TANZANIA GENDER AND ENVIRONMENT SURVEY 2025

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Msengwa.

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Executive Summary

Tanzania's pursuit of sustainable development and climate resilience depends, in part, on the achievement of gender equality. The 2025 Tanzania Gender and Environment Survey (2025 TGES) provide nationally representative evidence that people's experience of environmental health, resource access, and climate shocks differ significantly influenced by gender, location, and socio-economic status.

The data show that women, especially those managing households and living in rural or arid areas, face disproportionate challenges: limited secure rights to land and forests, higher vulnerability to disasters, increased unpaid care burdens arising from water and clean energy shortages, and limited access to finance and climate-smart technologies. These inequalities are not only issues of social justice but also major obstacles to the country's environmental sustainability and economic resilience.

The survey not only identifies gaps but also outlines a clear, actionable plan way forward. It shows that empowering women as change agents, by securing their resource rights, ensuring their voices are included in climate planning, and investing in infrastructure that eases their daily burdens, is a strong strategic approach to strengthening community adaptation, supporting sustainable resource management, and accelerating progress toward national and global development goals. This report is crucial guide for policymakers and stakeholders dedicated to creating a more equitable, resilient, and prosperous Tanzania for all.

The 2025 TGES underscores that environmental sustainability, climate resilience, and inclusive development in Tanzania are closely linked to the achievement of gender equality. The findings reveal that persistent, and intersecting inequalities are shaped by gender, location, disability status, and agro-ecological zones. Women, particularly those heading households, face systemic disadvantages including limited control over land and productive resources, disproportionate unpaid care and domestic responsibilities, heightened vulnerability to climate shocks and disasters, reduced access to basic services, clean energy, and resilient housing. These inequalities are increasingly higher in rural areas and in specific ecological zones, such as the Arid, Semi-Arid, and Coastal zones.

While progress is evident in areas such as access to improved water sources and the use of durable building materials, the survey confirms that policy responses remain insufficient.

The diverse impacts of environmental degradation and climate change, including droughts, floods, deforestation and indoor air pollution, call for targeted, gender-responsive interventions. By addressing the structural barriers that constrain women's agency and access to resources, Tanzania can strengthen community resilience, sustainable environmental management, and foster broader-based economic growth. Aligning these efforts with national frameworks such as Tanzania Development Vision 2050 (Dira 2050) and global commitments including the Sustainable Development Goals (SDGs), the Sendai Framework, and the Paris Agreement, provides a clear pathway towards a more equitable and sustainable future for all Tanzanians.

Policy Implications

1. Interlocking inequalities: Disadvantage is not experienced in isolation; rather, it rises from the intersection of gender, disability, location, and agro-ecological contexts. These overlapping factors create compounded vulnerabilities and call for more intersectional policy responses.

2. Climate vulnerability is reflected in housing conditions: Continued reliance on traditional materials such as grass, mud, and sundried bricks increases disaster risk, housing damage, and health risks, disproportionately affecting women and children.

3. Dependence on natural resources intensifies environmental pressure: High reliance on biomass fuels, natural building materials, and unimproved water sources accelerates deforestation, land degradation, and water source depletion, thereby undermining environmental sustainability.

4. Gendered time and labour poverty: Women bear the brunt of unpaid labour including water collection, firewood collection, and home maintenance. These responsibilities reduce the time available for education, income-generating activities, and time to rest, especially in rural and arid areas.

5. Limited inclusive governance: Decision-making in households and communities is largely male-dominated, which limits women’s participation in environmental, housing, and disaster planning, thereby reducing the relevance and effectiveness of policy interventions.

6. Access to clean energy and Water, Sanitation and Hygiene (WASH) services remains highly unequal: Rural women have the lowest access to clean cooking energy, electricity, safe water, and improved sanitation, worsening health, safety, and economic marginalization.

7. Disaster impacts are gendered and zone-specific: Women face greater damage to their dwellings, increased unpaid care work in the aftermath of disasters, and more limited access to early warning information, especially in semi-arid and coastal zones.

8. Slow adoption of sustainable practices: Despite declining soil fertility and growing pressure on fisheries, adoption of climate-smart agriculture, aquaculture, and sustainable forestry remains under 30 percent, threatening long-term environmental and livelihood resilience.

9. Sectoral silos undermine holistic resilience- building efforts: Housing, water, energy, and environmental policies are often designed separately, thereby limiting opportunities for integrated solutions that address multiple vulnerabilities at once.

10. Data gaps limit targeted action: Despite the valuable insights generated by the survey, routine monitoring often lacks gender, age-, disability-, and location-disaggregated data, hampering evidence-based, equitable resource allocation and targeted policy action.

Policy Recommendations

1. Adopt mandatory intersectional impact assessments: Require all national policies and budgets to be subjected to and publicly report on gender, disability, and agro-ecological zone equity audits before approval.

2. Launch a national climate-resilient housing program: Provide targeted grants, low-interest loans, and technical support for low-carbon, durable roofing, wall, and flooring, prioritizing women-headed households in high-risk zones.

3. Scale up integrated WASH–energy–housing packages: Bundle subsidies for clean cookstoves, home rainwater systems, and sanitation upgrades with housing improvement support to reduce women's labour and health risks.

4. Establish gender-responsive disaster management units: Integrate women-led early warning dissemination, gender-sensitive evacuation plans, and post-disaster recovery programs that address unpaid care responsibilities and housing damage.

5. Reform land and resource governance for inclusion: Mandate 50 percent women's representation in water, forest, and fisheries committees and accelerate the implementation of joint land titling and protection of women's inheritance rights.

6. Create green jobs and enterprise funds for women and youth: Support women's entry into and growth within sustainable forestry, aquaculture, eco-brick production, and waste management with training, start-up capital, and market access.

7. Expand rural clean energy and water infrastructure through solar-based solutions: Prioritize solar-powered water systems, mini-grids, and clean cooking distribution hubs in underserved rural and arid zones, including subsidized connection fees.

8. Promote agro-ecological zone-specific agriculture and aquaculture: Establish demonstration centers for climate-smart agriculture and fish farming tailored to local agro-ecological conditions, with extension services targeting women farmers.

9. Strengthen community-based sustainable resource management: Support village-level bylaws and incentives for tree planting, soil conservation, and regulated harvesting, while ensuring women's participation in programme design and benefits-sharing.

10. Invest in real-time, disaggregated data systems: Develop a unified digital platform for gender-, disability-, and location-sensitive monitoring of housing, WASH, energy, and environmental indicators to guide targeted interventions.

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CHAPTER ONE

INTRODUCTION

1.1 Background

The 2025 Tanzania Gender and Environment Survey (2025 TGES) is the first comprehensive national household-based survey on gender and environment to be conducted in Tanzania Mainland, and the second in Africa after Senegal. The survey examines the different ways in which women and men interact with the environment in Mainland Tanzania. It also assesses how their daily economic activities and livelihoods shape environmental outcomes, and how environmental conditions, in turn, affect their lives and opportunities.

Since the adoption of the 2030 Agenda for Sustainable Development in 2015, growing attention has been given to the ability of countries to report on progress, challenges, actions, and measures taken to advance implementation, particularly in relation to the commitment to “leave no one behind”. Countries are also expected to share best practices, identify implementation gaps, and document lessons learned in order to accelerate progress. Gender statistics are central to monitoring and reporting on the progress of the implementation of the 2030 Agenda. The 2030 Agenda recognises gender equality as not only as foundational development objective, but also as a means to advancing other SDGs. In addition, data disaggregation is integral to the agenda’s commitment to leave no one behind. Consequently, there is growing momentum to strengthen the production of gender related statistics. This has generated unprecedented demand for gender data, including data disaggregated by the characteristics necessary for assessing progress towards the SDGs.

African countries have acceded to various global and regional declarations, conventions, and protocols that commit them to eliminating discrimination against women and girls, and to take appropriate measures to ensure the full realisation of their rights. In this context, addressing gender and environmental issues, including climate change, requires Tanzania to align broad international commitments with context-specific national actions guided by the SDGs and other frameworks.

The Government of the United Republic of Tanzania has recognized the interconnected nature of gender equality, environmental sustainability, and climate resilience. It has

integrated these priorities into national development frameworks, including Dira 2050. This commitment is further reflected in initiatives such as the National Guidelines for Mainstreaming Gender into Environment and the National Strategy for Gender Development, which position gender as a cross-cutting issue. The findings of the 2025 TGES provide strong evidence for advancing gender-responsive environmental policies and programs in Mainland Tanzania. The survey also informs the work on the gender and climate nexus being undertaken by the Environment Statistics and Gender Statistics Sections at the United Nations Statistics Division (UNSD). At its 51st session in 2020, the United Nations Statistical Commission called for the integration of a gender perspective across all areas of official statistics (Decision 51/115, b). In addition, the survey complements existing gender statistics from other sources, such as the 2022 Population and Housing Census, thereby providing a more comprehensive understanding of the nexus between gender and the environment.

1.2. Institutional Framework and Objectives of the 2025 TGES

1.2.1 Institutional Framework

The 2025 Tanzania Gender and Environment Survey was implemented by the National Bureau of Statistics (NBS) in close collaboration with the Vice President's Office (VPO), the Ministry of Community Development, Gender, Women, and Special Groups (MoCDGWSGs), other government ministries, non-state actors, as well as research and academic institutions. UN Women provided technical support while the Government of the United Republic of Tanzania fully financed the survey through the Tanzania Statistical Master Plan II (TMSP II) fund. During the implementation, the survey, the VPO and MoCDGWSGs served as the chair and co-chair of the survey's Technical Committee (TC), respectively. The NBS served as the secretariat to the TC, which oversaw all technical aspects of the survey implementation. The TC comprised of representatives from data user institution and key partners, including as MDAs and Development Partners.

1.2.2 Objectives of the 2025 TGES

The main objectives of the 2025 TGES were to:

- produce baseline indicators for measuring the gender and environment nexus;
- measure, benchmark, and profile sex-disaggregated data and environmental statistics across different thematic areas;

- estimate household and individual-level exposure to the immediate consequences of recent disaster events and the prolonged impacts of climate change; and
- assess how women's and men's daily economic activities and livelihoods interact with the environment.

The survey also generates sex-disaggregated data to support national and global monitoring frameworks, including the 2030 Agenda for Sustainable Development, the Sendai Framework for Disaster Risk Reduction and the Global Set of Climate Change Statistics and Indicators.

1.3 Survey Implementation

1.3.1 Sampling Strategy

The 2025 TGES was designed to provide estimates at the national level, by rural-urban residence, sex (male- female), and for each of the six agro-ecological zones.

1.3.1.1 Sampling Frame

The sampling frame for the 2025 TGES was based on a complete list of Enumeration Areas (EAs) from the 2022 Tanzania Population and Housing Census (PHC). The frame included geographic codes, rural and urban classification, boundaries, main access routes and landmarks located in or outside the EA, and the census count of households enumerated in each EA. In rural areas, an EA is typically a hamlet (part of a village) or a group of small villages. In urban areas, an EA is often a street or a city block. On average, each EA contains 136 households. The 2022 PHC sampling frame was integrated with elevation data from raster and satellite imagery to accommodate the classification of the six agro-ecological zones used in the sample design.

1.3.1.2 Sample Design

A stratified three-stage sample design was used for the 2025 TGES. The geographic domains of analysis for the 2025 TGES were the six agro-ecological zones of Mainland Tanzania. The six agro-ecological zones were adopted from the Ministry of Agriculture, with slight modifications made to accommodate the survey's purpose (Map 1). Stratification was achieved by separating each zone into urban and rural areas. The urban and rural areas of each zone formed separate sampling strata, resulting in a total of 12

sampling strata. Samples were selected independently from each sampling stratum using a three-stage selection procedure. Implicit stratification and proportional allocation were achieved by sorting the sampling frame within each explicit stratum by lower administrative units before sample selection and by applying probability proportional to size (PPS) at the first stage of sampling. A three-stage sampling procedure was employed.

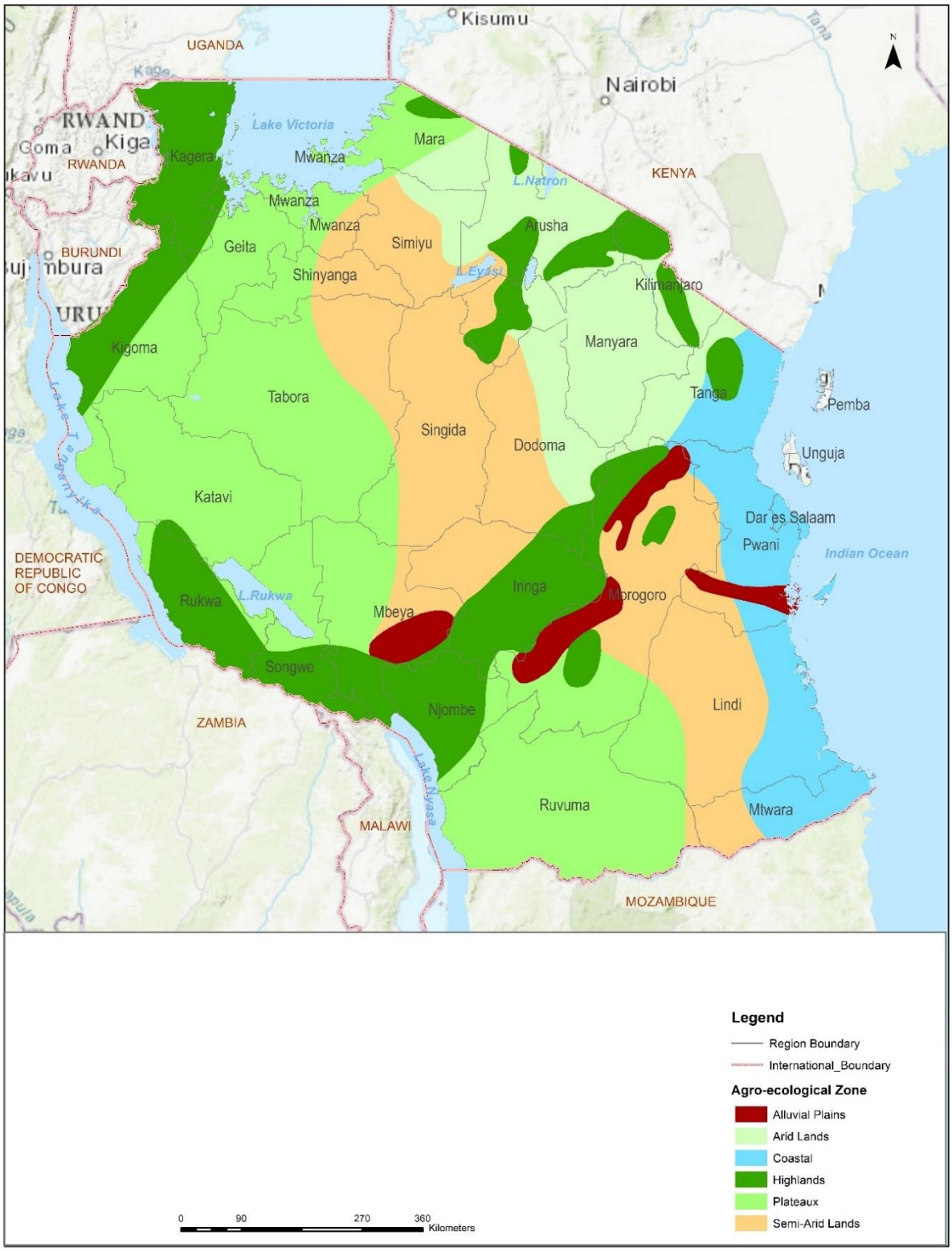
In the first stage, 321 EAs were systematically selected within each sampling stratum, using PPS, with the number of households in the 2022 PHC frame serving as a measure of size. Of the 321 EAs, 125 were in urban areas and 196 were in rural areas. With a fixed number of 15 households selected per cluster, the estimated total number of households sample was 4,815, including 1,875 households in urban areas and 2,940 households from rural areas.

In the second stage, a fixed number of 15 households were selected from each selected from each sampled EA using equal probability systematic sampling. Prior to fieldwork, a household listing exercise was conducted in each of the selected EA. The resulting household list served as the updated sampling frame from which 15 households were selected to participate in the survey.

In the third stage, two individuals aged 18 years and above, one male and one female, were randomly selected from each selected household using the Kish Grid for individual interviews. If selected household contained only one eligible adult, only that individual was interviewed.

A file containing all numerical parameters relevant to the sample, namely, selection probabilities at the different stages, response rates, and sampling weights, as well as GIS coordinates of each household in the cluster, was prepared. Final household and individual analysis were computed after data cleaning and included in the survey datasets.

Map 1.1: Agro-Ecological (modified) Zones used for the 2025 TGES



Reference: *LEVARD Laurent, Agricultural and Food Security Policies and Small-Scale Farmers in the East African Community – 5 – Tanzania, Paris, Gret - ESAFF, October 2014*

1.3.2 Survey Questionnaires

The 2025 TGES used two main types of questionnaires: (1) a household questionnaire and (2) an individual questionnaire administered to eligible women and men aged 18 years and above in each selected household.

1.3.2.1 Household Questionnaire

Information on the household and its member was collected through the Household Questionnaire. Modules 1 and 2 of the household questionnaires were used to collect household-level information.

- **Module 1** (Household Schedule): This module was used to list all household members and collect basic demographic information for each member, including sex, age, and relationship to the head of household.

- **Module 2**: This module was used to collect information on household characteristics, including the condition of the walls, roof, and floor; land, or plot ownership; the number of sleeping rooms, and proximity to environmental hazards. It also collected information on household energy use, including the source of electricity, the type of cooking energy used, factors affecting indoor air quality, the person responsible for cooking and obtaining cooking fuels, as well as the type of heating and cooling systems and household appliances including cooking stoves. This module also collected information on the source of drinking water and the type of sanitation facility, as well as related characteristics, such as location and sharing practices. The respondent to the household questionnaire was either the head of household or another knowledgeable adult member of the household.

In addition, the household questionnaire was used to identify eligible individuals for individual interviews.

1.3.2.2 Individual Questionnaire

The Individual questionnaire was used to collect information from eligible women and men aged 18 years and above on the following topics:

- **Module 3**: Background characteristics, including marital status, educational attainment, and disability status, media exposure.

- **Module 4:** Information on disaster and hazard exposure, early warning, preparedness, experiences, consequences and impacts, as well as environmental decision making associated with post-disaster needs assessment and planning.

- **Module 5:** Exposure to, and preparedness for, climate-related effects, this module collected information on the effects of climate change on each individual and their livelihoods. This includes information on exposure, preparedness, source of information, mitigation measures, livelihoods impacts, changes in safety, and participation in environmental decision-making related to climate change mitigation.

- **Module 6:** Agriculture and land use, this module collected information on agricultural and land use practices. It included questions on whether individual household members used or managed agricultural land, and on the type of farming practiced. It also collected information on income or other benefits derived from these activities, soil degradation and related practices, irrigation methods, water use, fertilizer type, and pesticide use. In addition, the module covered environmental risks associated with agricultural practices, land conservation practices, organic certification, and decision-making related to agriculture, land use, and natural resources.

- **Module 7:** Environment-related livelihoods, this module collected information on individuals engaged in fishing, aquaculture, collecting plants, obtaining firewood and timber, hunting, forest- related activities, mining, oil extraction, water collection, food and beverage processing, preservation and storage, as well as garbage picking, sorting and recycling.

- **Module 8:** Asset ownership, this module collected information on individual ownership of agricultural land. It included questions on available ownership documentations, the type of document, the name listed on the document, the right to sell the land, and the right to bequeath it.

- **Module 9:** Decision-making and mobility, this module included questions on the individual's decision-making regarding the use money, mobility, and garbage management practices at home. It also included questions on means of transportation including the individual's dependence on public transportation and

private vehicles, as well as the frequency of use. This information helped assess environmental footprint in the relation to daily travel.

1.3.3 Questionnaire Adaptation

The 2025 Tanzania Gender and Environment questionnaires were based on model questionnaires aligned with international standards and classifications. The questionnaires were adapted to suit Tanzania's context in consultation with the technical team and other key stakeholders in the survey who are knowledgeable about the environment and gender programme priorities covered by the 2025 TGES. The questionnaire adaptation was carried out through a day-long questionnaire adaptation workshop in February 2025. Participants in the workshop were technical experts from VPO, MoCDGWSGs, other government ministries, non-state actors, and research and academic institutions. Programme and technical experts who could not attend the workshop were able to provide their input and specific feedback to the questionnaire adaptation process by email.

After preparation of the final questionnaires in English, the questionnaires were translated into Kiswahili. As the questionnaires were being translated, the CAPI program was concurrently developed in English to support subsequent survey activities.

1.3.4 Main Training

1.3.4.1 Training of Interviewers and Supervisors for the Main Survey

The main training of the interviewers and supervisors took place at the Fire and Rescue Force Conference Hall in Dodoma City from 29 April to 8 May 2025. The main training was preceded by a n eight-day Training of Trainers (TOT) session, held from 21st – 28th April 2025. The TOT was intended to equip trainers with the necessary skills required to conduct the main training and supervise fieldwork. In addition, the TOT was designed to train key survey personnel and test all survey tools prior to full survey implementation; to estimate respondent burden, particularly interview duration; to pretest the planned operational model for data collection and management; to gain experience in field operations related to the implementation of 2025 TGES; and to identify potential challenges and non-response rates of the main data collection.

During the TOT, trainers were able to test the questionnaires and the CAPI system. They also identified issues related to survey instruments, including skip patterns, error handling, translation, question flow, inadequate response categories, and potential logistical

problems for the main survey. The participants in the TOT included staff from NBS, the VPO, MoCDGWSGs, other government ministries, non-state actors, as well as research and academic institutions.

A total of 57 fieldwork staff were trained as interviewers, while 19 NBS staff members were trained as team leaders. The training was conducted in two phases, following standard training procedures that included class presentations, lectures, mock interviews, field practice, and tests. The first phase focused on the paper questionnaires and lasted for the first four days of the training. It covered the basics of interview-based data collection and the key concepts underlying the survey. It also includes the content of the household and individual questionnaires, instructions for completing each question, interviewing procedures, and field procedures to be followed during the survey.

The second phase of the training focused on the use of the tablets and on entering responses during interviews using Computer-Assisted Personal Interviewing (CAPI) and lasted three days.

Issues identified in the questionnaires and computer programs, during lectures and field practice were discussed and corrected. Likewise, errors identified in the Kiswahili translation of the questionnaires and manuals were reconciled with the English version and corrected.

1.3.5 Data Collection

Following the completion of training for interviewers and supervisors, 19 field teams were formed. Each team consisted of a team leader, three to four interviewers, and a driver. Data collection took place from 9 May to 21 June 2025. Each team was assigned selected enumeration areas to visit, including their names, types, and locations. On average, fieldwork took two to three days per cluster. This period included the household listing exercise, which was conducted before the household and individual interviews.

1.3.6 Fieldwork Quality Control

NBS was responsible for coordinating fieldwork supervision. Throughout the data collection period, close communication was maintained between the NBS central office and field teams. Team leaders provided the first level of supervision for the 2025 TGES. They were responsible for monitoring fieldwork closely to ensure that all sampled

households were visited, all eligible respondents were contacted, and all questionnaires were checked in the field for accuracy and completeness.

The second level of supervision was provided by the fieldwork quality control team, comprising senior staff, trainers, and members of the Technical Committee. Each member was assigned one to three field teams. The team conducted periodic visits to review the work of interviewers, assess their performance, and monitor data quality. Spot checks were carried out on a sub-sample of the selected households. In addition, periodic review sessions were held with the interviewing teams to identify and correct errors detected in the fieldwork.

1.3.7 Data processing and Report Writing

Following the completion of data collection, the NBS technical staff responsible for data processing carried out secondary editing and coding of “other” responses. The cleaned dataset was then linked to the sampling weight to produce the final dataset. A data analysis and report writing workshop was held for all designated data analysts and authors to develop a tabulation plan, produce tables, interpret survey results, and draft chapters for the final report. The draft report produced during this workshop was reviewed and edited by a team of designated reviewers. The NBS staff were responsible for consolidating all comments and producing the final version of the report.

1.3.8 Response rates

Table 1.1 presents the response rates for the 2025 TGES. Of the target sample of 4,815 households, 4,755 were selected for the survey. The shortfall was due to four EAs that could not be reached because of accessibility challenges, including flooding. Of the 4,755 households selected, 4,751 were found to be occupied. Of these occupied households, 4,715 were successfully interviewed, yielding a household response rate of 99.2 per cent. In the interviewed households, 4,032 females aged 18 years and above were identified as eligible for individual interviews. Of these, 4,031 females were successfully interviewed, yielding a response rate of 99.9 per cent. Likewise, 2,814 males aged 18 and above were identified as eligible for individual interviews, and 2,813 were successfully interviewed, also yielding a response rate of 99.9 per cent.

Table 1.1: Results of the household and individual interviews

Number of households, number of interviews, and response rates (unweighted), 2025 TGES	
Result	Tanzania Mainland
Household interviews	
Households selected	4,755
Households occupied	4,751
Households interviewed	4,715
Household response rate	99.2
Interviews with women aged 18+	
Number of eligible Females	4,032
Number of eligible Females interviewed	4,031
Eligible Females' response rate	99.9
Interviews with Males age 18+	
Number of eligible males	2,814
Number of eligible males interviewed	2,813
Eligible males' response rate	99.9

CHAPTER TWO

DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Key points

- Most households are headed by men, with an average household size of 5.2 persons in rural areas and 4.2 in urban areas.
- Young adults aged 18-24 constitute a significant proportion of the population, accounting for 29.4%. Within the population structure, the proportion of women remains higher in the 25-29 and 30-34 age groups.
- The highest prevalence of disability is observed in the Arid Lands agro-ecological zone, with visual impairment being the most reported type of disability, affecting 14.3% of women.
- Households that include members with disabilities tend to have a lower level of educational attainment, particularly among women.

2.1 Introduction

This chapter presents the demographic characteristics of respondents and household members covered in the 2025 TGES, including household size, age-sex composition, Household size and headship, marital status, education level, and disability status. These demographic attributes are crucial for understanding the living conditions of the population and their relationship with the environment. Given that environmental challenges such as climate change, resource scarcity, and pollution, disproportionately affect vulnerable population groups, analysing these characteristics helps to identify those most at risk and to inform appropriate policy and programme interventions.

The analysis is also relevant to the United Nations Sustainable Development Goals (SDGs), particularly Goal 11, which aims to make cities and human settlements inclusive, safe, resilient, and sustainable. By examining how demographics characteristics shape exposure and vulnerability to environmental challenges, the chapter provides an evidence base for designing inclusive strategies that promote sustainability, strengthen resilience, and improve the quality of life, thereby contributing to the achievement of the SDGs.

2.2 Characteristics of Respondents

2.2.1 Household Size

Household size is a key demographic indicator that shows the average number of persons per household in a given area, and is widely used in censuses, surveys, and social research. In the 2025 TGES, household size is influenced by various factors, including agro-ecological zone, rural-urban residence, and the gender of the household head. Household size is an important indicator for assessing the living conditions, resource requirements, and broader social and economic dynamics within communities.

Table 2.1 presents information about average household size by place of residence and sex of household head across agro-ecological zones in Mainland Tanzania. The findings show that household sizes are generally larger in rural than in urban areas. Among, men-headed households, the average household size is 5.2 persons in rural areas compared with 4.2 persons in urban areas. Similarly, among women-headed households, the average 3.9 persons in rural areas compared with 3.5 persons in urban areas.

Across agro-ecological zones, male-headed households are consistently larger than female-headed households, with the largest sizes observed in the Plateaux: 6.2 in rural areas and 4.8 in urban for male-headed households; compared with 4.5 in rural areas and 3.4 in urban for female-headed households. The smallest averages are found among female-headed households in Highland zone (2.9) and the Coastal zone (3.0). However, in Coastal zone and Semi-Arid Lands, the average size of female-headed households is higher in urban than rural areas (3.8 versus 3.0 in the Coastal zone; and 3.9 and 3.8 in the Semi-Arid: Lands), while in the Alluvial Plains it is the same in both areas (3.1), to the general pattern of larger household sizes in rural areas.

Table 2.1: Household Size by Agro-Ecological Zone and Place of Residence; Mainland Tanzania, 2025 TGES

Location	Men headed		Women headed	
	Rural	Urban	Rural	Urban
Mainland Tanzania	**5.2**	**4.2**	**3.9**	**3.5**
Agro-ecological Zone				
Alluvial Plains	4.3	3.9	3.1	3.1
Arid Lands	4.9	4.5	3.8	3.7
Coastal	4.1	4.0	3.0	3.8
Highland	4.8	4.2	3.7	2.9
Plateaux	6.2	4.8	4.5	3.4
Semi-Arid Lands	5.1	4.2	3.8	3.9

2.2.2 Age-gender composition

In this report, household composition is analysed using selected characteristics of household members, including age, sex, relationship to the household head, and marital status. Age and gender are important demographic variables that form the basis of census and survey classifications.

Table 2.2 presents the percentage distribution of household members by age group and gender in Mainland Tanzania. The overall population distribution shows that young adults, specifically those aged 18-24, comprise a significant proportion of the population, at 29.4 percent, of whom 17.3% are women and 12.1% are men. (As age increases, the proportion of women remains higher, particularly in the 25-29 and 30-34 age groups.

In rural settings, young women aged 18-24 account for 17.3 per cent, significantly higher than young men of the same age group 10.9%). The data show a consistent pattern in which women constitute a larger share in the younger age groups, particularly in rural areas.

The table provides the percentage distribution of household members by age group and sex across the agro-ecological zones. The 18-24 age group shows significant gender disparity, with relatively high proportions of young women in the same zone, especially the Coastal zone 18.7 per cent. compared to 11.4 per cent for men in the Alluvial Plain. Generally, younger age groups (18-24 and 24-29) record a higher percentage of women across most agro-ecological zones, especially in the Coastal and Highland zones. As age increases, especially in the 55-64 and 65-69 age groups, men's representation tends to increase. This pattern reflects the socio-economic and environmental conditions associated with each agro-ecological zone.

Table 2. 2: Percentage distribution of Household Members by Age Groups and Sex; Mainland Tanzania, 2025 TGES

Age group	Tanzania Mainland		Total			Rural		Urban		Agro-ecological zone											
										Alluvial Plain		Arid Lands		Coastal		Highland		Plateau		Semi-Arid Lands	
Gender	Men	Women	Both sex	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
18-24	12.1	17.3	29.4	10.9	17.3	14.5	17.4	11.4	16.2	8.3	18.1	12.6	16.8	10.9	18.7	15.7	16.1	13.2	17.8		
25-29	11.4	14.3	25.7	11.0	13.4	12.1	15.8	9.4	13.4	14.9	11.8	14.7	14.3	10.0	13.8	10.3	17.7	9.4	14.7		
30-34	12.6	12.8	25.4	11.6	12.8	14.7	12.8	14.7	13.7	8.6	11.3	10.7	14.7	12.4	11.2	13.4	13.9	15.7	12.1		
35-39	11.9	11.6	23.5	12.0	10.9	11.8	12.8	12.0	13.2	12.6	8.2	10.0	11.6	11.7	9.6	15.6	14.9	9.4	12.3		
40-44	10.5	8.8	19.3	11.0	8.6	9.4	9.1	8.2	8.2	11.1	9.8	11.6	7.5	8.4	8.7	10.2	9.0	13.7	9.5		
45-49	8.8	8.8	17.6	9.1	9.1	8.1	8.3	10.4	7.0	7.6	8.0	7.6	10.0	10.2	11.5	7.8	7.6	9.0	8.8		
50-54	9.6	7.6	17.2	10.0	8.2	8.7	6.7	11.4	8.5	8.3	9.6	10.9	8.1	7.7	5.7	9.0	6.8	10.6	7.2		
55-59	6.2	5.3	11.5	6.7	5.4	5.2	5.3	6.3	4.8	5.6	5.6	7.1	6.4	8.0	5.3	5.7	3.7	4.5	6.2		
60-64	5.2	4.7	9.9	4.9	5.1	5.9	4.1	6.0	7.3	6.9	5.7	4.8	3.0	4.7	5.2	4.2	2.9	4.9	4.6		
65-69	4.2	3.1	7.3	4.5	3.3	3.6	2.6	3.4	2.1	7.6	4.8	3.0	2.5	3.9	3.4	2.6	2.1	4.7	3.3		
70-74	3.1	2.8	5.9	3.3	2.8	2.9	2.9	3.0	3.7	2.9	2.7	3.8	3.0	4.7	3.1	2.5	2.7	1.9	1.8		
75-79	2.0	1.7	3.7	2.3	1.9	1.5	1.3	0.5	1.8	2.7	2.5	2.1	1.3	4.0	2.1	1.7	1.3	1.2	1.2		
80+	2.4	1.1	3.5	2.8	1.2	1.5	0.9	3.4	0.1	2.9	1.9	1.2	0.9	3.6	1.7	1.3	1.3	1.9	0.5		

2.2.3 Marital Status

Examining marital status is important for understanding the social dynamics within a community and how these change over time. This analysis serves as a crucial component in exploring fertility patterns, as marital status influences family structures, reproductive choices, and the overall demographic landscape of a population. This section analyses the marital status of the household members aged 10 years and above by sex and agro-ecological zone.

Table 2.3 presents the percentage distribution of household members aged 10 years and above by marital status, gender, and agro-ecological zone. In Mainland Tanzania, a larger percentage of men never married (14.5%) compared with women (9.6%), while more women are widowed (11.7%) or separated (4.9%). The distribution across rural and urban areas shows higher percentages of married individuals in rural settings, for both men (72.9%) and women (65.4%). Results by agro-ecological zone show that the Alluvial Plains have the highest percentage of never married males (18.5%), while Arid Lands record high proportions of married individuals (75.1% for men and 65.3% for women). In the Coastal and Highland agro-ecological zones, similar patterns are observed, with relatively higher proportions of women in widowed and divorced categories. The Plateaux and Semi-Arid Lands also reflect a fairly balanced distribution across marital status categories, highlighting zonal variations in marital patterns and their possible socio-economic influences.

Table 2. 3: Percentage Distribution of Household Members Aged 10 Years or Above by Zone, Sex, and Marital Status, Mainland Tanzania, 2025 TGES

Marital status	Tanzania Mainland		Rural		Urban		Agro-ecological zone											
							Alluvial Plain		Arid Lands		Coastal		Highland		Plateaux		Semi-Arid Lands	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Never married	14.5	9.6	11.5	6.8	21.0	14.1	18.5	11.2	9.9	5.7	19.2	15.3	10.5	8.8	14.1	8.2	15.9	9.0
Married	69.5	60.9	72.9	65.4	62.5	53.7	55.0	50.5	75.1	65.3	64.8	54.9	75.9	66.9	72.9	61.8	71.4	64.5
Living together	8.0	7.6	7.6	6.9	8.8	8.7	16.9	13.5	7.6	6.0	8.5	7.7	6.7	4.8	6.7	9.7	2.9	4.3
Separated	3.2	4.9	3.8	4.3	1.9	5.8	5.3	6.2	1.6	4.5	3.4	5.4	3.2	4.5	1.3	3.9	4.5	4.8
Widowed	1.9	11.7	1.9	11.8	2.0	11.5	2.0	11.5	2.6	13.8	2.2	8.9	1.9	12.2	1.5	12.1	1.6	11.6
Divorced	2.8	5.3	2.2	4.9	3.9	6.1	2.3	7.1	3.2	4.6	2.0	7.9	1.7	2.8	3.5	4.2	3.8	5.8

2.2.4 Education level of respondents

Education is a fundamental driver of social and economic development. Assessing the education level of respondents is important for understanding the relationship between education, gender, and environmental issues. Education influences individuals' awareness of environmental challenges and gender dynamics. The 2025 TGES provides evidence on patterns that may influence environmental practices and gender equality. These findings can guide the development of targeted educational programmes and policies to strengthen environmental awareness and advance gender equality. Such evidence is essential for designing informed and effective strategies for sustainable and inclusive development.

Table 2.4 shows that educational attainment in Mainland Tanzania is still concentrated at the primary level, with relatively few progressing to secondary education and even fewer to university level. Gender disparities persist, with women being more disadvantaged, especially in rural agro-ecological zones. Primary education is the dominant level across both sexes, with men at 63.5 per cent and women at 60.7 per cent. This is followed by secondary education, slightly higher among men (19.4%) than women (18.5%). University and related education is relatively low among men (5.0%) and women (2.7%).

Urban areas demonstrate significantly higher educational attainment levels than rural areas. For example, urban males record 69.6 per cent at primary level, compared with 50.5 per cent among rural men. Similarly, urban women record 63.1 per cent at primary level, compared with 56.7 per cent in rural settings.

The results on educational attainment across agro-ecological zones reveal significant differences in primary education attainment levels. The Semi-Arid Lands exhibit the highest primary education attainment, with men at 69.3 per cent and women at 65.4 per cent. This suggests relatively higher attainment of primary education in this zone compared to the others. Arid Lands record the lowest primary education attainment levels, with men at 60.2 per cent and women at 57.2 per cent. The low attainment level in the Arid Lands suggest considerable challenges in access to education and may reflect underlying socio-economic constraints affecting progression in primary education. These findings highlight the urgent need for targeted educational strategies and resources in Arid Lands to improve primary education outcomes and bridge the gap observed across different agro-ecological zones.

Regarding secondary education attainment across agro-ecological zones, the Arid Lands exhibit the lowest attainment, with men at 13.2 per cent and women at 12.4 per cent. These low percentages suggest substantial barriers to educational progression in the Arid Lands and point to the need for targeted interventions and support to improve access to secondary education. These findings underscore the disparities in secondary education attainment across agro-ecological zones and highlight the need for targeted policies to strengthen educational development, particularly in the Arid Lands.

Table 2. *4*: Percentage Distribution of the Population Aged Five Years and Above by Gender and Education Level

Level		Education Level	Primary Education	Secondary Education	University and other equivalent institutions	Training after primary school	Training after secondary school	Not Educated	I don't know
Tanzania Mainland		**Male**	63.5	19.4	5.0	0.6	0.9	10.3	0.1
		Female	60.7	18.5	2.7	0.6	0.7	16.7	0.0
Urban		Male	69.6	13.5	2.5	0.7	0.6	13.0	0.2
		Female	63.1	13.2	1.1	0.6	0.4	21.4	0.0
Urban		Male	50.5	32.5	10.2	0.5	1.7	4.6	0.0
		Female	56.7	27.0	5.2	0.7	1.2	9.1	0.0
Agro-ecological zone	Alluvial Plain	Male	62.5	20.2	4.5	0.8	1.2	10.5	0.0
		Female	62.6	18.4	2.4	0.2	1.1	15.4	0.0
	Arid Lands	Male	60.2	13.2	3.3	0.8	0.7	21.9	0.0
		Female	57.2	12.4	1.4	0.8	0.1	27.9	0.0
	Coastal	Male	55.6	27.9	8.1	1.0	1.4	6.1	0.0
		Female	53.5	26.3	5.5	1.2	1.8	11.5	0.0
	Highland	Male	67.0	19.6	5.6	0.9	0.9	5.9	0.2
		Female	62.2	20.3	3.7	1.0	0.7	12.1	0.0
	Plateaux	Male	65.0	22.0	3.5	0.2	1.1	8.3	0.0
		Female	62.9	17.4	1.7	0.0	0.4	17.5	0.0
	Semi-Arid Lands	Male	69.3	14.4	5.0	0.2	0.4	10.4	0.4
		Female	65.4	16.7	1.7	0.5	0.3	15.2	0.0

2.2.5 Disability

Collecting data on people with disabilities is crucial for identifying their specific needs and challenges, and for informing targeted support and services. This information helps policymakers develop inclusive policies that promote fairness and accessibility, aligning with SDGs, especially Goal 10 (Reduced Inequalities) and Goal 11 (Sustainable Cities and Communities). Information on the prevalence and types of disabilities also supports effective resource allocation, strengthens awareness, and promotes the rights of people with disabilities. Environmental factors, such as access to clean water, sanitation, and safe

living conditions, can greatly influence the wellbeing of people with disabilities, making this data essential for addressing their distinct challenges across different environments. It also supports the tracking progress in disability inclusion and assessment of programme effectiveness, while encouraging community engagement and collaboration among stakeholders.

2.2.6 Prevalence of Persons with Disabilities by Type and gender

The 2025 TGES collected data on disability by type and gender so as to identify specific needs and challenges faced by different groups, allowing for tailored interventions and support services. Disaggregating data by gender reveals gender disparities in the prevalence and impact of disabilities, highlighting vulnerabilities and enabling targeted advocacy for gender equality. Data by agro-ecological zone help to explain how disabilities manifest differently across various geographic areas, influenced by local resources, cultural attitudes, and environmental factors. Collecting such data supports an inclusive approach to addressing the diverse needs of people with disabilities and contributes to a more equitable society.

Table 2.5 shows that in Mainland Tanzania, disability prevalence varied notably across types. The highest prevalence of disability is seen in the ‘seeing’ category, with 9.6 per cent of men and 11.2 per cent of women. These points highlight the need for interventions to improve eye health and strengthen support to those affected.

The lowest prevalence of disability is observed for albinism, at 0.9 per cent among men and 1.1 per cent among women. While these figures are relatively low compared to other disability categories, they suggest the importance of continued awareness and education efforts to address the unique challenges faced by persons with albinism, particularly in relation to healthcare access and social integration.

When comparing rural and urban areas, the data show significant differences in the prevalence of disabilities. In rural areas, the prevalence of disabilities among men and women varies by sex and type of disability. For albinism, the prevalence is 0.9 per cent for men and slightly higher at 1.4 per cent for women, suggesting a marginally greater prevalence among women in this category. The ‘seeing’ disability is reported by 10.3 per cent of men and 11.6 per cent of women, indicating that visual impairments are more common among women.

In urban areas, the prevalence of disabilities among men and women also varies by sex and type of disability. Albinism is found in 0.8 per cent of men and 0.3 per cent of women, indicating a lower prevalence in women compared with their rural counterparts. The prevalence of 'seeing' disability in urban men is 8.4 per cent, while for women it is 10.5 per cent, indicating that visual impairment is more common among women.

However, urban areas exhibit lower rates in several other disability categories, notably for hearing disability, where urban men have a prevalence of 2.4 per cent and urban women 2.8 per cent. Walking disabilities show a similar trend, with 6.1 per cent among men and 9.2 per cent among women. Notably, urban women experience a higher prevalence of walking disabilities compared to their rural counterparts, though overall rates are lower than in rural areas.

In urban areas, concentration disability is more common among men, at 3.6 per cent, than among women, at 2.8 per cent indicating a higher prevalence among men in this category." Lastly, self-care and communication disabilities remains less common in urban settings, with 1.6 per cent for men and 1.0 per cent for women in self-care, and communication disabilities at 1.1 per cent for both sexes.

Overall, the data highlight differences in disability patterns between urban and rural areas, pointing to the need for context-specific interventions to address the challenges faced by persons with disabilities in urban environments.

Table 2. 5: Prevalence of Persons with Disabilities by Type and gender

	Gender	Type of Disability						
		Albinism	Seeing	Hearing	Walking	Concentrating	Selfcare	Communication
Tanzania Mainland	**Men**	**0.9**	**9.6**	**2.9**	**6.5**	**4.3**	**1.9**	**1.8**
	Women	**1.0**	**11.2**	**3.4**	**9.7**	**4.9**	**1.5**	**1.7**
Rural	Men	0.9	10.3	3.2	6.8	4.4	2.0	2.0
	Women	1.4	11.6	3.7	10.1	6.1	1.9	2.0
Urban	Men	0.8	8.4	2.4	6.1	3.6	1.6	1.1
	Women	0.3	10.5	2.8	9.2	2.8	1.0	1.1

2.2.7 Prevalence of Persons with Disabilities by Agro-Ecological Zone

The highest prevalence of disability in the Arid Lands is observed in the 'seeing' category, with 14.3 per cent of women having this disability. This points to significant vision-related challenges and the need for targeted interventions in eye care and support services in this zone.

Albinism has the lowest disability prevalence in the Plateaux, at only 0.1 per cent of men. This indicates that the condition is relatively uncommon in this zone, although continued awareness and support remain essential for those affected. These findings point to the need for targeted strategies that respond to the specific disability patterns within each agro-ecological zone.

Table 2. 6: Prevalence of Persons with Disabilities by Agro-Ecological Zone

Location	Gender	Type of Disability						
		Albinism	Seeing	Hearing	Walking	Concentrating	Selfcare	Communication
Agro-ecological zone								
Alluvial Plain	Men	0.4	10.0	1.7	6.5	4.9	1.7	0.9
	Women	0.9	13.6	4.5	10.4	4.3	1.6	1.3
Arid Lands	Men	1.5	9.8	3.6	7.1	3.2	1.9	2.4
	Women	1.7	12.0	3.7	11.1	6.4	2.0	2.3
Coastal	Men	0.8	10.3	3.3	6.5	2.7	1.1	0.5
	Women	1.0	14.0	4.2	9.7	2.9	0.5	0.1
Highland	Men	0.8	11.7	4.1	8.8	3.8	3.1	2.0
	Women	0.3	10.4	3.1	12.2	5.5	2.6	2.3
Plateaux	Men	1.4	8.2	1.0	5.1	4.0	1.9	1.8
	Women	1.0	8.2	2.8	6.9	3.3	1.1	2.4
Semi-Arid Lands	Men	0.5	7.9	4.3	5.2	6.6	1.1	2.4
	Women	1.2	9.2	2.1	8.5	6.9	1.2	1.3

CHAPTER THREE

HOUSING CHARACTERISTICS

Key points

- The majority of households in Mainland Tanzania (89.0%) live in dwellings with improved roofing materials
- More than half of households (56.3%) live in dwellings with improved floor materials
- About seven in ten households (69.2%) in Mainland Tanzania use improved sources of drinking water.
- More than half of households in Mainland Tanzania (59.5%) use improved toilet facilities.
- Firewood is used for cooking by 81.0 per cent of households in rural areas compared with 13.6 per cent in urban.
- Less than half of households (42.0%) use electricity from the national grid for lighting, while 33.7 per cent use solar energy as their primary source of lighting

3.1 Introduction

The living conditions of households and the quality of their dwellings are important indicators of social and economic well-being. Housing characteristics provide insights into households' standard of living, environmental sustainability, and the adequacy of infrastructure and services available to households. Similarly, information on household population provides a demographic context that is vital for understanding demand for housing, access to services, and the relationship between population dynamics and environmental outcomes.

This chapter presents findings from the 2025 TGES on housing characteristics. Specifically, it highlights the information on the building materials used for the main dwelling and the number of rooms available for sleeping. In addition, it presents information on the main source of drinking water, sanitation facilities, and the main source of energy used for cooking and lighting. Data are disaggregated by gender, urban-rural residence,

Mainland Tanzania, and agro-ecological zones to provide a deeper understanding of variations across the country.

The analysis presented in this chapter provides essential evidence base for the design implementation, and monitoring of policies and programmes related to housing, urban development, and environmental management. It further informs gender-responsive planning by showing how housing conditions and household demographics intersect with social and environmental outcomes in Tanzania.

3.2 Housing Materials

Housing materials provide critical information on population living conditions and serve as a foundation for monitoring progress toward national development priorities and international commitments, including SDGs. Key dimensions include the types of materials used for roofing, walling, and flooring, as well as the number of sleeping rooms.

These indicators are essential for assessing the adequacy, quality, and safety of housing, while also highlighting disparities by sex, place of residence, and geographical location. They contribute to monitoring of SDG 11 (Sustainable Cities and Communities), which emphasizes on access to adequate, safe, and affordable housing and basic services for all. They are also closely linked to SDG 1 (No Poverty), as poor housing conditions often reflect and reinforce poverty, and SDG 3 (Good Health and Well-being), given that housing quality and crowding significantly affect health outcomes.

Moreover, analysing housing characteristics through a gender lens is critical, as inadequate housing and overcrowding disproportionately affect women and girls, who often shoulder a greater share of domestic work, caregiving, and household management. Integrating gender dimensions into housing statistics is therefore vital to ensure that policy responses are equitable, inclusive, and responsive to the needs of all members of society.

3.2.1 Roofing Materials

Roofing materials are a key indicator of household living conditions and environmental sustainability. The type of roofing used not only reflects households' socio-economic status but also has implications for health, safety, and the environment. Durable materials such as iron sheets, tiles, and concrete often indicate better living standards and provide greater protection against climatic hazards. In contrast, temporary or traditional materials such as

grass, palm leaves, and mud may expose households to greater risks, including leaks, fire hazards, and susceptibility to extreme weather.

Monitoring roofing materials thus provides valuable insights into the links between housing quality, gender equality, and environmental sustainability. This aligns with national priorities articulated in the Dira 2050 and Third Five-Year Development Plan (FYDP III), both of which emphasise improved housing conditions and resilience to climate change.

The 2025 TGES results indicate that 89.0 per cent of households in Mainland Tanzania live in dwellings roofed with improved materials such as iron sheets, tiles, concrete, or asbestos. The use of improved roofing materials is almost universal in urban areas (99.4%), compared with 84.7 per cent in rural areas. Across all agro-ecological zones, more than 80 per cent of households use improved roofing materials. However, disparities by sex of household head remain evident, with male-headed households (64.4%) more likely than women-headed households (24.6%) to live in dwellings with improved roofing materials (Figure 3.1).

Iron sheets are the dominant roofing material nationally, used by 98.5 per cent of urban households and 84.2 per cent of rural households. Their prevalence ranges from 81.3 per cent in semi-arid zones to 94.8 percent in the Coastal Zone. By contrast, the Plateau Zone records the highest use of traditional roofing materials, such as grass or leaves at 17.7% per cent (Table 3.1).

The findings further indicate that female-headed households are more likely to occupy dwellings with less durable roofing materials, heightening their exposure to weather-related shocks and weakening household resilience. This pattern reflects persistent structural inequalities in income, land ownership, and access to credit, which constrain women's ability to secure improved housing.

The continued use of grass and leaves for roofing may contribute to deforestation and the unsustainable extraction of natural resources (FAO, 2018). Although, iron sheets and concrete roofs are more durable, their production is both energy and carbon-intensive, underscoring the importance of promoting more environmentally friendly alternatives (UNEP, 2019; UN-Habitat, 2020).

Figure 3. 1: Percentage Distribution of Households by Improved and Unimproved Roofing Materials, Mainland Tanzania, 2025 TGES

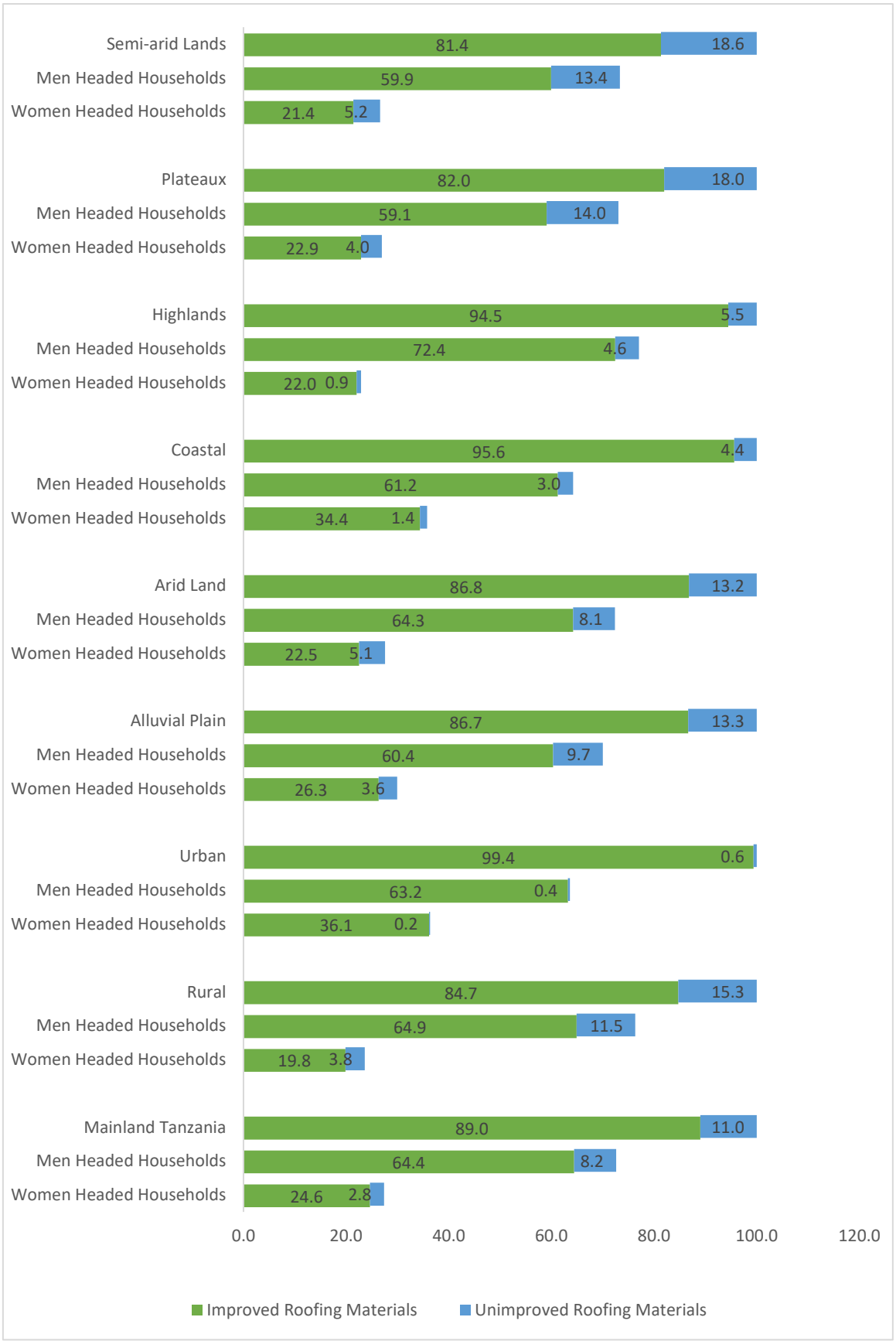


Table 3. 1: Percentage Distribution of Households by Roofing Material of the Main Dwelling, Gender, and Place of Residence, Mainland Tanzania, 2025 TGES

Characteristics	Roofing Material of Main Dwelling							
	Total Number of Households	Iron sheets	Tiles	Concrete	Asbestos	Grass/Leaves	Mud and Leaves	Plastics/Box
Mainland Tanzania	13,710,890	88.4	0.4	0.1	0.1	9.9	1.0	0.1
Men-headed Households	9,956,831	64.0	0.4	0.0	0.1	7.3	0.9	0.1
Women-headed households	3,754,059	24.4	0.1	0.1	0.1	2.6	0.2	0.0
Rural	9,689,975	84.2	0.5	0.0	0.1	13.7	1.4	0.1
Men headed Households	7,398,311	64.4	0.5	0.0	0.0	10.2	1.2	0.1
Women headed households	2,291,664	19.8	0.0	0.0	0.0	3.6	0.2	0.0
Urban	4,020,915	98.5	0.4	0.3	0.3	0.6	0.0	0.0
Men headed Households	2,558,520	62.8	0.1	0.1	0.2	0.4	0.0	0.0
Women headed households	1,462,395	35.6	0.3	0.2	0.1	0.2	0.0	0.0
Agro-ecologicla Zones								
Alluvial Plain	257,907	86.5	0.0	0.0	0.2	12.4	0.8	0.1
Men headed Households	180,641	60.2	0.0	0.0	0.2	9.1	0.5	0.1
Women headed households	77,266	26.3	0.0	0.0	0.0	3.3	0.3	0.0
Arid Land	1,069,893	86.8	0.0	0.0	0.0	10.5	2.7	0.0
Men headed Households	774,502	64.3	0.0	0.0	0.0	6.3	1.8	0.0
Women headed households	295,390	22.5	0.0	0.0	0.0	4.2	0.9	0.0
Coastal	2,616,052	94.8	0.6	0.2	0.1	4.2	0.2	0.0
Men headed Households	1,680,132	61.0	0.2	0.1	0.0	2.8	0.2	0.0
Women headed households	1,025,178	33.8	0.4	0.1	0.1	1.4	0.0	0.0
Highlands	4,474,288	93.2	1.0	0.1	0.1	5.4	0.0	0.2
Men headed Households	3,449,110	71.4	1.0	0.0	0.0	4.5	0.0	0.2
Women headed households	1,025,178	21.8	0.0	0.1	0.1	0.9	0.0	0.0
Plateaux	3,243,004	81.8	0.0	0.0	0.2	17.7	0.3	0.0
Men headed Households	2,368,744	58.9	0.0	0.0	0.2	13.8	0.2	0.0
Women headed households	874,259	22.9	0.0	0.0	0.0	3.9	0.1	0.0
Semi-arid Lands	2,049,747	81.3	0.0	0.0	0.1	14.1	4.6	0.0
Men headed Households	1,503,701	59.9	0.0	0.0	0.1	9.2	4.3	0.0
Women headed households	546,047	21.4	0.0	0.0	0.0	4.9	0.3	0.0

3.2.2 Floor Covering Materials

The type of material used for floor covering is a key indicator of household living standards and the overall quality of the dwelling environment. Flooring materials range from natural surfaces such as earth and sand to more durable options such as cement, tiles, or wood. The choice of flooring reflects not only a household's economic capacity but also cultural preferences and environmental conditions.

Understanding the distribution of floor covering materials is important for assessing health outcomes, as certain materials may retail dust, pests, or moisture which can contribute to respiratory disease and other health problems (UN-Habitat, 2020). Moreover, the sourcing and production of flooring materials have environmental implications, including the use of natural resources and potential waste generation (UNEP, 2019; FAO, 2018).

Floor quality directly affects domestic tasks, comfort, and health, particularly for women and children who typically spend more time indoors (OECD, 2021). These findings are therefore critical for informing policies aimed at improving housing quality, reducing health risks, and advancing environmentally sustainable construction practices (UN-Habitat, 2020).

Nationally, 56.3 per cent of households live in dwellings with improved floor covering materials, including cement, tiles, terrazzo, and polished wood, while 43.7 per cent rely on unimproved flooring materials such as earth, dung, bamboo, and wood planks. Urban-rural differences are stark: 93.6 per cent of urban households have improved floors, compared with 40.8 per cent of rural households. Across agro-ecological zones, improved flooring ranges from 36.8 per cent in the Arid Zones to 87.8 per cent in the Coastal Zone. Across all zones, male-headed households are more likely than female-headed households to live in dwellings with improved floors covering materials (Figure 3.2).

The results show that 46.7 per cent of households in Mainland Tanzania live in dwellings with cement floors, followed by dwellings with earth or sand floors (43.5%). In urban areas, almost seven out of ten households (68.2%) live in dwellings with cement floor followed by ceramic tiles (25.2%). In rural areas, most households (58.9%) live in dwellings with earth or sand as the floors, followed by cement floors (37.8%).

In addition, fewer than 50.0 per cent of households live in floors with cement floors across the agro-ecological zones, except in the Alluvial Plain (51.0%) and the Coastal Zone (65.4%) (Table 3.2).

Earth and dung floors, while low-cost, can contribute to unhygienic conditions and a higher disease burden (UN-Habitat, 2020). By contrast, the production of cement and tiles requires substantial amounts of energy and natural resources, thereby contributing to environmental degradation (UNEP, 2019; FAO, 2018). Balancing improved housing standards with sustainable material production therefore remains essential (UN-Habitat, 2020).

Figure 3. 2: Percentage Distribution of Households by Improved and Unimproved Floor Covering Materials, Gender, and Place of Residence; Mainland Tanzania, 2025 TGES

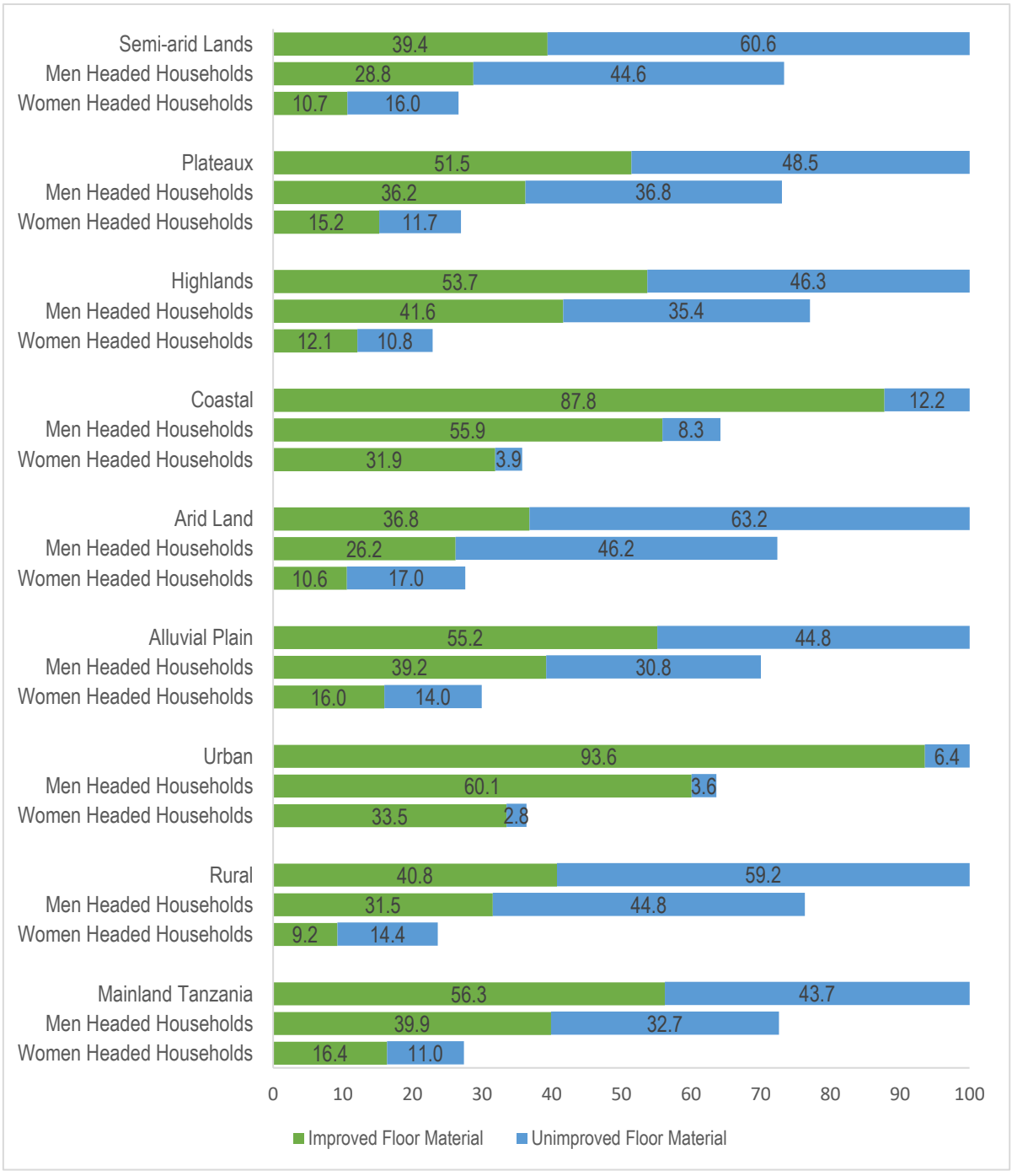


Table 3. 2: Percentage Distribution of Households by Type of Floor Covering Materials of Main Dwelling, Place of Residence and Gender; Mainland Tanzania, 2025 TGES.

Characteristics	Floor Material of Main Dwelling								
	Total Number of Households	Cement	Ceramic Tiles	Terrazzo	Wood Planks	Palm/Bamboo Planks	Earth/Sand	Animal Dung	Tent/Containers
Mainland Tanzania	13,710,890	46.7	9.5	0.1	0.1	0.0	43.5	0.1	0.0
Men-headed Households	9,956,831	33.5	6.4	0.0	0.0	0.0	32.5	0.1	0.0
Women-headed households	3,754,059	13.3	3.0	0.0	0.0	0.0	11.0	0.0	0.0
Rural	9,689,975	37.8	2.9	0.0	0.1	0.0	58.9	0.2	0.0
Men-headed Households	7,398,311	29.4	2.2	0.0	0.0	0.0	44.6	0.2	0.0
Women-headed households	2,291,664	8.5	0.8	0.0	0.1	0.0	14.4	0.0	0.0
Urban	4,020,915	68.2	25.2	0.1	0.0	0.0	6.3	0.0	0.1
Men-headed Households	2,558,520	43.3	16.8	0.0	0.0	0.0	3.5	0.0	0.1
Women-headed households	1,462,395	24.9	8.5	0.1	0.0	0.0	2.8	0.0	0.0
Agro-ecological Zones									
Alluvial Plain	257,907	51.0	3.2	1.0	0.0	0.3	44.5	0.0	0.0
Men-headed Households	180,641	36.7	1.8	0.7	0.0	0.3	30.5	0.0	0.0
Women-headed households	77,266	14.2	1.5	0.2	0.0	0.0	14.0	0.0	0.0
Arid Land	1,069,893	32.8	4.0	0.0	0.2	0.0	62.9	0.1	0.0
Men-headed Households	774,502	22.7	3.5	0.0	0.0	0.0	46.1	0.1	0.0
Women-headed households	295,390	10.1	0.5	0.0	0.2	0.0	16.8	0.0	0.0
Coastal	2,616,052	65.4	22.4	0.0	0.1	0.0	12.0	0.0	0.1

Characteristics	Floor Material of Main Dwelling								
	Total Number of Households	Cement	Ceramic Tiles	Terrazzo	Wood Planks	Palm/Bamboo Planks	Earth/Sand	Animal Dung	Tent/Containers
Men-headed Households	1,680,132	41.3	14.6	0.0	0.0	0.0	8.3	0.0	0.1
Women-headed households	935,919	24.0	7.9	0.0	0.1	0.0	3.7	0.0	0.0
Highlands	4,474,288	45.8	7.9	0.1	0.0	0.0	46.3	0.0	0.0
Men-headed Households	3,449,110	35.6	6.1	0.0	0.0	0.0	35.4	0.0	0.0
Women-headed households	1,025,178	10.2	1.8	0.1	0.0	0.0	10.8	0.0	0.0
Plateaux	3,243,004	44.2	7.2	0.0	0.0	0.0	48.5	0.0	0.0
Men-headed Households	2,368,744	31.8	4.5	0.0	0.0	0.0	36.8	0.0	0.0
Women-headed households	874,259	12.5	2.8	0.0	0.0	0.0	11.7	0.0	0.0
Semi-arid Lands	2,049,747	35.8	3.5	0.1	0.1	0.0	59.6	0.9	0.0
Men-headed Households	1,503,701	26.6	2.1	0.0	0.1	0.0	43.6	0.9	0.0
Women-headed households	546,047	9.1	1.4	0.1	0.0	0.0	16.0	0.0	0.0

3.2.3 Wall Materials

Wall materials play an essential role in determining the structural integrity, durability, and habitability of housing units. Commonly used materials include mud and poles, bricks, blocks, and concrete, each varying in cost, availability, and resilience to climatic conditions. Walls not only provide privacy and security but also affect indoor air quality, thermal comfort, and energy efficiency.

The type of wall material signals household economic capacity and access to construction resources, with poorer households often relying on temporary or less durable options (UN-Habitat, 2020; Jenkins & Smith, 2001). Poor-quality wall materials can increase vulnerability to environmental shocks, compromise safety, and intensify women's workload in maintaining homes (OECD, 2021). The extraction and production of construction materials such as timber, clay, or cement also contribute to deforestation, land degradation, and carbon emissions (FAO, 2018; UNEP, 2019).

In Mainland Tanzania, more than one-third (38.3%) of households have main dwelling walls constructed with baked bricks, followed by cement/rock bricks (28.1%) and sundried bricks (21.3%). In urban areas, nearly three-quarters of households (73.5%) use cement/rock bricks as wall materials, followed by baked bricks (17.9%). In rural areas, nearly half (46.7%) of households live in dwellings built with baked bricks as the primary wall material, followed by sundried bricks (27.7%).

Across agro-ecological zones, only the Coastal Zones have more than 80 per cent of households using cement/rock bricks as the primary wall material for their main dwelling. The findings further show that the use of cement bricks is higher among male-headed households than among female-headed households across all zones (Table 3.3).

Female-headed households are disproportionately represented in dwellings with sundried or mud walls, which are more susceptible to collapse during floods or heavy rainfall and therefore heighten exposure to climate shocks. This pattern points to the close link between gender inequality, poverty, and disaster risk.

The production of sundried and baked bricks often depends on unsustainable extraction of soil and fuelwood, thereby contributing to land degradation and deforestation. Cement and rock bricks, while more durable, are energy-intensive and generate high carbon emissions during production, raising concerns about the sustainability of current construction practices.

Table 3. 3: Percentage Distribution of Households by Type of Wall Materials of Main Dwelling, Place of Residence, and Gender; Mainland Tanzania, 2025 TGES

Characteristics	Wall Materials of Main Dwelling										
	Total Number of Households	Stones	Cement/Rock Bricks	Sundried Bricks	Baked Bricks	Timber	Timber and Iron Sheets	Poles and Mud	Grass	Glass/Aluminum	Tent/Containers
Mainland Tanzania	13,710,890	1.3	28.1	21.3	38.3	0.4	0.6	9.9	0.1	0.0	0.0
Men-headed households	9,956,831	0.8	18.8	15.8	29.2	0.3	0.6	7.0	0.1	0.0	0.0
Women-headed households	3,754,059	0.5	9.3	5.5	9.1	0.1	0.0	2.9	0.0	0.0	0.0
Rural	9,689,975	1.3	9.2	27.7	46.7	0.6	0.8	13.5	0.2	0.0	0.0
Men-headed households	7,398,311	1.0	6.9	20.9	36.6	0.4	0.8	9.6	0.2	0.0	0.0
Women-headed households	2,291,664	0.3	2.4	6.7	10.2	0.2	0.1	3.8	0.0	0.0	0.0
Urban	4,020,915	1.3	73.5	6.0	17.9	0.0	0.0	1.3	0.0	0.0	0.1
Men-headed households	2,558,520	0.3	47.7	3.6	11.4	0.0	0.0	0.6	0.0	0.0	0.1
Women-headed households	1,462,395	1.0	25.9	2.4	6.4	0.0	0.0	0.6	0.0	0.0	0.0
Agro-ecological Zones											
Alluvial Plain	257,907	2.9	7.0	10.0	66.8	0.0	0.0	13.2	0.2	0.0	0.0
Men-headed households	180,641	2.0	5.9	7.6	44.9	0.0	0.0	9.5	0.2	0.0	0.0
Women-headed households	77,266	0.9	1.1	2.4	21.9	0.0	0.0	3.7	0.0	0.0	0.0
Arid Land	1,069,893	0.4	12.3	26.4	36.6	0.3	0.0	23.1	0.6	0.1	0.0
Men-headed households	774,502	0.2	9.3	19.2	27.8	0.3	0.0	15.0	0.6	0.0	0.0
Women-headed households	295,390	0.3	3.0	7.2	8.8	0.0	0.0	8.2	0.1	0.1	0.0
Coastal	2,616,052	1.1	82.1	7.4	4.0	0.0	0.0	5.1	0.1	0.0	0.1
Men-headed households	1,680,132	0.4	52.6	4.5	2.8	0.0	0.0	4.0	0.0	0.0	0.1
Women-headed households	935,919	0.7	29.5	2.9	1.3	0.0	0.0	1.2	0.1	0.0	0.0
Highlands	4,474,288	1.4	13.9	14.3	56.0	1.2	1.9	11.3	0.0	0.0	0.0

Characteristics	Wall Materials of Main Dwelling										
	Total Number of Households	Stones	Cement/Rock Bricks	Sundried Bricks	Baked Bricks	Timber	Timber and Iron Sheets	Poles and Mud	Grass	Glass/Aluminum	Tent/Containers
Men-headed households	3,449,110	1.2	10.3	10.9	43.9	0.9	1.7	8.1	0.0	0.0	0.0
Women-headed households	1,025,178	0.2	3.6	3.5	12.1	0.4	0.1	3.1	0.0	0.0	0.0
Plateaux	3,243,004	2.0	17.0	28.4	45.9	0.0	0.0	6.5	0.3	0.0	0.0
Men-headed households	2,368,744	1.0	11.3	21.0	34.8	0.0	0.0	4.7	0.3	0.0	0.0
Women-headed households	874,259	1.0	5.7	7.4	11.1	0.0	0.0	1.8	0.0	0.0	0.0
Semi-arid Lands	2,049,747	0.4	18.4	41.9	28.4	0.0	0.0	10.9	0.0	0.0	0.0
Men-headed households	1,503,701	0.2	12.8	32.3	20.5	0.0	0.0	7.5	0.0	0.0	0.0
Women-headed households	546,047	0.2	5.6	9.6	7.9	0.0	0.0	3.4	0.0	0.0	0.0

3.3 Rooms for Sleeping

The number of sleeping rooms within a household is a key measure of housing adequacy and an important indicator of living conditions. It reflects the capacity of the dwelling to provide privacy, comfort, and sufficient space for household members. Overcrowding, often resulting from an insufficient number of sleeping rooms, is associated with a range of social and health challenges, including the spread of communicable diseases, limited rest, and reduced overall well-being.

Insufficient sleeping space disproportionately affects women and children, who may experience greater health risks, reduced privacy, and psychosocial stress (OECD, 2021). Overcrowded sleeping arrangements can also exacerbate vulnerabilities to gender-based violence and undermine the dignity and safety of household members (UN-Habitat, 2020).

From an environmental perspective, the number of sleeping rooms is closely linked to the scale of housing construction and, by extension, to the consumption of natural resources such as timber, clay, and cement (FAO, 2018; UNEP, 2019). Understanding patterns of sleeping room availability, therefore, offers valuable insights into both social welfare and the sustainability of housing development (UN-Habitat, 2020).

Taken together, indicators on building materials and sleeping room availability provide a comprehensive picture of household living conditions in Tanzania. Together, these indicators reveal disparities in housing quality, bring out the gendered dimensions of household welfare, and draw attention to the environmental consequences of construction practices (UN-Habitat, 2020; OECD, 2021). The 2025 TGES findings in this area are therefore critical for shaping policies aimed at advancing inclusive, safe, and sustainable housing for all.

Nationally, 32.9 per cent of households have two rooms for sleeping, 26.4 per cent have one room, 26.1 per cent have three rooms, and 14.5 per cent have more than three rooms. The average number of sleeping rooms varies only slightly by sex of household head. However, urban households are more likely to have only one sleeping room (35.1%) compared with rural households (22.8%). The Coastal Zone has the highest proportion of one-room households (34.5%), while the Highlands have the lowest (22.0%) (Figure 3.3 and Table 3.3).

Female-headed households with fewer sleeping rooms are more vulnerable to overcrowding, which increases health risks, particularly for children. Overcrowding also intensifies women's caregiving and household management responsibilities within constrained living spaces.

Overcrowding in small dwellings can intensify pressure on local environments as households expand informally, often encroaching on marginal or ecologically sensitive land. Planning for adequate and sustainable housing is therefore essential to meeting household space needs while meeting household needs.

Figure 3. 3: Percentage Distribution of Households by Number of Rooms Used for Sleeping and Place of Residence, Mainland Tanzania, 2025 TGES

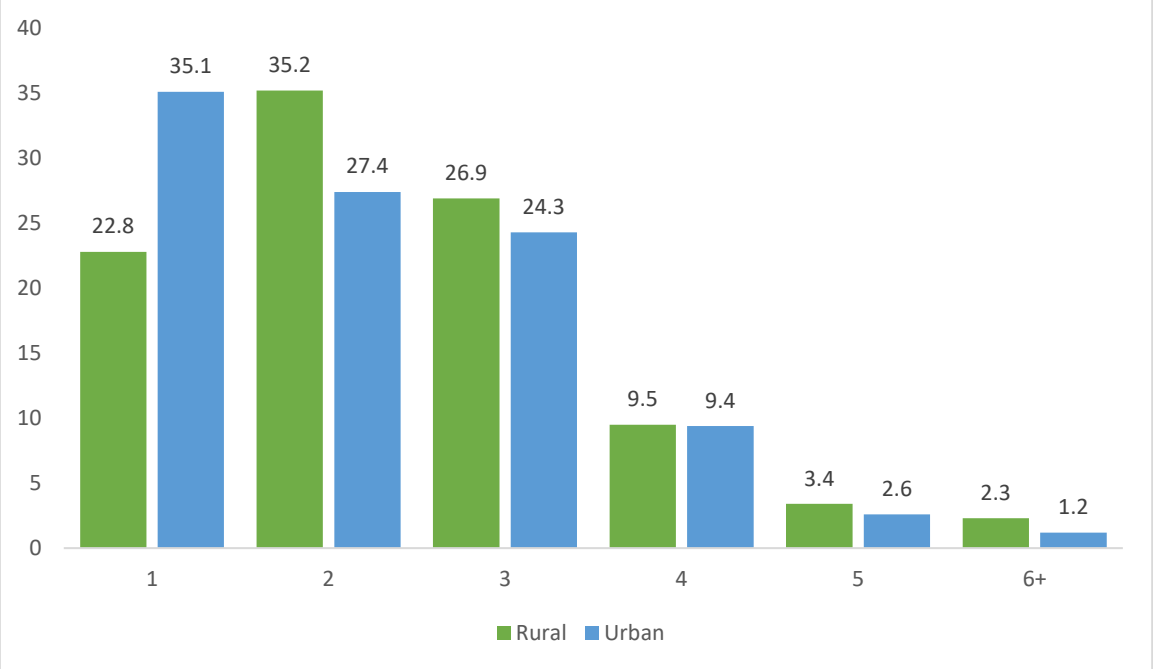


Table 3. 4: Percentage Distribution of Households by Number of Rooms for Sleeping, Place of Residence and Gender; Mainland Tanzania, 2025 TGES

Background Characteristics	Average household size	Total	Number of rooms for sleeping						Average Number of Rooms for Sleeping
			1	2	3	4	5	6+	
Mainland Tanzania	4.6	13,710,890	26.4	32.9	26.1	9.5	3.1	1.9	2.4
Men-headed households	4.9	9,956,831	17.7	23.5	20.1	7.4	2.4	1.6	2.4
Women-headed households	3.7	3,754,059	8.7	9.4	6.1	2.1	0.8	0.3	2.2
Rural	4.8	9,689,975	22.8	35.2	26.9	9.5	3.4	2.3	2.4
Men-headed households	5.2	7,398,311	16.4	26.1	21.5	7.8	2.6	1.9	2.5
Women-headed households	3.9	2,291,664	6.4	9.1	5.4	1.7	0.8	0.3	2.3
Urban	3.9	4,020,915	35.1	27.4	24.3	9.4	2.6	1.2	2.2
Men-headed households	4.2	2,558,520	20.8	17.1	16.6	6.3	2.0	0.9	2.3
Women-headed households	3.5	1,462,395	14.3	10.3	7.7	3.1	0.7	0.3	2.1
Agro-ecological Zones									
Alluvial Plain	3.9	257,907	33.9	35.0	22.6	4.6	2.3	1.7	2.1
Men-headed households	4.2	180,641	21.7	25.6	16.4	3.6	1.4	1.4	2.2
Women-headed households	3.1	77,266	12.2	9.3	6.2	1.0	0.9	0.3	2.0
Arid Land	4.6	1,069,893	29.3	38.3	23.3	7.0	1.3	0.8	2.2
Men-headed households	4.9	774,502	20.8	26.1	18.5	5.7	0.9	0.5	2.2
Women-headed households	3.8	295,390	8.5	12.3	4.8	1.3	0.4	0.3	2.1
Coastal	3.9	2,616,052	34.5	28.7	25.6	8.3	2.1	0.8	2.2
Men-headed households	4.0	1,680,132	21.2	18.5	17.8	5.1	1.2	0.5	2.2
Women-headed households	3.6	935,919	13.3	10.2	7.8	3.2	0.9	0.3	2.1

Background Characteristics	Average household size	Total	Number of rooms for sleeping						Average Number of Rooms for Sleeping
			1	2	3	4	5	6+	
Highlands	4.4	4,474,288	22.0	32.1	28.2	11.3	3.5	2.9	2.5
Men-headed households	4.7	3,449,110	16.3	24.1	22.5	9.0	2.6	2.5	2.6
Women-headed households	3.5	1,025,178	5.7	7.9	5.7	2.3	0.9	0.4	2.4
Plateaux	5.4	3,243,004	24.3	34.0	24.8	10.0	4.4	2.4	2.4
Men-headed households	5.9	2,368,744	15.2	24.2	19.5	8.1	3.7	2.3	2.6
Women-headed households	4.1	874,259	9.1	9.8	5.3	1.9	0.7	0.1	2.1
Semi-arid Lands	4.7	2,049,747	26.3	35.2	26.2	8.3	2.8	1.3	2.3
Men-headed households	5.0	1,503,701	18.1	25.5	19.9	7.0	2.2	0.7	2.3
Women-headed households	3.8	546,047	8.2	9.6	6.4	1.3	0.6	0.5	2.2

3.4 Water and Sanitation

Water and sanitation are basic services that directly influence human health, dignity, and sustainable development. Reliable access to safe drinking water and improved sanitation reduces the burden of waterborne diseases, improves quality of life, and contributes to socio-economic progress. In Mainland Tanzania, however, access remains uneven, particularly between rural and urban areas, with women and girls disproportionately affected because of their roles in water collection and caregiving.

3.4.1 Sources of Drinking Water

Access to safe and reliable drinking water is a fundamental determinant of public health, well-being, and sustainable development (WHO & UNICEF, 2021). The source of drinking water used by households is a key indicator of living standards and signals the extent to which communities benefit from improved water infrastructure (UN-Habitat, 2020). Common sources include piped water, boreholes, protected wells, rainwater, and surface water such as rivers, lakes, or ponds, each differing in safety, accessibility, and reliability (WHO & UNICEF, 2021).

The burden of water collection falls disproportionately on women and girls, particularly in rural areas where households rely on distant or unimproved water sources (OECD, 2021). This responsibility not only consumes time and energy but also reduces opportunities for education, economic participation, and personal well-being (UN-Habitat, 2020). Inadequate access to safe water can further expose women and children to health risks and physical insecurity during water collection (WHO & UNICEF, 2021). From an environmental perspective, over-reliance on natural and surface water sources may contribute to resource depletion, ecosystem degradation, and greater vulnerability to climate change (UNEP, 2019).

Access to safe drinking water is also a national development priority, reflected in FYDP III, which emphasises strengthening water supply systems to improve social services, reduce the gendered burdens of water collection, and enhance human capital development. At the global level, this indicator aligns directly with SDG 6 (Clean Water and Sanitation), which seeks to ensure the availability and sustainable management of water and sanitation for all. It is also linked to SDG 3 (Good Health and Well-being) and SDG 5 (Gender Equality). Monitoring household access to improved and unimproved water sources,

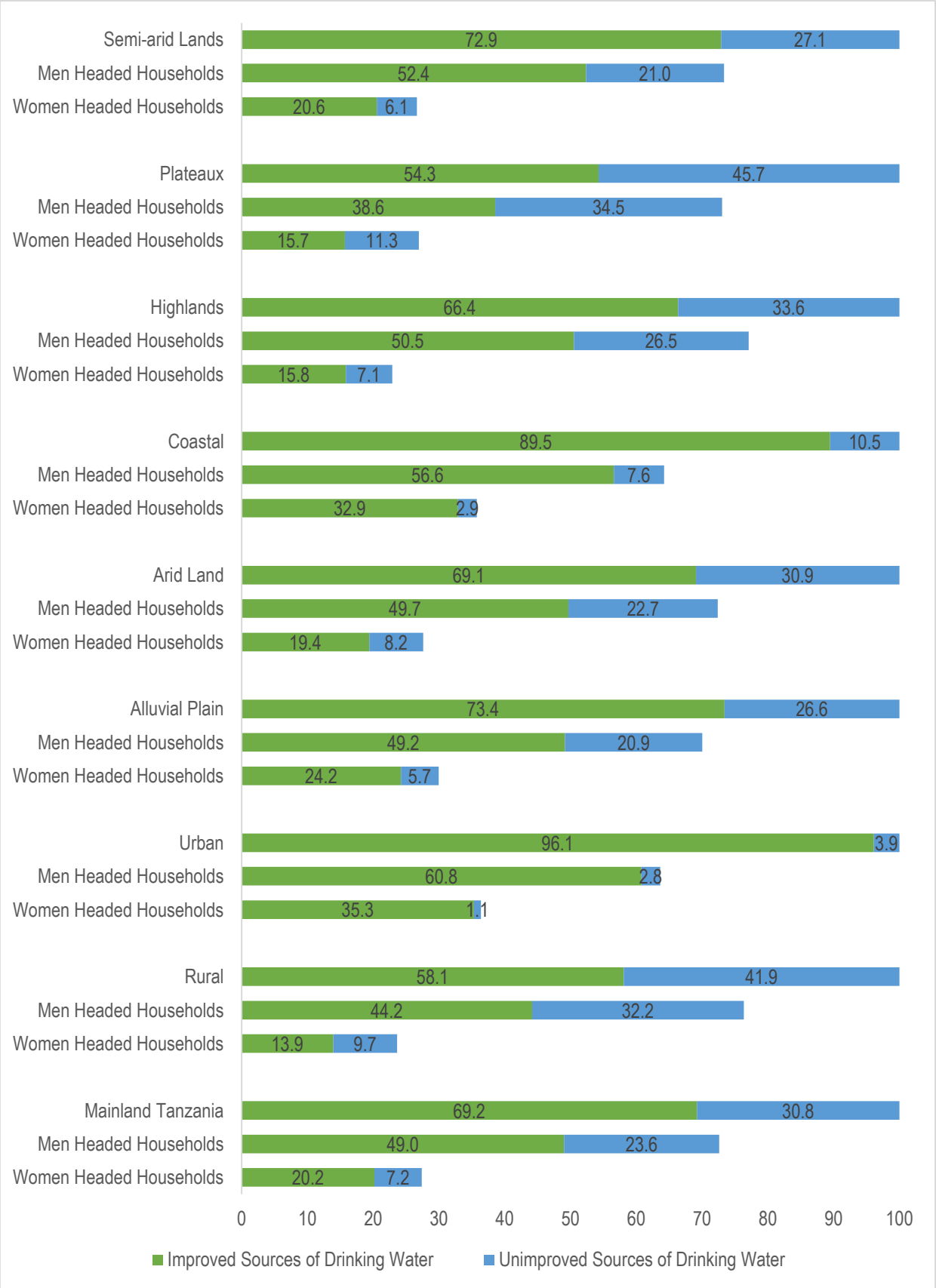
therefore, provides essential evidence for assessing progress towards both national and international commitments.

The results show that 69.2 per cent of households in Mainland Tanzania use improved drinking water sources. The proportion is much higher in urban areas (96.1 per cent) than in rural areas (58.1. per cent). Across Tanzania's agro-ecological zones, all six zones record more than 50 per cent of households relying on improved drinking water sources (Figure 3.4).

Improved drinking water sources include piped water which include piped water into a dwelling, piped water in the yard or plot, a public tap or standpipe, and a neighbours' tap or standpipe. Overall, 48.7 per cent of households in Mainland Tanzania use piped water as their primary source of drinking water. However, access to piped water is much higher in urban areas (71.6%) than in rural areas (39.2%).

In urban areas, 51.5 per cent of households have piped water into their dwelling or yard, while 16.3 per cent rely on a public standpipe and 3.8 per cent on a neighbour’s tap. In rural areas, 17.8 per cent of households have piped water into their dwelling or yard, 16.7 per cent get drinking water from a neighbour’s piped supply, and 4.7 per cent from a public tap. Across agro-ecological zones, the share of households using piped water ranges from 12.1 per cent in the Arid Zone to 20.1 per cent in the Semi-arid land Zone (Map 3.1 and Table 3.5).

Figure 3. 4: Percentage Distribution of Households Using Improved and Unimproved Sources of Drinking Water by Place of Residence and Gender; Mainland Tanzania, 2025 TGES



Map 3. 1: Percentage Distribution of Households Using Piped Water as the Main Source of Drinking Water by Place of Residence and Gender; Mainland Tanzania, 2025 TGES

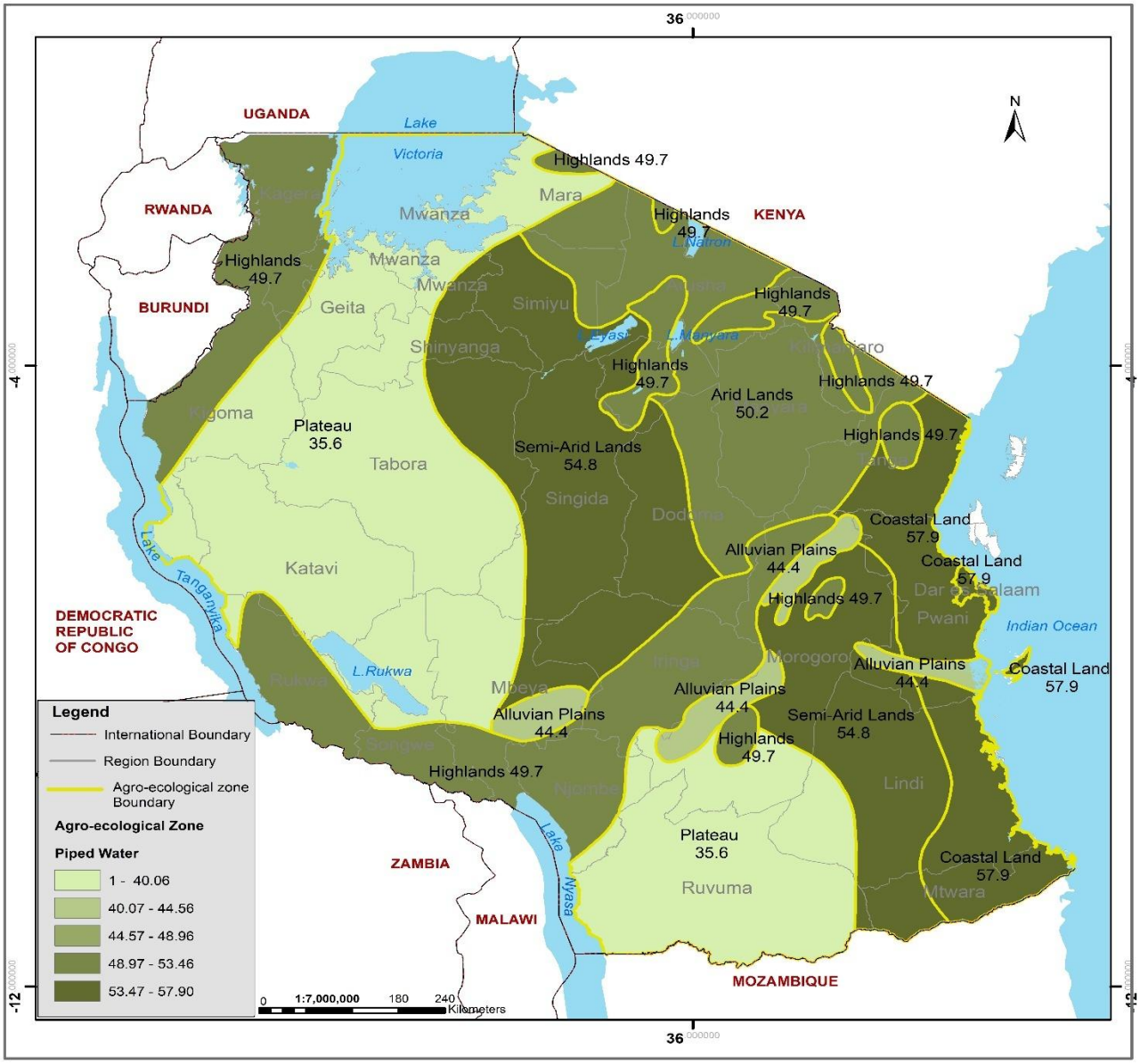


Table 3. 5: Percentage Distribution of Households by Main Source of Drinking Water, by Place of Residence and Gender; Mainland Tanzania, 2025 TGES

Characteristics	Total Number of Households	Main Source of Drinking Water													
		Piped Water into the Dweling	Piped Water to yard/plot	Public tap/standpipe	Neighbor Tap/stand pipe	Tube well/borehole	Protected dug well	Unprotected dug well	Protected Spring	Unprotected Spring	Rainwater Harvest	Tanker-truck	Cart with small tank / drum	Surface water (river, stream, dam, lake, pond, canal, irrigation canals	Bottled Water
Mainland Tanzania	13,710,890	17.7	10.0	8.1	12.9	5.6	11.1	15.9	1.1	2.9	0.9	0.4	0.4	12.0	1.1
Men-headed households	9,956,831	12.4	6.7	4.9	9.2	3.9	8.9	12.2	0.8	2.6	0.7	0.2	0.3	8.8	0.9
Women-headed households	3,754,059	5.3	3.2	3.2	3.6	1.7	2.2	3.7	0.3	0.3	0.2	0.2	0.0	3.2	0.3
Rural	9,689,975	13.5	4.3	4.7	16.7	4.1	11.9	21.3	1.4	3.9	1.1	0.0	0.2	16.7	0.3
Men-headed households	7,398,311	10.4	2.9	3.4	12.1	3.2	9.7	16.4	1.1	3.6	0.9	0.0	0.1	12.3	0.3
Women-headed households	2,291,664	3.1	1.4	1.3	4.5	0.9	2.2	4.9	0.3	0.4	0.3	0.0	0.0	4.4	0.0
Urban	4,020,915	27.9	23.6	16.3	3.8	9.2	9.1	2.8	0.3	0.3	0.5	1.3	0.9	0.8	3.2
Men-headed households	2,558,520	17.3	16.0	8.5	2.2	5.4	6.7	2.0	0.2	0.2	0.4	0.8	0.8	0.6	2.3
Women-headed households	1,462,395	10.6	7.5	7.7	1.5	3.8	2.3	0.8	0.1	0.1	0.0	0.6	0.1	0.2	0.9
Agro-ecological Zones															
Alluvial Plain	257,907	14.5	3.6	11.5	14.8	15.2	11.9	10.7	0.3	1.5	0.2	0.3	0.8	14.4	0.3
Men-headed households	180,641	9.9	2.6	7.0	8.9	11.7	8.0	8.3	0.0	0.9	0.2	0.2	0.3	11.7	0.3
Women-headed households	77,266	4.6	1.0	4.5	5.9	3.5	3.9	2.4	0.3	0.6	0.0	0.1	0.4	2.7	0.0
Arid Land	1,069,893	12.1	4.8	10.0	23.2	7.1	7.4	14.0	1.2	7.5	1.1	0.3	0.9	9.4	0.8
Men-headed households	774,502	8.2	3.4	7.0	16.6	6.1	5.8	11.4	0.2	6.4	0.8	0.1	0.8	5.0	0.7

Characteristics	Total Number of Households	Main Source of Drinking Water													
		Piped Water into the Dweling	Piped Water to yard/plot	Public tap/standpipe	Neighbor Tap/stand pipe	Tube well/borehole	Protected dug well	Unprotected dug well	Protected Spring	Unprotected Spring	Rainwater Harvest	Tanker-truck	Cart with small tank / drum	Surface water (river, stream, dam, lake, pond, canal, irrigation canals	Bottled Water
Women-headed households	295,390	3.9	1.4	3.0	6.6	1.0	1.6	2.6	1.0	1.1	0.3	0.3	0.1	4.4	0.1
Coastal	2,616,052	18.6	18.7	17.4	3.1	13.2	10.0	7.7	0.0	0.2	1.3	1.9	0.9	2.6	4.3
Men-headed households	1,680,132	11.3	13.4	9.0	2.0	7.6	7.1	5.3	0.0	0.2	1.0	1.1	0.9	2.2	3.0
Women-headed households	1,025,178	7.4	5.3	8.4	1.1	5.6	2.8	2.4	0.0	0.0	0.3	0.8	0.0	0.5	1.3
Highlands	4,474,288	19.0	8.8	6.2	15.7	2.6	10.1	9.9	2.4	4.3	1.2	0.0	0.0	19.3	0.4
Men-headed households	3,449,110	15.0	5.7	4.5	11.2	2.2	8.5	7.5	2.0	3.9	1.0	0.0	0.0	15.1	0.4
Women-headed households	1,025,178	4.1	3.1	1.7	4.4	0.5	1.6	2.4	0.4	0.4	0.1	0.0	0.0	4.2	0.0
Plateaux	3,243,004	15.7	9.2	3.4	7.2	3.0	13.7	30.9	0.9	2.0	0.8	0.1	0.1	12.9	0.2
Men-headed households	2,368,744	10.7	5.6	2.0	5.1	2.0	11.7	23.9	0.7	1.9	0.6	0.0	0.1	8.7	0.2
Women-headed households	874,259	5.0	3.7	1.4	2.1	1.0	1.9	7.0	0.2	0.1	0.3	0.1	0.0	4.2	0.1
Semi-arid Lands	2,049,747	20.1	6.0	6.2	22.5	4.4	12.4	17.1	0.1	2.3	0.1	0.0	0.6	7.7	0.4
Men-headed households	1,503,701	13.8	4.5	3.7	16.8	3.6	9.0	13.4	0.1	2.1	0.0	0.0	0.5	5.5	0.4
Women-headed households	546,047	6.4	1.5	2.5	5.7	0.8	3.4	3.7	0.0	0.1	0.1	0.0	0.1	2.3	0.1

Note: Surface water includes rivers, dams, lakes, ponds, streams, charco dams, canals and irrigation canals

3.4.2 Sanitation Facilities

Access to improved sanitation facilities is vital for protecting public health, reducing disease transmission, and promoting human dignity (WHO & UNICEF, 2021). In Tanzania, inadequate sanitation contributes to preventable illnesses such as diarrhoeal and disproportionately affects vulnerable populations, particularly children and women (UN-Habitat, 2020). FYDP III identifies improved sanitation and hygiene services as a key driver of human capital development, recognising their role in reducing disease, increasing productivity, and enhancing quality of life (URT, 2021). SDG 6.2 (Sanitation and hygiene) explicitly calls for universal access to adequate and equitable sanitation and hygiene for all by 2030, with special attention to the needs of women, girls, and marginalised groups (UN, 2015). Monitoring the types of sanitation facilities used by households, therefore, provides an important basis for assessing progress towards these commitments (WHO & UNICEF, 2021). Improved sanitation not only reduces environmental pollution and health risks but also advances gender equality by improving safety, dignity, and the well-being of girls and women (OECD, 2021)."

More than half of households in Mainland Tanzania (59.5%) use improved sanitation facilities. In rural areas, only 46.0 per cent of households use improved sanitation facilities; which is below the FYDP III target of 75 per cent by 2025/26. The most commonly used sanitation facilities in Mainland Tanzania is the pit latrines without a slab (open pit) used by 30.5% er cent of households. The use of pit latrines without slabs is considerably higher in rural areas than in urban areas (40.4% versus 6.6%). Across Mainland Tanzania's agro-ecological zones, the proportion of households without any toilet facility, and therefore practising open defecation ranges from 1.0 per cent in Highlands to 20.0 per cent in Arid Zones (Figure 3.5 and Table 3.6).

Figure 3. 5: Percentage Distribution of Households by type of sanitation facility, Place of Residence and Gender; Mainland Tanzania, 2025 TGES

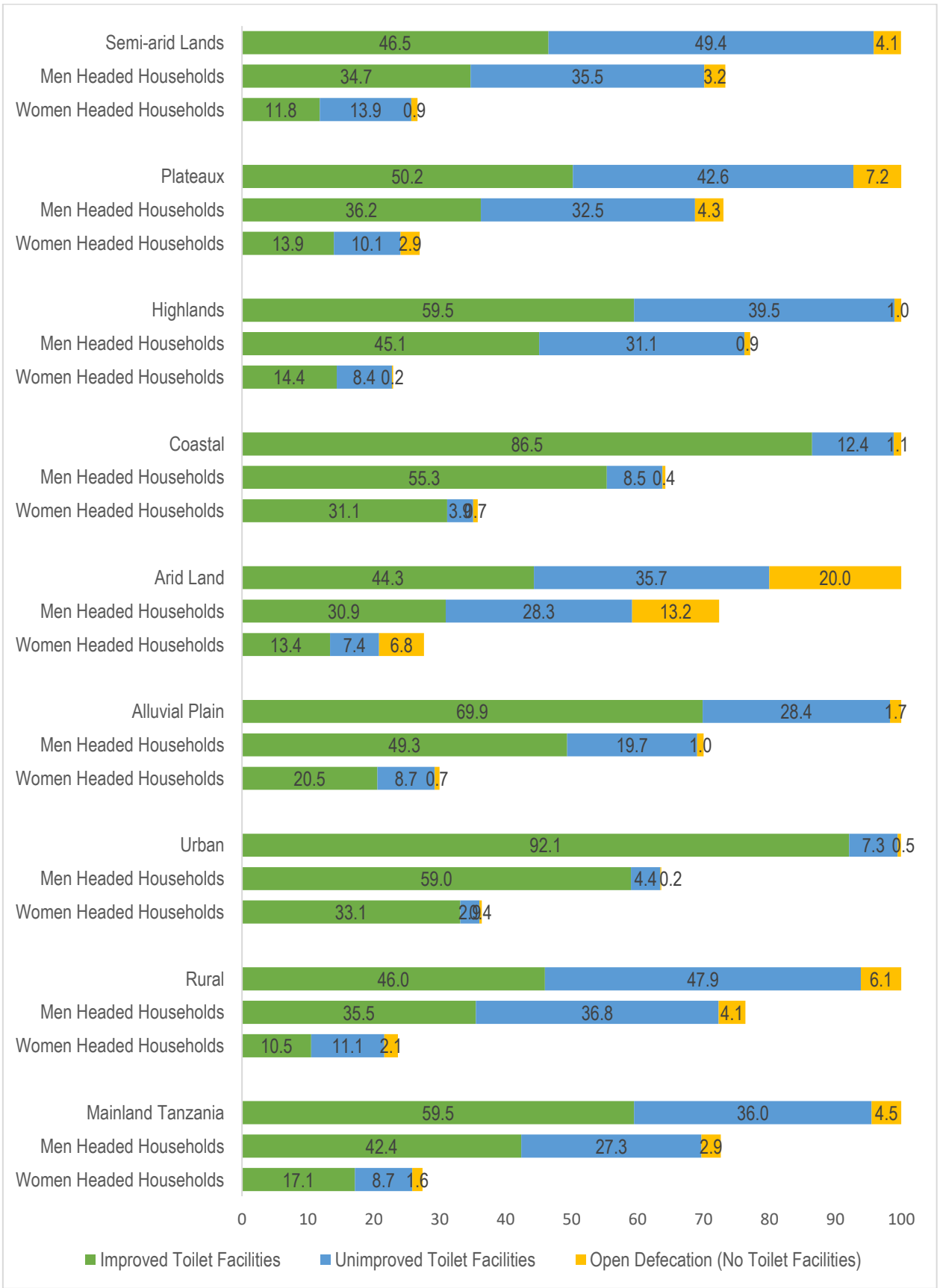


Table 3. 6: Percentage Distribution of Households by Main Type of Toilet Facility, Place of Residence and Gender; Mainland Tanzania, 2025 TGES

Characteristics	Total Number of Households	Main Type of Toilet Facility											
		Flush/Pour water to Piped Sewer System	Flush/ Pour water to Septic Tank	Flush/ Pour water to Covered Pit	Flush/Pour water to Somewhere Else	Ventilated Improved Pit Latrine	Pit Latrine with Washable Slab with Lid	Pit Latrine with Washable Slab without Lid	Pit Latrine without Washable/ Soil Slab	Pit Latrine without Slab/Open Pit	Bucket	wood floor without slab and lid	No Facility/bush/ field/ beach
Mainland Tanzania	13,710,890	3.7	9.4	18.7	2.1	9.8	3.6	6.8	5.4	30.5	0.3	5.3	4.5
Men-headed households	9,956,831	2.3	6.5	13.7	1.3	6.9	2.5	5.0	4.1	23.4	0.2	3.7	2.9
Women-headed households	3,754,059	1.4	2.9	5.0	0.7	2.9	1.1	1.9	1.2	7.0	0.1	1.6	1.6
Rural	9,689,975	1.5	3.2	12.4	1.9	9.4	3.9	6.9	6.8	40.4	0.3	7.3	6.1
Men-headed households	7,398,311	1.2	2.5	9.8	1.4	6.9	2.9	5.4	5.3	31.4	0.2	5.2	4.1
Women-headed households	2,291,664	0.3	0.6	2.5	0.5	2.4	1.1	1.6	1.5	9.0	0.0	2.1	2.1
Urban	4,020,915	8.9	24.6	33.9	2.5	10.7	3.0	6.6	1.9	6.6	0.2	0.6	0.5
Men-headed households	2,558,520	5.0	16.2	22.9	1.2	6.8	1.8	4.0	1.2	4.2	0.0	0.3	0.2
Women-headed households	1,462,395	4.0	8.4	11.0	1.4	3.9	1.2	2.6	0.7	2.4	0.2	0.3	0.4
Agro-ecological Zones													
Alluvial Plain	257,907	1.7	6.9	16.9	5.0	14.6	7.7	11.8	5.2	23.3	0.0	5.1	1.7

Characteristics	Total Number of Households	Main Type of Toilet Facility											
		Flush/Pour water to Piped Sewer System	Flush/ Pour water to Septic Tank	Flush/ Pour water to Covered Pit	Flush/Pour water to Somewhere Else	Ventilated Improved Pit Latrine	Pit Latrine with Washable Slab with Lid	Pit Latrine with Washable Slab without Lid	Pit Latrine without Washable/ Soil Slab	Pit Latrine without Slab/Open Pit	Bucket	wood floor without slab and lid	No Facility/bush/ field/ beach
Men-headed households	180,641	1.3	4.9	12.2	3.1	11.5	5.5	8.1	2.7	16.6	0.0	3.2	1.0
Women-headed households	77,266	0.4	2.0	4.6	1.8	3.1	2.3	3.7	2.5	6.8	0.0	1.9	0.7
Arid Land	1,069,893	2.3	4.6	12.0	0.9	8.2	3.0	8.5	4.7	31.3	0.0	4.4	20.0
Men-headed households	774,502	2.0	3.2	9.5	0.5	5.4	1.5	5.0	3.7	24.8	0.0	3.4	13.2
Women-headed households	295,390	0.3	1.4	2.5	0.4	2.8	1.5	3.5	1.0	6.5	0.0	1.0	6.8
Coastal	2,616,052	9.9	24.4	25.5	2.7	13.2	2.9	5.5	2.4	11.9	0.0	0.5	1.1
Men-headed households	1,680,132	5.2	17.2	16.6	1.4	8.4	1.6	3.2	1.7	8.3	0.0	0.1	0.4
Women-headed households	935,919	4.7	7.2	8.9	1.4	4.8	1.2	2.2	0.7	3.6	0.0	0.3	0.7
Highlands	4,474,288	3.7	5.0	17.4	1.9	16.0	4.3	7.3	3.8	33.8	0.0	5.7	1.0
Men-headed households	3,449,110	2.7	3.9	13.3	1.3	11.7	3.0	6.1	3.1	26.6	0.0	4.5	0.9
Women-headed households	1,025,178	1.0	1.1	4.1	0.6	4.3	1.3	1.3	0.8	7.2	0.0	1.2	0.2

Characteristics	Total Number of Households	Main Type of Toilet Facility											
		Flush/Pour water to Piped Sewer System	Flush/ Pour water to Septic Tank	Flush/ Pour water to Covered Pit	Flush/Pour water to Somewhere Else	Ventilated Improved Pit Latrine	Pit Latrine with Washable Slab with Lid	Pit Latrine with Washable Slab without Lid	Pit Latrine without Washable/ Soil Slab	Pit Latrine without Slab/Open Pit	Bucket	wood floor without slab and lid	No Facility/bush/ field/ beach
Plateaux	3,243,004	0.8	5.9	20.7	2.7	2.6	2.6	6.6	8.3	32.4	1.1	9.2	7.2
Men-headed households	2,368,744	0.6	3.2	15.3	2.0	2.0	2.2	4.7	6.3	25.3	0.7	6.4	4.3
Women-headed households	874,259	0.3	2.7	5.4	0.7	0.6	0.4	1.9	2.0	7.1	0.3	2.7	2.9
Semi-arid Lands	2,049,747	1.2	8.6	13.3	1.0	3.1	4.6	6.4	8.3	44.4	0.1	4.9	4.1
Men-headed households	1,503,701	0.8	5.9	10.6	0.5	2.3	3.3	4.8	6.5	32.9	0.0	2.6	3.2
Women-headed households	546,047	0.4	2.6	2.7	0.5	0.9	1.3	1.6	1.9	11.5	0.1	2.3	0.9

3.5 Sources of Energy

Energy is a fundamental enabler of socio-economic development, environmental sustainability, and improved quality of life. In Tanzania, household energy use is largely shaped by two key components: cooking and lighting. Both are closely linked to the country's development priorities, environmental management, and gender equality.

Both FYDP III and Dira 2050 emphasise expanded access to modern, affordable, and sustainable energy as a driver of inclusive industrialisation, human development, and poverty reduction. In line with SDG 7 (Affordable and Clean Energy), Tanzania has committed to achieving universal access to modern energy services by 2030. The country has demonstrated strong political commitment through the Presidential Clean Cooking Energy Championship, which aims to accelerate the transition from traditional biomass fuels towards clean, safe, and sustainable cooking solutions.

3.5.1 Sources of Energy for Cooking

Household cooking energy has profound implications for public health, environmental sustainability, and gender equality (WHO, 2021). In Tanzania, reliance on traditional biomass such as firewood and charcoal remains high, exposing households to indoor air pollution and contributing to deforestation and greenhouse gas emissions (UNEP, 2019; FAO, 2018). In response to these challenges, FYDP III prioritises access to clean, affordable, and modern energy sources as a foundation for inclusive economic growth and environmental conservation (URT, 2021). Tanzania has taken a leadership role through the Presidential Clean Cooking Energy Championship, positioning the country at the forefront of efforts to accelerate the adoption of cleaner fuels and technologies (URT, 2024). The initiative reinforces the urgency of moving households away from traditional biomass towards cleaner solutions that protect health, conserve ecosystems, and reduce the disproportionate time and labour burden borne by women and girls (OECD, 2021). The transition to clean cooking solutions, strongly championed at the highest political level, is central to reducing environmental degradation, improving health outcomes, and advancing gender equality in Tanzania (WHO, 2021; URT, 2024)."

The 2025 TGES findings reveal that the majority of households in Mainland Tanzania rely on biomass for cooking, with firewood (60.9%) as the main source, followed by charcoal (21.0%). The reliance on firewood is much higher in rural areas (81.0%) compared with

urban areas (13.6%). Across agro-ecological zones, the use of firewood ranges from 19.2 per cent in the Coastal Zone to 80.1% in the Arid Zone (Table 3.7).

Charcoal, by contrast, is more commonly used in urban households (41.1%) compared with rural households (12.7%). Its use is highest in the Coastal Zone (39.9%) and lowest in the Arid Zone (10.7%).

The use of clean energy for cooking, including electricity, gas, biogas, solar, generators, and wind-generated electricity, remains limited, accounting for only 16.6 per cent of households nationally. Urban households record a much higher level of use (43.9%) compared with rural households (5.3%). At the zonal level, clean energy use ranges from 8.3 per cent in the Arid Zone to 39.5 per cent in the Coastal Zone. Notably, the data show gender disparities: male-headed households are more likely to use clean energy than female-headed households across all agro-ecological zones. This points to persistent inequalities in access to modern energy sources, which affect women disproportionately, given their central role in cooking and household energy management.

Figure 3. 6: Percentage Distribution of Households Using Clean Energy for Cooking by Place of Residence and Gender; Mainland Tanzania, 2025 TGES

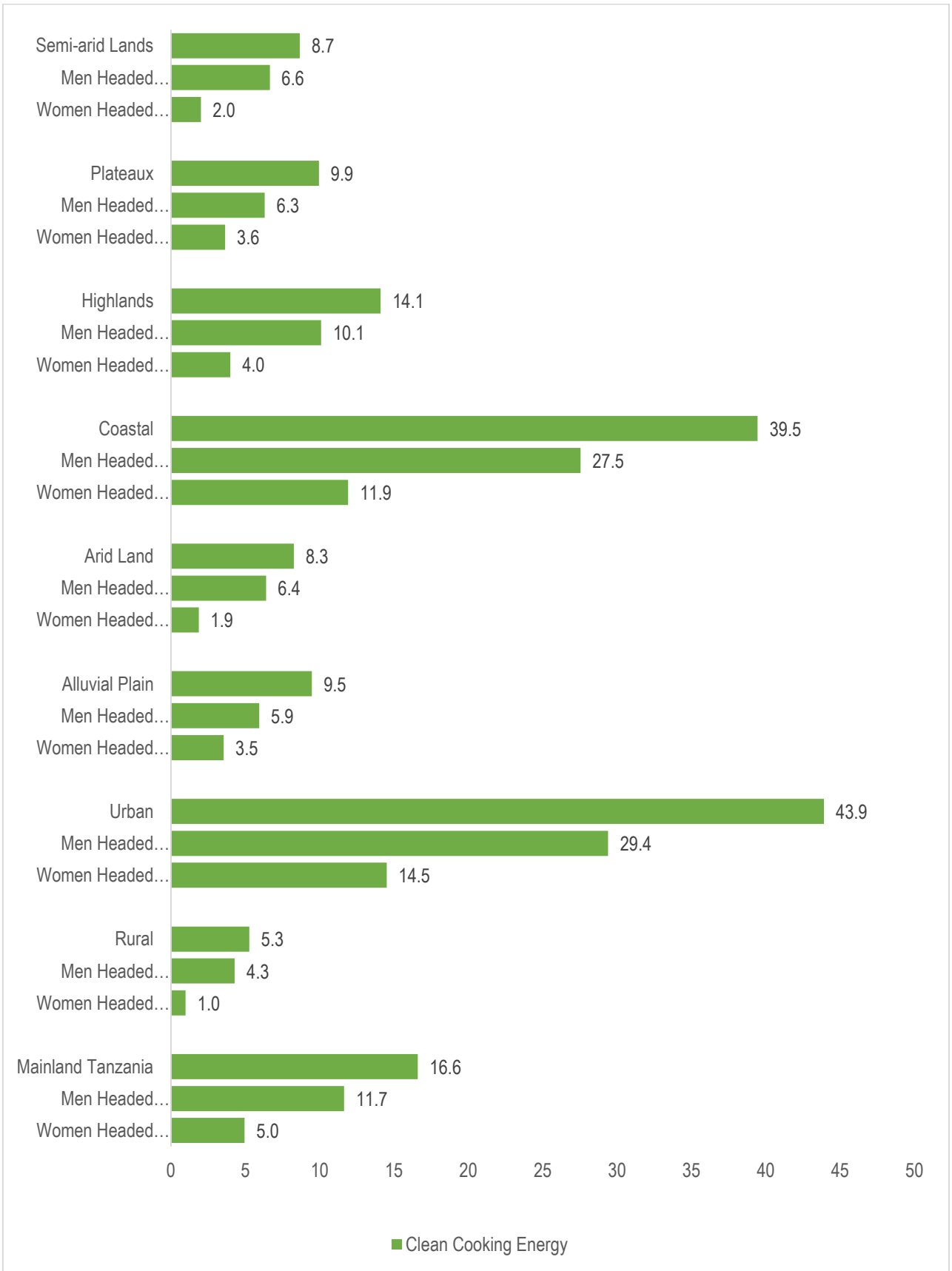


Table 3. 7: Percentage Distribution of Households by Main Source of Energy for Cooking, Place of Residence and Gender; Mainland Tanzania, 2025 TGES

Characteristics	Total Number of Households	Main Source of Energy for Cooking										
		Electricity (TANESCO)	Solar Energy	Gas (Industrial)	Biogas	Paraffin	Charcoal	Firewood	Wood/ residuals	Animal residuals	Charcoal briquette	No cooking in household
Mainland Tanzania	13,710,890	0.6	0.4	15.4	0.2	0.1	21.0	60.9	0.1	0.0	0.0	1.2
Men-headed households	9,956,831	0.5	0.4	10.7	0.1	0.0	13.7	46.0	0.1	0.0	0.0	1.1
Women-headed households	3,754,059	0.1	0.0	4.7	0.1	0.1	7.3	15.0	0.0	0.0	0.0	0.1
Rural	9,689,975	0.3	0.4	4.4	0.1	0.0	12.7	80.6	0.2	0.0	0.0	1.3
Men-headed households	7,398,311	0.3	0.4	3.5	0.1	0.0	9.1	61.6	0.2	0.0	0.0	1.3
Women-headed households	2,291,664	0.1	0.0	0.9	0.0	0.0	3.6	19.0	0.0	0.0	0.0	0.0
Urban	4,020,915	1.3	0.2	41.9	0.4	0.2	41.1	13.6	0.0	0.1	0.1	1.0
Men-headed households	2,558,520	1.0	0.2	28.0	0.2	0.0	25.0	8.3	0.0	0.0	0.0	0.8
Women-headed households	1,462,395	0.3	0.0	14.0	0.2	0.2	16.1	5.3	0.0	0.1	0.1	0.1
Agro-ecological Zones												
Alluvial Plain	257,907	0.2	0.1	9.0	0.1	0.2	37.5	50.8	0.7	0.0	0.0	1.3
Men-headed households	180,641	0.2	0.1	5.5	0.1	0.2	26.6	35.6	0.5	0.0	0.0	1.3
Women-headed households	77,266	0.0	0.0	3.5	0.0	0.0	10.9	15.3	0.2	0.0	0.0	0.0
Arid Land	1,069,893	0.6	0.1	7.5	0.0	0.0	10.7	80.1	0.1	0.0	0.1	0.7
Men-headed households	774,502	0.5	0.1	5.8	0.0	0.0	8.0	57.3	0.0	0.0	0.0	0.7
Women-headed households	295,390	0.1	0.0	1.8	0.0	0.0	2.8	22.8	0.1	0.0	0.1	0.0

Characteristics	Total Number of Households	Main Source of Energy for Cooking										
		Electricity (TANESCO)	Solar Energy	Gas (Industrial)	Biogas	Paraffin	Charcoal	Firewood	Wood/ residuals	Animal residuals	Charcoal briquette	No cooking in household
Coastal	2,616,052	0.4	0.1	38.9	0.1	0.3	39.9	19.2	0.0	0.1	0.0	1.0
Men-headed households	1,680,132	0.4	0.1	27.0	0.1	0.1	23.2	12.6	0.0	0.0	0.0	0.7
Women-headed households	935,919	0.0	0.0	11.9	0.0	0.3	16.7	6.5	0.0	0.1	0.0	0.2
Highlands	4,474,288	0.7	0.3	12.7	0.4	0.0	13.4	71.2	0.0	0.0	0.0	1.3
Men-headed households	3,449,110	0.5	0.3	9.1	0.2	0.0	9.8	55.9	0.0	0.0	0.0	1.3
Women-headed households	1,025,178	0.2	0.0	3.5	0.3	0.0	3.6	15.3	0.0	0.0	0.0	0.0
Plateaux	3,243,004	0.8	0.2	8.8	0.1	0.0	20.6	67.6	0.0	0.0	0.1	1.7
Men-headed households	2,368,744	0.7	0.2	5.2	0.1	0.0	13.8	51.2	0.0	0.0	0.0	1.7
Women-headed households	874,259	0.1	0.0	3.5	0.0	0.0	6.8	16.3	0.0	0.0	0.1	0.0
Semi-arid Lands	2,049,747	0.4	1.3	6.9	0.0	0.0	17.3	72.6	0.8	0.0	0.0	0.7
Men-headed households	1,503,701	0.2	1.3	5.2	0.0	0.0	11.6	53.8	0.8	0.0	0.0	0.5
Women-headed households	546,047	0.3	0.0	1.7	0.0	0.0	5.6	18.8	0.0	0.0	0.0	0.2

3.5.2 Sources of Energy for Lighting

Access to reliable lighting energy is vital for education, productivity, and socio-economic advancement. In Tanzania, FYDP III and the National Energy Policy emphasise expanded access to electricity, including renewable energy solutions, as a driver of industrialisation and inclusive development. These commitments align with SDG 7 (Affordable and Clean Energy), which aims to ensure universal access to modern energy services. Programmes implemented through the Rural Energy Agency (REA) have contributed significantly to rural electrification and the reduction of energy poverty. Monitoring household sources of lighting energy provides an important basis for assessing progress in expanding modern electricity access and supporting Tanzania's broader policy goals on sustainable development. Improved access to modern lighting not only reduces reliance on environmentally harmful fuels but also promotes gender equality by enabling more time for study, work, and caregiving, particularly for girls and women.

In terms of lighting, most households in Mainland Tanzania depend on electricity from the national grid (41.8%), followed by solar energy (33.7%). Access to grid electricity is highly skewed towards urban households (82.8%) compared with rural households (24.8%). The proportion of households using electricity as the main source of energy for lighting ranges from 26.0 per cent in Semi-arid Zone to 73.6 per cent in the Coastal Zone (Figure 3.7 and Table 3.8).

Unequal access to modern lighting remains a constraint on household welfare and socio-economic participation. In areas with limited access to electricity, households are more likely to depend on less reliable and less efficient lighting sources, with adverse effects on study, productivity, and overall well-being. Women and girls are particularly affected, as inadequate lighting can limit evening study, household tasks, and income-generating activities, while also compromising safety and security. Expanding access to clean and sustainable energy aligns with the objectives of Dira 2050, FYDP III, and the SDGs 5, 7, and 13 by promoting gender equality, enhancing household well-being, and safeguarding the environment.

Figure 3. 7: Percentage Distribution of Households Using Electricity and Solar as Main Sources of Energy for Lighting by Residence and Gender; Mainland Tanzania, 2025 TGES

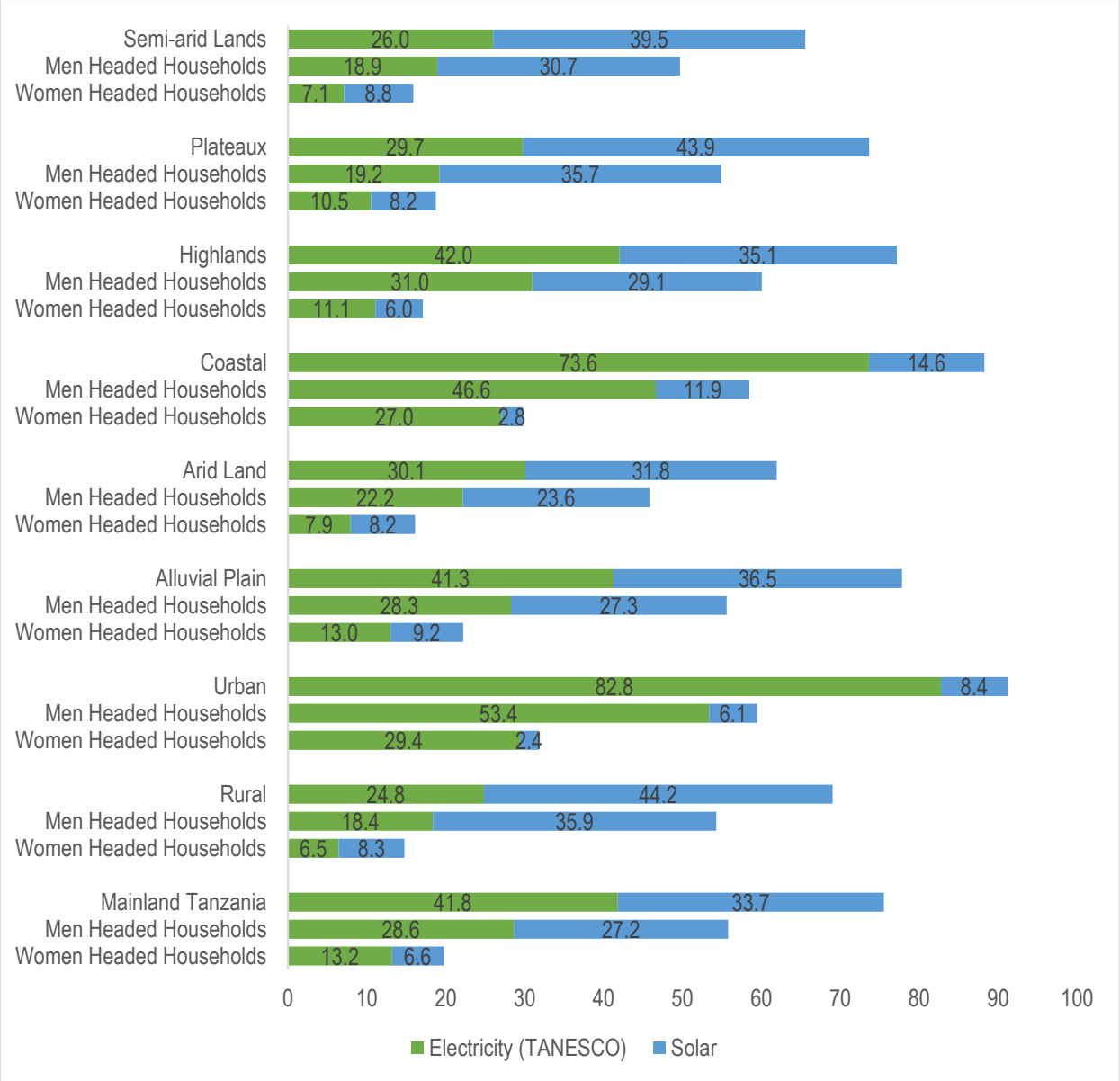


Table 3. 8: Percentage Distribution of Households by Main Source of Energy for Lighting, Place of Residence and Gender; Mainland Tanzania, 2025 TGES

Location	Total Number of Households	Main Source of Energy for lighting											
		Electricity (TANESCO)	Solar Energy	Generator/private sources	Gas (Industrial)	Gas (Biogas)	Acetylene lamp	Kerosene (lantern/chimney)	Kerosene (Wick lamps)	Candles	Firewood	Torch/Chinese lamp	Electricity (Generated from Plant residue)
Mainland Tanzania	13,710,890	41.8	33.7	0.1	0.1	0.0	0.2	0.1	0.6	0.2	0.7	22.4	0.0
Men-headed households	9,956,831	28.6	27.2	0.1	0.1	0.0	0.1	0.1	0.4	0.1	0.4	15.6	0.0
Women-headed households	3,754,059	13.2	6.6	0.0	0.0	0.0	0.1	0.0	0.2	0.1	0.3	6.9	0.0
Rural	9,689,975	24.8	44.2	0.1	0.1	0.0	0.1	0.1	0.6	0.0	0.9	28.9	0.1
Men-headed households	7,398,311	18.4	35.9	0.1	0.1	0.0	0.0	0.1	0.3	0.0	0.6	20.8	0.1
Women-headed households	2,291,664	6.5	8.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.4	8.1	0.0
Urban	4,020,915	82.8	8.4	0.0	0.2	0.0	0.5	0.0	0.5	0.7	0.1	6.8	0.0
Men-headed households	2,558,520	53.4	6.1	0.0	0.1	0.0	0.3	0.0	0.4	0.3	0.1	2.9	0.0
Women-headed households	1,462,395	29.4	2.4	0.0	0.1	0.0	0.2	0.0	0.1	0.4	0.0	3.9	0.0
Agro-ecological Zones													
Alluvial Plain	257,907	41.3	36.5	0.0	0.5	0.0	0.0	0.0	1.5	0.5	0.3	19.4	0.0
Men-headed households	180,641	28.3	27.3	0.0	0.3	0.0	0.0	0.0	0.5	0.5	0.0	13.1	0.0
Women-headed households	77,266	13.0	9.2	0.0	0.2	0.0	0.0	0.0	1.0	0.0	0.3	6.3	0.0
Arid Land	1,069,893	30.1	31.8	0.2	0.1	0.0	0.0	0.6	0.4	0.0	1.6	35.1	0.0
Men-headed households	774,502	22.2	23.6	0.0	0.1	0.0	0.0	0.4	0.4	0.0	0.9	24.8	0.0

Location	Total Number of Households	Main Source of Energy for lighting											
		Electricity (TANESCO)	Solar Energy	Generator/private sources	Gas (Industrial)	Gas (Biogas)	Acetylene lamp	Kerosene (lantern/chimney)	Kerosene (Wick lamps)	Candles	Firewood	Torch/Chinese lamp	Electricity (Generated from Plant residue)
Women-headed households	295,390	7.9	8.2	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.8	10.3	0.0
Coastal	2,616,052	73.6	14.6	0.0	0.2	0.1	0.8	0.0	0.6	0.8	0.1	9.2	0.0
Men-headed households	1,680,132	46.6	11.9	0.0	0.2	0.1	0.5	0.0	0.4	0.4	0.1	4.0	0.0
Women-headed households	935,919	27.0	2.8	0.0	0.0	0.1	0.3	0.0	0.2	0.3	0.0	5.1	0.0
Highlands	4,474,288	42.0	35.1	0.2	0.0	0.0	0.0	0.0	0.9	0.1	0.7	20.9	0.0
Men-headed households	3,449,110	31.0	29.1	0.2	0.0	0.0	0.0	0.0	0.6	0.0	0.5	15.6	0.0
Women-headed households	1,025,178	11.1	6.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.2	5.2	0.0
Plateaux	3,243,004	29.7	43.9	0.0	0.1	0.0	0.0	0.0	0.3	0.1	0.5	25.3	0.0
Men-headed households	2,368,744	19.2	35.7	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	17.8	0.0
Women-headed households	874,259	10.5	8.2	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.4	7.5	0.0
Semi-arid Lands	2,049,747	26.0	39.5	0.0	0.1	0.0	0.2	0.3	0.2	0.0	1.3	32.2	0.3
Men-headed households	1,503,701	18.9	30.7	0.0	0.0	0.0	0.0	0.3	0.1	0.0	1.0	22.0	0.3
Women-headed households	546,047	7.1	8.8	0.0	0.1	0.0	0.2	0.0	0.1	0.0	0.2	10.1	0.0

CHAPTER FOUR

DISASTERS AND HAZARD EXPERIENCE, AND RESPONSES

Key Points

- Drought was the most prevalent disaster, especially in rural areas and arid lands, affecting up to 50.3% of women.
- Crop damage in the Semi-Arid Lands affected more than half of households, reported by 56.5 per cent of the women and 60.4 per cent of men.
- Dwelling destruction in the Semi-Arid Lands was more prevalent among women-headed households (81%) than for men-headed households (60%).
- In Coastal Zones, 21.8 per cent of men and 16.6 per cent of women received early warning information, highlighting gender gap in access to information.
- In the Highlands, 85.3 per cent of men and 70.8 per cent of women found the early warning information valuable for disaster preparedness.
- In the Arid Lands, women were more likely to preserve drinking water at 23.3 per cent, while men reported 15.3 per cent.

4.1 Introduction

This chapter examines the population's exposure to natural hazards in Mainland Tanzania and the preparedness measures taken to address their impacts. It highlights vulnerability by gender, place of residence, agro-ecological zone, and socio-economic status. Furthermore, it analyses the differential consequences of disasters on lives, livelihoods, health, and assets. The chapter also examines access to sources of, and the usefulness of, early warning information, as well as the precautionary actions households take to safeguard food, water, personal safety, and livelihoods.

Disasters and hazards are closely related but conceptually distinct. Hazards are potentially damaging events such as droughts, floods, or cyclones, while a disaster occurs when such hazards severely disrupt lives and livelihoods. Within this context, disaster experience captures whether individuals were directly affected by disasters in the past 12 months. The

chapter then examines the impacts of disasters on health, livelihoods, unpaid care work, housing, crime, and sanitation. This analysis provides evidence to inform gender-responsive disaster risk reduction and resilience strategies in line with national policy and global frameworks.

4.2 Disaster Perception and Experience

In Mainland Tanzania 27.2 per cent of men and 28.0 per cent of women experienced droughts. Floods were experienced by 14.5 per cent of men and 14.1 per cent of women. In rural areas, droughts were particularly prevalent, affecting 32.8 per cent of men and 35.0 per cent of women, whereas in urban areas, extreme heat events impacted 16.6 per cent of men and 15.4 per cent of women.

Agro-ecological zone-specific patterns reveal that the Arid Lands had the highest drought experience (48.0% of men, 50.3% of women). In the Coastal Zone, 29.5 per cent of men and 28.0 per cent of women reported experiencing flooding. Other notable disasters include infestations in Coastal areas (21.7% of men, 21.4% of women), extreme heat events in Highland areas (25.3% of men, 29.7% of women), and severe thunderstorms in Plateaux (20.9% of men, 18.2% of women) (Table 4.1).

Table 4. 1: Percentage Distribution of the Population Experienced at Least One Disaster or Related Hazard in the Past 12 Months, by gender and Place of Residence, Mainland Tanzania, 2025 TGES.

Level	Drought	Flood	Extreme wind episode	Infestation event	Extreme heat event	Severe thunderstorm, lightning	Hailstorm, Ice storm, Blizzard	Pandemic/Health emergency/other biological event	Cyclone/Hurricane/ Typhoon/Depression
Mainland Tanzania									
Men-headed	27.2	14.5	11.1	12.4	12.4	10	5.9	4.8	3.3
Women-headed	28	14.1	12	11.7	12.4	10.9	6.1	4.7	3.2
Rural									
Men-headed	32.8	13.9	13.1	14.7	10.4	10.9	6.4	5	4
Women-headed	35	13.2	14.8	13.6	10.5	12.2	6.8	4.6	3.9
Urban									
Men-headed	15.4	15.7	6.8	7.5	16.6	8.1	4.9	4.4	1.6
Women-headed	16.9	15.6	7.5	8.6	15.4	8.9	4.9	4.7	2
Agro-ecological zones									
Alluvial Plain									
Men-headed	34.3	14.9	6.6	10.4	12.3	4.4	4	3.4	4.7
Women-headed	35.8	15.9	10.3	13.5	10.2	6.3	3.7	2.4	3.5

Level	Drought	Flood	Extreme wind episode	Infestation event	Extreme heat event	Severe thunderstorm, lightning	Hailstorm, Ice storm, Blizzard	Pandemic/Health emergency/other biological event	Cyclone/Hurricane/ Typhoon/Depression
Arid Lands									
Men-headed	48	6.2	9.3	6.1	10.1	4.7	1.3	1.2	2.3
Women-headed	50.3	5.6	11.7	6.6	7.2	5.9	2.9	1.2	2.8
Coastal									
Men-headed	14.6	29.5	7.5	21.7	17	6.8	1.7	9	3.3
Women-headed	13.9	28	9.4	21.4	19.3	13.3	2.4	10.7	3.8
Highland									
Men-headed	18.3	15.4	13.9	5.4	25.3	10.2	1	7.1	0.4
Women-headed	17.1	15.1	12.4	4	29.7	9.4	1.7	5.8	0.3
Plateaux									
Men-headed	17	12.9	13.7	10.5	6.9	20.9	13.6	5.2	0.7
Women-headed	18.4	12.6	11.3	10.5	5.9	18.2	14.6	3.6	0.7
Semi-Arid Lands									
Men-headed	33.6	10	14.7	20.1	4.9	11.3	11.9	3.5	0.6
Women-headed	33.4	9.2	16.4	14.7	4	12.8	10.4	5	0.5

4.3 Disaster and Hazard Impacts

This section examines the various consequences of disaster exposure as reported in the 2025 TGES, highlighting how affected populations experience disruptions in healthcare access, deteriorating health and safety conditions, severe livelihood challenges, increased unpaid care burdens, and significant damage to housing and infrastructure. Additionally, the section analyses the effects of disaster exposure on sanitation, crime, and violence.

4.3.1 Barriers to Healthcare Access Due to Disaster Experience

Barriers to healthcare access arising from infrastructure failures in Mainland Tanzania were generally low, affecting 2.1 per cent of women and 1.3 per cent of men. Rural areas reported the lowest levels at 1.7 per cent for women and 0.9 per cent for men. while urban residents faced higher barriers at 2.8 per cent for women and 2.1 per cent for men. Among agro-ecological zones, the Highland zone showed the highest barriers for women at 4.0 per cent, and the Arid Land and Coastal zones had elevated levels for both sexes. The Semi-Arid zone recorded the lowest barriers at 0.4 per cent for women and 0.5 per cent for men.

For pandemic or health emergency-related barriers, Mainland Tanzania reported 4.7 per cent among women and 4.8 per cent among men (Table 4.2). Rural and urban areas had similar levels ranging from 4.6 per cent to 5.0 per cent. Across zones, the Alluvial Plain showed the highest barriers (10.7% of women, 9.0% of men), followed by the Coastal (5.8% of women, 7.1% of men) and Plateaux zones (5.0% of women, 3.5% of men). The Semi-Arid zone had the lowest pandemic-related barriers (1.2% for both women and men).

Overall, pandemic-related barriers were higher than infrastructure failures, with specific zones, particularly the Alluvial Plain, disproportionately affected.

Table 4. 2: Proportion of the Population Encountered Barriers to Accessing Healthcare in the Past 12 Months by gender and Place of Residence, Mainland Tanzania, 2025 TGES

Level	Infrastructure failure (damn failure, supply systems failure, water supply failure, etc)	Pandemic/Health emergency/other biological event
Men-headed	1.3	4.8
Women-headed	2.1	4.7
Rural		
Men-headed	0.9	5
Women-headed	1.7	4.6
Urban		
Men-headed	2.1	4.4
Women-headed	2.8	4.7
Agro-ecological zones		
Alluvial		
Men-headed	1.9	9
Women-headed	0.8	10.7
Arid land		
Men-headed	1.9	3.4
Women-headed	3.2	2.4
Coastal		
Men-headed	1.5	7.1
Women-headed	3.2	5.8
Highland		
Men-headed	1.5	5.2
Women-headed	4	3.6
Plateaux		
Men-headed	0.6	3.5
Women-headed	1.3	5
Semi-arid		
Men-headed	0.5	1.2
Women-headed	0.4	1.2

4.3.2 Impact of Disaster Experience on Health and Safety

Across Mainland Tanzania, illness affected slightly more women (6.3%) than men (5.4%), while injury levels remained low for both sexes. Rural and urban areas recorded similar illness rates, though urban residents experienced the highest injury levels, with men reaching 2.0 per cent compared with 1.0 per cent among women.

Across agro-ecological zones, illness rates peaked sharply in the Coastal zone, where 15.3 per cent of women and 12.8 per cent of men were affected, representing the highest levels recorded across all zones. In contrast, the Semi-Arid Lands recorded the lowest illness levels at 1.9 per cent among women and 2.7 per cent among men. Injury patterns varied, with the Plateaux zone recording the highest male injury rate (2.6%) and the Coastal zone also showing elevated male injury rates (2.4%). Women recorded their highest injury levels in the Plateaux at 1.5 per cent, while several zones reported values below 1 per cent.

Household-level impacts also differed widely. Reports of an injured or ill household member were highest in the Coastal zone, affecting 9.2 per cent of women and 6.6 per cent of men. Death of a household member remained rare across all areas, but the Semi-Arid Lands reported the highest levels (0.8% for men and 0.6% for women). Missing household members were most reported in the Arid Lands, with 0.4 per cent of men and 0.1 per cent of women affected (Table 4.3).

Overall, the Coastal zone consistently had the highest illness burdens and household health impacts, while the Semi-Arid and Highland zones recorded the lowest levels across most indicators. Sex differences were modest but present, with women generally reporting higher illness burdens and men more likely to report injuries.

Table 4. 3: Percentage Distribution of the Population who Contracted Illness or Sustained Injuries in the Past 12 Months by Gender, and Place of Residence, Mainland Tanzania, 2025 TGES

	Injury	Illness	Death of a household member	Injury/Illness of a household member	Household member is missing
Mainland Tanzania					
Men-headed	1.6	5.4	0.3	3.4	0.1
Women-headed	1	6.3	0.3	3.5	0.1
Rural					
Men-headed	1.4	5	0.3	3.2	0.1
Women-headed	1	5.7	0.3	2.9	0.1
Urban					
Men-headed	2	6.7	0.3	4	0.1
Women-headed	1	7.5	0.4	4.7	0.2
Agro-ecological zones					
Alluvial Plain					
Men-headed	1	4.9	0.1	4	0
Women-headed	0.9	6.4	0.4	2.5	0.2
Arid Lands					
Men-headed	1.3	5.9	0.3	1.8	0.4
Women-headed	1	5.9	0	2.6	0.1
Coastal					
Men-headed	2.4	12.8	0.6	6.6	0
Women-headed	0.9	15.3	0.5	9.2	0.3
Highland					
Men-headed	1.8	4.5	0	2.2	0
Women-headed	1	4.1	0.1	1.9	0
Plateaux					
Men-headed	2.6	2.2	0.4	2.9	0.1
Women-headed	1.5	3.8	0.4	3.6	0.1
Semi-Arid Lands					
Men-headed	0	2.7	0.8	3.3	0
Women-headed	0.5	1.9	0.6	1.8	0

4.3.3 Impacts of Disaster Experience on Household Livelihoods

Across Mainland Tanzania, crop damage affected 40.2 per cent of men and 38.4 per cent of women, while personal income decreased for 36.7 per cent of men and 31.4 per cent of women. Livestock loss or illness was reported by a smaller proportion of the population (4.8% of men, 5.0% of women), and productive asset damage was generally low (1.9% of men, 1.5% of women). Damage to drinking water sources affected 7.7 per cent of men and 8.2 per cent of women, while job loss remained limited (1.9% of men, 1.3% of women).

In rural areas, impacts were higher than the national average, with crop damage affecting 45.3 per cent of men and 44.9 per cent of women. Also, a decrease in personal income reported by 41.0 per cent of men and 35.6 per cent of women. Livestock losses were also reported in rural areas (5.7% among men, 6.0% among women) compared with urban areas.

In urban areas, impacts were lower, with crop damage affecting about 26 per cent of men and 25 per cent of women. Income reductions were reported by 24.5 per cent of men and 22.6 per cent of women. Livestock losses and productive asset damage were minimal, while job loss was slightly higher for men (2.3%) compared with women (0.9%).

At the agro-ecological zones, the Semi-Arid Lands experienced the most severe livelihood impacts, with crop damage affecting 60.4 per cent of men and 56.5 per cent of women. Notably, income decreases were also highest in this zone, reported by 48.6 per cent of men and 43.6 per cent of women. The Alluvial Plain and Plateaux also showed high crops and income losses. The Arid Lands had the highest livestock losses (9.7% of men, 9.5% of women) and the most serious damage to drinking water (12.4% for both sexes). The Coastal zone experienced notable job loss among men (3.4%) and damage to drinking water sources among women (10.1%). The Highland zone showed moderate impacts across all indicators.

Male-headed households generally reported higher crop and livestock losses, while female-headed households experienced substantial reductions in personal income, particularly in the Semi-Arid and Alluvial zones. Damage to drinking water sources disproportionately affected women, and job loss was mainly concentrated among men in Coastal and Urban areas.

Table 4. 4: Percentage Distribution of the Population whose Livelihoods were Affected in the Past 12 Months by Gender and Place of Residence, Mainland Tanzania, 2025 TGES

Level	Personal income decreased	Crops damaged/ destroyed	Livestock lost/Illness	Productive Asset damaged/ destroyed	Drinking water source damaged/compromised	Lost Job
Mainland Tanzania						
Men-headed	36.7	40.2	4.8	1.9	7.7	1.9
Women-headed	31.4	38.4	5	1.5	8.2	1.3
Rural						
Men-headed	41	45.3	5.7	2	8.7	1.7
Women-headed	35.6	44.9	6	1.2	9.5	1.5
Urban						
Men-headed	24.5	25.9	2.1	1.6	4.8	2.3
Women-headed	22.6	24.7	3	1.9	5.5	0.9
Alluvial Plain						
Men-headed	43.6	42	2.4	1.5	7	2.4
Women-headed	34.4	38.4	3.2	1.6	6.2	2.3
Agro-ecological zones						
Arid Lands						

Level	Personal income decreased	Crops damaged/ destroyed	Livestock lost/Illness	Productive Asset damaged/ destroyed	Drinking water source damaged/compromised	Lost Job
Men-headed	33.2	40.1	9.7	2	12.4	1
Women-headed	29.5	42.5	9.5	2	12.4	1.2
Coastal						
Men-headed	25.3	23.2	4	2.4	9.9	3.4
Women-headed	24.9	18.1	3.4	1.6	10.1	0.4
Highland						
Men-headed	29.8	35.2	4.1	2.9	5.9	1.6
Women-headed	23.9	32.7	6	1.3	6.5	0.7
Plateaux						
Men-headed	41.7	45.2	4.9	0.7	4.8	2
Women-headed	34	44.5	4	0.8	6.3	2.3
Semi-Arid Lands						
Men-headed	48.6	60.4	3.9	1.5	6.6	0.8
Women-headed	43.6	56.5	3	1.3	7.1	0.4

4.3.4 Impacts on Unpaid Care and Domestic Work Burdens

Disasters exposure in 2025 was associated with increased unpaid care work in Mainland Tanzania, particularly among women. A small proportion reported increased time spent on water collection (12.4% of women and 9.3% of men). Similarly, few reported increased time spent on childcare (7.6% for women, 4.7% for men). A small proportion also reported increased time spent on domestic work (10.3% of women, 5.7% of men) (Table 4.5). Adult caregiving showed smaller sex differences (2.0% of women, 1.6% of men).

Rural areas showed the largest differences by household headship. Time spent on water collection was reported by 13.8 per cent of respondents in female-headed households compared with 10.2 per cent in male-headed households. Increased time spent on domestic work was reported by 10.9 per cent of female-headed households compared with 5.3 per cent of male-headed households, and childcare by 7.7 per cent compared with 4.7 per cent respectively. A smaller proportion reported greater time on adult caregiving (2.4% of female-headed households compared with 1.3% of male-headed households).

In urban areas, the differences were narrower but followed the same direction for most activities. Greater time on water collection was reported by 9.4 per cent of female-headed households compared with 6.6 per cent of male-headed households. Increased time spent on childcare was reported by 7.6 per cent of female-headed households compared with

4.9 per cent among male-headed households. Increased time spent on domestic work was reported by 8.9 per cent of female-headed households compared with 6.6 per cent of male-headed households. Adult caregiving was the only activity where a slightly higher proportion of male-headed households (2.5%) than female-headed households (1.1%) reported greater time spent. Across agro-ecological zones, the Arid Lands recorded the highest proportions. In this zone, greater time spent on water collection was reported by 18.8 per cent of female-headed households compared with 14.7 per cent of male-headed households. The corresponding proportions were 12.5 per cent and 7.2 per cent for childcare, and 16.0 per cent and 7.6 per cent for domestic work.

In the Coastal zone, the corresponding figures were 15.0 per cent compared with 13.4 per cent for water collection, 11.1 per cent compared with 6.1 per cent for childcare, and 10.5 per cent compared with 6.8 per cent for domestic work. The Semi-Arid Lands, Plateaux, Highlands, and Alluvial Plains also recorded consistently higher proportions among female-headed households for water collection and most other unpaid care activities (Table 4.5).

Table 4. 5: Percentage Distribution of the Population whose Time Spent on Unpaid Care Work Increased in the Past 12 Months by Gender Sex and Place of Residence, Mainland Tanzania, 2025 TGES

Level	Time spent on water collection increased	Time spends on childcare increased	Time spent caring for adult family member increased	Time spent on any domestic work activities increased
Mainland Tanzania				
Men-headed	9.3	4.7	1.6	5.7
Women-headed	12.4	7.6	2.0	10.3
Rural				
Men-headed	10.2	4.7	1.3	5.3
Women-headed	13.8	7.7	2.4	10.9
Urban				
Men-headed	6.6	4.9	2.5	6.6
Women-headed	9.4	7.6	1.1	8.9
Angro-ecological zones				
Alluvial Plain				
Men-headed	6.1	5.5	1.7	4.6
Women-headed	7.6	6.8	1.7	8.4
Arid Lands				
Men-headed	14.7	7.2	2.5	7.6
Women-headed	18.8	12.5	3.2	16.0
Coastal				
Men-headed	13.4	6.1	1.6	6.8
Women-headed	15.0	11.1	1.7	10.5
Highland				

Level	Time spent on water collection increased	Time spends on childcare increased	Time spent caring for adult family member increased	Time spent on any domestic work activities increased
Men-headed	5.8	3.9	1.8	5.2
Women-headed	8.9	4.0	1.9	6.6
Plateaux				
Men-headed	4.4	1.6	0.5	4.4
Women-headed	8.6	6.2	2.0	12.0
Semi-Arid Lands				
Men-headed	14.5	4.1	1.7	6.1
Women-headed	16.8	3.9	1.3	6.6

4.3.5 Impact of Disaster Experience on Dwelling Damage and Destruction

Mainland Tanzania experienced widespread housing damage due to floods and cyclones. Results in Table 4.6 show that in rural areas, dwelling damage was reported by 7.7 per cent of female-headed households and 7.3 per cent of male-headed households. Respondents reported more destruction of dwellings, affecting approximately 59 per cent of both female- and male-headed households. In urban areas, the incidence of damage was slightly lower, although complete loss of dwellings was reported by 65 per cent and 67 per cent of female-and male-headed households, respectively.

Differences by household headship were particularly evident across agro-ecological zones. The highest proportions of complete dwelling destruction among female-headed households were recorded in the Semi-Arid zone (81%) and the Plateaux (65%). Among male-headed households, the highest proportions were observed in the Coastal (67%) and Alluvial Plain (78%) zones. These findings underline the extreme housing vulnerability of both female-headed and male-headed households in rural and semi-arid areas, where exposure to erratic rainfall and flooding is severe.

Table 4. 6: Percentage Distribution of the Population whose Dwellings Damaged or Destroyed in the Past 12 Months by Gender and Place of Residence, Mainland Tanzania, 2025 TGES.

Level	Dwelling is damaged	Dwelling is destroyed
Mainland Tanzania		
Men	6.9	60.6
Women	7.4	60.8
Rural		
Men	7.3	58.7
Women	7.7	59.2
Urban		
Men	5.7	67.2
Women	6.8	64.8
Alluvial Plain		
Men	5.5	77.9
Women	5.1	60
Arid Lands		
Men	7.9	51.3
Women	6.4	48
Coastal		
Men	7.4	66.7
Women	8.3	62.1
Highland		
Men	6	56.1
Women	6.6	48.2
Plateaux		
Men	8.2	53.1
Women	10.8	64.9
Semi-Arid Lands		
Men	6.6	64.1
Women	8.6	81.3

4.3.6 Impact of Disasters Experience on Crime and Violence

Results in Table 4.7 indicate that in Mainland Tanzania, 2.8 per cent of women and 3.1 per cent of men reported increased crime or violence at home or work following the 2025 disasters. Rural areas saw 2.9 per cent of women and 3.4 per cent of men reporting increased crime or violence, reflecting heightened insecurity in resource-scarce settings. In urban Tanzania, 2.6 per cent of women and 2.1 per cent of men noted increased crime or violence.

The Alluvial Plain reported the highest increases, with 6.3 per cent of women and 7.2 per cent of men noting more crime or violence. Arid Lands showed equal reporting, with 2.1 per cent of both women and men noting increased crime or violence. Coastal zone reported 1.8 per cent of women and 2.0 per cent of men experiencing increased crime or

violence, with cyclone-driven disruptions like eroded infrastructure contributing to insecurity. In the Highlands, 2.9 per cent of women and 2.7 per cent of men reported increased crime or violence, indicating a marginally higher burden among women.

In Plateaux areas, only 2.0 per cent of women and 1.7 per cent of men reported increased crime or violence, with women slightly more affected. Semi-Arid Lands reported the lowest increases, with 0.3 per cent of women and 1.1 per cent of men noting more crime or violence. The relatively low reported levels of crime or violence, particularly among women in some areas, may also reflect underreporting of GBV due to social and cultural norms. This underscores the importance of gender-sensitive interventions to address hidden vulnerabilities in disaster-affected communities, in line with the National Disaster Management Strategy (2022–2027) and the Sendai Framework.

Table 4.7: Percentage Distribution of the Population with Crime or Violence Increased in the Past 12 Months by Gender and Place of Residence, Mainland Tanzania, 2025 TGES

Level	Crime increased at home/work
Mainland Tanzania	
Men	3.1
Women	2.8
Rural	
Men	3.4
Women	2.9
Urban	
Men	2.1
Women	2.6
Alluvial Plain	
Men	7.2
Women	6.3
Arid Lands	
Men	2.1
Women	2.1
Coastal	
Men	2
Women	1.8
Highland	
Men	2.7
Women	2.9
Plateaux	
Men	1.7
Women	2
Semi-Arid Lands	
Men	1.1
Women	0.3

4.3.7 Impact of Disaster Experience on Sanitation and Hygiene

In Mainland Tanzania, disaster-related disruptions to sanitation access affects both women and men, with some impacts differing by sex. About 2.4 per cent of women and 2.8 per cent of men resorted to unimproved sanitation facilities, including, open defecation. 3.2 per cent of women compared with 2.5 per cent of men (Table 4.6), began sharing sanitation facilities with other households, increasing women's experience of assault in unsafe, poorly lit facilities. Additionally, 1.0 per cent of women and 1.2 per cent of men faced difficulties accessing hygiene products, exacerbating health risks for women during menstruation.

In rural Tanzania, sanitation disruptions were acute, with 2.7 per cent of women and 3.2 per cent of men resorting to unimproved sanitation, and 2.9 per cent of women compared with 2.0 per cent of men sharing facilities, heightening women's GBV risks, as noted in UNICEF reports. Hygiene product access difficulties affected 1.0 per cent of women and 1.5 per cent of men. On the other hand, urban sanitation systems faced strain in 2025, with 2.0 per cent of women and 1.5 per cent of men switching to unimproved sanitation, and 3.9 per cent of women compared with 4.0 per cent of men sharing facilities, amplifying women's safety concerns amid power outages. Hygiene product access issues affected 0.8 per cent of women and 0.5 per cent of men, underscoring urban women's vulnerabilities.

In the Alluvial Plain, 1.2 per cent of women and 1.1 per cent of men used unimproved sanitation. Similarly,1.7 per cent of women and 1.3 per cent of men shared sanitation facilities, posing greater safety risks for women in flood-prone areas. Hygiene product access difficulties affected 1.0 per cent of women and 1.7 per cent of men, reflecting resource scarcity.

The Arid Lands recorded severe sanitation challenges, with 4.9 per cent of women and 4.3 per cent of men using unimproved sanitation. In addition, 4.2 per cent of women compared with 2.7 per cent of men shared sanitation facilities, increasing women's exposure to insecurity and protection risks. Hygiene product access constraints affected 1.3 per cent of women and 3.4 per cent of men, indicating broader resource limitations. These patterns underscore the importance of gender-responsive water, sanitation and hygiene interventions in arid areas, in line with the National Water Policy (2002) and the Sendai Framework.

Coastal zone faced cyclone-driven sanitation disruptions, with 4.5 per cent of women and 5.5 per cent of men using unimproved sanitation. Shared sanitation facilities were reported by 6.4 per cent of women compared with 7.3 per cent of men, with important implications for the safety and dignity of women and girls. Hygiene product access difficulties affected 1.4 per cent of women and 1.6 per cent of men. Taken together, these findings point to the need for inclusive and resilient sanitation responses in coastal areas that adequately address the safety and hygiene needs of women and girls.

In the Highlands, landslides contributed to 1.0 per cent of women and 1.2 per cent of men using unimproved sanitation. In addition, 1.8 per cent of women, compared with 0.9 per cent of men, shared sanitation facilities, exposing women to greater safety concerns. Hygiene product access difficulties affected 0.4 per cent of women and 0.1 per cent of men, reflecting women's disproportionate challenges.

In the Plateaux, 0.7 per cent of women and 1.5 per cent of men relied on unimproved sanitation. The share reporting use of shared facilities was 1.6 per cent among women, compared with 1.1 per cent among men, suggesting greater vulnerability among women. Hygiene product access difficulties affected 0.6 per cent of women and 0.5 per cent of men.

In the Semi-Arid Lands, 2.2 per cent of women and 4.1 per cent of men used unimproved sanitation. Meanwhile, 4.1 per cent of women compared with 2.9 per cent of men shared facilities, increasing women's exposure to GBV. Difficulties in accessing hygiene products affected 1.1 per cent of women and 0.4 per cent of men, indicating that women bore greater burden in this regard.

Table 4. 8: Percentage Distribution of Population Reporting Sanitation and Hygiene Challenges in the Past 12 months by Sex and Place of Residence, Mainland Tanzania, 2025 TGES

Level	Shifted to unimproved sanitation	Began sharing sanitation facilities with other households	Experienced difficulties accessing hygiene products
Mainland Tanzania			
Men-headed	2.8	2.5	1.2
Women-headed	2.4	3.2	1.0
Rural			
Men -headed	3.2	2.0	1.5
Women-headed	2.7	2.9	1.0
Urban			
Men-headed	1.5	4.0	0.5
Women-headed	2.0	3.9	0.8

Level Agro-ecological zones	Shifted to unimproved sanitation	Began sharing sanitation facilities with other households	Experienced difficulties accessing hygiene products
Alluvial Plain			
Men-headed	1.1	1.3	1.7
Women-headed	1.2	1.7	1.0
Arid Lands			
Men-headed	4.3	2.7	3.4
Women-headed	4.9	4.2	1.3
Coastal			
Men-headed	5.5	7.3	1.6
Women-headed	4.5	6.4	1.4
Highland			
Men-headed	1.2	0.9	0.1
Women-headed	1.0	1.8	0.4
Plateaux			
Men-headed	1.5	1.1	0.5
Women-headed	0.7	1.6	0.6
Semi-Arid Lands			
Men-headed	4.1	2.9	0.4
Women-headed	2.2	4.1	1.1

4.4 Disaster preparedness and response

This section presents findings from the 2025 TGES on the extent to which women- and men-headed households were prepared for and able to respond to environmental shocks and disasters. It examines household access to early warning information, the channels through which such information was communicated, and the extent to which it informed planning and decision-making. It also examines practical preparedness measures adopted by respondents, including the storage of food and water, safety measures to protect individuals and families, and strategies to protect livelihoods and household assets. Overall, these findings shed light on gendered patterns of vulnerability and capacity in disaster risk management and provide a basis for policies and programmes aimed at strengthening resilience across population groups.

4.4.1 Access to Early Warning Information

In Mainland Tanzania, Table 4.9 shows a gender gap in access to early warning information over the past 12 months, with 15.1 per cent of men compared with 11.7 per cent of women reporting access. This disparity suggests the persistence of structural and socio-cultural barriers that limit women's access to timely and potentially life-saving information.

In urban areas, 17.3 per cent of men and 14.1% of women reported receiving early warning information, compared with 14.3 per cent of men and 10.5 per cent of women in rural areas. The urban advantage may be associated with better communication infrastructure, wider media reach, and stronger institutional networks for information dissemination. The same pattern is evident across place of residence. The relatively higher levels observed in urban settings may reflect stronger communication infrastructure, broader media reach, and more established institutional channels for disseminating information.

Disparities become even more pronounced in the agro-ecological zones. Coastal areas recorded the highest access, with 21.8 per cent of men and 16.6 per cent of women receiving early warning information. In contrast, Arid Lands registered the lowest access, with only 9.1 per cent of men and 6.3 per cent of women informed. The Highlands stand out for their near parity in access, with 14.6 per cent of men and 14.3 per cent of women getting information. In the Plateaux zone, 14.9 per cent of men and 11.9 per cent of women report access Notably, in the Alluvial Plain, the figures are 12.1 per cent for men and 9.8 per cent for women. Semi-Arid Lands showed a wider gender differential, with 14.6 per cent of men and 9.2 per cent of women accessing information, underscoring the need for region-specific strategies. Addressing these disparities is central to fostering inclusive and resilient communities, particularly by ensuring that disaster preparedness systems reach women and men more equitably across different ecological settings.

Table 4. 9: Percentage Distribution of Population with Access to Early Warning Information in the Past 12 Months by Gender and Place of Residence, Mainland Tanzania, 2025 TGES

Level	Advance notice or warning
Mainland Tanzania	
Men	15.1
Women	11.7
Rural	
Men	14.3
Women	10.5
Urban	
Men	17.3
Women	14.1
Alluvial Plain	
Men	12.1
Women	9.8
Arid Lands	
Men	9.1
Women	6.3
Coastal	
Men	21.8

Level	Advance notice or warning
Women	16.6
Highland	
Men	14.6
Women	14.3
Plateaux	
Men	14.9
Women	11.9
Semi-Arid Lands	
Men	14.6
Women	9.2

4.4.2 Sources of Early Warning Information

Early warning systems are essential for disaster preparedness, helping to reduce losses through timely response. The Tanzania Meteorological Authority (TMA) is the main provider of early warning information in the country. The information is disseminated through channels like radio, television, community organizations, civil society, schools, the internet, social media, email, phone, and newspapers. Gender, as distinct sex, influences access to these channels through socially defined roles and resource inequalities, which often constrain women's access. Ensuring equal access is therefore important for advancing Tanzania's gender-responsive disaster risk management goals.

In Mainland Tanzania, Table 4.10 identifies radio as the primary source of information for men (42.5%) and women (40.8%), followed by television (33.5% for men; 30.6% for women). Women rely haavily on community-based sources (22.5%) compared with men (18.1%), a pattern that may reflect limited access to technology. Internet (1.2% for men; 2.5% for women) and mobile phones (3.2% for men; 2.0% for women) are less common, with minor gender gaps. These trends align with Table 4.9, which shows lower access to information for women (11.7%) than for men (15.1%).

Households in rural areas favoured radio (45.8% for men and 46.6% for women), while community-based sources were used more often by women (29.6% for women compared with 21.0% for men). By contrast, urban households relied primarily on television (46.0% for men and 49.8% for women). Female-headed households in these settings reported lower use of mobile phone-based sources (0.9% for women) than male-headed households (3.4% for men), suggesting barriers to digital access.

Community-based sources were the most prominent channel in the Semi-Arid Lands for both men (38.8%) and women (38.7%). By contrast, women in the Arid Lands reported

greater use the internet more (7.0%) that men (2.9%). In Coastal zones, both radio and television remained important, although women relied more on community-based sources (27.3%) compared with men (14.3%). In the Highlands newspapers use was more pronounced among women (11.1%) than men (2.9%), while Plateaus and Alluvial Plains prioritize radio. Female-headed households in urban areas were less likely than male-headed households to use mobile phone-based sources, pointing to unequal access to digital communication tools.

These findings underscore the need to strengthen community networks, improve women's digital literacy, and tailor communication channels to constraints related to literacy and mobility, particularly in rural and arid areas. Expanding the range of information source diversity would help promote more gender-equitable disaster preparedness and resilience.

Table 4.10: Percentage Distribution of the Population with Access to Sources of Early Warning Information in the Past 12 months by Gender and Place of Residence; Mainland Tanzania, 2025 TGES

Level	Main source of early warning information								
	Radio	Television	Speaker/ PSA	Community/ CSO/School	Internet /social media /email-Internet	Phone (text or call)	Siren	Magazine/ Newspaper	Other
Mainland Tanzania									
Men-headed	42.5	33.5	0.5	18.1	1.2	3.2	0.3	0.3	0.4
Women-headed	40.8	30.6	1.1	22.5	2.5	2	0	0.2	0.4
Rural									
Men-headed	45.8	28.2	0.7	21	0	3.2	0.4	0.4	0.3
Women-headed	46.6	18.2	0.4	29.6	1.6	2.6	0	0.3	0.5
Urban									
Men-headed	34.9	46	0	11.2	4.1	3.4	0	0	0.5
Women-headed	31.6	49.8	2.2	11.3	3.9	0.9	0	0	0.2
Agro-ecological zones									
Alluvial Plain									
Men-headed	35.4	39.5	0.7	18.8	3	2	0.5	0	0
Women-headed	34.3	30.9	1.5	29.1	4	0	0.2	0	0
Arid Lands									
Men-headed	53.3	10.7	0	22.7	2.9	0	2.1	4.6	3.7
Women-headed	42.6	34.7	0.2	14.3	7	0	0	1.3	0
Coastal									
Men-headed	41.7	39.4	0	14.3	3.6	0	0	1	0
Women-headed	42.6	25.7	1.7	27.3	1.3	0	1	0.5	0
Highland									

Level	Main source of early warning information								
	Radio	Television	Speaker/ PSA	Community/ CSO/School	Internet /social media /email- Internet	Phone (text or call)	Siren	Magazine/ Newspaper	Other
Men-headed	44.3	43.7	2	5	2.4	0	0	2.9	0
Women-headed	30.5	46.9	1.1	8.7	1.7	0	0	11.1	0
Plateaux									
Men-headed	54.7	29.5	0.6	14	0.5	0	0.8	0	0
Women-headed	52.4	31.4	0.9	13.9	0	1.1	0.2	0	0
Semi-Arid Lands									
Men-headed	29.7	23.5	0	38.8	6.9	0	0	1	0
Women-headed	43.6	14.4	0	38.7	1	0	0.3	1.9	0

4.4.3 Usefulness of Early Warning Information for Disaster Preparedness

Early warning systems are crucial for disaster preparedness, as they enable timely responses that help reduce loss of life, property, and livelihoods. The effectiveness of early warning information depends heavily on its usefulness, as it influences how individuals and communities respond to it. Ensuring that that early warning information is seen as valuable by both women and men is key to equitable disaster resilience and reflects Tanzania's commitment to gender-responsive climate and disaster risk management.

In Mainland Tanzania, Table 4.11 shows that in the past 12 months, 75.5 per cent of male-headed and 73.1 per cent of female-headed households found early warning information useful. This narrow gap suggests that despite differences in access to early warning information, male- and female-headed households assess its usefulness in broadly similar terms.

In rural areas, 74.6 per cent female-headed households found early warning information useful, compared with 72.8% per cent of male-headed households. This suggests that rural female-headed households, despite having lower access to early warning information (10.5% compared with 14.3% for male-headed households, per Table 4.8), may find the information more actionable, possibly because of community-based dissemination or its relevance to household preparedness. Urban male-headed households reported the highest perceived usefulness of early warning information (81.9%), compared with 70.7 per cent of urban female-headed households, indicating a marked gap in perceived usefulness in urban areas.

At the ecological zone level, variations in perceived usefulness are notable. The Highlands recorded the highest usefulness for men (85.3%) compared with women (70.8%), indicating a substantial gender gap that may reflect women's socio-cultural constraints, such as limited mobility or decision-making authority. The Alluvial Plain showed gender parity, with both men and women at 81.8 per cent, suggesting effective dissemination and relevance of information in this zone.

In coastal areas, the majority of men (79.3%) and women (75.8%) reported the information to be useful, likely due to tailored systems that address frequent climate-related hazards. Likewise, in the Plateaux zone, 79.3 per cent of men and 76.4 per cent of women reported the information to be useful, showing a moderate gender gap. In contrast, the Arid Lands (56.0% for men; 67.3% for women) and Semi-Arid Lands (59.0% for men; 57.7% for women) report lower usefulness, with women in Arid Lands finding information more useful than men, possibly due to targeted interventions or reliance on informal networks. These variations underscore the need for context-specific approaches to enhance the usefulness of early warning information. By ensuring that early warning information is both accessible and actionable, Tanzania can strengthen community resilience and ensure no one is left behind in disaster preparedness efforts.

Table 4.11: Percentage Distribution of the Population Reporting the Usefulness of ealy Warning Information in the Past 12 Months by gender and Place of Residence, Mainland Tanzania, 2025 TGES

Event	Early warning information useful
Mainland Tanzania	
Men	75.5
Women	73.1
Rural	
Men	72.8
Women	74.6
Urban	
Men	81.9
Women	70.7
Alluvial Plain	
Men	81.8
Women	81.8
Arid Lands	
Men	56
Women	67.3
Coastal	

Event	Early warning information useful
Men	79.3
Women	75.8
Highland	
Men	85.3
Women	70.8
Plateaux	
Men	79.3
Women	76.4
Semi-Arid Lands	
Men	59
Women	57.7

4.4.4 Food and Water Preservation

This section explores how households sought to protect essential resources, after receiving early warning information on potential hazards such as floods and droughts. Table 4.12 shows that among those exposed to hazards in the past 12 months, women in Mainland Tanzania were slightly more likely than men to preserve drinking water (18.7% compared with 16.1%) and dry food (22.3% compared with 22.1%). Men, however, were slightly more likely to engage in harvesting/storing crops (14.4% compared with 14.0%) and in covering or protecting crops (6.5% compared with 5.9%). Women's stronger engagement in preservation may reflect their roles in household resource management, despite having less access to early warning information.

Rural areas show higher uptake of these measures, including preserving drinking water (19.4% for women, 16.1% for men), dry food (23.8% for women, 23.0% for men), harvesting or storing crops (16.4% for women, 16.0% for men), and covering or protecting crops (7.5% for men, 6.9% for women). Urban rates are lower, with women leading only in preserving drinking water (17.1% for women, 16.0% for men). Rural women's reliance on community channels, together with the relatively high perceived usefulness of warning information, may drive action. Semi-Arid Lands recorded the highest uptake for several measures, including preserving dry food (47.9% for men and 40.5% for women), reflecting heightened exposure to drought. By contrast, uptake was lower in the Alluvial Plains and Coastal areas; for example, dry food preservation was reported by 10.8 per cent of men and 11.6 per cent of women. In Arid Lands, women were more likely than men to preserve

drinking water (23.3% compared with15.3% for men) and to protect crop (13.2% for compared with 12.4% for men).

Interventions should build on women's community networks, address barriers to resource access, and tailor warning messages to gender roles and responsibilities, particularly in low-uptake areas such as Alluvial Plains and Coastal areas, to strengthen gender-equitable food and water security.

Table 4.12: Percentage Distribution of Population with Precautionary Measures in Place Before the Disaster in the Past 12 Months by Gender, Place of Residence, and Type of Food and Water Security Measure, Mainland Tanzania, 2025 TGES

Level	Preserve drinking water	Preserve dry food	Harvest or store crops	Cover/protect crops
Mainland Tanzania				
Men-headed	16.1	22.1	14.4	6.5
Women-headed	18.7	22.3	14.0	5.9
Rural				
Men-headed	16.1	23.0	16.0	7.5
Women-headed	19.4	23.8	16.4	6.9
Urban				
Men-headed	16.0	19.3	9.6	3.5
Women-headed	17.1	19.1	8.8	3.9
Agro-ecological zones				
Alluvial Plain				
Men-headed	10.6	16.0	7.2	3.3
Women-headed	9.0	15.8	8.4	2.6
Arid Lands				
Men-headed	15.3	23.5	19.9	12.4
Women-headed	23.3	24.5	18.3	13.2
Coastal				
Men-headed	14.2	10.8	3.1	4.5
Women-headed	18.6	11.6	2.1	1.0
Highland				
Men-headed	20.4	18.6	8.2	3.9
Women-headed	20.2	19.3	11.0	4.8
Plateaux				
Men-headed	13.6	24.2	22.5	8.4
Women-headed	15.9	26.7	19.5	5.7
Semi-Arid Lands				
Men-headed	24.9	47.9	31.4	6.8
Women-headed	28.1	40.5	27.6	7.8

4.4.5 Personal and Family Safety Measures

This subsection analyses measures taken to protect personal and family safety, including isolating indoors, temporarily relocating to another area, and sending children to a safe place. Table 4.13 indicates that in Mainland Tanzania, women reported slightly higher participation in isolating indoors (19.4%) compared with men (18.7%) and in sending children to a safe place (2.3% for women compared with1.9% for men). Men, however, reported marginally higher engagement in temporary relocation, with 2.8 per cent for men and 2.5 per cent for women. The greater involvement of women in caregiving-related measures aligns with established gender roles. However, this occurs alongside lower reported access to early warning information (11.7% for women and 15.1% for men, as shown in Table 4.8).

Households in rural areas showed higher overall engagement in safety measures. Women in rural settings more frequently undertook isolating indoors, at 20.2 per cent for women and 19.4 per cent for men, and sending children to safety, at 2.2 per cent for women compared with 1.8 per cent for men. Men more commonly reported temporary relocation, with 3.1 per cent for men and 2.6 per cent for women. In urban areas, participation levels were lower for both genders, but women consistently recorded slightly higher uptake across all measures; for example, 17.7 per cent of women and 16.5 per cent of men undertook isolating indoors.

Across agro-ecological zones, the Coastal zone exhibits the highest level of indoor isolation, with 27.4 per cent for women and 27.2 per cent for men. In Semi-Arid Land, women were more likely than men to relocate temporarily, with 4.2 per cent for women and 2.7 per cent for men, and sending children to safe place, at 3.3 per cent for women compared with 2.0 per cent for men. The Alluvial Plains recorded the lowest levels of engagement, with equal proportions of men and women at 9.9 per cent, mainly involving indoor isolation. Women's greater reliance on community information channels (29.6% compared with 21.0% for men, as shown in Table 4.10) may help prompt action, although their more limited access to official warnings continues to hinder timely responses.

Table 4.13: Percentage Distribution of Population with Precautionary Measures in Place Before the Disaster in the Past 12 Months by gender, Place of Residence, and Type of Personal and Family Safety, Mainland Tanzania, 2025 TGES

Level	Isolate indoors	Flee to different geographical area (temporarily)	Send children to a safe place
Mainland Tanzania			
Men-headed	18.7	2.8	1.9
Women-headed	19.4	2.5	2.3
Rural			
Men-headed	19.4	3.1	1.8
Women-headed	20.2	2.6	2.2
Urban			
Men-headed	16.5	2.0	2.2
Women-headed	17.7	2.4	2.5
Agro-ecological zones			
Alluvial Plain			
Men-headed	9.9	4.3	2.0
Women-headed	9.9	3.1	2.4
Arid Lands			
Men-headed	17.7	2.7	2.3
Women-headed	19.9	2.0	1.8
Coastal			
Men-headed	27.2	2.2	3.2
Women-headed	27.4	1.8	3.4
Highland			
Men-headed	24.1	1.7	1.0
Women-headed	23.4	2.0	1.2
Plateaux			
Men-headed	14.6	2.9	1.5
Women-headed	17.4	2.4	1.8
Semi-Arid Lands			
Men-headed	21.1	2.7	2.0
Women-headed	23.2	4.2	3.3

4.4.6 Livelihood and Asset Protection

This subsection explores actions taken to safeguard livelihoods and assets, including reinforcing houses and animal shelter, relocating livestock to safe areas, and constructing barriers. Table 4.14 indicates that in Mainland Tanzania, adoption rates were low. Male-headed households recorded slightly higher uptake in reinforcing animal shelters (2.9% for men, 2.6% for women), relocating livestock (2.8% for men, 1.8% for women), and building barriers (4.7% for men, 3.2% for women). Female-headed households, however, recorded a marginally higher rate in reinforcing household materials (4.2%, compared with 4.1 % for male-headed households). The broader pattern may reflect men's greater access to resources and mobility, compounded by women's limited access to warnings.

In rural areas, both women and men reported higher adoption (4.5%) of household reinforcement than in urban areas, where men lead in most measures (e.g., 5.7% for men, compared with 3.8% for women for building barriers). Arid Lands showed the highest rates (e.g., 8.8% for men and 8.1% for women for household reinforcement), reflecting livestock dependence. Coastal and Alluvial Plain zones demonstrated lower adoption (e.g., 1.8% for men and 2.4% for women for household reinforcement in Coastal zones). Women in the highlands lead in reinforcing household materials (4.8% for women, 3.3% for men) and animal shelters (4.8% for women, 4.3% for men), possibly due to community support. Interventions should address women's resource limitations, build on community channels, and focus on low-adoption areas such as Coastal and Alluvial Plains to strengthen gender-responsive livelihood protection.

Table 4.14: Percentage Distribution of Population with Precautionary Measures in Place Before the Disaster in the Past 12 Months by gender, Place of Residence, Type of Livelihood and Asset Protection; Mainland Tanzania, 2025 TGES

	Reinforce building materials of the household	Reinforce building materials of the animal shelter	Move livestock to a safe place	Build barrier
Mainland Tanzania				
Men-headed	4.1	2.9	2.8	4.7
Women-headed	4.2	2.6	1.8	3.2
Rural				
Men-headed	4.5	3.3	3.5	4.3
Women-headed	4.5	2.7	2.2	2.9
Urban				
Men-headed	3.2	1.8	0.8	5.7
Women-headed	3.6	2.4	1.0	3.8
Agro-ecological zones				
Alluvial Plain				
Men-headed	1.8	0.6	2.8	4.5
Women-headed	0.9	0.2	1.7	4.1
Arid Lands				
Men-headed	8.8	6.3	5.7	3.8
Women-headed	8.1	5.9	3.2	2.1
Coastal				
Men-headed	1.8	0.8	1.6	4.5
Women-headed	2.4	0.1	0.6	4.4
Highland				
Men-headed	3.3	4.3	1.1	3.2
Women-headed	4.8	4.8	0.9	1.3
Plateaux				
Men-headed	4.6	2.4	2.1	5.8
Women-headed	4.3	1.6	1.8	2.6
Semi-Arid Lands				
Men-headed	5.1	2.9	4.3	7.6
Women-headed	5.1	2.8	2.4	6.1

CHAPTER FIVE

CLIMATE CHANGE EXPERIENCE AND RESPONSES

Key Points

- The most experienced climate change-related effect is the decrease in precipitation. This was reported by a large proportion of the population in Mainland Tanzania, involving 29.0 per cent men and 30.1 per cent women.
- The majority of both women (82.9%) and men (80.8%) observed climate change-related effects in the area where they live.
- Radio is the most common source of information about climate change-related events/effects, as reported by 35.3 per cent of women and 44.8 per cent of men.
- 18.8 per cent of men and 16.4 per cent of women preserve seeds and other planting materials as mitigation measures for climate change effects in rural and urban areas.
- About 17.5 per cent of men and 15.0 per cent of women in urban areas preserve food due to limited access to and use of food.
- 21.8 per cent of men and women in rural areas limit food intake due to insufficient food resources or income as a result of climate change effects.

5.1 Introduction

Climate change is one of the most pressing challenges of our time. Its impacts extend beyond environmental degradation to affect social, economic, and cultural systems. While its consequences are felt globally, they are not experienced equally. Gender plays a critical role in shaping vulnerability, resilience, and adaptive capacity to climate change. Women, men, and marginalized groups often face distinct risks and opportunities determined by their social roles, access to resources, and decision-making power.

This chapter explain the intersection between climate change and gender. Its main focus is on how climate change influence livelihoods, health, education, and community resilience. The chapter highlights the differences in exposure and vulnerability to climate risks by gender, place of residence (rural and urban) and agro-ecological zones in Mainland Tanzania. Perceptions/experiences of exposure, coping strategies and adaptive

capacities by population on climate related impacts are also discussed in this chapter. It shows and identifies the differences in exposure and vulnerability to climate risks. It assesses the access to adaptation resources such as finance, technology and training. Gender and climate change help with understanding how social roles influence participation in climate-related decision-making. The chapter highlights the opportunities for inclusive climate change policies and programs.

The chapter provide suggestions to inform national and local strategies, ensuring that climate action is equitable and responsive to the needs of all community members. Ultimately, this chapter contributes to building a knowledge base that supports gender-sensitive climate adaptation and mitigation, aligning with international frameworks such as the Sustainable Development Goals (SDGs), the Paris Agreement, and national climate policies.

5.2 Perceptions and Exposure to Climate Change Effects

Climate change is not only a physical phenomenon but also a social experience shaped by how communities perceive and respond to its impacts. Understanding perception is critical because it influences adaptation choices, policy support, and the effectiveness of climate interventions. Exposure to climate change effects varies across zones, livelihoods, and social groups, often intersecting with gender, age, and socioeconomic status.

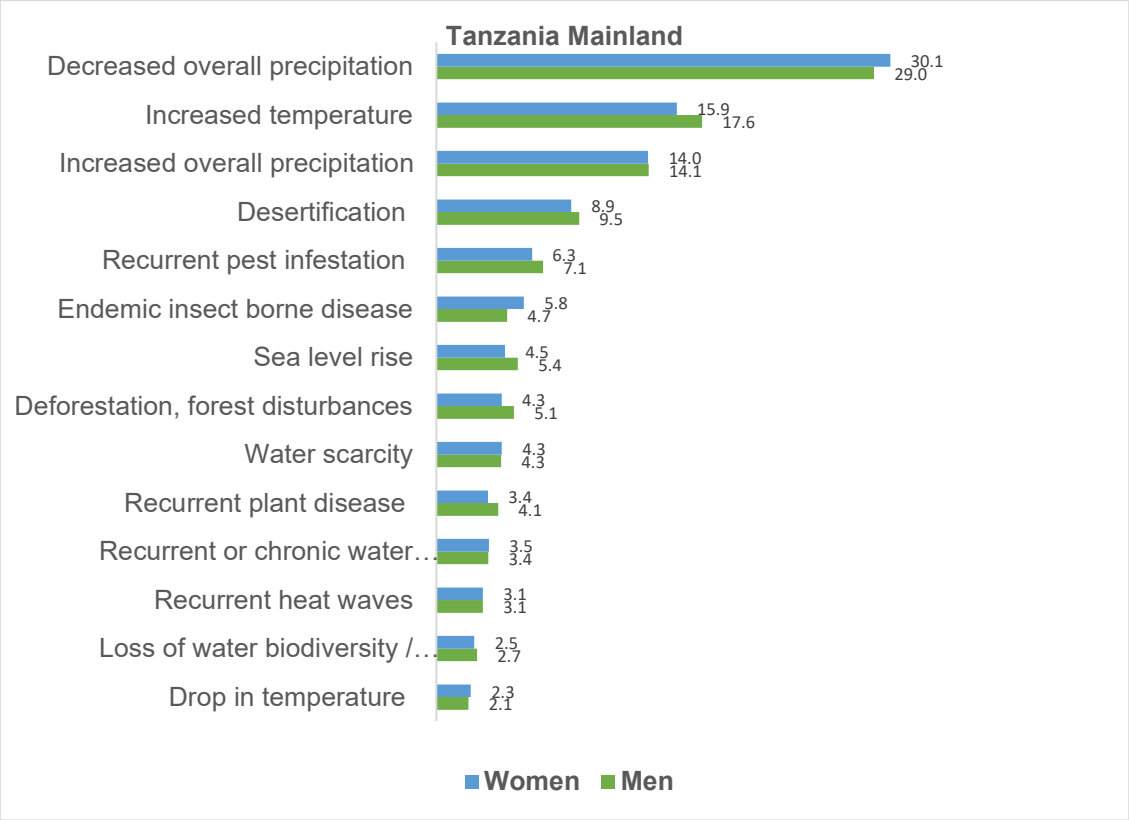
The 2025 TGES collected information on population perceptions and exposures on climate change-related effects by gender, residence, agro-ecological zones, and the type of climate change effects experienced. These factors are detailed in the following subsections.

5.2.1 Perception and Exposure to Climate Change Effects in Mainland Tanzania

The results in Tables 5.1a, 5.2b and Figure 5.1 show that the common climate change effects experienced by large proportion of population in Mainland Tanzania include: decreased overall precipitation (29.0% men and 30.1% women), increased overall precipitation (14.1% men and 14.0% women), increased temperature (e.g. temperatures are higher than they used to be in the past (17.6% men and 15.9% women), and drop in temperature (2.1% men and 2.3% women). Others include desertification (9.5% men and 8.9% women), sea level rise (5.4% men and 4.5% women), and water scarcity (reduced availability over extended periods) (4.3% both men and women).

Furthermore, households-heads reported to experience recurrent heat waves (3.1% both men and women), endemic insect borne disease (e.g. Malaria, Dengue, and Zika) (4.7% men and 5.8% women), and recurrent or chronic water pollution, including plastics in fresh water, marine, tap water, farming water (3.4% men and 3.5% women). Others reported loss of water biodiversity/depletion of species such as fish, seafood, seaweed, and coral bleaching (2.7% men and 2.5% women), recurrent pest infestation such as locust, invasive weeds, invasive species (7.1% men and 6.3% women), recurrent plant disease (bacterial, fungal, and mycoplasma (4.1% men and 3.4% women), and deforestation, forest disturbances (5.1% men and 4.3% women).

Figure 5. 1: Percentage Distribution of the Population Experienced with Most Climate Change Related Effects in their Lifetime by Gender; Mainland Tanzania, 2025 TGES



Note: Other climate change related effects were experienced by fewer proportion of population, hence not shown on figure 5.1.

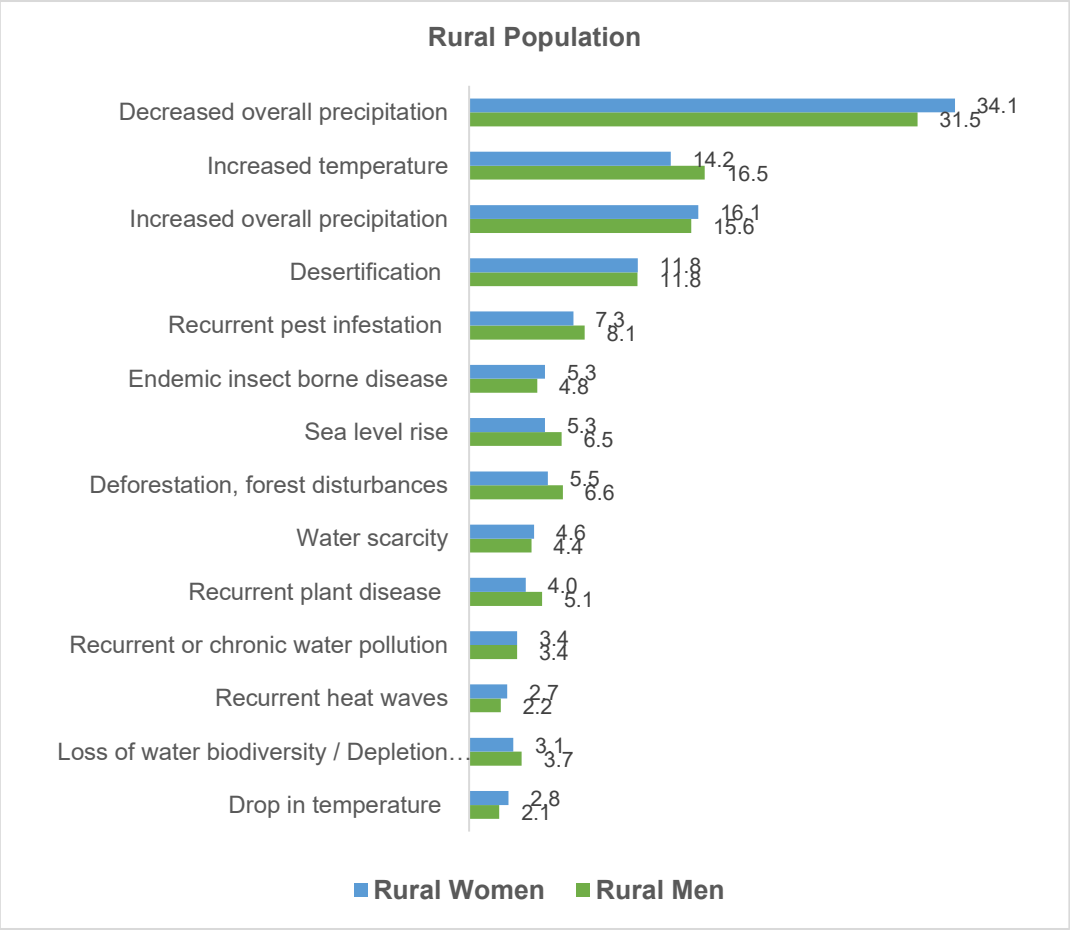
5.2.2 Perception and Exposure to Climate Change Effects in Rural and Urban

Figures 5.2 and 5.3 show that a decrease in overall precipitation was experienced by a higher proportion of the rural population (31.5% men and 34.1% women) compared to the urban population (23.7% men and 23.5% women). Increased temperatures (sustained) are higher than they used to be in the past, and they were the second most common

climate change effects in both rural and urban areas. However, the urban population reported to have experienced more effects (19.8% men and 18.7% women) compared to the rural population (16.5% men and 14.2% women).

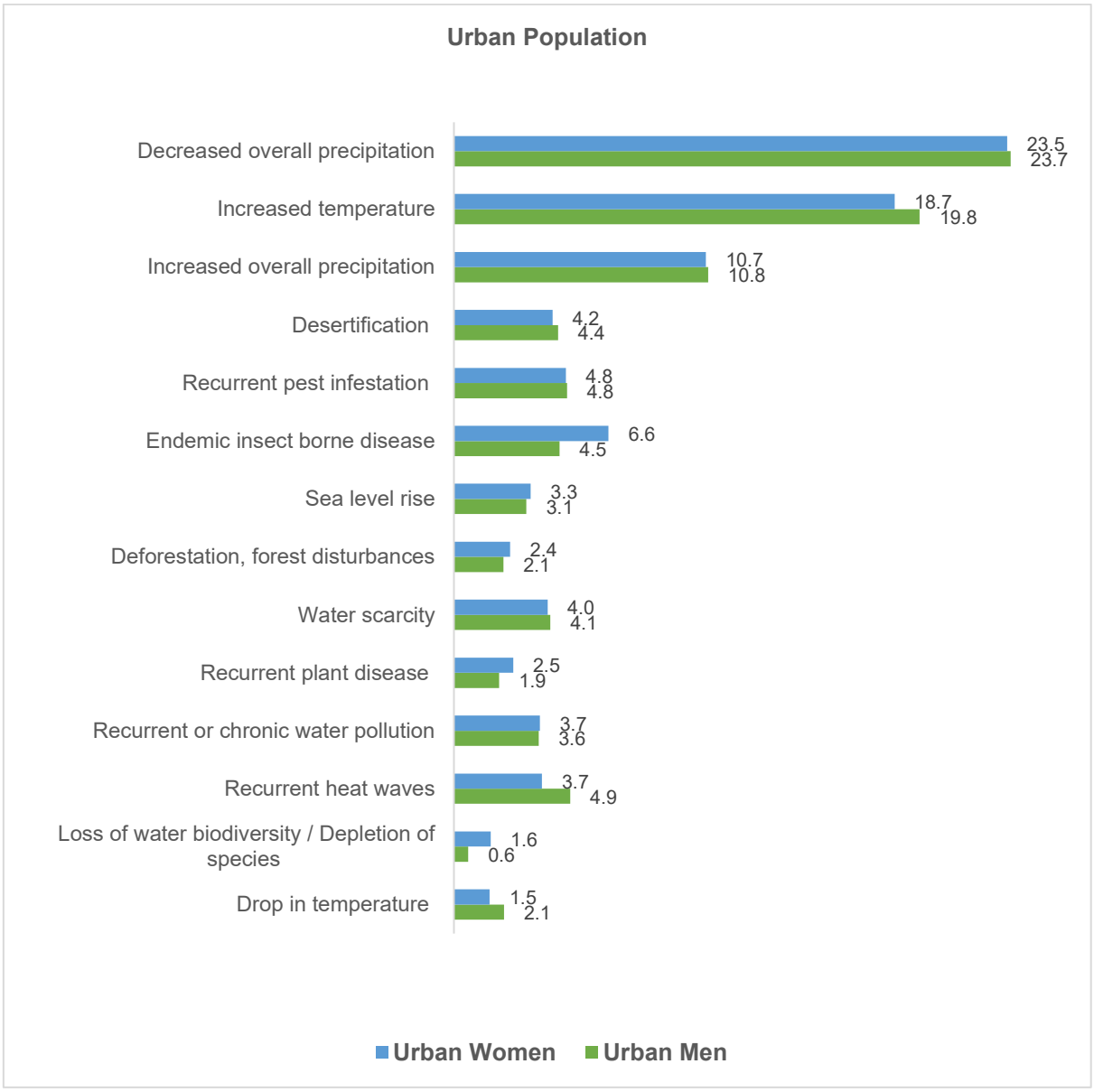
Increase in overall precipitation by rural and urban population ranked third, with the perceived/experienced effect being higher for a higher proportion of rural population (15.6% men and 16.1% women) than urban population (10.8% men and 10.7% women). Desertification effects were mainly perceived/experienced by the rural population (11.8% of both men and women) than the urban population (4.4% men and 4.2% women). Likewise, the effects of sea level rise were most pronounced in rural areas (6.5% men and 5.3% women) than in urban areas (3.1% men and 3.3% women).

Figure 5. 2: Percentage Distribution of the Population Experienced with Most Climate Change Related Effects in their Lifetime by Gender and Residence; Mainland Tanzania, 2025 TGES



Note: Other climate change related effects were perceived/exposed/experienced by fewer proportion of population, thus not shown on figure 5.2.

Figure 5. 3: Percentage Distribution of the Population Experienced with Most Climate Change Related Effects in their Lifetime by Gender and Residence; Mainland Tanzania, 2025 TGES



Note: Other climate change related effects were perceived/exposed/experienced by fewer proportion of population, hence not shown on figure 5.3.

Table 5. 1a: Percentage Distribution of the Population Experienced One or More Climate Change Related Hazards in their Lifetime by Residence and Gender; Mainland Tanzania, 2025 TGES

Climate Change Related Hazard	Tanzania Mainland		Rural		Urban	
	Men	Women	Men	Women	Men	Women
Increased temperature (sustained) (e.g. Temperatures are higher than they used to be years ago)	17.6	15.9	16.5	14.2	19.8	18.7
Drop in temperature (sustained) (e.g. Temperatures are lower than they used to be years ago)	2.1	2.3	2.1	2.8	2.1	1.5
Recurrent heat waves	3.1	3.1	2.2	2.7	4.9	3.7
Recurrent extreme cold events	2.1	2.7	2.0	2.7	2.3	2.8
Increased overall precipitation	14.1	14.0	15.6	16.1	10.8	10.7
Decreased overall precipitation	29.0	30.1	31.5	34.1	23.7	23.5
Desertification	9.5	8.9	11.8	11.8	4.4	4.2
Endemic insect borne disease (e.g. Malaria, Dengue, Zika, etc.)	4.7	5.8	4.8	5.3	4.5	6.6
Recurrent wildfires	1.1	0.7	1.2	0.8	0.9	0.5
Water scarcity (reduced availability over extended periods)	4.3	4.3	4.4	4.6	4.1	4.0
River/coast erosion/sand encroachment and other permanent shallow geohazards	1.5	1.7	1.4	1.3	1.7	2.4
Increased frequency of animal death episodes (birds, land animals)	1.3	1.3	1.7	1.7	0.5	0.7
Increased frequency of animal death episodes (fish, seafood, freshwater animals, marine animals)	1.3	1.3	1.7	1.7	0.5	0.7
Loss of land and air biodiversity / Depletion of species (land animals, birds, plants, trees, insects, mushrooms, seeds)	0.1	0.2	0.1	0.3	-	0.1
Loss of water biodiversity / Depletion of species (fish, seafood, seaweed, coral bleaching, etc.)	2.7	2.5	3.7	3.1	0.6	1.6
Increased/frequent/chronic air pollution, haze, smoke	2.0	1.2	2.4	1.3	1.2	1.0
Increased ocean temperature	0.5	0.5	0.4	0.5	0.9	0.5
Sea level rise	5.4	4.5	6.5	5.3	3.1	3.3
Permanent/frequent flood (coastal, estuarine, groundwater flood, snowmelt flood, etc.)	0.2	0.4	0.3	0.4	0.1	0.3
Thawing of ice (glaciers, permafrost, other)	0.4	0.6	0.4	0.7	0.2	0.5
Increasing spread of pathogens (virus, bacteria)	1.0	1.2	1.2	1.5	0.6	0.9
Increase spread of parasites (human and animal)	0.1	0.0	0.1	0.0	-	0.0
Recurrent or chronic water pollution, including plastics (fresh water, marine, tap water, farming water),	3.4	3.5	3.4	3.4	3.6	3.7
Fresh water depletion	0.7	0.2	0.8	0.3	0.5	0.0

Source: Tanzania Gender and Environment Survey, 2025

Table 5.2b: Percentage Distribution of the Population that Experienced One or More Climate Change Related Hazards in their Lifetime by Residence and Gender and Mainland Tanzania, 2025 TGES

Climate Change Related Hazard	Tanzania Mainland		Rural		Urban	
	Men	Women	Men	Women	Men	Women
Eutrophication (higher than usual concentrations of nutrients/phytoplankton in fresh water)	0.2	0.3	0.2	0.3	0.3	0.3
Land degradation (eroded, polluted, salinized, less productive land or soil)	0.4	0.6	0.4	0.7	0.4	0.4
Sand mining	0.8	0.6	0.9	0.6	0.6	0.7
Deforestation, forest disturbances	5.1	4.3	6.6	5.5	2.1	2.4
Forest invasive species	0.4	0.4	0.6	0.5	0.1	0.2
Loss of mangroves	0.0	-	0.0	-	-	-
Ocean invasive species	0.2	0.1	0.3	0.1	-	0.1
Wetland loss/degradation	1.0	0.9	0.9	1.1	1.0	0.6
Runoff (non-point source pollution)	0.7	0.9	0.8	0.9	0.4	0.8
Recurrent pest infestation (e.g. locust, invasive weeds, invasive species)	7.1	6.3	8.1	7.3	4.8	4.8
Recurrent plant disease (bacterial, fungal, mycoplasma, etc.)	4.1	3.4	5.1	4.0	1.9	2.5
Recurrent animal or human disease (airborne, water borne, blood borne, etc.)	1.8	1.8	1.8	2.1	1.7	1.5

Source: Tanzania Gender and Environment Survey, 2025

5.2.3 Perception and Exposure to Climate Change Effects in Agro-Ecological Zones

The 2025 TGES collected information on individuals' exposure and experiences across all agro-ecological zones in Tanzania Mainland. It was observed that the primary climate change effects in these zones are changing precipitation patterns, followed by shifts in temperature, desertification, and sea level rise. Other climate change effects were recorded as having minimal impacts on the larger population, thus they were not analysed in this report, as Tables 5.2a and 5.2b indicate.

Table 5. 2a: Proportion of the Population that Experienced One or More Climate Change Related Hazards in their Lifetime by Gender and Agro Ecological Zone; Mainland Tanzania, 2025 TGES

Climate Change Related Hazard	Alluvial Plain		Arid Lands		Coastal		Highland		Plateaux		Semi-Arid Lands	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Increased temperature (sustained) (e.g. Temperatures are higher than they used to be years ago)	21.1	20.7	15.3	15.7	21.2	19.3	12.1	10.4	18.4	16.6	18.3	13.3
Drop in temperature (sustained) (e.g. Temperatures are lower than they used to be years ago)	3.2	2.3	2.8	2.4	2.2	3.4	1.5	1.1	2.2	2.2	1.1	2.5
Recurrent heat waves	1.6	3.1	2.8	2.4	8.3	7.7	0.2	1.3	2.7	2.4	3.3	1.9
Recurrent extreme cold events	3.4	3.5	1.6	3.2	2.1	1.9	3.3	5.0	0.3	0.9	2.1	2.0
Increased overall precipitation	19.2	17.4	9.6	10.1	12.2	12.1	20.6	21.8	13.0	14.5	9.5	8.8
Decreased overall precipitation	30.8	30.2	32.8	37.8	25.0	23.7	28.2	26.8	31.6	33.3	25.5	28.0
Desertification	19.9	17.2	15.0	15.0	3.6	3.2	7.3	5.9	5.4	5.5	7.2	7.6
Endemic insect borne disease (e.g. Malaria, Dengue, Zika, etc.)	6.3	8.8	3.0	4.5	8.2	7.4	5.3	5.4	4.3	6.3	1.3	2.8
Recurrent wildfires	1.2	1.0	1.6	0.6	2.3	1.3	0.9	0.9	0.4	0.2	0.2	0.4
Water scarcity (reduced availability over extended periods)	3.6	3.7	7.8	7.2	4.4	5.1	2.5	3.5	3.2	2.4	4.6	4.2
River/coast erosion/sand encroachment and other permanent shallow geohazards	1.3	2.2	1.3	1.9	2.9	2.8	1.8	1.3	1.8	1.7	-	0.5
Increased frequency of animal death episodes (birds, land animals)	1.7	2.2	1.8	2.0	1.1	0.3	1.3	2.1	1.5	0.8	0.4	0.6
Increased frequency of animal death episodes (fish, seafood, freshwater animals, marine animals)	1.7	2.2	1.8	2.0	1.1	0.3	1.3	2.1	1.5	0.8	0.4	0.6
Loss of land and air biodiversity / Depletion of species (land animals, birds, plants, trees, insects, mushrooms, seeds)	0.0	0.1	-	0.3	0.6	0.5	-	0.0	-	0.3	-	0.0

Climate Change Related Hazard	Alluvial Plain		Arid Lands		Coastal		Highland		Plateaux		Semi-Arid Lands	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Loss of water biodiversity / Depletion of species (fish, seafood, seaweed, coral bleaching, etc.)	6.4	6.6	2.8	3.8	1.6	1.1	3.7	3.1	1.6	0.5	0.5	0.5
Increased/frequent/chronic air pollution, haze, smoke	1.2	2.1	0.7	0.9	1.7	1.7	4.6	2.0	3.5	0.6	0.1	-
Increased ocean temperature	0.9	1.2	0.5	0.9	0.6	0.7	0.5	0.2	0.3	-	0.4	0.2
Sea level rise	11.3	8.9	7.5	5.3	4.0	4.5	3.2	2.8	3.7	3.7	3.5	2.5
Permanent/frequent flood (coastal, estuarine, groundwater flood, snowmelt flood, etc.)	-	0.3	0.1	0.3	0.5	1.4	0.7	0.2	-	0.0	0.1	-

Source: Tanzania Gender and Environment Survey, 2025

Table 5. 2b: Percentage Distribution of the Population that Experienced One or More Climate Change Related Hazards in their Lifetime by Gender and Agro Ecological Zone; Mainland Tanzania, 2025 TGES

Climate Change Related Hazard	Alluvial Plain		Arid Lands		Coastal		Highland		Plateaux		Semi-Arid Lands	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Thawing of ice (glaciers, permafrost, other)	0.3	1.2	0.2	0.8	-	0.2	0.7	0.6	0.8	0.7	-	0.1
Increasing spread of pathogens (virus, bacteria)	1.8	3.4	0.9	1.0	2.0	1.2	0.9	1.3	0.5	0.3	0.1	0.6
Increase spread of parasites (human and animal)	-	-	-	-	-	-	0.4	0.2	-	-	-	-
Recurrent or chronic water pollution, including plastics (fresh water, marine, tap water, farming water),	6.4	5.9	5.5	5.4	4.1	4.1	3.1	3.4	0.7	1.5	1.5	1.0
Fresh water depletion	-	0.3	0.7	0.3	0.6	-	1.2	0.2	1.4	0.2	-	-
Eutrophication (higher than usual concentrations of nutrients/phytoplankton in fresh water)	0.6	-	-	0.1	0.4	0.2	0.1	0.7	0.2	0.8	-	-
Land degradation (eroded, polluted, salinized, less productive land or soil)	0.2	-	0.3	1.6	0.4	0.3	0.8	0.3	0.4	0.9	0.1	0.3

Climate Change Related Hazard	Alluvial Plain		Arid Lands		Coastal		Highland		Plateaux		Semi-Arid Lands	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Sand mining	1.5	1.4	0.3	0.4	0.9	1.2	0.9	0.8	1.1	-	0.3	0.2
Deforestation, forest disturbances	9.9	8.7	4.6	5.4	3.6	1.8	5.8	4.0	6.6	4.9	0.4	1.6
Forest invasive species	-	-	1.1	0.3	-	0.2	0.1	1.5	0.8	0.3	0.6	-
Loss of mangroves	-	-	0.2	-	-	-	-	-	0.0	-	-	-
Ocean invasive species	-	-	-	-	0.4	0.2	0.6	0.2	0.3	-	-	-
Wetland loss/degradation	0.8	0.3	0.3	0.9	2.8	2.4	0.1	0.4	1.6	1.2	0.2	0.3
Runoff (non-point source pollution)	1.0	1.0	0.2	0.5	0.1	0.2	1.2	1.3	1.2	2.1	0.1	0.2
Recurrent pest infestation (e.g. locust, invasive weeds, invasive species)	11.9	11.8	6.8	6.3	1.4	1.6	6.3	6.6	10.7	8.4	5.3	3.7
Recurrent plant disease (bacterial, fungal, mycoplasma, etc.)	12.1	8.4	2.1	3.2	0.7	0.5	5.9	6.0	3.0	2.1	1.2	0.9
Recurrent animal or human disease (airborne, water borne, blood borne, etc.)	0.4	1.4	3.6	2.5	1.4	2.1	1.5	1.9	2.1	1.9	1.5	1.2

Source: Tanzania Gender and Environment Survey, 2025

5.2.3.1 Perceived Climate Change Effects in Alluvial Plain

In the alluvial zone, men perceived more climate change effects (50.0%) compared to women (47.6%). Likewise, temperature effects were more reported by men (24.3%) than by women (23.0%). Also, desertification effects were more common among men (19.9%) than among women (17.2%). Furthermore, Sea level rise effects were more experienced by men (11.3%) than women (8.9%), as illustrated in Tables 5.2a and 5.2b.

5.2.3.2 Perceived Climate Change Effects in the Arid Lands

The 2025 TGES findings in the arid lands zone show that the most climate change-related effect experienced by a significant portion of the population is changes in precipitation. 47.9 per cent of women reported experiencing changes in precipitation, but only 42.4% of men observed changes in precipitation. The results regarding sea level rise effects differed from those related to changes in precipitation, as they were experienced more by men (7.5%) than women (5.3%). Desertification and changes in temperature due to climate change were experienced equally by men and women. However, changes in temperature rank as the second most common effect for a large proportion of the population in the arid lands agro-ecological zone. Other climate change-related effects were observed or experienced by a smaller proportion of the population (Tables 5.2a and 5.2b).

5.2.3.3 Perceived Climate Change Effects in the Coastal Zone

As observed across alluvial and arid land agro-ecological zones, changes in precipitation were the leading perceived effect of climate change. It affects a large proportion of men and women in the coastal agro-ecological zone. Changes in precipitation was followed by changes in temperature, which was the second most reported effect by the population in the coastal zone. The results show that men reported experiencing more changes in precipitation (37.2%) than women (35.8%). Similarly, changes in temperature are more experienced by men (23.4%) than women (22.7%). Sea level rise ranks third among climate change-related effects in the coastal agro-ecological zone. However, in this zone, women are more exposed to sea level rise (4.5%) than men (4.0%), as also shown in Tables 5.2a and 5.2b.

5.2.3.4 Perceived Climate Change Effects in Highlands Zone

In the Highlands agro-ecological zone, changes in precipitation are the most pronounced climate change impacts for a significant portion of the population. Considering gender, both

men and women are equally exposed to changes in precipitation. This is followed by temperature changes, which affect men more (13.6%) than women (11.5%). Desertification effects are experienced more by men (7.3%) than women (5.9%) in the Highlands agro-ecological zone. Additionally, men were reported to experiencing more sea level rise effects (3.2%) compared to women (2.8%) in the Highlands zone (Tables 5.2a and 5.2b).

5.2.3.5 Perceived Climate Change Effects in Plateaux Agro-Ecological Zone

In the Plateaux agro-ecological zone, changes in precipitation are the leading perceived climate change effect, and it is experienced by a large proportion of the population. The results show that47.8% of women and 44.6% of men perceived changes in precipitation. This was followed by changes in temperature, where more men (20.6%) perceived the effect than women (18.8%). Desertification effects were reported to be perceived by almost the same proportion of women (5.5%) and men (5.4%), Tables 5.2a and 5.2b indicate.

5.2.3.6 Perceived Climate Change Effects in the Semi-Arid Zone

The findings indicate that the majority of the population perceived changes in precipitation. Almost a similar proportion of women (36.8%) and men (35.0%) perceived changes in precipitation. This is followed by changes in temperature, which were reported by both men (19.4%) and women (15.8%). Other perceived changes include desertification effects (women 7.6%, men 7.2%) and sea level rise effects (men 3.5%, women 2.5%). Generally, these changes affected only a small proportion of the population, as Tables 5.2a and 5.2b show.

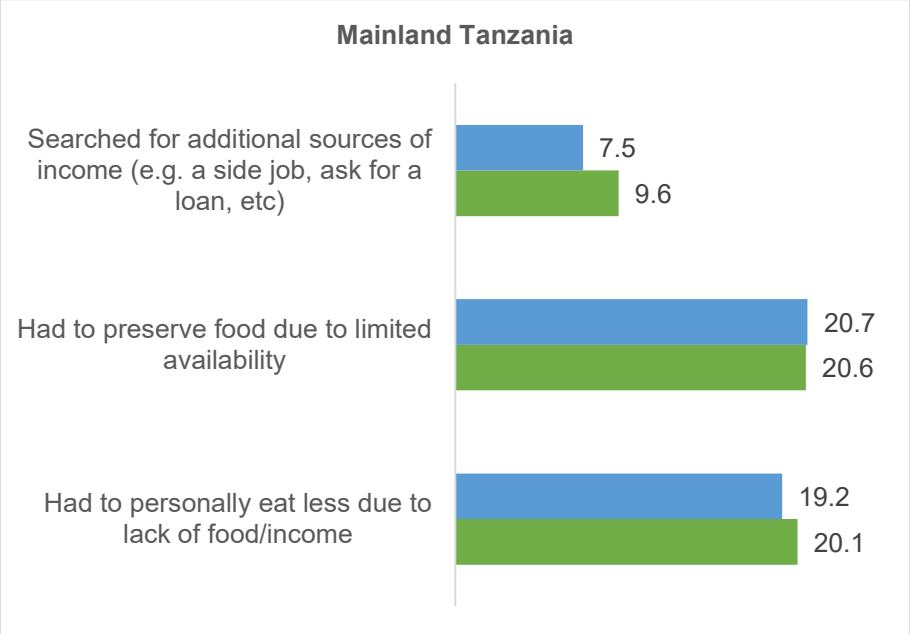
5.3 Responses to Climate Change Effects

Climate change responses include both adaptation and mitigation efforts, as well as psychological and community-based responses to manage its impacts. These strategies aim to reduce vulnerability, build resilience, and address the root causes of climate change.

The 2025 TGES results show that preserving food due to limited availability was the primary coping strategy used by a larger proportion of the population in overcoming the effects of climate change. Both men (20.7%) and women (20.6%) adopt food preservation as the main coping strategy. Other climate change coping strategies adopted by the majority of the population in Mainland Tanzania were limiting food intake due to a lack of

food or income (20.1% men, 19.2% women) and seeking for additional sources of income (9.6% men, 7.5% women), as Figure 5.4 illustrates.

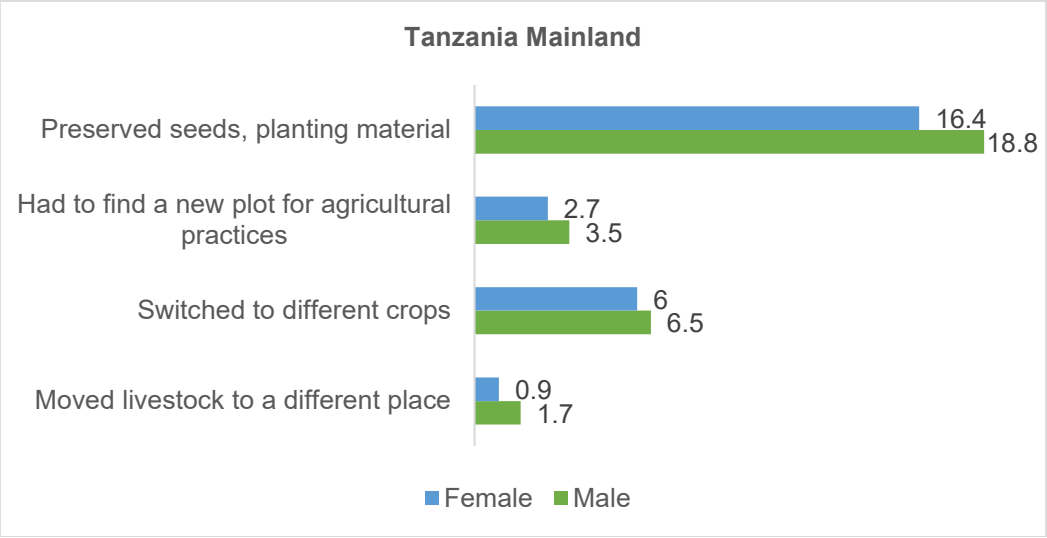
Figure 5. 4: Percentage Distribution of the Population Experienced Income and/or Food Shortages as a Result of Climate Change by Gender and Type of Response Strategies; Mainland Tanzania, 2025 TGES



Source: Tanzania Gender and Environment Survey, 2025

The 2025 TGES results show that a larger proportion of men-headed households (18.8%) in Mainland Tanzania use preserved seeds and planting material as climate change coping measures than women-headed households (16.4%). This strategy was closely followed by switching to different crops, which was reported by both men (6.5%) and women (6.0%). Other measures reported were moving livestock to different places, with 1.7 per cent of men and 0.9 per cent of women involved (Figure 5.5).

Figure 5. 5: Percentage Distribution of Population who Conserved Seeds, Switched Crops or Moved Operating Locations to Deal with the Consequences of Climate Change by Gender; Mainland Tanzania, 2025 TGES



Source: Tanzania Gender and Environment Survey, 2025

5.3.1 Climate Change Coping Strategies in Rural and Urban Areas

In Mainland Tanzania, rural and urban areas adopt distinct but complementary coping strategies to address climate change. The measures adopted were shaped by environmental, economic, and infrastructural contexts. The strategies include infrastructure, agriculture, water management, and community resilience.

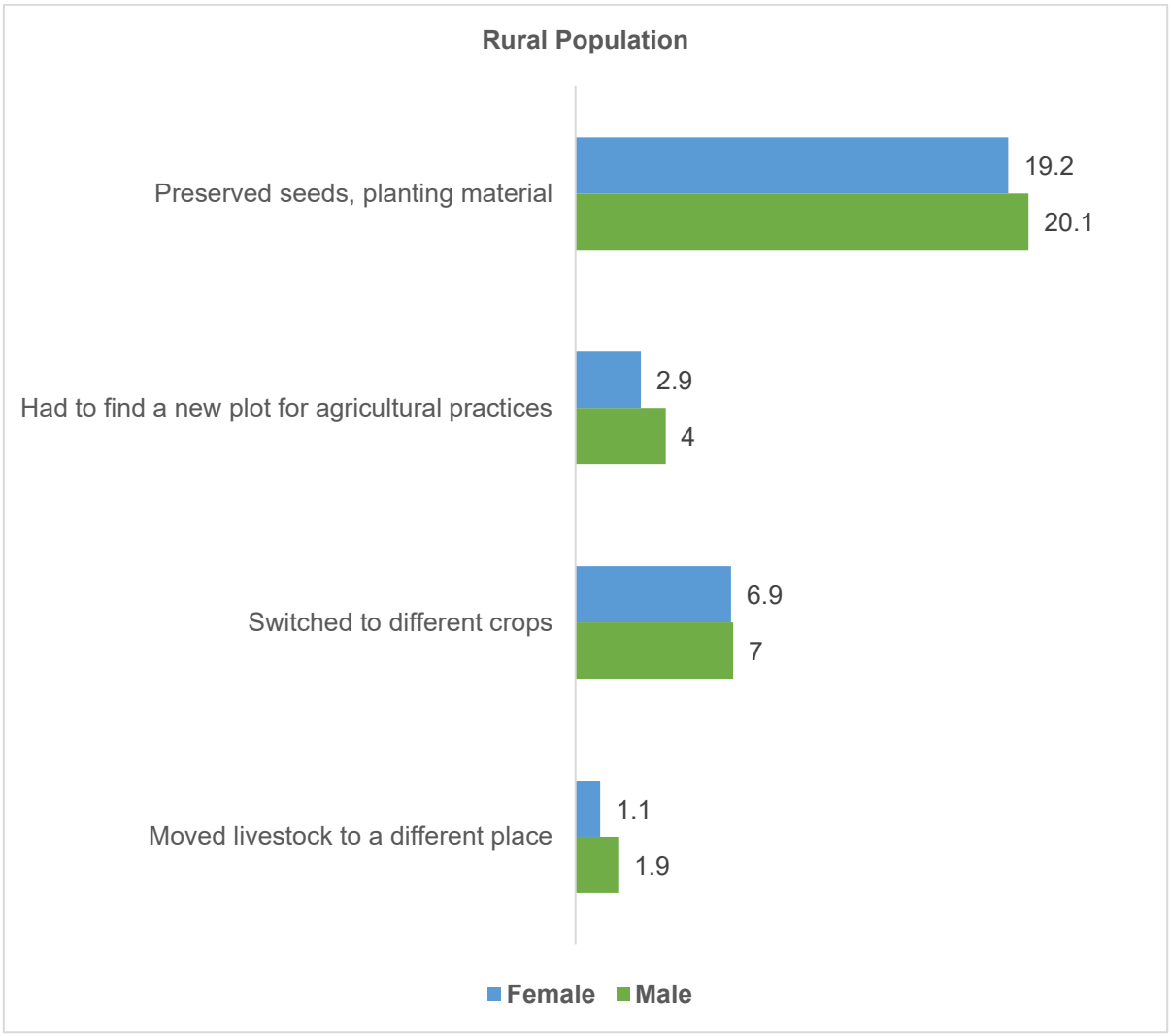
Results in Figure 5.6 show that a large proportion of the population in rural areas respond by limiting food intake due to insufficient food or income as a result of climate change effects. Both men and women adopted this strategy by 21.8 per cent each. The second coping strategy adopted by the population is preserving food due to limited availability of income or food shortages. The results show that women were the majority (23.4%) compared to men (21.7%) in the adoption of this strategy. The least used coping strategy by the population is looking for additional sources of income, such as a side job, and borrowing money, as the result of income or food shortages.

Figure 5. 6: Percentage Distribution of the Population Experienced Income and/or Food Shortages as a Result of Climate Change by Gender, Residence and Type of Coping Strategies; Mainland Tanzania, 2025 TGES

Source: Tanzania Gender and Environment Survey, 2025

The 2025 TGES results show that 20.1 per cent of men-headed households in rural areas used preserved seeds and planting materials as a climate change coping measure compared to 19.2 per cent of women (Figure 5.7). Switching to different crops is the second option, which was adopted by 7.0 per cent of women and 6.9 per cent of men. The least adopted coping measure for climate change used by men (1.9%) and women (1.1%) in rural areas is moving livestock to different places, as shown in Figure 5.7.

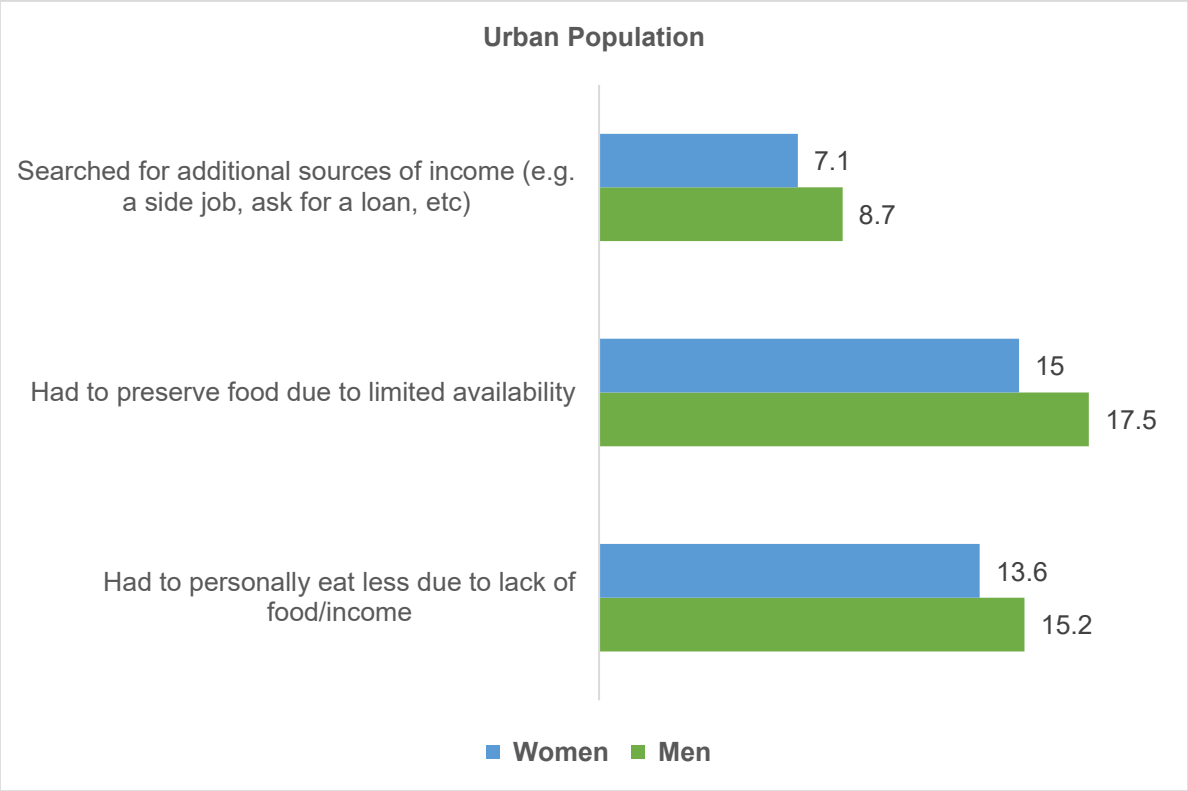
Figure 5. 7: Percentage Distribution of Population who Conserved Seeds, Switched Crops or Moved Operating Locations to Deal with the Consequences of Climate Change by Residence and Gender; Mainland Tanzania, 2025 TGES



Source: Tanzania Gender and Environment Survey, 2025

In Mainland Tanzania's urban areas, especially cities like Dar es Salaam, Dodoma, Arusha, and Mwanza, climate change coping strategies focus on managing floods, heatwaves, infrastructure stress, and public health risks. The 2025 TGES survey results show that a large proportion of the urban population preserves food due to limited food availability and income. Women-headed households reported using this strategy more often (17.5%) than men (15.0%). Other coping strategies used by men (15.2%) and women (13.6) include limiting food intake and looking for additional sources of income, such as a side job and seeking a loan, as illustrated in Figure 5.8.

Figure 5. 8: Percentage Distribution of the Population who Experienced (Income and/or Food) Shortages as a Result of Climate Change by Gender, Residence and Type of Coping Strategies; 2025 TGES

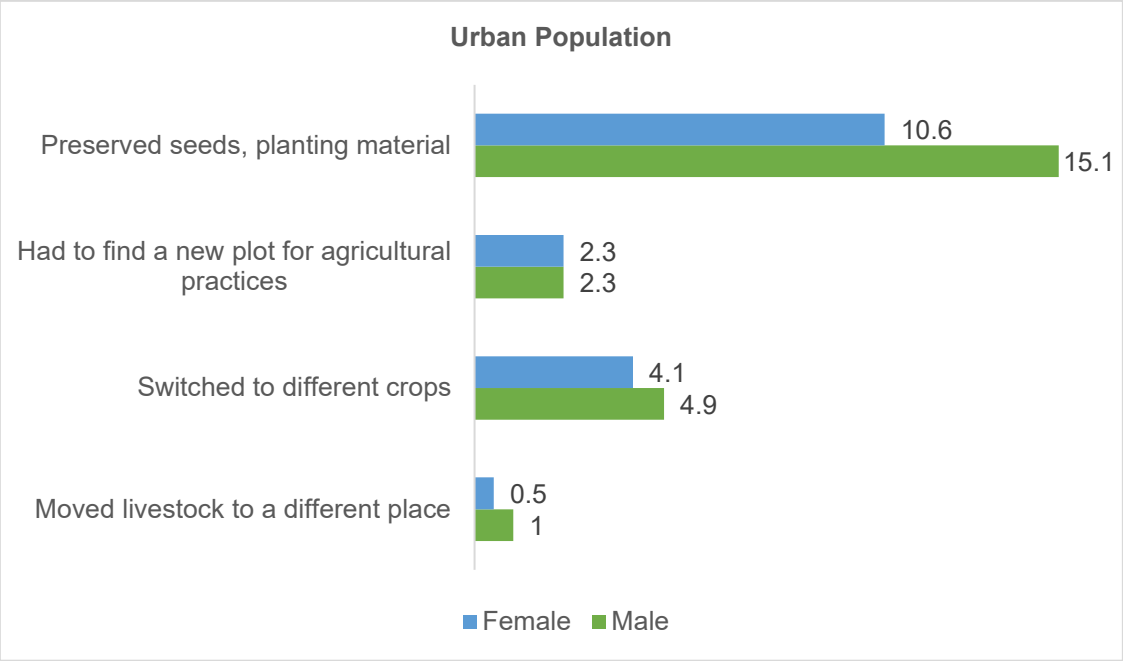


Source: Tanzania Gender and Environment Survey, 2025

Like in rural areas, preserved seeds and planting materials are the most common coping measures to climate change effects practiced by the urban population. The results show that more men (15.1%) than women (10.6%) use preserved seeds and planting materials as a climate change mitigation measure (Figure 5.9).

Moreover, switching to different crops is the second option for coping with climate change hazards in urban areas, with 4.9 per cent of men and 4.1 per cent of women adopting this approach. Others include moving livestock to different places. This measure was adopted by 1.0 per cent of men and 0.5 per cent of women.

Figure 5. 9: Percentage Distribution of Population who Conserved Seeds, Switched Crops or Moved Operating Locations to Deal with the Consequences of Climate Change by Residence and Gender; Mainland Tanzania, 2025 TGES



Source: Tanzania Gender and Environment Survey, 2025

5.3.2 Climate Change Coping Strategies in Agro-Ecological Zones

The results show that preserved seeds and planting material were the most common coping strategies to the effects of climate change across all agro-ecological zones in Mainland Tanzania (Table 5.3). The next strategy was switching to different crops and renting new plots for farming. Moving livestock to different locations, and fishing in different areas were the least used mitigation strategies for climate change impacts, as shown in Table 5.3.

Table 5.3: Proportion of Population who Conserved Seeds, Switched Crops or Moved Operating Locations to Deal with the Consequences of Climate Change by Residence and Gender; Tanzania Mainland

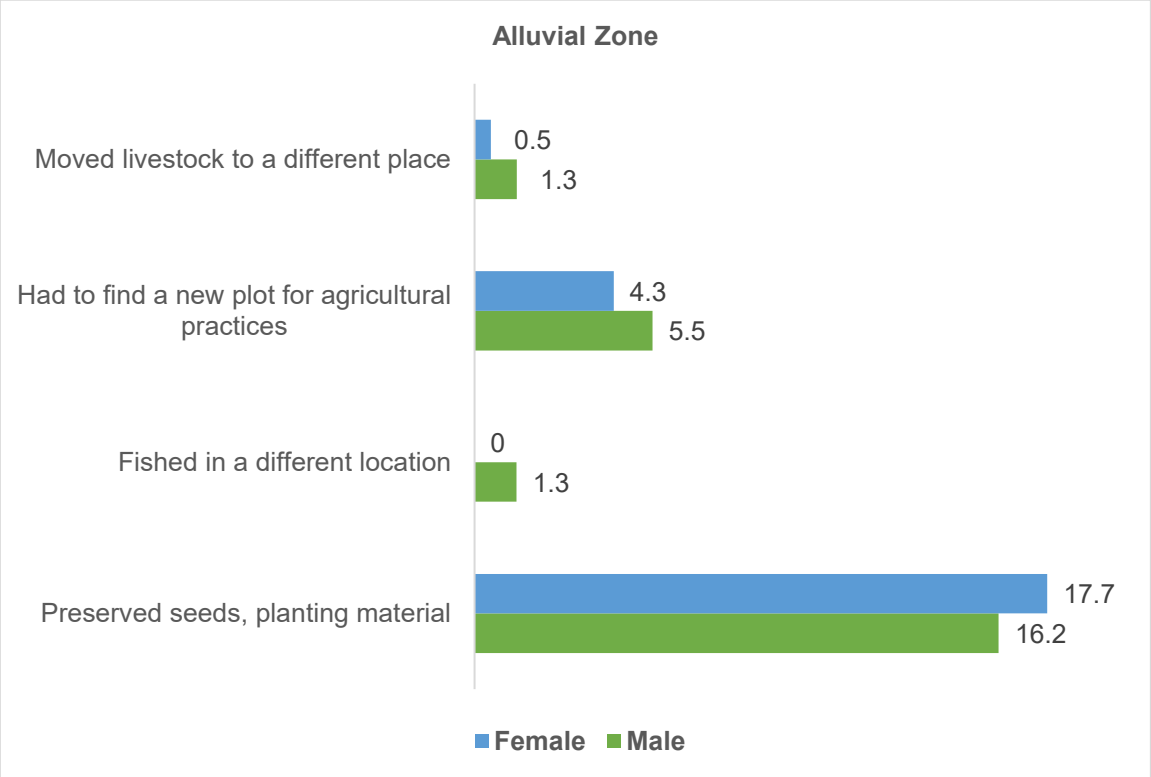
Events	Alluvial		Arid Lands		Coastal		Highlands		Plateaux		Semi-Arid Lands	
	Male	Women	Male	Women	Male	Women	Male	Women	Male	Women	Male	Women
Preserved seeds, planting material	16.2	17.7	17.2	23.5	19.5	15.9	18.2	25.4	14.6	16.3	17.8	14.1
Fished in a different location	1.3	-	0.8	0.5	0.7	-	0.8	-	-	-	0.7	-
Had to find a new plot for agricultural practices	5.5	4.3	3.7	1.1	2.9	3.5	3.2	4.1	4.7	1.6	2.0	7.1
Moved livestock to a different place	1.3	0.5	5.0	2.2	0.5	0.3	0.5	0.5	0.8	0.7	2.0	1.4

5.3.2.1 Climate Change Coping Strategies in Alluvial Agro-Ecological Zone

Climate change coping strategies among men and women varied across agro-ecological zones. For example, in the alluvial zone, women were more likely to employ various coping strategies than men. However, seeking for additional sources of income (such as a side job or asking for a loan) was more preferred by men (11.9%) than women (10.8 %), as Table 5.3 indicates.

A large proportion of the population in this zone reports preserving seeds and planting material as their leading coping strategy against the effects of climate change. This strategy is more commonly chosen by women (17.7%) than by men (16.2%). Looking for a new plot for agricultural practices was the second most opted strategy for climate change effects. The least opted measures to address climate change effects in the zone are moving livestock and fishing to different locations (Figure 5.10).

Figure 5.10: Percentage Distribution of Land or Livestock Users by Gender who Conserved Seeds, Switched Crops or Moved Operating Locations to Deal with the Consequences of Climate Change in Alluvial Plain Agro-Ecological Zone and Gender; 2025 TGES



Source: Tanzania Gender and Environment Survey, 2025

5.3.2.2 Climate Change Coping Strategies in Arid Lands Agro-Ecological Zone

Preserving food due to limited availability was the most commonly used strategy among the population in the arid land zone. This strategy was used by 21 per cent of women, but only 16.5 per cent of men employed the strategy. The second most common strategy in this zone was limiting food intake due to lack of food or income, as Table 5.3 illustrates.

Like in the alluvial plain zone, preserving seeds and planting material is the primary coping measure against the impacts of climate change in the arid lands zone. This strategy was adopted by both men (16.2%) and women (17.7%). Also, the results show that seeking for a new plot for agricultural practices ranked second. The least adopted measures for climate change effects in the zone are moving livestock to a different location, and fishing in a different area (Figure 5.11).

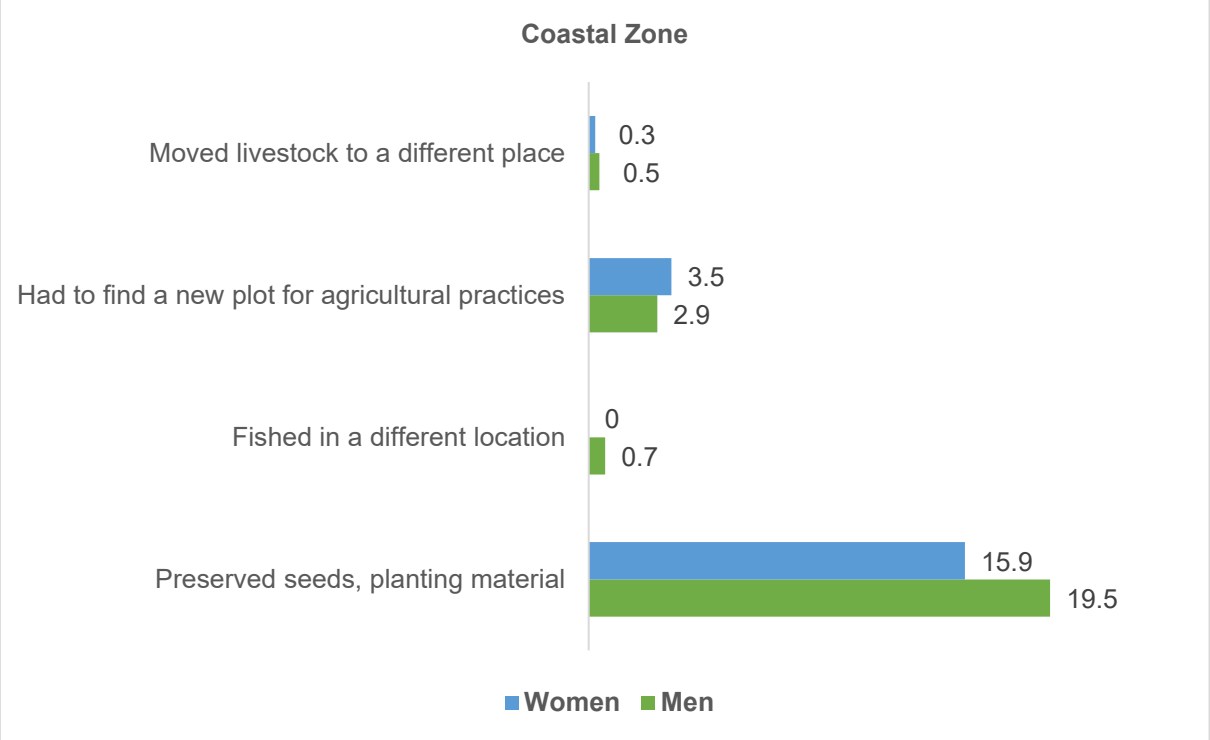
Figure 5. 11: Percentage Distribution of Land or Livestock Users by Gender who Conserved Seeds, Switched Crops or Moved Operating Locations to Deal with the Consequences of Climate Change in Arid Lands Agro-Ecological Zone and Gender; 2025 TGES

Source: Tanzania Gender and Environment Survey, 2025

5.3.2.3 Climate Change Coping Strategies in Coastal Agro-Ecological Zone

In the coastal zone, preserving seeds and planting materials was reported as the primary coping strategy among women (23.5%) and men (17.2%), as shown in Figure 5.12. Other households reduced food intake due to food or income shortages as a means of mitigating climate change effects. The results indicate that more women (8.4%) than men (7.6%) employed this coping strategy, as Tables 5.3a and 5.3b illustrate. The findings show that moving livestock to a different location, fishing in a different location, and seeking for a new plot for agricultural practices were used by the fewest people in the zone (Figure 5.12).

Figure 5. 12: Percentage Distribution of Land or Livestock Users by Gender who Conserved Seeds, Switched Crops or Moved Operating Locations to Deal with the Consequences of Climate Change in Coastal Agro-Ecological Zone and Gender; 2025 TGES



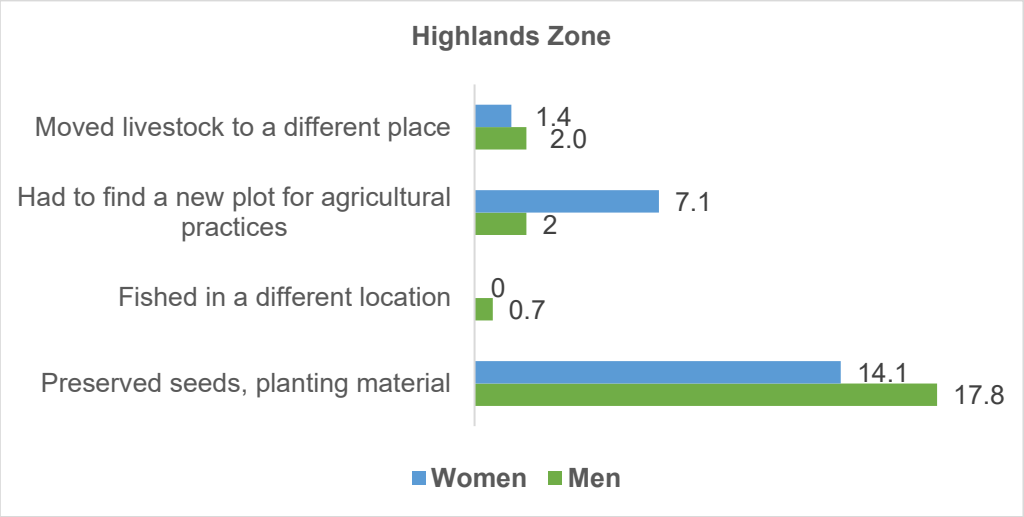
Source: Tanzania Gender and Environment Survey, 2025

5.3.2.4 Climate Change Coping Strategies in Highlands Agro-Ecological Zone

Preserving food due to limited income and food availability was the most common coping strategy among the population in the highlands zone. Both men (18.4%) and women (21.0%)) adopted this strategy. It was closely followed by limiting food intake due to lack of food or income, which was reported by 15.3 per cent of men and 13.8 per cent of women, as indicated in Table 5.3.

Preserving seeds and planting materials was reported by a large proportion of the population as a coping strategy against the effects of climate change in the highlands zone. The findings indicate that more women (25.4%) adopted the strategy compared to men (18.2%). Seeking for a new plot for agricultural practices was reported more by women (4.1%) than by men (3.2%). Fishing in different locations and relocating livestock were the least practiced measures in the highlands zone, as shown in Figure 5.13.

Figure 5. 13: Percentage Distribution of Land or Livestock Users by Gender who Conserved Seeds, Switched Crops or Moved Operating Locations to Deal with the Consequences of Climate Change in Highlands Agro-Ecological Zone and Gender; 2025 TGES



Source: Tanzania Gender and Environment Survey, 2025

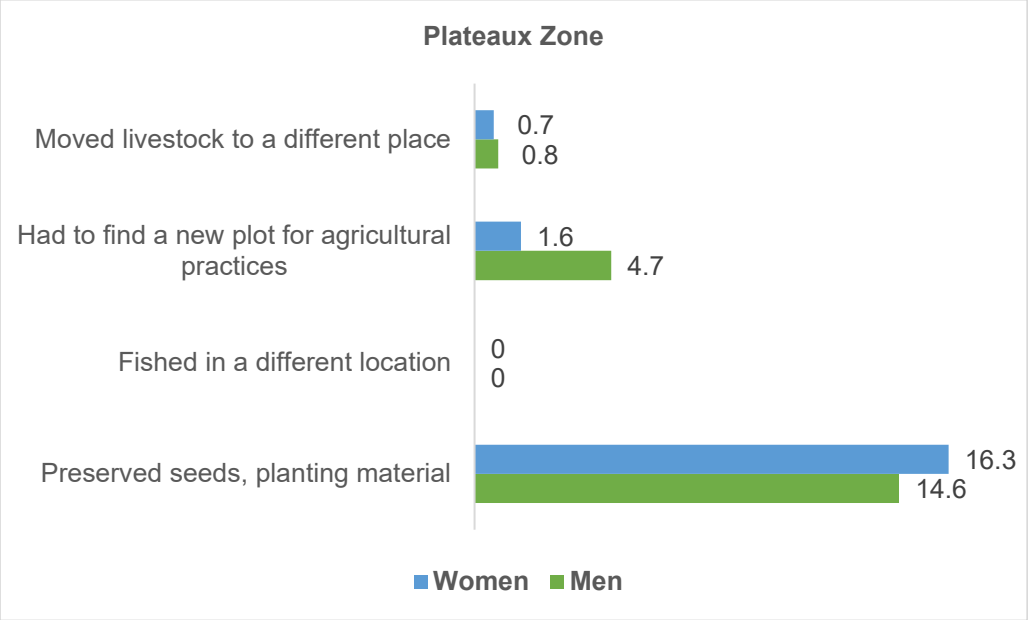
5.3.2.5 Climate Change Coping Strategies in Plateaux Agro-Ecological Zone.

Limiting food intake due to a lack of food or income is the most common climate change coping strategy among men (29.9%) than women (24.7%) in the Plateaux zone. This measure was followed by preserving food due to limited income or food availability. This strategy was also more prevalent among men (25.8%) than women (23.8%). The least commonly used coping strategy for climate change hazards in the Plateau zone was seeking for additional sources of income. This was employed more by men (9%) than women (6.4%), as shown in Table 5.3.

In the Plateaux zone, population reported to use preservation of seeds and planting materials as climate change coping measures. The results indicate that 16.3 per cent of women and 14.6 per cent of men in the Plateau zone employed this strategy. This was followed by the strategy of looking for a new plot for agricultural practices, which is more commonly used by men (4.7%) than by women (1.6 %). The least reported measure for

climate change effects in the Plateau zone is moving livestock to a different location, which is used more by men (0.8%) than by women (07%), as indicated in Figure 5.14.

Figure 5. 14: Percentage Distribution of Land or Livestock Users by Gender who Conserved Seeds, Switched Crops or Moved Operating Locations to Deal with the Consequences of Climate Change in Plateaux Agro-Ecological Zone and Gender; 2025 TGES



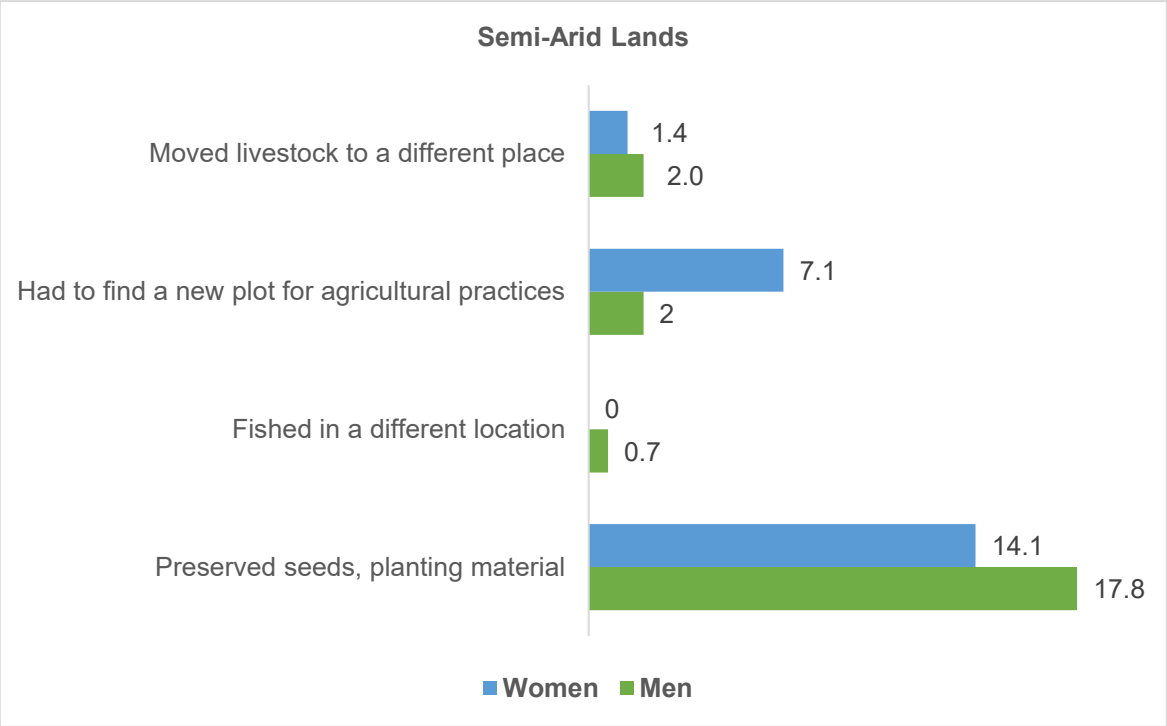
Source: Tanzania Gender and Environment Survey, 2025

5.3.2.6 Climate Change Coping Strategies in Semi-Arid Lands Agro-Ecological Zone

Reducing food intake due to lack of food or income as a coping strategy was adopted by a large proportion of the population in the semi-arid land zone. The other measure was food preservation due to limited availability. The percentage of men who chose to limit food intake because of a lack of food or income is higher (38.7%) than that of women (37.1%). Similarly, the percentage of men who adopted food preservation because of limited availability is higher (37.9%) than that of women (33.4%). The findings indicate that looking for additional sources of income is the least used coping strategy for climate change hazards in the semi-arid zone (Table 5.3).

Preserved seeds and planting materials were coping strategies to climate change used by men (17.8%) and women (14.1%) in the semi-arid lands zone. Also, looking fora new plot for agricultural practices is another strategy. This strategy was common among women (7.1) than men (2.0 %). The least reported coping strategy in the semi-arid lands zone is moving livestock to a different place. This was adopted by 2.0 and 1.4 percentages of men and women, respectively, as shown in Figure 5.15.

Figure 5. 15: Percentage Distribution of Land or Livestock Users by Gender who Conserved Seeds, Switched Crops or Moved Operating Locations to Deal with the Consequences of Climate Change in Semi-Arid Lands Agro-Ecological Zone and Gender; 2025 TGES



Source: Tanzania Gender and Environment Survey, 2025

5.4 Secondary Impacts of Climate Change on Gender and Environment-Related Livelihood

Environment and Gender-related livelihoods are economic and social activities that directly depend on natural resources and ecosystems. They are shaped by the availability, quality, and sustainability of land, water, forests, and biodiversity. Increasing temperatures, ecosystem loss, severe weather, and other climate-change-related hazards threaten agricultural activities. The following subsections present the impacts of climate change on gender and environment-related livelihood.

5.4.1 Increased Use of Pesticides or Antibiotics

In Tanzania Mainland, an estimated 13.8 per cent of men and 10.9 per cent of women growing crops increased the use of pesticide use. 7.8 per cent of men and 5.2 per cent of women keeping livestock increased antibiotic use (Table 5.4). Likewise, in both rural and urban areas, the increased use of both pesticides and antibiotics is more common among men than among women, as shown in Table 5.4. Men may be more likely to increase the use of these substances because of disproportionate engagement in industrial or other large-scale operations.

Table 5.4: Percentage Distribution of Land or Livestock Users Who Attributed Their Increased Use of Pesticides or Antibiotics Due to Effects of Climate Change by Gender and Residence; Mainland Tanzania; 2025 TGES

Background Characteristics	Tanzania Mainland		Rural		Urban	
	Men	Women	Men	Women	Men	Women
Applied pesticides in higher quantities	13.8	10.9	14.7	12.1	11.4	8.4
Applied antibiotics in higher quantities	7.8	5.2	7.6	5.7	8.2	4.0

Source: Tanzania Gender and Environment Survey, 2025

Similar results were observed across all agro-ecological zones, where men increased the use of pesticides and antibiotics due to the effects of climate change. The use of these substances was much in semi-arid lands, where men constituted 25.6 per cent and women 17.5 per cent. The semi-arid lands were followed by the Plateaux zone in terms of increased use of pesticides and antibiotics. In this zone, the use of those substances was prevalent among men were 17.3 per cent than women who were 14.8 per cent. The least use of pesticides and antibiotics was observed in the coastal zone, where only 5.3 per cent of men and 2.6 per cent of women engaged in such practices, as shown in Table 5.5.

Table 5.5: Percentage Distribution of Land or Livestock Users Who Attributed Their Increased Use of Pesticides or Antibiotics Due to Effects of Climate Change by Gender and Agro-Ecological Zone; Mainland Tanzania; 2025 TGES

Background Characteristics	Applied pesticides in higher quantities	Applied antibiotics in higher quantities
Alluvial Plain		
Men	15.5	9.4
Women	12.4	4.2
Arid Lands		
Men	10.5	2.5
Women	8.6	3.5
Coastal		
Men	5.3	2.1
Women	2.6	1.1
Highland		
Men	10.5	5.8
Women	10.5	3.7
Plateaux		
Men	17.3	11.8
Women	14.8	7.2
Semi-Arid Lands		
Men	25.6	16.4
Women	17.5	14

Source: Tanzania Gender and Environment Survey, 2025

5.4.2 Lengthening the Time on Maintaining Gender and Environment-Related Livelihoods

Climate change is impacting the availability and quality of water sources. Those without access to clean water at home are experiencing significant increases in the time spent to collect water. The 2025 TGES results show that more women (14.0%) than men (9.8%) spend more time in Mainland Tanzania. Additionally, rural women spend more time fetching water (14.9%) than rural men (10.6%). In urban areas, women also feel the impact more, spending 12.2 per cent of their time collecting water, while men spend only 7.6 per cent.

During crises, the number of people who must manually gather fuels may increase due to economic stressors and the impact of climate change on livelihoods. The situation causes cleaner fuels like electricity unaffordable. The burden of fuel collection is primarily carried by women, with 6.3 per cent affected compared with 4.3 per cent of men. The data also reveals that women face greater challenges in both rural (6.9%) and urban (5.1%) areas. However, the burdens among men are lower, with 5.0% in rural areas and only 2.1 per cent in urban areas.

The 2025 TGES results show that women are more likely to experience increased burdens related to food processing or waste management as a result of climate change. The findings indicate that 6.3 percentage of women experienced increased burdens related to food processing or waste management, while men were only 2.1 percentage. It was observed that there was an increased time in maintaining yields in fishing, farming, foraging, gardening, or livestock raising. This was noticed more among men as they engage in these activities more often than women to earn an income. These results were also observed in rural and urban areas, where men mostly carried the burden of fishing, farming, foraging, gardening, or livestock raising (Table 5.6).

Table 5.6: Percentage Distribution of the Population Whose Time Spent on Production of Environmental Goods Increased as a Result of Climate Change Effects; by Gender and Residence; 2025 TGES

Event	Tanzania Mainland		Rural		Urban	
	Men	Women	Men	Women	Men	Women
Time, I spent fetching water increased	9.8	14	10.6	14.9	7.6	12.2
Time, I spent on firewood/fuel collection increased	4.3	6.3	5	6.9	2.1	5.1
Time, I spent fishing increased	1.2	0.2	1.4	0.2	0.4	-
Time spent taking care of livestock increased	6.1	5.2	7.2	6.2	3	3.1
Time, I spent foraging increased	6	4.8	7.2	5.6	2.9	2.9
Time spent farming increased	16.2	14.2	17.8	16.5	11.8	9.5
Time spent processing food increased	2.1	6.3	2.4	6.9	1.3	5

Source: Tanzania Gender and Environment Survey, 2025

Note: Proportion of the population whose time spent on aquaculture, hunting, mining and oil pumping, garbage management/recycling/picking was very minimal. Thus, were not analyzed, and has been excluded from the table.

Across the agro-ecological zones, the burdens of fetching water and processing food are mostly borne by women rather than men in all zones. However, results show that men spend more time in fishing activities than women. The burden of firewood and fuel collection is primarily carried out by women in all agro-ecological zones except in the coastal zone, where men bear a 5.2 per cent burden compared to 2.8 per cent for women, as Table 5.7 indicates.

Taking care of livestock is mostly done by men in all zones except in the highlands, where women spend more time on the activity (5.1%) compared to men (4.8%). Farming activities are primarily carried out by men across the zones, except for the arid land and highland zones, where women outnumber men, as shown in Table 5.7. Generally, the results demonstrate that both women and men living in semi-arid lands, and in coastal and highland zones do not engage in fishing activities.

Table 5.7: Percentage Distribution of the Population Whose Time Spent on Production of Environmental Goods Increased as a Result of Climate Change Effects; by Gender and Agro-Ecological Zone; 2025 TGES

Event	Alluvial Plain		Arid Lands		Coastal		Highland		Plateaux		Semi-Arid Lands	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Time, I spent fetching water increased	8.6	10.6	12.4	22.7	12.0	14.1	5.9	8.2	8.1	12.4	13.8	16.1
Time, I spent on firewood/fuel collection increased	4.7	6.3	5.3	12.6	5.2	2.8	2.4	4.8	4.1	5.2	3.8	4.3
Time, I spent fishing increased	0.4	0.3	1.1	0.2	1.1	-	1.1	-	2.9	0.3	-	-
Time spent taking care of livestock increased	4.1	3.9	8.5	6.9	3.3	0.7	4.8	5.1	6.7	5.4	11.1	10.0
Time, I spent foraging increased	4.4	2.1	10.4	7.3	3.0	1.0	3.9	3.5	5.7	5.5	10.4	10.5
Time spent farming increased	20.8	17.1	12.0	12.9	4.8	3.1	10.5	14.5	18.7	14.7	32.5	24.3
Time spent processing food increased	0.8	5.2	2.2	9.9	1.3	3.5	1.2	4.4	2.7	7.5	5.8	6.6

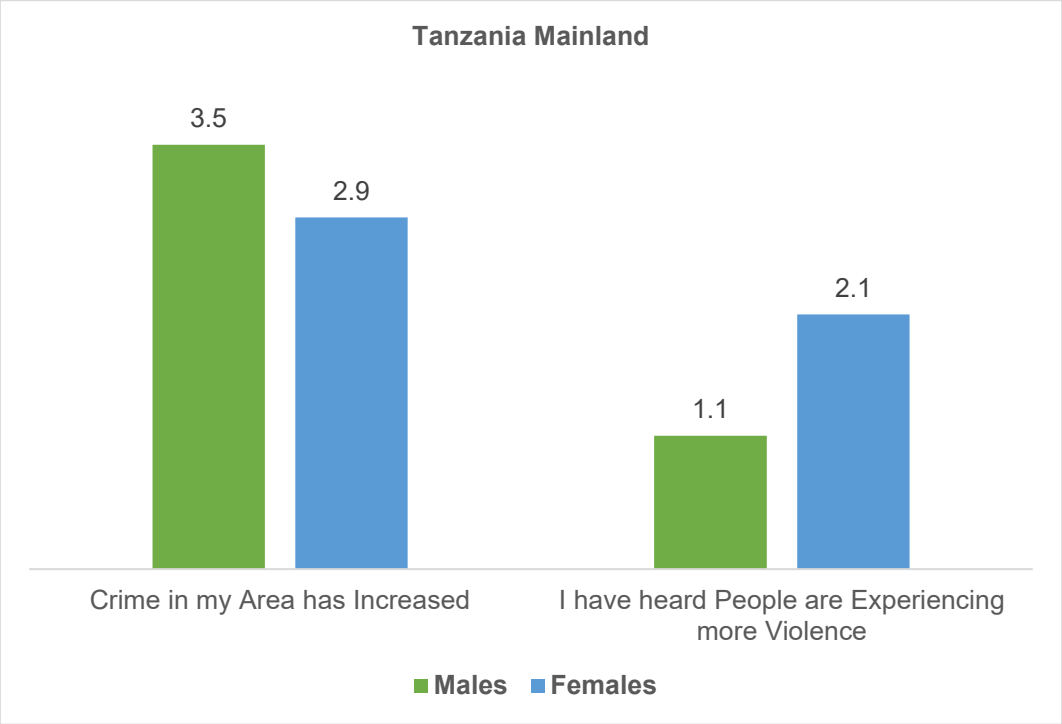
Source: Tanzania Gender and Environment Survey, 2025

5.4.3 Climate-Related Crime and Violence

Climate change is increasingly linked to crime and violence. It was established that rising temperatures, resource scarcity, and displacement fuel both direct and indirect forms of insecurity. Research shows that climate stressors can intensify lethal violence, property crime, and organized crime, while also challenging law enforcement capacity.

The results show that 6.4 per cent of the population reported that crimes had increased. Both men (1.1%) and women (2.1%) reported that people are experiencing more violence as a result of climate change (Figure 5.16).

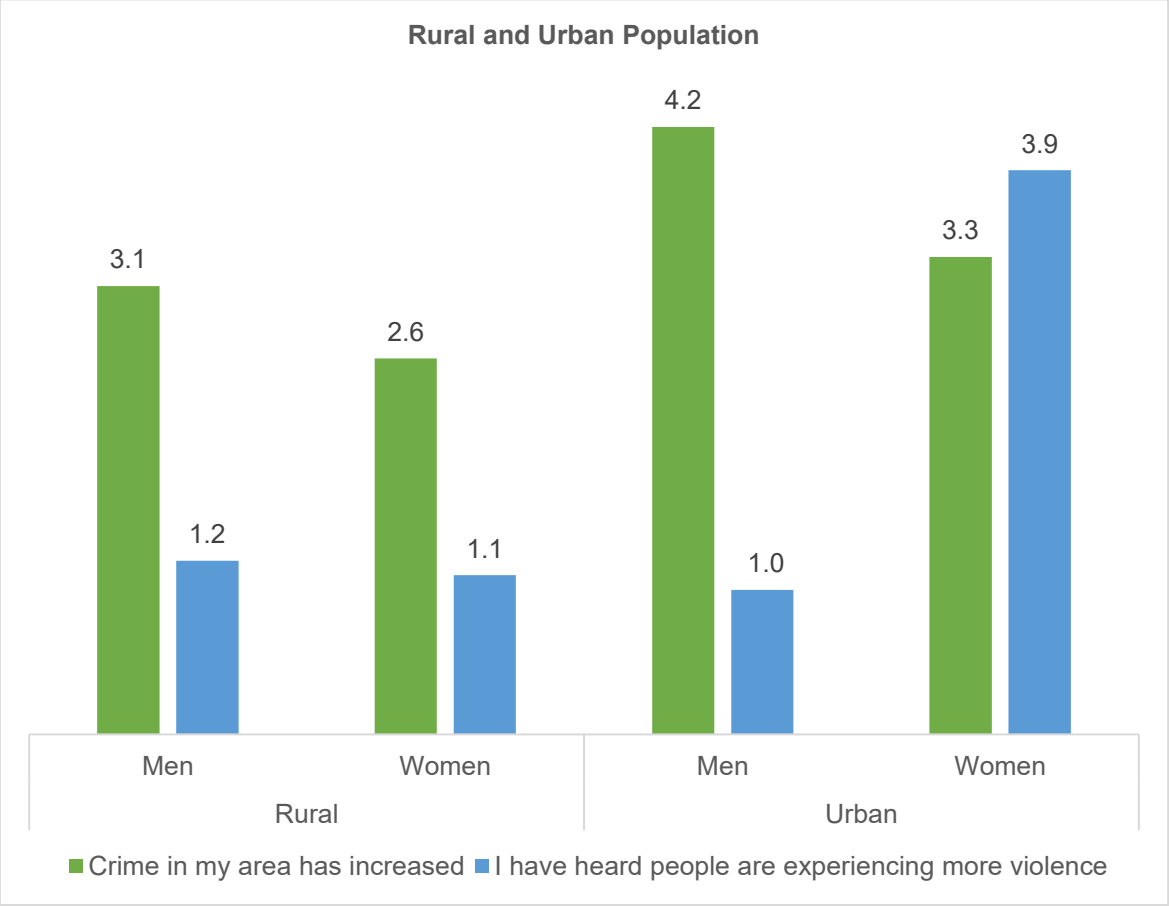
Figure 5.16: Percentage Distribution of the Population who Saw Increases in Crime and Violence as a Result of Climate Change Effects by Gender; Mainland Tanzania, 2025 TGES



Source: Tanzania Gender and Environment Survey, 2025

Across both rural and urban areas, urban men showed a higher increase in crimes (4.2%) compared to women (3.3%). Women in urban areas reported experiencing more violence due to climate change (3.9%) than men (1.0%). The increase in crime was more reported by rural men (3.1%), than women (2.6%). Similarly, more people experiencing increased violence were mostly reported by rural men (1.2%), slightly higher than 1.1% of rural women, as indicated in Figure 5.17.

Figure 5. 17: Proportion of the Population who Saw Increases in Crime and Violence as a Result of Climate Change Effects by Gender and Residence; Mainland Tanzania, 2025 TGES



Source: Tanzania Gender and Environment Survey, 2025

The 2025 TGES results show that a larger proportion of the population in the agro-ecological zones reported an increase in crimes in their areas. The increase in crime was mainly reported by men across alluvial plains, arid lands, highlands, and semi-arid lands agro-ecological zones. At the same time, women outnumbered men in coastal and plateaux zones (Table 5.9). Men living in alluvial and arid lands experienced more violence than women. However, women were dominating and experiencing more violence in the rest of the agro-ecological zones, as shown in Table 5.9.

Table 5.9: Percentage Distribution of the Population who Saw Increases in Crime and Violence as a Result of Climate Change by Gender and Agro Ecological Zone; Mainland Tanzania, 2025 TGES

Climate Related Crime and Violence	Alluvial Plain		Arid Lands		Coastal		Highland		Plateaux		Semi-Arid Lands	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Crime in my area has increased	3	1	2	1	4	5	6	1	3	4	4	4
I have heard people are experiencing more violence	1	1	1	0	1	3	1	3	0	3	2	3

Source: Tanzania Gender and Environment Survey, 2025

5.4.4 Increase and Decrease of Agricultural Yields

The 2025 TGES results show that as many as 50.2 per cent of men and 46.0 per cent of women engaging in these activities saw climate-related reductions in their agricultural yields (Figure 5.18). Increase in agricultural yields affected more men (4.8%) than women (4.6%). This may have led to severe impacts on their wellbeing because agricultural activities were their main source of personal income.

Table 5.10 shows that across agricultural zones, larger proportion of men population (69.8%) than women (60.1%) was affected more by decrease in agricultural yields in semi-arid lands. It was followed by plateaux zone (57.05 men and 54.7% women) and alluvial plain (51.7% men and (47.7% women).

5.4.5 Physical and Mental Health Effects

When exposed to disasters and hazards, individuals may experience mental health issues such as stress reactions, grief, depression, post-traumatic stress disorder (PTSD), or anxiety, including those related to uncertainties about meeting basic needs for food, water, or medical care. The effects of a changing climate on people's livelihoods, especially agriculture, fisheries, and other environmentally related livelihoods may lead to economic instability and food insecurity. These factors and other related stressors may impact migration, safety, and security, thus impacting people's physical and psychological health.

The 2025 TGES results show that 28.8 per cent of men and 23.0 per cent of women reported that stress and anxiety associated with climate change affected their mental health. In addition, a proportion of women (12.7%) and men (11.2%) highlighted that climate-related phenomena affected their physical health (Table 5.10). Similar results were observed in rural and urban populations and agro-ecological zones. In those areas, men

were mainly reported to be more affected in their mental health (stress, anxiety) than women. However, women in rural and urban areas mainly reported effects on their physical health (Table 5.10).

5.4.6 Caring for Family

The findings show that women are the care takers of the family members. According to 2025 TGES results, about 1.9 percent of women-headed households in Tanzania Mainland spend more time caring for children, elders, the sick, and other family members in need of support, such as those with disabilities. It has been observed that only 1.5 percent of men take care of their family members. It was further established that rural women tend to spend more time caring for family members (2.3%) compared to men (1.6%) (Table 5.10).

Across the agro-ecological zones, men were most likely to spend more time on caring for family members in alluvial plain and coastal zones. However, women dedicate more time to care for family members in the rest of agro-ecological zones compared to men, as shown in Table 5.10.

5.4.7 Domestic Work Burdens

The 2025 TGES results indicate that women (10.6%) bear the heaviest domestic work burdens compared to men (6.4%).. Although men are also experiencing significant impacts on the time they spend on domestic tasks, women are the key player in household repairs and reinforcing household structures against the effects of climate change, such as protecting against salinization or heatproofing. It was observed that 8.7 per cent of women had to repair or adapt their houses to cope with the effects of climate change, compared to 8.5 per cent of men (Table 5.10).

In rural areas, men undertake the heaviest domestic work burden (9.0%) compared to women (8.6%). However, in urban areas women (8.8%) bear heavier domestic work burdens than men (7.6%). The findings indicate that across all agro-ecological zones, women carry the heaviest domestic work burdens in arid lands, plateaus, coastal areas, highlands, and semi-arid lands. On the contrary, in alluvial plains, arid lands, and coastal zones, the heaviest domestic work burdens are mainly carried out by men, as shown in Table 5.10.

5.4.8 Job Changes and Losses

The findings demonstrate that some of the impacts of climate change include changes in the availability of natural resources, climate-related supply chain disruptions, biodiversity loss, and changes in meteorological conditions. These changes may have contributed to people switching jobs, particularly those engaged in tourism, agriculture, fisheries, or other environmentally related activities. It has been reported that as a result of climate change, an estimated 3.8 per cent of men and 3.4 per cent of women switched jobs. Also, the situation causes 5.8 per cent of men and 4.2 per cent of women to lose their jobs. Men are more likely to secure and lose jobs than women. However, women are mainly engaged in the informal sector, including subsistence farming and fishing. As a result, both women and men experienced job changes and job losses. Across the agro-ecological zones, men were most likely to be changing or losing jobs. However, women (3.6%) were slightly more likely to change jobs than men (3.5%) in the alluvial plain zone, Table 5.10 shows.

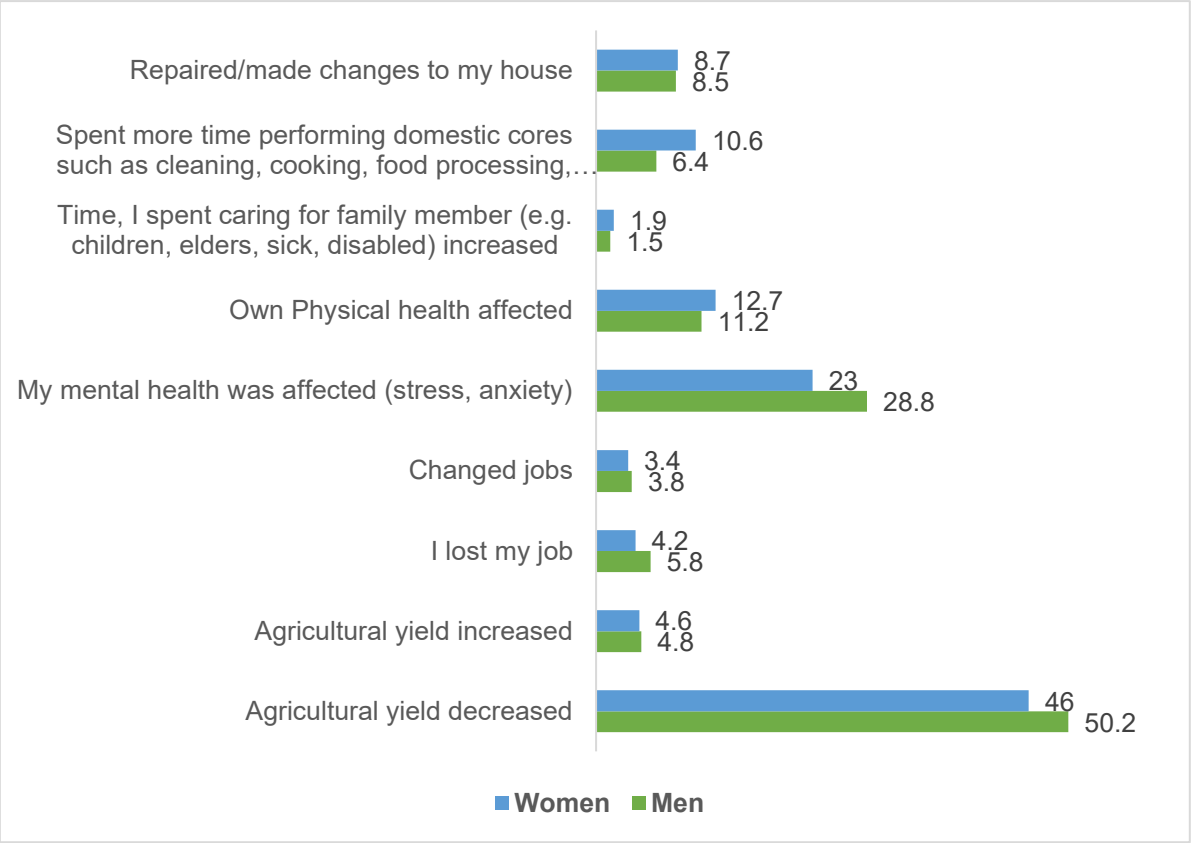
5.4.9 Change in Domestic Work Chores

Table 5.10 shows that 10.6 per cent of women spend more time performing domestic chores such as cleaning, cooking, food processing, and animal/pet caring than men (6.4%) in Mainland Tanzania. Additionally, women in both rural and urban areas spend more time on domestic work than men (Table 5.11). Similarly, in all agro-ecological zones, women spend more time performing domestic chores than men. The data reveal that a higher proportion of women in the arid lands zone spend more time on domestic tasks than men in other zones. Tables 5.10 and 11illustrate.

Table 5.10: Percentage Distribution of the Population Whose Time Was Lengthened to Maintain Gender and Environment-Related Livelihoods as A Result of Climate Change Effects by Gender and Residence; Mainland Tanzania, 2025 TGES

Event	Tanzania Mainland		Rural		Urban	
	Men	Women	Men	Women	Men	Women
Agricultural yield decreased	50.2	46	55.8	53.2	34.8	31.1
Agricultural yield increased	4.8	4.6	5.4	5.4	3.3	2.9
I lost my job	5.8	4.2	6.3	4.7	4.1	3.2
Changed jobs	3.8	3.4	4	3.8	3.1	2.5
My mental health was affected (stress, anxiety)	28.8	23	28.4	22.5	29.4	23.9
Own Physical health affected	11.2	12.7	11.1	13.3	11.4	11.7
Time, I spent caring for family member (e.g. children, elders, sick, disabled) increased	1.5	1.9	1.6	2.3	1.3	1.3
Spent more time performing domestic cores such as cleaning, cooking, food processing, animal/pet care, etc	6.4	10.6	6.6	9.8	6	12
Moved to a different house or area	0.8	0.5	0.5	0.6	1.1	0.3
Repaired/made changes to my house	8.5	8.7	9	8.6	7.6	8.8
Gathered plants /mushrooms/forest products in a different location	0.7	0.8	0.8	1	0.4	0.3

Figure 5. 18: Percentage Distribution of the Population Whose Time Was Lengthened to Maintain Environment-Related Livelihoods as A Result of Climate Change by Gender; Mainland Tanzania, 2025 TGES



Note: Proportion of the population who moved to different houses or areas gathering plants/mushrooms/forests products in different locations was very minimal, thus has been excluded from the figure.

Table 5.11: Percentage Distribution of Population who Attributed Health Ailments to the Effects of Climate Change by Residence, Agro Ecological Zone and Gender; Mainland Tanzania

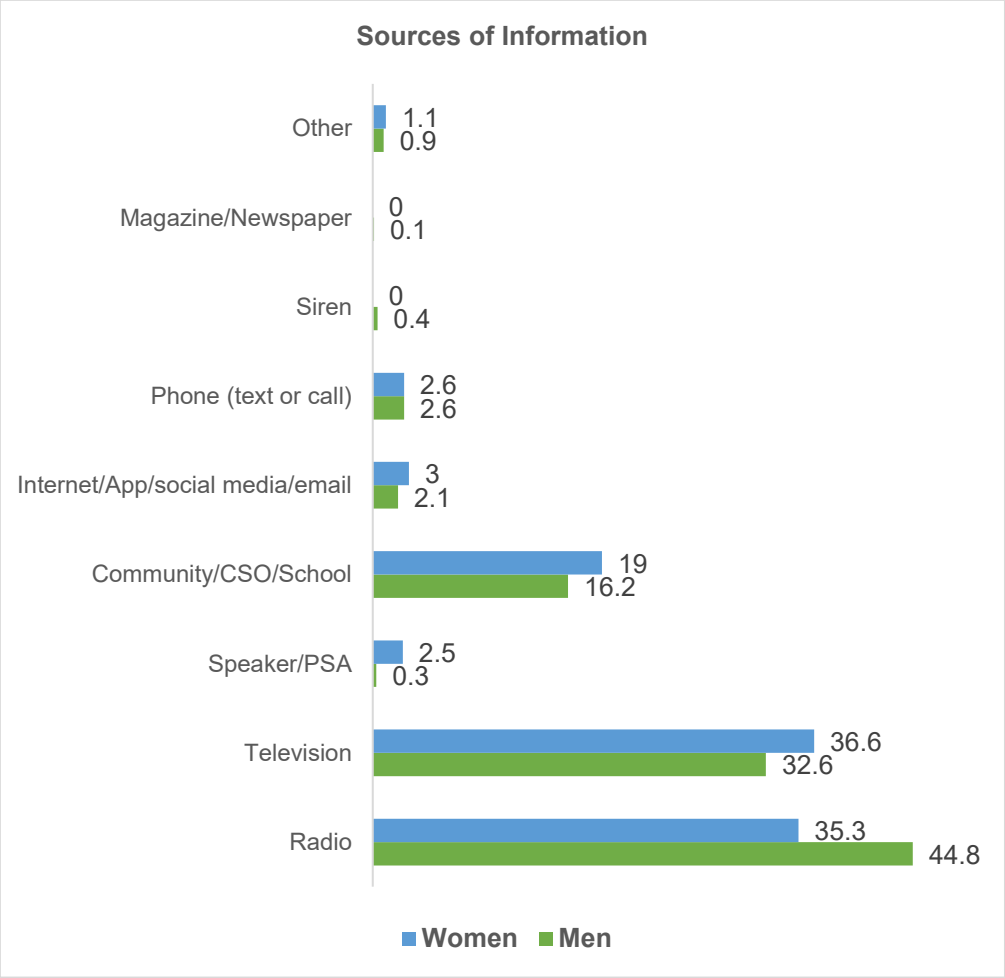
Event	Alluvial Plain		Arid Lands		Coastal		Highland		Plateaux		Semi-Arid Lands	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Agricultural yield decreased	51.7	47.7	48.4	49.9	31.2	22.6	45.9	41	57	54.7	69.8	60.1
Agricultural yield increased	7.3	5.3	3.8	3.1	2.4	2.6	3.7	6	6.5	6.1	4.1	4.3
I lost my job	6.4	4.7	4.6	4	7.4	3.5	2	1.7	7.5	6.6	7.2	4.9
Changed jobs	3.5	3.6	4	3.8	2.8	1.8	2.7	1.9	5.4	4.6	4.5	4.4
My mental health was affected (stress, anxiety)	28.3	20	26.2	22.9	33.3	25	27.1	20.8	30.7	25.5	26.9	23.2
Own Physical health affected	9.6	14.6	11.3	18.5	11.1	4.6	10.1	15.7	11.2	12	13.7	11.9
Time, I spent caring for family member (e.g. children, elders, sick, disabled) increased	2.5	1.7	0.7	3.5	2	0.9	1.5	2	0.8	1.9	1.4	1.7
Spent more time performing domestic cores such as cleaning, cooking, food processing, animal/pet care, etc	5.2	11	7.7	10	5.1	11.1	6.8	10.2	6.7	10.8	6.4	10.6
Moved to a different house or area	0.5	-	0.2	0	0.6	0.1	1	0.7	1.6	0.6	0.5	1.5
Repaired/made changes to my house	8.1	7.1	9.9	10.3	8.2	9	10	8.3	7.5	8.6	7.3	8.7
Gathered plants /mushrooms/forest products in a different location	0.4	0.8	0.3	1.1	0.8	0.8	1.2	0.3	1	0.8	0.3	0.8

5.5 Sources of Information for Climate Change-Related Events/Effects

Adaptation measures play a crucial role in mitigating the effects of climate change. However, not everyone has access to accurate, useful, and timely climate-related information. Figure 5.19 shows that the most common source of information about climate change-related events and effects was the radio. This was reported by 35.3 per cent of women and 44.8 per cent of men.

Across hazards, women were generally more likely than men to get information from television, while men were more likely than women to listen to the radio. Additionally, women were more likely than men to listen to the Community/CSO/School, Internet/App/social media/email, and Speaker/PSA. However, both women and men accessed information on climate change effects equally through Phone (text or call).

Figure 5. 19: Percentage Distribution of the Population with Access to Information on the Effects of Climate Change Effects by Source and Gender; Mainland Tanzania, 2025 TGES

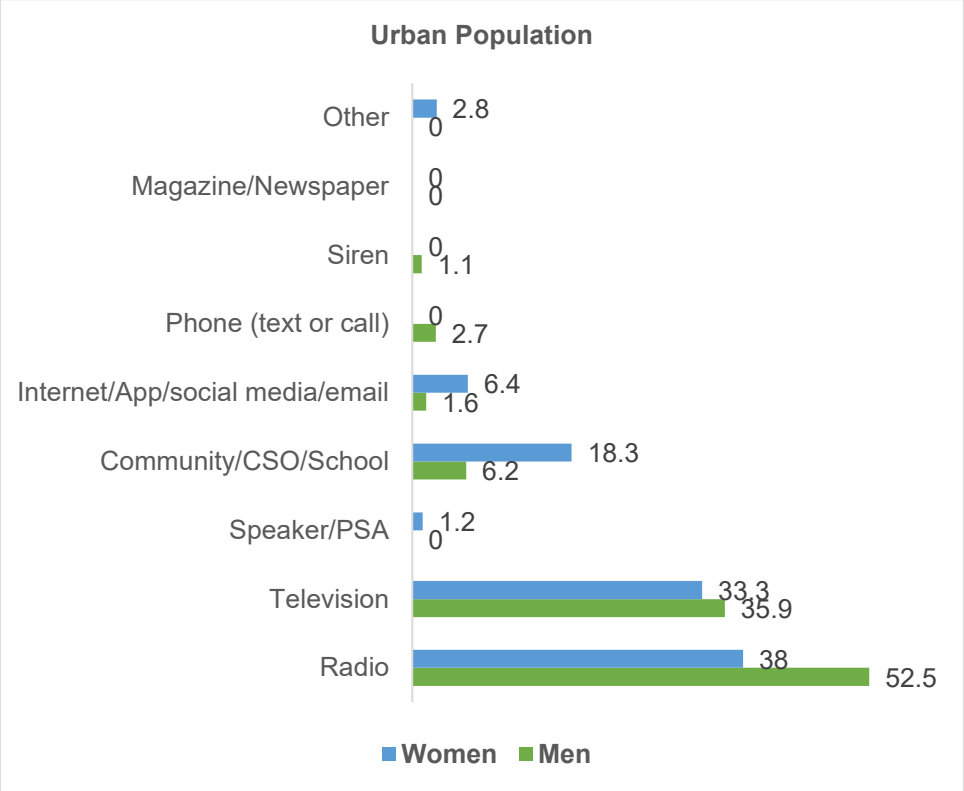


Source: Tanzania Gender and Environment Survey, 2025

5.5.1 Sources of Information for Climate Change-Related Events/Effects by Rural and Urban Populations

Across the rural and urban populations, it was observed that just above half of men (52.5%) and below half (38.0%) of the population living in urban areas have more information on climate change effects than the population living in rural areas (Figure 5.20).

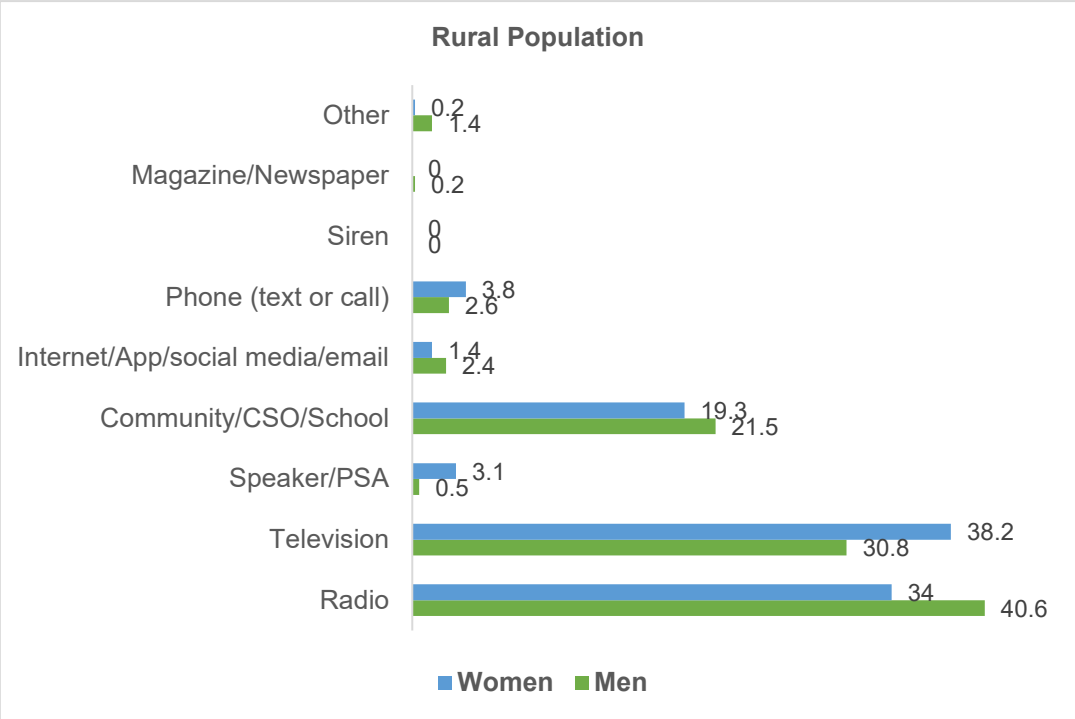
Figure 5. 20: Percentage Distribution of the Urban Population with Access to Information on the Effects of Climate Change Effects by Source, Residence and Gender; Mainland Tanzania, 2025 TGES



Source: Tanzania Gender and Environment Survey, 2025

In rural areas, the proportion of the population receiving information on climate change effects through radio was 40.6 per cent among men, and 34.0 per cent among women. However, the rural population has greater access to information on climate change impacts through community, CSO/School sources than the urban population (Figure 5.21).

Figure 5.21: Percentage Distribution of the Rural Population with Access to Information on the Effects of Climate Change, by Source, Residence and Gender; Mainland Tanzania, 2025 TGES



5.5.2 Sources of Information on Climate Change-Related Events/Effects by Agro-Ecological Zones

The 2025 TGES results from all zones showed that the most common source of information on climate change effects was radio, followed by television and community/CSO/school. Across all zones, access to climate change information through radio was higher in the coastal zone (55% men and 39% women), followed by the arid lands zone (53% men and 36% women), and the plateau zone (47% men and 38% women). Television was a very common source of information in the plateaux zone (28% men and 47% women), followed by the semi-arid lands (32% men and 42% women).

Comparing both men and women across all agro-ecological zones, men were more likely than women to listen to the radio as a source of information on climate change effects. However, in the highlands zone, women (44%) were more likely than men (33%) to listen to the radio. Women were more likely than men to obtain information on climate change effects through television in all agro-ecological zones, but in the highlands zone, men (41%) were more likely to access information via television than women (26%) (Table 5.12).

Table 5.12: Percentage t Distribution of the Population with Access to Information on the Effects of Climate Change by Agro Ecological Zones and Gender; Mainland Tanzania, 2025 TGES

Sources	Alluvial		Arid Lands		Coastal		Highland		Plateaux		Semi-Arid Lands	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Radio	41	40	53	36	55	39	33	44	47	38	39	20
Television	35	36	30	31	30	35	41	26	28	47	32	42
Speaker/PSA	0	0	0	3	2	0	0	1	0	1	0	7
Community/CSO/School	19	24	15	19	9	18	17	17	20	14	18	23
Internet/App/social media/email	0	0	0	7	0	5	4	2	2	0	5	3
Phone (text or call)	4	0	0	2	3	3	2	10	2	0	4	1
Siren	0	0	0	0	0	0	0	0	0	0	2	0
Magazine/Newspaper	0	0	0	0	1	0	0	0	0	0	0	0
Other	0	0	1	1	1	0	3	0	0	0	0	4

Source: Tanzania Gender and Environment Survey, 2025

CHAPTER SIX

ENVIRONMENTAL-RELATED LIVELIHOODS

Key Points:

- In Mainland Tanzania, livelihoods are closely linked to natural resources, showing notable gender and spatial differences. Men depend heavily on pasture (65–70%) and commercial trees (60–65%), while women rely more on wetlands (55–60%), fuelwood (70–75%), and domestic resource collection like water (75–80%). Overall, rural households have a higher dependence (70–75%).
- In mainland Tanzania, environmental livelihoods are gendered; women handle unpaid tasks like water collection (75-80%) and plant gathering (70%), while men dominate paid work such as grazing (65-70%) and fishing (75-80%).
- Gender disparities exist in decision-making. Men (62–65%) are more likely to make independent choices regarding finances and sales, while women typically defer to their partners or make decisions jointly.
- Healthy and safety risks in Mainland Tanzania differ by activity and agro-ecological. Women, particularly in rural and arid areas face significant risks from water collection (75–80%) and garbage handling (44%).

6.1 Introduction

This chapter presents information on the coverage of natural resources in Tanzania, focusing on how both men and women access, control, and benefit from resources such as land, water, forests, and minerals. It also examines the income derived from natural resource use. The chapter explores the participation of men and women in decision-making regarding the management and utilization of these resources. Additionally, the chapter explains the risks women and men face when using natural resources for their livelihoods. The information is crucial for shaping policies related to gender and the environment. It enhances our understanding of how gender equity can improve resilience and adaptability in the face of environmental challenges. Furthermore, it serves as a

foundation for developing gender-responsive environmental policies that aim to enhance livelihoods and promote sustainable development in Tanzania.

6.2 Status of Tanzania's Natural Features Associated with Gender

Mainland Tanzania depends on natural resources that support livelihoods, including pasture/grasslands, wildflower strips, stone/wood heaps, trees/hedgerows, and natural ponds/wetlands (Figure 6.1). Likewise, Figure 6.2 shows the percentage distribution of knowledge among men and women regarding the existing natural resources for livelihoods across the agroecological zones of Mainland Tanzania, as well as in rural and urban areas.

Figure 6.1 indicates that the most widespread features of Mainland Tanzania are trees/hedgerows, as reported by men (36.5%) and women (34.4%). This suggests that men are more familiar with various features of the natural environment. More men (30.8%) than women (28.5%) are aware of the presence of natural pasture or grasslands. Both men (13.1%) and women (11.2%) report the existence of wildflower strips where small wild animals' dwell. The figure also shows that only a small percentage (7- 8%) of both women and men are familiar with the available ponds and wetlands.

Figure 6.2 shows that certain areas have higher coverage of many features. The land indicates the presence of pasture, trees/hedgerows, and wetlands. For example, trees/hedgerows are reported by 37.5 per cent of rural men and 36.9 per cent of rural women. In urban areas 32.4 per cent of men and 26.7 per cent of women reported about the presence of trees or hedgerows. Natural pasture is also more common in rural areas, as reported by 32.5 per cent of men and 30.5 per cent of women, while in urban areas only 24.4 per cent of men and 22.3 per cent of women reported it. Conversely, urban areas show slightly higher coverage of wildflower strips, as reported by 15.8 per cent of men. These wildflowers are mainly found along roadside plantings and peri-urban green spaces. Only 9.4 per cent of urban women reported information on the coverage of this feature. These differences suggest that reliance on natural vegetation for livelihoods is predominant in rural areas.

Figure 6.2 shows that, in the Arid Lands, tree and hedgerow coverage is high. This was reported by both men (50%) and women (40%). The respondents indicate reliance on tree belts for shade, fodder, and soil conservation. Semi-Arid Lands are reported to have high tree coverage with both women and men at 45.1 per cent. Figure 6.2 shows that men (36.6%) and women (30.3%) report that Plateau areas are characterized by elevated

natural pasture coverage and wetlands, which support seasonal grazing and water-dependent activities. 14 percentage of men reported that Alluvial Plains have the lowest tree/hedgerow coverage. Women (21.3-32.2%) observed that the Coastal and Highland areas have tree and hedgerow coverage suitable for agroforestry and smallholder woodlots. These patterns imply different forms of natural resources that sustain community livelihoods, provide shade and fodder in drylands, support agroforestry inputs in highlands and coast, and enabling water-related activities in plateau and semi-arid systems.

Figure 6. 1: Percentage distribution of men and women with knowledge of the existing natural features; Mainland Tanzania, 2025 TGES

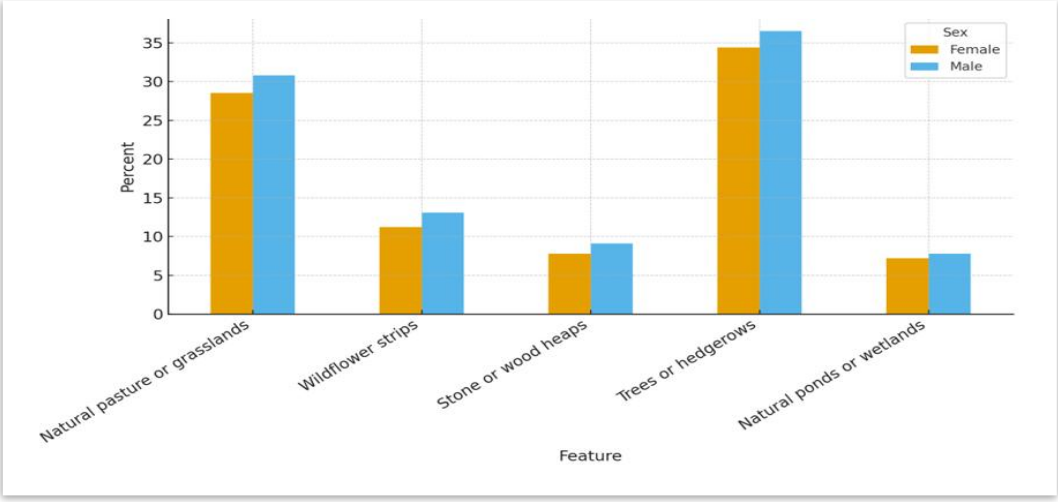
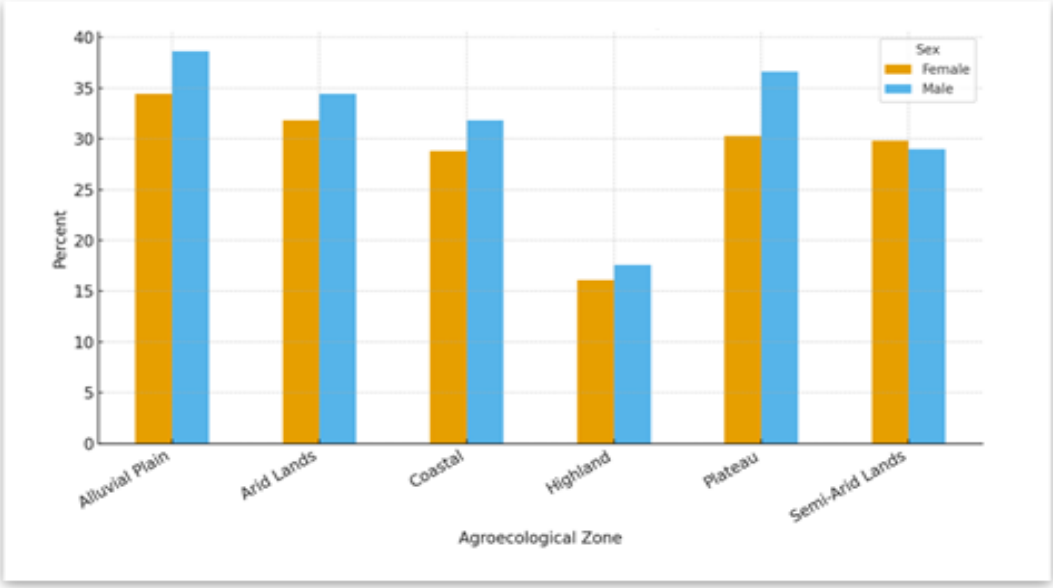


Figure 6. 2: Percentage distribution of men and women with knowledge of the existing natural features per agro-ecological zones; Mainland Tanzania, 2025 TGES



6.3 Gender Dependency on Natural Resources

Livelihoods in Mainland Tanzania depend mainly on natural resources, with gender differences influenced by roles and responsibilities. Men rely more on pasture and commercial tree use, while women are more reliant on wetlands, fuelwood, and domestic resource collection. Rural areas show higher dependency overall, whereas urban areas depend less directly but still rely on trees and hedgerows for household survival. However, in agroecological diversity zones, arid and semi-arid zones exhibit extreme dependence on trees, while coastal zones balance between pasture and wetlands.

Table 6.1 shows the percentage distribution of men and women's dependency on natural resources. The table shows that, in Mainland Tanzania, the dependence on natural resources varies between rural and urban areas, and gender plays a significant role in shaping these patterns. In rural areas, livelihoods show a heavy reliance on pasturelands, with men depending on them at 38.6 per cent and women at 34.4 per cent, mainly for livestock grazing. Trees and hedgerows are also critical resources, supporting both men and women by providing fuelwood, timber, and shade. Men’s dependence ranges from 17.3 to 49.4 per cent, while women’s reliance spans from 13.5 to 49.7 per cent. This observation reflects the importance of these resources across different agroecological zones. Women in rural settings also show stronger dependence on wetlands, with usage reaching up to 7.9 per cent. These areas provide water and support small-scale farming activities essential for household survival.

Table 6.1 shows that in urban areas, reliance on natural pasture and wetlands is much lower, since livelihoods are less dependent on grazing and subsistence farming. The table highlights that women still rely heavily on trees and hedgerows mainly for household energy and gardening. The findings show that the dependence reaches up to 35.6 per cent. Men’s dependence in urban settings is more related to commercial uses, especially through trees and stone or wood heaps, where reliance can reach up to 13.3 per cent. The results demonstrate that while rural households are more directly dependent on natural resources for daily survival, urban households also depend on them, but in different ways. It has been shown that women focus on household needs, while men engage more in commercial exploitation.

Table 6.1 provides information on the percentage distribution of men’s and women’s dependency on natural resources across different agroecological zones. It shows that in

the alluvial plains of Tanzania, livelihoods rely heavily on natural pasture, with 38.6 per cent of men and 34.4 per cent of women depending on it. Trees and hedgerows also play a role, with 17.3 per cent of men and 13.5 per cent of women depending on them. In wetlands, only 0.5 per cent of men and 5.4 per cent of women rely on trees and hedgerows. This indicates that pasture is the main source of livelihood in this zone, and men depend more on it compared to women.

In the arid lands, trees are the most critical resource, forming lifelines for both genders. Women's dependence on trees reaches 49.7 per cent, while men's is nearly the same (49.4%). Pasture is also important, as 31.8 per cent of women and 34.4 per cent of men depend on it for livelihood. In wetlands, pasture is also useful as reported by both men (7.9%) and women (9.7%). Here, men show greater reliance on wetlands and pasture, though trees remain equally vital for both.

In the coastal zone, 7.9 per cent of men show higher dependence on pasture (31.8%), trees (28.5%), and wetlands (9.9%). The results indicate that 28.8 per cent of women depend on pasture, and at trees by 21.3 per cent. at the findings indicate that fishing and mangrove resources are important features, and men exploit these natural features more than women.

Table 6.1 shows that, in the plateau areas, both genders show balanced dependence on natural resources. Women rely on pasture at 30.3 per cent, trees at 35.6 per cent, and wetlands at 9.0 per cent. Men's dependence is slightly higher in pasture (36.6%), wetlands (10.2%), and trees (35.6%). This balance highlights the shared importance of these resources, though men's reliance is marginally greater.

The results show that in the semi-arid lands, trees are the most essential resource for survival. Both men and women depend on them at 45.1 per cent. Pasture land is also significant, and women depend on it by 29.8 per cent, while men rely on it by 29.0 per cent. The wetlands contribute 6.7 per cent for women and 6.3 per cent for men. This indicates that trees are equally crucial resources for both genders, forming the foundation of livelihoods in semi-arid zones.

Table 6. 1: Percentage distribution of dependency on Natural Resources by gender and place of residence; Mainland Tanzania, 2025 TGES

Feature	Sex	Alluvial Plain	Arid Lands	Coastal	Highland	Plateau	Semi-Arid Lands
Natural pasture or grasslands	Female	34.4	31.8	28.8	16.1	30.3	29.8
Natural pasture or grasslands	Male	38.6	34.4	31.8	17.6	36.6	29.0
Natural ponds or wetlands	Female	5.4	7.9	7.9	6.4	9.0	6.7
Natural ponds or wetlands	Male	5.0	9.7	9.9	6.7	10.2	6.3
Stone or wood heaps	Female	1.9	7.7	2.6	10.7	10.7	10.5
Stone or wood heaps	Male	4.3	10.2	6.5	10.6	13.3	8.6
Trees or hedgerows	Female	13.5	49.7	21.3	32.2	35.6	45.1
Trees or hedgerows	Male	17.3	49.4	28.5	38.4	35.6	45.1
Wildflower strips	Female	4.8	16.8	4.5	8.9	11.3	17.2
Wildflower strips	Male	9.3	16.8	10.0	9.8	14.5	17.4

6.4 Natural Resources Related Livelihood Activities

Natural resources are the foundation of livelihood systems in Mainland Tanzania. The resources shape the economies of rural, urban, and agroecological zones. Agriculture, forestry, fisheries, and pastoralism remain key sectors. Communities dependent on land, water, and biodiversity for their livelihood. These resources ensure food security, income, and cultural identity, especially in rural areas where options are limited. However, gender dynamics affect access and control, with women often responsible for household resources. Agro-ecological zonal differences reveal varying dependencies, from coastal fisheries to highland farming and semi-arid pastoralism. Sustainable management is essential to balance livelihood needs with ecological resilience over the long term.

Table 6.2 displays the percentages of men and women involved in natural resources livelihoods in Tanzania Mainland. The results vary significantly depending on activity as well as location, such as the rural–urban divide, and ecological zone differences. Generally, women are especially prominent in water collection, plant gathering, and waste-

related activities, while men dominate grazing, fishing, and mining. This reliance emphasizes the vulnerability of communities to environmental change, while also highlighting the resilience and diversity of strategies across ecological zones.

6.4.1 Fishing

Table 6.2 shows that fishing is primarily a male activity, with men making up 3 per cent overall compared to just 0.4 per cent of women. In rural areas, men's participation increases to 3.7 per cent, while women's participation remains at 0.5 per cent. In urban areas, men's participation drops to 1.6 per cent, and women's to 0.2 per cent. Across ecological zones, fishing is most common among men in the plateau with 6.2 per cent, while women's involvement peaks at 1.1 per cent in the alluvial plains.

6.4.2 Aquaculture

Table 6.2 displays the percentage distribution of men and women participating in aquaculture activities as a livelihood in Tanzania, across rural and urban areas, and various agroecological zones. The results show that Mainland Tanzania has very limited aquaculture activity, but where it exists, men are consistently more involved than women. Overall, male participation in Mainland Tanzania is just 0.1 per cent, while female participation is practically zero. This indicates that aquaculture is primarily practiced by men. In rural areas, the same trend is observed, with 0.2 per cent of men involved compared to no women at all.

In urban areas, both men and women show zero participation. This is an indication that aquaculture is not practiced in urban. In the alluvial plains, aquaculture is slightly more visible, with 0.4 per cent of men compared to 0.1 per cent of women, resulting in a ratio of 4 men to 1 woman. In arid lands, coastal zones, and highlands, aquaculture is not practiced at all, with both genders showing zero involvement. On the plateau, aquaculture reaches 0.3 per cent for men and 0.2 per cent for women, which corresponds to a ratio of 1.5 men per woman. Finally, in semi-arid lands, aquaculture is again absent, with no participation recorded for either gender. Overall, aquaculture remains a marginal livelihood option in Tanzania, with men more likely to be involved than women wherever it is practiced.

6.4.3 Plant collection

Plant collection reflects a livelihood strategy that is both widespread and gender-inclusive. This activity provides food, materials, and supplementary income across Tanzania's varied landscapes. It highlights communities' reliance on natural vegetation, and underscores the important role women play in supporting households through gathering natural resources. This was noticed especially in semi-arid and rural areas where plant collection is most common. The collection of forest plants can be for food or non-food purposes.

Table 6.2 presents a more balanced picture. Nationally, 7.1 per cent of men and 7.8 per cent of women are involved in plant collection. Rural areas show higher levels, with men at 9.3 per cent and women at 11 per cent, while urban areas are lower, with 2.3 per cent for men and 2.6 per cent for women. In semi-arid lands, women's participation rises to 14.5 per cent compared to 11.5 per cent for men, making it one of the few activities where women dominate. Non-edible plant collection is also notable, with men at 5.8 per cent and women at 4.9 per cent overall.

The results indicate clear differences between rural and urban areas. In rural areas, both genders participate equally at 7.3 per cent in inedible plant collection, whereas in urban areas, men are at 2.8 per cent and women are at 1.1 per cent. The data shows that in semi-arid lands, men (12.3%) participate more in plant collection than women (11.8 %). The collection of non-edible plants, including timber, poles, and firewood, is common among men (5.8%) and women (4.9%). Rural participation is higher at about 7.3 per cent. By agroecological zones, men's involvement peaks in the Plateau at 10 per cent, and women's in the semi-arid zones at 1.8 per cent. This reflects dependence on forest resources where access to modern energy is limited.

6.4.4 Forest-related Activities

Forest-related activities such as fuelwood collection, honey gathering, and hunting forest animals are common in rural areas. Table 6.2 shows that hunting forest animals is almost exclusively a responsibility of the male population in Mainland Tanzania. However, this activity takes 0.1 per cent of the activities overall. Forest products such as leaves, sticks, tree roots, and flowers are normally used for cultural purposes, with about 0.6 per cent of men and 0.5 per cent of women engaged nationwide. In semi-arid lands, 1.5 per cent of women are involved in forest-related activities.

Activities in natural forests show 2.5 per cent of men and 3.6 per cent of women participating. The findings show that rural women reach 5.3 per cent in plant collection participation, but men are involved by 3.4 per cent. Highland women's involvement is at 9.4 per cent, compared to 5.7 per cent for men. Engagement in hunting or harvesting forest animals was negligible across Mainland Tanzania, with only 0.1 per cent of men involved. Rural areas such as the Alluvial Plains and Coastal zones showed slightly higher participation, but still under 1 per cent overall. This trend reflects stronger wildlife regulation, limited access, and community shifts toward alternative livelihoods.

6.4.5 Grazing

Table 6.2 shows that grazing animals are the most common livelihood, with 62.1 per cent of men and 62 per cent of women involved. Rural areas have slightly higher levels, 64.3 per cent for men and 64.6 per cent for women, while urban areas are lower at 51.2 per cent for men and 51.9 per cent for women. In semi-arid lands, grazing peaks, with 76.6 per cent of men and 74.4 per cent of women.

6.4.6 Garbage Collection

Garbage collection-related livelihoods reveal sharp gender differences, as indicated in Table 6.4. Activities such as garbage collection, picking, and sorting involve 4.8 per cent of men and 9.3 per cent of women nationwide. In rural areas, women are involved by 7.6 per cent compared to 4 per cent of men. Urban women are at 12.2 per cent versus 6.5 per cent of men. Waged garbage work is notably gendered, showing women (32.1%) involvement more than men (12.7%). Likewise, in rural areas, women dominate at 50.5 per cent compared to 15.9 per cent of men, while in urban areas women are at 19.5 per cent, while men participate by 8.5 per cent. Zone differences are prominent, with men reaching 59.1 per cent in the highlands and women at 42.5 per cent. In the coastal zone, women account for about 34 per cent compared to only 0.5 per cent of men.

6.4.7 Mining and Oil Plumbing

Mining and oil plumbing remain male-dominated activities. Table 6.2 shows that men account for 2.2 per cent, while women make up 0.4 per cent overall. Rural men are at 2.6 per cent compared to 0.5 per cent of women. In urban areas, men stand at 1.5 per cent compared to 0.1 per cent of women. The table indicates that the highest male participation is in the plateau zone, which account for 4 per cent.

6.4.8 Water Collection

Collecting water is predominantly a female activity, as indicated in Table 6.2. The table shows that women are greatly involved in water collection at 86.8 per cent, compared to 53.3 per cent of men in Mainland Tanzania. In rural areas, men engage in water collection by only 54.8 per cent, but women's involvement in water collection is higher (88.7%). In urban areas, women are at 83.6 per cent compared to 50.2 per cent of men. The findings indicate that across the agroecological zones, women consistently lead. For example, in semi-arid lands, women participate by 88.9 per cent compared to 61.3 per cent of men. In the plateau, women involvement is the highest, reaching 90.1 per cent compared to 53.4 per cent of men.

Table 6. 2: Percentage distribution of participation in environmental Livelihoods by gender and place of residence; Mainland Tanzania, 2025 TGES

	Tanzania Mainland		Rural		Urban		Alluvial Plain		Arid Lands		Coastal		Highland		Plateaux	Semi-Arid Lands		
Environmental related livelihood	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Fishing	3	0.4	3.7	0.5	1.6	0.2	3.7	1.1	1.7	0	1.6	0.4	4.4	0.6	6.2	0.4	0.2	0
Aquaculture	0.1	0	0.2	0	0	0	0.4	0.1	0	0	0	0	0	0	0.3	0.2	0	0
Collecting plants	7.1	7.8	9.3	11	2.3	2.6	2.7	4.9	7.4	8.5	3.5	4.5	7	6.9	9.7	6.9	11.5	14.5
Non -edible plants	5.8	4.9	7.3	7.3	2.8	1.1	2.8	1.7	3.5	4.8	1.4	0.5	4.3	3.4	10	6.5	12.3	11.8
Hunt or harvest forest animals	0.1	0	0.2	0	0.1	0	0.1	0	0.6	0	0.2	0	0	0	0	0	0	0
Forest products for cultural products	0.6	0.5	0.6	0.7	0.5	0.2	0.5	0	0.5	0	0	0	1.3	0.9	0.5	0.5	0.5	1.5
Activities on natural forest	2.5	3.6	3.4	5.3	0.6	0.7	0.9	0.3	5.7	9.4	0.7	0.3	0.3	2.4	2.5	4.4	5.1	4.1
Grazing animals	62.1	62	64.3	64.6	51.2	51.9	56.7	52.4	74.6	70.3	44.8	57.2	50.3	52.8	63.8	59	76.6	74.4
Collection Garbage Picking and sorting	4.8	9.3	4	7.6	6.5	12.2	1	2.4	2.4	6.6	2.8	7.9	1.8	9.4	9.5	13	10.6	15.5
Remuneration and waged for garbage	12.7	32.1	15.9	50.5	8.5	19.5	42.1	15.7	42.4	0	0.5	34	59.1	42.5	9.2	39.4	2	24.2
Mining and oil plumbing	2.2	0.4	2.6	0.5	1.5	0.1	1.9	0	2.9	0.1	0.7	0	0.8	0	4	1.2	2.8	0.7
Water collection	53.3	86.8	54.8	88.7	50.2	83.6	54.7	87.1	39.6	83.6	55.3	85.5	54.8	85.1	53.4	90.1	61.3	88.9

The findings show generally that men dominate in fishing, mining, and grazing, while women bear the overwhelming responsibility for water collection and play a central role in plant gathering and garbage-related livelihoods. Rural women are especially prominent in waged garbage work, while semi-arid zones highlight women's strength in plant collection. The percentages reveal a clear gendered division of labor shaped by agro-ecological conditions and social roles.

Natural resources-related livelihoods remain fundamental to Tanzania Mainland's socio-economic landscape, particularly among rural populations where natural resources serve as the backbone of income and household sustenance. Activities such as fishing, aquaculture, plant and forest product collection, grazing, and water collection represent the primary interface between livelihoods and the environment. Findings from the 2024 TGES illustrate notable differences in participation by gender, location, and ecological zone. These differences show how livelihood structures reflect gender roles and resource availability across the country.

6.5 Livelihood-Related Health and Safety Risks

Health and safety risks in livelihood activities remain a critical concern across rural and urban areas and various agroecological zones in Mainland Tanzania. Men and women often face different levels of exposure depending on the activity type and the surrounding environment. The results show that water collection, garbage handling (picking, sorting, recycling), and mining are three major risk areas that men and women engage in, as indicated in Table 6.3. These areas are explained in the following subsections to provide insights into gendered vulnerabilities and zonal disparities in occupational health and safety.

6.5.1 Water Collection Risks

Table 6.3 shows that both men and women face notable risks, although the proportions differ slightly. Across Mainland Tanzania, about 14.8 per cent of men and 15.7 per cent of women report health risks. The table indicates that risks are more prevalent in rural areas, where 18 per cent of men and 20.8 per cent of women are affected, compared to only 7.3 per cent of men and 7 per cent of women in urban settings. Table 6.5 highlights the risk conditions along the agroecological zones, with the highest risks for men found in the Plateau (21.6%) and Alluvial Plains (16.2%). Women report the most significant risks in Semi-Arid Lands (18.6%) and Alluvial Plains (16.2%). The table also shows that the coastal

zone has the lowest risks, with only 3 per cent of men and 3.3 per cent of women reporting unsafe conditions. The result suggests that water resources accessibility is easier in the coastal zone than other places.

6.5.2 Garbage Handling Risks

Handling, picking, sorting, or recycling risks again show gender disparities. On the Mainland, 8 per cent of men and 10.1 per cent of women report health hazards. Rural areas have slightly lower risks, 7.3 per cent for men and 9 per cent for women, while urban areas are higher, with 8.8 per cent for men and 11.3 per cent for women. This observation reflects the challenges of urban waste management. Across agroecological zones, disparities are noticeable.

In the Alluvial Plains, no men report risks, but 32.3 per cent of women do, highlighting a significant gender imbalance. In the Highlands, women are more vulnerable, with 44.6 per cent reporting risks compared to a smaller proportion of men. Conversely, in the Plateau and Semi-Arid Lands, risks are relatively low for both genders, men at 10.3 per cent and 1.5 per cent, and women at 11.3 per cent and 6.8 per cent, respectively, as illustrated in Table 6.3.

6.5.3 Risks from Mining Activities

Mining activities pose the lowest overall risks, with nearly zero values in all categories. In mainland Tanzania, only 0.7 per cent of men and 0.1 per cent of women report unsafe conditions. Rural and urban figures are similarly low, and across agroecological zones, men in the Alluvial Plains at 1.5 per cent and in the Semi-Arid Lands at 1.6 per cent show slightly higher risks, while women consistently report almost none. This reflects women's limited participation in mining.

Overall, the results show that women face more health risks from garbage handling, especially in highland and alluvial zones, while men are more vulnerable in water collection, particularly in plateau areas. Mining remains a low-risk activity for both genders. These patterns highlight how gender roles and ecological settings shape the types of unsafe conditions faced in livelihood activities across Mainland Tanzania (Table 6.3).

Table 6.3: Percentage distribution of health and safety risks by gender and place of residence; Mainland Tanzania, 2025 TGES

		Tanzania Mainland		Rural		Urban		Alluvial Plain		Arid Lands		Coastal		Highland		Plateaux	
Health and Safety	**Reaction**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
Health risk on water collection	No	85.2	84.3	82	79.2	92.7	93	88	90.9	83.8	75.6	97	96.7	79.9	74.8	78.3	81.4
	Yes	14.8	15.7	18	20.8	7.3	7	12	9	16.2	24.4	3	3.3	20.1	25.2	21.6	18.6
Health risk on picking, sorting, or recycling garbage	No	90.5	89.1	92.7	90.5	87.6	87.7	100	63.1	100	88.4	76.4	87	55.4	90.8	89.7	88.7
	Yes	8	10.1	7.3	9	8.8	11.3	0	32.3	0	9.3	7.1	10.7	44.6	9.2	10.3	11.3
	Don't know	1.5	0.8	0	0.6	3.6	1	0	4.5	0	2.3	16.5	2.4	0	0	0	0
Health risk on mining activities	No	99.3	99.9	99.2	99.9	99.6	100	100	100	98.5	100	99.8	100	99.6	100	99.5	100
	Yes	0.7	0.1	0.8	0.1	0.4	0	0	0	1.5	0	0.2	0	0.4	0	0.5	0

6.6 Decision Making over Resource Management

Decision-making dynamics within households in Mainland Tanzania vary greatly based on gender, location, and agroecological zones. Table 6.4 shows the percentage distribution of decision-makers. It shows whether decision-making is done individually, jointly, or externally. Four key areas were considered: buying farm animals, purchasing products, selling products, and waste management. The data is broken down by gender (men and women), place (Mainland Tanzania, rural, urban), and agroecological zone (Alluvial Plain, Arid Lands, Coastal, Highland, Plateau, Semi-Arid Lands), providing a detailed look at how decision-making power varies across contexts. The information on household decision-making in Mainland Tanzania highlights clear patterns on the basis of gender, location, and agroecological zone.

6.6.1 Purchasing Farm Animals

The results indicate that in Mainland Tanzania, 34.2 per cent of cases are decided by men, while 18.7 per cent are done by women. However, the findings demonstrate that both men and women make join decision by 39.5 per cent and 47.3 per cent, respectively. In rural areas, 35.6 per cent of men and 19.4 per cent of women make decisions alone, while joint decisions are reported by 38.2 per cent of men and 46.7 per cent of women. Urban areas show a shift toward more collaborative decision-making. It was reported that 45.1 per cent of men and 52.6 per cent of women make joint decision. The results reveal that only 28.3 per cent of men and 15.2 per cent of women deciding alone.

In the Alluvial Plain, 32.5 per cent of men and 17.6 per cent of women make decisions independently, while joint decision-making occurs in 41.2 per cent of cases for men and 48.9 per cent for women. In Arid Lands, the rate of male-only decisions is 36.8 per cent, and that of female-only decisions is 20.1 per cent. Joint decisions are slightly lower, at 37.4 per cent for men and 45.2 per cent for women. Coastal areas exhibit a more balanced decision-making process, with 30.1 per cent of men and 16.3 per cent of women deciding alone. In this area, joint decisions standing at 42.7 per cent for men and 50.4 per cent for women.

In the Highland zone, 33.9 per cent of men and 18.2 per cent of women make decisions independently, while 40.3 per cent of men and 47.8 per cent of women report making joint decisions. In the Plateaux zone, 35.0 per cent of men and 19.0 per cent of women decide alone, with joint decisions made by 38.6 per cent of men and 46.5 percent of women. The

Semi-Arid Lands show the highest percentage of men making independent decisions at 37.1 per cent, while 21.3 per cent of women decide alone. Joint decisions in this zone are reported by 36.9 per cent of men and 44.1 per cent of women, as shown in Table 6.4.

6.6.2 Purchases of Products

The findings demonstrate that in Mainland Tanzania, 29.8 per cent of men and 22.4 per cent of women make decisions alone in purchasing products. Also, it was reported that joint decision-making is more prevalent, with 42.1 per cent of men and 49.0 per cent of women. In rural areas, 30.5 per cent of men and 23.1 per cent of women make decisions independently, while joint decisions account for 41.3 per cent of men and 48.3 per cent of women. Urban areas display an even stronger tendency toward joint decision-making, with only 26.2 per cent of men and 19.7 per cent of women deciding alone. The results show that 45.6 per cent of men and 52.4 per cent of women in urban areas make joint decision in purchasing products (Table 6.4).

In agroecological zones, the Alluvial Plain records 28.7 per cent of men and 21.3 per cent of women making decisions alone, with joint decisions accounting for 43.2 per cent. In Arid Lands, 31.2 per cent of men and 24.0 per cent of women make decisions independently, while joint decisions account for 40.1 per cent. Coastal areas show that 27.4 per cent of men and 20.2 per cent of women make decisions alone, but 44.0 per cent of men and 51.3 per cent of women make joint-decision.

In the Highland zone, 29.5 per cent of men and 22.0 per cent of women make decisions independently, while joint decisions account for 42.3 per cent men, and 49.4 per cent women. The Plateau zone shows that 30.7 per cent of men and 23.3 per cent of women make decisions alone, with joint decisions made by 41.0 per cent men and 48.1 per cent women. The Semi-Arid Lands display the highest rate of male-only decision-making at 32.1 per cent, while 25.1 per cent of women decide alone. Joint decisions in this area stand at 39.2 per cent for men, and 46.3 per cent for women.

6.6.3 Selling of Products

In Mainland Tanzania, 31.6 per cent of men and 20.3 per cent of women make independent decisions in selling of products. In contrast, joint decision-making is reported at 40.7 per cent for men and 48.1 per cent for women. In rural areas, 32.4 per cent of men and 21.0 per cent of women make decisions alone, while joint decisions account for 39.9 per cent of men and 47.3 per cent of women. Urban areas demonstrate a stronger trend toward

joint decision-making, with 27.5 per cent of men and 17.2 per cent of women making decisions alone, and joint decisions reaching 44.2 per cent for men and 51.6 per cent for women.

In agroecological zones, Alluvial Plains show that 30.4 per cent of men and 19.1 per cent of women make decisions alone, while joint decisions account for 41.8 per cent of men and 49.3 per cent of women. Arid Lands record 33.7 per cent of men and 22.3 per cent of women deciding independently, with joint decisions at 38.6 per cent for men and 46.1 per cent for women. Coastal areas show that 29.0 per cent of men and 18.0 per cent of women make decisions alone, while joint decision-making is represented by 43.0 per cent of men and 50.7 per cent of women.

In the Highland zone, 31.2 per cent of men and 20.0 per cent of women decide alone, while 41.1 per cent of men and 48.5 per cent of women make joint decisions regarding products selling. In the Plateau zone, 32.6 per cent of men and 21.4 per cent of women decide independently, with joint decisions at 39.5 per cent for men and 47.0 per cent for women. The Semi-Arid Lands show that 34.2 per cent of men and 23.5 per cent of women make independent decisions in selling products, and joint decisions are made by 37.6 per cent of men and 45.0 per cent of women.

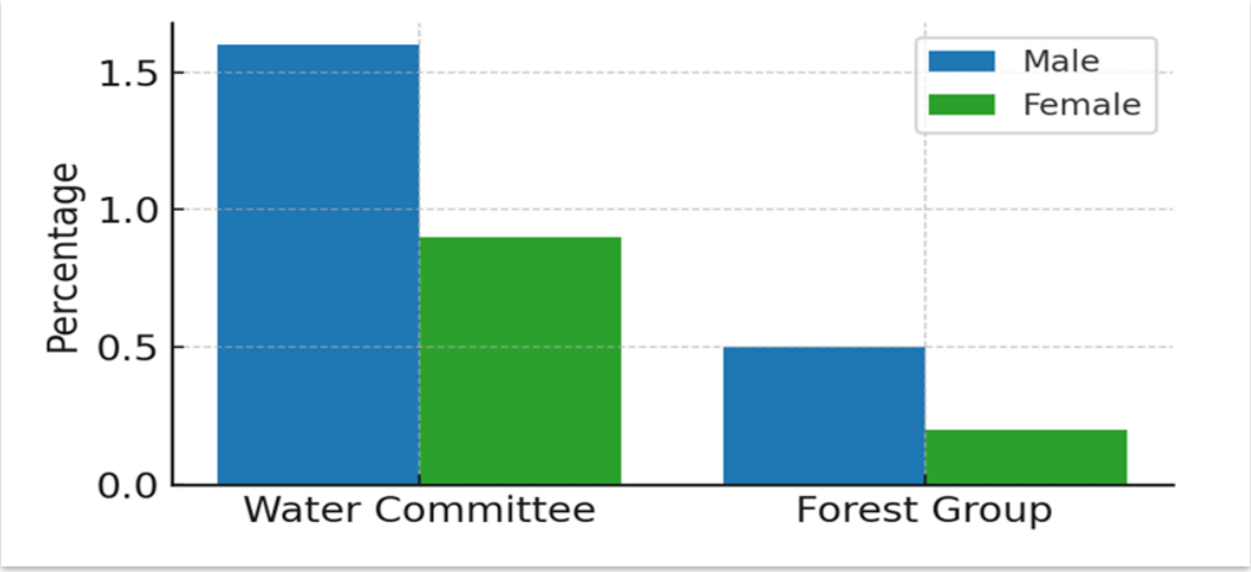
Table 6.4: Percentage distribution of decisions over natural resources livelihoods by gender and place of residence; Mainland Tanzania, 2025 TGES.

		Tanzania Mainland		Rural		Urban		Alluvial Plain		Arid Lands		Coastal		Highland		Plateaux		Semi-Arid Lands	
Decision making	**Reaction**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
Purchase of farm animals	Myself alone	18.4	3.7	21.9	3.6	10.3	3.9	18.7	2.8	32.8	4.6	10.5	5.5	14.8	5.5	12.2	1.5	22.3	2.7
	My partner alone	3.8	18.7	3.8	23	3.9	10.7	3.6	12.9	5.1	36.7	1.8	7	4.6	14.5	4	17.9	3.4	20.7
	Me and my partner j	35.5	31.5	40.5	38.7	24	18.2	28.9	28.4	29.1	27.8	21.1	17.6	52.5	42.7	44.3	38	31.7	32
	Someone else	2	1.9	2.4	2.1	1.1	1.6	0.9	1	3.1	2.3	1.5	1	1.3	2.5	3.1	1.6	2.1	2.9
	We haven't made ar	40.2	44.1	31.4	32.6	60.7	65.6	47.9	55	29.8	28.7	65.1	68.8	26.8	34.8	36.5	41	40.5	41.7
purchases of products	Myself alone	26.1	4.6	29.8	4.6	17.4	4.6	35.1	4.5	38.9	5	16.4	4.6	23.8	6.7	16.7	3	27.4	3.7
	My partner alone	4.1	23.8	4.4	29.8	3.3	12.9	4.1	30.9	4.7	41.7	1	8.6	5.6	17.3	4.1	19.9	4.4	24.5
	Me and my partner j	45.2	42	50.4	49.1	33.1	28.9	46.6	46.2	32.8	30.9	29.4	25	52.3	46.4	58	55	48.3	46.7
	Someone else	2.6	2.4	2.3	2.3	3.2	2.4	3.4	1.8	2.8	2.7	0.6	2	1.6	2.6	4.5	2.2	2.4	2.7
	We haven't made ar	22.1	27.2	13.1	14.2	43	51.2	10.8	16.5	20.8	19.6	52.6	59.9	16.8	26.9	16.7	19.9	17.5	22.5
selling of products	Myself alone	23.2	4.2	26.8	4.4	14.8	3.9	30.1	4.8	36.9	3.7	14.1	4.5	20.8	5.1	13.7	3.5	24.8	3.8
	My partner alone	4.4	21.2	4.4	27.4	4.3	9.8	4.7	24.6	5.3	41.3	2	7.4	5.1	16.2	4.4	16	4.5	21.5
	Me and my partner j	45	42.9	50.9	49.7	31.5	30.1	46	48.2	33.4	33.3	30.9	28.4	53.2	46.7	56.4	54	46.8	45.2
	Someone else	2.4	1.7	2.4	1.8	2.5	1.6	3	1	3.1	2	0.6	0.6	1.6	2.6	3.6	1.9	2.4	1.9
	We haven't made ar	25	30	15.6	16.7	46.9	54.6	16.2	21.5	21.3	19.8	52.4	59.2	19.2	29.4	21.8	24.5	21.4	27.6

The sustainability of livelihoods relies on community decision-making about the resources. Typically, decisions about resource use are made within an environmental committee. Tanzanian legal documents mandate the establishment of these environmental committees from the village to the regional levels.

Figure 6.3 illustrates the gender differences in decision-making process, revealing a notable underrepresentation of women in the environmental committee. In all zones, women's participation in water and forest management committees remains minimal, at less than 2 per cent. This low representation highlights ongoing structural barriers, including time constraints, cultural norms, and limited access to leadership opportunities. All these factors restrict women's participation in environmental governance.

Figure 6.3: Percentage distribution of Men and Women Participating in the Environmental Committees, Mainland Tanzania, 2025 TGES



CHAPTER SEVEN

ENVIRONMENTAL CONSERVATION AND DEGRADATION

Key Points:

- Land management practices show mixed progress, with over 70% of adults engaged in agriculture. 46.9% of households report reduced soil fertility, and fewer than 30% adopt sustainable methods such as crop rotation or intercropping. This indicates both high dependence on land and persistent environmental stress.
- Fishing participation is low nationwide, with 3% of men and only 0.4% of women engaged. Additionally, more than 80% of fishers report that catches have declined over time. The overall results highlight gender disparities and growing environmental pressures on aquatic ecosystems.
- Aquaculture remains minimally adopted in Tanzania, with participation below 0.5% for both genders. The few practitioners are dominated by men who farm 100% for commercial purposes. This observation underscores strong gender and structural constraints in this emerging livelihood.
- Households rely heavily on forests, with up to 29% gathering edible plants, more than 44% collecting firewood (primarily for home use), and 5–12% generating income from forest products. Hunting and grazing occur at lower but zone-specific levels.

7.1 Introduction

This chapter presents the 2025 TGES results on environmental conservation and degradation. It focuses on how individuals and households in Mainland Tanzania use and manage natural resources. The objective is to assess practices that either protect or degrade the environment. It also aims to identify gender differences across key domains, namely land

management, fishing practices, aquaculture, forest practices, mining, household practices, and natural resource decision-making.

Environmental conservation statistics are essential for understanding how daily activities shape resource sustainability, environmental quality, and community resilience. They support evidence-based planning, guide climate and environmental policies, and help identify gender-specific responsibilities and vulnerabilities. By examining who performs environmental tasks, who makes decisions, and who is exposed to environmental risks, this chapter contributes to more equitable and targeted interventions.

The 2025 TGES collected detailed information from individuals regarding agriculture and land use, environmental livelihoods, household energy and water practices, and decision-making. The analysis also draws on key issues highlighted in the technical review of gender and environment linkages.

The primary audience for this chapter includes policymakers in the environment, agriculture, fisheries, forestry, natural resources, water, and local government sectors. It also serves development partners, civil society, researchers, and practitioners working on climate resilience, environmental management, and gender equality. By providing clear, data-driven insights, this chapter supports national efforts to strengthen sustainable and gender responsive environmental governance.

7.2 Land Management Practices

Land remains one of Tanzania's most valuable natural resources. It supports crop farming, livestock keeping, settlements, forestry, wetlands, and other ecosystem services that sustain local livelihoods. How land is accessed, used, and conserved directly influences environmental stability, agricultural productivity, and climate resilience.

This section presents findings on land ownership, land-use practices, and land degradation issues reported by households across Mainland Tanzania. The results provide a foundation for understanding pressures on land resources and identifying sustainable land management priorities.

7.2.1 Patterns of Participation in Agriculture

Agriculture remains the backbone of livelihoods across Mainland Tanzania. This activity supports many rural households and contributes significantly to food security, income generation, and community resilience. The 2025 TGES highlights the central role of farming in both crop and livestock systems. The survey also revealing emerging challenges linked to soil degradation, input use, pesticide-related risks, and limited uptake of sustainable practices.

Understanding these patterns is essential for informing policies that strengthen productivity, environmental sustainability, and farmers' safety. This subsection examines the extent to which men and women engage in agricultural activities, comparing participation rates across Mainland Tanzania, rural and urban areas, and the different agro-ecological zones. It highlights how demographic and environmental factors shape livelihood.

Sustainable agricultural practices are being adopted, but not yet on a large scale. Nationally, approximately one in five farmers (20.2%) practices crop rotation, while mixed cropping (26%) and intercropping (27.8%) are somewhat more common, as shown in Table 7.1. The uptake of these practices is predominant in the Highlands, Semi-Arid Lands, and Plateaux. In these areas, farmers face serious climate and soil challenges and rely more on diversification to manage risks. In contrast, adoption is weaker in the Alluvial Plains and Coastal areas, where monocropping and shorter-term production strategies are more prevalent. Overall, the results indicate a significant opportunity to expand conservation and climate-smart practices to enhance soil health and resilience across all ecological zones.

According to the findings of the 2025 TGES, agriculture is primarily concentrated in rural areas, where both men and women are actively involved in farming and livestock keeping activities. Urban areas show much lower participation as livelihoods shift towards non-agricultural sectors. The Highlands, Arid Lands, and Alluvial Plains have the highest agricultural engagement, with women's involvement slightly lower than men's across all zones. These trends highlight agriculture's critical role in sustaining rural livelihoods and underscore the need for gender-responsive programs that promote equitable access, enhance productivity and resilience.

Table 7. 1: Percentage Distribution of Participation in Agriculture by gender and place of residence; Mainland Tanzania, 2025 TGES.

Sustainable practices	Tanzania Mainland		Rural		Urban		Alluvial Plain		Arid Lands		Coastal		Highland		Plateaux		Semi-Arid Lands	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Application of crop rotation	20.2	19.5	20.4	19.6	19.2	19.1	14.1	19.2	17.9	17.3	24	20.6	22.4	22	23.8	21.6	19.8	16.4
Application of mixed cropping	26	24.6	26.2	25.4	25.1	22.3	12.8	14.7	39.4	37.1	26.9	23.7	24.2	20.4	23.9	23.7	28.1	25.3
Application of inter-cropping	27.8	26.5	29.4	28.1	21.5	21.7	16.5	19	28.2	23.7	28.3	22.4	35.2	31.2	29.5	32.3	27.6	28.7
Perform biological pest control	2.6	2	2.6	1.7	2.5	3.1	3.2	2.1	2.5	2	0.5	2.4	4.2	1.4	2.3	2.5	1.6	2.1
Use of biopesticides	24.4	22.5	23.2	21.1	29.1	26.6	35.8	41	20.9	17.5	26	13.4	24.2	23.7	23.5	17	17.1	19.5
Adopting pasture rotation to suppress livestock pest population	3.1	1.5	3	1.4	3.8	1.9	2.9	0.2	4.6	2	2.2	2.2	2.4	1.5	3.8	2.2	2.6	0.8

7.2.2 Soil Degradation Issues

Households in Mainland Tanzania have reported several forms of land degradation that significantly affect agricultural productivity. It has been reported that soil degradation has contributed to soil infertility, as shown in Table 7.2. Also, land degradation causes waterlogging especially in low-lying and coastal landscapes. It also results into soil erosion particularly in upland and semi-arid zones. Additionally, salinization occurs in specific ecological pockets, particularly in areas with poor drainage or high evaporation rates. The pattern of degradation varies significantly by ecological zone, reflecting both natural conditions and the pressures of land use.

The 2025 TGES indicates that reduced soil fertility is the most widespread issue of soil degradation, impacting nearly half of all farming households (46.9%) across Mainland Tanzania. This problem is especially severe in the Plateaux (54.9%), Highlands (49.5%), and Arid Lands (50.2%). Factors such as continuous cultivation, limited fertilizer use, and erratic rainfall patterns are contributing to the decline in soil health (Table 7.2).

Waterlogging and flooding impact 11.4 per cent of households nationally, but the effects are much more severe for specific ecological zones. For example, the Alluvial Plains face nearly three times the national average, with an affected rate of 29.8 per cent. This is primarily due to their low-lying landscapes and poor drainage systems. Additionally, the Coastal zone experiences higher flooding, affecting 14.8 per cent of households. These conditions lead to delays in planting, lower crop yields, and significant crop losses.

Soil erosion is reported by 9.4 per cent of households. This effect is more severe in the Highlands (13%), where steep terrain accelerates runoff. In the Semi-Arid Lands, 9.6 per cent of households face similar challenges due to sparse vegetation and strong winds that contribute to topsoil loss. The Arid Lands (8.5%) also experience significant erosion pressures linked to overgrazing and deforestation.

Salinisation is not a widespread issue nationally. It affects only 2.2 per cent of the land. However, it is more pronounced in the Alluvial Plains, where the rate rises to 4.5 per cent, and also in the Plateaux, which has a rate of 2.2 per cent. This increased salinisation in these areas can be attributed to restricted drainage or high evaporation rates, leading to salt

accumulation in the soil. Although reports of chemical spills and pollution are infrequent, occurring at only 0.3 per cent of cases, their presence, even at low levels, signals emerging risks as the use of agricultural chemicals continues to grow.

The overall findings reveal a complex landscape of degradation pressures. Fertility decline is a universal challenge across all zones, while waterlogging, erosion, and salinity are highly localized, reflecting interactions between ecological conditions, farming practices, and climate variability. This spatial differentiation emphasizes the importance of zone-specific soil restoration strategies.

Table 7. 2: Percentage Distribution of Soil Degradation Types by Gender and Place of Residence; Mainland Tanzania, 2025 TGES.

Soil degradation	Tanzania Mainland		Rural		Urban		Alluvial Plain		Arid Lands		Coastal		Highland		Plateaux		Semi-Arid Lands	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
% of men and women engaged in crops, livestock, both	66.7	60.7	78.6	73.7	41.7	39.8	74.7	69.4	76.3	73.9	43.3	36.3	75.9	67.6	63.0	60.7	66.6	56.8
Soil erosion (loss of topsoil through wind or water erosion)	9.4	0.0	10.0	0.0	7.2	0.0	6.3	0.0	8.5	0.0	7.4	0.0	13.0	0.0	10.3	0.0	9.6	0.0
Reduction of soil fertility	46.9	0.0	46.9	0.0	46.7	0.0	34.7	0.0	50.2	0.0	40.9	0.0	49.5	0.0	54.9	0.0	47.8	0.0
Waterlogging, including by floods	11.4	0.0	10.8	0.0	13.8	0.0	29.8	0.0	5.6	0.0	14.8	0.0	6.5	0.0	7.2	0.0	7.2	0.0
Salinization	2.2	0.0	2.0	0.0	2.9	0.0	4.5	0.0	3.1	0.0	2.7	0.0	0.5	0.0	2.2	0.0	0.7	0.0
Pollution or chemical spill	0.3	0.0	0.1	0.0	0.8	0.0	0.5	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.1	0.0

Soil degradation indicators were collected at the household level, and therefore, they are not gender disaggregated. The results presented reflect household experience rather than individual male or female responses.

7.2.3 Fertilizer Use

This subsection explores the use of both synthetic and organic fertilizers among farming households in Mainland Tanzania. It highlights the role of fertilizer uses in restoring soil nutrients, improving crop yields, and adapting to different ecological conditions. The results indicate that the patterns of fertilizer use vary significantly between rural and urban areas as well as across ecological zones. This indicates differences in market access, farming practices, and traditional soil management. While both types of fertilizers are widely used, their adoption rates differ. It has been reported that synthetic fertilizers are more common in areas with commercial or intensive farming, while organic fertilizers are more frequently used in zones with livestock or access to organic matter. Urban farmers generally display slightly higher overall adoption rates due to better access to these inputs. Moreover, zones experiencing substantial soil fertility decline tend to use more fertilizers. This observation underscores the importance of restoring nutrients in degraded soils (Table 7.3).

Table 7.3 illustrates the proportion of male and female farmers in Tanzania Mainland who use synthetic and organic fertilizers. Generally, male farmers tend to use more synthetic fertilizers, which reflects their better access to purchased inputs. In contrast, female farmers demonstrate a comparable or even higher reliance on organic fertilizers derived from household resources. The highest overall fertilizer usage is reported in the Highlands, Plateaux, and Semi-Arid Lands. In contrast, Arid and Coastal areas show lower fertilizer adoption due to various soil and climatic challenges.

The sex-disaggregated data reveal notable differences in fertilizer usage between men and women across Mainland Tanzania. Nationally, 41% of male farmers report using synthetic fertilizer, compared to 39.8 per cent of women farmers, suggesting a slightly higher adoption rate among men, who typically make decisions regarding purchased inputs. In contrast, organic fertilizer is more commonly used by women, with 49 per cent reporting its use, compared with 47.7 per cent of men. This trend reflects women's roles in managing household-based soil fertility resources, such as manure and compost (Table 7.3).

Urban farmers tend to use synthetic fertilizers more than their rural counterparts, with 45.5 per cent of men and 43.5 per cent of women utilizing them. This is mainly due to the better access to input suppliers in urban areas. In rural areas, the use of synthetic fertilizers is slightly lower, at 39.8 per cent for men and 39.7 per cent for women. However, both men and women in rural areas continue to use organic fertilizers widely.

Fertilizer use varies by agro-ecological zones. Synthetic fertilizer usage is higher in the Plateaux (57.9% for both men and women), Highlands (53% for both), and Semi-Arid Lands (42% for both). In these zones, farming intensity and commercial crop production are greater. Conversely, synthetic fertilizer use is lower in the Arid Lands (24.8% for both men and women) and Coastal zones (26% for both). This is due to the soil conditions and limited market access that restrict the demand.

The use of organic fertilizers is higher in the Alluvial Plains (57.9% for men and women), the Coastal Zone (57.2% for men and women), and the Plateaux (57.2% for men and women). This trend reflects a strong reliance on livestock manure and locally available biomass. In nearly all zones, women's use of organic fertilizers is comparable to or slightly higher than men's, underscoring the vital role played by women in managing soil fertility. Overall, the results suggest that while both men and women use fertilizer, women are more likely to rely on organic sources, whereas men tend to prefer synthetic inputs when market access and farming systems allow it.

Table 7. 3: Percentage Distribution of Fertilizer Use by Gender and Place of Residence; Mainland Tanzania, 2025 TGES

Fertilizer use	Tanzania Mainland		Rural		Urban		Alluvial Plain		Arid Lands		Coastal		Highland		Plateaux		Semi-Arid Lands	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Using synthetic	41.0	37.1	39.8	36.3	45.5	39.4	34.8	26.8	24.8	28.2	26.0	21.9	53.0	48.9	57.9	52.4	42.0	38.0
Organic fertilizers	49.0	40.8	47.7	38.4	53.7	47.6	57.9	52.3	35.5	29.4	57.2	53.5	42.2	40.9	57.2	37.7	46.1	43.3
Awareness of risks	58.2	54.0	53.6	53.7	72.2	54.9	64.3	49.3	39.5	52.5	44.9	50.7	55.3	44.9	63.8	60.7	61.4	64.8
Follow protocols (as per extension service/ retail directions / local regulations) not exceeding recommended doses	82.9	82.0	80.6	80.6	88.0	85.3	96.4	95.7	20.1	32.9	84.7	72.4	78.6	85.5	89.5	86.9	80.3	92.3
Use organic source of nutrients (e.g. manure or composting residues) alone or in combination with synthetic or mineral fertilizers	43.2	48.4	37.2	50.5	57.1	43.9	17.3	11.2	80.2	73.5	28.3	33.2	30.8	24.4	41.9	54.2	83.8	82.5
Use legumes as a cover crop, or component of a multi crop or pasture system to reduce fertilizer inputs	10.2	10.2	6.4	7.6	19.0	15.8	10.6	21.4	30.8	12.0	31.9	19.4	17.9	11.4	0.0	7.9	4.1	0.0
Distribute synthetic or mineral fertilizer application over the growing period	32.5	32.8	32.3	34.5	33.0	29.2	30.8	17.4	0.3	11.0	58.5	8.5	19.2	36.0	42.5	62.8	34.7	22.5
Use soil sampling at least every 5 years to perform nutrient budget calculations	13.6	7.7	10.9	6.8	19.9	9.6	12.5	6.5	0.3	18.4	29.7	2.5	9.1	9.2	18.6	10.2	10.7	0.0
Use buffer strips along water courses	3.4	3.7	2.3	2.5	6.0	6.2	6.8	8.4	0.3	4.8	0.0	0.0	7.5	5.5	0.0	3.2	2.9	0.0

7.2.4 Pesticide Use

This subsection examines the extent to which households apply pesticides in their farming activities. Pesticide use varies across ecological zones, and reflects differences in pest pressure, crop types, and access to agricultural inputs. Understanding these patterns is important for assessing environmental risks and potential exposure to chemical hazards among farming communities.

The results show that pesticide use varies significantly across ecological zones, with higher application often found in areas where commercial or intensive farming is practiced, as shown in Table 7.4. However, some zones exhibit very limited pesticide use, which reflects either low pest pressure or restricted access to chemical inputs. Urban and peri-urban farmers typically report higher pesticide usage compared with rural areas that rely on more traditional farming systems. Additionally, gender-disaggregated data reveal different levels of involvement by men and women in pesticide application. This emphasizes the need for targeted interventions in pesticide management and tailored farmer training. These patterns underscore the importance of addressing the diverse needs of farmers across various ecological contexts.

Table 7.4 shows the proportion of men and women farmers reporting pesticide use across different geographic areas. Pesticide use is higher in the Plateaux and Highlands zones and lower in the Arid and Coastal areas. Men generally report slightly higher usage, reflecting gender differences in access to inputs and crop management roles.

The survey shows that pesticide use is uneven across the country, with notable contrasts between zones and between men and women. Nationally, 34% of men engaged in farming report using pesticides compared to 30.1% of women, indicating slightly higher use among men. Rural pesticide uses mirrors national levels, whereas urban areas show a small increase among men (36.7%) and women (32.7%). This result reflects greater access to input suppliers and commercialized crop production.

Across ecological zones, pesticide use is higher in the Plateaux zone (48.9% men; 48.9% women) and the Highlands (43.7% men; 43.7% women), where intensive crop systems demand greater pest control. The Semi-Arid Lands also show moderate use (32.2% men; 32.2% women), likely driven by pest pressures on cereals and horticulture. In contrast,

pesticide use is minimal in the Arid Lands (11.4% men; 11.4% women) and Coastal zone (18.5% men; 18.5% women). The findings suggest that either lower pest intensity or limited access constrains chemical use.

Table 7. 4: Percentage Distribution of Pesticide Use by Hazard Category, Gender and Place of Residence; Mainland Tanzania, 2025 TGES

Geographical Area	No Harm (Men)	No Harm (Women)	Moderately hazardous (Men)	Moderately Hazardous (Women)	Highly Hazardous (Men)	Highly Hazardous (Women)	Don't Know (Men)	Don't Know (Women)
Mainland Tanzania	37.5	35.0	54.1	53.8	1.2	1.5	7.2	9.8
Rural	36.4	33.8	54.6	54.5	0.8	1.7	8.2	10.0
Urban	41.6	38.0	52.5	51.8	2.3	0.9	3.6	9.2
Agro-Ecological Zones								
Alluvial	29.5	28.9	59.4	57.1	1.6	2.0	9.5	11.9
Arid Lands	38.4	33.2	49.2	53.4	0.5	1.9	11.9	11.5
Coastal	45.8	38.2	49.4	58.0	2.4	0.3	2.4	3.5
Highlands	21.4	23.5	66.7	59.9	1.3	1.9	10.6	14.8
Plateaux	57.6	43.9	38.4	47.9	0.8	0.0	3.2	8.2
Semi-Arid	38.2	45.6	56.9	47.1	0.5	2.3	4.3	5.0

7.2.5 Awareness and Protective Measures (PPE)

Awareness of pesticide risks and the use of protective measures are crucial parts of safe farming practices, as it affects both farmers' health and environmental sustainability. This section explains how much men and women who are engaged in farming related activities are aware of pesticide use, as well as the safety steps they take when handling chemicals. The results show notable gender differences in awareness and safety behaviors. This observation reflects disparities in access to training, agricultural extension services, and proper protective gear. Recognizing these gaps is essential for creating gender-responsive strategies that encourage safer, more sustainable pesticide practices across Mainland Tanzania

The 2025 TGES results show that awareness of pesticide risks varies significantly between men and women. The findings indicate that men are consistently reporting higher levels of

awareness. This is indicative of gaps in access to safety information and extension services (Table 7.5). While both genders generally follow pesticide label instructions, specialized protective behaviors, such as cleaning equipment, proper waste disposal, and the use of PPE are notably infrequent, especially among women. Moreover, many farmers, particularly women, either do not take protective measures or are unsure of the actions they took. These findings highlight significant gender gaps in pesticide knowledge and safety practices, affecting health, productivity, and environmental management.

Awareness of pesticide use shows substantial variation across Mainland Tanzania, with men consistently reporting higher levels of awareness than women. Nationally, 45.3 per cent of men, compared to 37.1 per cent of women report being aware of the risks associated with pesticides use. This gender gap persists across nearly all ecological zones. Awareness peaks in the Coastal zone, where 57.2 per cent of men and 49.2 per cent of women report understanding pesticide risks, while the lowest awareness levels are recorded in the Semi-Arid Lands, particularly among women (25.8%).

When examining protective measures, following label instructions is the most common behavior across all zones, with over 80 per cent compliance recorded among both men and women in most areas. However, this apparent compliance stands in stark contrast to the very low adoption of more advanced safety practices. Maintenance and cleaning of protective equipment after use is rare, with compliance often falling below 4 per cent for both men and women. Additionally, the safe disposal of waste, such as containers or wash water is also limited. However, a few areas like the Highlands shows higher rates (8.9% for men).

A significant number of farmers report not taking any protective measures, with proportions ranging from 6.9 per cent to 20 per cent for men across zones, and from 8.3 per cent to 19.1 per cent for women. Women consistently show slightly higher levels of inaction. Additionally, the proportion of "Do not know" responses is notably significant, particularly among women in areas such as the Alluvial Plains (11.9%) and Coastal zone (4.4%). This suggests information gaps that disproportionately affect female farmers, as summarized in Table 7.5.

Overall, the results show that while general awareness exists, meaningful protective behavior remains weak. The gender disparities in awareness and protective practices highlight the

need for targeted training for women. Also, strengthening extension systems that promote safe pesticide handling across all ecological zones is prerequisite.

Table 7. 5: Percentage Distribution of Awareness and Protective Measures by Gender and Place of Residence; Mainland Tanzania, 2025 TGES

Zone / Sex	Awareness of pesticide use	Adherence to label directions	Clean/maintain equipment	Safe disposal of waste	No protective measures taken	Do not know
Mainland (Men)	45.3	83.3	3.3	3.4	9.4	0.6
Mainland (Women)	37.1	80.8	1.8	1.6	13.5	2.2
Rural (Men)	42.1	84.8	1.6	3.6	9.7	0.2
Rural (Women)	32.4	85.0	1.0	1.6	10.2	2.1
Urban (Men)	57.2	79.0	7.8	2.9	8.4	1.9
Urban (Women)	49.2	73.8	3.0	1.6	19.1	2.4
Agro-Ecological Zone						
Alluvial (Men)	58.9	69.0	6.4	8.9	14.6	1.0
Alluvial (Women)	50.6	77.7	4.5	2.5	15.2	0.1
Arid (Men)	29.1	81.5	0.0	5.3	13.2	0.0
Arid (Women)	26.8	76.2	0.9	0.0	20.0	3.0
Coastal (Male	56.9	90.8	0.0	0.0	6.9	2.3
Coastal (Women)	42.6	85.3	2.0	0.0	8.3	4.4
Highland (Men)	41.6	82.1	3.7	3.5	10.5	0.2
Highland (Women)	30.8	79.6	0.6	5.8	11.0	3.0
Plateaux (Men)	49.7	93.0	0.0	0.0	7.0	0.0
Plateaux (Women)	42.2	80.8	0.0	0.0	16.6	2.6
Semi-Arid (Men)	33.9	91.3	7.5	0.0	1.2	0.0
Semi-Arid (Women)	25.8	91.2	0.0	0.0	5.1	3.7

7.2.6 Sustainable Agricultural Practices

Sustainable agricultural practices support long-term soil health, reduce vulnerability to climate shocks, and increase the productivity of smallholder farmers. This subsection looks at the adoption of key sustainable practices, including crop rotation, mixed cropping, and intercropping across Mainland Tanzania, broken down by gender and ecological zone. These practices are crucial for building resilience, enhancing soil fertility, and decreasing the environmental impact of chemical inputs. Understanding adoption patterns helps identify opportunities for expanding gender-responsive climate-smart agriculture.

The 2025 TGES results show that adoption of sustainable agriculture varies by ecological zone, with intercropping the most common technique, followed by mixed cropping (Table 7.6). Crop rotation is less practiced, especially in lowland and coastal areas. Men and women participate at similar rates, though variations exist by zone. Highlands, Plateaux, and Semi-Arid zone show higher adoption due to established farming traditions, while Coastal and Alluvial Plains indicate a need for targeted support.

Table 7. 6: Percentage Distribution of Adoption of Sustainable Agricultural Practices by Gender and Place of Residence; Mainland Tanzania, 2025 TGES

Zone / Sex	Crop Rotation	Mixed Cropping	Intercropping
Mainland (Men)	20.2	26	27.8
Mainland (Women)	20.2	26	27.8
Rural			
Men	Similar to national	Similar to national	Similar to national
Women	Slightly lower	Similar to national	Similar to national
Urban			
Men	Lower than rural	Comparable	Comparable
Women	Lower than rural	Comparable	Comparable
Agro-Ecological Zone			
Alluvial			
Men	Lower	Moderate	Moderate
Women	Lower	Moderate	Moderate
Arid			
Men	Moderate	Moderate	Moderate
Women	Moderate	Moderate	Moderate
Coastal			
Men	Low	Moderate	Moderate
Women	Low	Moderate	Moderate
Highland			
Men	Higher	Moderate	High
Women	Higher	Moderate	High
Plateaux			
Men	Moderate	Moderate	High
Women	Moderate	Moderate	High
Semi-Arid			
Men	Moderate	Higher	Moderate
Women	Moderate	Higher	Moderate

7.3 Fishing Practices

Fishing is a small but locally important livelihood activity in Mainland Tanzania, especially in rural communities near rivers, floodplains, wetlands, and small inland lakes. Although national participation is low compared to agriculture and forest-related activities, fishing plays a key role in food security, dietary diversity, and income generation for certain ecological zones. Gender differences are significant in this regard. The results indicate that men dominate in fishing activities, while women's involvement is limited due to cultural norms, reduced mobility, and unequal access to fishing assets and water resources.

Environmental and climate-related pressures, such as declining fish stocks, changing water levels, increased sedimentation, and seasonal droughts are affecting how households interact with aquatic ecosystems. Understanding fishing practices provides insights into how gender roles, environmental changes, and climate variability shape livelihood strategies, vulnerability, and resilience in Tanzania.

7.3.1 Participation in Fishing

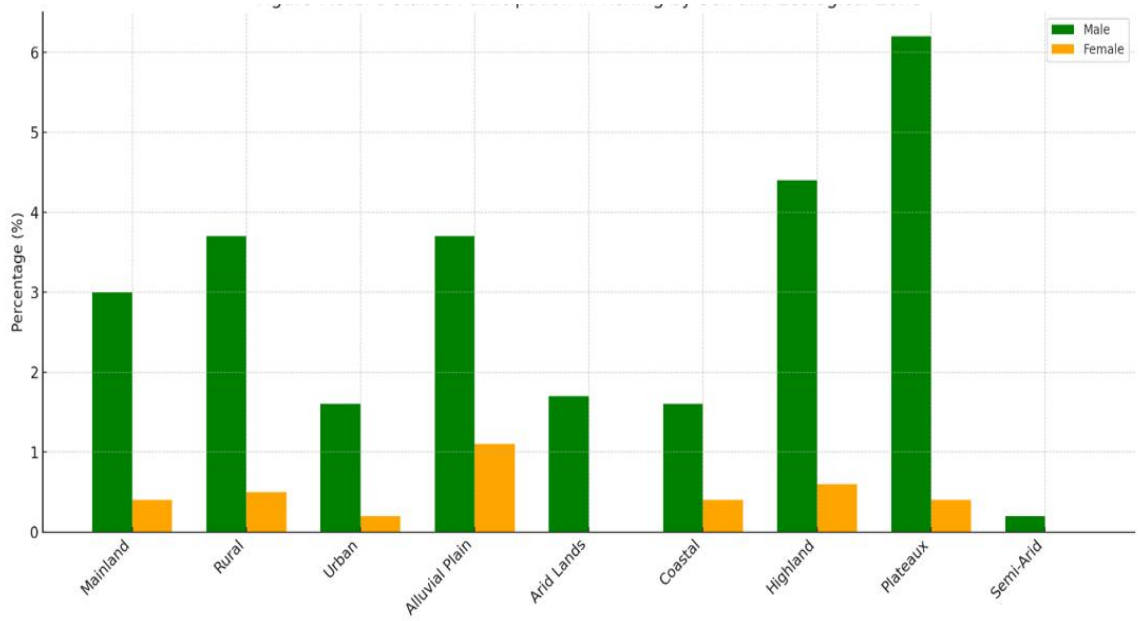
Participation in fishing varies widely across ecological zones. Fishing is powerfully shaped by gender roles, proximity to water bodies, and local livelihood systems. Understanding who participates and where provides insight into household dependence on aquatic ecosystems, and exposure to climate-related changes in fish availability.

Participation in fishing reveals a significant gender gap, with men being far more engaged than women across all ecological zones. Rural areas exhibit higher levels of fishing involvement compared to urban settings. However, the Plateaux and Highland zones emerge as the primary fishing hotspots for men. In contrast, women's participation remains consistently very low across locations, and fishing activity is nearly nonexistent in the Semi-Arid Lands, as illustrated in Figure 7.1.

Fishing is clearly a minor livelihood activity when viewed nationally, with only 3 per cent of men and 0.4 per cent of women reporting participation. Rural communities are more involved than urban ones. This is because many rural areas are surrounded by rivers, lakes, and wetlands, as well as fewer non-farm job opportunities. The Plateaux and Highland zones stand out as hubs for men's fishing, with 6.2 per cent and 4.4 per cent of men participating,

respectively. However, participation is lower in the Semi-Arid Lands, where water sources are scarce and highly seasonal. Women's participation remains low across all zones, peaking at just 1.1 per cent in the Alluvial Plains, where near-shore and small-scale activities are more feasible. Overall, the results show that fishing is a gendered, niche livelihood, concentrated in specific ecological settings, and mainly dominated by men (Figure 7.1).

Figure 7. 1: Percentage Distribution of Participation in Fishing by Gender and Place of Residence; Mainland Tanzania, 2025



7.3.2 Purpose of fishing

Fishing serves multiple purposes, ranging from household consumption to income generation. The balance between subsistence and commercial fishing differs across areas and between men and women, reflecting livelihood strategies, access to fishing gear, and market opportunities.

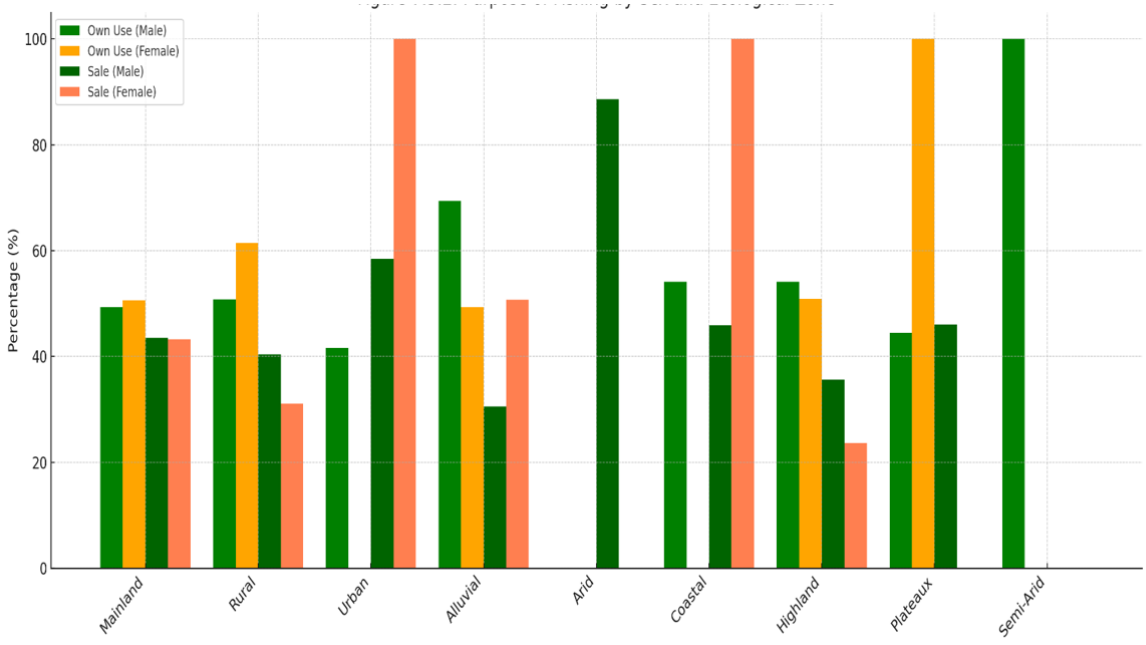
Fishing serves both subsistence and commercial purposes, with men often being more commercially oriented, while women primarily fish to support household food needs. In urban areas, there is generally a more commercial fishing profile, whereas subsistence fishing is more common in certain ecological zones. Additionally, wage-based fishing is mostly

practiced by men, highlighting gender differences within the fishing industry, as indicated in Figure 7.2.

The purposes of fishing are heavily influenced by gender and ecology. At the national level, men and women are roughly equal when it comes to fishing for subsistence and for income. This pattern highlights the dual role of fisheries in providing food and livelihoods. Wage fishing is a small men-dominated niche, mostly found in the Arid Lands, where 11.4% of men fishers work for pay in more commercial operations (Figure 7.2).

Patterns vary significantly by zone. In the Alluvial Plains men fishing is for subsistence (69.4%), while in Semi-Arid Lands, male fishing is primarily for personal use (100%). This is an indication that fishing mainly serves as a buffer against food shortages and seasonal changes. Conversely, the Arid Lands and urban areas are highly commercial: 88.6% of male fishers in Arid zones, and 58.4 per cent in urban settings sell their catch. Although women fishing is less common, it notably has a strong commercial aspect in Coastal and urban areas, where all women fishers report fishing for sale. In the Plateaux, women fish exclusively for household consumption, highlighting different gender roles even within the same ecological context.

Figure 7. 2: Percentage Distribution of Purpose of Fishing by Gender and Place of Residence; Mainland Tanzania, 2025 TGES.



7.3.3 Changes over Time

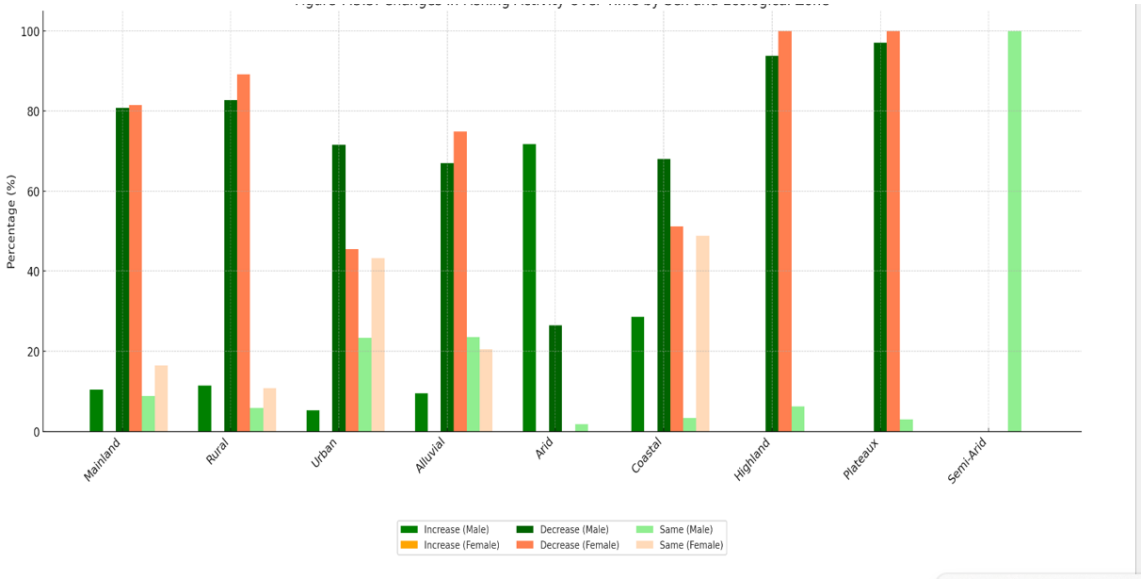
Fishing communities across mainland Tanzania have observed significant changes in fish availability and fishing activities over time. The 2025 TGES results show that most fishers report a decline in fishing activity, particularly in rural communities, which experience reduced opportunities, as indicated in Figure 7.3. In contrast, urban fishers report mixed experiences, with some maintaining stable access to resources. Various ecological zones have shown long-term declines in fish availability. However, a few areas have reported emerging or expanding fishing opportunities, often associated with environmental or infrastructural changes. These shifts reflect broader environmental pressures, climatic variability, and resource degradation affecting the livelihoods of these communities.

In Mainland Tanzania, fishing is widely seen as a diminishing activity. Approximately 81 per cent of men and 82 per cent of women report a decline in fishing over time (Figure 7.3). This sentiment is particularly strong in rural areas, where more than four in five fishers acknowledge a decrease in fish catch. This trend likely results from a combination of factors, including reduced fish stocks, fluctuating water levels, environmental degradation, and increased competition.

Urban areas present a more complex situation. While 71.5 per cent of urban men fishers report a decline, women are nearly evenly divided between those experiencing a decrease and those reporting no change. The results show that 11.2 per cent of women were unsure whether there are any changes happening. This possibly reflects the diverse, smaller-scale, or intermittent nature of fishing activities.

Ecological patterns enhance the story. In the Highlands and Plateaux, nearly all respondents, over 93 per cent of men and all women report that fishing has declined, indicating significant pressure on inland fish resources. Conversely, the Arid Lands stand out as an anomaly. In this zone, 71.7 per cent of men fishers report an increase in fishing over time. This may suggest new or expanded fishing sites, such as dams or reservoirs, or a recent shift into fishing as households diversify under climate stress. In the Semi-Arid Lands, the few fishers present report no change, pointing to small, stable, but limited fishing opportunities.

Figure 7. 3: Percentage Distribution of Changes Over Time by Gender and Place of Residence; Mainland Tanzania, 2025 TGES.



7.3.4 Environmental Risks and Practices

Fishing activities generate waste that significantly impacts water quality and aquatic ecosystems. Many fishers dispose of this waste in environmentally harmful ways. The results show that women are more likely to use methods that directly affect water bodies than men. While some recycling practices exist, they are limited, and certain ecological zones rely heavily on storing or burning waste due to a lack of alternatives. Poor waste management contributes to ecosystem degradation and health risks.

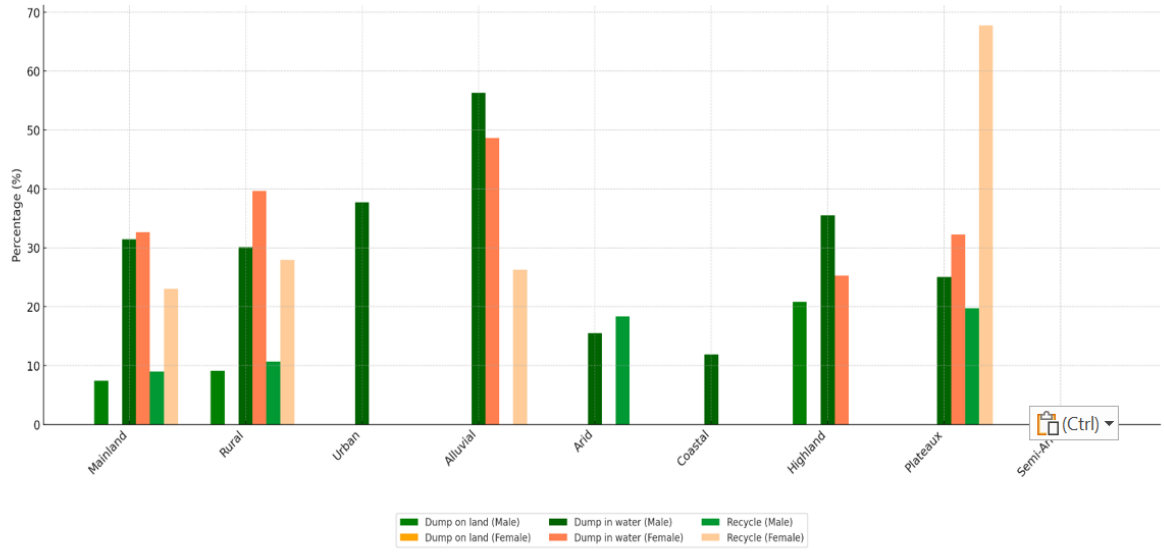
Waste-handling practices related to fishing present clear environmental risks and show notable gender differences. In Mainland Tanzania, about one-third of both men and women dispose fishing waste on land, contributing to local pollution and health hazards (Figure 7.4). However, women (23.0%) are more likely to dump waste directly into rivers, lakes, or the sea than men who are. 8.9 per cent only. It was observed that 27.9 per cent of rural women, and 10.7 per cent of rural men dump waste directly into rivers, lakes, or the sea. This indicates limited access to safe disposal options and less emphasis on women in environmental education programs.

Recycling nets, lines, or other materials is quite common among men (about 26% on the mainland and in rural areas), while women recycle less often. Urban men tend to discard waste on land or recycle it, whereas urban women mostly keep or store waste (over 80%).

This practice may reduce immediate pollution, but can still lead to long-term environmental and health problems if accumulated waste is not managed safely in the long term (Figure 7.4).

Agro-ecological zones reveal additional concerns, as Figure 7.4 illustrates. Alluvial and coastal zones experience high levels of dumping and burning, practices that can harm sensitive aquatic and coastal ecosystems. In arid lands, 66.1% of male fishers keep or store waste, likely due to limited disposal options near scarce water bodies. Overall, the findings indicate that waste management related to fishing is often informal and poses environmental risks, with women in particular being more likely to adopt practices that directly impact water quality.

Figure 7. 4: Percentage Distribution of Environmental Risks and Practices (Waste Disposal) by Gender and Place of Residence; Mainland Tanzania, 2025 TGES



7.4 Aquaculture Practices

Aquaculture is emerging as a supplementary livelihood activity in Mainland Tanzania. However, participation remains very low compared to other environmental practices. Engagement in aquaculture practices is basically influenced by ecological factors, water access, land availability, and technical knowledge. This section highlights national patterns of aquaculture participation, the purpose of production, the use of inputs such as feed and antibiotics, and the locations of fishponds across different ecological zones.

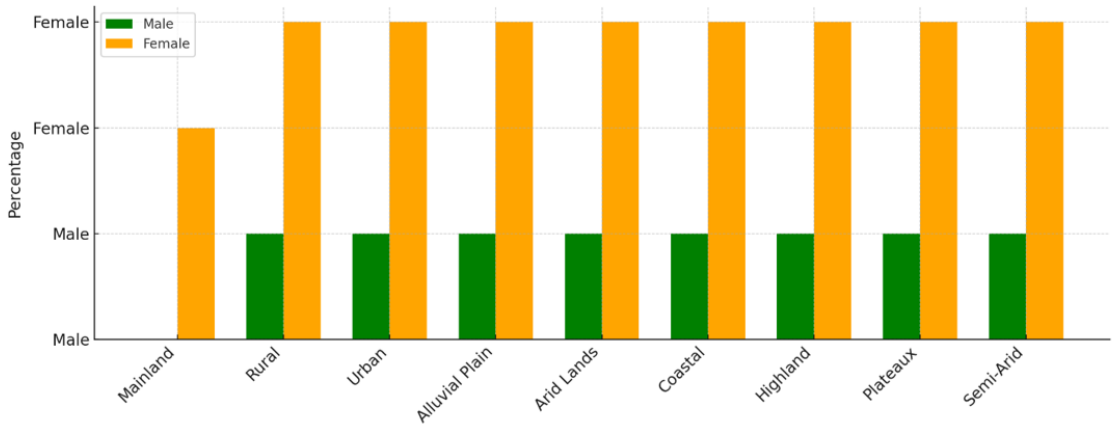
7.4.1 Participation in Aquaculture

Aquaculture is one of the least practiced livelihood activities in Mainland Tanzania, with minimal participation across ecological zones, especially among women. Overall involvement in aquaculture is very low, but slightly higher in rural areas compared to urban settings. Only a few ecological zones exhibit any meaningful presence of aquaculture. The results show that barriers such as land access, water availability, and lack of technical support further hinder its adoption, particularly among women.

Aquaculture participation remains very low across Mainland Tanzania, with fewer than one per cent of adults involved. Men participate slightly more than women, but women's involvement is nearly non-existent. Nationally, only 0.1 per cent of men are engaged in aquaculture, and no women are reported. Participation rises slightly in rural areas to 0.2 per cent for men, but stays at zero for women, with no involvement recorded in urban areas for both men and women (Figure 7.5).

Ecological differences reveal small pockets of activity. It has been revealed that the Alluvial Plains have the highest participation (0.4% of men and 0.1% of women), followed by the Plateau Zone (0.3% men; 0.2% women). All other ecological zones show almost no engagement. These patterns indicate that aquaculture remains a very minor livelihood activity. It is limited to a few suitable locations with access to water and small-scale pond systems.

Figure 7. 5: Percentage Distribution of Participation in Aquaculture by Gender and Place of Residence; Mainland Tanzania, 2025 TGES

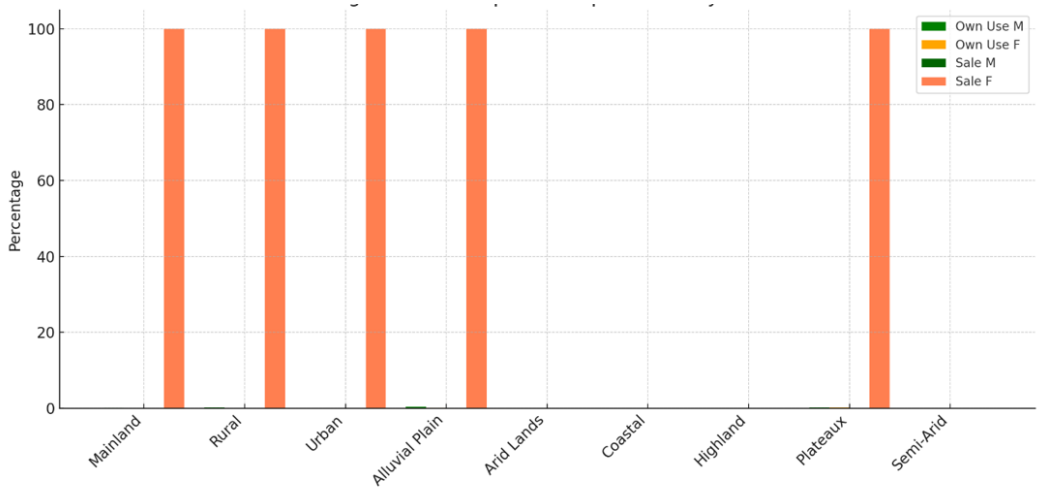


7.4.2 Purpose of Aquaculture

In areas where aquaculture occurs, clear gender roles strongly influence what motivates people to participate in this sector. Men primarily engage in aquaculture for commercial purposes, aiming to earn income, whereas women mostly participate for household consumption, focusing on food security (Figure 7.6). This gender-based pattern highlights different livelihood goals. It has been shown that men pursue commercial opportunities, while women focus on subsistence aquaculture. Overall, the reported participation patterns and the purpose of the activity reflect broader social dynamics, showing how gender roles shape the purpose and nature of aquaculture in these areas.

Aquaculture serves distinct purposes for men and women in Mainland Tanzania, reflecting strongly gendered patterns of production. Men exclusively engage in aquaculture for commercial purposes, with 100 per cent of male participants producing fish for sale in every zone where aquaculture is practiced. In contrast, women participate only for their household's own use, with 100 per cent reporting subsistence use in all areas except the Alluvial Plains, where numbers are minimal (Figure 7.6). These patterns emphasize a strong gender division in aquaculture roles, with men focusing on income generation and women on household food needs.

Figure 7. 6: Percentage Distribution of Purpose of Aquaculture by Gender and Place of Residence; Mainland Tanzania, 2025 TGES



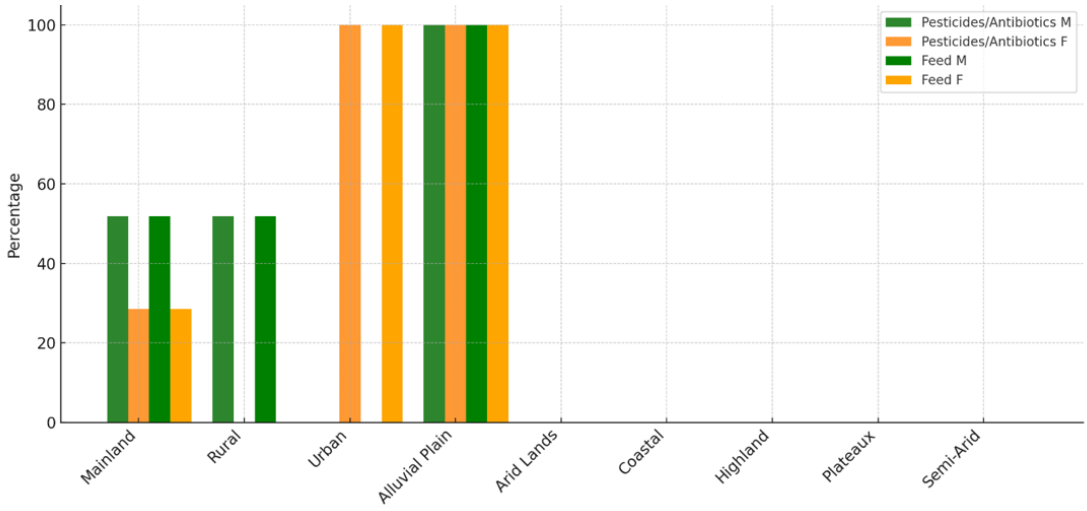
7.4.3 Use of Inputs

Input use in aquaculture such as pesticides, antibiotics, and feed offers valuable insights into production intensity, environmental impacts, and potential health risks. The findings of the 2025 TGES show that input use in aquaculture varies by genders. For instance, men and women exhibit variations in the use of pesticides and antibiotics, with women generally relying on fewer chemical inputs (Figure 7.7). In certain zones, aquaculture systems operate without any chemical inputs, highlighting a diverse range of practices. Additionally, feed use is prevalent in areas where aquaculture is practiced. These differing patterns of input use not only reflect the resource dynamics between genders, but also carry significant environmental implications. This observation suggests the need for careful monitoring to mitigate potential adverse effects.

The use of inputs in aquaculture varies by location and between men and women, reflecting differences in scale, knowledge, and resource access, as shown in Figure 7.7. In Mainland Tanzania, men are nearly evenly split between intensive and low-input systems, with 51.9 per cent using both pesticides and antibiotics and 48.1 per cent using neither. Women, however, rarely depend on chemical inputs, with 71.5 per cent reporting no use and only 28.5 per cent applying both pesticides and antibiotics.

The pattern shifts in the Alluvial Plains, where 100 per cent of women who practice aquaculture report using both pesticides and antibiotics, indicating more intensive or commercial setups. In contrast, producers in the Plateau zone report no use of chemical inputs. Feed use is consistently high wherever aquaculture exists, with 100 per cent of men and women using feed in Mainland, Rural, Alluvial Plains, and Plateau areas. In urban areas, 0 per cent of men use feed, while 100 per cent of women do. These findings highlight the diversity of aquaculture practices, and underscore the need for strengthened extension services to promote safe, efficient, and sustainable input use.

Figure 7.7: Percentage Distribution of Use of Inputs in Aquaculture by Gender and Place of Residence; 2025 TGES



7.4.4. Pond Location

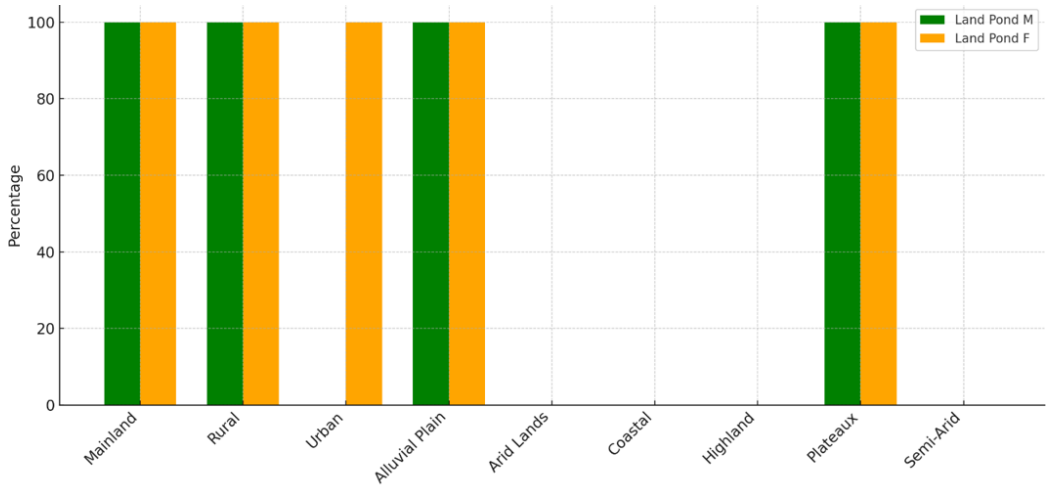
The location of aquaculture ponds, mainly land-based, greatly affects their productivity, climate risk exposure, and environmental sustainability. Gendered disparities exist in pond placement, as men and women have different access to land and resources. While most producers use land-based ponds, women have restricted access, thus they tend to seek alternative locations. Factors like land ownership, water rights, and environmental conditions shape pond placement. However, land-based ponds are more vulnerable to drought and water scarcity, making equitable access to resources critical for enhancing resilience to climate impacts.

The 2025 TGES results indicate that aquaculture in Mainland Tanzania is primarily land-based, especially among men. Nationally, 100 per cent of male producers operate land ponds, but women are 71.5 per cent only. This disparity reflects men's greater access to land, and their control over production sites. In rural areas, land-based ponds are widely used, with both men and women engaging in aquaculture. This trend is also observed in the Plateaux zone, where all producers rely on land ponds (Figure 7.8).

The findings indicate further that some women in specific zones utilize alternative pond locations. Notably, 28.5 per cent of women on the mainland operate ponds in non-land sites. In the Alluvial Plains and Urban areas, 100 per cent of women use alternative locations for their ponds. These patterns illustrate the gendered differences in access to land. This is an

indication that women may often depend on improvised or shared spaces for aquaculture due to limited land ownership or control.

Figure 7. 84: Percentage Distribution of Aquaculture Pond Location by Gender and Place of Residence; Mainland Tanzania, 2025 TGES



7.5. Forest Practice

Forest practices are a crucial part of household livelihoods throughout Mainland Tanzania. Families engage in various activities, such as gathering both edible and non-edible plants, collecting firewood, hunting, and participating in a range of forest-based and conservation efforts. These practices demonstrate the strong reliance on natural forests for energy, food, traditional medicine, construction materials, and income. The practices are particularly common among communities in rural and agroecological areas. This section explores the scale and purposes of forest practices, highlighting gender differences, opportunities for income generation, and ecological variations. It also assesses the extent to which conservation behaviors promote sustainable forest management.

7.5.1. Gathering of Forest Edible Products

In Mainland Tanzania, collecting edible forest products like wild fruits, mushrooms, honey, and nuts is a crucial livelihood and nutrition strategy, especially for rural households, as Figure 7.9 illustrates. Women are more actively engaged in foraging, while men participate in specific seasons only. The nature of participation in hunting among men and women highlights traditional gender roles. Rural communities depend more on these resources than urban

areas, particularly in biodiversity-rich zones such as the Highlands and Alluvial Plains. Participation in gathering rises during times of food shortages or poor crop yields. However, this important activity remains largely informal and unregulated, raising concerns about sustainability and the risk of overharvesting.

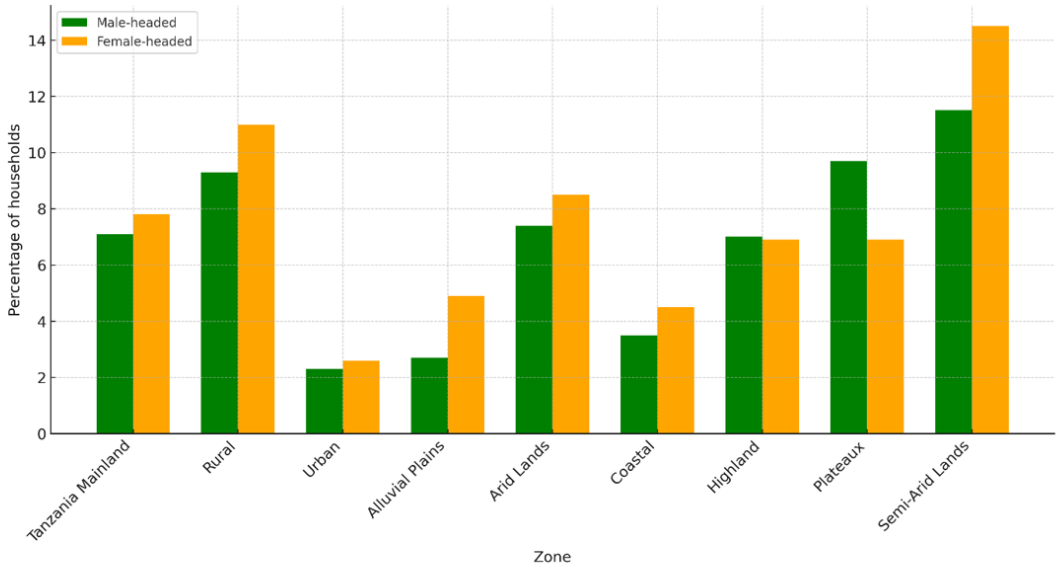
The 2025 TGES results show that at the national level, 7.1 per cent of men-headed households, and 7.8 per cent of women-headed households collect edible forest products. Participation is slightly higher in rural areas, with 9.3 per cent of men-headed rural households, and 11 per cent of women-headed rural households involved in edible gathering. In contrast, urban participation is very low, with only 2.3 per cent of urban men-headed households involved, and 2.6 per cent of urban women-headed households reporting involvement. This reflects limited access to forests and alternative food markets in urban settings (Figure 7.9).

Participation across agroecological zones varies widely. The Semi-Arid Lands have the highest involvement, with 11.5 per cent of men-headed and 14.5 per cent of women-headed households collecting edible plants. The Plateaux zone also shows relatively higher participation (9.7% male; 6.9% female), consistent with its woodland and mixed farming environments that support foraging. The Highland zone exhibits moderate engagement (7% male; 6.9% female), while the Alluvial Plains show mixed patterns, lower male participation (2.7%), but higher female involvement (4.9%).

Conversely, the Coastal zone shows limited overall involvement, with only 3.5 per cent of men-headed and 4.5 % of women-headed households reporting edible plant gathering. The Arid Lands also show modest levels (7.4% men; 8.5% women), which may reflect reliance on specific seasonal products adapted to dry conditions.

Gender disparities are visible in almost all zones, with women-headed households generally more involved in collecting edible forest products than men-headed households. This reflects gender norms related to food preparation, foraging knowledge, and household nutrition duties. Although gathering edible plants is not common nationwide, their significance in specific zones, especially in the Semi-Arid and Plateaux zones, indicates that these products remain a vital part of rural food systems and forest-dependent livelihoods, particularly for climate adaptation and seasonal food security.

Figure 7. 9: Percentage Distribution of Household gathering edible plants by Gender and Place of Residence; Mainland Tanzania, 2025 TGES



7.5.2. Firewood Gathering

Firewood remains one of the most widely used forest resources across mainland Tanzania. This is particularly common among rural communities where access to alternative energy sources is limited. This subsection explores how households collect firewood, focusing on differences by the sex of the household head, settlement type (Mainland, rural, urban), and agroecological zone. Understanding these patterns is important because dependence on firewood directly contributes to forest degradation, soil erosion, and reduced ecosystem resilience, particularly in areas already facing climate-related stresses (Figures 7.10 and 7.11).

Firewood collection is much more common among rural communities, and female-headed households. This reflects gendered energy responsibilities and limited access to clean alternatives. Across nearly all agroecological zones, the proportion of households that gather firewood is significantly higher among women-headed than men-headed households. The results show that there are considerable differences in the Plateaux and Semi-Arid Lands. These patterns indicate that energy poverty remains closely linked to gender and geography, placing disproportionate strain on forest ecosystems in rural and ecologically fragile zones, as Figures 7.10 and 7.11 demonstrate.

Firewood gathering is common nationwide, with 34.6 per cent of women-headed households and 22.2 per cent of men-headed households collecting firewood in Mainland Tanzania. The findings indicate that the rural–urban gap is significant. In rural areas, 47 per cent of women-headed households and 28.5 per cent of men-headed households gather firewood, compared to only 14.7 per cent of urban female-headed households and 8.8 per cent of urban male-headed households. This highlights rural dependence on biomass. These variations as shown in Figures 7.10 and 7.11.

The results indicate further that participation varies greatly across agroecological zones. The Plateaux zone has one of the highest rates among women (49% women versus 20.7% men), while the Semi-Arid Lands also exhibit high levels (44.2% women versus 27.8% men). Conversely, the Alluvial Plains show relatively lower rates (26.3% women versus 20.1% men), and the Highland zone has moderate participation (33.8% women versus 26.9% men). The Coastal zone has the lowest recorded participation rates, with only 10.1 per cent of women-headed households and 10.9 per cent of men-headed households participating in firewood gathering activity (Figures 7.10, 7.11 and 7.12).

Gender disparities are consistent across agro-ecological zones. The 2025 TGES results show that female-headed households have higher firewood-collection rates in nearly all ecological settings. This pattern reflects entrenched gender roles in household energy provision, and the limited availability or affordability of modern energy sources for women. The findings suggest that firewood remains a vital yet environmentally costly household energy source, especially in rural, Plateaux, Highland, and Semi-Arid areas where extraction is most intense.

Figure 7. 5: Percentage Distribution of Household earnings from forest plants by Gender and Place of Residence; Mainland Tanzania, 2025 TGES

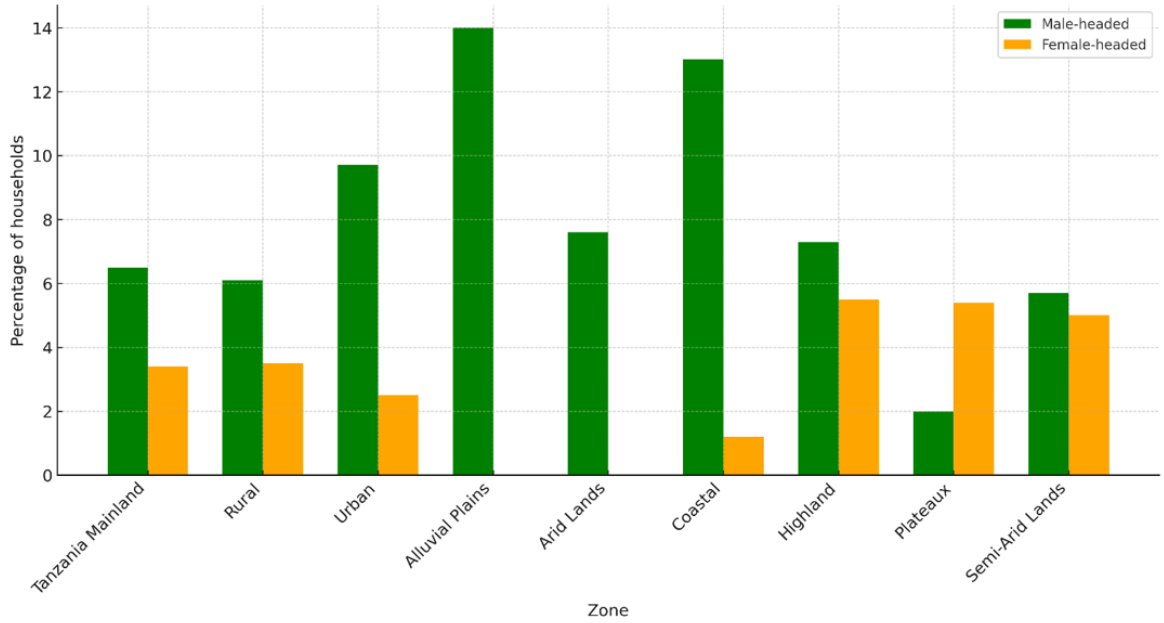


Figure 7. 11: Percentage Distribution of Households gathering firewood by Gender and Place of Residence; Mainland Tanzania, 2025 TGES

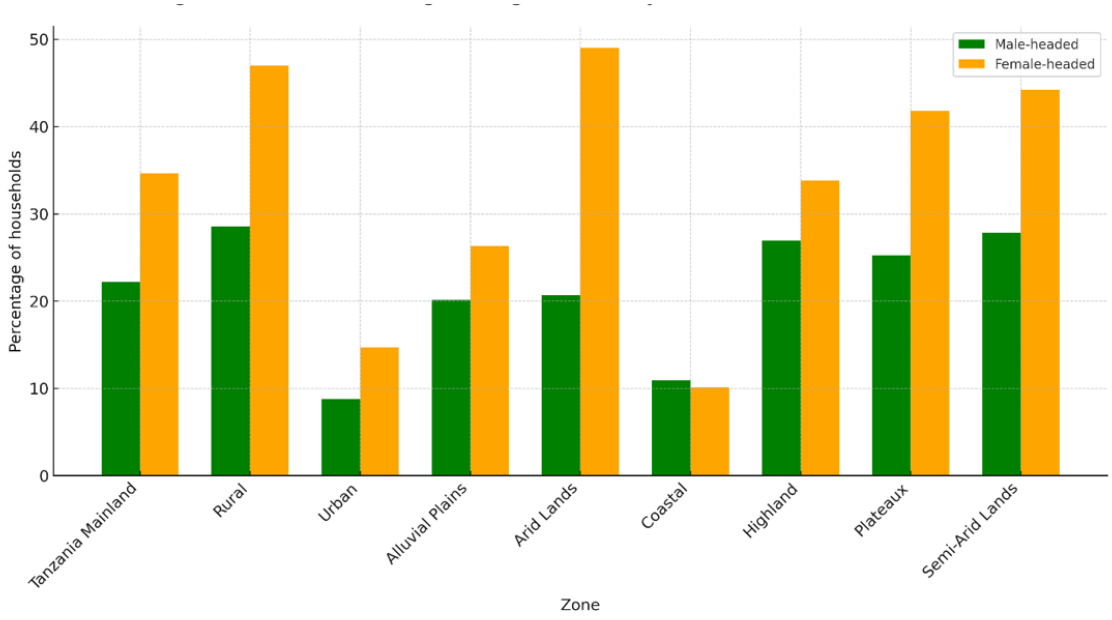
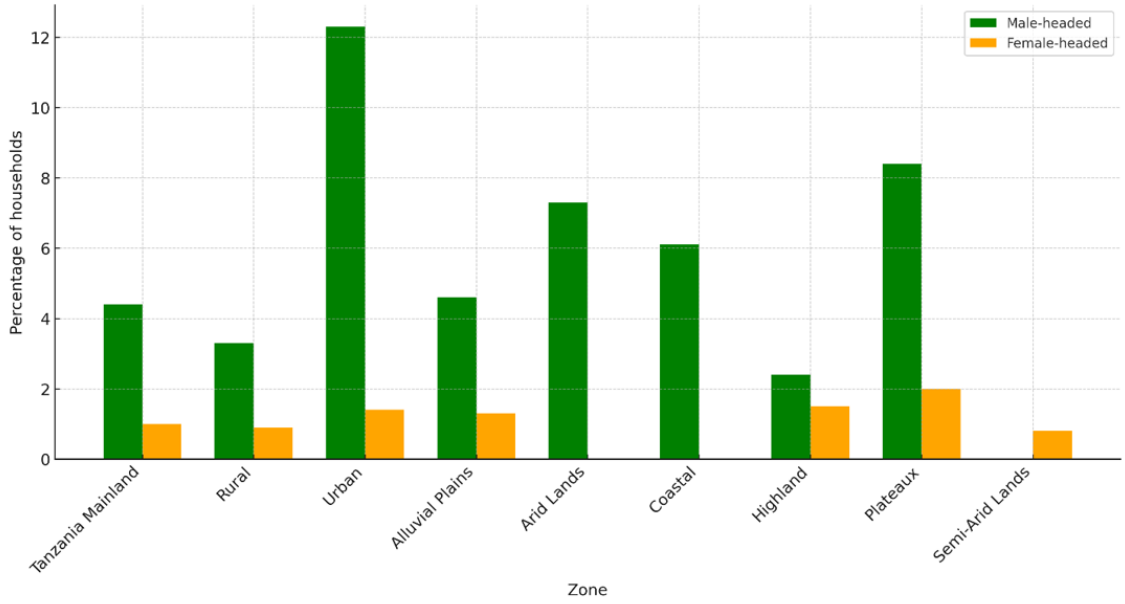


Figure 7. 12: Percentage Distribution of Households earning income from firewood by Gender and Place of Residence; Mainland Tanzania, 2025 TGES



7.5.3. Collection of Non-Edible Forest Products

Forest practices play a vital role in the livelihoods of households across Mainland Tanzania. Families engage in activities such as gathering edible and non-edible plants, collecting firewood, hunting, and participating in conservation efforts. These practices highlight the extent to which rural communities depend on natural forests for energy, food, traditional medicine, construction materials, and income. This section examines the scale and purpose of these activities in relation to gender differences, income-generating opportunities, and ecological variations. Also, the section evaluates how conservation behaviors contribute to sustainable forest management (Figure 7.13).

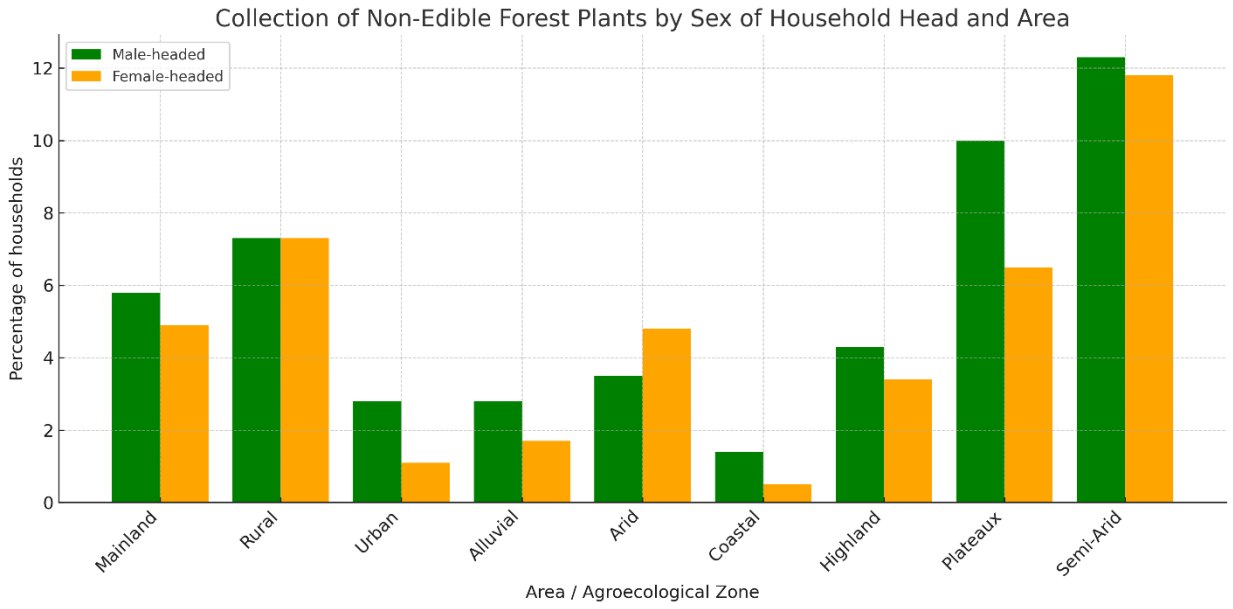
The 2025 TGES results demonstrate that in Mainland Tanzania, 5.8 per cent of men-headed households and 4.9 per cent of women-headed households collect non-edible forest plants. Participation rises slightly in rural areas, where 7.3 per cent of both men-headed and women-headed households engage in this activity. In urban areas, the activity is less common, with only 2.8 per cent of men-headed households and 1.1 per cent of women-headed households' participation. The pattern of participation for urban community reflects lower access to natural vegetation and a greater dependence on purchased materials (Figure 7.13).

The findings show significant variation across different agroecological zones. It has been observed that the Semi-Arid Lands have the highest participation rates, with 12.3 per cent of men-headed households and 11.8 per cent of women-headed households collecting non-edible plants. This likely reflects broader pastoral and construction needs in these areas. The Plateaux zone also shows higher participation (10% men; 6.5% women), consistent with a long-standing dependence on forest vegetation for building and craft materials.

In contrast, the Coastal zone has the lowest participation rate, with only 1.4 per cent of men-headed households and 0.5 per cent of women-headed households collecting non-edible plant materials. The Highland and Alluvial Plains zones show moderate but gendered differences: Highland (4.3% men; 3.4% women) and Alluvial Plains (2.8% men; 1.7% women). Arid Lands report very low levels (3.5% men; 4.8% women), possibly due to limited vegetation availability. The results are summarized in Figure 7.13.

Overall, although collecting non-edible plants is less intensive than other forest activities, it remains ecologically significant. The higher participation in Plateaux and Semi-Arid zones emphasizes the need for sustainable harvesting and regeneration approaches to avoid overexploitation of vital vegetation resources, especially in areas where natural recovery is slow.

Figure 7. 13: Percentage Distribution of Collection of Non-Edible Forest Products by Gender and Place of Residence; Mainland Tanzania, 2025 TGES



7.5.4. Conservation Practices

Conservation practices are essential for household interactions with forest ecosystems, impacting regeneration, biodiversity, and long-term sustainability. This section first explores conservation behaviors in Mainland Tanzania, differentiating between rural and urban households to highlight patterns of participation and gender roles in forest stewardship. The national analysis is distinct from the subsequent agroecological zone assessment. The former reveals disparities in access, awareness, and resource dependence, while the latter illustrates how agroecological conditions influence specific conservation efforts. Together, these perspectives offer a comprehensive understanding of household contributions to forest conservation in Mainland Tanzania.

7.5.4.1. Forest Conservation Practices

Conservation practices are crucial for sustaining forest ecosystems and minimizing environmental degradation. This subsection explores how households in Mainland Tanzania, both in rural and urban settings engage in practices like selective harvesting, fallowing, ecosystem regeneration, rotational grazing, and other protective measures. The analysis offers a national overview of conservation behaviors and identifies areas where limited adoption could weaken climate resilience and sustainable resource use.

Engagement in conservation practices in Mainland Tanzania is low, especially among female-headed households. The results show that women do not take any protective measures to conserve the forest. Rural households show slightly more involvement in practices like fallowing and rotational grazing than urban ones, but overall, non-participation is common. While specific ecological zones may exhibit some conservation behaviors, most households focus on resource extraction rather than stewardship, highlighting a gap in ecosystem preservation (Table 7.7).

The 2025 TGES findings reveal that households in Mainland Tanzania do not widely adopt conservation practices. At the national level, 68.4 per cent of men-headed households and 82.8 per cent of women-headed households report taking no conservation measures. The gender gap observed here is consistent across settlement types. For example, it has been reported that in rural areas, 70.7 per cent of men-headed households and 85.6 per cent of women-headed households do not employ conservation actions. In urban areas 37.4 per cent

of men-headed households and 31.8 per cent of women-headed households report no conservation behaviour (Table 7.4).

Among households practicing conservation activities, rotational grazing is the most common method, especially in rural areas. It is reported by 12.6 per cent of men-headed households and 7.7 per cent of women-headed households. Fallowing or intermittent collection is also observed but at lower levels, with 6.9 per cent of rural men-headed households and 1.5 per cent of rural women-headed households adopting this practice.

Similarly, the adoption of regeneration and ecosystem protection rules remains limited, with only 4.3 per cent of rural men-headed households and 2.6 per cent of rural women-headed households participating. In contrast, urban households show higher involvement, with up to 32.5 per cent of men-headed and 56.5 per cent of women-headed households engaged. This reflects the presence of localized urban forestry initiatives or specific resource governance structures (Table 7.4).

Selective harvesting, often indicating ecological awareness and sustainable extraction, shows minimal adoption across different settlement types. This practice rarely exceeding 1 per cent, except in certain ecological zones. It is not reflected in Mainland Tanzania, Rural, or Urban summaries. "Other conservation measures" also remain negligible, typically below 0.5 per cent.

The consistently high rates of non-participation across all settlement types highlights a national challenge. The findings suggest that despite reliance on forest resources for energy, grazing, and household needs, most households do not take measures that support regeneration or long-term ecological health. This gap has significant implications for climate vulnerability, deforestation trends, and long-term livelihood security.

Table 7.7: Summary of Conservation Statistics for Mainland Tanzania and Rural Urban, 2025 TGES

Indicator	Statistics
Mainland Tanzania – No conservation measures	Men: 68.4%• Women: 82.8%
Rural – No conservation measures	Men: 70.7%• Women: 85.6%
Urban – No conservation measures	Men: 37.4% • Women: 31.8%
Most practiced conservation action (nationally)	Rotational grazing: up to 12.6% (rural male)
Least practiced conservation action	Selection of specimens: 0–1.2%across most settlement types
Largest gender gap	Mainland: women not practicing conservation 14 points higher than men
General pattern	conservation measures remain minimal, with non-practice levels above 60% in all settlement types

7.5.4.2: Forest Conservation Practices- Agroecological Zones

Conservation practices differ greatly across agroecological zones, reflecting variations in environmental pressure, cultural land-use norms, livestock systems, and access to natural resources. This subsection explores household involvement in six key conservation practices across Alluvial Plains, Arid Lands, Coastal zone, Highland, Plateaux, and Semi-Arid zones. The analysis emphasizes spatial patterns of conservation behavior, and identifies where adoption is most or least prevalent. Attention is given to gender differences that affect participation.

Adoption of conservation practices varies considerably across different ecological zones. In all zones, households headed by men tend to participate more than those headed by women. However, the Semi-Arid Lands display a few practices with relatively equal participation. The main pattern observed in most zones is a high rate of non-participation. This highlights

structural issues related to community awareness, capacity, or resource management (Table 7.8).

The 2025 TGES results indicate that conservation practices show significant spatial differences across ecological zones, with some areas exhibiting high participation and others very little. Alluvial Plains stand out as the most active conservation zone, especially among male-headed households. The nature of participation reported in Alluvial Plains is the result of traditional grazing methods and established natural resource management practices. In this zone, 41.8 per cent of men-headed households switch grazing sites, compared with 13.1 per cent of women-headed households. Also, 22.7 per cent of men-headed households engage in selective harvesting, one of the highest rates for a single practice in the dataset, as shown in Table 7.8.

In Semi-Arid Lands, participation in conservation is also relatively higher, especially in rotational grazing, where adoption is balanced between genders (13.9% men; 15.4% women). Regeneration rules and ecosystem protection measures are also more prominent, with 18.1 per cent of men-headed households reporting participation, which is among the highest levels across all zones.

The Highland and Plateaux zones show moderate adoption of conservation measures. Adoption of regeneration rules reaches 5.2 per cent for men and 7.0 per cent for women in Highland zones and increases to 10.1 per cent for men and 16.4 per cent for women in Plateaux areas. Fallowing, a traditional conservation practice is also present in these zones, with adoption rates between 2–9 per cent, mostly among men-headed households.

Coastal and Arid Lands show the lowest levels of conservation engagement. In these areas, various practices, such as selective harvesting, regeneration rules, and alternating grazing have not been recorded as participating among either men-headed or women-headed households. The only exception is a minimal 0.2 per cent uptake of “other conservation measures” in Arid Lands, specifically among female-headed households. Additionally, these zones have the highest percentage of households reporting no conservation practices at all. In Coastal areas, 100 per cent of both male and female-headed households do not engage in any conservation efforts, while in Arid Lands, 100 per cent of women-headed households report the same.

Female-headed households across all ecological zones show consistently lower participation in conservation activities compared with male-headed households. This is often due to structural constraints like limited access to land and resources. Even in areas with better conservation practices, such as the Alluvial Plains and Semi-Arid Lands, female involvement remains lower. However, in rotational grazing, women show slightly higher participation, as indicated in Table 7.8.

Overall, the pattern of conservation behavior across agroecological zones shows that only a small proportion of households are actively engaged in sustainable resource management. Engagement tends to be higher in pastoral and mixed farming systems, while arid and coastal zones exhibit significant gaps that require targeted conservation education and supportive policy measures.

Table 7. 1: Summary of Key Conservation Statistics- Agroecological Zones

Indicator	Statistics
Highest recorded conservation practice	Alternating grazing – Alluvial Plains: 41.8%(Men), 13.1%(Women)
Second-highest conservation activity	Regeneration rules – Semi-Arid: 18.1%(Men), 8.1%(Women)
Zones with zero participation for multiple practices	Coastal Zone, Arid Lands
Strongest men–women gap	Selective harvesting – Alluvial Plains: 22.7%(Men) vs 0% (Women)
Most gender-balanced zone	Semi-Arid: rotational grazing 13.9%(Men) vs 15.4%(Women)
Highest “no conservation measures”	Coastal: 100% (Men & Women); Arid Lands 100% (Women)
Lowest “no conservation measures”	Alluvial Plains: 34.4%(Men) vs 78.9%(Women)

CHAPTER EIGHT

CONCLUSION, POLICY IMPLICATIONS AND RECOMMENDATIONS

8.1. Introduction

Tanzania's environmental sustainability and inclusive development are closely linked with gender equality. Women and men experience environmental changes differently due to socially constructed roles. Also, factors such as unequal access to resources and varying decision-making powers among men and women influence livelihoods, resilience, and vulnerability in both rural and urban areas, and across agro-ecological zones. The 2025 TGES highlights ongoing gaps in women's control over land, forest products, water, and climate-resilient resources, as well as disproportionate unpaid care responsibilities, and limited access to finance, technology, and markets.

Addressing these issues requires policies that recognise existing structural barriers and the potential for transformative change. Based on the results of the 2025 TGES, five evidence-based practical recommendations:

- Strengthen women's land and resource rights; incorporate gender-sensitive climate adaptation and disaster risk reduction into planning and funding;
- Expand women's access to climate-smart technologies, finance, and markets;
- Reduce unpaid care and time burdens through improved infrastructure and services; and
- Institutionalize gender-responsive data collection, monitoring, and participation mechanisms.

Each recommendation aligns with relevant Tanzanian policies and strategies, UN Women guidance, the Sustainable Development Goals, and the Dira 2050. The recommendations provide a clear path to enhance women's agency, strengthen community resilience, and promote equitable and sustainable environmental management.

8.2. Conclusion

Aligning gender-responsive environmental policies with Dira 2050, national strategies, and global commitments will promote fair resource management, resilient communities, and inclusive economic growth in Tanzania. By securing women's land and resource rights, integrating gender into climate adaptation and DRR, expanding access to climate-smart technologies and finance, reducing unpaid care burdens, and institutionalizing gender-responsive data and participation, policymakers can boost productivity, strengthen social protection, and lower vulnerability. Coordinated efforts across ministries, financing mechanisms, and civil society, with clear indicators and accountability will guarantee that interventions are sustainable, scalable, and inclusive, providing long-term benefits for women, men, and future generations.

8.3. Policy Recommendations

- Strengthen women's land and resource rights through legal reforms that ensure their equal rights to own, inherit, and control land. Implement gender-responsive land registration programs with simplified procedures and outreach to women. Dira 2050 emphasizes equitable access to productive resources and formalized land rights to promote investments and economic transformation, supporting its goals for equitable resource governance and broader economic participation.
- Integrate gender-responsive climate adaptation and disaster risk reduction into sector planning and financing. National and subnational climate adaptation, disaster risk reduction, and natural resource management plans should include gender analyses, sex-disaggregated indicators, and specific budget allocations for women-led adaptation initiatives.
- Increase women's access to climate-smart technologies, finance, and markets by providing targeted extension services. Expand gender-responsive extension services, microfinance, and value chain support to help women adopt sustainable technologies, such as efficient cook stoves, irrigation systems, drought-tolerant seeds, and agroforestry practices. Additionally, connect women to markets through gender-sensitive procurement policies.
- To enhance women's participation and agency, it is essential to reduce unpaid care and time burdens. This can be achieved by investing in public services and

infrastructure such as clean water, fuel-efficient energy, childcare, transportation, and rural electrification. Additionally, promoting time-saving technologies and community care systems is crucial. It is important to consider unpaid care in planning and budgeting processes.

- Establish gender-responsive data, monitoring, and participation mechanisms as standard practices. Regularly, collect and utilize sex- and age-disaggregated data, as well as gender-environment indicators, and engage in participatory monitoring that includes women and marginalized groups. Require gender impact assessments for significant environmental and resource policies, and ensure that the findings are linked to budgeting processes.

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