



# Living income gap of smallholder farmers in southern Ethiopia

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RAISE-FS Working paper #013



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Resilient Agriculture for Inclusive and Sustainable Ethiopian Food Systems (RAISE FS)  
Addis Ababa, April 2024

RAISE-FS is funded by the Embassy of the Kingdom of the Netherlands in Addis Ababa (grant number 4000004753).  
RAISE-FS is a programme hosted by Stichting Wageningen Research Ethiopia

RAISE-FS Working paper #013





Teklu B., Abate L., Teshome A., Glaser J., and Schaap M. 2024. Living income gap of smallholder farmers in southern Ethiopia. Stichting Wageningen Research Ethiopia, Addis Ababa. SWRE-RAISE-FS-24-028.

The findings from the study conducted in three *woredas* of Southern Ethiopia indicate that smallholder farmers' actual income is significantly lower than the living income benchmark. It was observed that income from crops constitutes a substantial portion of the total income, while income from livestock remains relatively minimal. Furthermore, the study revealed that remittances play a significant role in supplementing household income in certain *woredas*. The working paper emphasises the existence of a substantial living income gap across all three *woredas*, underscoring the necessity to improve the actual income of smallholder farmers to narrow this gap.

Keywords: living income, benchmarking, gap, food system, smallholder farmers, Ethiopia

This working paper can be downloaded for free at: <https://doi.org/10.18174/656192>

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# Contents

<b>Preface</b>	<b>7</b>
<b>List of abbreviations and acronyms</b>	<b>8</b>
<b>Abstract</b>	<b>9</b>
<b>1 Introduction</b>	<b>10</b>
<b>2 Methodology</b>	<b>12</b>
2.1 Description of the study area	12
2.2 Sampling design	13
2.3 Data collection	13
2.4 Data analysis	13
<b>3 Results</b>	<b>14</b>
3.1 Farm size and livestock herd size	14
3.2 Sources of income	15
3.2.1 Income from Livestock	15
3.2.2 Income from crops	15
3.2.3 Remittances	16
3.2.4 Off-farm income	16
3.2.5 Share of Income Sources	17
3.3 Living income gap	17
<b>4 Conclusion and recommendation</b>	<b>19</b>
4.1 Conclusion	19
<b>References</b>	<b>20</b>
<b>Annex III</b> Error! Bookmark not defined.	

## List of tables and figures

Table 1 Income from livestock and livestock products for 2022/23 cropping season.....	15
Table 2 Income from crops for 2022/23 cropping season .....	16
Table 3 Income from remittance for the 2022/23 fiscal year.....	16
Table 4 Off-farm income for the 2022/23 fiscal year .....	17
Figure 1 Map of the study area .....	12
Figure 2 The average farm size (top) and livestock herd size (bottom) in the three study <i>woredas</i> .....	14
Figure 3 Share of crops, livestock and off-farm income to the total income for the three <i>woredas</i> .....	17
Figure 4 Living income gap for the three <i>woredas</i> of the study area .....	18

# Preface

Resilient Agriculture for Inclusive and Sustainable Ethiopian Food Systems (RAISE-FS) is a four-year program funded by the Dutch Embassy in Addis Ababa and hosted by Stichting Wageningen Research Ethiopia based in Addis Ababa, to bring about transformation in the Ethiopian food system. RAISE-FS will develop and implement a demand-driven and interdisciplinary approach to Research for Food System Transformation (R4FST) and as such contribute to the Government of Ethiopia's transformational agenda.

RAISE-FS adopts the food system approach as a Theory of Change (ToC), which helps in analysing the drivers and food system activities that contribute to the transformation of the food system by addressing leverage points, resulting in increased productivity, enhanced value chain performance, and improved human nutrition for food security while minimizing environmental impact and ensuring social inclusion.

The project aims to leverage transformation in Ethiopian food systems, covering the spectrum from food-insecure households and regions, to better-off households that are food-secure and can realize production surpluses, towards commodity commercialization efforts that contribute to rural and urban consumption demands and export.

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## List of abbreviations and acronyms

AME	Adult Male Equivalent
ETB	Ethiopian Birr
CSA	Central Statistical Agency
FAO	Food and Agricultural Organizations of the United Nations
FGD	Focused Group Discussion
KII	Key Informant Interview
NGO	Non-Governmental Organization
PPP	Purchasing Power Parity
RAISE-FS	Resilient Agriculture for Inclusive and Sustainable Ethiopian Food Systems
SDG	Sustainable Development Goals
SNNPRS	Southern Nation Nationalities and Peoples Regional State
SPSS	Statistical Package for Social Sciences
SWR	Stichting Wageningen Research
TLU	Topical Livestock Unit
USDA	United States Department of Agriculture
WCDI	Wageningen Centre for Development Innovation, Wageningen University & Research
WHO	World Health Organizations
WUR	Wageningen University & Research



# Abstract

There is little information on the living income gap assessment by comparing smallholder farmers' yearly actual income to the living income benchmark, even though this may be done by comparing farmers with lower resource endowments to farmers with greater resource endowments. Understanding the disparity in income amongst rural households is crucial as it empowers stakeholders to take appropriate measures to bridge these differences. A household survey was carried out with a total of 328 farm households using a structured questionnaire. Data for the study were collected through the survey from rural households and their immediate surroundings on all the income sources of smallholder farmers. The real income was expressed per adult equivalent per day (AE/day). The annual real income for Hawassa Zuria *woreda* was 88.8 (1.71) ETB (US\$) /AME/day; for Gumer *woreda* it was 60.3 (1.16) ETB(US\$) /AME/day; and for Boloso Bombe it was 67 (1.29) ETB(US\$) /AME/day. These are all below the living income benchmark. The income from crops accounts for about half of the total income in Gumer and Boloso Bombe *woredas*. In Hawassa zuria income from crops accounted for three-fourths of the total income. The income from livestock did not vary among the three *woredas* and it accounted for less than 12% of the total income. Boloso's overseas remittances comprise 93% and other off-farm 46.2%; in Gumer *woreda* local remittances make up 96.3% whereas other off-farm remittances comprise 55.8%. On the other hand, remittance income was essentially nonexistent in Hawassa Zuria *woreda*, where off-farm revenue other than wages and salaries, made up 71.3% of total off-farm revenue. While the living income gap in Hawassa zuria was 73%, in Gumer it was found to be 81 %. In Boloso Bome *woreda* the living income gap was slightly higher than that of Boloso Bome and was found to be 78%. This suggests that for all three *woredas*, farmers' actual revenue covers between 19% - 27% of the income needed for a decent life. Thus, a huge effort to enhance the real income of smallholder farmers is required to bridge the large gap between the living income benchmark and the current income in the study area.

# 1 Introduction

Eradicating poverty and ending hunger are the first two Sustainable Development Goals (SDGs) that are intended to be accomplished by 2030 (UN, 2015). As it is vital to improving food security and creating jobs, the agricultural sector is closely related to SDGs (Otsuka, 2013). To ensure a better food supply, increasing agricultural output and diversifying the uses of agricultural land could be part of a plan to end hunger (Smyth et al., 2015). Ethiopia and other low- and middle- income countries have made significant efforts to reduce poverty, but the percentage of people living below the poverty line remained at 23% in Ethiopia (World Bank, 2022). Increasing production and productivity have been the major priority area in Ethiopia with the aim to bridge the yield gap and ensure food and nutrition security.

The worldwide or extreme poverty level for low-income nations was set in 2017 at Purchasing Power Parity (PPP) of 2.15 US dollars per capita per day (World Bank, 2022). Based on the national poverty thresholds of the 15 poorest economies in the world, it was changed in 2017 to account for growing price levels (World Bank, 2022). The Worldwide poverty line has served as a gauge for evaluating the effectiveness of initiatives to combat poverty (Debebe & Zekarias, 2020). However, the indicator is very broad and does not take country or region-specific realities into account. For hired workers, a more context-specific poverty line known as the living wage was developed (Anker, 2008). However, this indicator is not applicable to self-employed farm households. Because of that, a new indicator, called living income benchmarking, was introduced to measure a decent standard of living for East African smallholder farming households (van de Ven et al., 2021).

Because few indicators can be used to determine whether the income of farming households is enough to afford a decent living, a recent study by van de Ven et al. (2021) developed the idea of using a living income to benchmark the income of self-employed smallholder farmers in East Africa. The cost of a healthy diet, decent housing, and other non-food expenses for things like health care, education, transportation, and clothing are all taken into account when calculating a living income, which is defined as enough money to support a respectable standard of living for every member of the household (Komives et al., 2015). A living income benchmark, in contrast to the poverty line, is more context-specific and more accurately captures the true cost of living in the area. It answers the question: 'How much does a typical household in a particular place need to earn from all income sources in order to achieve a decent standard of living?' (van de Ven et al., 2021) This creates an opportunity to compare living income benchmarks to the total annual household incomes of agricultural households. The living income benchmark would help to calculate the living income gap and it is helpful in understanding how much more farming households need to earn to achieve a living income (IDH, 2023; Oxfam International, 2021).

In relation to that, RAISE-FS, a Dutch-funded project, is working on food system transformation in the food insecure, high potential and commercial food systems. To be able to find whether the project contributes to closing the living income gap, the living income gap was assessed in three food systems of three *woredas* (Hawassa zuria, Boloso Bombe, and Gumer) found in southern Ethiopia.

A first step in closing the living income gap is calculating the living income benchmark in southern Ethiopia. This was done in a previous report (<https://doi.org/10.18174/654532>). That was followed by assessing the annual real income of farm households in the three food systems of southern Ethiopia. The living income benchmark was calculated for the same study area where the real annual income of the farm households was collected. The living income gap was calculated by subtracting the mean total household income from the living income benchmark for small-scale food producers in the intervention areas of RAISE-FS.

The study was guided by the following specific objectives:

- To obtain insights into the annual real income and the main sources of income of smallholder farmers of the three *woredas*;

- To obtain insights on how the real income varies across *woredas*;
- To assess the living income gap by comparing the living income benchmark with real income in the target food systems.

## 2 Methodology

### 2.1 Description of the study area

The study was conducted in Sidama and Southern Nation Nationalities and Peoples Regional State (SNNPRS) of Ethiopia. From the Sidama region, one *woreda* (Hawassa zuria) was selected. This *woreda* was chosen because it has a commercial food systems typology. From SNNPR, two *woredas* (Bolosso Bombe and Gumer) were selected as they represent food insecure and high potential food system typologies, respectively. Within each *woreda*, two *woredas* where a baseline survey for the RAIS-FS project had already been conducted were chosen. As shown in Figure 1 below, whereas Jara Damuwa and Lebu Korom were selected from Hawassa zuria *woreda*, Bombe zuria, Ajora/Gedela were chosen from Bolosso Bombe *woreda*. Aselecha and Bordona Denber are the two *woredas* selected from Gumer *woreda*. It is worth noting that the living income benchmark was calculated at *woreda* level.

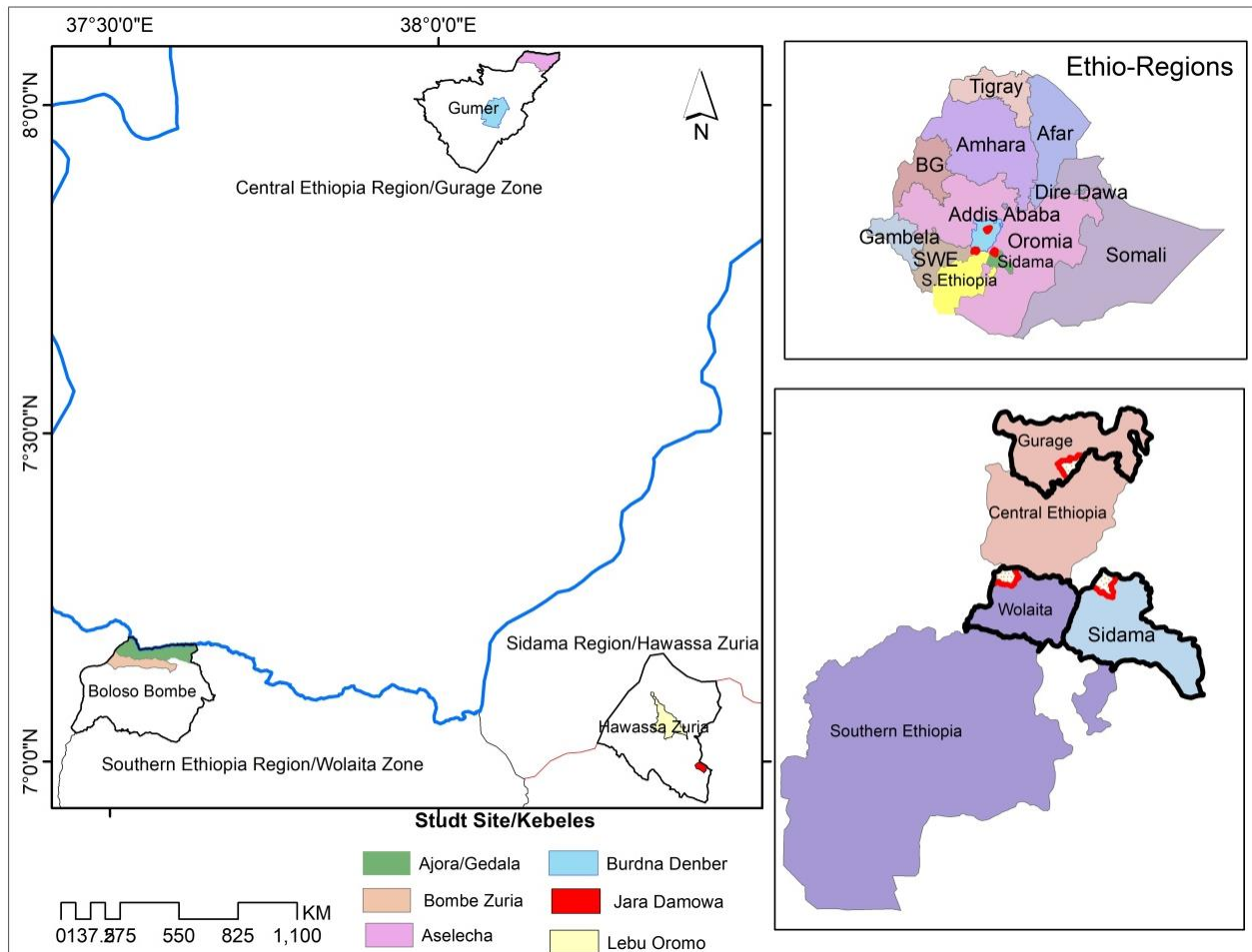


Figure 1 Map of the study area

## 2.2 Sampling design

This study employed a multi-stage purposive and random sampling method. The Hawassa Zuria, Gumer and Boloso Bombe *woredas* of the study areas were purposefully chosen because they are the sites where the project is being implemented. As noted earlier, a total of six *woredas* (two rural *woredas* from each *woreda*) were selected for the household survey. Altogether, a total of 328 households (109 in Hawassa zuria, 108 in Gumer, and 111 in Boloso Bombe *woredas*) participated in the survey. Out of the total sampled households, 308 of them also took part in the RAISE-FS project baseline survey, while the remaining 20 households participated in the innovation piloting. The respondents for the baseline survey were selected using random sampling techniques. It is noteworthy that the household survey was administered to determine the real income of households involved in innovation/pilot trials as well as those who participated in the baseline survey.

## 2.3 Data collection

The primary data-gathering tool used for the study was a household survey, in the form of a structured questionnaire. The questionnaire was designed to collect data on household characteristics (family size, age, and gender), resource endowment (farm size, livestock herd size), income sources (crops, livestock off-farm), types of crops grown and their production. Enumerators who can speak the languages of the study areas (i.e. Sidamigna, Wolaytegna and Guragigna) were recruited and trained for two days on the contents of the questionnaire and on how to collect data. The data were collected using the Kobo toolbox. Livestock herd size was converted to topical livestock unit (TLU), based on the conversion factor used to estimate tropical livestock unit (Storck and Doppler, 1991). The questionnaire was developed and adjusted based on the national income survey used by the Central Statistical Agency (CSA, 2016)

## 2.4 Data analysis

The data collected through the survey questionnaire were analysed using the Statistical Package for Social Sciences (SPSS version 20) and Microsoft-excel 2013. The results were then summarized and presented using means, percentages, tables, and graphs. The worth of assets (e.g., home, land, cattle herd) was not taken into consideration while calculating the annual revenue. All of the harvest in the 2022/2023 cropping season was multiplied by its market price at *woreda* capital town to determine crop revenue. The self-reported number of livestock sold in one year was multiplied by their market values to determine livestock income. The survey also yielded information on the off-farm revenue collected during the agricultural season of 2022/2023.

Finally, the living income gap was calculated as described by (COSA and KIT, 2020).

$$\text{Living income gap} = \left( \frac{\text{mean living income benchmark} - \text{Mean total household income}}{\text{mean living income benchmark}} \right) * 100$$

## 3 Results

### 3.1 Farm size and livestock herd size

The total farm size per household showed a significant difference among the three *woredas* of the study area (Figure 2). With an average farm size of 1.24 ha, farmers in Gumer *woreda* had significantly larger farm sizes than those in Hawassa zuria (0.91 ha) and Boloso Bombe (0.71 ha) *woredas*. However, only farmers in Gumer had a significantly larger number of livestock (3.9 TLU) than those in Boloso Bombe (2.3 TLU) and the herd size Hawassa Zuria (3.1 TLU) did not significantly vary between the two *woredas*.

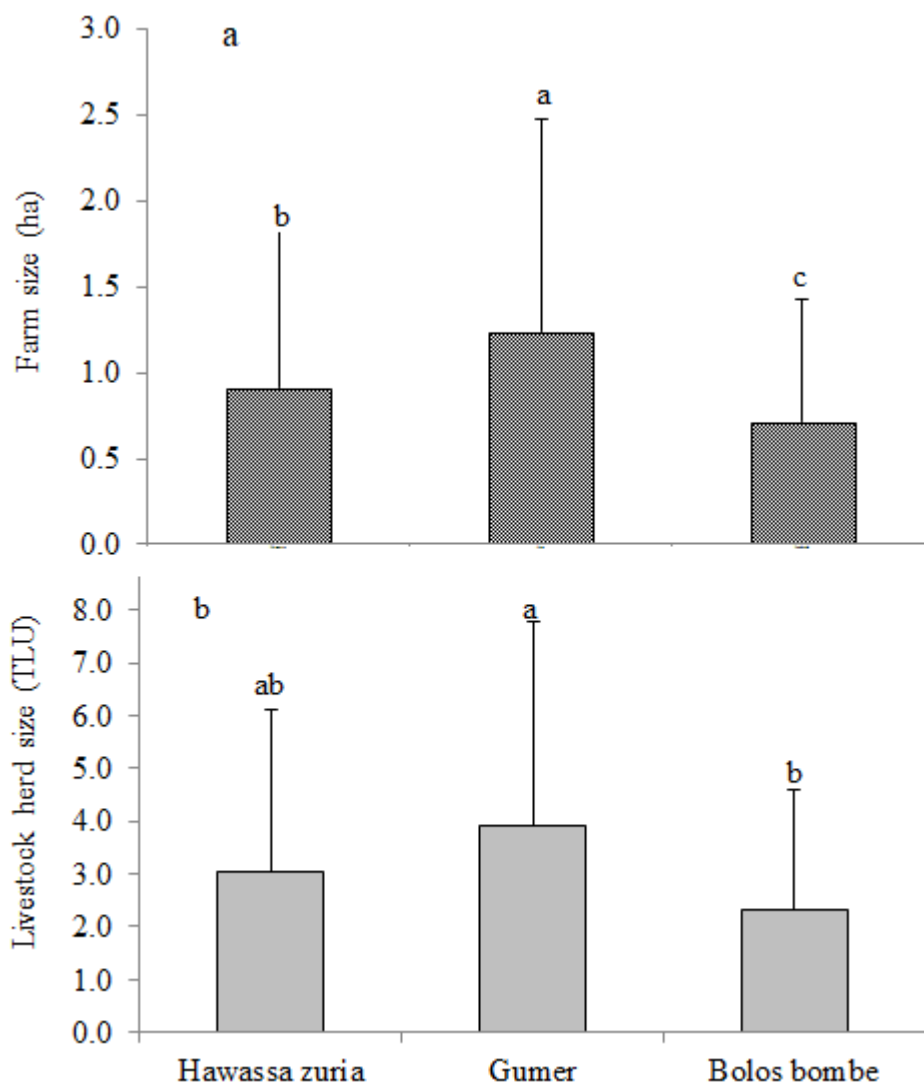


Figure 2 The average farm size (top) and livestock herd size (bottom) in the three study *woredas*

Note: Different letters in the top of each bar indicate a significant level at  $p < 0.05$



## 3.2 Sources of income

### 3.2.1 Income from Livestock

As shown in Table 1 below, it was found that smallholder farm households in the three *woredas* generated revenues from a variety of animal production categories. In all three *woredas*, income from cattle accounted for more than half of the livestock income. That was followed by dairy products such as milk, butter, and cheese. When compared to the income from livestock in Boloso bombe *woredas*, the overall income from livestock in the Hawassa Zuria and Gumer *woredas* was almost twice as high. For the Hawassa zuria *woreda*, the daily income per adult male equitant (AME) was 9.9 (0.19) ETB (US\$), while it was 6.6 (0.13) ETB (US\$) /AME/day for both Gumer and Boloso Bombe *woredas*.

Table 1 Income from livestock and livestock products for 2022/23 cropping season

Description	ETB(US\$)/RH/year (mean)		
	Hawassa Zuria	Gumer	Boloso Bombe
Cattle	8,957 (172.5) (50%)	5,792 (111.5) (57%)	8,570 (165.5) (49%)
Small ruminant	2,443 (47.0) (14%)	1,232 (23.7) (12%)	865 (16.7) (5%)
Chicken	114 (2.2) (1%)	394 (7.5) (4%)	0.0 (0%)
Equine	1,860 (35.8) (10%)	417 (8.0) (4%)	692 (13.3) (4%)
Cattle products	4,152 (79.9) (23%)	2,257 (43.4) (22%)	1,972(37.9) (21%)
Fish	148 (2.8)(1%)	0.0(0%)	0.0 (0%)
Honey	75 (1.4) (0.5%)	48 (0.9) (0.1%)	105 (2.0) (1%)
Total	17,749 (341.7) (100%)	10,139 (195.2) (100%)	12,204 (335) (100%)
	Total income from livestock (ETB (US\$)/AME/day)		
	9.9 (0.19)	6.8 (0.13)	6.8 (0.13)

1 US\$ = 51.945 ETB in 2022/23; values in parenthesis is in US\$

### 3.2.2 Income from crops

The contribution of different types of crops to the farm household income varied among the three *woredas* (see Table 2). In Gumer, cereals were the main contributors to the income from crop production (35%). In Hawassa zuria, the main income came from vegetables (29%) and cereals (27%) and in Boloso bombe, most income from crop production came from tuber production (30%). While food and malt barley were the main cereals in Gumer *woreda*, maize was the main grain in Hawassa Zuria and Bolos bombe *woredas*.

In Hawassa Zuria *worea*, vegetables contributed 29% of crop income, compared to less than 10% and 15% in Gumer Boloso Bombe *woredas*, respectively. Green pepper, head cabbage, and Ethiopian kale were the main vegetables grown in Hawassa zuria. It was learned that the availability of irrigation in the Hawasa Zuria area made growing vegetables a source of revenue for the *woreda*. Sugarcane was grown as a commercial crop in Hawassa Zuria *woreda*, eucalyptus in Gumer, and coffee and ginger in Boloso Bombe *woredas*. The daily income per adult male equitant for the Hawassa Zuria *woreda* was 59.2 ETB (US\$ 1.14), compared to 30.6 ETB (US\$ 0.59) for Gumer and 20.8 ETB (US\$ 0.40) ETB (US\$) for Boloso Bombe *woredas*. This suggests that farming households in Hawassa Zuria received greater money from crop production than in Gumer and Boloso Bombe *woredas*.

Table 2 Income from crops for the 2022/23 cropping season

Description	US\$/RH/year (mean)		
	Hawassa Zuria	Gumer	Boloso Bombe
Cereals	27,736 (534) (27%)	16,153 (311) (35%)	8,310 (160) (22%)
Pulses	14,907 (287) (14%)	8,674 (167) (19%)	4,259 (82) (11%)
Root crops	11,271 (217) (11%)	10,180 (196) (22%)	11,271 (217) (30%)
Fruits	9,921 (191) (10%)	1,091 (21) (2%)	5,558 (107) (15%)
Vegetables	30,229 (582) (29%)	3,480 (67) (8%)	5,298 (102) (14%)
Cash crops	9,453 (182) (9%)	6,489 (125) (14%)	2,647 (51) (7%)
Total	103,516 (1,993) (100%)	46,071 (887) (100%)	37,345 (719) (100%)
Total income from crops (ETB (US\$)/AME/day)			
	59.2 (1.14)	30.6 (0.59)	20.8 (0.40)

1 US\$ = 51.945 ETB in 2022/23

### 3.2.3 Remittances

In the Hawassa Zuria and Gumer *woredas*, local remittances accounted for more than 83.3% and 96.3% of the total income from remittance respectively. Contrary to that, in Boloso Bombe, income from local remittances only accounted for 6.3% of the total income from remittance in the *woreda* (see Table 3). This implies that farmers in Gumer *woreda* received almost all remittances from inland while those in Boloso Bombe obtained theirs from overseas. The total daily remittance per adult male equivalent in the Hawassa zuria *woreda* was almost negligible while it was 7.8 ETB (US\$ 0.15)/AME/day in the Gumer and 13.5 ETB (US\$ 0.26) /AME/day in the Boloso Bombe *woredas*.

Table 3 Income from remittance for the 2022/23 fiscal year

Remittance	Hawassa Zuria	Gumer	Boloso Bombe
	US\$/RH/year		
Local remittance	234 (4.5) (83.3%)	11,063 (213) (96.3%)	1,537 (29.6) (6.3%)
International remittance	47 (0.9) (16.7%)	426 (8.2) (3.7%)	22,926(441.4) (93.7%)
Total	280.5 (5.4) (100%)	11,489 (221.2) (100%)	24,463 (471) (100%)
Remittance	ETB (US\$) /AME/day		
	0.16 (0.003)	7.8 (0.15)	13.5(0.26)

### 3.2.4 Off-farm income

Among the off-farm activities, salary and other off-farm activities such as petty trade, handicraft, land rent, house renting, and livestock rent programs constituted more than 90% of the off-farm income in Hawassa Zuria *woreda* while wage and other off-farm activities were the main forms of off-farm income in Gumer and Boloso Bombe *woredas* (see Table 4 ). The daily off-farm income per adult male equivalent in the Hawassa Zuria *woreda* was 18.7 ETB (US\$ 0.36), while it was 7.8 ETB (US\$ 0.15)/AME/day in Gumer, and 13.5 ETB (US\$ 0.26)/AME/day in Boloso Bombe *woredas*.

Table 4 Off-farm income for the 2022/23 fiscal year

Other off farms	Hawassa Zuria	Gumer	Boloso Bombe
	US\$/RH/year		
Salary	6,840 (131.7) (20.9%)	1,558 (30.0) (13.6%)	4,405(84.8) (18.5%)
Wage	1,922 (37.0) (5.9%)	3,527 (67.9) (30.7%)	7,298(140.5) (30.6)
Safety net	634 (12.2) (1.9%)	0.0 (0.0%)	1,132(21.8) (4.7%)
other off-farm	23,363 (449.8) (71.3%)	6,399 (123.2) (55.7%)	11,032(212.4) (46.2%)
Total	32,759 (630.7) (100%)	11,484(221.1) (100%)	23,866(459.5) (100%)
Off-farm income	ETB (US\$) /AME/day		
	18.7 (0.36)	7.8 (0.15)	13.5 (0.26)

1 US\$ = 51.945 ETB in 2022/23

### 3.2.5 Share of income sources

In Gumer and Bolos Bombe *woredas*, income from crop farming contributed for respectively 51% and 31% of the total income. In Hawassa Zuria *woreda*, the contribution of crop farming was much larger, and it contributed to more than three-fourths of the total income (Table 4). In the Boloso Bombe *woreda*, off-farm income accounted for 59% of total income, compared to 38% and 22% for the Gumer and Hawassa zuria *woredas*, respectively. Income from livestock farming was around 10% of the total income for all *woredas*.

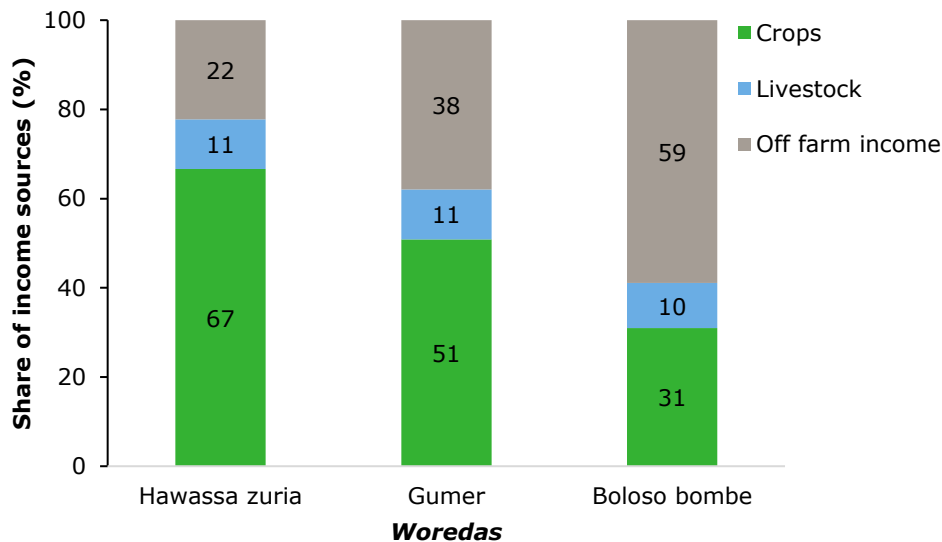


Figure 3 Share of crops, livestock and off-farm income to the total income for the three *woredas*

## 3.3 Living income gap

Based on the previously reported living income benchmarking, a daily income of 6.34 US\$ AME in rural Hawassa zuria, 6.2 US\$ AME at Gumer and 5.76 US\$ per AME at Boloso Bombe *woredas* is needed for a household to live a decent living (<https://doi.org/10.18174/656192>). The real income for the three *woredas* was less than 2 US\$ per AME per day (Figure 3). The living income gap in Hawassa zuria was 73% while it was 81% and 78% in Gumer and Boloso Bombe *woredas*, respectively. This implies that the real income farmers currently generate accounts for less than 27% to 19% of their living income for all three *woredas*.

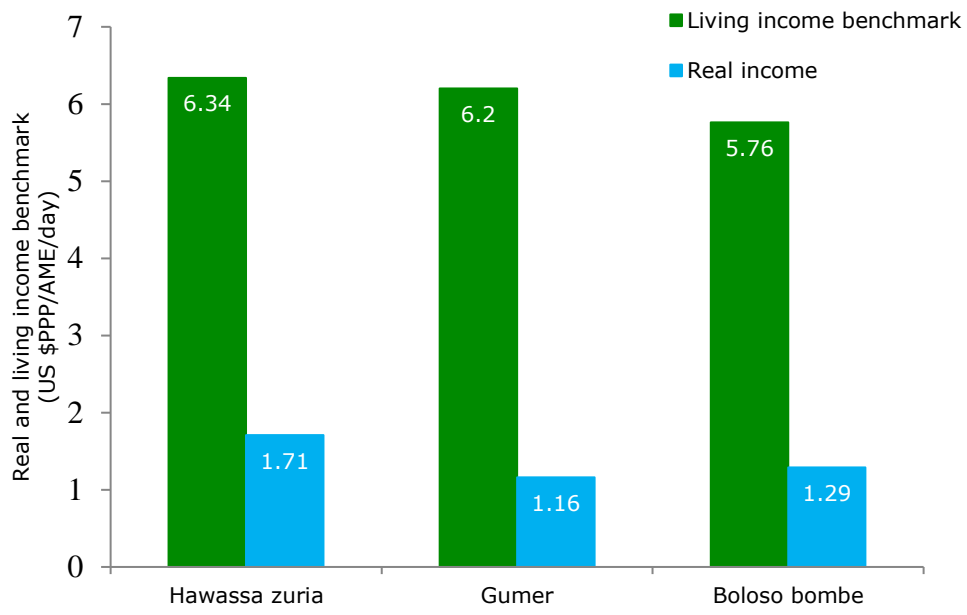


Figure 4 Living income gap for the three *woredas* of the study area

## 4 Conclusion and recommendation

### 4.1 Conclusion

The annual real income per farm household varied among the three study *woredas*. Farmers in Hawassa Zuria and Gumer *woredas* earn more of their income from crops while that in Boloso bombe from off-farm activities. Remittance was thus found to be the major off-farm income contributor in Gumer and Boloso bombe *woredas*. The contribution of livestock to total income did not vary among the three *woredas*. The real income in Hawassa Zuria covered only 27% of the income needed for a decent life. The current income was 3.7 times lower than the living income benchmark. In Boloso bombe, the current income covers 22% of the current income needed for a decent life and the current income is 4.5 times lower than the living income benchmark. The income gap was the biggest in Gumer. In this *woreda*, the current income covers only 19% of the income needed for a decent life and the income was 5.3 times lower than the living income benchmark.

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Resilient Agriculture for  
Inclusive and Sustainable  
Ethiopian Food Systems  
(RAISE FS)

[www.raise-fs.org](http://www.raise-fs.org)

Stichting Wageningen  
Research Ethiopia

[www.wur.eu](http://www.wur.eu)

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Resilient Agriculture for Inclusive and Sustainable  
Ethiopian Food Systems (RAISE-FS) is a four-year  
program funded by the Dutch Embassy in Addis Ababa  
and hosted by Stichting Wageningen Research Ethiopia  
based in Addis Ababa, to bring about transformation in  
the Ethiopian food system. RAISE-FS will develop and  
implement a demand-driven and interdisciplinary  
approach to Research for Food System Transformation  
(R4FST) and as such contribute to the Government of  
Ethiopia's transformational agenda.

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