



Living income gap of smallholder farmers in Oromia region, Ethiopia

Asfaw Zewdu³, Tesfaye Letta³, Beyene Teklu¹, Melkamu Girma², Legesse Abate³, Akalu Teshome³ and Mirjam Schaap⁴

¹ Hawassa University

² Haramaya University

³ Stichting Wageningen Research Ethiopia

⁴ Wageningen Social and Economic Research

SWRE-RAISE-FS-working paper # 021

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This document presents a recent living income study in Oromia Region, Ethiopia, which conducted under the RAISE-FS project. Focusing on the of Ada'a, Wolmera, and Babile *woredas*, the study uncovers significant living income gaps, despite farmers relying on diverse income sources such as crops, livestock, and remittances. These findings underscore the critical need for targeted interventions to boost productivity, diversify income sources, and enhance market access, paving the way for sustainable livelihoods and a more resilient food system.

Key words: living income, income, gap, productivity, Oromia, Ethiopia

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T + 31 (0)317 48 68 00, E info.cdi@wur.nl, www.wur.eu.



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Preface

Rural households have engaged in various livelihood activities to enhance both the quantity and quality of life. The main sources of income for farmers include crop production, livestock rearing, and off-farm or non-farm activities. However, there is limited information available about decent living standards for household members in rural areas. A decent standard of living encompasses not only food and housing but also non-food, non-housing (NFNH) expenses, which include education, healthcare, social responsibilities, transportation, and more.

This study aims to assess living income gaps by comparing households' actual incomes with the income necessary for a decent standard of living. It utilized household surveys and focus group discussions (FGDs) conducted in the Ada'a, Babile, and Wolmera *woredas* in the Oromia region of Ethiopia. To determine the living income gap, the study measured the difference between actual household income and an established living-income benchmark across the three *woredas*. Income data were collected through surveys to determine farmers' actual earnings. The living income benchmark was developed using insights from FGDs to estimate indicators of decent living standards. The study ultimately calculated the living income gap by subtracting actual income from the established benchmark, providing context-specific recommendations to improve the living standards of rural households.

The research received financial support from the Dutch Embassy in Ethiopia for the Resilient Agriculture for Inclusive and Sustainable Ethiopian Food Systems (RAISE-FS) project. It is being hosted by Stichting Wageningen Research Ethiopia, based in Addis Ababa, to transform the Ethiopian food system across three food system typologies. The study would not have been possible without the collaboration of enumerators, *woreda* experts, development agents, and kebele administrators. Additionally, implementing partners such as Haramaya University, Bishoftu Agricultural Research Center, and Holeta Agricultural Research Center, along with scaling partners that include the Agriculture and Land Offices of Ada'a, Babile, and Wolmera, played significant roles in facilitating, sharing secondary data, and providing logistical support.

The study has a limited geographic scope. It focuses on three food system typologies and agro-ecologies, particularly within the already selected *woredas* for the RAISE-FS project, which considers commercial, food-insecure, and high-potential food system typologies. The findings will serve as valuable input for policymakers, researchers, scholars, and students in designing interventions, generating further information, improving living standards, and transforming food systems in rural areas.

Contact : info.raisefsethiopia@gmail.com

More information : www.raise-fs.org

List of abbreviations and acronyms

AME	Adult Male Equivalent
ETB	Ethiopian Birr
CSA	Central Statistical Agency
FAO	Food and Agriculture Organization of the United Nations
FGD	Focused Group Discussion
ha	Hectare
KII	Key Informant Interview
km	Kilo meter
M.a.s.l.	Meter above sea level
mm	milli meter
NGO	Non-Governmental Organization
PPP	Purchasing Power Parity
RAISE-FS	Resilient Agriculture for Inclusive and Sustainable Ethiopian Food Systems
SPSS	Statistical Package for Social Sciences
SWRE	Stichting Wageningen Research Ethiopia
PPP/AME/day	Purchasing Power Parity per Adult Male Equivalent
PPP/RH/day	Purchasing Power Parity per Rural Household per Day
TLU	Topical Livestock Unit
WSER	Wageningen Social and Economic Research
WHO	World Health Organization
WUR	Wageningen University & Research

Summary

Although income disparity can be assessed by comparing farmers with fewer resources to those with greater resources, there is limited information on the living income gap determined by comparing the annual real incomes of smallholder farmers to the living income benchmark. Understanding the income gap among rural households is crucial for enabling stakeholders to take necessary actions to address these disparities. This study assessed the living income gap among smallholder farmers in three *woredas* of Oromia, Ethiopia, viz., Ada'a, Wolmera, and Babile, under the framework of the RAISE-FS project.

A structured questionnaire was used to administer a household survey targeting randomly selected smallholder farmers in the target *woredas*. Using a structured household survey of 363 households, data on crops, livestock, remittance, off-farm, and non-farm income sources were collected and benchmarked against the living income standard, defined as the minimum income required for households to afford a decent standard of living.

The real income was expressed in terms of adult equivalent per day (AE/day). In Ada'a *woreda*, the annual real income was 196.31 ETB (US\$8.83) per AME/day; in Wolmera *woreda*, it was 156.78 ETB (US\$7.07) per AME/day; and in Babile *woreda*, it was 105.99 ETB (US\$4.78) per AME/day, and overall, it was 195.40 ETB (US\$7.88) in the region. All these amounts are below the living income benchmark. Crop income accounts for 71% of total income in Ada'a, 50% in Babile, 43% in Wolmera *woredas*, and 61% in three *woredas*. Livestock income contributes 7% in Ada'a; 11%, 5%, and 6% in Wolmera *woreda*, Babile *woreda*, and in sampled *woredas* in the region, respectively. In Ada'a and Wolmera, overseas remittances represent more than 67% of other off-farm income, while they account for 45% in Babile *woreda*. Additionally, local remittances make up 55% in Babile *woreda*. Similarly, 78% of remittances were obtained from international sources, whereas the remaining 22% received from local sources in the three *woredas*. The living income gap in Ada'a is 8%, while it was 43% and 31% in Babile and Wolmera *woredas*, respectively. Overall, the living income gap was 15% in the three *woredas*.

This indicates that the real income farmers currently generate accounts for 92% to 57% of the income needed for a decent life. Generally, the findings from this study indicate persistent economic vulnerability, particularly in Babile, and highlight the importance of targeted interventions to enhance productivity, diversify income sources, and improve market access. Addressing these gaps is essential for supporting sustainable livelihoods and advancing food system resilience in the Oromia region.

Introduction

World Bank poverty lines are commonly used to assess poverty levels and compare countries, especially the extreme poverty line of USD 1.90 (2011 PPP). However, stakeholder groups are increasingly realizing that such poverty lines do not necessarily indicate whether farmers have a decent standard of living. Instead, the aim of poverty measurements should be to focus on empowering people to have a 'decent standard of living' (Waarts et al., 2021). This is connected to clause 25 of the Universal Declaration of Human Rights that states that: 'Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control'.

Due to the growing interest of donors, NGOs, policy makers, and other parties to achieve a decent standard of living, the World Bank poverty benchmarks are gradually being replaced with 'living income' and 'living wage' benchmarks in commodity sectors, to assess poverty levels and the impact of interventions on poverty.

A living income is defined as 'the net annual income required for a household in a particular place to afford a decent standard of living for all members of that household' (Anker & Anker, 2017). A 'decent standard of living' includes: a nutritious low-cost diet based on nutritional requirements and local food preferences, housing that meets local norms and common international standards of decency, essential needs including healthcare, clothing, education, and transport, and a margin for unforeseen events (Anker & Anker, 2017; Waarts et al., 2021). The margin for unforeseen events anticipates and plans for resilient livelihoods. Whereas living wages focus more on wages from a single source (e.g., factory workers), the living income concept considers all sources of income for the entire household.

The worldwide or extreme poverty level for low-income nations was set in 2017 at Purchasing Power Parity of 2.15 US dollars per capita per day (World Bank, 2022). Based on the national poverty benchmarks 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 does not apply 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). Agriculture remains the backbone of rural livelihoods in Ethiopia, employing the majority of the population and serving as a critical driver of food security and economic development. In the Oromia region, home to a large share of the country's smallholder farmers, agriculture plays a particularly vital role in household income generation and resilience. Despite their indispensable contribution, many smallholder farmers in Oromia continue to face substantial challenges that prevent them from earning a living income, the income required to afford a decent standard of living for a household, including food, housing, healthcare, education, transportation, and savings for unexpected events.

Recent studies and livelihood assessments in Oromia reveal a persistent and, in some cases, widening gap between actual farm household incomes and the living income benchmark. These gaps are driven by a complex interplay of factors, including low agricultural productivity, limited market access, price volatility, rising input costs, and land shortages. Furthermore, external shocks such as climate variability, conflict, and inflation continue to exacerbate economic vulnerabilities.

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. 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 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 income of agricultural households. The living income benchmark helps to calculate the living income gap, providing insight into the additional earnings farming households need to achieve a living income (IDH, 2023; Oxfam International, 2021).

Concerning this, RAISE-FS, a Dutch-funded project, is working on food system transformation in the food-insecure, high-potential, and commercial food systems. To determine whether the project contributes to closing the living income gap, the living income gap was assessed in three food systems of three *woredas* (Wolmera, Ada'a, and Babiler) located in the Oromia region of Ethiopia.

A first step in closing the living income gap is calculating the living income benchmark in different study *woredas* of the Oromia region, Ethiopia. This was done in a previous report. That was followed by assessing the annual real income of farm households in the three food systems of the region. The living income benchmark was calculated for the same study areas 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*, viz, Wolmera, Ada'a, and Babile;
- To obtain insights on how the real income varies across these *woredas*;
- To assess the living income gap by comparing the living income benchmark with real income in the target three food systems of these *woredas*.

Materials and Methods

Description of the study area

Regarding geographic scope, this study was conducted in three *woredas* of the Oromia regional state of Ethiopia. The *woredas* were purposefully selected because they are among the RAISE-FS project implementation *woredas*. These *woredas* were categorized into different food system typologies. For instance, Ada'a *woreda* is categorized into the commercial, Babile *woreda* is categorized into the food insecure, whereas the Wolmera *woreda* is categorized as the food secure food systems typologies. Within each *woreda*, the project baseline survey was conducted in its two *kebeles*. As shown in Figure 1 below, the *kebeles* where the surveys were conducted included: Akako and Denkaka (from Ada'a *woreda*), Bishan Babile and Erer Ibada (from Babile *woreda*), and Burkusame Geba Robi and Wolmera Choke (from Wolmera *woreda*). Detailed descriptions of these *woredas* are depicted in Table 1. The living income benchmark was calculated at the *woreda* level.

Table 1. Detailed description of the study areas¹

Variables		Ada'a <i>woreda</i>	Babile <i>woreda</i>	Wolmera <i>woreda</i>
Number of <i>kebeles</i>	Rural	25	21	19
	Urban	0	2	1
Distance from Addis Ababa (KM)		45	565	39
Borders	North	Gumbichu and Akaki <i>woredas</i>	Harari region	Mulo <i>woreda</i>
	East	Lume <i>woreda</i>	Gursum <i>woreda</i>	Shaggar City
	South	Dugda Bora <i>woreda</i>	Somalia region	Sebeta Awas <i>woreda</i>
	West	West Shewa Zone	Fadis <i>woreda</i>	Ejere <i>woreda</i>
Average altitude (m.a.s.l)		1731	1431	2590
Latitude		8° 35' N	8° 40' 1" N	8° 55' 37" N
Longitude		38° 55' E	42° 25' 1" E	38° 31' 19" E
Average annual rainfall (mm)		860	410-800	1069
Population size	Male	94,463	72,468	46,813
	Female	87,699	75,212	40,071
	Total	182,162	147,680	86,884
Agroecology (%)	Highland	3	0	61
	Midland	94	10	39
	Lowland	3	90	0
Cultivated land (ha)		49,467	30,234	48,796
Major crop produced		Teff, wheat, chickpea, barley, lentil	Sorghum, groundnut, maize, common bean, <i>khat</i> , etc.	Wheat, barley, teff, potato, faba bean, field pea
Major livestock reared		Cattle, sheep, goat, equines, poultry.	Cattle, goat, sheep, camels, equines, poultry	Cattle, sheep, equines, poultry, and beehives.

¹ Data obtained from Ada'a, Babile, and Wolmera Agriculture and Land Offices. Additional data were also obtained from their three respective *Woreda* Food System Profiles ([Ada'a Woreda Food System Profile](#), [Babile Woreda Food System Profile](#), and [Wolmera Woreda Food System Profile](#)).

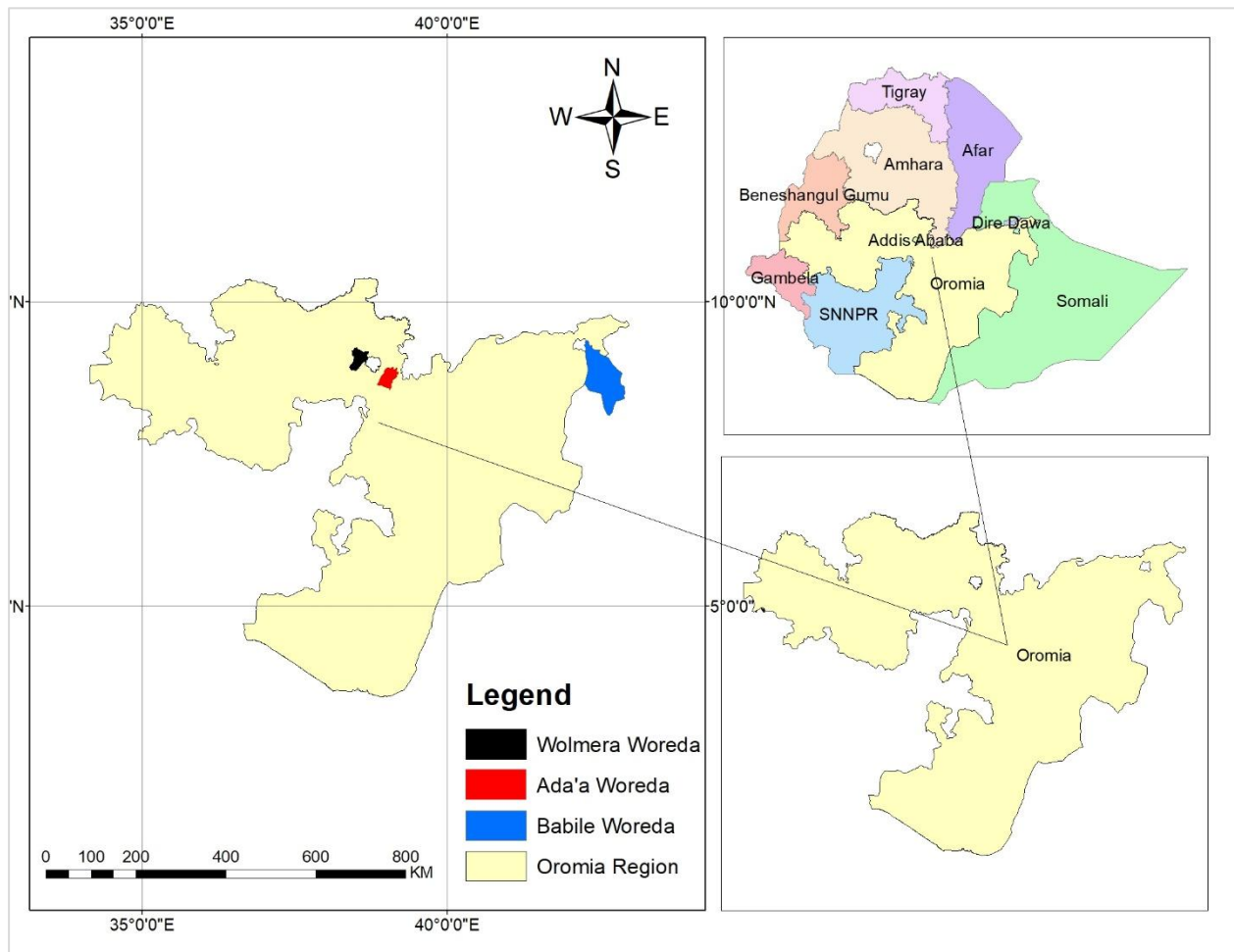


Figure 1. Map of the study areas

Sampling design

This study employed a multi-stage sampling approach combining purposive and random sampling techniques. The *woredas* of Wolmera, Ada'a, and Babile were purposively selected as study sites due to their involvement in the ongoing RAISE-FS project interventions. A total of six rural kebeles, two from each *woreda*, were then selected for the household survey.

In total, 363 households were surveyed: 116 from Ada'a, 126 from Babile and 121 from Wolmera *woredas*. While a total of 310 sample households participated in the baseline survey, the remaining 53 households were engaged in innovation piloting.

Respondents for the baseline survey were selected using random sampling techniques. The household survey aimed to assess actual household incomes among both baseline participants and those engaged in innovation or pilot interventions, thereby providing comparative insights into income levels across different household categories.

Data collection

The primary data for this study were collected through a structured household survey administered using a pre-tested questionnaire. The questionnaire was designed to capture comprehensive information on household demographics (such as family size, age distribution, and gender composition), resource

endowment (including landholding size and livestock ownership), income sources (from crop production, livestock sales, and off-farm activities), as well as the types and quantities of crops cultivated.

To ensure linguistic and cultural relevance, enumerators fluent in the local languages of the study area, *Oromiffaa*, were recruited. These enumerators underwent a two-day intensive training session covering the content of the questionnaire, ethical considerations, and standard procedures for data collection. The training aimed to enhance data quality and ensure consistency in the interview process.

Data collection was carried out using Kobo Toolbox, a digital platform that facilitates efficient and accurate data entry and management in the field. For analytical consistency, livestock holdings were converted into Tropical Livestock Units (TLUs) using standardized conversion factors provided by Storck and Doppler (1991).

The questionnaire was adapted and refined based on the format and indicators used in the National Income Survey conducted by Ethiopia's Central Statistical Agency (CSA, 2016), ensuring alignment with national data standards and comparability of findings.

Data analysis

The data collected through the structured household questionnaire were processed and analyzed using Statistical Package for the Social Sciences (SPSS) version 27 and Microsoft Excel 2021. Descriptive statistical techniques were employed to summarize the findings, which are presented in the form of means, percentages, tables, and graphs for ease of interpretation. Inferential statistics were employed to analyze the association between *woredas* and incomes from various sources. ANOVA was used to compare the incomes and their sources over locations, while a one-sample t-test was used to estimate the association of households' differences in terms of the safety net incomes.

In calculating annual household income, the monetary value of physical assets such as houses, land, and livestock holdings was excluded, focusing solely on actual income streams. To estimate crop income, the total harvest obtained during the 2022/2023 cropping season was multiplied by the prevailing market price at the *woreda* capital at the time of the survey. Similarly, livestock income was estimated by multiplying the self-reported number of livestock sold within the year by the corresponding market prices reported during the same reference period.

The survey also captured data on off-farm and non-farm income, including earnings from wage labor, petty trade, and other non-agricultural sources, accrued during the 2022/2023 agricultural season. These figures contributed to the overall estimation of annual household income used in the subsequent living income gap analysis.

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

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

Results

Farm size and livestock herd size

The results indicate significant differences in both farm size and livestock holdings across the three *woredas* ($p < 0.001$). The average farm size was highest in Wolmera (1.61 ± 1.00 ha) followed by Ada'a (1.47 ± 0.90 ha), while Babile had the smallest mean farm size (0.95 ± 0.58 ha). In terms of livestock herd size, households in Wolmera (6.09 ± 4.02 TLU) and Ada'a (5.82 ± 3.52 TLU) maintained significantly larger herds compared to those in Babile (1.93 ± 1.77 TLU) (Table 2).

Table 2. Mean + SD of farm size and livestock herd size per household for the three *woredas*

Variables	Woredas			P-value
	Ada'a	Babile	Wolmera	
Farm size	1.47 ± 0.90^b	0.95 ± 0.58^a	1.61 ± 1.00^a	0.000
Livestock size	5.82 ± 3.52^a	1.93 ± 1.77^b	6.09 ± 4.02^a	0.000

Values with different letters across the rows represent significantly different at $P < 0.001$

Sources of income

Income from Livestock

As presented in Table 3 below, smallholder farm households in the three *woredas* generated revenue from various categories of livestock production. Besides, it shows a considerable variation in income from livestock and livestock products across the three *woredas* during the 2022/23 cropping season. Total annual household income from livestock was highest in Wolmera (27,586 ETB; US\$PPP 1,244), followed by Ada'a (21,296 ETB; US\$PPP 961), while Babile recorded the lowest income (11,226 ETB; US\$PPP 506). Cattle contributed the largest share of livestock income in all *woredas*, accounting for 63% in Babile, 46% in Ada'a, and 41% in Wolmera. Cattle products were the second-largest source, particularly in Wolmera, where they made up 32% of total income, compared to 20% in Ada'a and 17% in Babile. Contributions from small ruminants, poultry, equines, and honey varied, with equine and honey income being substantial in Ada'a and Wolmera but negligible in Babile. When adjusted per adult male equivalent (AME), the daily livestock income was highest in Wolmera (17.8 ETB; US\$PPP 0.8), followed by Ada'a (13.2 ETB; US\$PPP 0.6), lowest in Babile (5.8 ETB; US\$PPP 0.3), and a total of three *woredas* (11.8 ETB; US\$PPP 0.5).

The combined analysis results show that the total annual income obtained from livestock was (20,164 ETB; US\$PPP 910). The highest share of income was from livestock (44%), followed by cattle products (27%). Overall, the result of ANOVA indicates a statistically significant difference among *woredas* in terms of cattle products, overall livestock income, and small ruminants at the 1%, 5%, and 10% significance level, respectively. The results highlight a significant improvement in livestock development across all *woredas*, indicating a promising future.

Table 3. Income from livestock and livestock products for the 2022/23 cropping season

Income from livestock and livestock products									
	Babile				Wolmera		Total		P-value
ETB (US\$PPP)/RH/year (mean)									
Cattle	9,889(446)	(46%)	6,991(315)	(63%)	10,877(491)	(41%)	8,908(402)	(44%)	0.330
Small ruminants	2,310(104)	(11%)	1,349(61)	(12%)	2,108(95)	(8%)	1,819(82)	(9%)	0.093
Chicken	1,441(65)	(7%)	791(36)	(7%)	1,383(62)	(5%)	1,184(53)	(6%)	0.126
Equines	1,783(80)	(8%)	0(0)	(0%)	2,005(90)	(8%)	1,749(79)	(9%)	0.892
Honey	1,693(76)	(8%)	114(5)	(1%)	1,531(69)	(6%)	1,105(50)	(5%)	0.530
Cattle products	4,369(197)	(20%)	1,836(83)	(17%)	8,384(378)	(32%)	5,399(244)	(27%)	0.001
	21,485(969)	(100%)	11,081(500)	(100%)	26,288(1,186)	(100%)	20,164(910)	(100%)	0.021
Total income from livestock (ETB (US\$)/AME/day)									
	13.3(0.6)		5.7(0.3)		17.0 (0.8)		11.8(0.5)		

Income from crops

The contribution of various crop types to farm household income across the three *woredas* is presented in Table 4. Crop income during the 2022/23 cropping season varied considerably across the three *woredas*. Total household income from crops was highest in Ada'a (225,200 ETB; US\$PPP 10,158), followed by Wolmera (103,314 ETB; US\$PPP 4,660) and Babile (102,308 ETB; US\$PPP 4,615). In Ada'a, oil crops (34%), cereals (32%), and vegetables (23%) were the major income sources. In Babile, vegetable production dominated (48%), followed by cereals (16%) and root crops (10%). By contrast, Wolmera's crop income relied mainly on cereals (32%), root crops (27%), and pulses (20%). Tef and bread wheat were the predominant cereals in both Ada'a and Wolmera. The daily income per adult male equivalent in Ada'a was 139.3 (6.3) ETB (US\$), followed by Wolmera, 66.8 (3.0) ETB (US\$), the lowest for Babile, 53.0 (2.4) ETB (US\$), and a total of three *woredas*, 119.7 (5.0) ETB (US\$).

Overall, the household total annual income from crops (203,966 ETB: US\$PPP 9,200) in the Oromia region. The highest income was obtained from oil crops (31%), followed by cereals (20%) and vegetables (16%). The ANOVA result shows that the mean total crop income, cereals, and pulses were significant among *woredas* at 1% significance level, whereas the mean income of vegetables and root crops was significant at 10% significance level. This indicates that farming households in Ada'a generated significantly higher income from crop production compared to those in Wolmera and Babile.

Table 4. Income from crops for the 2022/23 cropping season in three study *woredas*

Income from crops					
	Ada'a	Babile	Wolmera	Total	P-value
ETB (US\$PPP)/RH/year (mean)					
Cereals	72,661 (3,277) (32%)	15,918 (718) (16%)	32,828 (1,481) (32%)	41,524(1,873)(20%)	0.001
Pulse	25,059 (1,130) (11%)	9,467 (427) (9%)	20,151 (909) (20%)	20,928(944) (10%)	0.001
Oil crops	76,280 (3,441) (34%)	0 (0) (0%)	1,120 (51) (1%)	63,753(2,876)(31%)	0.405
Vegetables	51,200 (2,309) (23%)	48,624 (2,193) (48%)	6,349 (286) (6%)	32,355(1,459)(16%)	0.080
Fruits	0 (0) (0%)	6,880 (310) (7%)	0 (0) (0%)	6,880(310) (3%)	NC
Root crops	0(0) (0%)	10,000 (451) (10%)	28,076 (1,266) (27%)	26,304(1,186)(13%)	0.065
Other	0(0) (0%)	11,418 (515) (11%)	14,779 (667) (14%)	12,222(551) (6%)	0.470
Total	225,200 (10,158) (100%)	102,308 (4,615) (100%)	103,314 (4,660) (100%)	203,966(9,200) (100%)	0.001
Total income from crops (ETB (US\$PPP)/AME/day)					
	139.3 (6.3)	53.0 (2.4)	66.8 (3.0)	119.7 (5.4)	

Values in parentheses indicate US\$, NC: Not Computed

Remittances

Income from remittances during the 2022/23 fiscal year showed substantial variation among the three *woredas* (Table 5). Total household remittance income was highest in Wolmera (45,727 ETB; US\$PPP 2,063), followed by Ada'a (18,661 ETB; US\$PPP 842), and lowest in Babile (13,313 ETB; US\$PPP 600). In Ada'a, international remittances accounted for two-thirds of the total (67%), while in Babile, local remittances dominated (55%). In Wolmera, most of the remittance income (78%) came from international sources. Farmers in Babile primarily received remittances from domestic sources, while those in Wolmera relied more on overseas remittances. Overall, Wolmera reported higher income from remittances compared to both Ada'a and Babile *woredas*.

The annual total remittances from abroad and locally obtained from three *woredas* were (35,408 ETB; US\$PPP 1,597). The highest share of remittances was from abroad (72% in all three *woredas*. On a per adult male equivalent (AME) basis, daily remittance income was highest in Wolmera (29.55 ETB; US\$PPP 1.33), followed by Ada'a (11.54 ETB; US\$PPP 0.52), lowest in Babile (6.89 ETB; US\$PPP 0.31), and the three *woredas* (20.77 ETB; US\$PPP 0.94). The ANOVA result revealed that the total annual income from remittances and international remittances were significant among *woredas* at 1% and 10% significance levels, respectively.

Table 5. Income from Remittances for the 2022/23 Fiscal Year for the three study *woredas*

ETB (US\$PPP)/RH/year	Remittance						Total	P-value
	Ada'a		Babile		Wolmera			
Local remittance	6,231 (281) (33%)	7,313 (330) (55%)	10,000 (451) (22%)				7,641 (345) (22%)	0.126
International remittance	12,430 (561) (67%)	6,000 (561) (45%)	35,727 (1,612) (78%)				27,767 (1,252) (78%)	0.007
Total	18,661 (842) (100%)	13,313 (600) (100%)	45,727 (2,063) (100%)				35,408 (1,597) (100%)	0.001
ETB (US\$PPP) /AME/day								
	11.54 (0.52)	6.89 (0.31)	29.55 (1.33)				20.77 (0.94)	

Off-farm and non-farm income

Among the various off-farm and non-farm activities, salaries and other income-generating activities such as petty trade, handicrafts, land rent, house rentals, charcoal sales, carting, and livestock rental programs accounted for over 70% of the off-farm income in the Ada'a and Welmera *woredas*. In contrast, salaries, safety net programs, wages, and other off-farm/non-farm activities were the predominant sources of income in Babile *woreda* (see Table 6). The income from daily labor was notably higher in Ada'a, followed by Welmera, due to the presence of manufacturing and industrial sectors in their main markets, Bishoftu and Holeta.

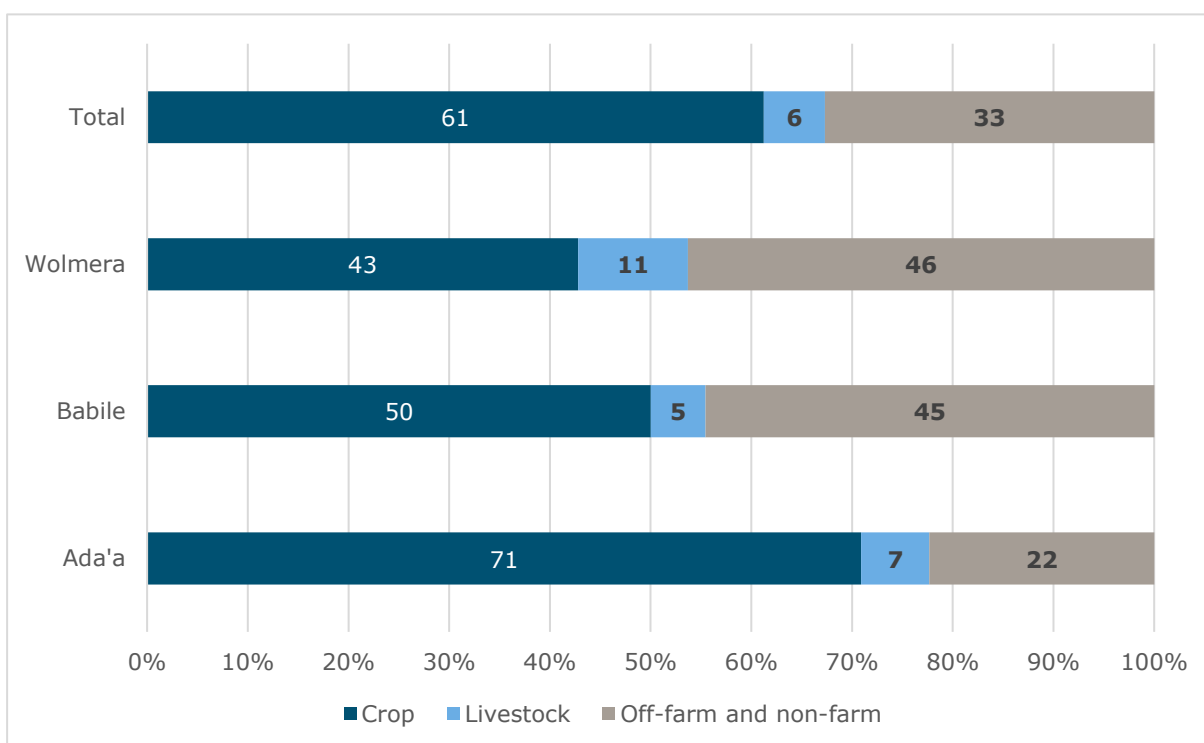
In the three *woredas*, the highest off-farm and non-farm income was obtained from salary, followed by other off-farm/non-farm income and wage (daily labor). Overall, the total annual off-farm and non-farm income was (73,535 ETB; US\$PPP 3,317). Specifically, the daily off-farm and non-farm income per adult male equivalent was 32.32 (1.5) ETB (US\$)/AME/day in Ada'a, 40.30 (1.8) ETB (US\$)/AME/day in Babile, 42.65 (1.9) ETB (US\$)/AME/day in Wolmera *woreda*, and total three *woredas* (43.14 (1.9) ETB(US\$)/AME/day. The ANOVA result shows that salary and total annual off-farm and non-farm income were significant at 1% significance level among the three *woredas*. The one-sample t-test result revealed that safety net income was statistically significant among households in Babile *woreda* at 1% significant level.

Table 6. Off-farm and non-farm income for the 2022/23 fiscal year of the three study woreda

ETB (US\$PPP)/RH/year	Off-farm and non-farm income			Total	P-value
	Ada'a	Babile	Wolmera		
Salary	22,663 (1,022) (43%)	40,067(1,807) (51%)	35,350 (1,595) (54%)	33,073 (1,492) (45%)	0.1
Wage (daily labour)	15,633 (705) (30%)	12,595 (568) (16%)	13,921 (628) (21%)	13,370 (603) (18%)	0.699
Safety net	0 (0) (0%)	12,319 (556) (16%)	0 (0) (0%)	12,319 (556) (17%)	0.001
Others' off-farm & non-farm income	13,969 (630) (27%)	12,829 (579) (16%)	16,734 (755) (25%)	14,773 (666) (20%)	0.372
Total	52,265 (2,357) (100%)	77,810 (3,510) (100%)	66,006 (2,977) (100%)	73,535 (3,317) (100%)	0.064
ETB (US\$PPP)/AME/day					
	32.32 (1.5)	40.30 (1.8)	42.65 (1.9)	43.14 (1.9)	

Share of income sources

Figure 2 illustrates the relative contribution of crops, livestock, and off-farm/non-farm activities to total household income across the three *woredas*. The results show that crop production was the dominant source



of income in Ada'a, accounting for the largest share compared to livestock and non-farm activities. In Babile, off-farm and non-farm income contributed the highest share, reflecting the significance of wage employment, salaries, and safety net transfers in household livelihoods.

Figure 2. Share of crops, livestock, and off-farm/non-farm income to the total income for the three woredas

In Wolmera, income was more diversified, with crops and off-farm/non-farm activities contributing almost equally, while livestock also played a substantial role. Specifically, in the Ada'a and Babile *woredas*, income from crop farming comprised 71% and 50% of the total income, respectively. In contrast, in Wolmera

woreda, crop farming contributed 43% to total income (see Figure 2). Notably, off-farm income in Wolmera accounted for 46% of total income, significantly higher than other income sources, while Babile and Ada'a *woredas* reported figures of 45% and 22%, respectively. Additionally, income from livestock farming represented 11% of total income in Wolmera, 5% in Babile, and 7% in Ada'a. Overall, in three *woredas*, the highest income share was from crop production (61%), followed by off-farm and non-farm incomes (33%) and livestock (6%). These findings highlight the varying livelihood strategies across the three *woredas*, shaped by differences in agro-ecology and economic opportunities.

Living income gap

Figure 3 shows the living income gaps across the three *woredas*. The results indicate that households in all *woredas* fall short of meeting the living income benchmark, though the size of the gap varies. According to the previously reported benchmarks for living income, a daily income of \$9.66 per AME is necessary for a household in the rural Ada'a *woreda* to achieve a decent standard of living. In Babile, the required amount is \$8.32 per AME, while in Wolmera, it is \$10.32 per AME and \$9.24 for the three *woredas*. In contrast, the actual income reported for Ada'a is \$8.85 per AME per day, \$4.78 per AME per day for Babile, \$7.07 per AME per day for Wolmera, and overall, \$7.88 per AME for the region (see Figure 3). The living income gap for Ada'a was 8%, whereas it was 43% in Babile, 31% in Wolmera, and 15% for the region.

This indicates that the real income generated by farmers currently satisfies between 92% and 57% of their required living income across these three *woredas*. Ada'a is distinguished by its robust production of commercial crops like wheat, teff, chickpeas, and oilseeds, including fenugreek. The *woreda's* fertile soils and productive lands play a vital role in empowering smallholder farmers, enabling them to narrow the gap between their actual income and the living income benchmark. Generally, the result showed that Babile exhibits the widest gap, reflecting the lowest capacity of households to cover basic needs, while Wolmera shows a moderate gap. Ada'a has the narrowest gap, suggesting relatively better household income levels compared to the living income benchmark. To close the living income gaps, efforts should focus on enhancing agricultural productivity through providing agricultural inputs and climate-smart technologies, particularly in Babile and Wolmera *Woredas*. *Woreda*-specific policy interventions are needed, with priority given to Babile, where the income gap is widest, and households are most vulnerable.

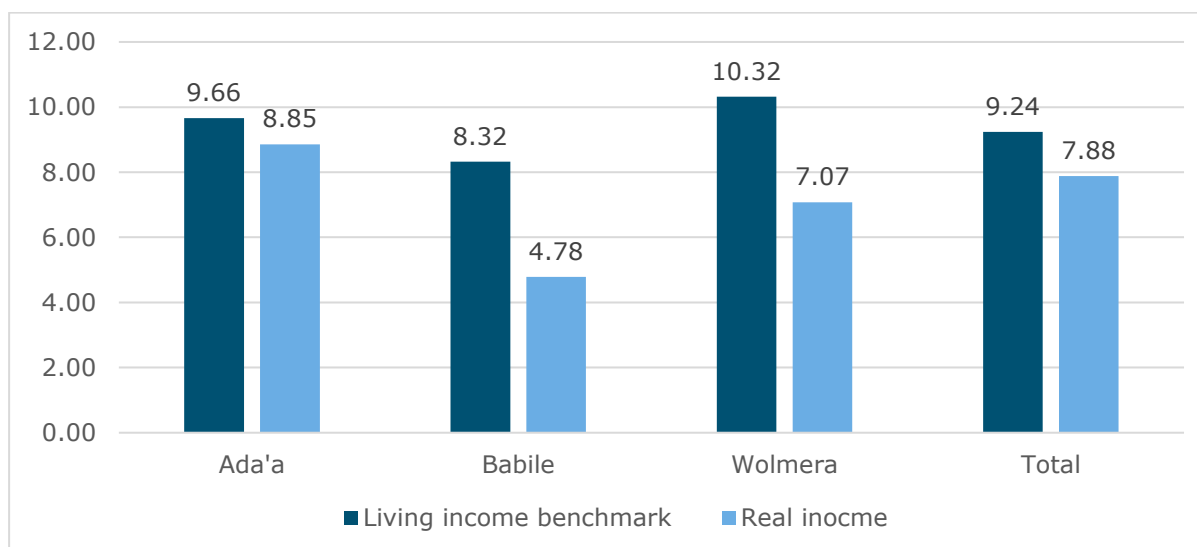


Figure 3. Living income gap for the three *woredas* of the study area

Conclusions

The study revealed that smallholder farmers in the three *woredas*, Ada'a, Wolmera, and Babile, rely on different livelihood strategies shaped by their agro-ecological and socio-economic contexts. Crop production was the dominant income source in Ada'a, while Wolmera and Babile exhibited greater dependence on off-farm and non-farm activities alongside farming. Livestock contributed relatively little to household income in Babile compared to the other *woredas*. Generally, land and livestock are the major assets of smallholder farmers in three *woredas*. In Wolmera, the average land and livestock holding size was larger than in Ada'a and Babile *woredas*.

The annual real income per farm household varied among the three study *woredas*. Farmers in Ada'a *woreda* derive most of their income from crop production, whereas those in Womera and Babile place greater emphasis on off-farm and non-farm activities alongside crop cultivation. In Babile, the contribution of livestock to overall income is considerably lower than in Ada'a and Wolmera *woredas*.

Despite these differences, all three *woredas* demonstrated a living income gap, indicating that current household incomes fall short of the minimum required to secure a decent standard of living. The income shortfall was smallest in Ada'a (8%), moderate in Wolmera (31%), largest in Babile (43%) and overall, in the three *woredas* (15%). This highlights persistent economic vulnerability, particularly in Babile, where households face severe constraints in meeting basic needs. Overall, the findings underscore the limited capacity of smallholder farmers in the study areas to achieve a sustainable livelihood under existing conditions.

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