewing (CAPI), a rapid consumption methodology and a more robust sample frame for rural households. Furthermore, the questionnaires had a number of differences, including the consumption module. Therefore, the poverty estimates for 2013 must first be made compatible with 2016 before comparisons can be carried out.

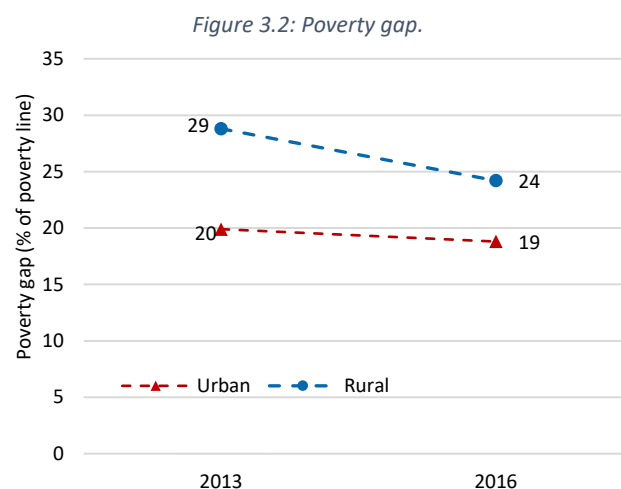
More specifically, the originally estimated poverty incidence in 2013 is not comparable with that of 2016 for two main reasons. First, the questionnaires considered different food, non-food and durable items. Second, the SHFS 2016 considers a standard international poverty line while SLHS 2013 derived a poverty line based on a needs-based approach using an average calorie intake as reference point and an allowance for non-food consumption.

In order to compare 2013 and 2016, the consumption aggregate for 2013 was adjusted by excluding food and non-food items that were not covered in the 2016 questionnaire (Table A.4 in the Appendix). Poverty incidence was calculated using the international poverty line of US\$ 1.90 (2011 PPP) deflated to 2013. In 2011, US\$ 1 (2011 PPP) was worth 10,731 Somali Shillings (2011 PPP). To obtain the amount for 2013, inflation has to be considered measured at 58.4 percent between 2011 and 2013. Finally, the average exchange rates of Somali Shillings and Somaliland Shillings against the US\$ were used with Somali Shilling 20,360.53 and Somaliland Shilling 6,733.69 for US\$ 1. Thus, the US\$ 1.90 (2011 PPP) poverty line corresponds to 10,680.11 Somaliland Shillings per person per day in 2013. Finally, the poverty line was scaled to account for consumption items included in the 2016 but not the 2013 questionnaire (Table A.5 in the Appendix). The scale factor was calculated by estimating the average consumption in 2016 covered by those items missing in the 2013 questionnaire.

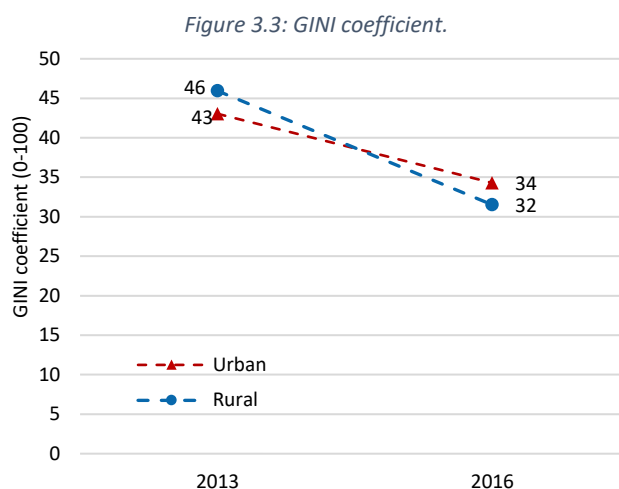
The robustness of this standard methodology is shown by comparing that the poverty incidence in 2016 is relatively similar when considering the total consumption and a standard international poverty line, against the comparable consumption aggregate and the scaled poverty line (Figure A.6 in the Appendix).

46. A large share of the population has an expenditure level below US\$ 2 per day in 2013 and 2016. The share of population with a daily expenditure level below US\$ 2 increases rapidly until this mark. The same pattern is observed between 2013 and 2016 in urban and rural areas (Figure 3.4 and Figure 3.5). Nearly

60 and 72 percent of the urban and rural population respectively consumed less than this amount in 2016. Slightly higher consumption can be observed in 2016, mainly in rural households, in line with a decrease in poverty incidence and poverty gap. Still, consumption is higher for urban households compared to the rural population. In addition, there are larger differences in expenditure levels between 2013 and 2016 for the population at the top of the distribution or with the highest levels of expenditure. This mainly corresponds to outliers in the consumption aggregate for some urban and rural households in 2013.



Source: Authors' calculation.



Source: Authors' calculation.

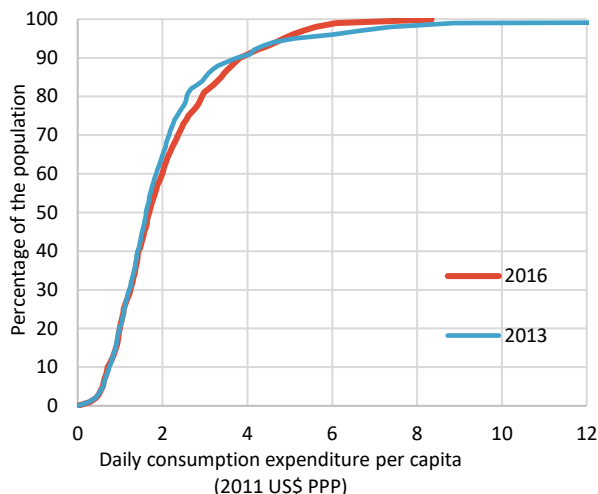
47. The share of poor households receiving remittances is similar between 2013 and 2016, while that of non-poor increased in rural areas and decreased in urban areas. Nearly 16 percent poor and 30 percent non-poor households received remittances in urban areas in 2013, and only 6-7 percent in rural areas. In 2016, 19 percent of the urban poor and 23 percent of the urban non-poor were recipients, while 13 percent and 15 percent of the rural poor and non-poor respectively (Figure 3.6). The share of poor households receiving remittances in 2013 and 2016 -urban and rural- is not statistically different. For non-poor households, the share of receivers in urban areas decreased by 7 percentage points and it more than doubled in rural areas. Households in rural areas are still less likely to receive remittances than urban households. The urban-rural gap in terms of share of households receiving remittances decreased for poor and non-poor households between 2013 and 2016.

48. The amount of remittances received decreased from 2013 to 2016, except for urban non-poor households.²⁶ In 2013 non-poor households received remittance for an average amount of US\$ 632 per capita in rural areas and US\$ 367 per capita in urban areas, followed by the urban poor with US\$ 329 and lastly by the rural poor with US\$ 242 per capita. Three years later, urban non-poor received an average of US\$ 445 per capita, rural non-poor US\$ 277, while the rural poor US\$ 238 and the urban poor US\$ 227 per capita (Figure 3.7). The value of remittances per capita that households received decreased slightly from 2013 to 2016 for the rural poor, around 50 and 30 percent for urban poor and rural non-poor households, respectively. In the same period, urban and non-poor households experienced an increase in the value of remittances received, which could have helped them not to be classified as poor in 2016.

²⁶ These figures should be interpreted with caution as they are lower than those reported by other sources. The information on remittances collected is likely to be under-reported by households surveyed. However, it is expected that the under-reporting is random and not concentrated in a group of households with certain characteristics.

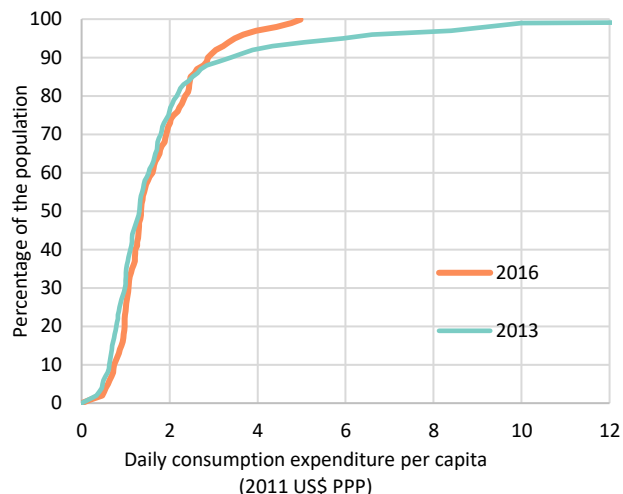
Poor households still receive, on average, smaller amounts of remittances than non-poor households. Yet, the gap in the value received between poor and non-poor households decreased in rural areas and increased in urban areas between 2013 and 2016.

Figure 3.4: Distribution of consumption in urban areas.



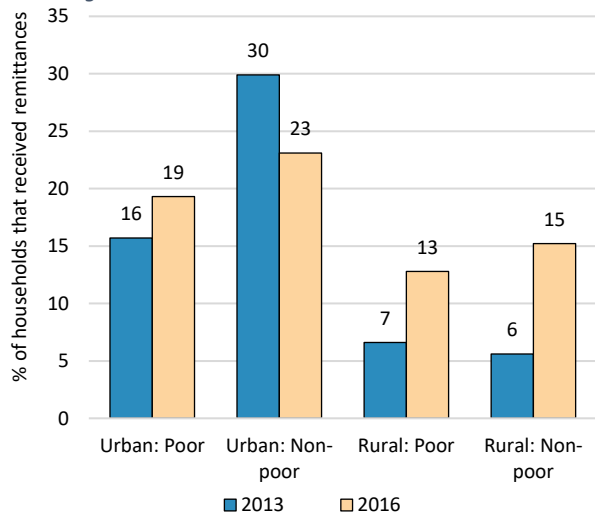
Source: Authors' calculation.

Figure 3.5: Distribution of consumption in rural areas.



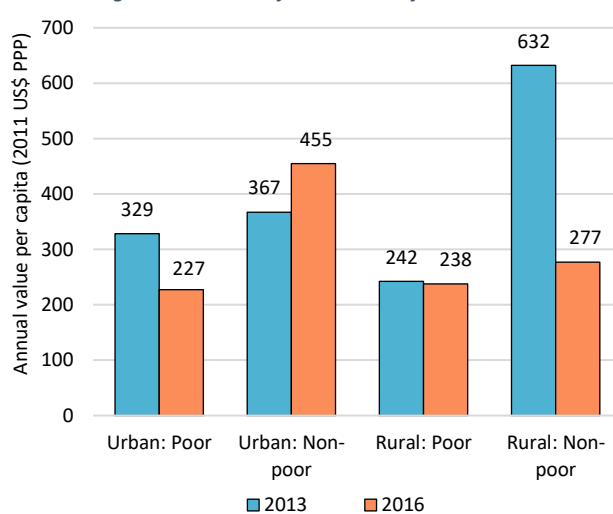
Source: Authors' calculation.

Figure 3.6: Households that received remittances.



Source: Authors' calculation.

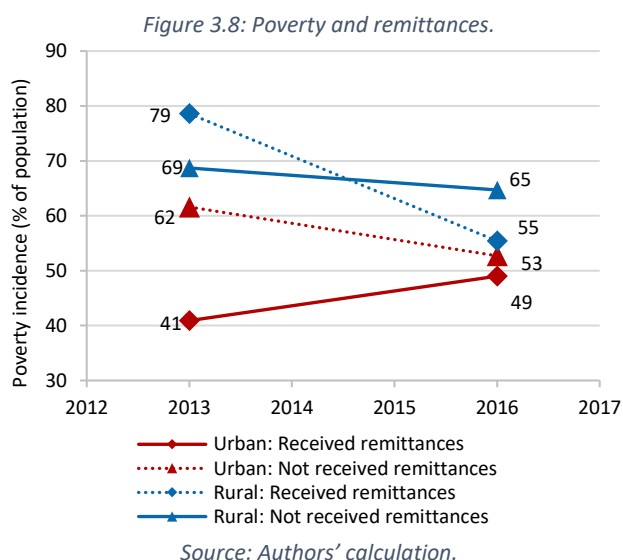
Figure 3.7: Value of remittances for receivers.



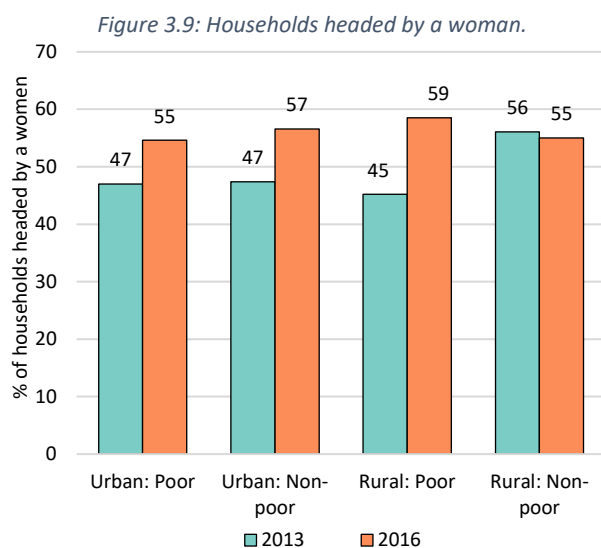
Source: Authors' calculation.

49. In urban areas, poverty incidence increased for households that received remittances and decreased for non-receivers. In 2013 poverty incidence was higher among urban households that did not receive remittances (62 percent) than among urban recipients (41 percent). In 2016 the gap between urban recipients and non-recipients decreased, since poverty incidence in the former group was 49 percent while in the latter 53 percent (Figure 3.8). Over the last three years, poverty incidence increased 8 percentage points among households that received remittances, and decreased 9 percentage points among urban non-receivers. The share of poor households receiving remittances was similar in 2013 and 2016 but the average amount received declined for the urban poor (Figure 3.7). The urban increase in poverty can be explained by a mixing effect with some urban receivers graduating from poverty not requiring remittances anymore and other urban poor households starting to receive remittances.

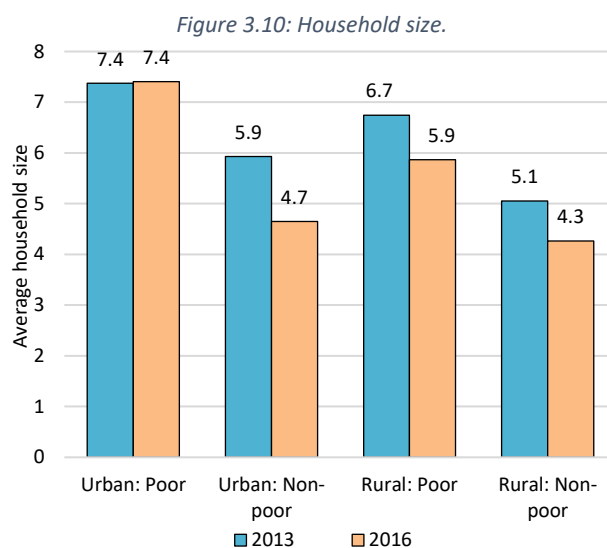
50. In rural areas, poverty incidence decreased largely for receivers of remittances and moderately for non-receivers. In 2013 poverty incidence was highest among rural recipients of remittances (79 percent), followed by rural non-recipient households (69 percent). In 2016 the pattern was reversed as poverty was higher for non-recipients (65 percent) relative to those households that received remittances in rural areas (55 percent; Figure 3.8). Poverty incidence decreased largely (23 percentage points) for receivers of remittances and moderately for non-receivers (4 percentage points) in rural areas. The reduction in rural poverty is unlikely to be caused by remittances as the share of poor rural households receiving remittances is not statistically different in 2013 and 2016, and households received, on average, smaller amounts per capita in 2016 (Figure 3.6 and Figure 3.7). Furthermore, the urban-rural gap in terms of share of households receiving remittances decreased for poor and non-poor households between 2013 and 2016.



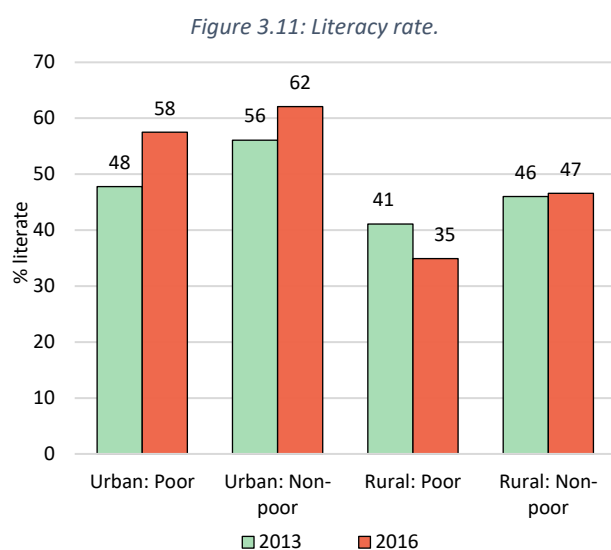
51. More households are headed by a woman in urban areas and in poor rural households. In 2013 around 47 percent of households in urban areas were headed by a woman, while 45 percent among the rural poor and nearly 56 in rural non-poor households. In 2016, the percentage of households headed by woman remained relatively constant for the rural non-poor (55 percent), while the rural poor and urban reached similar shares to those of non-poor households; larger for the rural poor, followed by urban non-poor households and then by the urban poor, with 59 percent, 57 percent and 55 percent of households headed by a woman respectively (Figure 3.9). Rural and poor households are more often led by a woman in 2016 than in 2013 (13 percentage points increase). The share in urban households -poor and non-poor- also increased by 8 and 9 percentage points respectively, such that they are mainly headed by women in 2016. Only non-poor households in rural areas have a similar share of households headed by a woman in 2013 and 2016. Poor households are more likely to have a woman as the head in rural areas, while non-poor households in urban areas. The increase in households headed by a woman could reflect a higher absence of men, potentially explained by migration patterns as a consequence of the ongoing conflict and droughts (see Chapter 4. Remittances). This is supported by the fact that for all the Somali population, there was a difference (21 percent) in the portion of adult men (aged 25 to 64) in households headed by women between recipients and non-recipient of remittances in 2016 (Table A.7 in the Appendix).



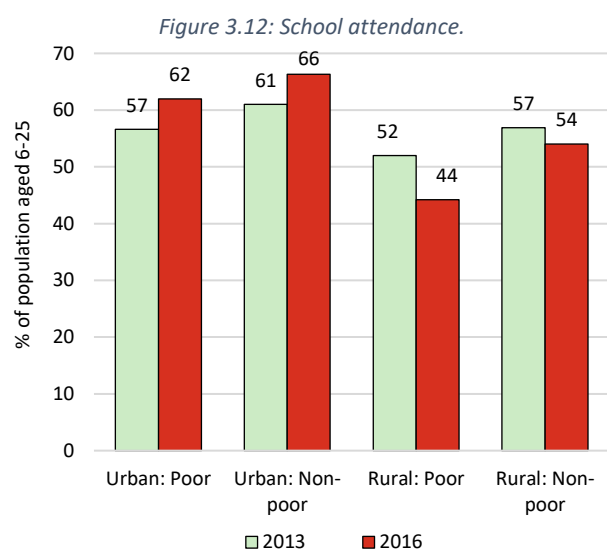
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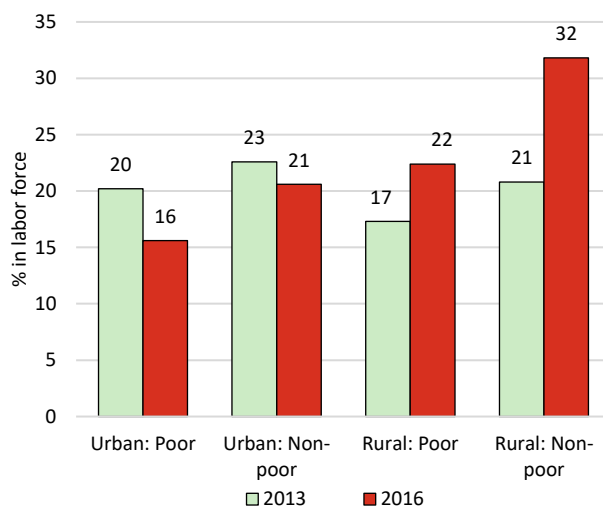


Source: Authors' calculation.

52. Households are smaller in 2016 compared to 2013, except for poor households in urban areas. On average, urban households were composed of 7.4 and 5.9 members in poor and non-poor households in 2013, while in rural areas of 6.7 among the poor and 5.1 for the non-poor. In 2016, the households size of urban poor was the largest (7.4) followed by the rural poor (5.9), and then by non-poor households in urban and rural areas (4.7 and 4.3 respectively). The average size of rural households decreased by less than one member, while poor urban households preserved the same size (Figure 3.10). A larger decrease in household size for urban and non-poor households might be associated with migration prior to 2016, since this group is more likely to obtain a job in other markets. This is consistent with a higher value of remittances received in 2016 for these households (Figure 3.7; US\$ 455 per capita in 2016 vs. US\$ 367 per capita in 2013). Poor households are still larger than non-poor households, and also the average household size is larger in urban than rural areas of the North West region.

53. Literacy rates decreased for the rural poor of the North West region. More than half of the urban non-poor were literate in 2013 (56 percent), less than half of the urban poor and rural non-poor (48 percent and 46 percent), and around 41 percent among the rural poor. In 2016, nearly 2 in 3 of the urban population in the North West were literate (58 percent for the poor and 62 percent for the non-poor), while less than half of the non-poor in rural areas (47 percent), and only around 1 in 3 for the poor in rural areas (35 percent; Figure 3.11)²⁷. The percentage of literate people increased by 10 percentage points among the urban poor and 6 percentage points for the urban non-poor between 2013 and 2016. In rural areas, non-poor households maintained a similar literacy rate, yet poor households experienced a worrying decrease of 6 percentage points. The increase in the literacy rate in urban areas is likely to be associated with higher levels of education, since the share of people with no education in urban areas decreased from 44 percent to 41 percent during the same period. Contrary to this, a larger share of the rural poor does not have any education in 2016 (65 percent) compared to 2013 (54 percent). Changes in the levels of education could be associated with a different composition of the population in urban and rural areas. The rural poor have been increasingly excluded in the North West region in terms of education which complicates their path out of poverty.

Figure 3.13: Labor force participation.



Source: Authors' calculation.

54. Worse educational levels for the rural poor are associated with lower attendance to school. In 2013 nearly 2 in 3 of the population aged 6-25 attended school in urban areas and among the rural non-poor, while only more than 1 in 2 of the rural poor attended school. In 2016, school attendance was highest in urban areas (66 percent for the non-poor and 62 percent for the poor), followed by the rural and non-poor population (54 percent), and then by the poor in rural areas (44 percent; Figure 3.12). Between 2013 and 2016, school attendance increased in urban areas, remained relatively constant for the rural non-poor population, while it decreased around 8 percentage points among the rural poor. Access and availability to key services must be improved for poor households. Providing the means to reap the benefits from education, among other basic services, is crucial to achieve positive labor outcomes and to

²⁷ The literacy rates from SLHS 2013 and SHFS 2016 have some limitations, since they are non-functional and were self-reported by interviewed households, yet their evolution provides reliable insights of the observed patterns during this period.

ultimately lift these households out of poverty. The emphasis should be on poor and vulnerable households, since their educational achievements are lower, and these low levels tend to be transmitted across generations (see Chapter 5. Child and youth poverty).

55. Labor force participation decreased in urban areas, and increased in rural areas. Overall labor force participation is low in the North West region. In 2013, around 1 in 5 of the working age population was in the labor force in urban areas and among the rural non-poor, while only 17 percent of the rural poor. In 2016 labor force participation was 32 percent for the rural non-poor working age population, between 21-22 percent among the rural poor and urban non-poor, and nearly 16 percent for the urban poor (Figure 3.13).²⁸ Labor force participation decreased between 2013 and 2016 by 4 and 2 percentage points for the urban poor and non-poor respectively. In rural areas, it increased by 5 percentage points for poor households and 11 percentage points for non-poor ones. Lower levels of labor force participation in urban areas are driven by less people employed (12.9 percent in 2013 and 3.8 percent in 2016). Rural areas present an increase in labor force participation due to more unemployed people (0.3 percent in 2013 and 5 percent in 2016), that are still considered in the labor force. Labor force participation was higher in urban than rural areas in 2013, a trend that has been reversed in 2016. Also, participation is higher for the non-poor than the poor in the North West. Sustained differences in terms of education between poor and non-poor households, together with a low labor force participation, may continue to deepen the urban-rural divide in this region. In 2016, the main reasons for inactivity among the Somali population were illness and sickness, enrollment in school, migration and household work. Generating employment opportunities and bringing people into the labor force should be a central pillar of any poverty reduction strategy in the North West.

²⁸ The labor indicators presented in this report have some limitations, as they were obtained from the household member that responded the survey on behalf of the other members of the household, instead of every person responding on their own. However, they were collected in the same way in SLHS 2013 and SHFS 2016, thus their evolution provides reliable insights of the observed patterns during this period.

Part II: Deep dive into selected topics

4. Remittances

KEY MESSAGES

Remittances make important contributions to welfare, with 1 in 5 Somali households receiving remittances, but recipients rely heavily on these transfers. Remittances are the main source of income for 16 percent of households, and for more than half of recipients. High reliance on remittances leaves recipients, especially poor recipients, at risk in the face of the volatility of diaspora incomes and the uncertainties around sending money to the region.

Recipients are less poor, experience hunger less often, and have better educational outcomes. Recipients are typically urban, wealthier, headed by women, and their members better educated. Poverty incidence is 18 percentage points lower in recipient households (recipients: 37 percent, non-recipients: 55 percent). They also experience hunger in the past month half as often. Educational attainment is higher amongst recipient households, especially amongst poorer recipients, suggesting poor recipient households can offset much of their educational disadvantage compared to non-poor households.

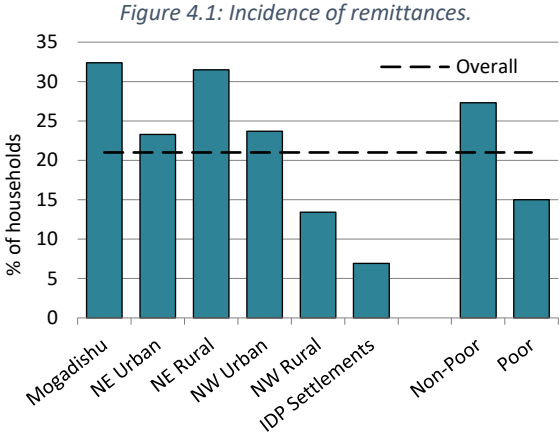
IDP households are most excluded from the benefits of remittances, and IDP recipients are no less poor than non-recipients. IDP households are least likely to receive remittances (7 percent), they receive the lowest amounts (US\$149 per capita per year), and in many cases suffered a reduction in the amount of money relative to the previous year. Unlike other recipient households, recipients in IDP settlements are no less poor than non-recipients. There is no difference in the poverty gap, the consumption shortfall relative to the poverty line, between recipients and non-recipients in IDP settlements. This is likely due to the fact that poor households in IDP settlements receive amounts too low to overcome their large consumption shortfall relative to the poverty line.

The effect of remittances on labor market behavior is negligible overall. Having an additional source of income through remittances could lead recipients to withdraw from working in a labor market that provides poor opportunities for generating income, thus exacerbating dependency. Overall there is no conclusive evidence for this kind of behavior among recipients, who are usually no less likely to participate in the labor force or work fewer hours. However, a finer breakdown reveals that remittances do crowd out work for some segments of the Somali population, albeit with no clearly discernable pattern.

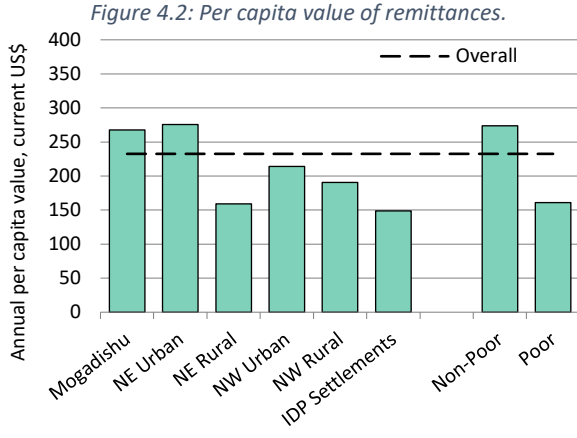
Remittances –and cash transfers more generally– can serve as a resilience mechanism in light of adverse shocks, but access is limited, making the case for a formalized social protection program. Remittances mitigate difficult circumstances, highlighting how cash transfers can build resilience for the poor against shocks. With many Somalis excluded from the benefits of receiving remittances, especially the poor and most vulnerable in IDP settlements, other, more formal and predictable cash transfers programs are a suitable means to mitigate the most urgent shortfalls in basic needs.

The emerging role of remittances will be analyzed in more depth in the planned Poverty Assessment. The in-depth analysis will add to the dynamics of remittances and their impact utilizing the second wave of the SHFS. In addition, the descriptive analysis will be extended to gather evidence on the causal link between education and remittances. The analysis will also assess the relevance of remittances in the context of a drought, to inform future policies to create resilience.

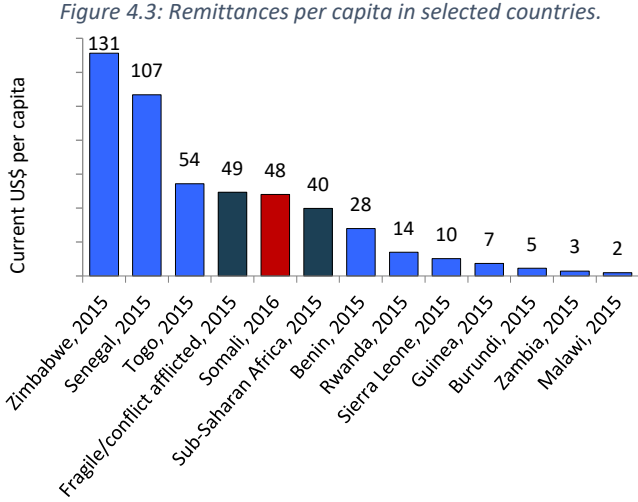
56. Every fifth Somali household received remittances in the last 12 months, but the likelihood of receipt varies from 7 to 32 percent across regions, leaving vulnerable populations, especially IDP settlements, relatively excluded. Mogadishu and the rural North East regions have the highest incidence of households receiving remittances (both 32 percent), followed by urban households in the North West (24 percent) and North East regions (23 percent), and rural North West region (13 percent). Households in IDP settlements are least likely to receive remittances at 7 percent, more than 50 below average (Figure 4.1).



Source: Authors' calculation.



Source: Authors' calculation.



Source: Authors' calculation and World Bank Open Data.

57. The annual per capita value of remittances, among those who receive them, is US\$233. In contrast, the annual per capita value among the entire Somali population (both recipients and non-recipients) is US\$48 (Figure 4.3). Recipient households in urban areas receive between US\$214 (North West) and US\$276 (North East), significantly more than households in rural areas (between US\$159 and US\$191) and in IDP settlements (US\$147; Figure 4.2). Households in rural areas and especially IDP settlements thus remain relatively excluded from receiving remittances, and consequently from the benefits that their receipt entails. The annual per capita value for entire population among the entire population (counting

both recipients and non-recipients) of US\$48 places Somalis slightly above the US\$40 average in Sub-Saharan Africa, and in line with conflict-afflicted countries with a US\$49 average.

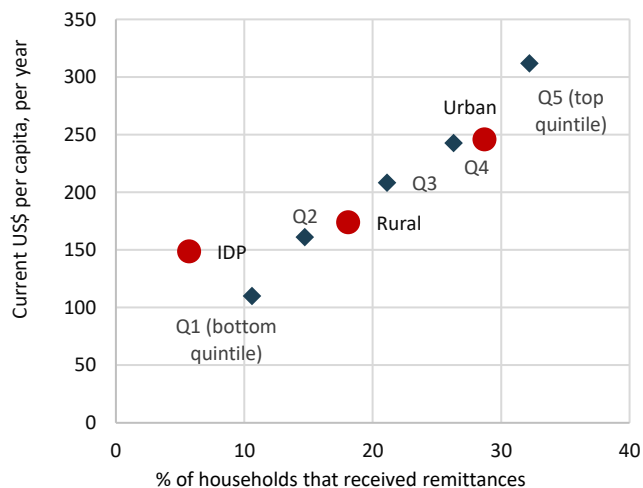
58. The total value of remittances received should be interpreted with caution, as this number is lower than those reported by other sources. Drawing from experience in other countries, household surveys like Wave 1 of the SHFS are likely to under-report the value of remittances received by households. The findings indicate that misreporting is not strongly biased towards groups of households with certain characteristics, since there is a correlation between receiving remittances and other indicators. Thus, the analysis is largely constrained to correlations while results about the level and total value of remittances should be interpreted with caution.

The profile of recipients of remittances

59. Urban and wealthy households are more likely to receive remittances and receive higher amounts.

There is a positive relationship between the average amount received and the probability of receiving remittances. Urban households, which are wealthier than households in rural areas and IDP settlements, are at once more likely to receive remittances and, contingent on receipt, receive more money (Figure 4.4). The relationship between wealth, urban-rural-IDP livelihood, and receiving remittances is arguably driven by a combination of factors: First, remittances make a direct contribution to household income. Households use this contribution, at least in part, to cover basic needs and day-to-day expenses, increasing household expenditure, which makes recipient households mechanically wealthier the more money they receive from remittances. Therefore, an average Q5 (top quintile) household is both likelier to receive remittances and to receive a higher amount than an average household in one of the lower income quintiles. Second, it is plausible that wealthy households have better means to send their members away to work and transfer remittances in the first place. For example, wealthy households, both recipients and non-recipients, have better educational attainment than poorer households (Chapter 2. Multidimensional deprivation), placing their members at an advantage on labor markets abroad.

Figure 4.4: Incidence and value of remittances, by income and urban, rural, IDP status.

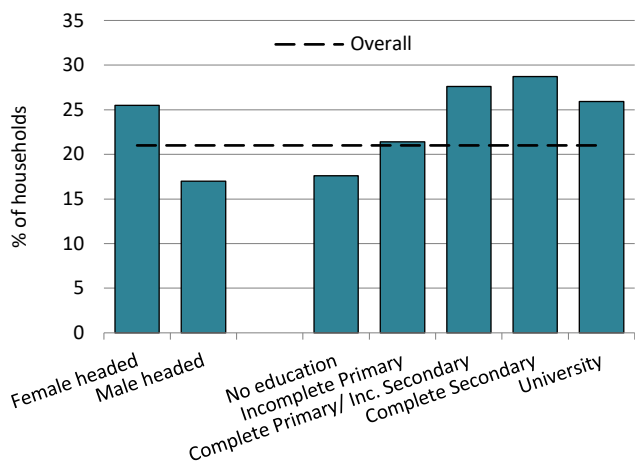


Source: Authors' calculation.

60. Recipient households have better educational attainment. Households headed by members with higher levels of education are more likely to receive remittances (Figure 4.5), while members of recipient

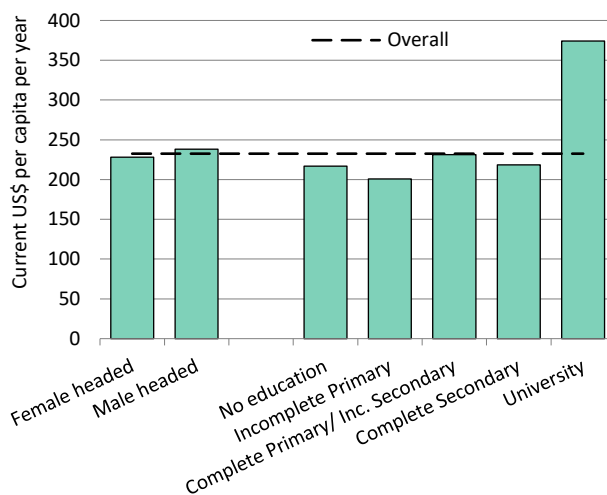
households tend to receive a better education. However, households led by better educated members do not receive higher amounts of remittances across the board; it is specifically university-educated household heads who receive significantly higher amounts of remittances (Figure 4.6; average amount: US\$233, household head with university degree: US\$274). Similarly, recipient households have a 15 percentage point higher enrolment rate amongst their school-aged children, 14 percentage points higher literacy rate, and spend 26 percent more on education (Figure 4.7 and Table A.6 in the Appendix). Similar to the previous findings on income and wealth, the differences in educational attainment are likely driven by an interaction of two factors: On the one hand, receiving remittances improves households' means to educate their children. On the other hand, better educational attainment could put household members in a position to earn a decent living and thus send remittances in the first place.

Figure 4.5: Remittances by gender and education of the household head.



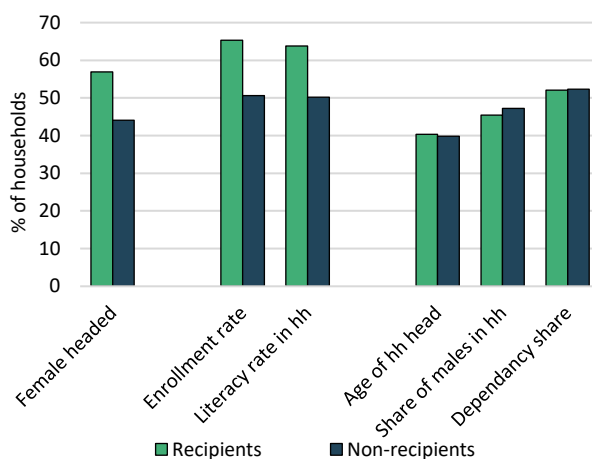
Source: Authors' calculation.

Figure 4.6: Remittances value by gender and education of household head.



Source: Authors' calculation.

Figure 4.7: Characteristics of recipient and non-recipient households.

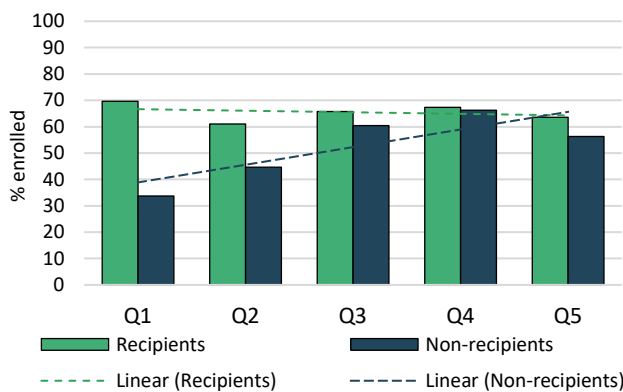


Source: Authors' calculation.

61. Recipient households' advantage in educational attainment is most important in poorer households. The enrolment rate for recipient households of quintile Q1 (the bottom 20 percent of households in terms of total consumption) is more than double that of non-recipients in the same quintile

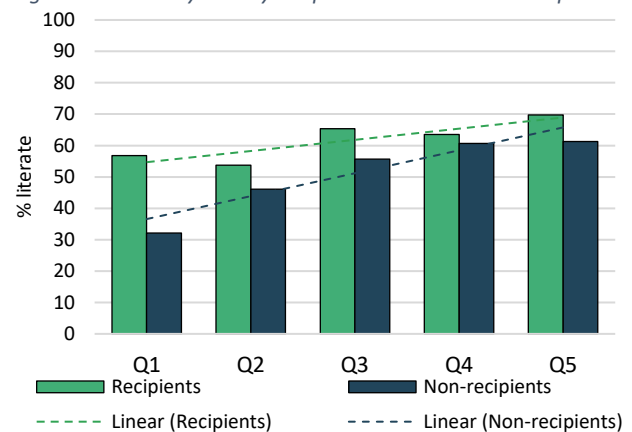
(Figure 4.8; recipients: 70 percent, non-recipients: 34 percent). This advantage is progressively receding for wealthier households, and the difference in mean enrollment rates disappears for quintiles Q4 and Q5. It is only among non-recipients that members of wealthier households are more likely to be enrolled. In the same way, Q1 recipients spend a significantly higher fraction of their income on education than Q1 non-recipients (Table A.6 in the Appendix; 73 percent difference). Household member literacy follows a similar trend, albeit less pronounced (Figure 4.9): in Q1, the literacy rate is higher for members of recipient households (recipients: 57 percent, non-recipients: 32 percent), and the advantage wears thinner for wealthier households. Literacy increases modestly with income, including among recipients. Thus, remittances provide a means for poor households to mitigate their educational disadvantage compared to non-poor households. This insight justifies further inquiry into how to foster the nexus between remittances and education.

Figure 4.8: Enrollment rate by recipient status and income quintile.



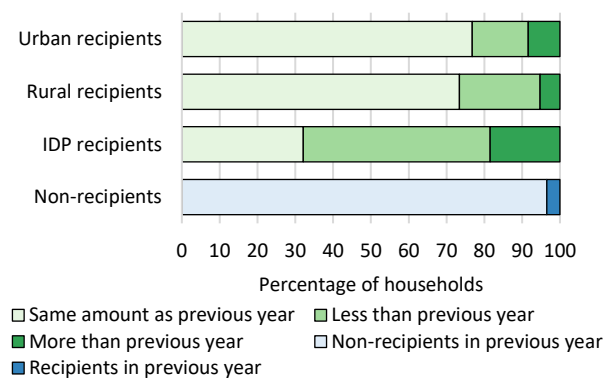
Source: Authors' calculation.

Figure 4.9: Literacy rate by recipient status and income quintile.



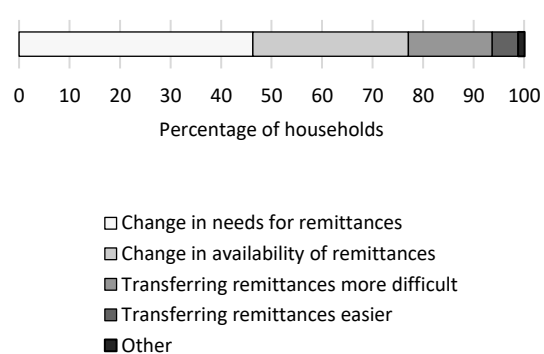
Source: Authors' calculation.

Figure 4.10: Remittance receipt compared to previous year.



Source: Authors' calculation.

Figure 4.11: Reasons for change in remittances value.



Source: Authors' calculation.

62. Households headed by women are more likely to receive remittances than households headed by men. 26 percent of households headed by women received remittances, compared to 17 percent of households headed by men (Figure 4.7). Likewise, 57 percent of recipient households are headed by a woman, compared to an overall average of 48 percent, whether recipients or not. Furthermore, recipient households are more likely to be headed by a woman in higher income quintiles (Figure A.7 in the Appendix). A plausible explanation for this finding is that, in households headed by women, it is more

likely that men have left the household to work elsewhere and send remittances, a trend which increases with income. This hypothesis is supported by the fact that recipient households headed by women count fewer adult men among their members (aged 25 to 64) than non-recipient households headed by women (Table A.7 in the Appendix; 21 percent fewer adult men in recipient households headed by a woman). Moreover, women-led households have significantly fewer adult men regardless of recipient status. Other socioeconomic characteristics, such as age of the household head, share of dependents, and share of boys and men in the household, do not correlate significantly with recipient status.

63. Remittances have remained relatively constant in urban and rural areas but changed for most households in IDP settlements. 3 in 4 recipient urban and rural households received the same amount as in the previous year, and few non-recipients received remittances in the previous year (4 percent)²⁹. In contrast, half of recipients in IDP settlements received less money than in the previous year (Figure 4.10). Of the 26 percent of recipients who reported a change in the amount of remittances (17 percent less, 9 percent more), just under half state a change in household needs as the main reason (Figure 4.11). To the extent that remittances are adaptive to household needs, these transfers could be particularly important when households are affected by adverse shocks like the ongoing severe drought. However, for more than half of these recipients, the amount transferred changed for reasons unrelated to their present situation, illustrating the limits of remittances as an adaptive shock absorber. In particular, 17 percent of households receive less money than in the previous year because receiving remittances has become more difficult, enough to warrant policy efforts towards improving easy access to such funds.

Remittances, poverty and consumption

64. Recipients of remittances are significantly less poor, with considerable differences in poverty incidence across regions. The poverty headcount rate of recipients is 37 percent, 18 percentage points lower than that of non-recipients, and child poverty among recipients is 40 percent as opposed to 62 percent among non-recipients (Figure 5.7). With a poverty gap of 12 percent, poor recipients are also significantly closer to moving out of poverty than non-recipients at 24 percent. The reduction in poverty is most pronounced in urban areas. Most likely, this is the consequence of urban households receiving higher amounts of remittances than households in rural areas and IDP settlements, as higher amounts of remittances received are strongly related to lower poverty incidence (Figure 4.13). While the difference in poverty between recipients and non-recipients is sizable, differences in poverty at the regional level are larger (Figure 4.21).

65. In IDP settlements, remittances are rare and ineffective at reducing poverty. Only 7 percent of IDP households receive remittances and poverty incidence is equally high for recipients and non-recipients in IDP settlements, with 69 percent and 70 percent, respectively (Figure 4.12). In line with this, poverty depth is 35 percent for recipients and 37 percent for non-recipients, with the difference not statistically significant. Thus, unlike in urban and rural areas, remittances receipt does not have any discernable effect on poverty. There are few recipient IDP households leading to low statistical power and limited scope for exploring this finding in depth empirically. Yet, several observations suggest a plausible explanation: The

²⁹ This estimate is based on respondents retrospectively self-reporting the ordinal change in value of remittances (*more, less, or about the same*) between the two years before the survey date, February 2016. In contrast, figures reported in *Chapter 3: The Evolution of Welfare Conditions in the North West Region* are based on survey data on the value of remittances collected three years apart, in 2013 and in 2016. Therefore, Chapter 3 draws on a direct comparison of the value of remittances in 2013 and in 2016. In spite of these methodological differences, both sets of findings consistently point to a net reduction in the overall value of remittances over the years.

annual per capita value of remittances varies widely among IDP recipients, and much more so than elsewhere. The annual per capita value of the non-poor in IDP settlements 22 times higher than that of poor IDP recipients (IDP non-poor: US\$438, IDP poor: US\$20). In comparison, in urban areas the value of the non-poor recipients exceeds that of poor recipients by a factor of 1.5 (urban non-poor: US\$276, urban poor: US\$186), and by a factor of 1.08 in rural areas (rural non-poor: US\$178, rural poor: US\$166). This vast inequality in the value of remittances among IDP recipients suggests that poor households do not receive enough to overcome their consumption shortfall relative to the poverty line. In fact, the average value of remittances for poor IDP households covers only 13 percent of the average poverty gap. This deficiency is also reflected in the fact that just around 1 percent all IDP households, and 19 percent of recipients, cite remittances as their main source of income, compared to more than half of recipients overall (Figure 4.21). This discussion reveals that the most at-risk households in IDP settlements remain excluded from any meaningful benefits stemming from receiving remittances.

Figure 4.12: Poverty incidence by recipient status.

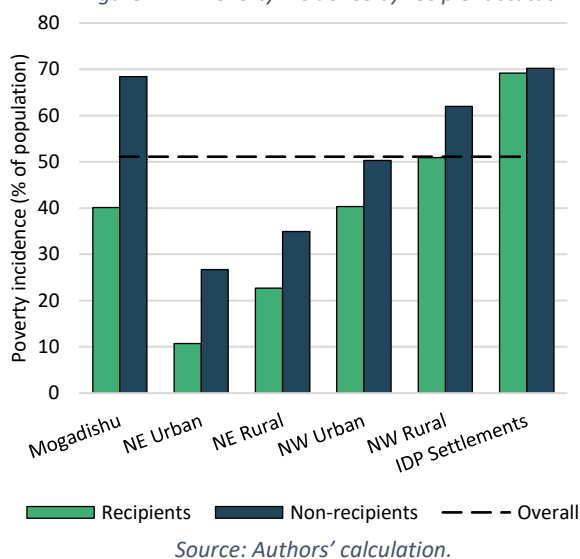


Figure 4.13: Poverty incidence by value of remittances received.

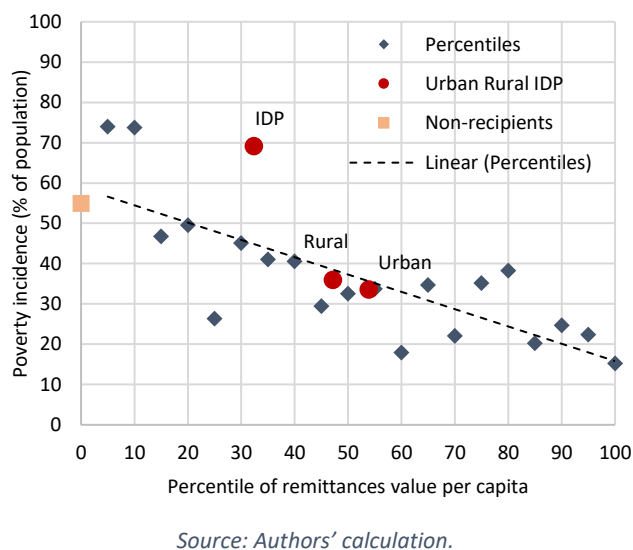


Figure 4.14: Cumulative distribution of consumption, urban.

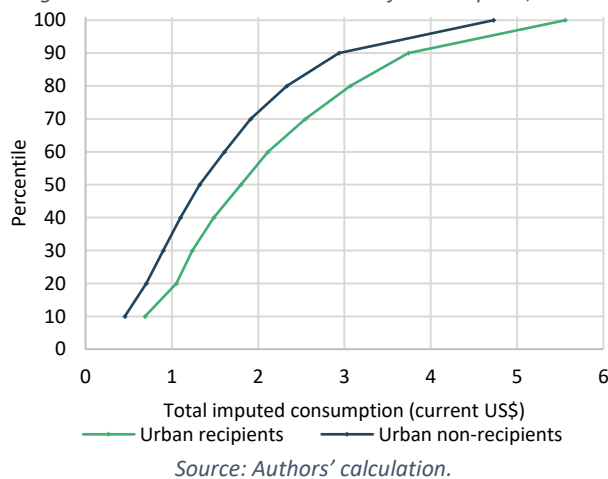
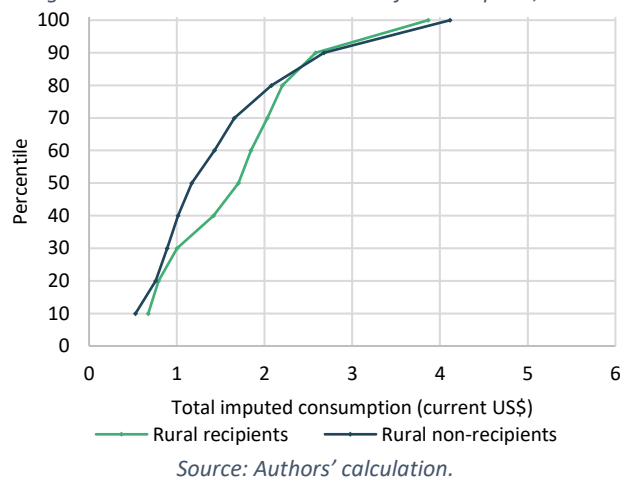


Figure 4.15: Cumulative distribution of consumption, rural.

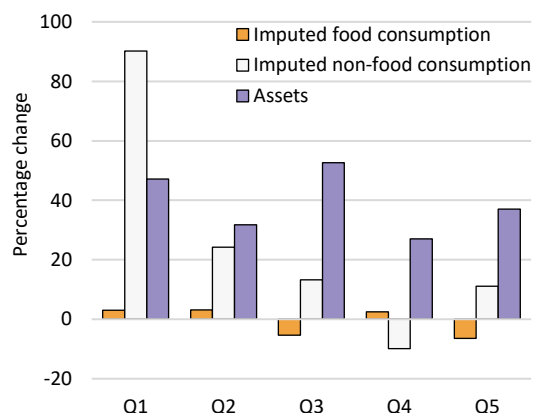


66. While overall recipient households consume more than non-recipient households, differences in consumption benefit households in urban and rural areas and IDP settlements in different ways.

Recipient households in urban areas have the largest percentage increase in total consumption over non-recipient households (Table A.9 in the Appendix). In addition, urban recipients' consumption increases across all three components of total consumption – food, non-food and assets. In contrast, there is no statistically significant increase in nonfood consumption for recipients in IDP settlements and rural areas. However, recipient households experience a significant increase in assets and nonfood consumption. Moreover, this analysis of average values conceals an important distributional trend: Rural receivers in the middle part of the income distribution (between the 40th and the 70th percentile) do in fact consume more than non-receivers (Figure 4.14). It is for the wealthiest and poorest household that the difference vanishes. A plausible interpretation of this fact is that for the poorest rural recipients, the transfers received are not enough to meaningfully alter their day-to-day consumption. The wealthiest rural households, in contrast, may be using their remittances income in ways that do not reflect in their consumption expenditures.

67. The largest increase in total consumption accrues to the poorer recipient households. In the bottom quintile, recipient households consume 23 percent more than non-recipients (Table A.9), with the difference most pronounced in non-food consumption and assets (Figure 4.16). The overall consumption surplus for recipients wears out for the other income quintiles. Similarly, remittances make up a larger share of total expenditure for poorer households, even though they receive lower amounts: the daily value of remittances relative to daily consumption is 23 percent for the top quintile as opposed to 58 percent for the bottom quintile (Table A.8 in the Appendix). Remittances are thus a critical means especially for poor households to meet basic day-to-day expenses. Conversely, poor households are most dependent on remittances, and would suffer severely from an adverse shock to this source of income. In line with this, a previous study finds that many recipient households rely on a single sender and would not know how to afford basic consumption and services without this source of income.³⁰

Figure 4.16: Difference in consumption between recipients and non-recipients.

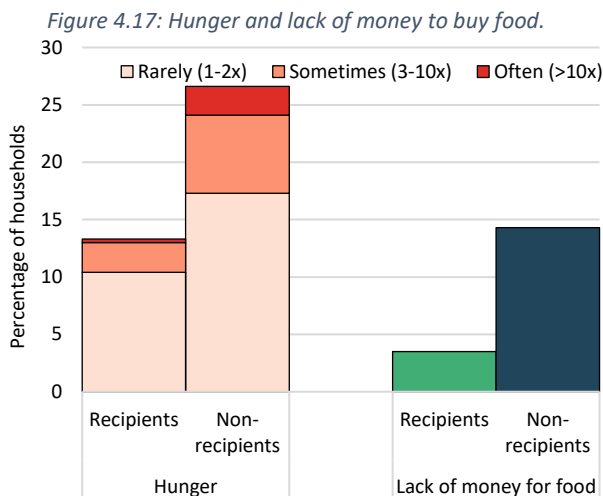


Source: Authors' calculation.

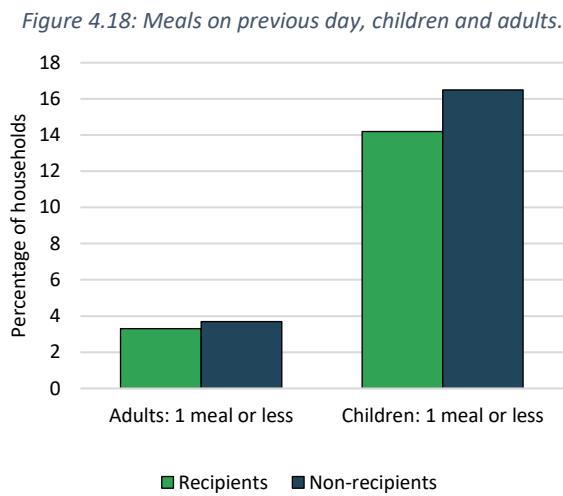
68. Remittance-receiving households experience hunger less often. Non-recipients are twice as likely to have experienced hunger in the past month as recipients. This finding holds across income quintiles and regions, as well as along the urban-rural-IDP divide, with the value of remittances inversely related to experiencing hunger. Also, 2.5 percent of non-recipients have experienced hunger often (more than 10 times) in the past month, compared to 0.3 percent of recipients (Figure 4.17, left). Similarly, 4 percent of

³⁰ FSNAU (2013) 'Remittances and Livelihood support in Somaliland and Puntland'. FSNAU, Nairobi.

recipient households lacked money to buy sufficient food, as starkly opposed to 14 percent of non-recipient households (Figure 4.17, right). This trend is also visible in households' reported number of meals on the previous day. Children under five, in particular, are 2 percentage points more likely to have eaten an insufficient number of meals (Figure 4.18), though the difference is relatively slim and not statistically significant in all specifications. On the one hand, this is due to low statistical power. On the other hand, there is no information in this statistic about the quality and quantity of the meal.

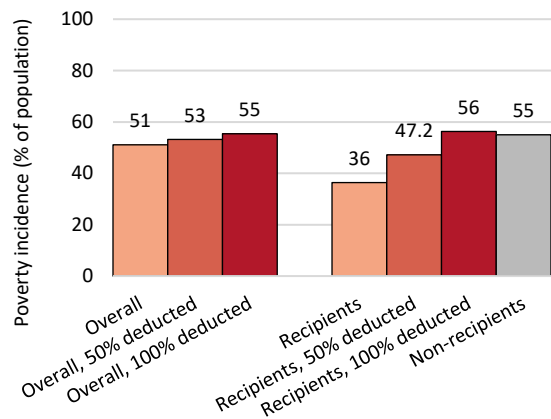


Source: Authors' calculation.



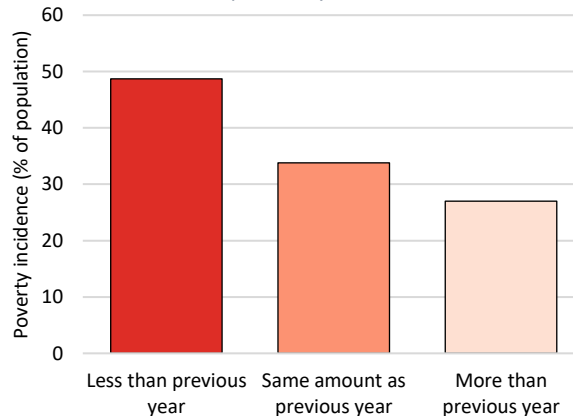
Source: Authors' calculation.

Figure 4.19: Poverty incidence with & without remittances.



Source: Authors' calculation.

Figure 4.20: Poverty incidence by change in remittances value previous year.

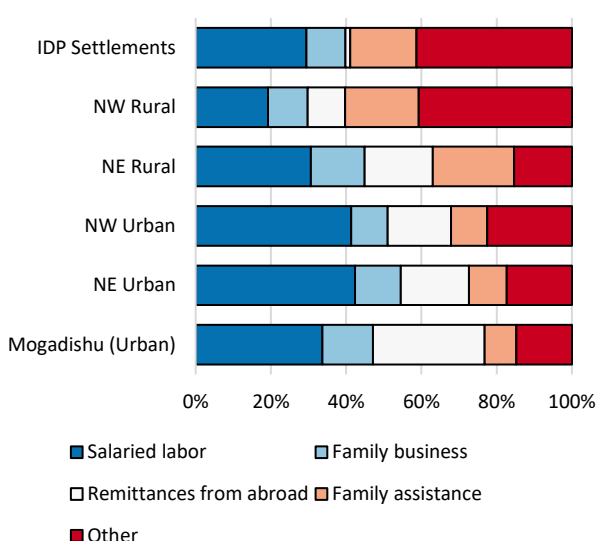


Source: Authors' calculation.

69. Without remittances, current recipients could be as poor as current non-recipients, highlighting dependency. Two simple simulations illustrate the effect of remittances on poverty: first, deducting 50 percent of the value of remittances from the total value of consumption of recipients, and, second, deducting 100 percent of the value of remittances. In the absence of information on how households allocate remittances income between consumption expenditure and other uses such as investment, the two cases aim to serve as benchmarks for how different shocks may affect recipients rather than being empirically grounded: A 50-percent deduction leads an increase in poverty of 11 percentage points for recipient households (Figure 4.19; 36 percent vs. 47 percent), and 2 percentage points for the entire population (Figure 4.19; 51 percent vs. 53 percent). In contrast, a 100-percent deduction makes recipients

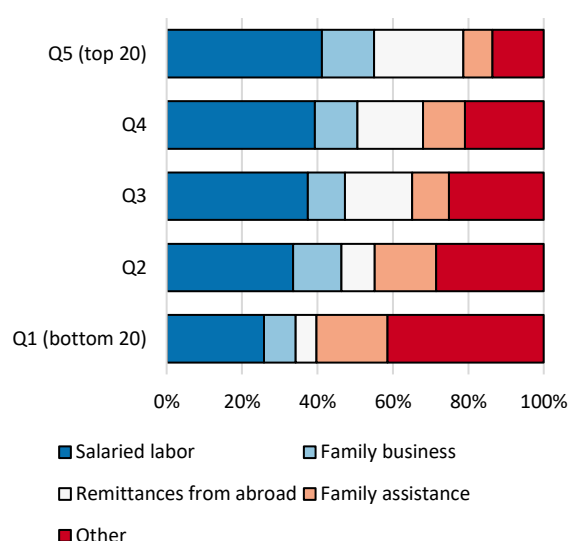
as poor as non-recipients (Figure 4.19; recipients: 56 percent, non-recipients 55 percent), and leads to an overall increase in poverty of an additional 2 percentage points. These results are further supported by the fact that households which received less money from remittances than the previous year are significantly poorer (poverty incidence: 49 percent) than those who received the same amount as the previous year (34 percent), while those who received more are less poor (27 percent, Figure 4.20). The same relationship holds true for hunger: a decrease in the value of remittances implies experiencing hunger more often, an increase reduces the incidence of hunger. These findings highlight the extent to which households depend on remittances as a source of income. These transfers are large relative to total consumption expenditure, thus boosting household welfare and protecting against the worst forms of deprivation. At the same time, relying on remittances leaves recipients vulnerable in the face of volatile diaspora incomes and the uncertainties around sending money to the region.

Figure 4.21: Main source of income, regional breakdown.



Source: Authors' calculation.

Figure 4.22: Main source of income, income quintiles.



Source: Authors' calculation.

Remittances, sources of income and the labor market

70. Remittances are important sources of household income, except in IDP settlements. The most common source of income is salaried labor (36 percent), followed by remittances (16 percent), family assistance (12 percent), and income generated from a family business (11 percent). But sources of income vary across regions and along the urban-rural-IDP divide. Urban areas and wealthy households rely more often on salaried labor and on remittances than rural and IDP households. In contrast, rural households rely more readily on family assistance from within the country (Figure 4.21 and Figure 4.22)³¹. Very few IDP households rely on remittances as their main source of income. While only 7 percent of IDP

³¹ Figure 4.21 and Figure 4.22 have been collapsed for presentation. The full list of response options in the Wave 1 questionnaire are: Salaried labor; Remittances from abroad; Savings, investments; Pensions; Family assistance; Revenues from sales of assets; Small family business; Other small family business; Domestic trade; Foreign trade; NGO or foreign aid; None. A full breakdown of sources of income overall, by income quintile, and in regional breakdown can be found in Table A.10 in the Appendix. In Wave 2, response options are updated to consist of: Salaried Labor; Remittances (money and goods from family and friends) from abroad; Savings, interest or other investments; Pensions; Remittances (money and goods from family and friends) from within this country; Revenues from sales of assets; Small family business; Agriculture, fishing, hunting and animal husbandry; Trade in domestic goods / products; Trade in foreign goods / products (export or import); NGO or foreign aid; Property income; Zakat; Other (specify).

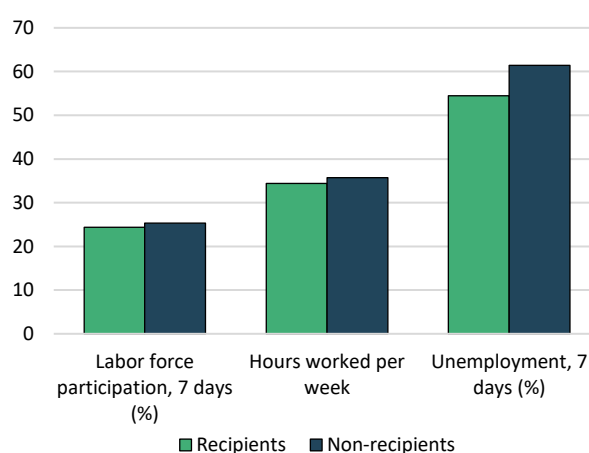
households receive remittances, only 1 percent reported relying on them as the main source of income, a reflection of the fact that IDPs receive particularly low amounts in transfers.

Table 4.1: Main sources of income for households.

	Salaried labor	Remittances from abroad	Family assistance	Family business	Other
Overall	36%	16%	12%	11%	25%
Recipients	22%	56%	6%	9%	8%
Non-recipients	40%	N/A	14%	12%	30%

Source: Author's calculation.

Figure 4.23: Labor market statistics by recipient status.



Source: Authors' calculation.

71. Remittances are the main source of income for more than half of recipient households, but reliance on transfers leaves them vulnerable to adverse shocks to remittances income. 56 percent of recipient households rely on remittances as their main source of income, highlighting how important remittances are in creating welfare. At the same time, many households stand to suffer a serious consumption shortfall in case of an adverse shock to their remittances income (Table 4.1). The effect of receiving remittances on labor market behavior is therefore all the more relevant. Particularly, if the knowledge of having an additional source of income from remittances crowds out work in the labor market as an income generating activity, remittances will exacerbate, and potentially create, dependency in the first place. The ensuing paragraph thus explores the relationship between receipt of remittances and behavior in the labor market.

72. Overall, receiving remittances does not have a large effect on household members' behavior in the labor market. The effect that receipt has on labor market behavior aids an understanding of the degree and nature of remittances dependency. The labor market effect depends on how recipients use the received transfers, as complements or substitutes to their usual means of earning a living. In a labor market with poor opportunities (Chapter 2. Multidimensional deprivation), members in recipient households may be tempted to leave the labor market and live off remittances, which would imply a lower labor force participation rate, and, by the same token, a lower unemployment rate. Similarly, recipients may decide to work fewer hours in the knowledge of having additional funds from remittances. Indeed,

recipients do have nominally lower labor force participation, hours worked, and unemployment, but only the difference in unemployment is statistically significant at the 10 percent level (Figure 4.23). However, breaking the labor statistics down by region reveals considerable heterogeneity: labor force participation is around 10 percentage points lower for members of recipient households in North East urban, North West rural, and IDP settlements, suggesting that these populations use remittances as substitutes for other income generating activities (Figure A.9 in the Appendix). Unemployment is lower in North East urban areas, but higher in North West rural areas (Figure A.10 in the Appendix). There is also considerable heterogeneity across income quintiles, albeit with no clearly discernable pattern. The sparsity of data on hours of work does not allow for credible analysis based on a finer breakdown. Overall, there is no strong evidence that receiving remittances crowds out work in the labor market.

Cash transfers, resilience and social protection

73. With beneficial effects on poverty and hunger, remittances show how cash transfers can serve as mechanism for resilience. The findings of this section highlight several ways in which remittances mitigate difficult circumstances. First, remittances reduce poverty and hunger. The overall value of remittances is directly related to better welfare outcomes, and a change in that value affects poverty levels and food security. Second, their positive relation with welfare outcomes is particularly pronounced among poorer households, who otherwise lack the means to satisfy basic needs. These findings are indicative of the great potential that direct transfers hold in insuring the poor against shocks and assisting in overcoming the most urgent deprivations.

74. With many households left excluded from benefits of remittances, especially the poorest and most vulnerable in IDP settlements, an institutionalized social protection program offers a promising path for protecting the poor. 8 in 10 households remain excluded from the benefits that receiving remittances holds. Poor households are particularly unlikely to be recipients at 14 percent and current recipient are at risk of falling into poverty in case of shock to their income from remittances. Moreover, households in IDP settlements and, to a lesser extent, rural households benefit least from remittances: they are least likely to receive remittances, receive very little money, and in many cases suffer a decline in the value of remittances. At the same time, rural areas, and particularly IDPs, are disproportionately at risk in the current crisis. Emergency assistance in the form of direct cash transfers is apt for filling the gaps in access and mitigating the most severe effects of the drought and building resilience to such crises in the future. Any such intervention is most effective when it is predictable and targets vulnerable and excluded populations, namely the internally displaced and rural households. However, any type of social protection program requires fiscal capacity, technical capabilities and adequate infrastructure (see Chapter 6. Social protection for a detailed discussion).

5. Child and youth poverty³²

KEY MESSAGES

In line with global trends, children are overrepresented amongst the poor. 58 percent of children and 46 percent of youth live in poor households. In line with the general finding of better welfare conditions in the North East region, the lowest child and youth poverty incidence are found in that area. Child and youth poverty is substantially lower in small households, households with an educated household head and in those that receive remittances.

Almost 4 out of 5 children are deprived in at least one welfare dimension. 79 percent of children and 85 percent of youth are deprived in at least one dimension. Deprivation is concentrated in rural areas of North West and IDP settlements. For children, consumption deprivation is the most common type of deprivation in urban areas and IDP camps, while the lack of access to improved water source is most prevalent in rural areas.

Education is key to break the poverty cycle, yet nearly half of Somali children and youth do not currently attend school. 47 percent of the children and 45 percent of the youth do not attend school. Children and youth living in households that receive remittances have a higher school attendance by 13 and 17 percentage points respectively. Poor children are less likely to attend school (46 percentage) compared to those living in non-poor households (63 percentage), while children and youth living in households with a head that has no education are 30 percent less likely to attend school. The main reasons for not attending school are illnesses, absent teachers, the lack of resources and having to help at home.

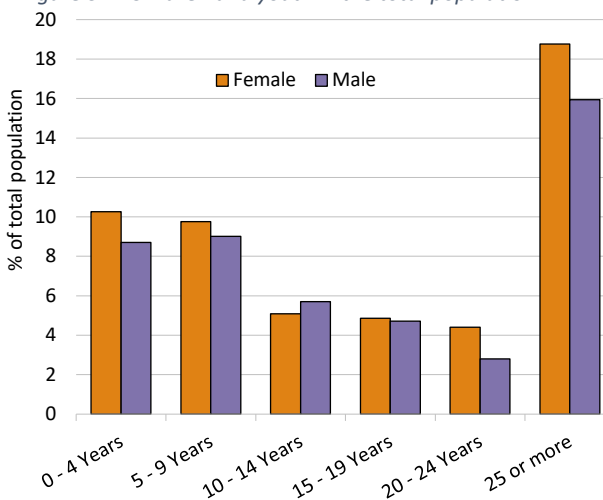
Many poor children and youth grow up in challenging water and sanitation conditions possibly impacting their health and productivity, especially in IDP settlements. Less than half of children and youth drink water from a piped source. Children and youth living in rural areas are much less likely to treat the water they use, when the source is unprotected. Most children and youth in IDP camps and rural North West rely on other water sources. Regional disparities and dire conditions especially in IDP settlements and rural North West make it harder to lift households out of poverty in these regions.

The Poverty Assessment will explore in more detail how to break the intergenerational poverty cycle. In the current environment, children and youth especially from poor families are disadvantaged across a range of indicators. This disadvantage will likely translate into poverty in their adult lives. In light of the overwhelmingly young Somali population, this will become an extraordinary development challenge. Thus, these inequalities and barriers must be addressed now with dedicated and specific programs to create enabling environments and opportunities for vulnerable children and youth. As the Poverty Assessment will explore in more detail, priority should be given to programs which aim to break the intergenerational transmission of poverty by addressing the low educational levels, poor health and housing conditions of children and youth.

³² This chapter has been written in collaboration with, and funded by UNICEF Somalia.

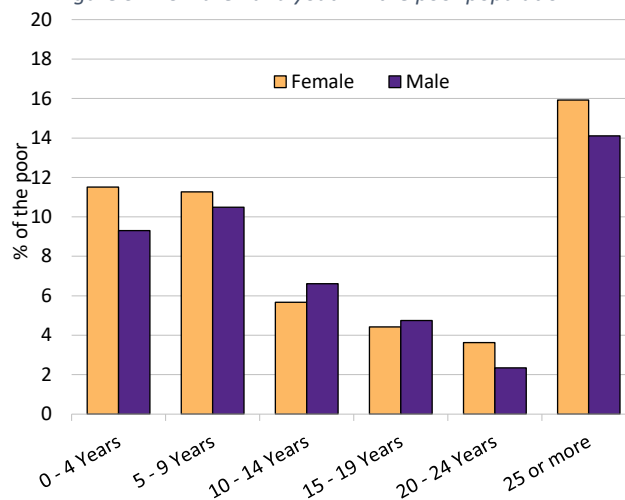
75. In line with global trends, children are overrepresented amongst Somali's poor population, while youth are slightly underrepresented. Children (aged 0-14) represent nearly half of the total Somali population (49 percent) and more than half (55 percent) of the poor (Figure 5.1 and Figure 5.2). Girls and boys represent 25 and 23 percent of the overall population, while 28 and 26 of the poor respectively. Contrary to this, youth (aged 15-24) represent around 17 percent of the total population and slightly less of the poor (15 percent). The same pattern is observed for children and youth in IDP settlements, rural and urban areas, yet more pronounced in urban and IDP areas.

Figure 5.1: Children and youth in the total population.



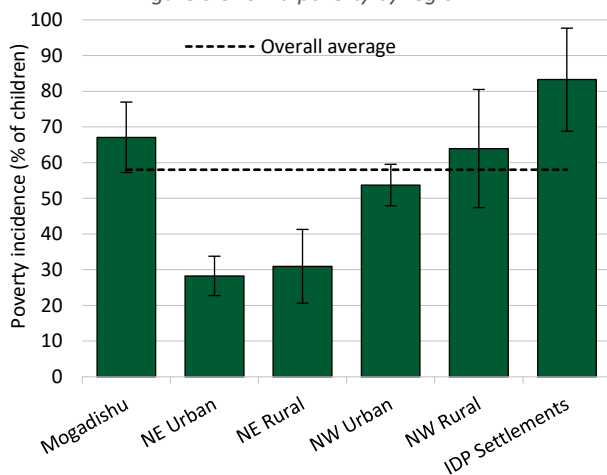
Source: Authors' calculation.

Figure 5.2: Children and youth in the poor population.



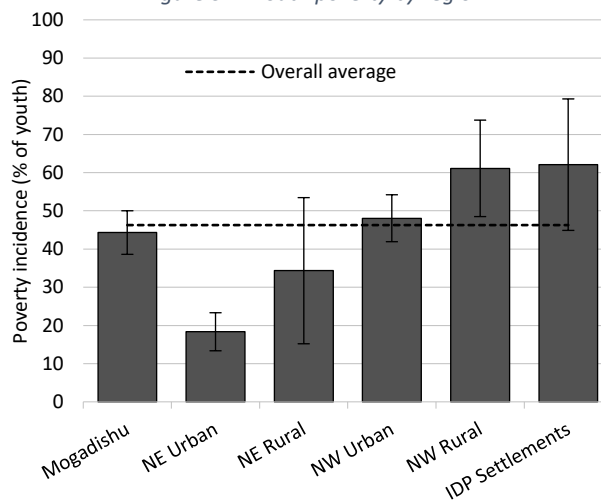
Source: Authors' calculation.

Figure 5.3: Child poverty by region.



Source: Authors' calculation.

Figure 5.4: Youth poverty by region.

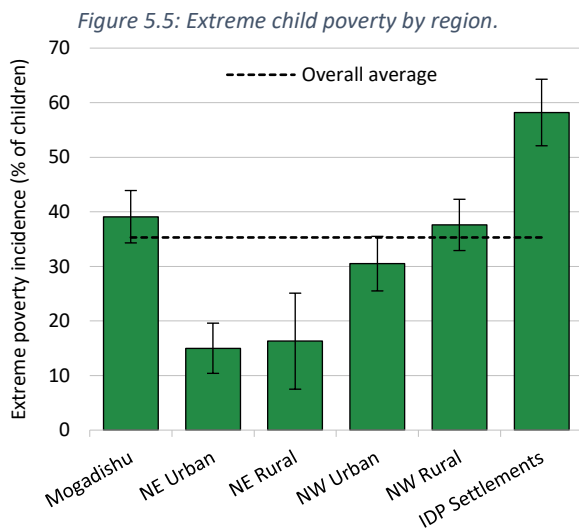


Source: Authors' calculation.

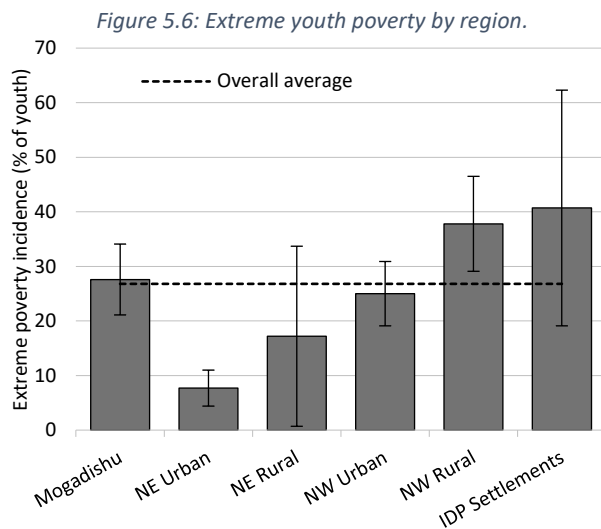
76. More than half of the children and nearly half of the youth live in a poor household. 58 percent of children and 46 percent of youth live in households consuming less than the poverty line. Child poverty incidence is higher in IDP camps, Mogadishu and North West rural (Figure 5.3). Youth poverty is also higher in IDP settlements and North West rural (Figure 5.4). Consistent with the overall trend for lower poverty incidence in the North East region, the lowest child and youth poverty incidence are found in this area.

Higher poverty incidence rates for children and youth are partially explained by a larger dependency ratio in poor households.

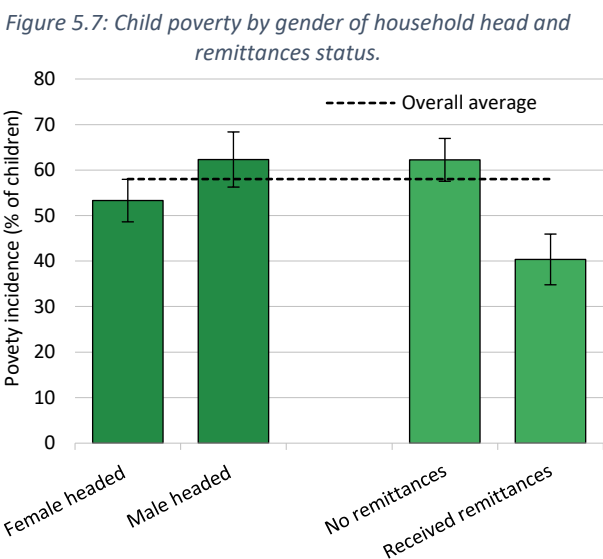
77. More than 1 in 3 children and nearly 1 in 3 youth live in households with conditions of extreme poverty. 35 percent of children and 27 percent of youth live in conditions of extreme poverty. The profile of poverty and extreme poverty for both children and youth is similar. Poverty and extreme poverty is highest in IDP settlements, followed by the rural North West, Mogadishu, North West urban and lastly by rural and urban North East (Figure 5.5 and Figure 5.6). Moreover, the gap between children and youth is smaller for extreme poverty than for poverty with a poverty line of US\$ 1.9 (PPP 2011) per day.



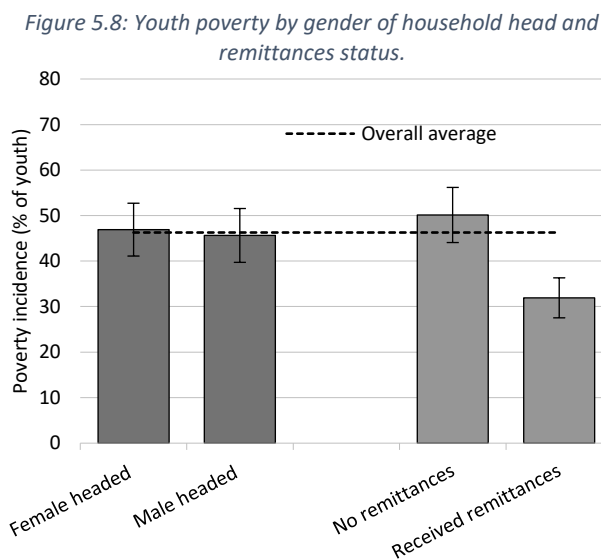
Source: Authors' calculation.



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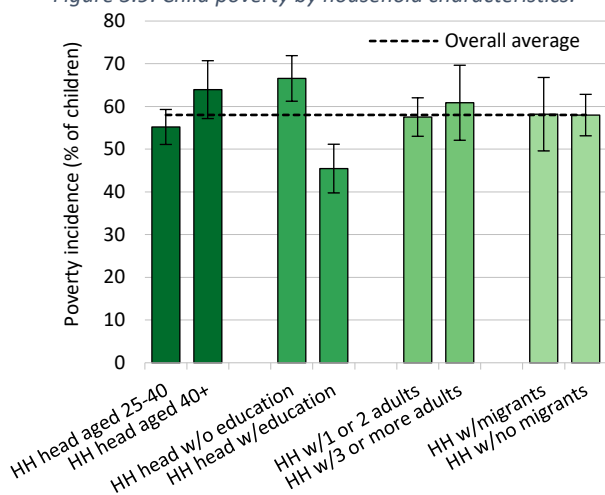
Source: Authors' calculation.

78. Child and youth poverty is substantially lower in households with an educated household head and in those that receive remittances. Child poverty incidence is higher in male-headed households and in those that did not received remittances (Figure 5.7). Whilst youth poverty incidence is similar in households headed by men and women, it is higher in households that did not received remittances

(Figure 5.8). Moreover, child and youth poverty is more common in households with a household head aged 40 years or older and whenever the household head does not have education (Figure 5.9 and Figure 5.10). The number and the migration status of adults in the household does not seem to be associated with child and youth poverty incidence.

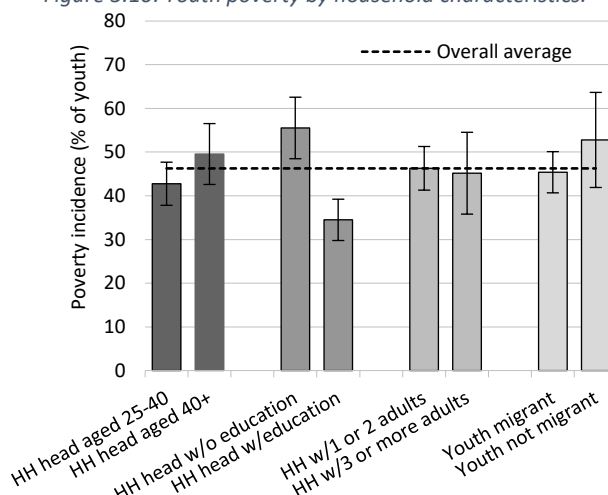
79. For children and youth, monetary and non-monetary poverty are closely related, yet consumption deprivation is the first or second most common type of deprivation. For children, consumption deprivation is the most common type of deprivation in urban areas and IDP camps, while the lack of access to improved water source is most prevalent in rural areas (Figure 5.11). Along with the lack of access to information, consumption deprivation is more relevant for youths in Mogadishu and urban areas of North West, while access to an improved water source is the second most common deprivation in rural areas of North West and North East and amongst IDP settlements (Figure 5.12).

Figure 5.9: Child poverty by household characteristics.



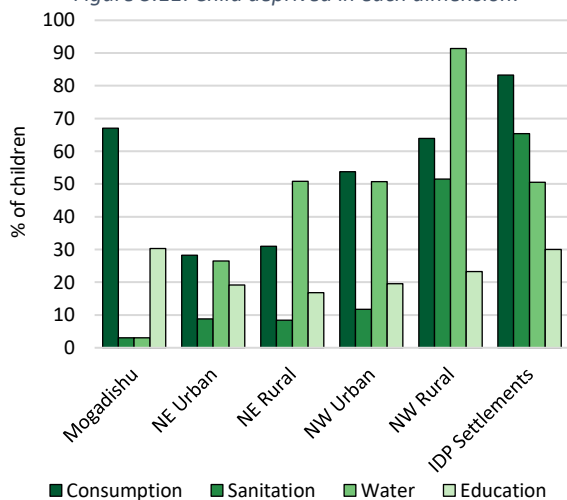
Source: Authors' calculation.

Figure 5.10: Youth poverty by household characteristics.



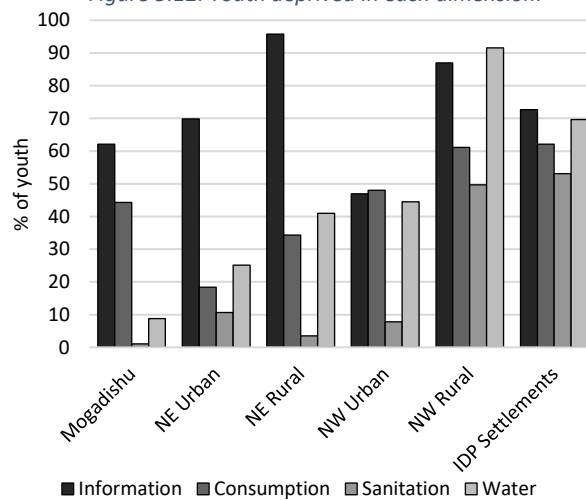
Source: Authors' calculation.

Figure 5.11: Child deprived in each dimension.



Source: Authors' calculation.

Figure 5.12: Youth deprived in each dimension.

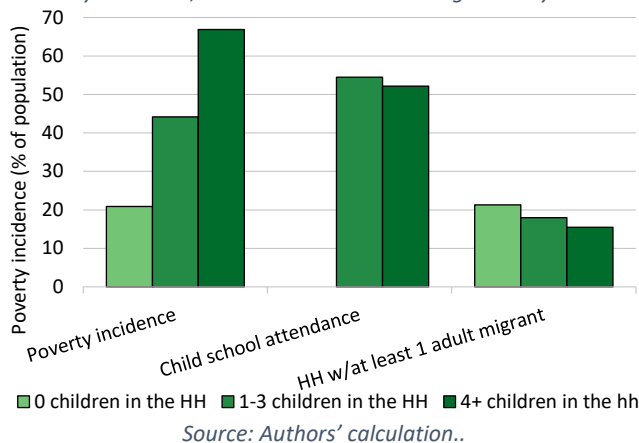


Source: Authors' calculation.

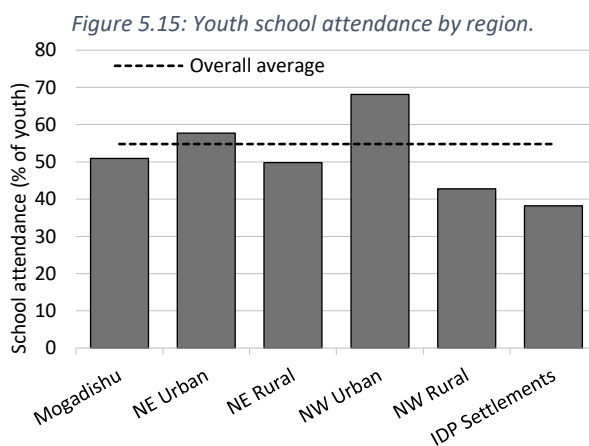
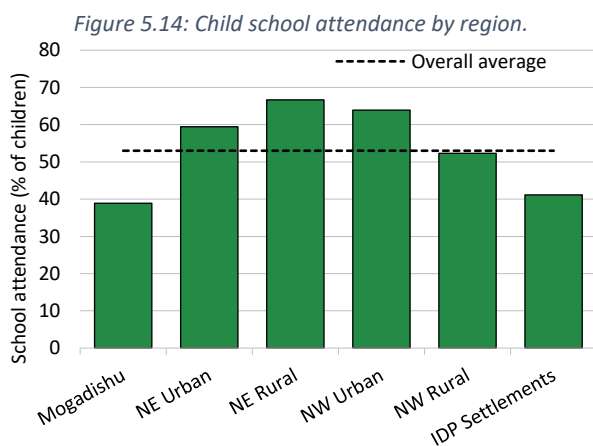
80. Multidimensional poverty measures indicate that 79 percent of children and 85 percent of youth are deprived in at least one dimension, while 47 and 54 percent in at least two dimensions, respectively.

Deprivation is concentrated in rural areas of North West and IDP populations. The number of children and youth deprived in various dimensions gives an indication of wellbeing by considering education, water, sanitation and access to information, in addition to consumption. Child poverty is lowest in the North East region, while youth poverty in urban areas (Figure A.12 and Figure A.13 in the appendix). Multidimensional poverty is also more severe in North West rural and IDP camps regardless of whether we consider deprivation in one or two dimensions (Figure A.14 and Figure A.15 in the Appendix).

Figure 5.13: Poverty incidence, school attendance and migration by number of children.



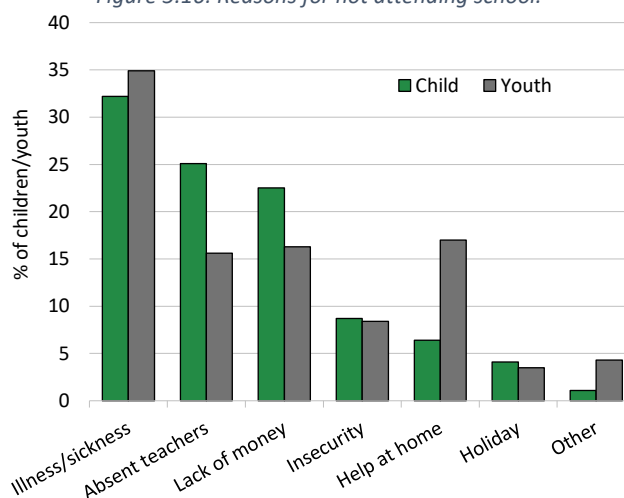
81. Poverty incidence is higher for households with a larger number of children. Households with no children have a poverty incidence of 24 percent; for households with 1 to 3 and 4 or more children, this increases to 44 and 67 percent, respectively (Figure 5.13). This is mainly because larger households are more often poor than smaller households, but also since having more children increases expenditure needs in a context of scarce resources. Household size is a relevant feature of child development, as households with fewer children can devote more time and more resources to them, potentially bringing other benefits in terms of school attendance, educational attainment, productivity and consumption.³³ School attendance and migration of adults in the household does not vary with the number of children in the household.



³³ UNICEF (2012), Steelman, et al. (2002), HM Government (2014) and Bird, K. (2007).

82. Nearly half of Somali children and youth do not currently attend school, mainly due to illnesses, absent teachers, the lack of resources, and in the case of the youth group, having to help at home. 47 percent of the children and 45 percent of the youth do not attend to school (Figure 5.14 and Figure 5.15). Health issues are the first cause of absenteeism for children (32 percent) and youth (35 percent) (Figure 5.16). Next, for children, the lack of teacher’s attendance (25 percent) and the lack of money (23 percent), while for youth, helping with work at home is a greater barrier (17 percent), before teacher’s absenteeism (16 percent) and the lack of resources (16 percent). These barriers are similar for boys and girls. School attendance is relatively similar for children and youth, and less frequent for children in IDP settlements and Mogadishu, and for IDP and rural youth. Education is a powerful tool to improve the wellbeing of future generations, thus efforts aimed at increasing school attendance should focus on children and youth with poor health, lack of resources and those that live in areas where teachers do not attend to school. Some examples of these programs include school feeding, conditional cash transfers (see Chapter 6. Social protection), conditional in-kind transfers like cooking oil, and community mobilization activities, including child-to-child clubs and community education committees.

Figure 5.16: Reasons for not attending school.



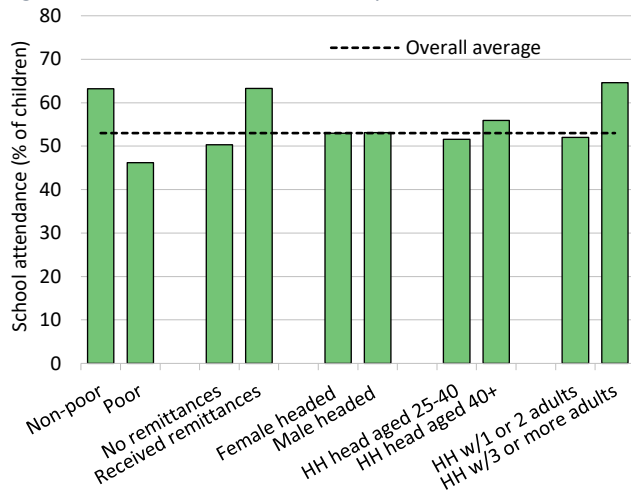
Source: Authors’ calculation.

83. School attendance is more likely for children and youth in households that receive remittances, but there are no differences in attendance by the gender of the household head. Children and youth that live in households that receive remittances have higher school attendance by 13 and 17 percentage points respectively (Figure 5.17 and Figure 5.18). This provides evidence that remittances might lead to investments in education, since households that receive them have higher incomes, are less poor and are more likely to send their sons and daughters to school (see Chapter 4. Remittances). Poor children are less likely to attend school (46 percentage) compared to children living in non-poor households (63 percentage). Thus, children from poor households face bigger challenges to overcome poverty in their adult life. Children are also more likely to attend school in households with 3 or more adults and an older household head. On average, the gender of the household head does not appear to be a relevant factor impacting school attendance for children and youth, while for youth, the poverty status and number of adults in the household does not affect outcomes on school attendance.

84. School attendance is nearly 30 percent less likely for children and youth in households with a head that has no education. School attendance is higher for children and youth in households with a household

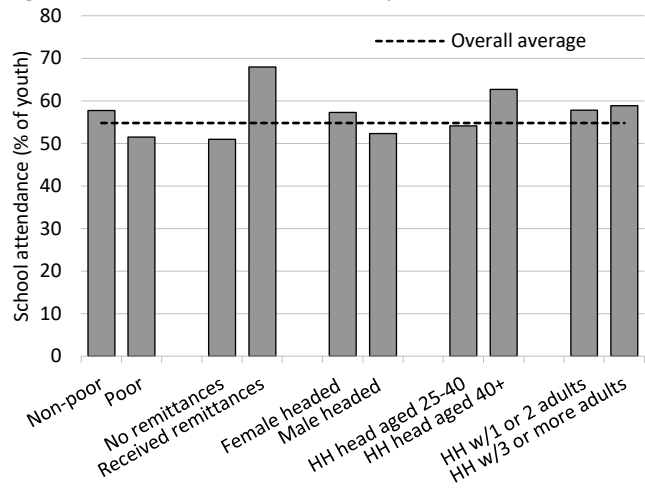
head with some education (64 vs. 45 percent for children and 65 vs. 46 percent for youth) and those with a larger number of literate adults in the household (Figure 5.19 and Figure 5.20). Education is crucial to interrupt the intergenerational transmission of poverty due to its externalities and a higher expected income. Yet, children and youth in households with low levels of education are less likely to attend school. In the current environment, children and youth especially from poor families are disadvantaged. This disadvantage will likely translate into poverty in their adult lives. Priority should be given to programs which aim to break this cycle of poverty. In light of the overwhelmingly young Somali population, this will become an extraordinary development challenge.

Figure 5.17: Child school attendance by household characteristics.



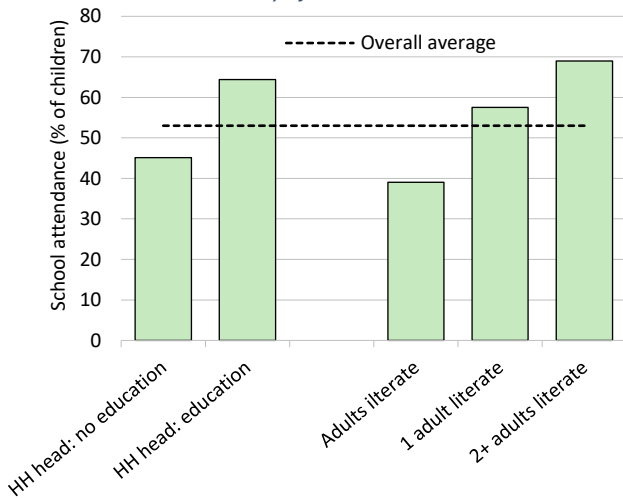
Source: Authors' calculation.

Figure 5.18: Youth school attendance by household characteristics.



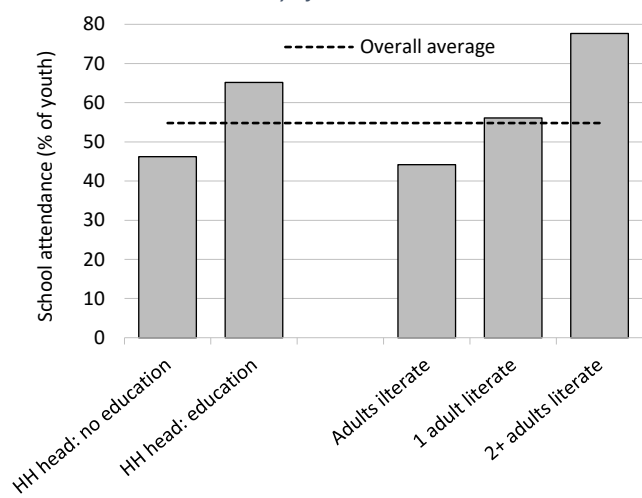
Source: Authors' calculation.

Figure 5.19: Child school attendance by education of household head and literacy of adults in the household.



Source: Authors' calculation.

Figure 5.20: Youth school attendance by education of household head and literacy of adults in the household.

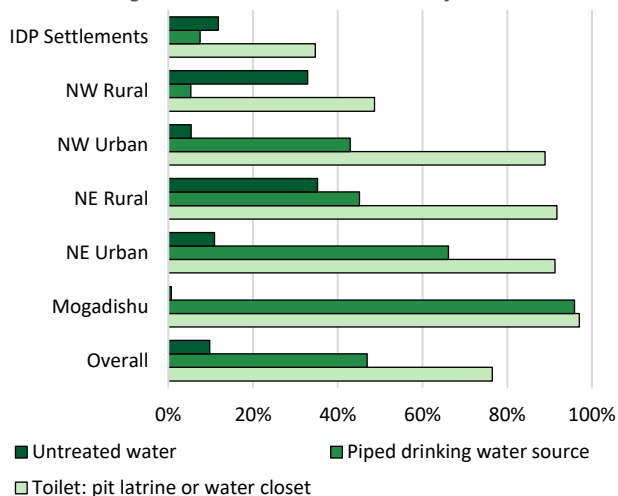


Source: Authors' calculation.

85. In line with poverty incidence and other deprivations, water and sanitation for children and youth are worse in IDP camps and North West rural. Less than half of the children and youth drink water from a piped source (Figure 5.21 and Figure 5.22). Children and youth living in rural areas are much less likely to treat the water they use, when the source is unprotected. Most children and youth in IDP camps and

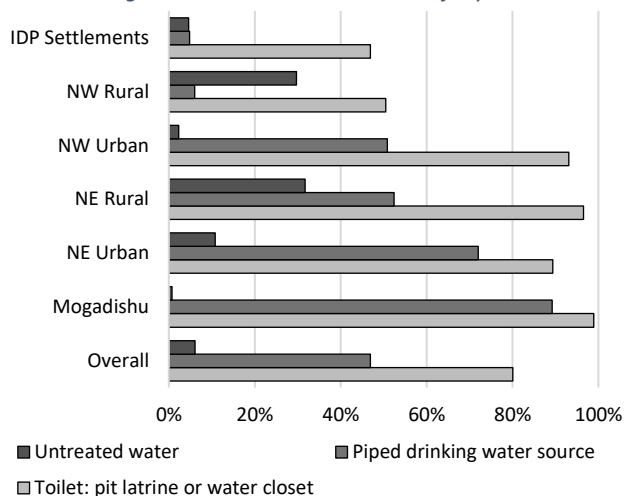
North West rural rely on other water sources like public tap, borehole, protected or unprotected spring, rainwater collection, and tanker-truck, among others. Water and sanitation conditions can also have a deep impact on health and productivity, and thus in income generation opportunities and future poverty status.

Figure 5.21: Water and sanitation for child.



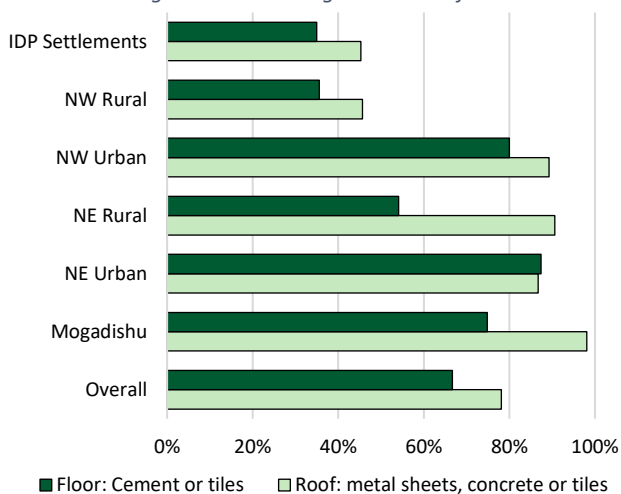
Source: Authors' calculation.

Figure 5.22: Water and sanitation for youth.



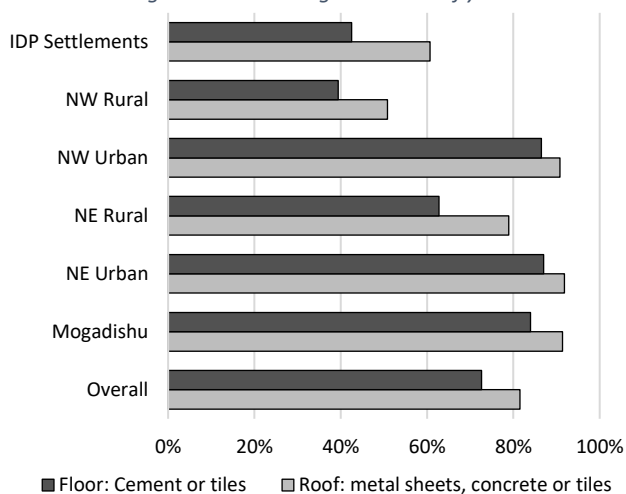
Source: Authors' calculation.

Figure 5.23: Housing conditions of child



Source: Authors' calculation.

Figure 5.24: Housing conditions of youth



Source: Authors' calculation.

86. Similarly, housing conditions are poor for nearly half of the children and youth, and worse in IDP camps and North West rural. Most children and youth live in a dwelling with roof of metal sheets, concrete or tiles, and a floor of cement or tiles (Figure 5.23 and Figure 5.24). In IDP camps and North West rural, more than half of the children and youth live in a dwelling with a floor of mud or wood, and less than half with a roof of wood or plastic sheets. Worse conditions in IDP camps and North West rural makes harder to break the poverty cycle in these regions, as children and youth face greater challenges to overcome in order to have good health, acquire skills and education, to ultimately benefit from income generating opportunities.

87. Successful efforts to address monetary and multi-dimensional poverty in Somali regions will require dedicated and specific attention to poverty's impact on children and youth. Breaking the poverty cycle requires improving conditions for children and youth, and the challenge of improving the welfare of Somali's young population will only grow in light of the country's demographic structure. The first step in this direction is adequate data collection and analysis to monitor the conditions of children and youth in poverty. In addition, reducing poverty requires targeted responses to reach children and youth, particularly in the areas of social protection and service delivery (see Chapter 6. Social protection) by addressing the low educational levels, poor health and housing conditions of children and youth.

6. Social protection

KEY MESSAGES

Large numbers of Somalis are affected by a drought in 2017. Food insecurity and poverty remain acute. Many households live in a state of constant vulnerability and are exposed to shocks that – if not mitigated – quickly become human disasters, putting millions of Somalis at the brink of starvation.

Social safety nets are instrumental in reducing poverty, supporting vulnerable households and building resilience. The Horn of Africa is cyclically affected by climate-related events like El Niño. Future droughts and floods are expected. This requires resilience-building as part of a sustainable poverty reduction strategy, with specific focus on the most vulnerable households. In the aftermath of the current shock, designing a well-targeted and effective social protection program will be one of the over-arching objectives to avoid repeating famines and more generally to open up a sustainable path to poverty reduction and shared prosperity.

A targeted social protection program could reduce poverty from 51 to 32 percent at a cost of US\$1.7 billion. Given wide-spread and deep poverty, a social protection program with considerable impact on poverty would require substantial funding. Using observable household characteristics to target poor households, a uniform annual transfer of US\$ 157 per capita to all eligible households would reduce poverty by 19 percentage points. The most vulnerable households in rural areas and IDP settlements would benefit with a poverty reduction of 26 and 22 percentage points respectively. Thus, the program would help to include especially the most excluded households. As for any targeted program, there would be some leakage with 27 percent of poor households excluded and 31 percent of non-poor households included. In addition, the costs with US\$ 1.7 billion are large, representing around 22 percent of GDP or 130 percent of official development assistance and aid in 2015.

Protecting the poor in times of a shock like a drought is even more expensive than just lifting poor households out of poverty. Building resilience is important to protect protective assets from being sold in times of a shock. A 10 percent consumption shock across all households would increase the costs of a social protection program to reduce poverty to the same level of 32 percent from US\$ 1.7 billion to around US\$ 2.0 billion. It is noteworthy that the 10 percent shock increases the costs of a comparable social protection program by 17 percent. This large elasticity is due to a large number of households that were almost poor in 2016 but are likely to be pushed into poverty by a shock like the current drought.

The Somali Poverty Assessment will explore in more detail the impact on poverty depending on the design of the social protection program. The simulations presented in this report are giving a general sense for the needs and potential impact of social protection programs. A more detailed analysis will discuss different objectives of a social protection effort as well as its design implications. Simulations will model different targeting schemes including a focus on extreme poverty. Also the amount of a potential transfer will be contextualized and aligned with the objective of the social protection programs.

88. Given widespread poverty in 2016, the poverty outlook for 2017 looks grim. Food insecurity and poverty remain acute in Somali regions, as more than half of the population lives in poverty and 24 percent

of the households experienced some type of hunger in 2016. Welfare conditions are critical and fragile, which complicates the path out of poverty going forward. Moreover, the data collected in 2016 showed a large number of vulnerable households without access to effective and well-targeted social protection programs.

89. Many households live in a state of constant vulnerability and are exposed to shocks. The Somali population is highly dependent on agriculture, livestock and income from remittances.³⁴ Non-idiosyncratic shocks can push poor households deeper into poverty, and push non-poor households into poverty. Climate-related events like El Niño, which refers to the warming of sea-surface temperatures in the Pacific Ocean, causes severe conditions in Somali regions. Previously, it caused massive flooding in some regions during 1997-1998 and in 2006-2007, but it has also led to below average rainfall and droughts. Recurring climate-related events represents a great risk and potential source of shocks for the Somali population every couple of years.

90. The Somali population is at risk due to severe and continuous droughts. The food security outlook in Somali regions has been deteriorating, mainly in rural areas due to poor rainfall in the October-December 2016 season, and given low levels of rainfall forecasted for the April to June 2017 season. In January 2017, around 3 million people were not consuming the minimum food requirements, while an additional 3.3 million were in need of assistance to avoid famine.³⁵ Severe droughts and high food prices led to a famine already during 2011.³⁶ In that year, more than 260,000 people died between October 2010 and April 2012.³⁷ Thus, better resilience systems are needed.

91. A severe drought is occurring in 2017. The Integrated Food Security Phase Classification (IPC) describes the severity of the crisis, based on a five-level scale of food insecurity: 1) minimal, 2) stressed, 3) crisis, 4) emergency and 5) famine. A risk of famine is likely if the rain levels are below the average in the April to June 2017 season, as forecasted. Households could lose all their crops and livestock. Food production will go down, food prices might continue to rise and livestock prices decrease, and there will be reduced rural employment opportunities. As a consequence, people will be displaced and households will experience the loss of their livelihoods. While large-scale humanitarian assistance is needed in such contexts, adding to the supply by importing those products through food assistance programs might not be the best alternative. Prices will drop further, potentially forcing local producers out of business. To avoid stepping into this vicious cycle of aid dependency, food assistance programs should carefully and continuously assess the market dynamics, and whether products should be imported or can be sourced from local food producers, for example by distributing food vouchers. Hence, the monitoring of markets and their price dynamics is essential for designing and implementing life-saving interventions. The market surveys of the SHFS provides this information in a timely and ready-to-use manner (Box 4).

³⁴ FAO Somalia (2010).

³⁵ <http://www1.wfp.org/countries/somalia>.

³⁶ Maxwell & Fitzpatrick, M. (2012).

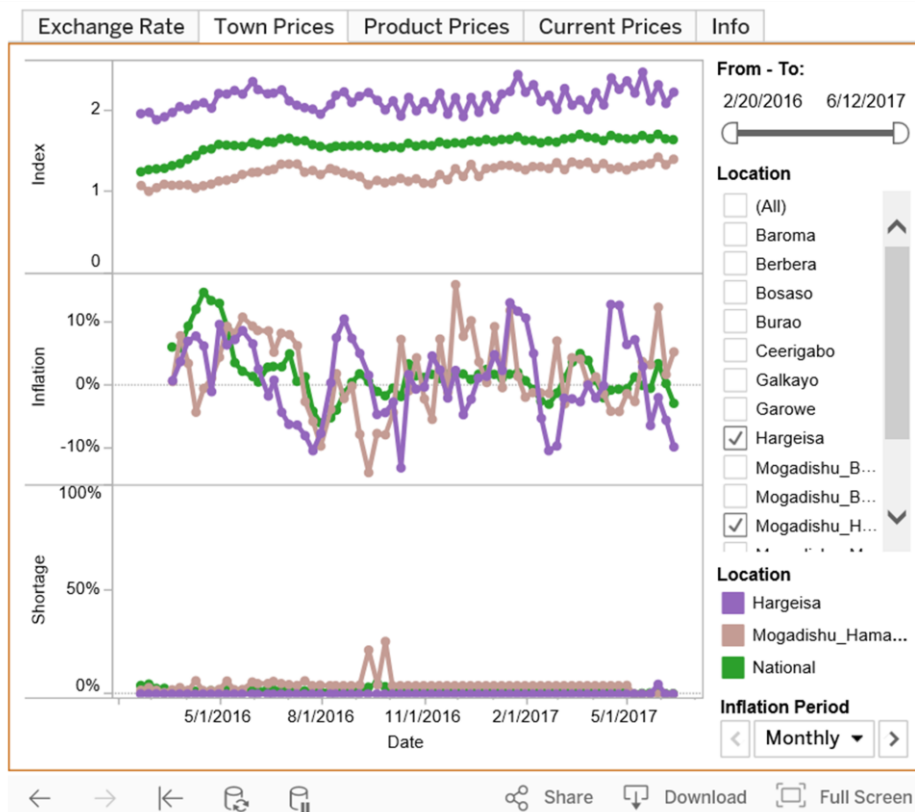
³⁷ <http://www.un.org/apps/news/story.asp?NewsID=44811#.WNz-SRsrLb1>.

Box 4: REAL-TIME TRACKING OF MARKET PRICES

To embark on a sustainable pathway toward development, intervention should rely on markets and react dynamically to changes in market equilibria. Since 2016, the market survey of the Somali High Frequency Survey (SHFS) tracks weekly exchange rate and market price data in near real-time across the 14 urban locations. The dashboard presents a dynamic and rich set of up-to-date prices for a wide range of different types of products and services. The items include livestock, food (cereals, milk), non-food items (clothing, cosmetics), utilities (electricity), and services (such as motor vehicle repair), from both the tradable and non-tradable sectors.

The dashboard provides useful insights into the dynamics of the severe drought that is affecting the Somali population in 2017. Prices have been stable, despite the onset of the crisis, with no shortages of products in markets. Thus, urban markets are functioning and products available while most of the acute food insecurity is in rural areas. Hence, interventions should utilize the existence and functioning of those markets. The dashboard and real-time data can be found in the following link:

<http://www.thesomalipulse.com>



92. Even though remittances can help to smooth shocks and improve welfare conditions, they are decentralized and not targeted to the most vulnerable households. Poor households face more challenges than non-poor ones to successfully send a productive member away and receive remittances to support their livelihood. Some of these challenges refer to the lack of social capital, resources to invest, and skills required to obtain a job. As a consequence, poor households are less likely to receive remittances. Hence, they are not always received by the poorest and most vulnerable households. Only 15 percent of the poor in Somali regions received remittances. Remittances are also susceptible to shocks, besides being volatile and uncertain. For example, the change in regulations for international bank transfers to Somalia created uncertainty around remittances at the time of the emerging drought.

93. Another source of support comes from donors, yet their coordination is crucial in light of weak domestic capacity. The international community is an important actor, but the fragmentation of their programs could limit its impact. There is a multiplicity of small-scale initiatives in the form of cash and in-kind transfers being implemented by NGOs and international organizations like Save the Children, BRCiS, CONCERN, World Vision, ADESO, ACTED, among others.³⁸ Coordination mechanisms are being established through the UN's Cash Working Group to avoid duplicating efforts. However, these initiatives are also constrained by the local capacity to efficiently deliver services to the most vulnerable groups. In addition, political economy challenges can weaken the effectiveness of programs or delay their implementation. Therefore, a social safety net program can be a good alternative to reach the most vulnerable people. Simulating the cost and impact of such programs is constructive to better understand fundamental trade-offs that will also be valid for alternative programs.

Social safety nets

94. Programs and policies to escape poverty and increase resilience are critical in such contexts. A non-contributory social safety net (SSN) can serve as an intermediate step between short-term humanitarian aid and a comprehensive long-term development and livelihood strategy, while playing a crucial role in improving resilience and increasing welfare. A vast evidence of successful stories from a diversity of low and middle-income countries has placed SSNs at the heart of the development agenda.³⁹ The details of these programs vary from country to country, depending on their needs, constraints and capabilities. Some of them concentrate on job creation, like public works (work with Stipends in Latvia and Programa de Apoyo Temporal al Ingreso in Salvador) and workfare programs (Trabajar in Argentina), mainly targeted at low-skill workers through infrastructure projects (Productive Safety Net Program in Ethiopia). Others are aimed at early childhood development, like school feeding programs (School Feeding Program in Kenya), school meals (Bolsa Familia in Brazil), maternal-child food (MCH/FP program in Honduras) and food rations (Urban voucher program in Gaza), among others. Other programs support households with a cash transfers -conditional and unconditional-, social pensions or in-kind transfers like food stamps, or other social assistance programs such as housing allowances, scholarships, and fees waivers.⁴⁰

95. The Government's development plan supports the implementation of SSN programs that empower citizens and improve governance. Somalia's 2017-2019 National Development Plan has a strong focus on tackling poverty and building more resilient communities, with an emphasis on gender and other

³⁸ World Bank (2017).

³⁹ Hill, Olinto, Pape, Sherpa, & Sohnesen (2015).

⁴⁰ World Bank (2012).

inequalities. One of the key policy targets is to implement social protection systems, in order to reduce vulnerability and support communities from internal and external shocks. The introduction of an SSN also represents a direct and transparent way to allocate resources, and thus to enable citizens and support strong governance.

96. A well designed SSN can boost productivity in rural areas and upgrade skills in urban areas. In Ethiopia, the Productive Safety Nets Program showed that it is feasible to achieve both food security and land productivity. In rural areas, where poverty is more acute, a well-designed productive SSN can be used to increase land productivity through investments in land, and improve access to markets and local roads. Urban centers have more opportunities and requires a different set of skills from rural areas. A SSN in the form of cash transfer combined with vocational and business training can aim to create and upgrade skills. This can help to close the gap between basic education and marketable skills.⁴¹

97. The social protection analysis presented in this chapter concentrates on poverty and monetary transfers. A simulation focuses on non-contributory monetary transfer to the poor. An in-kind transfer might be better suited for some contexts, like rural areas without market infrastructure. However, these transfers are equivalent to a monetary transfer, from a conceptual point of view, in terms of their impact on poverty, given that both relax the budget constraint of households in a similar way. The simulation represents a simplification as only direct impacts are simulated. While the analysis concentrates on monetary poverty, other indicators are equally relevant as school and health outcomes. Moreover, cash transfers are only one alternative, and further analysis is needed given the complexity of designing and implementing a social protection program. Also, any SSNs has a short-term component of reaching and supporting vulnerable population, and a long-term component on how to build a system and achieve a broader set of goals. Finally, results are partly extrapolated to the total Somali population, which should be interpreted with caution given the restricted representativeness of the underlying data.

98. The impact of the SSN can be assessed in terms of poverty reduction, while the cost of the instrument and fiscal considerations will determine its feasibility. A SSN program can be measured by the number of poor people lifted out of poverty, as well as the reduction in the poverty gap. Safety nets are usually established for several years, such that transfers are stable and predictable for beneficiaries. These program require enough resources to achieve its objectives, and they should become part of the fiscal plan for that time horizon. Any SSN implies a fiscal commitment, and consequently requires a minimum fiscal capacity. Besides, its implementation requires to develop technical capabilities, administrative capacity at the central and local levels, as well as an adequate infrastructure. Here, the analysis will focus on the impact and feasibility to provide foundational evidence for the discussion of social protection programs in the Somali context. Additional analysis will be needed to design a specific social protection program.

99. The performance and cost-efficiency of an SSN instrument are captured by its coverage and leakage. One of the main challenges when selecting beneficiaries for an SSN program lies in the correct targeting of the proposed group of beneficiaries. That is, including vulnerable and poor households only and excluding those that are not classified as such. The inclusion error refers to the erroneous inclusion of non-poor into the program, while the exclusion error corresponds to erroneously leave out some poor households. Coverage refers to the proportion of eligible beneficiaries chosen through the targeting

⁴¹ Hill, Olinto, Pape, Sherpa, & Sohnesen (2015).

mechanism. The analysis defines coverage relative to both the total population as well as relative to the poor population. Leakage is defined as the ratio between the total number of non-poor who may be erroneously targeted and the total number of people targeted by the SSN. As a result, an effective targeting program should have a low leakage ratio.

Simulation of SSNs for Somali regions

100. The simulation evaluates two targeting mechanisms and two transfer amounts: perfect targeting (PT) and proxy means test (PMT), each with a transfer equal to the average poverty gap and twice this amount. Implementing a well-targeted SSN program requires choosing the appropriate group of beneficiaries and the type as well as amount of the transfer. The SSNs analyzed in this chapter consist of non-contributory and uniform monetary transfers such that all eligible individuals receive the same amount. This type of SSNs is used in the simulation, as they have minimal capacity requirements and are often used in poor countries, although they might not represent the best option for the Somali context. Moreover, two amounts are compared in the simulation; a transfer equal to the average poverty gap (US\$0.22 per capita per day or US\$ 80 per year) and twice the average poverty gap (US\$0.43 per capita per day or US\$ 157 per year).

101. Perfect targeting covers the poor and serves as a theoretical benchmark. Using perfect targeting, only poor households are included while all non-poor households are excluded from the SSN. Perfect targeting is not feasible from an operational perspective, given the difficulty of identifying poor households, since they will tend to under-report their income or consumption in order to be eligible and receive the transfer or benefits. However, this alternative is a useful theoretical benchmark against other alternatives, since it provides the maximum possible impact of a SSN at lowest cost.

102. PMT relies on easily identifiable characteristics to select beneficiaries, yet it leads to inclusion and exclusion errors. A set of household characteristics, easily verifiable and hard to misreport, were obtained for poor households⁴². These characteristics are a proxy for the household's welfare and are correlated with poverty incidence. Some of them refer to geographic location, size of household, ownership of durable goods, material of the dwelling, sanitation facilities, access to clean drinking water, among others. By using a specific list of characteristics, some households might be selected as beneficiaries even if they are not poor, while others might not be eligible, even if their consumption falls below the poverty line. A key challenge is to determine which characteristics are the best proxies for welfare (Box 5). Thus, PMT suffers from the inclusion of non-poor and the exclusion of poor households from the program, due to the challenge of identifying beneficiaries accurately through a set of household characteristics. One advantage is that PMT does not necessarily exclude vulnerable households, i.e. those slightly above the poverty line. Furthermore, it introduces a perception of fairness since eligible households are identified through observable attributes.

103. Not surprisingly, PT achieves a higher poverty reduction than PMT. The results of the simulation indicate that the best possible SSN program (PT) could reduce poverty incidence by 11 and 26 percentage points, depending on the amount considered, while PMT by 7 and 20 percentage points (Figure 6.1). Similarly, PT reduces poverty gap by 10 and 17 percentage points, depending on the amount transferred, and PMT by 9 and 15 percentage points (Figure 6.2). Compared to urban and rural areas, PMT is more

⁴² Schnitzer (2016).

efficient for households living in IDP settlements, as the poverty reduction achieved under PMT is closer to the theoretical benchmark of PT. This could be explained by household characteristics being more closely related to poverty in IDP settlements, relative to urban and rural areas.

BOX 5: PROXY MEANS TESTING (PMT)

In order to identify beneficiaries with PMT, each household was classified as poor or non-poor based on their core consumption relative to a scaled poverty line. The poverty line had to be scaled since the total consumption aggregate cannot be used because it was constructed using multiple imputation techniques (see Appendix D. Rapid Consumption Methodology) and household characteristics, thus core consumption was used instead. In line with this, the poverty line was adjusted accordingly using the ratio between the average core consumption and total consumption.

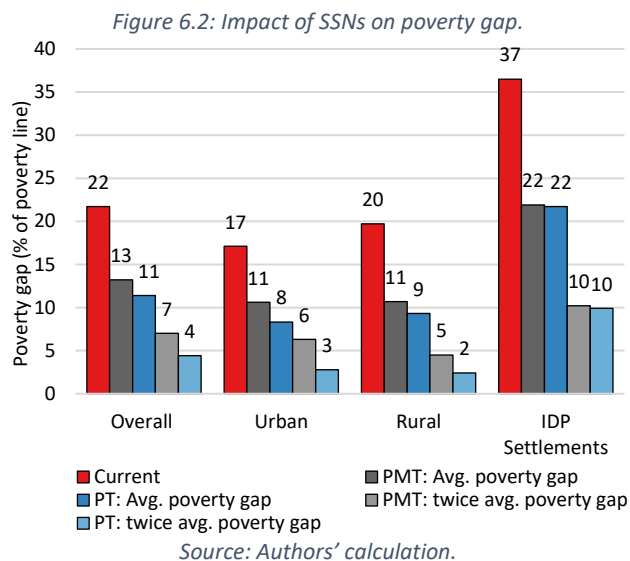
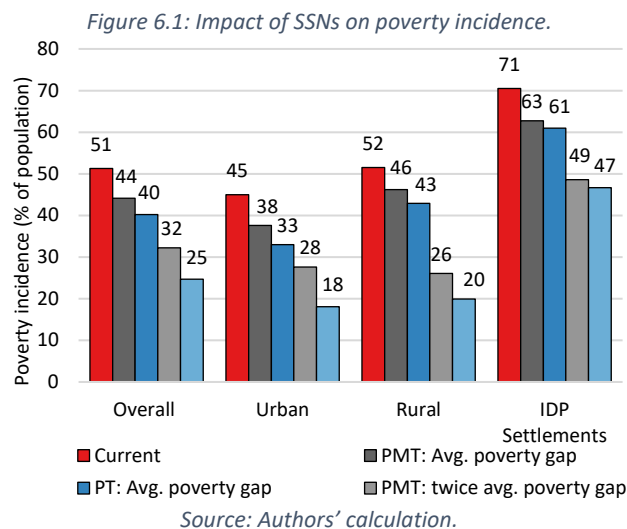
Then, a logit model was constructed to predict the probability of being poor, considering certain identifiable characteristics. In the model, six types of verifiable characteristics were included: i) geographical location: region and urban-rural-IDP classification; ii) household composition: household size and dependency ratio; iii) characteristics of the household head: gender and education; iv) characteristics of the dwelling: floor material, house ownership and type of housing; v) income: members employed and if the household received remittances; and vi) hunger: if the household experienced hunger in the previous month.

The estimated logit was used to predict the probability of households being poor (Table A.11 in the Appendix). They were selected as beneficiaries if the estimated probability of being poor was equal or greater than 0.42. This threshold was defined to minimize both exclusion and inclusion (leakage) errors. The actual poverty status of households was compared against the list of households selected into the program using the estimated probability of being poor, based on those household characteristics. This provided the basis to estimate the impact of the SSN program, the cost and performance, as measured by coverage and leakage.

104. A social protection program that reduces poverty to 40 or 25 percent will at least cost 745 or 1,490 million US\$, respectively.⁴³ A SSN program that provides a uniform transfer to poor households in Somali regions (covered and not covered in the survey) can achieve a maximum reduction of 26 percentage points in poverty incidence. This would be the case if poor households could be perfectly identifiable, and considering a transfer equal to twice the average poverty gap (Figure 6.1). With this targeting mechanism, the reduction in rural areas would cost 369 or 737 million US\$ depending on the

⁴³ The simulation of SSNs considers all the population in all the Somali regions, covered and not covered in the SHFS 2016. The reduction in poverty is assumed to be representative of all the regions, which means the SSNs will have the same poverty reduction impact in areas not covered by the survey. The cost was scaled at the rural-urban-IDP level by the share of population not covered in the SHFS 2016, to account for the cost of the SSNs in all the regions. This includes the nomad population, which has been considered in the cost of rural areas.

amount transferred, while 281 or 562 million US\$ in urban areas, and 95 or 191 million US\$ in IDP settlements (Figure 6.3).



105. Reducing poverty in rural areas is more expensive than in urban areas and IDP settlements.

Considering a transfer of US\$ 0.22 per capita per day, PT achieves a larger poverty reduction in urban areas (12 percentage points) followed by IDP settlements (10 percentage points) and then by rural areas (9 percentage points). Only when considering a transfer twice the average poverty gap, poverty reduction is larger in rural areas (32 percentage points vs. 27 and 24 of urban and IDP camps respectively). This is explained by a higher poverty gap in IDP camps and rural areas relative urban area (37, 20 and 17 percent respectively), which implies that a larger transfer is needed to reach or exceed the poverty line in rural areas and IDP camps (Figure 6.1 and Figure 6.2). The latter, combined with the size of the poor population in each area (larger share in rural areas) results in a cost of reducing poverty under PT of nearly four and three times higher in rural and urban areas than in IDP camps, respectively (Figure 6.3).⁴⁴

106. PMT can reduce poverty from 51 percent to 44 percent or 32 percent at a cost of 871 or 1,741 million US\$, respectively. A feasible PMT approach can reduce poverty to 44 percent across all the Somali regions at a cost of 871 million US\$ if the transfer per capita is equal to the average poverty gap. If this amount were to double, PMT could further reduce poverty incidence by 19 percentage points (to 32 percent) at a cost of 1,741 million US\$ (Figure 6.3). In the latter case, only 1 in 3 people in urban and rural areas would be classified as poor, while still 1 in 2 of them would be poor in IDP settlements.

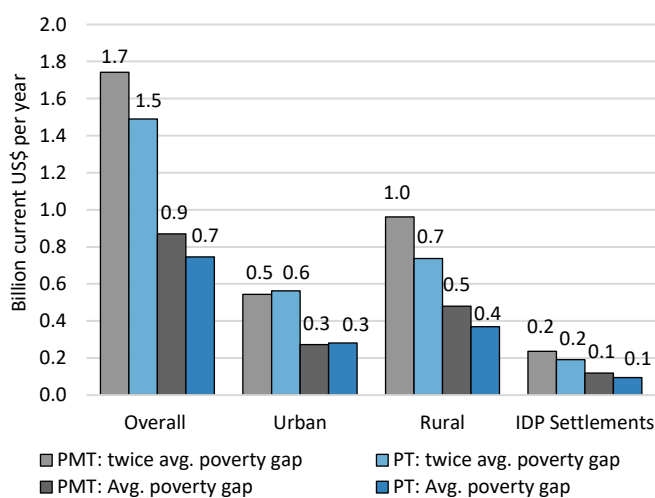
107. For all the Somali regions, PMT covers 37 percent of them, 73 percent which is poor, and 27 which is not poor, resulting in a leakage of 32 percent. Under a PMT targeting mechanism, nearly 1 in 5 poor Somali will not be included in the SSN program, while almost 1 in 3 in the people selected as beneficiaries for the program will not be poor in these regions (Figure 6.4), even though they might be vulnerable. Leakage is greater in rural areas, mainly because some household characteristics are relatively similar

⁴⁴ The poor in all the Somali regions are distributed in the following way: 50 percent in rural areas including the nomads, 38 percent in urban areas and 13 percent in IDP camps.

between rural poor and non-poor households.⁴⁵ Using a different threshold to identify beneficiaries will allow to reduce the exclusion error but will come at the cost of a higher inclusion error and also larger program costs.

108. The cost of reducing poverty by 1 percentage point is at least 62 million US\$ (PT) but will cost 106 million US\$ for PMT. Any SSN program would cost at least 62 million US\$ for 1 percentage point in poverty reduction, but more likely around 106 million US\$ as simulated with PMT. The cost of targeting with PMT is 1.7 times higher than PT because the former leads to inclusion and exclusion errors, while the latter does not have these errors, yet PT is not a feasible alternative and only serves as a benchmark. Thus, 27 percent of the poor would not be included in the SSN and 31 percent of the those included would not be poor (Figure 6.4). The exclusion error could be reduced but would increase program costs.

Figure 6.3: Cost of SSNs in all the Somali regions.

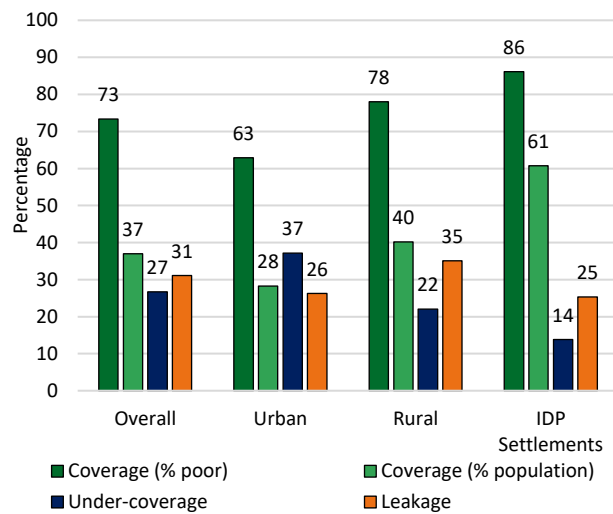


Source: Authors' calculation.

109. Given the depth of poverty in Somali regions, the unit cost of reducing poverty declines as the transfer amount increases, under both PT and PMT. The unit cost refers to the amount in million US\$ for 1 percentage point of poverty reduction. This cost is 17 percent smaller with PT and 25 percent with PMT when the transfer is equal to twice the poverty gap, compared to a transfer of US\$ 0.22 per capita per day (Figure 6.3). Under a PT targeting scheme, the cost of 1 percentage point in poverty reduction is 67 million US\$ with a transfer of equal to the average poverty gap, while 56 million with a transfer of US\$ 0.43 per head per day. Analogously, the unit cost of a PMT targeting scheme is 121 million US\$ in case of a transfer equal to the poverty gap, and 91 million for a transfer equal to twice the poverty gap. A larger transfer amount (US\$ 157 per capita per year) would help the very poor, but it will exceed the expenditure needs to overcome poverty of less poor households. However, a transfer amount of US\$ 80 per year will only reduce poverty from 51 percent to 44 percent, and will maintain in poverty 12 percent of the population that could be lifted out of poverty with a uniform annual transfer of US\$ 157 per person per year.

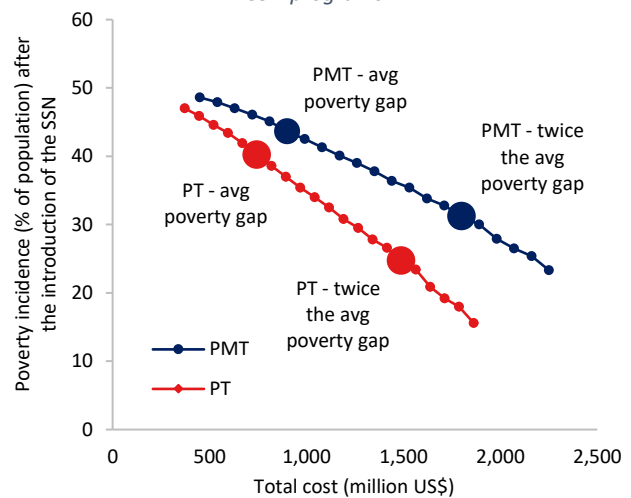
⁴⁵ Poor and non-poor households in rural areas are not statistically different for the following household characteristics considered in the PMT model: house ownership, floor material, hunger experienced over the previous four weeks, and if the household has at least one employed member.

Figure 6.4: Coverage, leakage and under-coverage for PMT.



Source: Authors' calculation.

Figure 6.5: Cost and impact of poverty reduction efforts through SSN programs.



Source: Authors' calculation.

110. With PMT, the larger the transferred amount and the cost, the harder it becomes to further reduce poverty. The poverty reduction efforts depend on the fiscal capacity (Figure 6.5). The difference in terms of the poverty reduction achieved from a SSN program between the theoretical benchmark and PMT widens as the amount transferred increases. A SSN program will support poverty reduction efforts and increase resilience in light of the vulnerable conditions of many households. Yet, it becomes more difficult to further reduce poverty with a transferred amount beyond twice the average poverty gap as some households might need a relatively large transfer to reach the poverty line, and other poor households are not included in the PMT targeting scheme. Larger amounts would further increase costs and make the program less efficient in reducing poverty. A non-uniform transfer program can provide alternatives but are often more complex to implement.

111. Protecting the poor in times of a shock like a drought is even more expensive than just lifting poor households out of poverty. Building resilience is important to protect assets from being sold in times of a shock. Assuming a 10 percent consumption shock across all households would increase the costs of a social protection program to reduce poverty to the same level of 32 percent from US\$ 1.7 billion to around US\$ 2.0 billion. It is noteworthy that the 10 percent shock increases the costs of a comparable social protection program by 17 percent. This large elasticity is due to a large number of households that were almost poor in 2016 but are likely to be pushed into poverty by a shock like the current drought.

7. Conclusions

112. Wave 1 of the Somali High Frequency Survey, implemented in February and March of 2016, provides critical data on poverty and other key socioeconomic indicators. In the absence of representative household surveys not much was known about the state of the Somali population. The lack of information prevents the design and implementation of policies and programs needed to support economic resilience and development as well as assistance in the event of shocks. The first wave of the SHFS filled many critical data gaps, from poverty estimates to components of GDP. The data shed light on the circumstances in which Somali households live at a time when the region is amidst a severe drought and an impending famine.

113. A large share of the Somali population lives in poverty, with children and the internally displaced particularly affected. Poverty is widespread with every second Somali living in poverty in 2016 before the onset of the current shock. 51 percent of the population are below the international poverty line, and 31 percent face conditions of extreme poverty. In contrast, 58 percent of children live in poor households, and 1 in 3 in extreme poverty. Poverty also varies considerably across the Somali population, ranging from 26 to 70 percent. Households in IDP camps are more likely to be affected by poverty. Regional differences in poverty between the North East (27 percent) and the North West (50 percent) are much larger than urban/rural variation (45/52 percent). In urban areas, poverty ranges from 26 (North East) to 57 percent (Mogadishu). In rural areas, poverty ranges from 34 percent (North East) to 61 percent (North West). Breaking the poverty cycle requires improving conditions for children and youth. This challenge will continue to grow in light of the demographic structure of Somali regions. Priority should be given to programs which aim to break the intergenerational transmission of poverty by addressing the low educational levels, poor health and housing conditions of children and youth.

114. Beyond monetary poverty, many more Somalis lack access to basic services, such as education, safe drinking water, and information media. Non-poor households have higher levels of literacy, educational attainment and better dwelling conditions like quality of water and sanitation. 9 in 10 Somali households are deprived in at least one dimension of multidimensional poverty. 40 percent of Somali households do not have access to improved sources of water, and the drought is further depleting water stocks. Providing safe drinking water is therefore a policy priority in the current crisis. Investments in basic infrastructure, such sanitation systems, electricity lines, and roads, are strongly needed in all Somali regions, particularly in rural areas. Overall, the Somali population lags behind most low-income African countries in most non-monetary correlates of welfare.

115. In order to reduce inequality and poverty, access and availability to key services must be improved for poor households, since current programs leave them behind, particularly in terms of education. The educational gap has widened for the rural poor between 2013 and 2016 in the North West. The percentage of literate people was stable or increased for every group, but the rural poor. Changes in the literacy rate are likely to be caused by changes in the levels of education of the Somali population. A larger share of the rural poor does not have any education in 2016 compared to 2013. Worse educational levels for the rural poor are probably associated by lower attendance to school. Between 2013 and 2016, school attendance increased in urban areas of the North West region, remained relatively constant for the rural non-poor population, while it decreased for the rural poor. This group has been increasingly excluded in the North West in terms of education which complicates their path out of poverty. Sustained

differences in terms of education between poor and non-poor households, together with higher unemployment in rural areas, may continue to deepen the gap. Providing access and means to reap the benefits from education, among other basic services, is crucial to achieve positive labor outcomes and to ultimately lift these households out of poverty. In 2016, nearly half of the school-aged Somali population did not attend school due to illnesses, absent teachers, the lack of resources, and having to help at home. The emphasis should be on poor and vulnerable households, since their educational achievements are lower, and these low levels tend to be transmitted across generations.

116. Access to the labor market, particularly for young Somalis and women, is critical to sustainably improve welfare conditions. Poverty strongly correlates with unwanted labor market outcomes. Poor households tend to have lower participation in the labor market and lower employment. Increasing the active participation of Somalis in the labor market is key to improve welfare and decrease inequality. The different reasons for inactivity need to be addressed by a comprehensive approach. The most serious barriers to labor force participation are gender disparities, conflict-related insecurity, and disability, each of these constraints warranting specific interventions.

117. Many households are highly vulnerable to the effects of the ongoing severe drought. Many of the currently non-poor households live just above the poverty line so that in the event of an adverse shock, such as the current drought, poverty levels can be expected to increase significantly. Specifically, a 10-percent adverse shock implies a 6 percentage point increase in poverty. This simulation is in line with current estimates of the effects of the drought which expect overall output to decrease by 10.6 percent according to World Bank internal estimates. The situation is particularly severe for households in IDP settlements, and children, whom the drought is affecting most direly. An unmitigated famine would mean a sustained setback to the gradual gains in standards of living of the past years.

118. In the context of the current crisis, monitoring markets is essential for designing and implementing life-saving interventions. To embark on a sustainable pathway toward development, intervention should rely on markets and react dynamically to changes in market equilibria. Since 2016, the market survey of the SHFS tracks weekly exchange rate and market price data in near real-time across the 14 urban locations. The market surveys of the SHFS provides this information in a timely and ready-to-use manner.⁴⁶ The dashboard provides useful insights into the dynamics of the severe drought that is affecting the Somali population in 2017. Prices have been stable, despite the onset of the crisis, with no shortages of products in markets. Thus, urban markets are functioning and products available while most of the acute food insecurity is in rural areas. Food assistance programs should carefully and continuously assess the market dynamics, and whether products should be imported or can be sourced from local food producers, for example by distributing food voucher.

119. Remittances – and cash transfers more generally – can serve as a resilience mechanism in light of the current crisis, but the most vulnerable remain excluded. Poverty and hunger are significantly less common among recipients of remittances compared to non-recipients, and they also have better educational outcomes. However, with just above 20 percent of households receiving remittances at all, a large majority of the population cannot fall back on remittances in the current crisis. Moreover, the most vulnerable populations, particularly in IDP settlements, are least likely to receive remittances, receive

⁴⁶ <http://blogs.worldbank.org/nasikiliza/how-the-real-time-tracking-of-market-prices-in-somalia-helps-us-respond-to-drought>.

relatively little money, and in many cases suffer a decline in the value of remittances. At the same time, rural areas, and particularly IDPs, are disproportionately at risk in the current crisis, while the drought has already displaced an additional 257,000 people.⁴⁷ Donor support through direct cash transfers, targeted to the most vulnerable populations, is therefore critical.

120. Absence of effective resilience-building social protection programs allows natural shocks like a drought to become a human disaster putting millions of Somalis at the brink of starvation. The data collected in 2016 showed a large number of vulnerable households without access to effective and well-targeted social protection programs. Recurrent natural shocks like this drought caused by El Niño will continue to test resilience of the Somali population in the future. In the aftermath of the current shock, designing a well-targeted and effective social protection program that can work in the local context will be one of the over-arching objectives to avoid repeating famines and more generally to open up a sustainable path to poverty reduction and shared prosperity.

121. Social safety nets are instrumental in reducing poverty and supporting vulnerable households. A targeted social protection program could reduce poverty from 51 to 32 percent at a cost of US\$1.7 billion. Given wide-spread and deep poverty, a social protection program with considerable impact on poverty would require substantial funding. Using observable household characteristics to target poor households, a uniform annual transfer of US\$ 157 per capita to all eligible households would reduce poverty by 19 percentage points. The most vulnerable households in rural areas and IDP settlements would benefit with a poverty reduction of 26 and 22 percentage points respectively. Thus, the program would help to include especially the most excluded households. As for any targeted program, there would be some leakage with 27 percent of poor households excluded and 31 percent of non-poor households included. In addition, the costs with US\$ 1.7 billion are large, representing around 22 percent of GDP or 130 percent of the annual receipt of official development assistance and aid in 2015.

122. Protecting the poor in times of a shock like a drought is even more expensive than just lifting poor households out of poverty. Building resilience is important to protect protective assets from being sold in times of a shock. A 10 percent consumption shock across all households would increase the costs of a social protection program to reduce poverty to the same level of 32 percent from US\$ 1.7 billion to around US\$ 2.0 billion. It is noteworthy that the 10 percent shock increases the costs of a comparable social protection program by 17 percent. This large elasticity is due to a large number of households that were almost poor in 2016 but are likely to be pushed into poverty by a shock like the current drought.

123. Wave 2 of the SHFS will provide a timely update in the context of the current crisis. When faced with an emergency information is critical to shape policies and programs to ultimately support the population in the most vulnerable conditions. Policies based on evidence and rapid changing conditions for the Somali population require regular updates about the profile of the poor, to ultimately make an efficient use of national and international resources. The High Frequency Survey managed to close data gaps but, with the drought ongoing, the situation is changing rapidly, threatening to further exacerbate poverty. The survey, funded by the Somali Multi Partner Trust Fund, is expected to be administered in the summer of 2017. It will expand the geographical coverage, include the Somali nomadic population, and will provide the most comprehensive update on the status of the current crisis in Somali regions.

⁴⁷ <http://reliefweb.int/report/somalia/somalia-drought-response-situation-report-no-1-24-march-2017>.

124. Video testimonials, part of the innovative concept for Wave 2, will give voice to the Somali people behind the numbers. As part of data collection for Wave 2, survey respondents will be offered to give a short video testimonial reflecting on their day-to-day lives. While data is critical for informing policies going forward, the power of these testimonials lies in capturing the human side of life in difficult circumstances

125. Wave 2 will provide, for the first time, an insight into the conditions facing a large, and vulnerable, Somali nomadic population, including their patterns of movement. Nomads make up around a third of the Somali population, and very little is known about poverty, well-being, and needs among this group. Wave 2 will contain a pilot of interviews attempting to fill this critical gap in a systematic fashion. Through the use of state-of-the-art satellite technology, the team will be able to determine the regular routes of nomadic populations, providing invaluable information, for example for emergency assistance and service delivery to this group, which is among the most affected by the current drought.

126. A Somali Poverty Assessment will utilize wave 1 and 2 of the Somali High Frequency Survey to delve deeper into selected topics and make more specific program and policy recommendations. The poverty analysis will consider adult equivalent measures of monetary poverty, which is relevant to consider within household economies of scale, provide a more nuanced profile of the vulnerable population, and assess the impact of the drought on livelihoods. Also the gender dimension of poverty will be explored in more detail including the identified education - health nexus. The role of women in the economy will be analyzed given their contributions in the informal sector and subsistence farming that are not well reflected in the labor market statistics. An education analysis will analyze constraints to education as well as estimate returns to education to better understand potential entry points to improve educational outcomes with a focus on the identified linkages between education and health. The emerging role of remittances will be analyzed with respect to their dynamics and impact. The Poverty Assessment will explore in more detail how programs can break the intergenerational transmission of poverty. The discussion of social protection programs will be expanded considering different objectives of a social protection effort as well as its design and poverty implications. A focus will also be put on IDPs and how durable solutions for them could look like.

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Appendix

A. Figures and Tables

Table A.1: Household demographic attributes: number of children and adults.

Region	Number of children (0-14 years old)			Number of adults (15-64 years old)		
	All	Poor	Non Poor	All	Poor	Non Poor
North East	2.6	4.0	2.3***	2.3	2.4	2.3
Urban	2.6	4.1	2.2***	2.4	2.3	2.4
Rural	3.1	3.7	2.9**	2.1	2.7	1.9
North West	2.7	3.7	2.0***	2.9	3.2	2.6
Urban	2.7	3.8	2.0***	3.0	3.4	2.7
Rural	2.7	3.2	2.0***	2.4	2.6	2.1
Mogadishu	2.4	3.2	1.6***	2.3	2.3	2.3
Urban	2.6	3.6	2.0***	2.6	2.8	2.5
Rural	2.8	3.3	2.4**	2.3	2.7	2.0
IDP Settlements	2.5	3.1	1.3***	2.9	2.5	3.7
Overall average	2.6	3.4	2.0***	2.6	2.7	2.6

*, **, *** indicate significance at the 10%, 5%, and 1% level respectively.

Source: Author's calculation.

Table A.2: Selected poverty indicators.

	Poverty incidence (% of population)	Poverty Gap (% of poverty line)	Poverty Severity Index	Total Gap (per year, current million US\$)
North East	27.2***	7.9	3.5	49.2
Urban	26	7.5	3.4	40.4
Rural	34	10.1	4.1	8.8
North West	50.0***	19.2	9.3	229.8
Urban	47.9	18.2	8.9	179.7
Rural	61.1	24.2	11.4	50.1
Mogadishu	57.0***	23.8	11.9	163.5
Urban	45.0*	17.1	8.4	476.3
Rural	52.5*	19.7	9.1	627.5
IDP Settlements	70.5***	36.5	22.2	214.6
Overall average	51.4	21.7	11.5	1,318.4

The total monetary value of the poverty gap includes the entire Somali population.

*, **, *** indicate significance at the 10%, 5%, and 1% level respectively.

Source: Author's calculation.

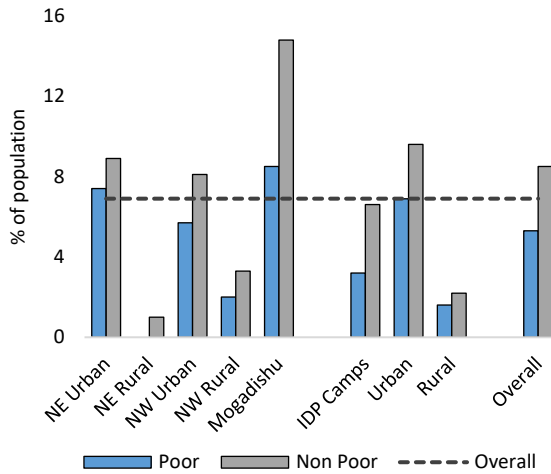
Table A.3: Access to improved source of water and sanitation, percentage of population.

Variables	Number of deprivations	
Being poor	0.474*** (0.052)	0.431*** (0.046)
Rural		0.634*** (0.068)
Mogadishu		-0.332*** (0.063)
IDP		0.288*** (0.079)
Constant	1.267*** (0.042)	1.229*** (0.050)
Observations	4,064	4,064

*, **, *** indicate significance at the 10%, 5%, and 1% level respectively.

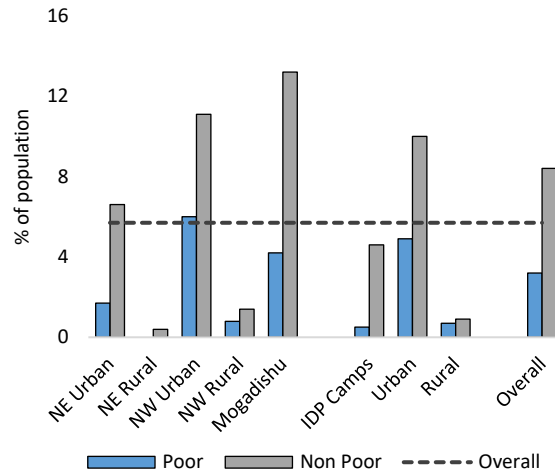
Source: Author's calculation.

Figure A.1: Educational attainment, secondary.



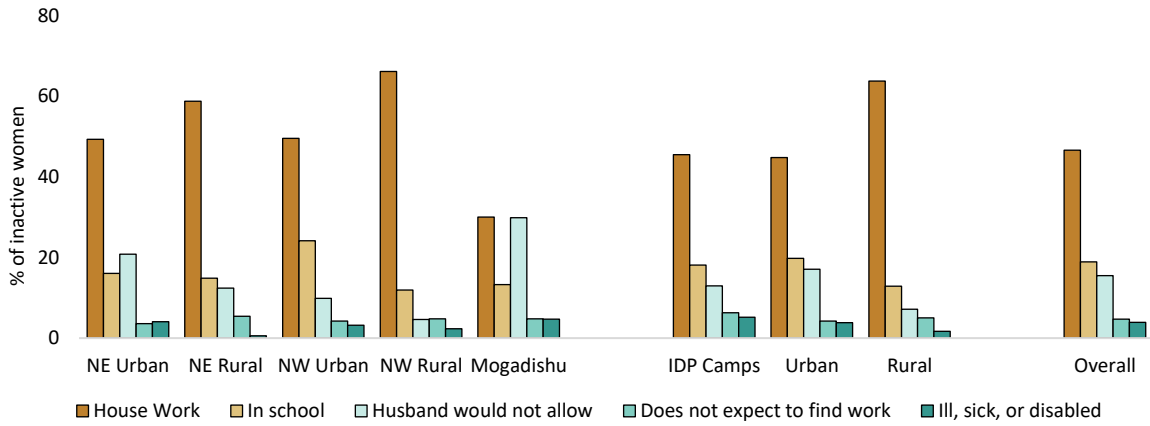
Source: Author's calculation.

Figure A.2: Educational attainment, tertiary.



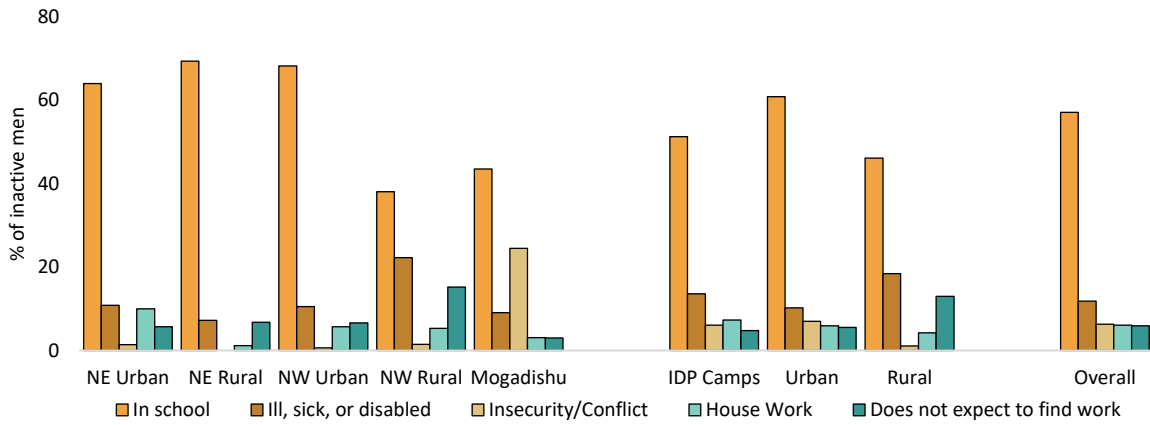
Source: Author's calculation.

Figure A.3: Inactivity reasons for women.



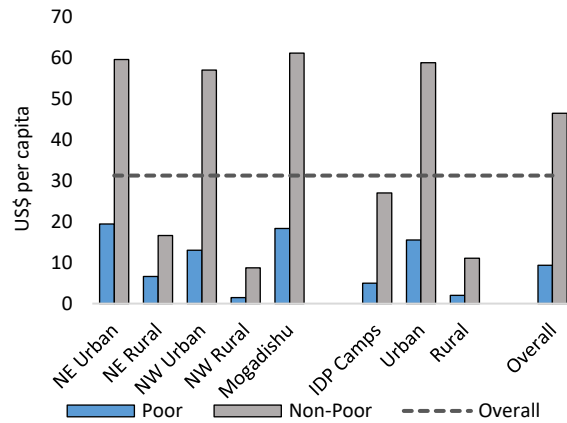
Source: Author's calculation.

Figure A.4: Inactivity reasons for men.



Source: Author's calculation.

Figure A.5: Average annual expenses on electrical devices.



Source: Authors' calculation.

Table A.4: Consumption items excluded from each survey to obtain a comparable consumption aggregate.

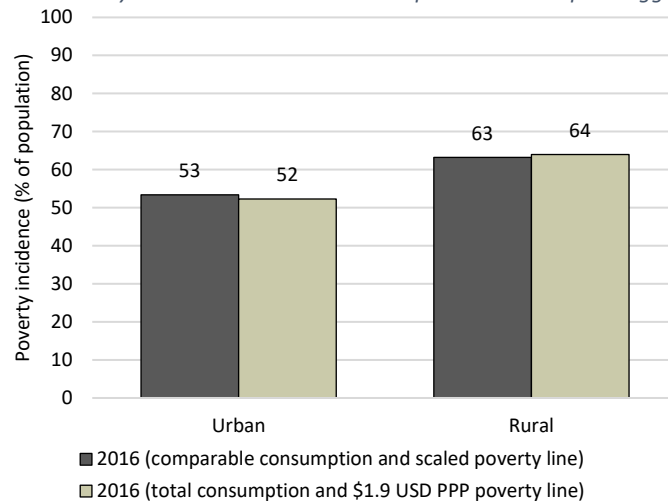
Section	SLHS 2013	SHFS 2016
Food	Coconuts	Baker's vanilla (carfiso buskut)
	Dried or salted meat	Begel
	Groundnuts shelled	Bell pepper
	Other 'Roots, Tubers	Canned sweetcorn
	Other vegetables	Cardamom (heyI)
		Cinnamon (qarfo)
		Clove (dhago yare)
		Cucumber local (khajaar)
		Dates - import (timir)
		Foster Powder
		Fresh camel
		Fresh chicken - local
		Frozen chicken - import
		Ginger (zanjabiiI)
		Ketchup
		Mayonnaise
	Olive oil	
	Parsley - local (kabasr caleen)	
	Pizza	
	Sandwiches	
	Vimto (squash)	
Non-food	Postage stamps or other postal fees	Healthcare expenditures
Durables	N/A	Small solar light

Table A.5: Average consumption (per capita, per day in US\$).

	Urban	Rural
Total	1.728	1.428
Comparable	1.620	1.344
Scale factor	0.938	0.941

Source: Authors' calculation.

Figure A.6: Poverty incidence with total and comparable consumption aggregates.



Source: Authors' calculation.

Table A.6: Difference in educational spending per school-aged child between recipients and non-recipients.

	Q1	Q2	Q3	Q4	Q5
Difference in educational spending	0.90***	-0.09	0.01	-0.09	0.22

These figures are the result of subtracting the log of educational expense of recipients from that of non-recipients and should be interpreted as a percentage change. *, **, *** indicate significance at the 10%, 5%, and 1% level respectively.

Source: Author's calculation.

Table A.7: Difference in share of males, household head excluded

	Recipient	Non-recipient	Percentage difference
Household head by men	18%	19%	-7%
Household head by women	8%	11%	-20%***

*, **, *** indicate significance at the 10%, 5%, and 1% level respectively.

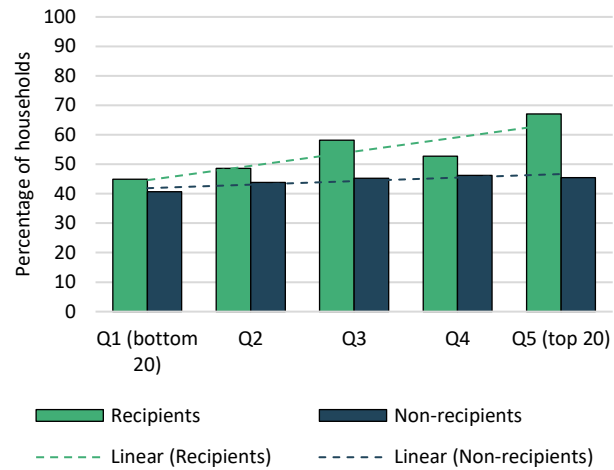
Source: Author's calculation.

Table A.8: Remittances share of total consumption

	Total daily consumption (current US\$)	Total daily value of remittances per capita (current US\$)	Percentage remittances of total consumption
Q1	0.52	0.30	58%
Q2	0.94	0.44	47%
Q3	1.38	0.57	41%
Q4	2.05	0.67	33%
Q5	3.76	0.85	23%
Overall	1.73	0.64	37%

Source: Author's calculation.

Figure A.7: Household headed by a woman by income quintile and recipient status



Source: Authors' calculation.

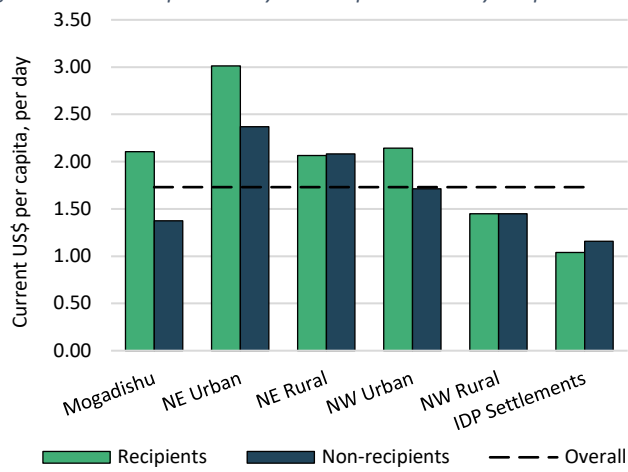
Table A.9: Changes in daily per capita consumption for recipients.

	Total consumption	Food consumption	Non-food consumption	Consumption flow of durable goods
Urban	0.30***	0.24***	0.36***	0.41***
Rural	0.14	0.06	0.47***	0.71***
IDP	0.03	-0.05	0.26	0.61***
Q1	0.23***	0.03	0.90***	0.47**
Q2	0.04	0.03	0.24**	0.32**
Q3	0.00	-0.05	0.13**	0.53***
Q4	-0.01	0.03	-0.10	0.27***
Q5	0.04**	-0.06	0.11	0.37***

These figures are the result of subtracting the log of consumption of recipients from that of non-recipients and should be interpreted as a percentage change. *, **, *** indicate significance at the 10%, 5%, and 1% level respectively.

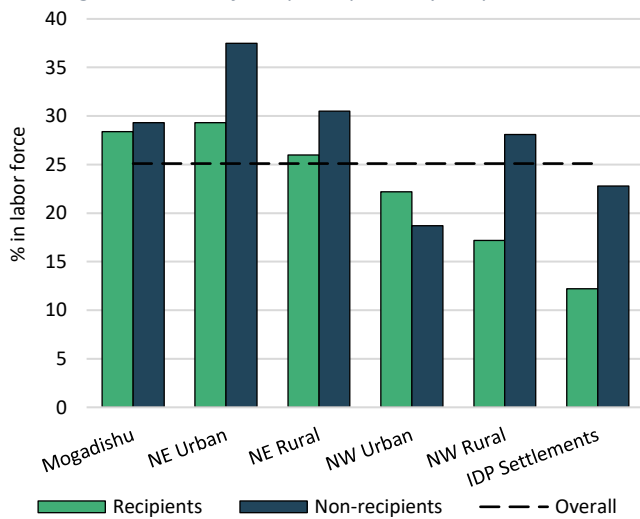
Source: Author's calculation.

Figure A.8: Total imputed daily consumption value by recipient status.



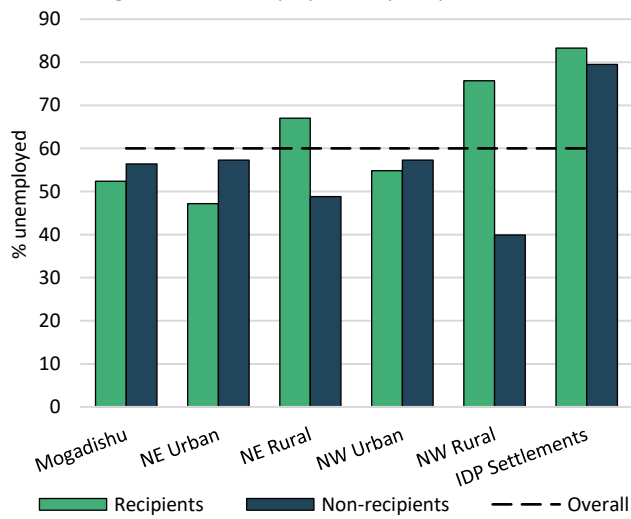
Source: Authors' calculation.

Figure A.9: Labor force participation by recipient status.



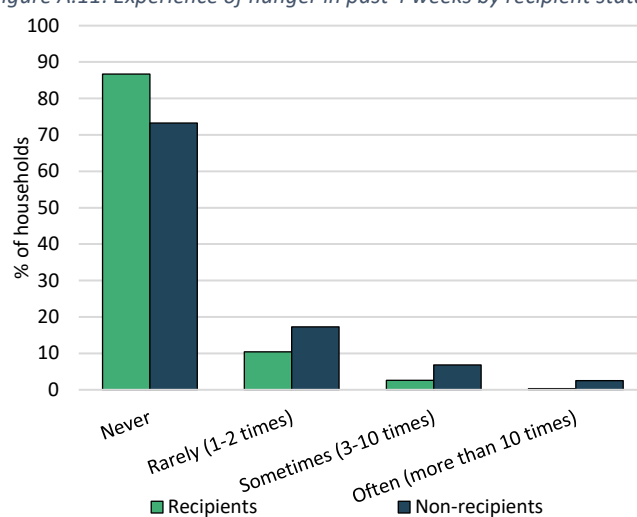
Source: Authors' calculation.

Figure A.10: Unemployment by recipient status.



Source: Authors' calculation.

Figure A.11: Experience of hunger in past 4 weeks by recipient status.

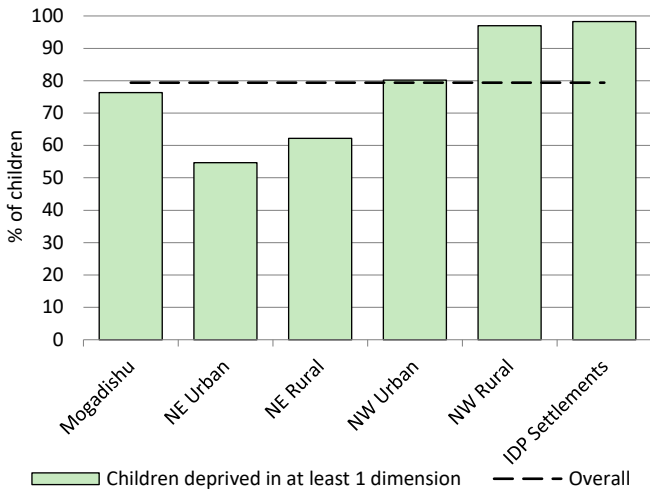


Source: Authors' calculation.

Table A.10: Full List of Sources of Income by Income Quintile and Regional Breakdown.

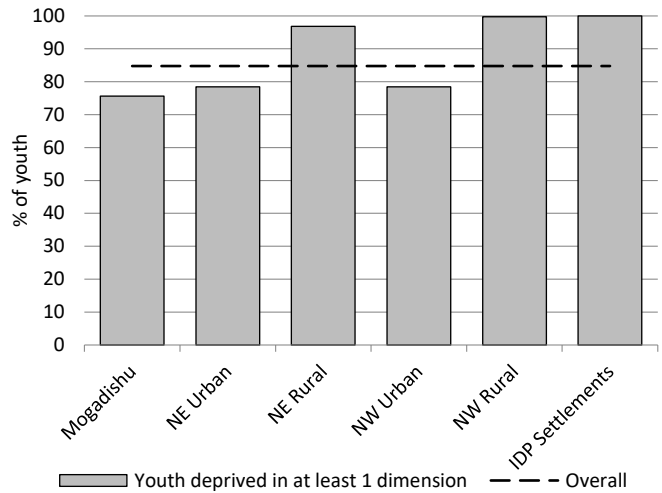
	Overall	MOG	NE Urban	NW Urban	NE Rural	NW Rural	IDP	Q1	Q2	Q3	Q4	Q5
Salaried labor	36%	34%	42%	41%	31%	19%	29%	26%	33%	37%	41%	41%
Remittances from abroad	16%	30%	18%	17%	18%	10%	1%	8%	10%	17%	16%	22%
Savings, investments	1%	1%	1%	0%	0%	1%	0%	0%	1%	1%	1%	1%
Pensions	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Family assistance	12%	8%	10%	10%	22%	20%	18%	18%	14%	9%	11%	8%
Revenues from sales of assets	1%	1%	0%	1%	1%	8%	1%	2%	1%	2%	2%	0%
Small family business	8%	8%	8%	7%	12%	8%	6%	7%	12%	8%	7%	8%
Other small family business	4%	5%	4%	3%	2%	3%	4%	3%	3%	3%	4%	7%
Domestic trade	1%	0%	1%	1%	5%	5%	1%	0%	2%	1%	2%	2%
Foreign trade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
NGO or foreign aid	1%	0%	0%	0%	0%	0%	2%	2%	1%	0%	1%	1%
None	21%	13%	14%	20%	9%	27%	37%	34%	24%	23%	17%	12%

Figure A.12: Child deprived in one dimension.



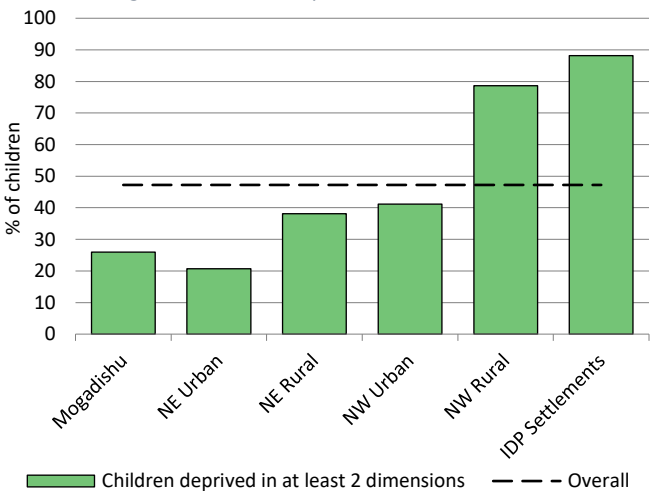
Source: Authors' calculation.

Figure A.13: Youth deprived in one dimension.



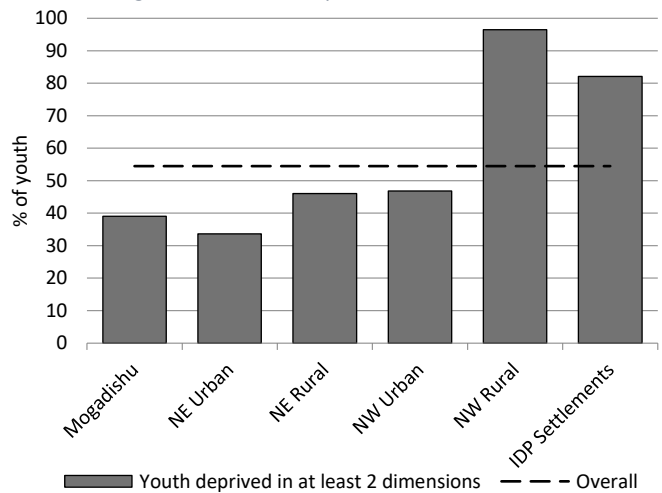
Source: Authors' calculation.

Figure A.14: Child deprived in two dimensions.



Source: Authors' calculation.

Figure A.15: Youth deprived in two dimensions.



Source: Authors' calculation.

Table A.11: Estimated logit for proxy means test.

Dependent variable: Poor			
Explanatory variables			
Dependency ratio	0.132***	Hunger in the past month: Rarely (1-2 times)	0.106
Male-headed household	-0.068	Hunger in the past month: Sometimes (3-10 times)	0.611***
Household size	0.395***	Hunger in the past month: Often (more than 10 times)	0.526
HH has at least one employed member	-0.631***	House type: Shared house/apartment	0.417***
HH head education: Incomplete primary	-0.234*	House type: House	-0.016
HH head education: Complete Primary/Incomplete Secondary	-0.702***	House type: Hut and other	0.796***
HH head education: Complete Secondary	-0.645***	Region: Strata 101 & 105	1.836***
HH head education: University	-1.088***	Region: Strata 201-205, 1103, 1203, 1204 & 1303	-0.970***
HH head education: Other	-0.185	Rural	2.075***
Floor material: Tiles (ceramic)	-0.597***	IDP Settlement	2.379***
Floor material: Mud	0.483***	NE Urban	1.841***
Floor material: Wood	-0.023	NW Urban	1.525***
Floor material: Other	0.494***	NE Rural	-0.052
House ownership: Own	-0.140	Received remittances	-0.435***
House ownership: Occupy w/o permission	-0.115	Constant	-4.251***
House ownership: Occupy w/permission	-0.572**		
House ownership: Other	-0.745		
Observations	3,777		
Pseudo R2	0.27		

*, **, *** indicate significance at the 10%, 5%, and 1% level respectively.

B. Lower poverty incidence in the North East region

The results from Wave 1 of the SHFS indicate that the North East region has lower poverty incidence than in the other surveyed pre-war regions. Contrary to this finding, anecdotal evidence and expert assessments raised the expectation that Somalis in North East regions would be among the poorer parts of the population. Thus, the findings presented in this report related to North East have been analyzed particularly carefully to assess their validity in a number of ways.

Table B.1: Differences in poverty incidence.

	North West	Mogadishu	North East	Overall
Poverty Headcount Rate	53%	57%	25%	46%
Quantity of consumption				
Mean kg of core consumption pc pd per item	0.049	0.054	0.061	0.054
Percentage relative to mean	91%	100%	113%	100%
Number of consumption items				
Average core items per household	13.1	12.3	14.4	13.3
Percentage relative to mean	99%	93%	109%	100%
Household size				
Average household members	5.7	4.5	5.2	5.2
Size relative to mean	109%	86%	99%	100%
Replacement rate of EAs	23%	24%	21%	23%

To ensure that findings are not artificial due to some idiosyncrasies of the data collection in North East, scrutiny was directed at whether low poverty incidence was driven by (i) consumption quantity per core item, (ii) the number of core items consumed, or (iii) prices. Households in North-East consume a higher quantity per capita per item (13 percent more than the overall average) and more items per household (9 percent more than average; Table B.1). No notable price trends emerged, as prices for food items are deflated. In addition, household consumption profiles of North East, North West, and Mogadishu in terms of the most consumed items, both by quantity and value, are similar (Table B.2). Lower poverty incidence further does not seem to be driven by household size, as the average household size in North East is 5.2, compared to 5.7 in North West and 4.5 in Mogadishu (Table B.1). Finally, the rate of replacement of enumeration areas (due to inaccessibility, missing structures or security) is similar in all three regions (Table B.1). Overall, then, North East's lower poverty incidence appears to be the result of genuinely higher recorded consumption.

Table B.2: Most consumed core food items.

Region	Value			Quantity		
	Rank	Item	Share	Rank	Item	Share
North West	1	Sugar	10%	1	Sugar	14%
	2	Goat or sheep	9%	2	Macaroni, spaghetti	10%
	3	Macaroni, spaghetti	9%	3	Rice, husked	9%
Mogadishu	1	Fresh camel	19%	1	Sugar	13%
	2	Macaroni, spaghetti	8%	2	Macaroni, spaghetti	9%
	3	Milk Powder	7%	3	Millet, flour	7%
North East	1	Milk Powder	10%	1	Sugar	14%
	2	Goat or sheep	10%	2	Macaroni, spaghetti	9%
	3	Sugar	8%	3	Rice, husked	7%

In addition, the analysis of other typical well-being indicators, known to correlate well with monetary poverty, support the conclusion that lower poverty incidence in North East is genuine: North East is doing better than average in various important indicators of well-being. Literacy rate in North East is 64 percent relative to an average of 55 percent (Table B.3), and households in North East also outperform the average in other educational outcomes such as enrollment and educational attainment. The same holds true for labor market outcomes, most critically with more Somalis in North East participating in the labor force (Table B.3). This trend also holds for access to water and sanitation. 70 percent of households in North East have access to improved water sources, compared to the average of 58 percent (Table B.3), while 14 percent of North East households have access to improved sources of sanitation, compared to an average of 12 percent in the other regions. North East’s performance on these non-monetary indicators of well-being is thus in line with its lower incidence of monetary poverty.

Table B.3: Key non-monetary indicators of well-being.

	Literacy rate	Primary school completion rate	Primary enrollment rate	Labor Force Participation	Access to improved water	Access to improved sanitation
North West	57%	16%	62%	32%	45%	12%
Mogadishu	58%	16%	39%	37%	96%	12%
North East	64%	18%	61%	47%	70%	14%
Overall	55%	16%	53%	38%	58%	10%

C. Sample and Data Collection

Estimating monetary poverty rates requires a sound, reproducible methodology. The methodology starts with the sample design, continues with questionnaire design and the construction of food and non-food consumption aggregates, selection of spatial price deflators and how to determine the consumption value derived from assets, and what process to use to construct the poverty lines. The appendix describes the methodology used to estimate poverty for the Wave 1 Somali High Frequency Survey.

The chosen methodology balances a trade-off between feasibility and accuracy. Somalia is a fragile country with severe security constraints for field work and wide spread displacement. The sampling methodology was adapted to the context by excluding several inaccessible areas. The questionnaire design utilized the Rapid Consumption methodology that can be easily and quickly implemented. The choice of deflators and the poverty line were driven by data quality.

A household is defined as poor if the per-capita household consumption does not exceed a given threshold

$$(1) \quad y_i \leq z$$

where y_i is the nominal per-capita household expenditure and z is the poverty line at the nominal level. In the following, we discuss the selection of households i as part of the sample design and present the construction of the consumption aggregate y_i before discussing the choice of the poverty line z and standard poverty measures.

Sample and Sample Frame

The Population Estimation Survey of Somalia (PESS) was used as sample frame alongside a list of settlements from three different sources (UNDP 1997, UNDP 2006 and FSAU 2003) to complement missing rural and semi-urban settlements. The combined sample frame was cleaned and preprocessed before the number of enumeration areas per strata was calculated and enumeration areas selected proportional to size. Depending on the strata, different multi-stage clustering approaches were used to select households.

Due to the combination of the different data sources, the resulting sample frame included enumeration areas as well as settlements. While enumeration areas are defined as geographical areas with about 50 to 200 households, settlements often are larger areas with a larger population. In fact, all rural and a large fraction of semi-urban enumeration areas and settlements did not have boundaries available but were only defined by a GPS position.

Since PESS is also partially based on the same data sources (especially UNDP 1997 and UNDP 2006) and since some PESS enumeration areas had the same GPS location, several GPS positions were very close of each other and, thus, considered duplicates (Figure C.1). Technically, duplicates are defined where the distance between the GPS position is below 75m. In groups with multiple duplicates, the additional criteria was introduced that all GPS positions must have pair-wise distances below 200m to prevent large sequential areas of GPS positions. Duplicates were merged into one 'hypothetical' enumeration area with a tag of the number of duplicates. Those duplicate counts were used to position manually midpoints for

new enumeration areas around the main duplicate GPS position to ensure that larger settlements have the appropriate number of surrounding enumeration areas.⁴⁸

In a second step, boundaries of enumeration areas without corresponding shape files were drawn automatically. First, the GPS positions were used as midpoints of circles with a radius of 200m. Overlapping circles were transformed to Thiessen polygons where the line connecting the overlapping points becomes the new boundary. The algorithm was tested for areas where PESS shapefiles were available (Figure C.2).

Figure C.1: Examples of duplicate GPS.



Figure C.2: Thiessen test polygons with bold boundaries representing the known enum. area boundaries.



Sample Stratification and Size

The sample is designed based on predicted statistical precision of consumption as well as cost considerations. Without political implications, the survey stratifies the sample into four zones, A including

⁴⁸ Note that this was only done for selected duplicate enumeration areas to reduce manual processing.

Mogadishu, B including Garowe, C including Hergeiza and D for Sanaag, Sool and Togdheer. The sample is stratified for each zone into economic/political centers, urban centers, other urban settlements, rural settlements and – if existent – IDP camps. The result are 16 strata (star marks areas where a micro-listing approach was utilized; see below):

- A: Mogadishu*; IDPs*
- B: Garowe; Urban Centers; Other Urban; Rural; IDPs*
- C: Hergeiza; Urban Centers; Other Urban; Rural; IDPs*
- D: Sanaag Urban; Sanaag Rural; Sool Urban; Sool Rural; Togdheer Urban; Togdheer Rural

The sample employs a clustered design with the Primary Sampling Unit (PSU) being the enumeration area. Within each enumeration area, 12 households will be selected for interviews. A larger number of households per enumeration area would only marginally benefit the statistical estimation of indicators. A smaller number of households would result in less than 3 observations for each of the four optional modules capturing consumption data.

A total sample of about 3,800 households is sufficient to obtain consumption estimators with a relative standard error below 1 percent. After rounding the number of enumeration areas ensuring that 12 households per enumeration area, 324 enumeration areas were initially selected. The 324 enumeration areas are first distributed into the 16 strata. The number of enumeration areas per strata is determined by (i) the population of the strata, (ii) the variability of consumption within the strata, and (iii) the requirement of at least two enumeration areas per strata. Strata with larger population and larger variability will need a larger sample to retrieve the same relative standard error as a stratum with smaller population and consumption variability (Table C.3). Variability is estimated based on previous surveys and a pilot in Mogadishu. The strata for Mogadishu was later amended by an additional 20 enumeration areas to correct against a faulty optional module assignment in the first days of data collection.

Household Selection

Depending on the strata, different clustering approaches were used. In strata with more volatile security as well as for IDP camps, a multi-stage cluster design was employed called micro-listing. Each selected enumeration area was divided into multiple segments and each segment was further divided into blocks. A block is defined as a geographical area where an enumerator can see (and list) all households from one location in the center of the block. Within each enumeration area, one segment was randomly selected and within the segment 12 blocks were chosen. In each block, all structures were listed before selecting randomly one structure. Within the selected structure, all households were listed and one household randomly selected for interview. This multi-stage clustering approach reduces the time in the field substantially and contributes to a lower profile of enumerators, which is paramount in fragile areas. In strata less volatile, the complete enumeration area was listed before 12 households were randomly selected for interviews (called full-listing).

Data Collection and Replacements

The survey was implemented using tablets as survey devices (CAPI). The data collection system consisted of Samsung Smartphones equipped with SIM cards, mobile data plans, microSD cards (16 GB capacity), and external battery packs. The phones were secured with Android's native encryption and protected by a password. GPS tracker helped to track all devices using a web interface (www.gps-server.net), Barcode

Scanner allowed to use barcodes for the identification of enumerators and a parental control application provided a safe contained working environment for enumerators. Interviews were conducted using SurveyCTO Collect on the tablet with data transmitted to a secure SurveyCTO server in a cloud computing environment.

EAs were replaced if security rendered field work unfeasible (Table C.3). Replacements were approved by the project manager. Replacement of households were approved by the supervisor after a total of three unsuccessful visits of the household.

Incoming data is processed to create a raw consistent data set. Interviews with wrongly entered EAs were manually corrected. Interviews conducted outside sampled EAs were discarded. For duplicate submissions, only one record is kept.⁴⁹ Sampling weights are added to the final dataset and subsequently anonymized at the strata level. Missing values are recoded into four different types of missing values: (i) genuinely missing values coded as “.”; (ii) respondent indicated “don’t know” coded as “.a”; (iii) respondent refused to respond to the question coded as “.b”; and (iv) missing values due to the questionnaire skipping pattern because the question does not apply to the respondent coded as “.z”.

Cleaning Process of Submissions

The total number of interviews submitted through SurveyCTO was 4,590, and the breakdown by zone the following:

- A: 1,06
- B: 1,035
- C: 2,366
- D: 120

The first step corresponds to a cleaning process identifying general issues and inconsistencies with submissions.

- B: 1 empty household record dropped
- C:
 - 3 household records deleted as they were submitted through the web and they were part of a test to monitor scripts before fieldwork
 - 1 submission dropped as it corresponds to a test that a team leader made to check if the GPS of one of his enumerator's phone was working
 - 1 additional household record dropped as it corresponds to an interview completed by the enumerator to check he had the latest version of the questionnaire

Therefore, after making the described adjustment, the number of correct submissions became 4,584, with the following breakdown by region:

- A: 1,069

⁴⁹ Two types of duplicate households are identified. Technical duplicates are defined as duplicate submission of the same interview. They are identified as households with identical GPS data (latitude, longitude and altitude coordinates). Manual duplicates are defined as two interviews conducted with the same household. They are identified by almost identical household rosters. The interview with more information is kept based on manual inspection.

- B: 1,034
- C: 2,361
- D: 120

The second step excludes submissions from EAs and blocks that were not included in the final sample.

- A: 3 submissions were dropped as they belong to a block that was not included in the final sample
- B: 12 submissions dropped, as they correspond to an EA that was not included in the final sample, since it was a replacement EA that was never executed
- C: 3 interviews dropped because the enumerators selected a wrong EA that had been replaced

Therefore, after making the described adjustment, the number of correct submissions became 4,566, with the following breakdown by region:

- A: 1,066
- B: 1,022
- C: 2,358
- D: 120:

The next step was to validate the acceptance of submissions, for which six criteria were defined and interviews were dropped that failed to meet at least one of them:

1. The duration of the interview had to exceed a threshold of 30 minutes
 - 26 submissions were excluded because they were completed in 30 minutes or less
2. Random sound bites check, including respondent and enumerator voices. This criterion will be assumed to hold if a specific interview was not checked on this criterion.
 - No interview was removed for this reason
3. The interview has GPS coordinates and it was conducted within a buffer area of the correspondent EA
 - 5 interviews did not have GPS coordinates; and
 - 5 were also excluded as the GPS coordinates indicate the interview did not take place within the boundaries of the EA
4. If the interview was not completed in the first visit, then the household record for the first visit must be valid using the previous criterions (except for the duration), and both household records must contain a matching GPS positions, with a margin of +/- 10 meters
 - 34 interviews were dropped as they corresponded to a second visit, and the record from the previous visit did not exist or was not valid
 - 26 additional submissions were not considered, as the GPS coordinates of the first visit did not match with those of the subsequent visit
5. If the interview corresponds to a replacement household, the record of the original household must be valid, except for the duration of the interview
 - 67 submissions were not considered as the interview corresponded to a replacement household with an inexistent or invalid record for the original household
6. Finally, unsuccessful interviews were discarded; the ones where no one answered the door, there was not a knowledgeable adult present or the respondent did not give permission to continue:
 - 282 submissions were not successful and thus were also excluded

Therefore, at this point, the dataset had a total number of 4,121 submissions, with the following breakdown by region:

- A: 1,031
- B: 929
- C: 2,045
- D: 116

The final step excludes interviews that were incomplete, and thus have several sections without any single response. 4 households did not have any record in the sections corresponding to food consumption, assets and livestock, and thus they were excluded. Therefore, the final dataset includes a total number of 4,117 complete, valid and successful submissions from valid EA and blocks, with the following breakdown by region:

- A: 1,031
- B: 929
- C: 2,041
- D: 116

Sampling weights

This subsection describes calculation of sample weights for households in the dataset. The sample design was different for some strata due to security volatility. Thus, the methods differ between micro-listing and full-listing. After the sample weights were calculated as described below, they were scaled to the number of households accessible with GPS from the sample frame.

A) Full listing: The sample was drawn in a two-stage process for strata 201-204, 301-304 and 1103-1304. Therefore, the weights were calculated based on the sampling probabilities for each sampling stage and for each cluster in the following way:

$$P_{hij} = P_1 P_2 = \frac{EA_j H_i}{H_j} \frac{HS_i}{HL_i}$$

such that

P_{hij} : Probability of selecting household h in EA i of strata j

P_1 : Probability of selecting the EA in stage 1

P_2 : Probability of selecting the household in stage 2

EA_j : Number of EAs selected in strata j

H_i : Number of households estimated in the sample frame for EA i

H_j : Number of households estimated in the sample frame in strata j

HS_i : Number of households selected in EA i

HL_i : Number of households listed in EA i

Therefore, the sample weight for each household corresponds to

$$w = 1/P_{hij}$$

B) Micro-listing: In strata 101, 105, 205 and 305, the sample was segmented in blocks within EAs, in addition to the two-stage, stratified cluster sampling, design.⁵⁰ Therefore, the weights were calculated based on the sampling probabilities for each sampling stage and for each cluster in the following way:

$$P_{hij} = P_1 P_2 P_3 = \frac{EA_j H_i}{H_j} \frac{BS_i}{B_i} \frac{HS_i}{H_i}$$

such that

P_{hij} : Probability of selecting household h in EA i of strata j

P_1 : Probability of selecting the EA

P_2 : Probability of selecting the Block

P_3 : Probability of selecting the household

EA_j : Number of EAs selected in strata j

H_i : Number of households estimated in the sample frame for EA i

H_j : Number of households estimated in the sample frame in strata j

BS_i : Number of blocks selected in EA i

B_i : Number of blocks in EA i

HS_i : Number of households selected in EA i

HL_i : Number of households in EA i

Therefore, the sample weight for each household corresponds to

$$w = 1/P_{hij}$$

Finally, three types of sampling weights were estimated:

1. Unadjusted weights: Considers all submissions (4,117) and scales the weights so that the sum of the sampling weights by analytical strata matches the total number of accessible households with GPS according to sample frame.
2. Adjusted weights: Considers all submissions (4,117) and scales the weights uniformly so that the sum of the weights by analytical strata matches the total number of households according to the PESS (Table C.2).⁵¹

⁵⁰ The segmentation step cancels out as exactly one segment is chosen.

⁵¹ Usually, the household number from the sample frame should reflect the number of households from the last Census. However, the incomplete sample frame necessitated using different (overlapping) data sources for the sample frame. While the probabilities for selection for duplicates are adjusted for already in the EA selection step, the total number of households did not automatically sum up to the number of households from PESS.

3. Adjusted weights for consumption and poverty variables: Considers only submissions with consumption data (excludes 53 submissions with missing values in the consumption of food, non-food and durables) and adjusts the weights of the remaining 4,064 submissions according to the following scenarios:
- If the number of accessible households with GPS (i.e. the sum of weights) is larger than the total number of households according to PESS by analytical strata, then the weights were scaled downwards uniformly to match the total number of households from PESS, which already reflects the re-allocation of the weights from the 53 submissions excluded
 - If the number of accessible households with GPS (i.e. the sum of weights) is smaller than the total number of households according to PESS, then the weights were scaled upwards in two steps: i) re-allocating uniformly the weights from the 53 households excluded across the 4,064 submissions; and then ii) assigning the additional weights needed to match the figures from PESS only to those households or submissions in the bottom 25 percent of the total consumption distribution for the respective analytical strata. The bottom 25 percent were taking up the weight of the additional households to reflect the fact that excluded enumeration areas were not randomly chosen but differed from other enumeration areas by inaccessibility due to security and/or infrastructure. As those enumeration areas are expected to be more deprived than the average enumeration area, they were assumed to be similar to the bottom 25 percent.

Table C.1: Sample properties of the SHFS.

	Overall	Mogadishu	North East		North West		IDP Settlements	Nomads	Other areas
			Urban	Rural	Urban	Rural			
Sample Size (Households)	4,117	816	643	154	1,405	668	431	0	0
Covered Households	923,092	187,246	163,444	27,684	281,669	61,086	201,963	0	0
Sample Size (Individuals)	21,026	3,619	3,272	800	7,851	3,294	2,190	0	0
Covered Individuals	4,930,401	895,915	823,041	147,758	1,636,490	315,508	1,111,689	0	0
Population (PESS)	12,316,895	1,280,939	992,207	176,282	1,854,995	384,798	1,106,751	3,186,966	3,333,957
Population Covered	40%	70%	83%	84%	88%	82%	100%	0%	0%
No. of Enumeration Areas	341	67	52	13	118	56	35	0	0

Table C.2: Total number of households by PESS region and analytical strata.

PESS Region	Type	Analytical Strata	Number of households
All	IDP	All IDPs	201,963
Banadir	Urban	Mogadishu	187,246
Nugaal	Urban	Garowe	23,119
Bari and Mudug	Urban	Urban Bari and Mudug	140,334
Woqooyi Galbeed	Urban	Hergeiza	123,390
Awdal, Sanaag, Sool and Togdheer	Urban	Urban Awdal, Sanaag, Sool and Togdheer	158,279
Bari, Mudug and Nugaal	Rural	Rural Bari, Mudug and Nugaal	27,684
Awdal, Sanaag, Sool, Togdheer and Woqooyi Galbeed	Rural	Rural Awdal, Sanaag, Sool, Togdheer and Woqooyi Galbeed	61,086

Table C.3: Sample size calculation, number of replacement and final sample.⁵²

Strata	Strata Code	Number of EAs	Number of accessible EAs	Number of accessible EAs with GPS	Number of households	Number of accessible households in EAs with GPS	Percent in Sample	N	"weights"	consumption			Design Effect	(NhSh)	"optimum" allocation	rounded optimum	clusters	est. standard error	relative standard error	Replacements	Post Sample
										n	standard deviation	n									
A - Mogadishu	101	1347	1299	136592	136592	131914	97%	131,914	0.146	512.9	38.4	676	3.327	5,062,022	558.88	564	47	5.4	0.01	27	67
A - IDPs	105							33,333	0.037	97.9	54.0	122	2.858	1,801,172	198.86	204	17	10.8	0.11	10	17
B - Garowe	201	149	149	149	16351	16351	100%	16,351	0.018	484.6	59.4	573	1.091	971,660	107.28	108	9	6.2	0.01	1	9
B - Urban Centers	202	111	111	111	12534	12534	100%	12,534	0.014	484.6	59.4	573	1.091	744,834	82.23	84	7	7.1	0.01	1	7
B - Other Urban	203	1426	1399	1230	160891	142339	88%	142,339	0.157	386.0	27.8	279	2.130	3,962,628	437.50	432	36	2.9	0.01	6	36
B - Rural	204	1230	1067	475	101226	46235	46%	46,235	0.051	347.1	30.9	873	2.406	1,428,335	157.70	156	13	6.0	0.02	6	13
B - IDPs	205							21,500	0.024	97.9	54.0	122	2.858	1,161,756	128.27	132	11	13.4	0.14	3	11
C - Hergeiza	301	1617	1617	1617	139345	139345	100%	139,345	0.154	484.6	59.4	573	1.091	8,280,591	914.24	912	76	2.1	0.00	5	76
C - Urban Centers	302	1071	1071	1071	114435	114435	100%	114,435	0.126	386.0	27.8	279	2.130	3,185,798	351.73	348	29	3.2	0.01	1	29
C - Other Urban	303	268	250	237	26294	23224	88%	23,224	0.026	386.0	27.8	279	2.130	646,542	71.38	72	6	7.0	0.02	0	6
C - Rural	304	1296	1218	1013	241531	185700	77%	185,700	0.205	347.1	30.9	873	2.406	5,736,817	633.38	636	53	2.9	0.01	98	53
C - IDPs	305							14,167	0.016	97.9	54.0	122	2.858	765,498	84.52	84	7	16.8	0.17	0	7
D - Sanaag Urban	1103	57	57	57	6088	6088	100%	6,088	0.007	386.0	27.8	279	2.130	169,486	18.71	24	2	12.1	0.03	0	2
D - Sanaag Rural	1104	43	43	43	5131	5131	100%	5,131	0.006	347.1	30.9	873	2.406	158,512	17.50	12	2	15.2	0.04	4	0
D - Sool Urban	1203	10	10	10	1352	1352	100%	1,352	0.001	386.0	27.8	279	2.130	37,639	4.16	12	2	12.1	0.03	4	2
D - Sool Rural	1204	29	29	10	2387	919	39%	919	0.001	347.1	30.9	873	2.406	28,391	3.13	12	2	15.2	0.04	4	3
D - Togdheer Urban	1303	128	128	128	11064	11064	100%	11,064	0.012	386.0	27.8	279	2.130	308,015	34.01	36	3	9.9	0.03	2	3
D - Togdheer Rural	1304	8	8	2	541	150	28%	150	0.000	347.1	30.9	873	2.406	4,634	0.51	12	2	15.2	0.04	2	0
Total		8790	8456	142745	975762	836781		905,781		369.8	288.1	8124	36.65526	34,454,327	3,804	3,840	324	1.4	0.004	174	341

⁵² Note that the number of (accessible) households does not resemble necessarily the number of PESS households due to the merging of multiple data sources. Therefore, sample weights were adjusted accordingly to scale with PESS household estimates.

D. Consumption Aggregate

The nominal household consumption aggregate is the sum of three components, namely 1) expenditures on food items, 2) expenditures on non-food items, and 3) the value of the consumption flow from durable goods:

$$(1) \quad y_i = y_i^f + y_i^n + y_i^d$$

This section describes in detail the cleaning of the recorded data for each of three components. Subsequently, the construction of the consumption aggregate using the Rapid Consumption Methodology is explained as well as the estimation of the consumption flow for durables and the details on the deflator used to calculate spatial price indices.

Moreover, 53 households were assigned a missing value in consumption since 52 of them reported not consuming any food items, and 1 household only reported consuming a non-core food item.

Cleaning Process: Food

Food expenditure data is cleaned in a four-step process. First, units for reported quantities of consumption and purchase are corrected. Typical mistakes include recorded consumption of 100 kg of a product (like salt) where the correct quantity is grams. These mistakes are corrected using generic rules (Table D.1). Then, we introduce a conversion factor to kg for some specific items and units. For example, we recognize that a small piece of bread must have a different weight than a small piece of garlic (Table D.2). The third step consists of correcting issues with the exchange rate selected (Table D.3). Finally, outliers are detected using the six cleaning rules below to correct quantities and prices.

- Rule 1
 - o Consumption quantities with missing values for items reported as consumed were replaced with item-specific median consumption quantities.
 - o Missing purchase quantities and missing prices for items consumed were replaced with item-specific median purchase quantity and item-specific median purchase price.
- Rule 2: Records where the respondent did not know or refused to respond if the household had consumed the item, were replaced with the mean value, including non-consumed records.
- Rule 3: Records with the same value for quantity consumed or quantity purchased and price are assumed to have a data entry error in the price or quantity and are replaced with the item-specific medians.
- Rule 4: Records that have the same value in quantity consumed and quantity purchased but different units are assumed to have a wrong unit either for consumption or purchase. For both quantities, the item-specific distribution of quantities in kg is calculated to determine the deviation of the entered figure from the median of the distribution. The unit of the quantity that is further away from the median is corrected with the unit of the quantity closer to the median.
- Rule 5:

- Missing and zero prices are replaced with item-specific medians
 - Outliers for unit prices were identified and replaced with the item-specific median. This includes unit prices in the top 10 percent of the overall cumulative distribution (considering all items), and unit prices below 0.07 US\$.
- Rule 6: the consumption value in US\$ was truncated to the mean plus 3 times the standard deviation of the cumulative distribution for each item, if the record exceeded this threshold.

All medians are estimated at the EA level if a minimum of 5 observations are available excluding previously tagged records. If the minimum number of observations is not met, medians are estimated at the strata-level before proceeding to the survey level. In addition, medians greater than 20 kg and smaller than 0.02 kg were not considered for quantities, while medians greater than 20 US\$ and smaller than 0.005 US\$ were also excluded for unit prices.

Cleaning process: Non-Food

The non-food dataset only contains values without quantities and units. First, we apply the same cleaning rules for currencies (Table D.3) and then the following cleaning rules:

- Rule 1: Zero, missing prices and missing currency for purchased items are replaced with item-specific medians.
- Rule 2: Records where the respondent did not know or refused to respond if the household had purchased the item, were replaced with the mean value, including non-consumed records.
- Rule 3: Prices that are beyond a specific threshold for each recall period (Table D.4) are replaced with item-specific medians.
- Rule 4: Prices below the 1 percent and above the 95 percent of the cumulative distribution for each item are replaced with item-specific medians
- Rule 5: the purchase value in US\$ was truncated to the mean plus 3 times the standard deviation of the cumulative distribution for each item, if the record exceeded this threshold.

The item-specific medians were applied at the EA, strata and survey level as described above.

Cleaning process Durables

For durables, we also apply the same cleaning rules for currencies (Table D.3), and then the following cleaning rules:

- Rule 1: Vintages with missing values and greater than 10 years are replaced with item-specific medians.
- Rule 2: Current and purchase prices equal to zero are replaced with item-specific medians.
- Rule 3: Records that have the same figure in current value and purchase price are incorrect. For both, the item-vintage-specific distribution is calculated to determine the deviation of the entered figure from the median. The one that is further away from that median is corrected with the item-year-specific median value.

- Rule 4: Depreciation rates are replaced by the item-specific medians in the following cases:
 - o Negative records
 - o Depreciation rates in the top 10 percent and vintage of one year
 - o Depreciation rates in the bottom 10 percent and a vintage greater or equal to 3 years
- Rule 5: Records with 100 items or more, and those that reported to own a durable good but did not report the number were replaced with the item-specific medians of consumption in US\$
- Rule 6: Consumption in the top and bottom 1 percent of the overall distribution were replaced with item-specific medians
- Rule 7: Records where the respondent did not know or refused to respond if the household owned the asset, were replaced with the mean consumption value, including non-consumed records.
- Rule 8: the consumption value in US\$ was truncated to the mean plus 3 times the standard deviation of the cumulative distribution for each item, if the record exceeded this threshold.

All medians are estimated at the EA level if a minimum of 3 observations are available excluding previously tagged records. If the minimum number of observations is not met, medians are estimated at the strata-level before proceeding to the survey level. Table D.5 contains a general overview of consumption of durables, and Table D.6 presents the details. Table D.7 shows the median depreciation rate by item.

Table D.1: Summary of unit cleaning rules for food items.

Unit	Condition	Correction	Affected Records⁵³
250 ml tin	<=0.03	Multiply by 4	2; 39
Animal back, ribs, shoulder, thigh, head or leg	>=7	Divide by 10	4; 35
Basket or Dengu (2 kg)	>=10	Divide by 10	1,004; 20
Bottle (1 kg)	>=10	Divide by 10	473; 281
Cup (200 g)	>200	Divide by 2	447; 24
Faraasilad (12kg)	>12	Divide by 12	544; 60
Gram (if item corresponds to a spice)	<1	Multiply by 100	115; 5
Gram (if item does not correspond to a spice)	<1	Multiply by 1,000	69; 19
Haaf (25 kg)	>=25	Divide by 25	357; 921
Heap (700g)	>=0.69	Divide by 7	182; 11
Kilogram	>=100	Divide by 1,000	68; 4
Large bag (50 kg)	>=50	Divide by 50	1; 27
Liter	>=10	Divide by 10	3; 32
Madal/Nus kilo ruba (0.75kg)	>=7.5	Divide by 10	849; 20
Meals (300 g)	>2.1	Divide by 10	366; 208
Packet sealed box/container (500 g)	>=5	Divide by 10	340; 16
Piece (large - 300g)	>=3	Divide by 10	397; 43
Piece (small - 150g)	>=1.5	Divide by 10	95; 5
Rufuc/Jodha (12.5kg)	>=12.5	Divide by 10	37; 15
Saxarad (20kg)	>=20	Divide by 10	312; 793
Small bag (1 kg)	>=10	Divide by 10	110; 8
Teaspoon (10 g)	<0.009	Multiply by 10	45; 4

⁵³ The first number indicates the number of affected records reported for consumption while the second number states the number of affected records for purchases.

Table D.2: Conversion factor to Kg for specific units and items.

Item	Unit	Conversion to Kg
Biscuits	Piece – large	0.030
	Piece - small	0.010
Bread	Piece – large	0.400
	Piece - small	0.100
Eggs	Piece – large	0.070
	Piece - small	0.050
Canned fish/shellfish	Piece – large	0.420
	Piece - small	0.140
Grapefruits, lemons, guavas, limes	Piece – large	0.350
	Piece - small	0.100
Milk	Piece – large	0.750
	Piece - small	0.250
Milk powder	Piece – large	0.450
	Piece - small	0.100
Garlic	Small bag	1.00
	Piece – large	0.065
	Piece - small	0.040
Onion	Piece – large	0.150
	Piece - small	0.095
Tomatoes	Piece – large	0.200
	Piece - small	0.110
Bell-pepper	Piece – large	0.150
	Piece - small	0.080
Sweet/ripe bananas	Piece – large	0.110
	Piece - small	0.070
Canned vegetables	Piece – large	0.400
	Piece – small	0.200
Sorghum, flour	Cup	0.200
Cooking oats, corn flakes	Cup	0.200
Other cooked foods from vendors	Small bag	1.00
Purchased/prepared tea/coffee consumed at home	Small bag	0.400
Other spices	Small bag	0.400

Table D.3: Summary of cleaning rules for currency.

Currency	Condition	Correction
Somaliland shillings	Entry in Somaliland shilling	Replace currency to Somali shillings
	Price <=500	Replace currency to Somaliland shillings (Thousands)
	Price >=500,000	Divide by 10
Somali shillings	Entry in Somali shilling	Replace currency to Somaliland shillings
	Price <=500	Replace currency to Somali shillings (Thousands)
	Price >=500,000	Divide by 10
US\$	Price >1,000	Replace currency to Somali(land) shillings

Table D.4: Threshold for non-food item expenditure (US\$).

Recall period	Min	Max
1 Week	0.05	30
1 Month	0.20	95
3 Months	0.45	200
1 Year	0.80	1,200

Table D.5: Consumption of durable goods (per week in current US\$).

	SOM Wave 1 All regions	SOM Wave 1 Mogadishu	Pilot Mogadishu
Median	0.74	1.17	1.01
Mean	1.24	1.52	1.91
SD	1.51	1.49	2.62

Table D.6: Median consumption of durable goods (per week in current US\$).

Item	SOM Wave 1 All regions	SOM Wave 1 Mogadishu	Pilot Mogadishu
Air conditioner	0.005	0.005	0.041
Bed	N/A	N/A	0.861
Bed with mattress	0.700	0.746	N/A
Car	0.001	0.001	0.001
Cell phone	0.361	0.413	0.430
Chair	0.073	0.072	0.253
Clock	0.028	0.003	0.046
Coffee table (for sitting room)	0.005	0.005	0.106
Computer equipment & accessories	0.020	0.020	2.837
Cupboard, drawers, bureau	0.240	0.240	1.099
Desk	0.047	0.005	0.429
Electric stove or hot plate	0.001	0.001	N/A
Electric or gas stove; hot plate	N/A	N/A	0.012
Electric stove	N/A	N/A	0.004
Fan	0.069	0.064	0.101
Gas stove	0.007	0.007	0.275
Generator	0.000	0.000	0.000
Iron	0.043	0.035	N/A
Kerosene/paraffin stove	0.024	0.007	0.009
Kitchen furniture	0.023	0.015	1.112
Lantern (paraffin)	0.000	0.000	0.002
Lorry	0.000	0.000	0.000
Mattress without bed	0.217	0.212	N/A
Mini-bus	0.000	0.000	0.001
Mortar/pestle	0.016	0.009	0.112
Motorcycle/scooter	0.002	0.002	0.006
Photo camera	0.001	0.001	0.595
Radio ('wireless')	0.021	0.001	0.016
Refrigerator	0.282	0.018	0.267
Satellite dish	0.117	0.008	0.265
Sewing machine	0.002	0.002	0.732
Small solar light	0.003	0.003	N/A
Solar panel	0.000	0.000	0.018
Stove for charcoal	0.032	0.023	0.020
Table	0.042	0.042	0.092
Tape or CD/DVD player; HiFi	0.001	0.001	0.092
Television	0.330	0.278	0.417
Upholstered chair, sofa set	0.019	0.019	2.657
VCR	0.000	0.000	0.000
Washing machine	0.405	0.368	0.557

Table D.7: Median depreciation rate of durables goods.

Item	Wave 1 All	Wave 1 Mogadishu	Pilot Mogadishu	Wave 1: All pre-war regions	SLHS13
Air conditioner	0.278	0.241	0.210	0.134	0.145
Bed	N/A	N/A	0.364	N/A	0.088
Bed with mattress	0.172	0.172	N/A	0.172	N/A
Car	0.118	0.118	0.111	0.118	0.066
Cell phone	0.188	0.188	0.296	0.188	0.169
Chair	0.149	0.149	0.371	0.149	0.114
Clock	0.204	0.204	0.228	0.204	0.110
Coffee table (for sitting room)	0.279	0.279	0.329	0.279	0.114
Computer equipment & accessories	0.182	0.240	0.364	0.150	0.204
Cupboard, drawers, bureau	0.150	0.150	0.296	0.150	0.098
Desk	0.134	0.134	0.502	0.134	0.108
Electric stove or hot plate	0.262	0.257	0.005	0.252	N/A
Electric stove	N/A	N/A	0.296	N/A	0.138
Fan	0.131	0.131	0.235	0.131	0.134
Gas stove	0.174	0.135	0.296	0.174	0.333
Generator	N/A	N/A	0.296	N/A	0.127
Iron	0.161	0.161	N/A	0.161	0.110
Kerosene/paraffin stove	0.224	0.224	0.296	0.224	0.210
Kitchen furniture	0.188	0.188	0.393	0.188	0.101
Lantern (paraffin)	0.064	N/A	0.067	0.064	0.114
Lorry	0.154	N/A	0.296	0.154	0.052
Mattress without bed	0.185	0.185	N/A	0.185	N/A
Mini-bus	0.153	0.172	0.296	0.153	0.039
Mortar/pestle	0.210	0.210	0.254	0.210	0.114
Motorcycle/scooter	0.172	0.172	0.138	N/A	N/A
Photo camera	0.134	0.134	0.296	0.122	0.171
Radio ('wireless')	0.210	0.210	0.337	0.210	0.134
Refrigerator	0.133	0.133	0.065	0.133	0.096
Satellite dish	0.110	0.110	0.303	0.110	0.097
Sewing machine	0.138	0.114	0.296	0.138	0.134
Small solar light	0.296	N/A	N/A	0.471	N/A
Solar panel	0.005	0.038	0.296	0.005	0.110
Stove for charcoal	0.226	0.226	0.337	0.254	0.188
Table	0.157	0.157	0.296	0.160	0.114
Tape or CD/DVD player; HiFi	0.172	N/A	0.138	0.172	0.092
Television	0.131	0.131	0.240	0.131	0.099
Upholstered chair, sofa set	0.168	0.168	0.289	0.168	0.101
VCR	0.166	0.488	0.296	0.130	0.092
Washing machine	0.138	0.138	0.171	0.138	0.114

E. Rapid Consumption Methodology

The survey used the new Rapid Consumption methodology to estimate consumption. A detailed description including an ex post assessment of the methodology is available in a separate document.⁵⁴ The rapid survey consumption methodology consists of five main steps. First, core items are selected based on their importance for consumption. Second, the remaining items are partitioned into optional modules. Third, optional modules are assigned to groups of households. After data collection, fourth, consumption of optional modules is imputed for all households. Fifth, the resulting consumption aggregate is used to estimate poverty indicators.

First, core consumption items are selected. Consumption in a country bears some variability but usually a small number of a few dozen items captures the majority of consumption. These items are assigned to the core module, which will be administered to all households. Important items can be identified by its average food share per household or across households. Previous consumption surveys in the same country or consumption shares of neighboring / similar countries can be used to estimate food shares.⁵⁵ In the worst case, a random assignment results in a larger standard error but does not introduce a bias.

Second, non-core items are partitioned into optional modules. Different methods can be used for the partitioning into optional modules. In the simplest case, the remaining items are ordered according to their food share and assigned one-by-one while iterating over the optional module in each step. A more sophisticated method takes into account correlation between items and partitions them into orthogonal sets per module. This leads to high correlation between modules supporting the total consumption estimation. Conceptual division into core and optional items is not reflected in the layout of the questionnaire. Rather, all items per household will be grouped into categories of consumption items (like cereals) and different recall periods. Using CAPI, it is straight-forward to hide the modular structure from the enumerator.

Third, optional modules will be assigned to groups of households. Assignment of optional modules will be performed randomly stratified by enumeration areas to ensure appropriate representation of optional modules in each enumeration area. This step is followed by the actual data collection.

Fourth, household consumption will be estimated by imputation. The average consumption of each optional module can be estimated based on the sub-sample of households assigned to the optional module. In the simplest case, a simple average can be estimated. More sophisticated techniques can employ a welfare model based on household characteristics and consumption of the core items. The results presented in this note uses a multiple imputation technique based on a multi-variate normal approximation.

⁵⁴ Pape & Mistiaen (2015), "Measuring Household Consumption and Poverty in 60 Minutes: The Mogadishu High Frequency Survey", World Bank (2015).

⁵⁵ As shown later, the assignment of items to modules is very robust and, thus, even rough estimates of consumption shares are sufficient to inform the assignment without requiring a baseline survey.

Next, the methodology is formalized and assessed using an *ex post* simulation based on the consumption data from Hergeiza using the Somaliland 2013 Household Survey (SLHS13). Food and non-food consumption for household i are estimated by the sum of expenditures for a set of items

$$y_i^f = \sum_{j=1}^m y_{ij}^f \text{ and } y_i^n = \sum_{j=1}^m y_{ij}^n$$

where y_i^f and y_i^n denote the food and non-food consumption of item j in household i . As the estimation for food and non-food consumption follows the same principles, we neglect the upper index f and n in the remainder of this section. The list of items can be partitioned into $M+1$ modules each with m_k items:

$$y_i = \sum_{k=0}^M y_i^{(k)} \text{ with } y_i^{(k)} = \sum_{j=1}^{m_k} y_{ikj}$$

For each household, only the core module $y_i^{(0)}$ and one additional optional module $y_i^{(k^*)}$ are collected. The item assignment to the modules are based on the SLHS13 survey with manual modifications specially to treat 'other' items correctly.⁵⁶ The core module was designed to maximize its consumption share resulting in 91 percent and 76 percent of food respectively non-food consumption captures in the core modules (based on SLHS13 consumption; Table E.1). Optional modules are constructed using an algorithm to assign items iteratively to optional modules so that items are orthogonal within modules and correlated between modules. In each step, an unassigned item with highest consumption share is selected. For each module, total per capita consumption is regressed on household size, the consumption of all assigned items to this module as well as the new unassigned item. The item will be assigned to the module with the highest increase in the R2 relative to the regression excluding the new unassigned item. The sequenced assignment of items based on their consumption share can lead to considerable differences in the captured consumption share across optional modules. Therefore, a parameter is introduced ensuring that in each step of the assignment procedure the difference in the number of assigned items per module does not exceed d . Using $d=1$ assigns items to modules (almost) maximizing equal consumption share across modules.⁵⁷ Increasing d puts increasing weight on orthogonality within and correlation between modules. The parameter was set to $d=3$ balancing the two objectives.

In each enumeration area, 12 households were interviewed with an ideal partition of three items per optional module.⁵⁸ The assignment of optional modules must ensure that a sufficient number of households are assigned to each optional module. Household consumption was then estimated using the core module, the assigned module and estimates for the remaining optional modules.

⁵⁶ Items 'other' are often found to capture remaining items for a food category. Using the Rapid Consumption Methodology, this creates problems as 'other' will include different items depending on which optional module is administered. This can lead to double-counting after the imputation. Therefore, 'other' items are re-formulated and carefully assigned so that double counting cannot occur.

⁵⁷ Even with $d=1$, equal consumption share across modules is not maximized because among the modules with the same number of assigned items, the new item will be assigned to the module it's most orthogonal to; rather than to the module with lowest consumption share.

⁵⁸ Field work implementation aimed to achieve a balanced partition among optional modules but due to challenges in following the protocol exactly some enumeration areas are not completely balanced.

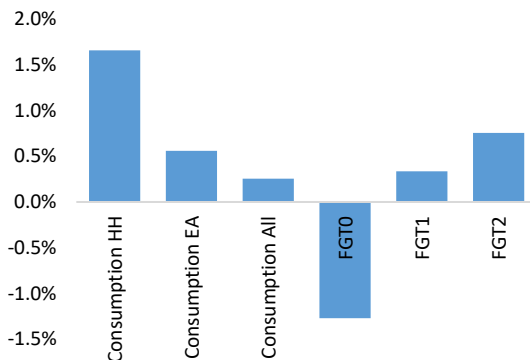
$$\hat{y}_i = y_i^{(0)} + y_i^{(k^*)} + \sum_{k \in K^*} \hat{y}_i^{(k)}$$

where $K^* := \{1, \dots, k^* - 1, k^* + 1, \dots, M\}$ denotes the set of non-assigned optional modules. Consumption of non-assigned optional modules is estimated using multiple imputation techniques taking into account the variation absorbed in the residual term.

Multiple imputation was implemented using multi-variate normal regression based on an EM-like algorithm to iteratively estimate model parameters and missing data. This technique is guaranteed to converge in distribution to the optimal values. An EM algorithm draws missing data from a prior (often non-informative) distribution and runs an OLS to estimate the coefficients. Iteratively, the coefficients are updated based on re-estimation using imputed values for missing data drawn from the posterior distribution of the model. The implemented technique employs a Data-Augmentation (DA) algorithm, which is similar to an EM algorithm but updates parameters in a non-deterministic fashion unlike the EM algorithm. Thus, coefficients are drawn from the parameter posterior distribution rather than chosen by likelihood maximization. Hence, the iterative process is a Monte-Carlo Markov –Chain (MCMC) in the parameter space with convergence to the stationary distribution that averages over the missing data. The distribution for the missing data stabilizes at the exact distribution to be drawn from to retrieve model estimates averaging over the missing value distribution. The DA algorithm usually converges considerably faster than using standard EM algorithms:

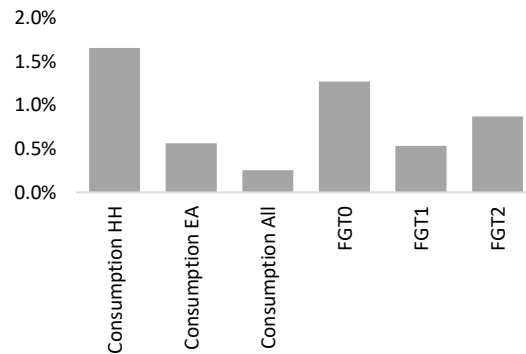
$$\hat{y}_i^{(k)} = \beta_0^{(k)} y_i^{(0)} + x_i^T \beta^{(k)} + u_i^{(k)}$$

Figure E.1: Relative bias of simulation results using the rapid consumption estimation.



Source: Authors' calculations based on the SLHS13.

Figure E.2: Relative standard error of simulation results using the rapid consumption estimation.



Source: Authors' calculation based on the SLHS13.

The performance of the estimation technique was assessed based on an *ex post* simulation using the Hergeiza data from SLHS13 and mimicking the Rapid Consumption methodology by masking consumption of items that were not administered to households. The results of the simulation were compared with the estimates using the full consumption from SLHS13 as reference. The simulation results distinguish between different levels of aggregation to estimate consumption.⁵⁹ The methodology generally does not

⁵⁹ The performance of the estimation techniques is presented using the relative bias (mean of the error distribution) and the relative standard error. The relative error is defined as the percentage difference of the estimated consumption and the reference consumption (based on the full consumption module, averaged over all imputations).

perform well at the household level (HH) but improves considerably already at the enumeration area level (EA) where the average of 12 households is estimated. At the national aggregation level, the Rapid Consumption methodology slightly over-estimates consumption by 0.3 percent. Assessing the standard poverty measures including poverty headcount (FGT0), poverty depth (FGT1) and poverty severity (FGT2), the simulation results show that the Rapid Consumption methodology retrieves estimates within 1.5 percent of the reference measure (Figure E.1). Generally, the estimates are robust as suggested by the low standard errors (Figure E.2).

Table E.1: Item partitions based on SLHS13 and the pilot in Mogadishu.

	Food Items				Non-food Items			
	Number of items	Share Hergeiza	Share Mogadishu	Share Mogadishu Imputed	Number of items	Share Hergeiza	Share Mogadishu	Share Mogadishu Imputed
Core	33	91%	64%	54%	26	76%	62%	52%
Module 1	19	3%	9%	16%	15	7%	9%	12%
Module 2	20	2%	14%	14%	15	5%	9%	12%
Module 3	15	2%	5%	6%	15	6%	8%	9%
Module 4	15	2%	8%	9%	15	6%	11%	15%

Source: Authors' calculations based on the SLHS13.

Durable consumption flow

The consumption aggregate includes the consumption flow of durables calculated based on the user-cost approach. The consumption flow distributes the consumption value of the durable over multiple years. The user-cost principle defines the consumption flow of an item as the difference of selling the asset at the beginning and the end of the year as this is the opportunity cost of the household for keeping the item. The opportunity cost is composed of the difference in the sales price and the forgone earnings on interest if the asset is sold at the beginning of the year.

If the durable item is sold at the beginning of the year, the household would receive the market price p_t for the item and the interest on the revenue for one year. With i_t denoting the interest rate, the value of the item thus is $p_t(1 + i_t)$. If the item is sold at the end of the year, the household will receive the depreciated value of the item while considering inflation. With π_t being the inflation rate during the year t , the household would obtain $p_t(1 + \pi_t)(1 - \delta)$ with the annual physical or technological depreciation

The relative bias is the average of the relative error. The relative standard error is the standard deviation of the relative error. The simulation is run over different household-module assignments while ensuring that each optional module is assigned equally often to a household per enumeration. The relative bias and the relative standard error are reported across all simulations.

rate denoted as δ assumed constant over time.⁶⁰ The difference between these two values is the cost that the household is willing to pay for using the durable good for one year. Hence, the consumption flow is:

$$(2) \quad y^d = p_t(1 + i_t) - p_t(1 + \pi_t)(1 - \delta)$$

By assuming that $\delta \times \pi_t \cong 0$, the equation simplifies to

$$(3) \quad y^d = p_t(i_t - \pi_t + \delta) = p_t(r_t + \delta)$$

where r_t is the real market interest rate in period t . Therefore, the consumption flow of an item can be estimated by the current market value p_t , the current real interest rate r_t , and the depreciation rate δ . Assuming an average annual inflation rate π , the depreciation rates δ can be estimated utilizing its relationship to the market price⁶¹:

$$(4) \quad p_t = p_{t-k}(1 + \pi)^k(1 - \delta)^k$$

The equation can be solved for δ obtaining:

$$(5) \quad \delta = 1 - \left(\frac{p_t}{p_{t-k}}\right)^{\frac{1}{k}} \frac{1}{(1 + \pi)}$$

Based on this equation, item-specific median depreciation rates are estimated assuming an inflation rate of 0.5 percent, a nominal interest rate of 2.0 percent and, thus, a real interest rate of 1.5 percent (Table D.7).

For all households owning a durable but did not report the current value of the durable, the item-specific median consumption flow is used. For households that own more than one of the durable, the consumption flow of the newest item is added to the item-specific median of the consumption flow times the number of those items without counting the newest item.⁶²

Deflator

Prices fluctuate considerably between regions, thus we calculated spatial price indices using a common food basket and spatial prices to make consumption comparable across regions. The Laspeyres index is chosen as a deflator due to its moderate data requirements. The deflator is calculated by analytical strata areas based on the price data collected by the HFS.

The Laspeyres index reflects the item-weighted relative price differences across products. Item weights are estimated as household-weighted average consumption share across all households before imputation. Based on the democratic approach, consumption shares are calculated at the household level. Core items use total household core consumption as reference while items from optional modules use the total assigned optional module household consumption as reference. The shares are aggregated at the national level (using household weights) and then calibrated by average consumption per module to arrive at item-weights summing to 1. The item-weights are applied to the relative differences of median

⁶⁰ Assuming a constant depreciation rate is equivalent to assuming a “radioactive decay” of durable goods (see Deaton and Zaidi, 2002).

⁶¹ In particular, π solves the equation $\prod_{i=t-k}^t (1 + \pi_i) = (1 + \pi)^k$

⁶² The 2016 HFS questionnaire provides information on a) the year of purchase and b) the purchasing price only for the most recent durable owned by the household.

item prices for each analytical strata. Missing prices are replaced by the item-specific median over all households. A large Laspeyres indicates a high price level deflating consumption stronger than a lower Laspeyres index. The resulting indices show the fluctuation of prices across regions (Table E.2).

Table E.2: Laspeyres deflator by analytical strata.

Analytical Strata	Deflator
All IDPs	0.923
Mogadishu	0.964
Garowe	0.862
Urban Bari and Mudug	1.107
Hergeiza	1.133
Urban Awdal, Sanaag, Sool and Togdheer	0.922
Rural Bari, Mudug and Nugaal	1.013
Rural Awdal, Sanaag, Sool, Togdheer and Woqooyi Galbeed	1.075

F. Labor Statistics

This appendix describes the construction of key labor statistics for Wave 1 of the Somali High Frequency Survey. The statistics presented in this note follow closely the international standard set as per the International Labour Organisation's (ILO) Key Indicators of the Labour Market (KILM), wherever possible and sensible given data restrictions. The KILM consist of the 17 most important indicators of labor market conditions, designed to allow for cross-country comparisons.

Preliminary Definitions

The labor market indicators at hand rely critically on a number of preliminary definitions that recur throughout the construction of the higher-level statistics. This section introduces the most important concepts.

Reference Periods

There are two key reference periods: (a) the *short observation period* defined as 7 days, and (b) the *long observation period* defined as 12 months. Following ILO guidelines, most statistics are reported for the short observation period.

Working Age and Age Groups

In the SHFS, working age is defined as all persons aged 15 to 64. This definition departs slightly from the ILO definition (15 years and older, no top limit). It is referenced against standardized age groups of five years, i.e. 15–19, 20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64. Youth labor is defined over age group 15–24, adult labor as 25+, and elderly labor as 55+. In addition, the data of Wave 1 of the High Frequency survey for Somalia (HFS SOM) includes information on children of the ages 10 to 14 engaging in work activities (ILO, 2013).

Labor Force Status

Labor force status comprises three mutually exclusive and exhaustive categories:

1. Employment,
2. Unemployment,
3. Outside the labor force or inactivity.

Persons in employment are those who are of working-age and engaged in activities producing goods or providing services for at least one hour during the past seven days. This includes persons working for pay or for profit and workers who contributed within the family establishment. Note that this definition deviates slightly from the international standard. This is related to the concept of 'contributing family member'. A contributing family member works in the family establishment, and is not remunerated directly, profits accruing to the family. The international standard counts contributing family members as 'employed' only if the family establishment is a market unit, i.e. it works for pay or profit of some kind. This definition excludes production for own-use from the 'employment' category. In contrast, the SHFS does not determine whether a contributing family member works in an own-use or in a market-unit family establishment.

Specifically, in Wave 1 of the SHSF, employment is constructed by determining if a person has engaged, over the previous 7 days (short reference period), or over the past 12 months (long reference period), in one of the following work activities:

1. Working as an apprentice
2. Working on the household’s farm, raising livestock, hunting or fishing
3. Conducting paid or commissioned work
4. Running a business of any size for oneself or for the household
5. Helping in a household business of any size.

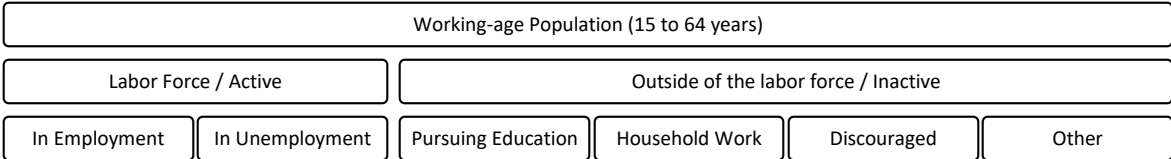
The definition further includes persons who are temporarily absent from their work due to training or working-time arrangements such as overtime leave, and paid interns. Note that the definition excludes household work.

Persons in unemployment are of those of working-age not in employment during the short reference period, but seeking employment within the past four weeks, and currently available to take up employment. In the HFS SOM data, unemployment is determined through the combination of three questions: the absence of employment as defined above and ascertaining whether the respondent has been looking for work in the past four weeks and is available to take up work (ILO, 2013).

Persons outside the labor force those of working-age who are neither employed nor unemployed, according to the preceding definitions. Persons outside the labor force are also referred to as ‘inactive’. But inactive should not be construed as idle, especially in the context of a developing economy. The Wave 1 data of the SHFS allows drawing important distinctions within the group of persons outside the labor force. This group comprises persons who work in the household, persons in education, and discouraged persons, among others (ILO, 2013).

The labor force is the sum of persons in employment and in unemployment. It is the counterpart of the group of inactive persons, i.e. the labor force plus the inactive sum up to the entire working-age population (ILO, 2013). visualizes the distinctions between labor force, inactivity, and employment status.

Figure F.1: Labor force.



Labour Market Indicators

This section lays out the indicators presented in this document. Each indicator is presented as the overall average for the sample as well as disaggregated by region, urban/rural, and IDP camps, gender, and consumption quintile, allowing for a detailed analysis of the labor market situation in Somalia.

Labor Force Participation and Inactivity

The labor force participation rate (LFPR) is the ratio of the labor force to the working age population, expressed as percentages. That is,

$$LFPR_{t,a,s} = \frac{LF_{t,a,s}}{POP_{t,a,s}},$$

where LF is labor force, POP is working age population, t is the reference period, a refers to age groups, and s to sex. The LFPR provides an indication of labor supply relative to the population at large (Bourmpoula, Kapsos, Pasteels, 2013).

The Inactivity Rate (IR) is the number of inactive persons of working age as a percentage of the working-age population. As such, it is the counterpart to the LFPR, given by 100 minus LFPR. Of particular interest are three groups: Household workers, pursuing education, and discouraged, inactive persons who state they are not looking for work because of unavailability of jobs. All three are determined by asking respondents why they have not been looking for a job in the past four weeks. The size of the inactive population may change over time. For example, as perceived employment prospects change, some people resume looking for work, thereby entering the labor force (ILO, 2015).

Employment, Unemployment, Hours of Work

The employment-to-population ratio (ER) is proportion of the working-age population that is employed, i.e.

$$ER_{t,a,s} = \frac{EMP_{t,a,s}}{POP_{t,a,s}},$$

with EMP referring to the number of persons in employment, and all other variables defined as before. The employment-to-population ratio is a way to assess the ability of the economy to create employment. Note that in the context of the low-income countries, the ER sometimes *decreases* in times of growth and development due to concurrent improvements in education and training opportunities (ILO, 2015).

The unemployment rate is the number of persons in unemployment as a percentage of the total labor force. With unemployment defined as above, the unemployment rate (UR) is given by

$$UR_{t,a,s} = \frac{LF_{t,a,s} - EMP_{t,a,s}}{LF_{t,a,s}}.$$

Youth Unemployment refers to unemployed persons in the 15-to-24 age-bracket: This is figure is complemented by another statistic: The number of 15-to-24-yearolds not in employment, education or training (NEET) as a percentage of the entire youth population. The NEET is a key metric for determining the state of the economy's youth and their prospects. The NEET is determined in the HFS SOM by means of matching the youth population according to whether they are currently in employment, or currently pursuing education.

Long-term Unemployment refers to persons unemployed for 12 months or longer: Two metrics are of interest: first, the long-term unemployment rate; and, second, the incidence of long-term unemployment, that is, the long-term unemployed as a percentage of the total unemployed. Where unemployment as such is not necessarily and indicator of wellbeing or the lack thereof, long-term unemployment can be

considered to have a closer relation with well-being in many contexts (ILO, 2013). Long-term unemployment is determined in the HFS SOM by comparing those who state having worked at some point in their lives while not having worked in the past 12 months.

Hours of work refers to the total hours of work spent on any work activity during the past 7 days: This is the definition of *actual hours worked* per week, which includes 'related hours', e.g. cleaning of instruments, 'down time', and 'resting time'. Hours worked is central in so far as it is the starting point for number of other indicators, such as time-related underemployment (persons working less than they desire) – for which working hours of 20 or less may be indicative –, part-time employment, and over-employment (persons working 49 hours or more per week) (ILO, 2013). In the HFS SOM, respondents self-report hours worked. Note that this goes both for hours in employment and hours worked in the household. Both metrics are censored at 100 hours per week.

Employment by Status, Sector, and Occupation

Status in Employment refers to two broad categories of the employed population: employees or salaried workers, and self-employed workers. The self-employed are further distinguished as

- a. employers: self-employed with employees,
- b. own-account workers: self-employed without employees,
- c. contributing family workers,
- d. Workers not classifiable by status: workers who cannot be classified in one of the preceding categories, e.g. due to lack of available information.

Status in employment speaks both to working conditions as well as the state of development of the economy. A large proportion of own-account workers is indicative of a less developed economy, a large agriculture sector, and low growth in the formal economy. Specifically, a large share of contributing family workers suggests low levels of development. In addition, own-account and contributing family workers, typically lacking formal work arrangements, are considered to be in *vulnerable employment*. This group is less likely to have conditions of decent employment as defined by the Millennium Development Goals (ILO, 2013). In the HFS SOM, status in employment is determined by respondents' direct self-classification into one of the categories.

Employment by sector: In line with the *International Standard Industrial Classification of all Economic Activities* (ISIC) Revision 4 of 2008, sectors are defined as

1. Agriculture,
2. Industry,
3. Services, and
4. Sector not adequately defined.

Employment by sector provides an insight into the stage of development of the economy. Economic development has historically been associated with fundamental shifts in the allocation of the labor force, from agriculture, towards industry, and eventually services (ILO, 2015).

In the HFS SOM, sectors are collapsed from a list narrower categories as defined by ISIC, Rev.4 2008, according to which each respondent is classified:

- A. Agriculture, forestry and fishing
- B. Mining and quarrying
- C. Manufacturing
- D. Electricity, gas, steam and air conditioning supply
- E. Water supply; sewerage, waste management and remediation activities
- F. Construction
- G. Wholesale and retail trade; repair of motor vehicles and motorcycles
- H. Transportation and storage
- I. Accommodation and food service activities
- J. Information and communication
- K. Financial and insurance activities
- L. Real estate activities
- M. Professional, scientific and technical activities
- N. Administrative and support service activities
- O. Public administration and defence; compulsory social security
- P. Education
- Q. Human health and social work activities
- R. Arts, entertainment and recreation
- S. Other service activities
- T. Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use
- U. Activities of extraterritorial organizations and bodies
- O. Not classified/No occupation

In this classification, category A corresponds to agriculture, categories B-F to industry/manufacturing, and G-U to services (UN, 2008).

Employment by Occupation: The *International Standard Classifications of Occupations of 2008 (ISCO08)* defines the major employment groups, along with suggested levels of skill, as presented in Table F.1.

ISCO skill levels are defined as: (1) primary education; (2) first stages of secondary education; (3) completed secondary education, and training not equivalent to a university degree; (4) university degree or equivalent. Employment by Occupation is informative of levels and composition of skills in the economy (ILO, 2008). In the HFS SOM, ISCO-08 occupations are determined via self-classification of respondents aged 15 and older.

Table F.1: ISCO 08.

ISCO08 Major Groups	ISCO Skill Level
1. Managers	3 + 4
2. Professionals	4
3. Technicians and Associate Professionals	3
4. Clerical support workers	2
5. Service and sales workers	2
6. Skilled agricultural, forestry and fishery workers	2
7. Craft and related trade workers	2
8. Plant and machine operators and assemblers	2
9. Elementary occupations	1
10. Armed forces occupations	1+ 2 + 4
11. Non-classifiable workers.	-

Educational Attainment and Illiteracy

Levels of education and basic literacy are a key metric for the human capital supply in the labor market.

Literacy is the ability to read and write a simple sentence about every-day life: In the HFS SOM the ability to read and the ability to write are assessed in two separate questions in order to avoid confusion in regards to the concept (ILO, 2015).

The five categories of educational attainment are: No education/Less than primary, primary, secondary, tertiary, and other. This definition is in line with the *International Standard Classification of Education* (ISCED) of the UN. Note that ‘primary’ includes primary education as well as lower, incomplete secondary; ‘secondary’ includes upper secondary and non-tertiary post-secondary education; and tertiary covers all levels of tertiary education (UNESCO, 2012). In the HFS SOM, educational attainment is determined by means of self-classification of respondents in levels of schooling in line with the education system in Somalia. Of note, the ‘other’ category includes non-formal education as well as the option ‘other’ as chosen by respondents. The ‘tertiary’ category contains first university degree, master’s degree, PhD, and post-secondary technical education.

G. Remittances

In the Wave 1 of the SHFS, data on remittances was collected at the household level, as part of the household characteristics module of the questionnaire. The primary reference period for the receipt of remittances is the past 12 months. Five main questions determine the nature and scope of remittances received:

1. If the household received remittances in the past 12 months or not,
2. Amount and currency of remittances receipt in past 12 months,
3. If the household received remittances in 12 months prior to the past 12 months,
4. Change (same/more/less) in the value of remittances between the two periods,
5. Reason for this change.

Around 22% of the households (1,905 out of 4,117) reported receiving remittances in the past 12 months. The cleaning process of this data was done in a three-step process. First, corrections were introduced to the exchange rate selected (Table D.3). Then, the value of remittances was converted to US\$. Finally, the following cleaning rules were used to identify and replace outliers:

- Rule 1: Records where the respondent did not know or refused to respond if the household had received remittances, were replaced with the mean value, considering all the recipients and non-recipients.
- Rule 2: Outliers were identified and replaced with the median for the respective analytical strata. This includes values in the top and bottom 1% of the overall cumulative distribution.