



The State of Modern Energy Cooking Services in Tanzania

A Gender Equality and Social Inclusion (GESI) Perspective

May 2026

ISBN : 978-1-83709-649-7 (Vektor Publishing)



This work is licensed under the Creative Commons AttributionNonCommercial-NoDerivatives 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-ncnd/4.0/>.



Authors: Donata Didas, Mary Swai, Jensen Shuma, Estomih, Sawe, Serena Saligari.

Cite as: Didas, D., Swai, M., Shuma, J., Sawe, E. & Saligari, S. (2026). *The State of Modern Energy Cooking Services in Tanzania: A Gender Equality and Social Inclusion (GESI) Perspective*. Dar es Salaam: TaTEDO-SESO.

Acknowledgement: this report was produced as part of the Mainstreaming Gender Equality and Social Inclusion for a Just Energy Transition in Ethiopia, Malawi, Mozambique, and Tanzania (JustGESI) project. JustGESI is a 3-year interdisciplinary project funded by the UKRI's Ayrton Challenge Programme. The report was prepared by TATEDO-SESO with the support of Loughborough University as part of the desk review conducted within Work Package 1 activities and dedicated to exploring barriers to eCooking access and GESI mainstreaming in the Tanzania energy transition.

For more information visit: justgesi.com

EXECUTIVE SUMMARY

Tanzania is at a pivotal moment in its clean energy transition. With a goal of achieving 75 percent of electricity connectivity by 2030 (REA, 2022), alongside strong national frameworks such as the National Clean Cooking Strategy (NCCS) 2024–2034, the country is well-positioned to accelerate the shift from biomass to modern, efficient, and inclusive electric cooking (eCooking) solutions. This report examines the opportunities, barriers, policies, and gender and social inclusion (GESI) dynamics influencing this transition. Adopting a qualitative research approach, the study draws on extensive academic and grey literature, national surveys, and semi-structured interviews with diverse stakeholders (government agencies, private sector actors, civil society, and end-users) to provide a comprehensive analysis of the current eCooking landscape of Tanzania.

Despite the enabling policy environment, eCooking adoption remains critically low across the country. Currently, only about 2% of households use electricity as their primary cooking fuel, while over 80% continue to rely on traditional biomass. Reliance on firewood and charcoal drives deforestation and household air pollution (HAP), contributing to more than 33,000 premature deaths annually and leading to over US\$39 billion of economic losses. The study finds that while awareness of eCooking benefits (improved health, time efficiency, and environmental sustainability) is gradually increasing, uptake is hindered by deep-seated structural and socio-cultural barriers.

Key findings reveal that high upfront appliance costs, unreliable electricity supply, and persistent misconceptions regarding electricity costs constrain the transition to eCooking. Although the market offers over 16 types of imported appliances, affordability remains low for the average household. Market growth is further stifled by limited financing options, inconsistent appliance quality, and weak after-sales support. The study also highlights the prevalence of fuel stacking and behavioral resistance, with cultural preferences regarding food taste and deep-seated cooking habits slowing the shift away from traditional fuels.

Gender equality and social inclusion (GESI) are central to this study's analysis. Women, as the household members traditionally in charge of tending to energy needs and the primary users of cooking technologies, bear the disproportionate burden of fuelwood collection and exposure to HAP. However, research indicates that women often lack the decision-making power and financial autonomy to purchase eCooking appliances. Furthermore, tenants in multi-tenanted buildings face disincentives due to shared metering systems, and marginalized groups remain underserved by current interventions due to insufficient disaggregated data and GESI integration.

On the policy front, while the NCCS and the National Energy Efficiency Strategy (NEES) 2024–2034 provide clear direction, gaps in policy implementation and weak institutional coordination pose significant hurdles. Initiatives by sector actors—such as TANESCO's on-bill financing, the "Pika Smart" awareness campaign, and result-based financing subsidies—demonstrate growing momentum. Yet, to unlock the full potential of eCooking, a more holistic approach is required.

The report recommends intensified public awareness campaigns to drive behavior change and the expansion of inclusive appliance financing models to address affordability barriers. Strengthening appliance standards, ensuring robust after-sales support, and improving grid reliability are essential technical steps. Institutionally, there must be a stronger focus on GESI-sensitive programming and improved data systems to track gender and social equity outcomes. Finally, deeper coordination among government, utilities, private companies, and development partners is necessary to ensure that Tanzania's clean cooking transition is equitable and leaves no one behind. With strategic interventions, Tanzania can position itself as a continental leader in eCooking innovation, enhancing the wellbeing of its women, youth, and marginalized groups while achieving its climate and development goals.

Contents

Abbreviations	6
1. Introduction.....	8
2. Overview of Cooking Fuels and Practices in Tanzania.....	9
3. Policy Landscape	11
3.1 National Clean Cooking Strategy (NCCS) 2024–2034	11
3.2 National Energy Efficiency Strategy (NEES) 2024–2034.....	12
3.3 National Energy Compact for the United Republic of Tanzania, 2025.....	12
3.4 Rural Energy Master Plan (REMP) 2022/23 – 2029/30.....	13
3.5 Improved Cookstoves (ICS) Country Action Plan, 2014	13
4. Electrification Infrastructure	14
4.1 Electricity Access.....	14
4.2 Availability of eCooking Appliances	15
5. Gender Equality and Social Inclusion (GESI) in Tanzania	15
5.1 Economic Barriers to GESI in Tanzania’s Clean Cooking Transition.....	16
5.2 Social Barriers to GESI in Tanzania’s Clean Cooking Transition	16
5.3 Cultural Barriers to GESI in Tanzania’s Clean Cooking Transition.....	17
5.4 Addressing GESI considerations in Tanzania’s Clean Cooking Transition.....	18
6. Key Actors and Their Roles in Advancing eCooking and GESI in Tanzania’s Clean Cooking Transition	19
6.1 Governmental Actors	19
6.2 Academic and Research Institutions	21
6.3 Development Partners, Programmes, and International Initiatives.....	21
6.4 Civil Society and Knowledge Actors.....	22
6.5 Private-Sector and Market Development Actors	23
7. Geographically Referenced Census of Initiatives to Advance eCooking in Tanzania	26
8. Barriers to eCooking uptake in Tanzania.....	29
9. A study on Barriers to eCooking access and GESI integration in Tanzania’s Clean Cooking Transition	31

9.1 Participants: sampling and demographic characteristics of the respondents	33
9.2 Findings.....	41
9.2.1 Awareness and Knowledge of eCooking.....	41
9.2.2 Barriers to eCooking Adoption.....	42
9.2.3 Gender and Social Inclusion (GESI).....	44
9.2.4 Policy and Institutional Framework	45
9.2.5 Cultural and Behavioral Factors.....	46
9.2.6 User Experiences	47
9.2.7 Non-User Perceptions.....	48
9.2.8 Recommendations from Stakeholders.....	49
10. Conclusions and Recommendations	50
10.1 Conclusions	50
10.2 Recommendations.....	51
References	53

Abbreviations

AECF	Africa Enterprise Challenge Fund
ASES	Access to Sustainable Energy Survey
CSOs	Civil Society Organizations
EAE	Energy Access Explorer
eCooking	Electric Cooking
EnDev	Energising Development
EPCs	Electric Pressure Cookers
ESMAP	Energy Sector Management Assistance Programme
EU	European Union
EWURA	Energy and Water Utilities Regulatory Authority
FHH	Female Headed Households
FNRB	Fraction of Non-renewable Biomass
GEF	Global Environment Facility
GESI	Gender Equality and Social Inclusion
GHG	Greenhouse Gas
HAP	Household Air Pollution
HBS	Household Budget Survey
IASSES	Impact of Access to Sustainable Energy Survey
ICS	Improved Cook Stove
KIIs	Key Informants Interviews
LPA	Local Government Authority
LPG	Liquefied Petroleum Gas
MCFA	Modern Cooking Facility for Africa
MECS	Modern Energy Cooking Services
MoE	Ministry of Energy
MRV	Monitoring, Reporting, and Verification
MUST	Mbeya University of Science and Technology
MW	Megawatts
NBS	Tanzania National Bureau of Statistics

NCCS	National Clean Cooking Strategy
NCMC	National Carbon Monitoring Centre
NDC	Nationally Determined Contributions
NEES	National Energy Efficiency Strategy
NGO	Non-Governmental Organization
OBF	On-Bill Financing
PAYG	Pay-As-You-Go
PBF	Performance-Based Financing
PWD	People With Disabilities
RBF	Results-Based Financing
REA	Rural Energy Agency
REDD+	Reducing Emissions from Deforestation and Forest Degradation Plus
REF	Rural Energy Fund
REMP	Rural Energy Master Plan
SDG	Sustainable Development Goal
SE4All	Sustainable Energy for All
SESCOM	Sustainable Energy Services Company
SIDA	Swedish International Development Cooperation Agency
SME	Small and Medium Enterprise
SUA	Sokoine University of Agriculture
TANESCO	Tanzania Electric Supply Company
TANGSEN	Tanzania Gender and Energy Network
TAREA	Tanzania Renewable Energy Association
TaTEDO-SESO	TaTEDO-Sustainable Energy Services Organization
TCCP	Tanzania Clean Cooking Project
UNCDF	United Nations Capital Development Fund
UNDP	United Nation Development Programme
VPO	Vice President's Office
WFP	World Food Programme
ZECO	Zanzibar Electricity Corporation

1. Introduction

This report presents a comprehensive assessment of the status, development, and emerging opportunities for modern energy cooking services in Tanzania, with a particular focus on the adoption and promotion of electric cooking (eCooking). It examines the spread of eCooking solutions in comparison with other cooking fuels, analyses cooking practices across the country, and reviews the state of electricity access and the availability of eCooking appliances. The report also examines national initiatives that promote eCooking and mainstream Gender Equality and Social Inclusion (GESI) in energy transitions, while identifying the key barriers that continue to limit the uptake of eCooking technologies among different user groups.

The findings presented in this report were initially drawn from a structured literature review covering four core thematic areas:

- **Modern Cooking Energy Services:** A review of academic and grey literature on the development, availability, and promotion of modern cooking solutions in Tanzania.
- **Cooking Fuels and Practices:** An analysis of existing datasets and publications on cooking fuel preferences and cooking practices among households and institutions.
- **GESI:** An analysis of how GESI provisions have been integrated into the country's drive toward clean cooking transitions.
- **Comparative Energy Adoption:** An assessment comparing the uptake of electricity for cooking with other fuels such as charcoal, firewood, LPG, and biogas, highlighting adoption trends and underlying barriers.
- **eCooking Initiatives Mapping:** The creation of a geographically referenced inventory of ongoing projects and interventions supporting the scale-up of eCooking in the country.

To compile these findings, the report applied a mixed-methods approach, beginning with extensive secondary data analysis. This involved reviewing academic publications, policy and strategy documents, government statistics, research reports, and other grey and brown literature. Sources were gathered through targeted searches in academic databases such as Google Scholar and institutional repositories such as MECS, NBS, the World Bank, and government portals. Selection criteria ensured that only relevant, credible, and recent literature contributed to understanding the current modern cooking energy landscape.

However, the literature review revealed several limitations. Data related to marginalized groups, gender-differentiated impacts, and specific user behaviours were often limited, outdated, or unavailable. Many datasets lacked disaggregation by gender, income level,

or rural–urban location, and regional coverage was inconsistent. The quality and methodological rigour of available grey literature also varied. To address these gaps, we conducted further primary research through key-informant interviews (KIIs) with 32 respondents across different genders, ages, and geographical locations to deepen our understanding of the key barriers to eCooking access in Tanzania and how GESI considerations are taken into account in the country’s clean cooking transition. Findings from this work are integrated into this report (Section 9) to complement, strengthen and validate the evidence base produced through the literature review.

2. Overview of Cooking Fuels and Practices in Tanzania

In Tanzania, biomass fuels, primarily firewood and charcoal, dominate the energy mix, accounting for 82% of the total primary energy supply. The residential sector is the largest consumer, accounting for 64% of total final energy consumption (NBS, 2024). On mainland Tanzania, 65.5% of households rely on firewood as their main cooking fuel, followed by charcoal (44%), LPG (24.6%), electricity (2%), other sources (0.6%), biogas (0.1%), and bioethanol (0.01%). In rural areas, reliance on firewood is pronounced (89.6%), with only 7.5% of the households using LPG and 0.4% using electricity for cooking (URT, 2025). In Tanzania Zanzibar, household cooking energy use also remains dominated by biomass fuels, with 46.9% of households relying on firewood, 28.9% on charcoal, and 20.7% on clean cooking energy sources such as electricity and gas (NBS, 2024). These trends highlight a critical gap between electrification progress, which we outline in section 4, and actual energy transition at household level.

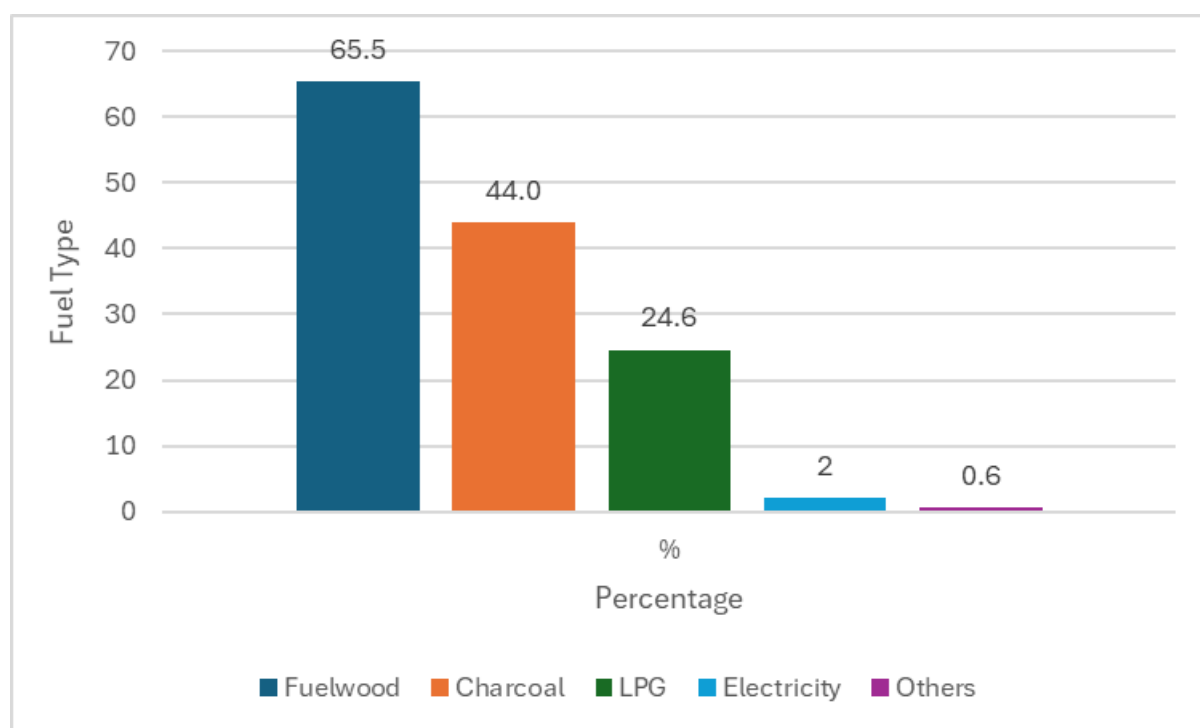


FIGURE 1: Distribution of Households by Fuel sources for Cooking in Mainland Tanzania. Representation of data from URT (2025).

Stacking, i.e. cooking with a combination of multiple fuels and cookstoves, is prevalent across the country, being practiced by about 66.2% of households (URT, 2025). A study by MECS & TaTEDO (2022a) in urban communities in Dodoma, the central part of Tanzania, found that the most common stacking combinations were LPG and charcoal (35%), firewood and LPG (24%), and firewood and charcoal (14%). Only 5% of households used LPG exclusively, 13% used charcoal exclusively but none used firewood alone. Electricity was typically used alongside other fuels, especially during power interruptions or the early phases of eCooking adoption. A study on electric pressure cooker (EPCs) adoption among mini-grid users conducted in Biharamulo District in Kagera Region (Kweka et al., 2021) explains stacking behaviors as influenced by income stability, grid reliability, convenience, and cultural factors.

Heavy dependence on biomass has contributed significantly to environmental degradation and deforestation in Tanzania, with an estimated 469,420 hectares of forest lost annually between 2015 and 2020 (URT, 2021; FAO, 2021). Unsustainable firewood collection and charcoal production deplete natural forest resources and generate greenhouse gas (GHG) emissions because a significant share of the biomass used is non-renewable. The United Nations Framework Convention on Climate Change (UNFCCC, 2012) estimates Tanzania's default fraction of non-renewable biomass (fNRB) at 51%.

At the household level, inefficient combustion of biomass produces household air pollution (HAP), resulting in 33,024 premature deaths annually and 1,414,699 disability-adjusted life years (DALYs) lost due to exposure to smoke and particulate matter (World Bank, 2024a; GBD, 2016). The health risks associated with traditional cooking practices remain substantial and gendered. Analysis of the 2015–16 Demographic Household Survey data indicated that approximately 76% of households cooking with biomass indoors faced high smoke-exposure risk, disproportionately affecting women and girls who manage cooking and fuel collection (Tanin and Shrestha, 2021).

In addition, cooking practices in Tanzania are deeply gendered. Women and girls, who are primarily responsible for cooking and fuel collection, are disproportionately exposed to HAP and the time burden associated with energy procurement. This affects their health, education, and economic participation, particularly in rural communities (Kelkar and Nathan, 2021).

Beyond its environmental, health and social equality impacts, the lack of access to clean cooking poses a substantial economic burden on Tanzania. The World Bank Country Climate and Development Report (2024) estimates the annual cost of inaction at US\$39

billion, including US\$25 billion in health impacts, US\$12 billion from lost productivity among women, and US\$2 billion from climate-related losses.

Transitioning to clean cooking is critical to address the environmental, economic, health and social challenges associated with traditional biomass fuel use.

3. Policy Landscape

Tanzania has made significant strides in establishing a supportive policy environment for clean cooking and sustainable energy access. Over the past decade, a number of interlinked policies, strategies, and plans have been developed to accelerate the transition from traditional biomass fuels to modern, clean cooking technologies. These policy instruments aim to improve public health, reduce deforestation, enhance energy security, and empower women and marginalized groups through inclusive participation in the energy economy.

3.1 National Clean Cooking Strategy (NCCS) 2024–2034

The [National Clean Cooking Strategy \(NCCS\) \(2024–2034\)](#) serves as Tanzania's central framework for promoting the adoption of clean cooking solutions. It aims to achieve 80% national adoption of clean cooking technologies by 2034, reducing dependence on firewood and charcoal. The Strategy emphasizes a multi-pronged approach encompassing policy reforms, financial mechanisms, capacity building, and awareness campaigns.

Key interventions include:

- Fiscal and policy reforms, such as reducing taxes on clean cooking appliances and fuels.
- Creation of a National Clean Cooking Fund to catalyze investment and support the sector. This was supposed to be established by June 2025, but it is not yet operational at the time of writing this report.
- Deployment of Pay-As-You-Go (PAYGO) financing systems to improve affordability of modern cooking appliances like electric pressure cookers (EPCs).
- Institutional bans on biomass fuels, starting with large public institutions.
- Awareness and education campaigns, including integration of clean cooking topics into vocational and technical curricula.
- Gender and social inclusion mainstreaming, with dedicated efforts to promote women's participation, leadership, and entrepreneurship in the clean cooking value chain.

The NCCS further seeks to stimulate domestic manufacturing of clean cooking equipment, expand access to LPG and electric cooking appliances, and promote local

innovation. Its holistic design aligns with Tanzania's commitments under Sustainable Development Goal (SDG) 7 and the Paris Agreement by linking clean cooking adoption to health, climate, and gender equality outcomes.

A major strength of the NCCS is that it formally recognizes eCooking within national energy planning and has improved coordination among government, donors, utilities, and private-sector actors. However, implementation remains slow. Key initiatives such as the National Clean Cooking Fund are not yet operational, affordability barriers persist, and institutional coordination and monitoring systems remain weak.

3.2 National Energy Efficiency Strategy (NEES) 2024–2034

The [National Energy Efficiency Strategy \(NEES\) 2024–2034](#) complements the NCCS by advancing energy efficiency across key sectors, including electricity, cooking, transport, manufacturing, and buildings. It aims to enhance energy security, reduce energy intensity, and support Tanzania's climate change mitigation and adaptation goals.

Supported by partners such as the EU and UNDP, the NEES promotes investment in efficient cooking appliances, integration of LPG and electric cooking technologies, and phasing out non-renewable biomass in institutional settings. It also calls for:

- Expanding the affordability and availability of modern cooking fuels (e.g., LPG, electricity).
- Introducing energy-efficient standards for appliances.
- Integrating clean cooking with the national prepayment metering system.
- Establishing dedicated funding mechanisms for clean cooking projects under broader energy efficiency initiatives.

The Strategy has strengthened recognition of clean cooking as part of Tanzania's broader energy and climate agenda. However, implementation gaps remain due to weak enforcement of appliance standards, limited funding, and continued high costs and low availability of quality cooking appliances.

3.3 National Energy Compact for the United Republic of Tanzania, 2025

The [National Energy Compact](#) represents a high-level commitment to accelerate universal access to modern, affordable, and sustainable energy. The Compact aims to strengthen partnerships and financing to achieve Tanzania's energy access targets. It commits to mobilize US\$12.9 billion, including US\$4.04 billion from the private sector, to expand clean energy infrastructure, support local capacity building, and strengthen national data systems. It emphasizes investment in clean cooking as a critical pathway toward sustainable development and climate resilience.

While the Compact strengthens investment commitments and policy visibility, it remains largely aspirational. Clear implementation mechanisms and targeted support for low-income and rural households are still limited.

3.4 Rural Energy Master Plan (REMP) 2022/23 – 2029/30

The [Rural Energy Master Plan \(REMP\)](#), developed by the Rural Energy Agency (REA), provides a framework for expanding modern energy access in rural Tanzania. It integrates grid extension, renewable energy deployment, and clean cooking initiatives to advance SDG 7. The plan incorporates Gender Equality and Social Inclusion (GESI) principles by prioritizing projects that benefit women and marginalized groups.

Key initiatives include:

- Training women in energy entrepreneurship and project implementation.
- Promoting LPG and clean cooking technologies through subsidies and awareness campaigns.
- Applying results-based financing (RBF) to expand solar home systems and off-grid electricity.
- Linking clean cooking with broader goals of electrification, sanitation, and community health.

Progress in rural electrification has improved the enabling environment for future eCooking adoption. However, electrification and clean cooking interventions remain poorly integrated. Many rural households still face challenges related to affordability, grid reliability, and limited access to modern cooking appliances.

3.5 Improved Cookstoves (ICS) Country Action Plan, 2014

The [ICS Country Action Plan](#) coordinates national efforts to scale up improved cookstove production, distribution, and market development. The plan emphasizes the central role of women in the stoves and fuels value chain, both as primary users and as entrepreneurs. It focuses on enhancing women's participation in manufacturing, distribution, and marketing, thereby generating employment and income opportunities.

The Action Plan also calls for targeted awareness campaigns, gender-sensitive training programs, and research to explore new roles for women in the evolving clean cooking market. It underscores the importance of building sustainable markets through multi-stakeholder collaboration and evidence-based interventions.

However, the Plan focused primarily on biomass-based improved cookstoves rather than modern cooking technologies such as eCooking. Many interventions remained donor-driven and lacked strong long-term monitoring and sustainability mechanisms.

Overall, Tanzania's policy landscape demonstrates growing political commitment to clean cooking and eCooking. Nevertheless, implementation gaps in financing, coordination, infrastructure, affordability, and enforcement continue to slow the transition from policy ambition to widespread adoption.

4. Electrification Infrastructure

4.1 Electricity Access

The Tanzania energy sector has made notable progress in power generation and electrification in recent years. Installed electricity generation capacity reached 3,404 MW by January 2025, a significant increase from 21 MW in 1967, with major contributions from the Julius Nyerere Hydropower Project (2,115 MW) (URT, 2025).

Electricity access has expanded from 14% in 2011 to 71.2% of households in 2025, yet rural access remains considerably lower (61%) than in urban areas (84%) (NBS, 2025). National grid has reached all 12,318 villages of Tanzania (URT, 2025). Overall household connectivity to electricity is 52.7%, with 72.7% in urban and 30.7% in rural areas (NBS, 2025). In Zanzibar, access rose from 38% in 2011 to 57% in 2020 to 90% in 2023 (ZECO, 2023). Despite significant progress in electrification (71% access), only ~2% of households use electricity for cooking, indicating a major disconnect between energy access and clean cooking adoption.

Data from the Impact of Access to Sustainable Energy Survey (IASSES, 2021–2022) show that while most Tanzanian households have electricity access within Tier 2–3, only a small share achieves Tier 4–5, reflecting limited capacity and reliability of electricity services. Under the World Bank's Multi-Tier Framework (World Bank et al., 2026), Tier 2–3 electricity access generally supports basic lighting, phone charging, televisions, fans, and a few medium-power appliances, but service is often unreliable and insufficient for sustained use of high-power devices. Tier 4–5 access provides higher power capacity, longer daily availability, and more reliable service, enabling households to consistently operate energy-intensive appliances such as refrigerators, irons, and electric cookers. Thus, while electrification rates are high across the country, effective access to electricity suitable for cooking remains limited.

Tanzania's mini-grid sector comprises over 100 systems, with installed capacity ranging from tens of megawatts for modern solar-hybrid mini-grids to around 150 MW when including SPPs and hydro-based systems (Energy Sector Management Assistance Program (ESMAP), 2023–2025; Africa Minigrid Developers Association, 2024; Ordano L. et al., 2017). Mini-grids contribute to rural electricity access, serving households and businesses and supporting national electrification growth (World Bank, 2023–2025). They are also beginning to support eCooking, with emerging evidence from ESMAP showing that higher-capacity systems can power efficient appliances such as electric

pressure cookers, improving energy access while enhancing mini-grid demand and viability.

4.2 Availability of eCooking Appliances

A wide variety of electric cooking appliances are available in the Tanzanian market, all of which are imported. Both “large” cooking appliances (ovens, hot plates, induction stoves) and “small/compact” ones (rice cookers, kettles, air fryers, pressure cookers) are available (Teske, S. et al., 2025). Main suppliers of eCooking appliances include Smartware Tanzania, Newmatic Kitchen Tanzania, Nida & Danish Trading Ltd, and SESCOM (MECS, 2023). Affordability and quality assurance remain a challenge, and repairs and maintenance are still limited due to a low number of technicians with the specialized skills. In addition, spare parts are scarce and only available in major urban centers.

The absence of local manufacturers is largely attributed to the relatively small and developing market for eCooking appliances, the high initial capital and investment requirements needed to establish production facilities, and the lack of a well-developed industrial supply chain and supporting manufacturing industries in Tanzania.

5. Gender Equality and Social Inclusion (GESI) in Tanzania

Current GESI initiatives in Tanzania primarily focus on women, but also encompass poor and marginalized groups, such as children, youth, elderly, and people with disabilities. Tanzania has progressively advanced efforts towards GESI through dedicated national policies like the [Women and Gender Development Policy, 2024](#), the [National Youth Development Policy, 2007](#), the [Policy on the Development of People with Disabilities, 2004](#) and the [National Ageing Policy, 2003](#). Within the energy sector, institutions like the Energy and Water Utilities Regulatory Authority (EWURA) have integrated GESI principles into their oversight functions, emphasizing equitable electricity access, tariff fairness, and gender-responsive employment practices (EWURA, 2024). Tanzania’s NCCS also recognizes gender disparities in the clean cooking value chain. While providing a platform for addressing GESI concerns by, for example, expanding economic opportunities and access to services for marginalized groups, these frameworks only lightly integrate GESI provisions and they do not yet include systematic GESI-disaggregated monitoring.

Energy access continues to be a major challenge in Tanzania, particularly for women and vulnerable populations. The Energy Access and Use Situation Survey (NBS, 2020) and the Household Energy Consumption Survey for Tanzania Mainland Report (URT, 2025) highlight that women face disproportionate burdens from traditional cooking practices, including long hours spent collecting fuel and exposure to HAP, underscoring the need

for gender-responsive policies and better data systems (NBS & REA, 2020). Complementary evidence from the Household Budget Survey 2017/18 identifies persistent gender inequalities in unpaid care and domestic work, reinforcing the link between gender roles and household energy responsibilities (NBS, 2019).

Challenges in energy access for women and marginalized groups have multiple causes. Existing studies have provided both national and subnational insights into the socioeconomic and cultural factors shaping household adoption of clean cooking technologies in Tanzania, and how they impact GESI in the sector.

5.1 Economic Barriers to GESI in Tanzania's Clean Cooking Transition

It is well known that practical and economic constraints play a significant role in influencing household energy choices. Katikiro et al. (2023)'s study on clean cookstoves preferences in rural Tanzania found that even when households express a preference for LPG, many continue to stack with biomass fuels due to cost and accessibility. Fuel stacking reflects the complexity of clean cooking adoption as a negotiated practice influenced by both gender roles and household economic realities. Women, often responsible for daily cooking, must reconcile aspirations for cleaner fuels with affordability and reliability considerations (e.g. electricity outages). This underscores the need for interventions that are sensitive not only to technological preferences but also to household realities, cultural practices, and gendered responsibilities.

Drawing on the 2022 Demographic and Health Survey to examine patterns of clean-fuel use across different population groups, Ndifwa et al. (2025) found that households' wealth and size, and the education level of the household head, are among the strongest predictors of clean energy adoption. Rural households remain significantly disadvantaged due to limited affordability of clean cooking solutions, lower electrification rates, and constrained access to modern fuels. Complementing this, Aamaas et al. (2024) identify affordability, continued fuel stacking, and limited access to inclusive financing models (e.g., PAYGO) as key barriers to adoption, particularly among low-income households. While these studies establish a robust evidence base on socioeconomic inequalities affecting clean cooking adoption, they primarily rely on broad household-level indicators. As a result, deeper GESI-specific dimensions such as gender roles, intra-household decision-making, and the experiences of marginalized groups remain insufficiently explored.

5.2 Social Barriers to GESI in Tanzania's Clean Cooking Transition

Gender roles and sociocultural norms play a central role in shaping household energy practices. Standal et al. (2024) situates cooking transitions within an energy-justice framework, demonstrating that fuel choices are influenced not only by health and

environmental concerns but also by livelihood constraints and perceptions of fairness. These dynamics disproportionately affect women, who typically perform most cooking and fuel collection tasks while having limited influence over energy related expenditures and technology adoption. Gender disparities in household leadership are validated by data from the 2023 Household Energy Consumption Survey, which shows that 72% of Mainland Tanzania households are male-headed. Unbalanced responsibilities and roles within households reflect ingrained sociocultural norms which ultimately limit women's decision-making power in energy technology adoption (NBS, 2025). Despite awareness of gender disparities in energy decision-making exists, research on intra-household decision-making is limited. Data on who decides which fuels or technologies to use, how financial resources are allocated for energy purchases, and how household power dynamics influence adoption are scant. Understanding these dynamics is crucial for designing interventions that reduce health risks while promoting gender-equitable decision-making and agency within households.

5.3 Cultural Barriers to GESI in Tanzania's Clean Cooking Transition

Cultural barriers also play a role in informing access to clean cooking technologies. Tunguhole et al. (2025) highlight how beliefs that food tastes better when cooked on biomass or that smoke repels insects continue to drive energy users towards traditional energy sources. These perceptions were found to be particularly pronounced among female headed households (FHH), illustrating how gender norms and cultural expectations intersect with energy adoption decisions.

-

These barriers are interconnected and reinforce each other, creating a complex ecosystem that limits inclusive access to clean cooking. Collectively, this scholarship shows that energy transitions are not purely technical or financial challenges but are embedded in gendered, sociocultural, and justice-related dynamics. Interventions must therefore engage with these contexts to support inclusive and sustainable adoption of clean cooking technologies. However, while the evidence base on socioeconomic and gendered determinants of clean cooking is growing, substantial knowledge gaps remain. Most studies focus on household-level variables such as wealth, education, and household headship, with limited disaggregation by other marginalized groups, including people with disabilities, elderly-headed households, or extremely poor households. Similarly, off-grid or grid covered but non connected households are rarely studied, and intra-household decision-making beyond household headship remains underexplored. These gaps constrain the design of clean cooking interventions that are truly equitable and responsive to the needs of marginalized populations. Addressing them will require targeted, intersectional research that combines quantitative GESI-disaggregated data with qualitative insights into intra-household dynamics, sociocultural norms, and

gendered decision-making. Doing so will improve understanding of who benefits or is left behind during clean cooking transitions and support the development of interventions that are socially inclusive, culturally sensitive, and health-promoting.

5.4 Addressing GESI considerations in Tanzania's Clean Cooking Transition

A growing body of interventions led by civil society organizations and development partners seeks to address the economic, social, and cultural barriers shaping clean cooking adoption in Tanzania. These initiatives increasingly recognize the importance of integrating Gender Equality and Social Inclusion (GESI) considerations, particularly in reaching low-income and rural populations.

Several programmes focus on addressing affordability and awareness constraints. For example, TaTEDO (2024b) highlights the continued role cost barriers play in shaping household energy choices and advocates for consumer education campaigns that communicate the long-term economic and health benefits of modern energy technologies, including eCooking. Similarly, EnDev Tanzania (2024) has implemented programmes promoting improved cookstoves (ICS) and solar energy solutions among poor and rural households, with explicit efforts to incorporate GESI considerations into programme design and delivery.

Women-led and women-focused organizations also play a critical role in advancing inclusive clean cooking transitions. Initiatives such as those of the [Mwanamke Initiatives Foundation \(2025\)](#), frame clean cooking not only as an energy or environmental issue, but as a matter of health, time use, and women's empowerment. Their work highlights the importance of tailoring interventions to the needs of vulnerable groups, particularly women who bear the primary burden of cooking and fuel collection.

In parallel, awareness-raising campaigns, such as the "Pika Smart" launched in 2024 (and further discussed in section 6.3), have increasingly targeted peri-urban and underserved populations. Evidence suggests that prior exposure to different cooking fuels significantly influences households' willingness to adopt new technologies. As shown by Ntiyakunze and Stage (2025), households familiar with multiple energy sources are more likely to transition to electric cooking, indicating that both awareness and reliable energy access are critical enablers of behavioural change.

Despite these efforts, important limitations remain. While many programmes explicitly reference GESI, the methodological robustness of available evidence varies considerably. In particular, a large proportion of NGO and project-based reporting lacks rigorous monitoring and evaluation frameworks, including GESI-disaggregated indicators. This constrains the ability to systematically assess impacts on gender equality, intra-household dynamics, and the inclusion of other marginalized groups.

6. Key Actors and Their Roles in Advancing eCooking and GESI in Tanzania's Clean Cooking Transition

The transition to clean and modern cooking in Tanzania has accelerated in recent years through growing convergence between government policy, international development partners, utilities, private-sector actors, and gender-advocacy networks. This section reviews the major actors involved in promoting eCooking, their contributions, strategic approaches, and the extent to which GESI considerations are integrated into their work.

6.1 Governmental Actors

Ministry of Energy (MoE)

The Ministry of Energy is the primary government institution responsible for clean cooking policy formulation and implementation. In 2024, MoE launched the National Clean Cooking Strategy (NCCS) 2024–2034, which sets the ambitious target of 80% national clean cooking adoption by 2034. As explained in section 3.1, the Strategy explicitly integrates eCooking as a key pillar to advance modern energy services and reduce reliance on biomass fuels and provides a unified national framework around which utilities, private companies, NGOs, and development partners coordinate. It legitimizes eCooking as a central component of national energy planning, creating political and institutional momentum necessary for large-scale adoption.

Vice President's Office (VPO)

The VPO, through the Division of Environment, plays a cross-cutting role in aligning clean cooking with national climate mitigation, adaptation, and gender policies. The Office acts as Tanzania's focal point for climate change conventions and ensures that clean cooking is reflected in the National Environmental Policy (2021), the National Climate Change Strategy (2021–2026), and Nationally Determined Contributions (NDCs). The VPO highlights clean cooking as both a climate action and gender equality issue, emphasizing the disproportionate health, time, and labor burdens placed on women by traditional cooking practices. Its assessment guides the integration of gender considerations across national planning frameworks.

Rural Energy Agency (REA)

The REA facilitates access to modern energy services in rural areas through the Rural Energy Fund (REF). REA's electrification work, grid extensions, mini-grid deployment, and off-grid solar support create the enabling infrastructure needed for future uptake of eCooking. REA's financial incentives to developers have significantly expanded rural energy access, making it a foundational actor for long-term eCooking adoption in underserved communities. Recent developments indicate that REA is increasingly

supported by the World Bank through performance-based financing (PBF) and results-based financing (RBF) mechanisms for clean cooking. Under this framework, subsidies are linked to verified performance metrics such as the production, distribution, and adoption of improved cooking technologies (World Bank, 2024b).

In 2024, REA launched a national Call for Proposals for companies to access RBF subsidies for improved cooking solutions (REA, 2024). These interventions strengthen supply chains, reduce consumer costs, and stimulate private-sector participation. Early evidence suggests positive supply-side effects, although long-term sustainability depends on robust monitoring and sustained financing.

National Bureau of Statistics (NBS)

The NBS contributes critical empirical evidence for clean cooking planning. As the primary source of national household data, NBS has been instrumental in generating data for the NCCS. Key assessments include the Impact of Access to Sustainable Energy Survey (2021/22) and the Household Budget Survey (2024-2025 – yet to be made publicly available), both of which reveal trends in cooking fuel consumption, household energy expenditure, and transitions from biomass to modern fuels. These data sets form the backbone of national planning and monitoring frameworks in the clean cooking sector.

Energy and Water Utilities Regulatory Authority (EWURA)

EWURA regulates energy markets, including pricing, quality standards, and distribution of fuels such as kerosene and LPG—both of which influence fuel-switching decisions. EWURA’s annual Energy Sector Performance and Rural Electrification reports provide insights into consumption patterns, access levels, and fuel price trends across Tanzania. Although not directly promoting eCooking, EWURA’s regulatory oversight shapes the broader energy landscape within which clean cooking interventions evolve.

Tanzania Electric Supply Company (TANESCO)

As the national utility, TANESCO is emerging as a pivotal implementation partner in scaling eCooking. In 2025, in partnership with MECS (see MECS, 2025a; 2025b), TANESCO began to distribute subsidized electric stoves (up to 11,000 appliances) via a revolving fund to its employees, with a vision to create early adopters and household-level ambassadors before extending the scheme to customers. An On-Bill Financing (OBF) scheme will enable new grid customers to purchase eCooking appliances through flexible monthly payments. By lowering acquisition costs and demonstrating feasibility among its own staff, TANESCO aims to address major barriers to eCooking uptake: affordability, perceptions of electricity cost, and limited practical exposure. Its leadership represents a crucial operational bridge between electricity supply and clean cooking demand.

6.2 Academic and Research Institutions

National Carbon Monitoring Centre (NCMC)

The Tanzania NCMC, hosted by Sokoine University of Agriculture (SUA) in Morogoro region, leads national Monitoring, Reporting, and Verification (MRV) of GHG emissions. NCMC supports the clean cooking transition by quantifying emissions reductions achieved through reduced biomass consumption and adoption of cleaner fuels, thereby strengthening climate justification for initiatives such as the NCCS.

Illustrative activities include:

- Establishment and oversight of Tanzania's national MRV system.
- Technical support and registration of Reducing Emissions from Deforestation and Forest Degradation Plus (REDD+) and carbon offset projects (e.g., Ntakata Mountains, Luganzo Carbon Project, Selous Voluntary Offset Project).
- Capacity-building workshops on GHG accounting for government agencies and project developers.

Through these functions, NCMC provides the empirical foundation for Tanzania's climate commitments, including those related to clean cooking.

Mbeya University of Science and Technology (MUST)

MUST, located in Mbeya region, adds value to the clean cooking sector through research in food science, food processing, and appliance efficiency. By studying safe and efficient cooking practices, MUST contributes to the development of culturally appropriate electric cooking solutions. The university also partners with NGOs and private-sector actors in testing and validating appliance performance under local conditions.

6.3 Development Partners, Programmes, and International Initiatives

Mission 300 in Tanzania

Mission 300 is a continental initiative aiming to connect 300 million Africans to electricity by 2030. Tanzania, as a participant, integrates clean cooking (including eCooking), into its national Energy Compact, linking electrification expansion with modern cooking solutions. The program supports the adoption of electric pressure cookers (EPCs), induction stoves, and other clean cooking appliances, alongside improved biomass and LPG options, while stimulating private-sector innovation through challenges and market incentives. Mission 300 complements Tanzania's NCCS by creating a policy and infrastructure environment conducive to eCooking adoption. While large-scale uptake is still emerging, the initiative strengthens the enabling conditions affordable electricity, institutional support, and market development for scaling eCooking, particularly in urban and peri-urban areas.

Modern Energy Cooking Services (MECS)

MECS, funded by UK Aid, is the leading international programme supporting eCooking in Tanzania. Through the Tanzania eCooking Scale and Support Programme (2024–2026), MECS is implementing national-scale interventions, including:

- The national eCooking Awareness Campaign (“Pika Smart”), launched in 2025, targets approximately 80% of urban and peri-urban populations and combines multiple outreach strategies including roadshows in public spaces and markets, mass media campaigns (radio, television, and social media), community demonstrations of electric cooking appliances, school and institutional engagement programmes, as well as cooking competitions and public exhibitions designed to showcase the affordability, convenience, and safety of electric cooking technologies.
- Deployment of institutional demonstration projects, such as the first fully electric school kitchen at Kibasila Primary School (2025) in Dar es Salaam, delivered in partnership with SEforALL and World Food Programme (WFP).

MECS combines mass awareness, research, and demonstration pilots to accelerate normalization of eCooking at both household and institutional levels. It is the central donor-backed catalyst for Tanzania’s eCooking transition. MECS interventions demonstrate technological feasibility, shift public perceptions, and create large-scale demand for electric cooking solutions.

Energising Development (EnDev) Programme

The EnDev programme, implemented by SNV, is one of the longest-standing initiatives promoting clean cooking technologies in Tanzania. While largely focused on ICS, EnDev increasingly intersects with the eCooking sector. Key elements of EnDev contributions to eCooking include:

- Training and certifying stove producers including women-led enterprises.
- Using Results-Based Incentives (RBI) to reward producers for quality and sales performance.

EnDev strengthens supply chains and enhances market penetration, particularly in rural and low-income contexts. Its strong GESI outcomes through women-led stove enterprises contribute directly to socioeconomic empowerment.

6.4 Civil Society and Knowledge Actors

TaTEDO – Sustainable Energy Services Organization (TaTEDO-SESO)

TaTEDO-SESO (previously known as TaTEDO) is a key national NGO providing research, policy guidance, and community-level energy interventions. It has produced strategic analyses on integrating eCooking into national electrification efforts and frequently advocates for utility engagement, e-Cooking affordability, and sustainable market

systems. Key projects and studies on eCooking undertaken by TaTEDO-SESO in partnership with MECS include:

- Approach to designing delivery models of modern energy cooking services in Tanzania (TaTEDO et al., 2020), which involved studies of market actors, socio-economic, cultural barriers, and policy environments to improve delivery models for electric pressure cookers and other modern energy cooking solutions. The project aimed to enhance the scale-up of eCooking to contribute to SDG7.
- EPCs Awareness Campaigns and Influencing Decision Makers in Tanzania Report (2023) on awareness-raising efforts and engaging decision makers to increase uptake of efficient electric cooking appliances, highlighting that the eCooking push is not only technical, but also institutional and societal.
- The Tanzania eCooking Market Assessment Study (2022), which highlighted significant potential for eCooking scale up, particularly among urban charcoal users with electricity access. The study identified opportunities for stimulating electricity demand, reducing charcoal use, and promoting livelihoods for women, while noting barriers such as cost perceptions and appliance safety concerns.
- The Cooking Diaries report (MECS & TaTEDO, 2022a; 2022b), which gives empirical evidence from households trialling eCooking, including valuable insights into real-world use, user behaviour, barriers, and adoption dynamics.
- The Tanzania eCook Book (2020), which provides practical guidance on using EPCs, including handling, maintenance, and recipes tailored to Tanzanian cuisine, targeting primarily household cooks, especially women.

TaTEDO-SESO plays a “bridge” role between technical/market actors and policy/utility actors, helping align interests to create a viable ecosystem for eCooking adoption. Its briefing notes (MECS and TaTEDO, 2022c; TaTEDO, 2024), shapes national discourses by articulating economic, environmental, and operational benefits of modern cooking. While indirect, this influence is crucial in aligning institutions and actors around a shared vision.

Tanzania Gender & Sustainable Energy Network (TANGSEN)

TANGSEN is the most prominent organization explicitly linking energy access with gender equality and social inclusion. Supported by ENERGIA and the Swedish International Development Cooperation Agency (SIDA), TANGSEN’s recent work includes distribution of 235 electric and improved stoves in Ikungi District, the central part of Tanzania in the Singida Region, and demonstrates the integration of GESI principles in clean cooking programming.

6.5 Private-Sector and Market Development Actors

Africa Enterprise Challenge Fund (AECF)

AECF supports the Tanzania Clean Cooking Project (TCCP), designed to enhance private-sector development in clean cooking solutions, including electric appliances. Key activities of the TCCP include:

- A US\$3.75 million blended-finance programme.
- Targeting of 60,000+ households with improved, biofuel, and electric cooking solutions.
- Prioritizing small and medium enterprises (SMEs) in underserved markets, with additional incentives for women owned.

AECF strengthens commercialization pathways, reduces risk for early business entrants, and stimulates supply in rural and peri urban markets areas often overlooked by donor driven projects.

The CookFund Programme

The CookFund Programme is a flagship initiative in Tanzania aimed at accelerating the market-based adoption of clean cooking solutions by targeting the private sector. Funded by the EU and implemented by the UN Capital Development Fund (UNCDF), the programme addresses structural and market barriers that have historically limited the shift from biomass fuels (charcoal, firewood) to modern, cleaner cooking options. The CookFund supports enterprises across the clean cooking value chain including manufacturers, importers, distributors, and retailers by providing financial and technical assistance such as grants, subsidies, and working capital. It therefore lowers entry barriers and enables private-sector actors to scale operations, thereby increasing the availability and affordability of clean cooking technologies, including ICS, clean fuels, and electric cooking appliances.

Recognizing that technology supply alone is insufficient, the CookFund integrates demand-side measures, such as nationwide awareness campaigns, to encourage adoption and shift consumer behavior. The programme also promotes institutional uptake, facilitating the replacement of traditional cooking in public institutions, while strengthening regulatory and standardization capacity to ensure safe, certified, and reliable appliances. A core objective of CookFund is to advance women's economic empowerment and ensure equitable access to clean cooking, addressing the disproportionate burden that traditional cooking imposes on women. CookFund primarily targets urban and peri-urban areas, where there is high potential for scaling clean cooking adoption and stimulating private-sector growth.

By combining supply-side support, demand stimulation, institutional interventions, and gender-inclusive approaches, CookFund seeks to catalyze a sustainable clean cooking market, increase adoption of modern cooking solutions, and contribute to health, environmental, and economic benefits in Tanzania.

Sustainable Energy Services Company (SESCOM) Limited

SESCOM is a leading social enterprise involved in renewable energy distribution and service delivery. The company supplies EPCs, air fryers, and related accessories, while offering strong after-sales support through trained technicians. SESCO also promotes productive uses of energy such as solar pumping and agroprocessing.

Of particular relevance is SESCO's participation in the implementation of the project ["Piloting Innovative Business Models for Accelerating the Uptake of Efficient Electric Cooking Appliances in Morogoro" \(2021\)](#), supported by MECS. The project explored inclusive, community-based sales channels, tested gender-sensitive financing models, and assessed socio-cultural cooking practices to design more accessible and affordable eCooking solutions. The project demonstrated that well-designed financing mechanisms and women-led distribution networks can significantly reduce adoption barriers for electric cooking.

Tanzania Renewable Energy Association (TAREA)

TAREA is a national membership-based organization for private organizations promoting renewable energy and energy efficiency, including clean cooking solutions. Its key roles include advocacy and policy engagement, technical support, capacity building, awareness raising, and market facilitation. Through these activities, TAREA strengthens the enabling environment for clean cooking by linking stakeholders, supporting enterprises along the supply chain, and promoting standards and best practices. TAREA catalyses adoption by creating market readiness, training practitioners, and supporting pilot projects. Its work complements government, donor, and private-sector initiatives, contributing to a more coordinated and sustainable clean cooking ecosystem in Tanzania.

-

Tanzania's eCooking and clean cooking landscape shows growing coordination across government, utilities, development partners, gender-focused actors, and the private sector. The NCCS, utility-led initiatives, and donor-supported programmes provide a strong policy and implementation foundation, with early gains seen in pilots, awareness campaigns, and increased women's participation in energy enterprises. However, scaling eCooking nationwide still depends on improved infrastructure, affordability, stronger GESI integration, cultural acceptance, and deeper private-sector engagement.

The private sector is increasingly critical in driving this transition. Tanzania offers a large untapped market, as most households still rely on biomass despite rising electrification. Urban and peri-urban areas present the strongest growth potential, where electrified households often continue using charcoal but could shift to eCooking if key barriers are addressed.

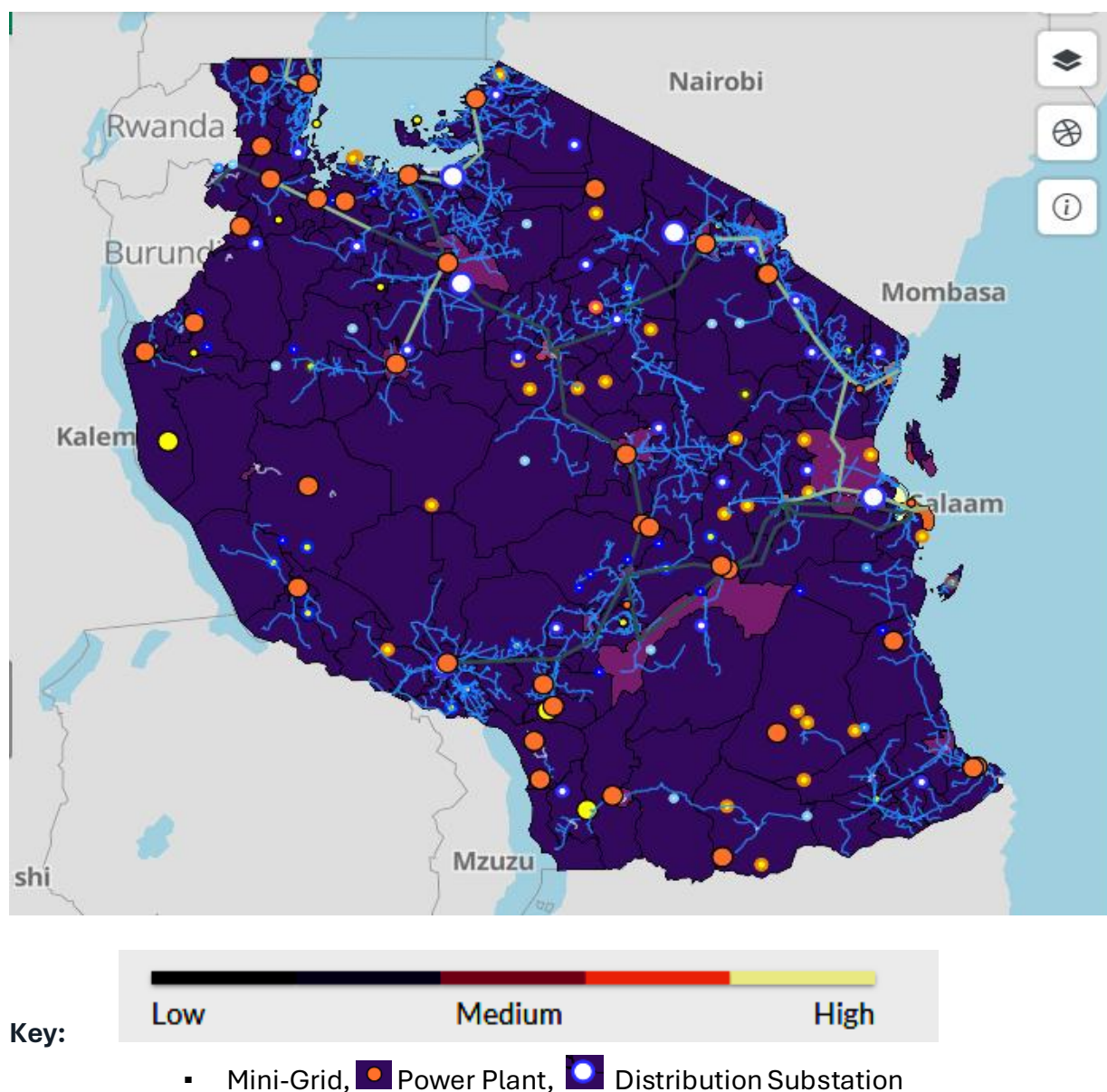
Private distributors such as SESCO are central to this shift, moving beyond appliance sales to include financing, consumer education, after-sales support, and community-

based delivery models that build trust and improve sustained use. These models help fill gaps in weak retail and service networks outside major cities.

7. Geographically Referenced Census of Initiatives to Advance eCooking in Tanzania

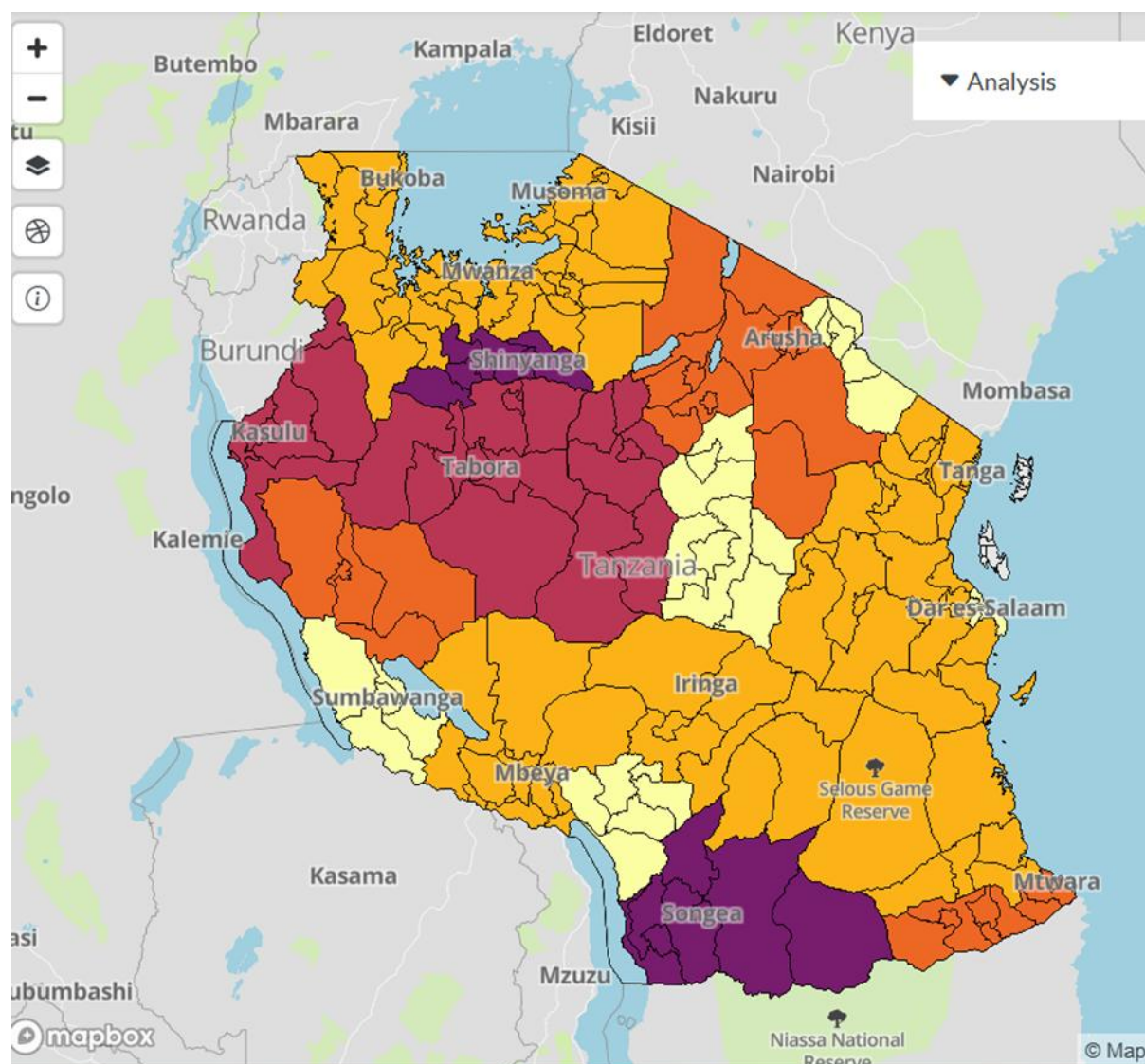
A critical step toward achieving equitable access to clean cooking in Tanzania involves establishing a geographically referenced census of ongoing and planned eCooking initiatives. Such census entails systematically collecting, organizing, and analyzing spatially anchored data on the deployment of clean cooking technologies and programs. The objective is to understand where and how eCooking is advancing, who benefits, and which regions remain underserved. Such mapping facilitates evidence-based decision-making by identifying priority intervention zones, potential partnerships, and opportunities for scaling up successful models.

We used the Energy Access Explorer (EAE) tool to map and conduct spatial analysis of eCooking initiatives in Tanzania. Drawing on data from the World Resources Institute (WRI), the platform visualizes the distribution of energy access subsectors. EAE is an open-source, interactive geospatial platform designed to help identify and prioritize areas for expanding energy access, particularly in Sub-Saharan Africa. It enables energy planners, clean energy entrepreneurs, donors, and development institutions to pinpoint high-priority locations for intervention.



Map 1: Status of Districts Cooking with Electricity. Source WRI – Energy Access Explorer

The EAE map above shows the existing status of electric cooking in Tanzania. Despite increased access to grid electricity, only a few districts in urban and peri-urban areas of Tanzania are cooking with electricity. The districts with high to medium rates of cooking with electricity are Hai, Moshi, Rombo, Kilombero, Shinyanga Urban, Dodoma, Mtwara, all the districts of the Dar es Salaam, and some districts in the Tanga Region. Electric Cooking for other districts is growing as awareness of eCooking is increasing amongst rural and urban communities.



Map 2: Expected Electric Cooking Prospects after Adoption by 10% Population Connected to Grid and Mini-Grids. Source WRI – Energy Access Explorer

In the next 10 years, Tanzania is expected to see a significant increase in eCooking adoption, driven by the government's ambitious clean cooking strategy and increased electricity access. The government aims to have 80% of households using clean cooking solutions by 2034, with electric cooking being a key component of this strategy, especially in grid-connected areas. This transition will be supported by increased electricity access, affordability initiatives, and the promotion of efficient electric cooking technologies.

8. Barriers to eCooking uptake in Tanzania

Despite significant progress in electricity access across Tanzania, the uptake of eCooking technologies remains strikingly low, with only around 2% of households rely on electricity as their primary cooking fuel (URT, 2025). A growing body of research has sought to understand this disparity and has identified a complex interplay of economic, technical, cultural, and institutional barriers constraining widespread adoption of eCooking solutions.

8.1 Economic Barriers

Affordability remains one of the most significant constraints to eCooking adoption. Although electricity tariffs in Tanzania have become relatively stable, the **upfront costs of modern appliances** such as EPCs and induction stoves remain prohibitively high for many low-income households (MECS & TaTEDO, 2022c). In addition, many households perceive electricity as inherently expensive for cooking, despite evidence showing that energy-efficient appliances can reduce overall energy consumption (Leary et al., 2021). These perceptions discourage investment in eCooking technologies, especially among poorer households.

Another economic barrier relates to poor-quality appliances available in the market. Weak enforcement of minimum energy performance standards has allowed inefficient and low-quality appliances to circulate widely (Kimambo & Mgombera, 2023). Such appliances often consume more electricity, fail prematurely, and increase household electricity costs, thereby reinforcing negative perceptions about eCooking affordability.

8.2 Technical Barriers

Technical and infrastructural challenges also limit eCooking uptake. Unreliable electricity supply, including **frequent outages and voltage fluctuations**, reduces household confidence in relying on electricity for cooking (Madinga & Munisi, 2021). As a result, many households continue “fuel stacking,” where electricity is used alongside charcoal or firewood as a coping strategy against unreliable supply (Mwampamba et al., 2025).

In rural and mini-grid settings, limited generation capacity further constrains the viability of eCooking, particularly during peak cooking hours (Msoffe & Mwase, 2020). Additionally, **shared metering systems** common in urban rental housing create practical difficulties for monitoring electricity consumption and allocating costs fairly among tenants (REA, 2020; World Bank, 2021). This discourages renters from adopting electric appliances due to fears of disputes over electricity bills.

Limited appliance distribution networks, inadequate repair services, and weak after-sales support also undermine sustained adoption of eCooking technologies, particularly outside major urban centres (MECS & TaTEDO, 2022c).

8.3 Social and Cultural Barriers

Social and cultural factors strongly influence household cooking practices and technology choices. In many Tanzanian communities, cooking with firewood or charcoal is deeply embedded in daily life and **cultural traditions**. Studies report that households often perceive food cooked with biomass fuels as tastier or more suitable for traditional cooking methods such as roasting and frying (Mwampamba et al., 2025).

In some contexts, biomass smoke is also associated with practical benefits such as repelling insects. These cultural preferences reduce willingness to transition fully to electric cooking. Furthermore, **gendered household roles and decision-making dynamics** affect appliance adoption and use. Women are typically responsible for cooking but may have limited control over household financial decisions, slowing investment in modern cooking technologies. Research therefore emphasizes that electricity access alone is insufficient; behavioural and cultural acceptance are equally important for long-term adoption (Batchelor et al., 2021).

8.4 Institutional and Policy Barriers

Institutional and policy-related constraints further hinder the growth of eCooking in Tanzania. Historically, national clean cooking policies and programmes focused more heavily on biomass improvements and LPG, with eCooking receiving only recent policy attention. Consequently, the **eCooking market system remains underdeveloped**, with limited coordination across stakeholders and insufficient long-term support mechanisms.

High import duties and taxes on energy-efficient appliances increase retail prices and discourage both suppliers and consumers (Kimambo & Mgombera, 2023). At the same time, **delayed implementation and weak enforcement of appliance efficiency standards** reduce market competitiveness for high-quality technologies.

In summary, the literature shows that **barriers to eCooking adoption in Tanzania are multifaceted**, spanning affordability constraints, energy reliability challenges, cultural preferences, weak appliance markets, and inadequate policy support. While studies demonstrate the technical feasibility and potential benefits of eCooking, they also highlight that targeted interventions are required to overcome these structural barriers. These include public awareness campaigns, improved appliance financing, stronger enforcement of energy standards, investment in grid reliability, and integration of eCooking within national clean cooking and electrification policies. Without such

coordinated efforts, the transition to widespread eCooking adoption will remain slow despite growing electricity access.

9. A study on Barriers to eCooking access and GESI integration in Tanzania's Clean Cooking Transition

To complement the literature review and address identified evidence gaps, the TaTEDO-SESO team conducted key informant interviews (KIIs) with a diverse range of stakeholders across Tanzania. A tailored interview questionnaire was developed to capture the perspectives of different groups. These interviews provide qualitative insights into lived experiences, perceptions, and practical challenges related to the adoption of eCooking technologies, as well as the integration of GESI considerations in Tanzania's clean cooking transition.

Table 0: Interview sample composition. Source: TaTEDO-SESO Field Data, (2026)

Organization	Title	Gender	Age Group
Ministries	Economist	F	18-35
	Energy specialist	F	36-45
Local Government Authority	Community Development Officer	F	36-45
Development Organizations	Energy Specialist	M	46-60
	Energy Specialist	M	46-60
Civil Society Organizations	Energy Advisor	F	36-45
	Assistant Director	F	46-60
	Project Officer	M	46-60
Private companies	Sales person	M	18-35
	Marketing officer	M	36-45
Government Agencies	Energy Specialist	M	46-60
	HR Officer	M	36-45
Sales Agent	Director	M	46-60
	Sales Person	M	46-60
EPC Users	Community	F	36-45
		F	18-35
		F	36-45
		F	60+
		F	36-45
		F	60+
		M	60+
		F	46-59
		M	18-35
		M	36-45
Non Users of EPC	Community	F	60+
		M	36-45
		M	18-35
		F	46-59

		M	36-45
		F	46-59
		F	46-59
		F	36-45

Interviews were conducted in Kiswahili, transcribed and analysed through a descriptive thematic analysis approach, which allowed to identify codes and subsequently generate themes and subthemes. Those are presented in tables within each finding section.

In what follows, we first explain our purposive sampling strategy, and how careful recruitment considerations allowed us to capture the voice of the most vulnerable and marginalised groups. We then present our findings, which highlight how issues such as affordability, awareness, cultural practices, and access to infrastructure shape eCooking adoption patterns at both household and institutional levels. By grounding the analysis in key informants' experiences, the findings presented here complement and enrich the evidence derived from the literature review, offering a more nuanced understanding of eCooking and GESI in Tanzania and allowing us to draw recommendations to inform future directions towards the country transition to clean cooking.

9.1 Participants: sampling and demographic characteristics of the respondents

Participants for this study were recruited through two different venues: i) the TaTEDO-SESO team contacted potential interviewees from governmental bodies, local authorities, media and civil society organizations, and agreed with their human resources departments on the most appropriate interlocutor to represent their institutions for an interview; ii) the TaTEDO-SESO team recruited sales agents from SESCO as interviewees. Sales agents were able to recommend end-users of eCooking appliances whom, in turn, recommended non-users of EPCs within their communities that they considered relevant for the TaTEDO-SESO team to interview.

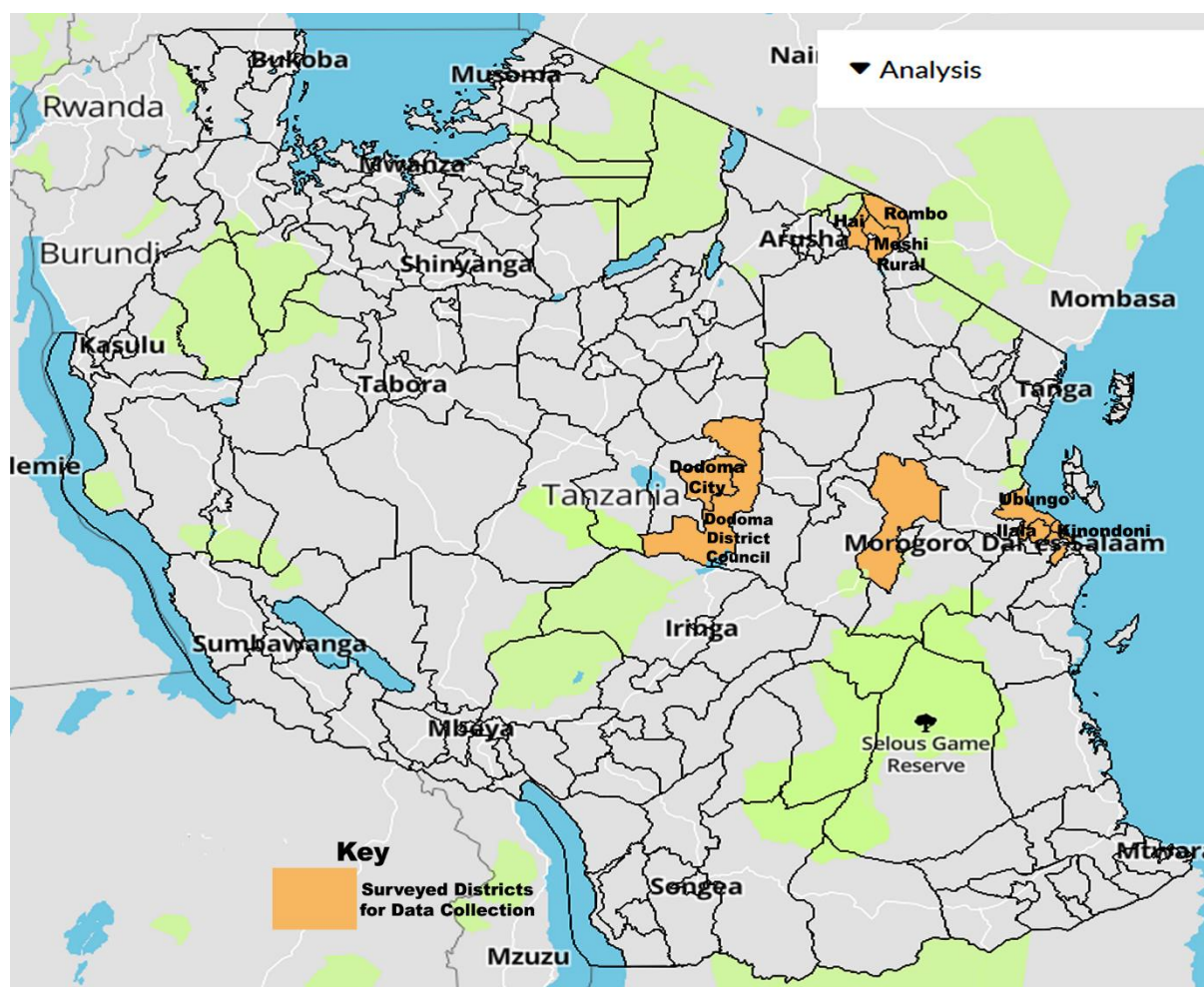
The 32 study respondents represent a diverse but intentionally selected sample across four regions of Tanzania, with total gender balance, concentration in middle age groups, and very limited representation of people with disabilities due to difficulties in recruiting participants from this group. The gender balance ensures women's voices are represented across stakeholder categories, which is essential for addressing the study's GESI objectives. The age distribution captures robust perspectives from middle-aged decision-makers who shape policy and programming, yet it provides more limited insights from youth and elderly populations. The very low disability representation

highlights a critical gap that limits the study's ability to address the needs and experiences of people with disabilities in the clean cooking transition.

These demographic characteristics shape the scope and limitations of the findings presented in subsequent sections. Where findings are based on limited representation from certain groups (such as people with disabilities, youth, and elderly populations) this limitation is noted in the analysis, and findings should be interpreted with appropriate caution. The implications of demographic composition inform the recommendations for future research, particularly regarding the need for more inclusive and representative sampling approaches that intentionally reach marginalized groups, oversample underrepresented populations, and employ accessible research methods to ensure that all voices are heard in the clean cooking transition.

Geographical Distribution of the Respondents

The geographical distribution of respondents reflects a purposive sampling strategy designed to capture diverse perspectives from regions with varying levels of eCooking penetration and electrification status. As presented in Table 1, respondents were drawn from four regions: Dar es Salaam, Dodoma, Kilimanjaro, and Morogoro.



Map 3: Map of Tanzania presenting the districts surveyed for data collection. Source: TaTEDO-SESO Field Data (2026).

Dar es Salaam Region contributed seven respondents (2 development organizations, 3 civil society respondents, 1 private company, 1 government agency), representing 21.9 percent of the total, distributed across Ilala District (6.25 percent), Kinondoni District (9.38 percent), and Ubungu District (6.25 percent). Dar es Salaam, as Tanzania's largest urban center, holds significance for this study because it has the highest electricity access rates and the greatest concentration of clean cooking appliance markets. The selection of respondents from this region was intentional to capture perspectives from the epicenter of eCooking market development, where awareness campaigns such as “Pika Smart” have been most intensively implemented. The distribution across three districts within Dar es Salaam ensures representation of diverse urban settings, from high-density residential areas to more affluent neighborhoods. The implication of this distribution is that findings from Dar es Salaam respondents provide valuable insights into urban eCooking dynamics, market conditions, and consumer behavior in contexts where infrastructure and market systems are most developed.

Dodoma Region contributed eight respondents (2 ministries, 1 private company, 1 government agency, 2 EPCs end-users and 2 non-users), accounting for 25 percent of the total, with one respondent (3.13 percent) from Dodoma District Council and seven respondents (21.88 percent) from Dodoma Mjini, the municipal capital. Dodoma, as the political capital of Tanzania, holds particular significance for capturing perspectives of policymakers and government actors. The concentration of respondents in Dodoma Mjini reflects the presence of key ministries, government agencies, and development partners headquartered in the city. This location is specifically relevant for understanding policy formulation processes, inter-ministerial coordination, and the translation of national strategies such as the NCCS into implementation frameworks. This distribution implies that findings from Dodoma respondents provide robust policy-level perspectives that are essential for understanding institutional barriers and enablers, though they may not fully capture variation in local government implementation across different district contexts where capacity and resources may differ significantly.

Kilimanjaro Region contributed the largest share of respondents, with 10 individuals representing 31.3 percent of the total. These were 6 EPCs end-users and 4 non-users of electricity for cooking. Respondents were distributed across Hai District (15.63 percent), Moshi District (9.38 percent), and Rombo District (6.25 percent). Kilimanjaro is significant for this study because it represents one of the regions with the highest rates of electric cooking adoption in Tanzania. As highlighted in the literature review, Hai, Moshi, and Rombo are among the districts identified as having “high to medium rates of cooking with electricity” (Map 3), making this region a critical case for understanding the factors enabling successful eCooking transitions. The high representation from Kilimanjaro was intentional to capture lessons from early adopters and understand the contextual factors (including cultural practices, economic conditions, and infrastructure quality) that have facilitated adoption in this region. The implication of this overrepresentation is that findings may reflect conditions in areas where eCooking is relatively advanced, potentially providing insights into what enables successful adoption, but may underrepresent the challenges faced in regions with lower adoption rates where eCooking is still nascent.

Morogoro Region contributed seven respondents, representing 21.9 percent of the total, with one respondent (3.13 percent) from Morogoro Municipal and six (1 sales agent, 1 LGA leader, 2 end-users, and 2 non-users) respondents (18.75 percent) from Morogoro Urban. Morogoro represents a transitional context between the highly urbanized Dar es Salaam and more rural areas, with growing eCooking market activity supported by projects such as SESCOB’s pilot on innovative business models for accelerating eCooking uptake. The region’s proximity to Dar es Salaam makes it a strategic location for understanding peri-urban eCooking dynamics and the spread of clean cooking technologies from urban centers to surrounding areas. This distribution implies that findings from Morogoro provide valuable insights into the transitional dynamics of

eCooking adoption in peri-urban contexts, where households may have access to electricity but face different barriers than either fully urban or rural populations.

Collectively, the geographical distribution enables comparative analysis across urban (Dar es Salaam, Dodoma Mjini, Morogoro Urban, Moshi), peri-urban (Morogoro peri-urban areas), and more rural districts (Hai, Rombo, Dodoma District Council), though the absence of respondents from predominantly rural districts with low electrification rates means that perspectives from off-grid or weakly connected areas may be insufficiently captured in this study.

Table 1: Geographical Distribution of the Respondents. Source: TaTEDO–SESO Field Data, (2026)

Region	District	Frequency	Percentage
Dar es Salaam	Ilala	2	6.25
	Kinondoni	3	9.38
	Ubungo	2	6.25
Dodoma	Dodoma District Council	1	3.13
	Dodoma Mjini	7	21.88
Kilimanjaro	Hai	5	15.63
	Moshi (V)	3	9.38
	Rombo	2	6.25
Morogoro	Morogoro Municipal	1	3.13
	Morogoro Urban	6	18.75
Total		32	100.0

Gender of the Respondents

As presented in Figure 2, the study achieved gender balance among respondents. This distribution reflects intentional sampling to ensure that gender perspectives were adequately represented across stakeholder categories. Female representation in the sample is significant, given the study's explicit focus on GESI in the clean cooking transition. As established in the literature review, women bear disproportionate burdens from traditional cooking practices; they are primarily responsible for cooking and fuel collection, spend long hours on these tasks, face greater exposure to HAP, and suffer associated health impacts. Women also experience significant time poverty that affects their education and economic participation, particularly in rural communities. Yet, despite their central role in cooking, women often have limited influence over household energy expenditure decisions and technology acquisition. Including women respondents across all stakeholder categories enables the study to capture these gendered experiences, perspectives, and priorities from multiple angles, including women policymakers shaping national strategies, women entrepreneurs in the clean cooking value chain, and women end-users navigating household energy decisions.

The implication of this gender distribution is multidimensional. Firstly, it allows for comparison between male and female perspectives on barriers, opportunities, and program effectiveness, which is essential for generating GESI-responsive recommendations. Secondly, it ensures that women's voices, which are often marginalized in energy sector research and decision-making, are adequately represented in the findings, contributing to a more complete understanding of the gendered dimensions of clean cooking transitions. Thirdly, the inclusion of women across different institutional positions allows for analysis of how gender intersects with organizational role and authority to shape perspectives on clean cooking and GESI. Fourthly, the gender balance strengthens the study's credibility in addressing GESI issues, as the findings are grounded in the experiences and perspectives of both women and men. However, it is important to note that gender representation among respondents does not necessarily reflect gender representation in the broader clean cooking sector, where women may be underrepresented in technical and leadership positions despite their predominance as end-users. This distinction is important for interpreting findings related to women's participation in the eCooking value chain, as the perspectives of women in decision-making roles may differ from the experiences of women in communities.

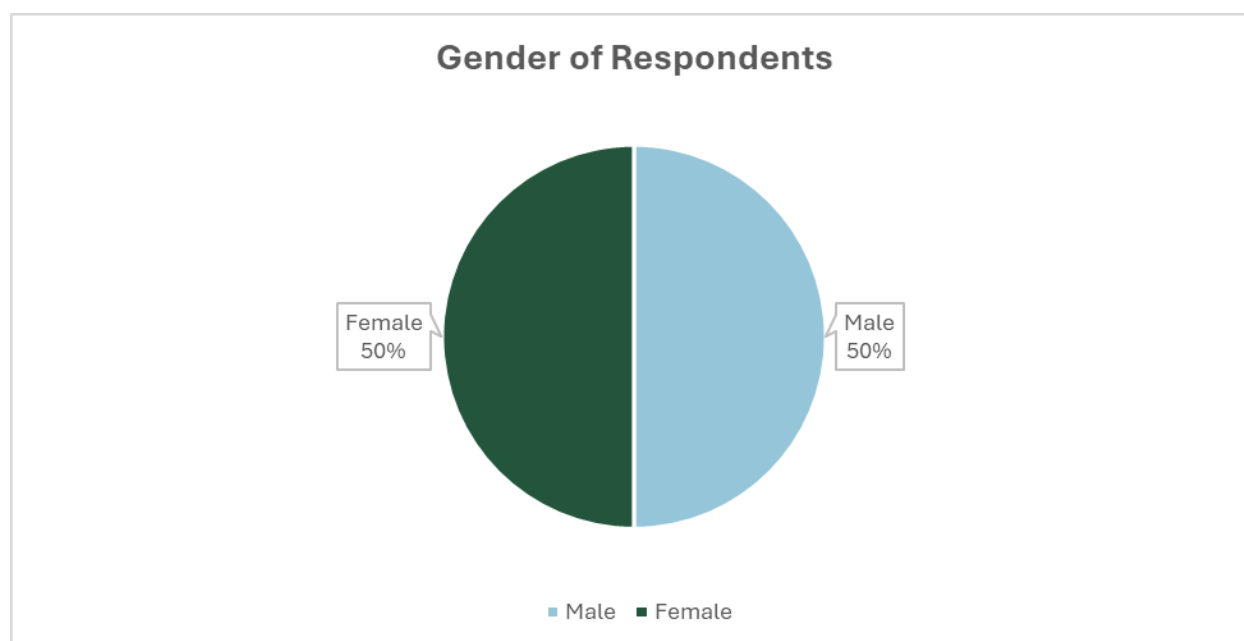


Figure 2: Gender of Respondents. Source: TaTEDO–SESO Field Data, (2026)

Age of the Respondents

The age distribution of respondents, presented in Figure 3, reveals a concentration in middle-aged groups. Respondents aged 25 to 44 years formed the largest category, with 12 respondents (37.5 percent). Those aged 45 to 54 years constituted the second largest group, with 11 respondents (34.38 percent). Younger respondents aged 18 to 24 years consisted of 5 respondents (15.63 percent) and older respondents above 54 years accounted for 4 respondents (12.5 percent).

The predominance of respondents between 25 and 54 years of age, which collectively accounts for 71.8 percent of all respondents, reflects the demographic composition of professional roles in the clean cooking sector. Policymakers, program managers, business owners, local government officials, and technical staff typically fall within these age brackets, where individuals have acquired sufficient experience, expertise, and seniority to hold decision-making positions. This concentration is appropriate for understanding institutional and policy dynamics, as these respondents are directly involved in shaping, implementing, and managing clean cooking interventions.

The representation of younger respondents aged 18 to 24 years, while limited in number, is important for capturing perspectives on youth engagement in the clean cooking value chain. Young people represent a key demographic for clean cooking transitions, being often more open to new technologies, more adaptable to behavior change, and potentially serving as agents of change within households and communities. Young people also represent a critical demographic for entrepreneurship in the clean cooking sector, including as sales agents, technicians, and innovators.

The representation respondents above 54 years of age is similarly important for understanding the perspectives of elderly individuals in the clean cooking transition. The literature review identified elderly-headed households as a marginalized group for whom limited research exists, noting that older individuals may face distinct challenges in adopting new technologies, have different cooking needs and preferences shaped by lifelong practices, and experience physical limitations that affect their interaction with new appliances.

The age distribution implies that while the study provides robust insights from middle-aged decision-makers who are central to clean cooking policy and programming, it offers more limited insights into youth and elderly perspectives. This has implications for the study's ability to fully address the needs and experiences of these demographic groups, particularly in generating recommendations for engaging youth and supporting elderly populations in the clean cooking transition. Future research should intentionally oversample these age groups to ensure their perspectives are adequately captured.

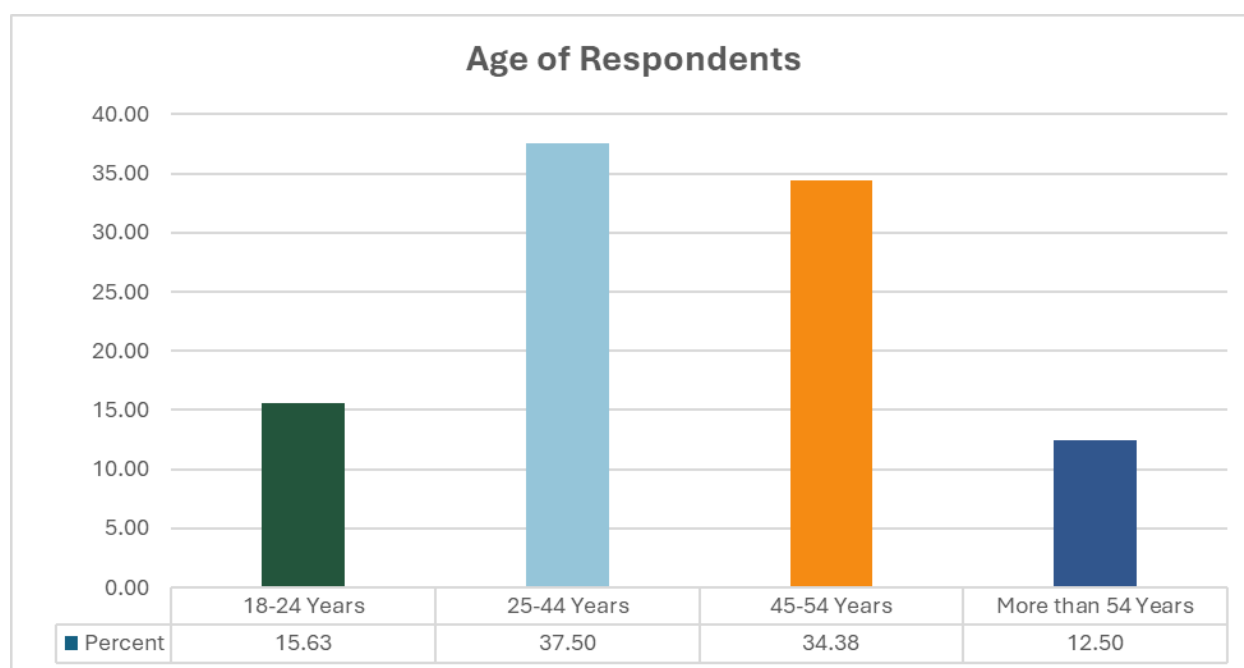


Figure 3: Age of Respondents. Source: TaTEDO–SESO Field Data (2026)

People with Disability (PWD)

Figure 4 presents the disability status of respondents, revealing that among the 32 respondents, only one individual (3.1 percent) identified as a person with disability. This reflects broader patterns of exclusion in the clean cooking sector, where people with disabilities are often invisible in policy discussions, program design, research, and data collection. As highlighted in the literature review, “marginalized groups, including people with disabilities, elderly-headed households, or extremely poor households, are rarely studied in clean cooking research” (Section 4.0), and “data related to marginalized

groups were often limited, outdated, or unavailable” (Section 1.0). This study's demographic profile reflects this broader research gap, with persons with disabilities underrepresented despite the importance of understanding their experiences.

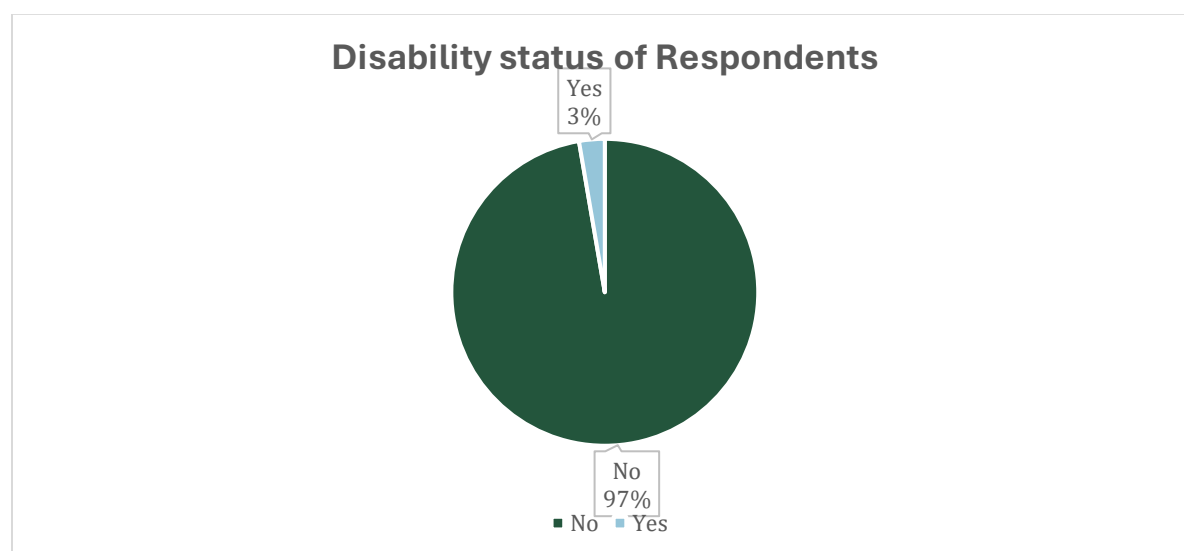


Figure 4: Disability status of Respondents. Source: TaTEDO–SESO Field Data, (2026)

9.2 Findings

9.2.1 Awareness and Knowledge of eCooking

Table 2 presents the main themes emerged on the topic of level of awareness and knowledge of eCooking technologies. It highlights variations in understanding between institutional actors and community-level groups, including end-users and non-users. Institutional stakeholders (ministries, developing organizations, and private companies) generally demonstrate relatively high awareness due to their direct involvement in policy implementation and market development. However, knowledge gaps and misconceptions about eCooking remain prevalent at the grassroots level.

Table 2: Awareness and Knowledge of eCooking. Source: TATEDO–SESO Field Data (2026)

Theme	Sub-theme	Codes
Awareness of eCooking	Institutional awareness	Policy awareness, National Clean Cooking Strategy 2024-2034 knowledge, stakeholder engagement
	Community awareness	Limited awareness, misconceptions, information gap

Awareness strategies	Government initiatives	Campaigns, workshops, outreach programs
	Stakeholder engagement	Partnerships, training, demonstrations

Government efforts such as awareness campaigns, workshops, and institutional programs have contributed to increasing knowledge of clean cooking technologies; however, this awareness has not been uniformly distributed across all segments of society. In particular, awareness at the community level remains limited, especially among end-users and non-users, where misconceptions regarding the cost of electricity and the usability of eCooking appliances persist. This gap suggests that awareness efforts, although present, have not yet fully penetrated grassroots communities, thereby limiting the effectiveness of adoption initiatives. As one Ministry respondent noted, “... *The Ministry continues to create awareness on eCooking technology in various ministries so that they can become ambassadors to the community...*” highlighting a top-down approach to awareness creation. In contrast, a non-user respondent emphasized the persistence of knowledge gaps by stating, “...*Many people still do not understand how electric cooking works and assume it is too expensive...*”, indicating that information dissemination has not effectively reached the intended beneficiaries.

This uneven distribution of awareness reinforces the evidence that end-users remain insufficiently equipped with the knowledge required to make informed decisions regarding eCooking adoption. Awareness is a prerequisite for adoption, as households cannot transition to new technologies without understanding their benefits, costs, and usability. In this regard, the findings are consistent with TaTEDO and MECS (2023; 2024b), which emphasize that awareness campaigns play a critical role in influencing decision-making and adoption of electric pressure cookers in Tanzania. Similarly, Clements and Fodio Todd (2022) identify low consumer awareness as a major constraint within the eCooking market. However, as pointed out by Aamaas et al. (2024), knowledge gaps extend beyond awareness to include technical understanding and user confidence, suggesting that increasing awareness alone may not be sufficient to drive widespread adoption without complementary capacity-building efforts.

9.2.2 Barriers to eCooking Adoption

Table 3 summarizes the key barriers affecting adoption of eCooking technologies. In addition to awareness and knowledge of eCooking appliances, which have been discussed above, it outlines economic, infrastructural, and informational constraints,

including high upfront costs, unreliable electricity supply, and limited access to appliances.

Table 3: Barriers to eCooking Adoption. Source: TaTEDO–SESO Field Data (2026)

Theme	Sub-theme	Codes
Economic barriers	Affordability	High cost, expensive appliances, low income
Infrastructure barriers	Electricity reliability	Power cuts, unstable supply
	Access issues	Limited grid access
Knowledge barriers	Information gap	Lack of knowledge, misconceptions
Market barriers	Supply chain	Limited availability, import dependence

The study identified multiple and interrelated barriers affecting the adoption of eCooking technologies across all stakeholder groups, with affordability emerging as the most dominant constraint. Respondents consistently highlighted the high upfront cost of electric cooking appliances as a major limitation, particularly for low-income households. In addition, electricity reliability was identified as a critical challenge, especially in rural and peri-urban areas where frequent power interruptions reduce user confidence in eCooking technologies and encourage continued reliance on traditional fuels such as charcoal and firewood. Furthermore, persistent misconceptions about electricity costs exacerbate these challenges, while market-related issues, including limited availability of appliances and weak distribution systems, further constrain adoption. A company respondent emphasized the economic barrier by stating, “...*The biggest challenge is the cost of the appliances; many households cannot afford them...*”, while an end-user respondent highlighted perception-related barriers, noting that “...*People fear using electricity for cooking because they think it will increase their bills too much...*”. These perspectives illustrate how both actual and perceived costs influence adoption decisions.

Our findings align with Batchelor et al. (2021) and Habitat Media (2023), who identify affordability and infrastructure limitations as primary barriers to modern energy cooking in Tanzania. They further validate Madinga and Munisi (2021), who emphasize the critical role of electricity reliability in shaping adoption decisions. The results are also consistent with the Energy Access and Use Situation Survey (NBS & REA, 2020), which indicates that the majority of Tanzanian households continue to rely on traditional fuels due to cost and

accessibility constraints. However, this study illuminates the interconnected nature of these barriers, underscoring how eCooking adoption is shaped by economic, infrastructural, and informational challenges reinforcing one another and making it difficult to address them in isolation. The findings indicate that effectively promoting eCooking technologies requires a comprehensive, multi-dimensional approach. Without targeted efforts to address the barriers faced by marginalized groups, existing social and economic inequalities risk being reinforced, underscoring the need for inclusive and carefully tailored interventions.

9.2.3 Gender and Social Inclusion (GESI)

Table 4 presents findings related to gender dynamics and social inclusion in the adoption of eCooking technologies. It highlights the roles, decision-making power, and challenges faced by different groups, particularly women and marginalized populations, demonstrating how social inequalities influence access to and adoption of modern cooking technologies.

Table 4: Gender and Social Inclusion (GESI) Factors in eCooking Adoption. Source: TaTEDO–SESO Field Data (2026)

Theme	Sub-theme	Codes
Gender roles	Cooking responsibility	Women cook, unpaid labor
Decision-making	Power dynamics	Men control finances, limited women's voice
Inclusion gaps	Marginalized groups	Youth exclusion, PWD barriers
Empowerment	Participation	Women in the value chain, entrepreneurship

Women, who are the primary users of cooking technologies, often lack decision-making power over household expenditures, thereby limiting their ability to adopt modern cooking solutions despite being the most affected by traditional cooking practices. This imbalance creates a disconnect between usage and decision-making authority, ultimately constraining adoption at the household level. In addition, marginalized groups (including low-income households, people with disabilities (PWD), and other vulnerable populations) face compounded challenges due to financial limitations and accessibility constraints. A civil society organization (CSO) respondent highlighted this disparity by stating, “... Women are responsible for cooking, but they do not decide what technology to buy...” while a Local Government Authority (LGA) respondent emphasized inclusivity concerns, noting that “...Low-income households and vulnerable groups are often left

behind due to affordability issues...” . These perspectives underscore how social inequalities intersect with economic barriers to influence adoption outcomes.

These findings highlight that technological and policy interventions alone are insufficient to drive eCooking adoption without addressing underlying gender and social inequalities. The findings presented above align with Kelkar and Nathan (2021) argument that women’s agency is a key determinant in transitioning to clean cooking energy. TaTEDO-SESO (2024a) has emphasized the importance of integrating GESI considerations into clean cooking interventions to ensure inclusivity and equity (see also: Standal et al., 2024). However, the current study extends existing literature by incorporating multi-stakeholder perspectives, demonstrating that while GESI issues are widely recognized at the policy level, their implementation remains inadequate in practice, thereby limiting the effectiveness of eCooking initiatives.

9.2.4 Policy and Institutional Framework

Table 5 outlines the key policy and institutional frameworks supporting eCooking adoption. It presents the roles of various government institutions, policy instruments, and coordination mechanisms. Additionally, the table highlights existing gaps in implementation, resource allocation, and institutional collaboration.

Table 5: Policy and Institutional Framework for eCooking. Source: TaTEDO-SESO Field Data (2026)

Theme	Sub-theme	Codes
Policy support	NCCS implementation	Strategy execution, policy alignment
Institutional coordination	Stakeholder collaboration	Inter-ministerial coordination
Implementation gaps	Weak execution	Monitoring challenges, resource constraints

The study examined the role of policy and institutional frameworks in supporting eCooking adoption and found that Tanzania has established a relatively strong policy foundation, particularly through instruments such as the NCCS and the NEP. Ministries and government agencies play a central role in coordinating implementation efforts, setting targets, and monitoring progress. Yet, significant challenges persist in translating policies into effective action at the local level, largely due to coordination gaps between institutions, limited financial and human resources, and weak monitoring and evaluation systems. A Government Agency respondent noted that “...*Each institution is given*

responsibilities and reports monthly to ensure implementation of the strategy...” indicating the presence of structured frameworks, yet an LGA respondent pointed out that *“...Coordination between ministries and local authorities still needs improvement...”*. These responses highlight the disconnect between policy design and practical implementation.

These findings demonstrate that the existence of supportive policies does not automatically guarantee successful outcomes, particularly in the absence of strong institutional coordination and accountability mechanisms. This finding is consistent with Kimambo and Mgombera (2023), who identify policy implementation challenges within Tanzania’s energy sector. It also aligns with SE4All (2024) and the National Energy Efficiency Strategy (URT, 2024b), which emphasize the need for improved coordination, enforcement, and institutional strengthening. Furthermore, EnDev (2024) highlights capacity constraints as a major limitation to the effectiveness of clean cooking programs. However, this study contributes additional insight by showing how these policy and institutional gaps affect stakeholders across multiple levels, from national ministries to local government authorities and end-users, thereby reinforcing the need for a more integrated and inclusive implementation approach.

9.2.5 Cultural and Behavioral Factors

Table 6 summarizes cultural beliefs, behavioral patterns, and perceptions that influence the adoption of eCooking technologies. It shows how preferences for traditional cooking methods, fear of new technologies, and misconceptions about electricity impact household decisions regarding cooking practices.

Table 6: Cultural and Behavioral Factors Influencing eCooking Adoption. Source: TaTEDO–SESO Field Data (2026)

Theme	Sub-theme	Codes
Cultural preferences	Cooking traditions	Taste preference, traditional methods
Behavioral factors	Resistance to change	Habit, fear of new technology
Perceptions	Misconceptions	Electricity fear, safety concerns

Many households continue to prefer traditional cooking methods due to deeply rooted cultural beliefs, taste preferences, and familiarity with conventional fuels such as charcoal and firewood. Resistance to change and fear of new technologies were particularly evident among non-users, who often perceive eCooking as complex, unsafe, or unsuitable for preparing traditional meals. Misconceptions regarding electricity costs

and safety further reinforce these attitudes, thereby limiting the willingness to adopt modern cooking solutions. An end-user respondent expressed cultural preference by stating, “...*Some people believe food cooked with charcoal tastes better...*”, while a non-user respondent highlighted concerns about technology, noting that “...*There is fear that electric cooking is dangerous or too complicated...*” These perceptions illustrate how behavioral and cultural factors can act as significant barriers to adoption.

These findings highlight that eCooking adoption is not purely a technical or economic issue but also a socio-cultural process that requires behavioral change and user acceptance. They align with Katikiro et al. (2023), who analysed the role played by cultural preferences in influencing clean cookstove adoption in rural Tanzania, and with MECS & TaTEDO (2022a; 2022b) cooking diaries studies, which highlights how households often engage in fuel stacking due to cultural and practical considerations. They also validate Ntiyakunze and Stage (2025), who emphasize the role of experience, perception, and behavioral patterns in shaping energy choices. However, the current study adds further value by integrating a GESI perspective, demonstrating how cultural norms intersect with gender roles and social structures to influence adoption patterns, thereby reinforcing the need for culturally sensitive and inclusive intervention strategies.

9.2.6 User Experiences

Table 7 presents the experiences of end-users who have adopted eCooking technologies. It highlights perceived benefits such as convenience, efficiency, and time savings, as well as challenges including electricity costs and power reliability.

Table 7: User Experiences with eCooking Technologies. Source: TaTEDO–SESO Field Data (2026)

Theme	Sub-theme	Codes
Benefits	Convenience	Time saving, ease of use
	Efficiency	Faster cooking
Challenges	Cost	Electricity expense
	Reliability	Power interruptions

End-users of eCooking technologies generally report positive outcomes, particularly in terms of convenience, time savings, and efficiency. Electric cooking appliances are widely perceived as modern, easy to use, and capable of simplifying daily cooking activities, thereby improving household routines and, in some cases, contributing to better health outcomes through reduced exposure to smoke. An end-user emphasized

these benefits by stating, “...*Electric cooking is fast and convenient compared to charcoal...*” highlighting the practical advantages of adoption. Despite these positive experiences, several challenges including electricity costs and unreliable power supply, limit consistent usage and discourage full transition. Another end-user noted, “...*Sometimes power cuts force us to go back to using charcoal...*”, illustrating the continued reliance on traditional fuels and the prevalence of fuel stacking among households.

Our findings also suggest that user experience plays a crucial role not only in sustaining adoption but also in influencing wider community uptake through social diffusion. Positive experiences can encourage others to adopt eCooking technologies, while negative experiences may reinforce skepticism and resistance. This finding is consistent with Kweka et al. (2021), who observed that users of EPCs in mini-grid settings reported significant benefits alongside operational challenges. Similarly, Leary et al. (2021) highlight the performance advantages of electric cooking appliances, while also acknowledging concerns related to affordability. The results further align with MECS (2022), which shows that user satisfaction is shaped by both technical performance and cost considerations.

9.2.7 Non-User Perceptions

Table 8 provides insights into the perceptions and attitudes of non-users toward eCooking technologies. It outlines key concerns such as affordability, lack of awareness, and skepticism about practicality. The table also captures the conditions under which non-users may be willing to adopt eCooking.

Table 8: Non-User Perceptions of eCooking. Source: TaTEDO–SESO Field Data (2026)

Theme	Sub-theme	Codes
Reasons for non-use	Cost concerns	High electricity cost
	Lack of awareness	No information
Perceptions	Skepticism	Doubt benefits
	Interest	Willingness to adopt

In contrast to the experiences of eCooking adopters, the study found that non-users’ reluctance to adopt eCooking technologies is primarily driven by affordability concerns, limited awareness, and skepticism regarding practicality and reliability. Many non-users perceive electric cooking as expensive and unsuitable for their household needs, often

forming opinions without direct experience. A non-user respondent expressed this concern by stating, “...I have heard about it, but I think it is too expensive for my household...”, reflecting the strong influence of perceived cost barriers. At the same time, some respondents indicated a willingness to adopt eCooking technologies if enabling conditions such as training, awareness, and financial support were provided. For instance, another non-user respondent noted, “...If we get proper training and support, we can try using electric cooking...”.

Perceptions (whether accurate or not) play a decisive role in shaping adoption decisions, often acting as barriers even in the absence of direct experience. This implies that addressing misconceptions is as important as addressing actual structural and economic constraints. The finding is consistent with Mwampamba et al. (2025), who identify perception and socio-economic factors as key determinants of clean cooking adoption. It also aligns with Tunguhole et al. (2025), who emphasize the interaction between affordability, accessibility, and reliability in influencing household energy choices. Additionally, the Household Energy Consumption Survey (NBS, 2025) reflects similar trends, showing continued reliance on traditional fuels due to perceived and actual barriers. However, the present study adds depth by providing qualitative insights into the underlying reasons for resistance, which are often not captured in quantitative analyses, thereby offering a more nuanced understanding of non-user behavior.

9.2.8 Recommendations from Stakeholders

Table 9 presents the recommendations provided by various stakeholders on how to improve eCooking adoption. It highlights suggested interventions such as financial support mechanisms, awareness campaigns, infrastructure improvements, and the integration of GESI principles to ensure inclusive and sustainable adoption.

Table 9: Stakeholder Recommendations for Enhancing eCooking Adoption. Source: TaTEDO–SESO Field Data (2026)

Theme	Sub-theme	Codes
Financial support	Subsidies	Reduced cost, financing
Awareness	Education	Campaigns, training
Infrastructure	Electricity improvement	Reliable power
Inclusion	GESI integration	Women empowerment

Drawing from the identified challenges, user experiences, and perceptions, the study further captured recommendations from stakeholders on how to enhance eCooking adoption, revealing a strong consensus on the need for a comprehensive and multi-faceted approach. Stakeholders emphasized the importance of financial support mechanisms, including subsidies, instalments payment plans, and result-based financing models, to address affordability constraints and make eCooking technologies more accessible to low-income households. A company respondent stated that *“...Providing subsidies or payment plans will help many households adopt eCooking...”*. In addition, awareness campaigns and training programs were identified as essential for improving knowledge, correcting misconceptions, and building user confidence, particularly among women and marginalized groups. A CSO respondent noted that *“...We need more awareness campaigns targeting communities, especially women...”*.

Furthermore, stakeholders highlighted the need to improve electricity reliability and strengthen infrastructure to ensure consistent and dependable use of eCooking technologies. A respondent from TANESCO (government agency) noted that *“To ensure that all groups have access to and reliable electricity services, TANESCO needs to increase production capacity and diversify from hydropower to other sources of energy. In addition, the government should facilitate electricity imports from neighboring countries to help reduce costs and expand access. Finally, communities should play their part by conserving water sources to support sustainable power generation.”*

Integrating GESI principles across all interventions was also identified as a key priority to ensure that adoption efforts are inclusive and equitable. The stakeholders interviewed recognize the interconnected nature of the challenges and advocate for integrated solutions that address economic, technical, social, and institutional dimensions simultaneously. These recommendations are consistent with SE4All (2024) and World Bank (2023), which advocate for holistic approaches to clean cooking transitions. Similarly, REA (2024, 2025) initiatives on subsidies and financing mechanisms support the need for targeted financial interventions, while Teske et al. (2025) emphasizes the role of strategic investments and policy alignment in achieving sustainable energy transitions. However, this study adds value by explicitly incorporating GESI-focused recommendations, highlighting the importance of ensuring that eCooking interventions are not only effective but also inclusive and socially equitable.

10. Conclusions and Recommendations

10.1 Conclusions

The study set out to explore barriers to the adoption of eCooking through a GESI lens by capturing perspectives from multiple stakeholders, including government institutions, private sector actors, civil society organizations, local government authorities, end-

users, and non-users. Using descriptive thematic analysis, the study identified several interconnected factors influencing the adoption and scaling of eCooking technologies.

The findings reveal that while there is a growing awareness of eCooking and its potential benefits (such as improved health outcomes, environmental sustainability, and time efficiency), its adoption remains uneven and constrained by multiple barriers. Key challenges identified include the high upfront cost of appliances, unreliable electricity supply in some areas, limited infrastructure, and low levels of public awareness. These barriers are particularly pronounced among low-income households and marginalized groups, thereby reinforcing existing inequalities.

From a GESI perspective, the study concludes that gender dynamics play a significant role in shaping eCooking adoption. Although women are the primary users and beneficiaries of cooking technologies, they often have limited decision-making power over household energy choices and financial resources. This disconnect limits the uptake of eCooking solutions despite their potential to reduce women's workload and exposure to health risks associated with traditional cooking methods. Additionally, the inclusion of vulnerable groups such as people with disabilities, youth, and rural populations remains inadequate in both policy and practice.

Institutionally, the study finds that while there are supportive policies and national frameworks promoting clean energy transitions, implementation gaps persist due to weak coordination among stakeholders, limited enforcement mechanisms, and insufficient resource allocation. Similarly, private sector actors face market-related challenges such as limited consumer demand, high import costs, and weak distribution networks, which hinder the scalability of eCooking technologies.

Cultural and behavioral factors also emerged as critical determinants of adoption. Deeply rooted cooking practices, food preferences, and perceptions about electricity usage influence household decisions, particularly among non-users who remain skeptical about the affordability and practicality of eCooking.

Overall, the study concludes that the transition to eCooking requires a holistic and inclusive approach that addresses economic, infrastructural, institutional, and socio-cultural barriers while actively integrating GESI considerations. Without targeted interventions, the benefits of eCooking may remain inaccessible to the most vulnerable populations, thereby limiting its transformative potential.

10.2 Recommendations

Based on the findings, the study proposes several recommendations aimed at enhancing the adoption and sustainability of eCooking technologies while promoting gender equality and social inclusion.

- i. The government should strengthen policy implementation and coordination mechanisms across ministries, agencies, and local government authorities. This includes ensuring that existing clean energy policies are effectively operationalized, adequately funded, and aligned with GESI objectives. Establishing clear accountability frameworks and enhancing inter-institutional collaboration will improve the efficiency and impact of eCooking initiatives.
- ii. There is a need to improve the affordability of eCooking technologies. The government, in collaboration with development partners and the private sector, should introduce financial support mechanisms such as subsidies, instalment payment schemes, and micro-financing options to enable low-income households to access electric cooking appliances. Additionally, reducing import taxes and promoting local manufacturing can help lower the cost of appliances.
- iii. Investment in energy infrastructure is critical to ensure reliable and accessible electricity supply, particularly in rural and underserved areas. Expanding grid connectivity and promoting off-grid renewable energy solutions will enhance the feasibility of eCooking adoption across diverse contexts.
- iv. Targeted awareness and behavior change campaigns should be implemented to educate communities about the benefits and practical use of eCooking technologies. These campaigns should be culturally sensitive and tailored to different user groups, including women, youth, and rural populations, to address misconceptions and promote acceptance.
- v. Gender and social inclusion should be mainstreamed across all eCooking interventions. Programs should actively empower women by enhancing their access to financial resources, decision-making platforms, and entrepreneurial opportunities within the clean energy value chain. Special attention should also be given to the inclusion of people with disabilities and other marginalized groups by designing accessible and user-friendly technologies.
- vi. The private sector should be supported to strengthen supply chains, distribution networks, and after-sales services. Public-private partnerships can play a crucial role in expanding market reach, improving product availability, and ensuring sustainability of eCooking solutions.
- vii. Continuous research and monitoring should be conducted to assess the impact of eCooking interventions and inform evidence-based decision-making. Future studies should explore innovative financing models, user-centered technology design, and long-term behavioral change strategies to accelerate the transition to clean cooking.

References

- Aamaas, B., Grimsby, L. K., Ulsrud, K., Standal, K., Vindegg, M., Chowdhury, S., ... Pope, D. (2024). Required knowledge for clean cooking transition: The case of Tanzania. *Environmental Science & Policy*, 160, 103834. <https://doi.org/10.1016/j.envsci.2024>.
- Africa Minigrid Developers Association (AMDA). (2024). *Benchmarking Africa's Minigrids Report 2024*. <https://www.africamda.org/wp-content/uploads/2025/04/Benchmarking-Africas-Minigrids-Report-2024-Online-version.pdf>
- Batchelor, S., Brown, E., Leary, J., & Scott, N. (2021). The transition to modern energy cooking services in Tanzania. *Energies*, 14(15), 4574. <https://doi.org/10.3390/en14154574>
- Clements, A., & Fodio-Todd, J. (2022). Tanzania eCooking market assessment 2022. MECS <https://mecs.org.uk/wp-content/uploads/2022/08/Tanzania-eCooking-Market-Assessment-2022-Final.pdf>
- EnDev. (2024). *Country programme overview: Clean cooking and energy access in Tanzania*. Retrieved from <https://endev.info>
- ESMAP. (2023–2025). *Mini Grids for Half a Billion People: Market Outlook and Handbook for Decision Makers*. World Bank. <https://www.worldbank.org/en/topic/energy/publication/mini-grids-for-half-a-billion-people>
- ESMAP. (2024). *State of the Mini-Grids Market Report 2024*. World Bank / ESMAP.
- EWURA. (2024). Electricity sub-sector regulatory performance report for the financial year 2023/24. Dar es Salaam: <file:///C:/Users/User/Downloads/Electricity%20Sub-Sector%20Regulatory%20Performance%20Report%20for%20the%20Financial%20Year%202023-24-1.pdf>
- FAO. (2021). Integrated landscape management in the dry Miombo woodlands of Tanzania. Project Document. <https://openknowledge.fao.org/server/api/core/bitstreams/eabcf71-33ba-4274-b945-a1b90432d93e/content>
- GBD. (2016), *Global Burden of Disease Study 2016*. Institute for Health Metrics and Evaluation: Washington DC.
- Habitat Media. (2023). Barriers slowing Tanzania's shift to clean cooking energy. Habitat Media. <https://habitatmedia.co.tz/barriers-slow-tanzanias-shift-to-clean-cooking-energy-stakeholders-warn/#:~:text=The%20lack%20of%20skilled%20technicians%20to%20repair,from%20adopting%20clean%20energy%20solutions%2C%20Barnaba%20added.>

- Katikiro, R., Gill-Wiehl, A., & Kammen, D. M. (2023). Evaluation of the preference for and viability of clean cookstove adoption in rural Tanzania. *Energy, Sustainability and Society*, 13(Article 42). <https://doi.org/10.1186/s13705-023-00422-3>
- Kelkar, G., & Nathan, D. (2021). Cultural and economic barriers in switching to clean cooking energy: Does women's agency make a difference? *Energies*, 14(21), 7242. <https://doi.org/10.3390/en14217242>
- Kimambo, N., & Mgombera, A. (2023). Energy efficiency in domestic appliances in Tanzania: Policy gaps and implementation challenges. *Tanzania Journal of Engineering and Technology*, 42(1), 45–57.
- Kweka, A., Clements, A., Bomba, M., Schürhoff, N., Bundala, J., Mgonda, E., Nilsson, M., Avila, E., & Scott, N. (2021). Tracking the Adoption of Electric Pressure Cookers among Mini-Grid Customers in Tanzania. *Energies*, 14(15), 4574. <https://doi.org/10.3390/en14154574>
- Leary, J., Sago, S., Minja, A., Batchelor, S., et al. (2019). eCook Tanzania Prototyping – Final Report. Tanzania Traditional Energy Development Organization, Loughborough University, University of Surrey & Gamos Ltd (MECS Programme). <https://tatedo.or.tz/attachments/article/109/eCook-TZ-Prototyping-Report-2-10-18-COMPRESSED.pdf>
- Leary, J., Sago, S., Batchelor, S., Scott, N., & Chepkemai, M. (2021). Cost and performance of electric cooking appliances in East Africa. *Energies*, 14(14), 4345. <https://doi.org/10.3390/en14144345>
- Madinga, P., & Munisi, R. (2021). Energy reliability and adoption of modern cooking technologies in Tanzania. *Journal of Energy Transitions*, 5(3), 98–112.
- MECS & TaTEDO. (2022a). Cooking diaries study performed in the city of Dodoma, Tanzania. <https://mecs.org.uk/wp-content/uploads/2022/10/Cooking-Diaries-Study-Performed-in-the-City-of-Dodoma-Tanzania.pdf>.
- MECS & TaTEDO. (2022b). Cooking diaries study — Rural Kilimanjaro (Hai District). <https://mecs.org.uk/wp-content/uploads/2022/10/Cooking-Diaries-Study-Kilimanjaro.pdf>.
- MECS & TaTEDO (2022c). *Towards a Thriving eCook Market in Tanzania – Briefing Note 2: Who's Who in the Market Chain for eCooking in Tanzania*. Modern Energy Cooking Services (MECS).
- MECS. (2025a). TANESCO launches an eCooking appliance lending programme for its staff. *MECS blog*. <https://mecs.org.uk/blog/tanESCO-launches-an-ecooking-appliance-lending-programme-for-its-staff/>

- MECS. (2025b). Tanzania's power utility scales up electric cooking through landmark partnership. *MECS blog*. <https://mecs.org.uk/tanzanias-power-utility-scales-up-electric-cooking-through-landmark-partnership/>
- Msoffe, T., & Mwase, V. (2020). Solar PV–diesel hybrid mini-grids and the feasibility of electric cooking in Tanzania. *Energies*, 13(13), 3761. <https://doi.org/10.3390/en13153761>
- Mwampamba, T., Msuya, N., & Mwinuka, L. (2025). Household energy transitions in Tanzania: Determinants of electric cooking uptake. *Energy for Sustainable Development*, 79, 110–121.
- Mwanamke Initiatives Foundation (MIF). (2024–2025). *Upishi Salama clean-cooking programme*. allAfrica.com.
- NBS & REA. (2020). Energy Access and Use Situation Survey in Tanzania Mainland 2020. <file:///C:/Users/User/Downloads/ENERGY%20ACCESS%20AND%20USE%20SITUATION%20SURVEY%20IN%20TANZANIA%20MAINLAND%20%E2%80%93%20APRIL%202020-1.pdf>
- NBS. (2019). *Household Budget Survey 2017/18: Main Indicators Report*. Dodoma, Tanzania. https://www.nbs.go.tz/nbs/takwimu/hbs/2017_18_HBS_Main_Indicators_Report_English.pdf
- NBS. (2023). Impact of Access to Sustainable Energy Survey. Access to Electricity and Modern Cooking Solutions. (IASSES 2021/2022). <https://www.nbs.go.tz/uploads/statistics/documents/en-1706803129-The%202021-22%20Impact%20of%20Access%20to%20Sustainable%20Energy%20Survey%20-%20Main%20Report.pdf>
- NBS. (2024). Key insights from the United Republic of Tanzania's 2022 *Energy Balance*. <https://www.nbs.go.tz/uploads/statistics/documents/en-1742553339-2022%20Energy%20Balance%20-Key%20Insights.pdf>
- NBS. (2025). Household Energy Consumption Survey Report 2023: Mainland Tanzania. <https://www.nbs.go.tz/uploads/statistics/documents/en-1762972701-2023%20Household%20Energy%20Consumption%20Survey%20Report%20%20Mainland%20Tanzania.pdf>
- Ndifwa, N. J., Hayuma, E. H., & Kuchengo, S. A. (2025). Decomposing rural–urban disparities in clean energy use for cooking in Tanzania: Evidence from the 2022 Tanzania Demographic and Health Survey. *Eastern Africa Journal of Official Statistics*, 1(1). <https://doi.org/10.63933/eajos.1.1.2025.2>
- Ntiyakunze, M., & Stage, J. (2025). Fuel-stacking behaviour among households in Dar es Salaam, Tanzania: The role of experience. *Energy Strategy Reviews*, Volume 60, 2025, 101773, <https://www.sciencedirect.com/science/article/pii/S2211467X25001361>

- Odarno L., Sawe. E, Swai M., Katyega M., and Lee A. (2017). Accelerating Mini-grid Deployment in Sub-Saharan Africa: Lessons from Tanzania. Washington, DC: World Resources Institute and TaTEDO.. <https://www.wri.org/research/accelerating-mini-grid-deployment-sub-saharan-africa-lessons-tanzania>
- REA. (2022). Tanzania Rural Energy Master Plan (REMP), Volume 1: Main Report. <https://rea.go.tz/Articles/rural-energy-master-plan-remf>
- REA. (2024). Call for proposals – Provision of subsidies under result based financing for improved cooking solutions program. <https://rea.go.tz/Articles/call-for-proposals-provision-of-subsidies-under-result-based-financing-for-improved-cooking-solutions-program-1> rea.go.tz
- REA. (2025). Provision of subsidies under result-based financing for clean cooking solutions program (RBF Clean Cooking call). REA. <https://rea.go.tz/Articles/provision-of-subsidies-under-result-based-financing-for-clean-cooking-solutions-program> rea.go.tz
- SE4All. (2024a). *eCooking Market and Policy Insights: Tanzania*.
- Standal, K., Ulsrud, K., Grimsby, L. K., & Aamaas, B. (2024). Health, energy security or people's jobs? Understanding cooking transition narratives and energy justice implications in Tanzania. *Energy Research & Social Science*, 117, 103718. <https://doi.org/10.1016/j.erss.2024.103718>
- Tanin, F., & Shrestha, N. (2021). Household smoke-exposure risks associated with cooking fuels and cooking places in Tanzania: A cross-sectional analysis of Demographic and Health Survey data. *International Journal of Environmental Research and Public Health*, 18(5), 2534. <https://doi.org/10.3390/ijerph18052534>
- TaTEDO, DfID and Loughborough University (2020). Approach to Designing Delivery Models of Modern Energy Cooking Services in Tanzania (ADD-MECS-Ta). MECS-TRIID report. <file:///C:/Users/User/Downloads/MECS-TRIID-Tatedo-Final-Project-Report-1.pdf>
- TaTEDO & MECS. (2023). EPCs awareness campaigns and influencing decision makers in Tanzania. Project Completion Report. <https://mecs.org.uk/wp-content/uploads/2024/03/Completion-REPORT-TaTEDO-SESO.pdf>
- TaTEDO. (2020). *THE TANZANIA eCOOKBOOK Plus eRecipes for Tanzanian Staple Foods*.
- TaTEDO. (2024a). The Clean Cooking Policy Dialogue with Policy and Decision-Makers [Policy brief/workshop report]. tatedo.or.tz
- TaTEDO. (2024b). Awareness and Communication Strategy: Promoting Modern Cooking Appliances in Tanzania [Report]. tatedo.or.tz
- Teske, S., Feenstra, M., Miyake, S., Rispler, J., Mohseni, S. (2025) Tanzania: Energy Development Plan to Decarbonise the Economy; prepared for Power Shift Africa by

- The University of Technology Sydney, Institute for Sustainable Futures; March 2025.
<https://www.uts.edu.au/globalassets/sites/default/files/2025-03/UTS-Africa-Power-Report-Tanzania-WEB2.pdf?>
- Tunguhole, J., Ückert, G., Gebre, G. G., Robischon, M., & Sieber, S. (2025). Household cooking energy transition in Tanzania: The interplay between energy accessibility, affordability and reliability in the shift to clean fuels. *Energy for Sustainable Development*, 89, 101854. <https://doi.org/10.1016/j.esd.2025.101854>
- UNFCCC. (2012). Information note. Default values of fraction of non-renewable biomass for least developed countries and small island developing States. Clean Development Mechanism. EB 67, Report, Annex 22.
- URT. (2000). *Women and Gender Development Policy*. Ministry of Community Development, Gender, Women and Special Groups.
https://natlex.ilo.org/dyn/natlex2/natlex2/redirect/fromOld?p_count=97036&p_isn=94118&p_lang=en Natlex+1
- URT. (2003). *National Ageing Policy*. Ministry of labour, youth development and sports.
[Microsoft Word - NATIONAL AGEING POLICY - FINAL PAPER.rtf](#)
- URT. (2004). *National Policy on Disability*. Ministry of Labour, Youth Development and Sports.
<http://www.tanzania.go.tz/pdf/NATIONAL%20POLICY%20ON%20DISABILITY.pdf>
- URT. (2007). *National Youth Development Policy*. Ministry of Labour, Employment and Youth Development. <https://www.kazi.go.tz/uploads/documents/en-1599494965-sw1573207670-NATIONAL%20YOUTH%20DEVELOPMENT%20POLICY.pdf> Kazi+1
- URT. (2015). *National Energy Policy*. Ministry of Energy.
[https://www.nishati.go.tz/uploads/documents/en-1622283004-National%20Energy%20Policy%20\(NEP\),%202015.pdf](https://www.nishati.go.tz/uploads/documents/en-1622283004-National%20Energy%20Policy%20(NEP),%202015.pdf).
- URT. (2021). *National Climate Change Response Strategy (2021–2026)*. Vice President’s Office, Division of Environment, Government Printer, Dodoma.
<https://tzdpg.or.tz/storage/2022/09/National-Climate-Change-Strategy-2021-2026.pdf>
- URT. (2024a). *National Clean Cooking Strategy 2024–2034*. Ministry of Energy,
[nishati.go.tz/uploads/documents/en-1717680135-NATIONAL CLEAN COOKING STRATEGY \(2024-2034\) FINAL.pdf](https://nishati.go.tz/uploads/documents/en-1717680135-NATIONAL CLEAN COOKING STRATEGY (2024-2034) FINAL.pdf)
- URT. (2024b). *National Energy Efficiency Strategy (2024–2034)*. Ministry of Energy.
energyefficiency.co.tz/uploads/documents/en-1738309350-Final National Energy Efficiency Strategy 2024-2034.pdf

URT. (2025). *Clean cooking energy solutions baseline survey to support implementation of clean cooking strategy in enhancing access to modern energy in mainland Tanzania* (Draft Report). Ministry of Energy, prepared by Kepler Consultant.

World Bank. (2021). *Tanzania – National Panel Survey (NPS) 2020/21 and Energy Access Analysis (LSMS Program)*. Washington, DC: World Bank.
<https://www.worldbank.org/en/programs/lsms/brief/national-panel-survey-data-on-the-living-standards-of-tanzania>.

World Bank. (2024a). *Mission 300 overview*. Africa Energy Summit.
<https://thedocs.worldbank.org/en/doc/f5191bbf194fcec652d4f5afe98a4768-0360012025/original/Mission-300-Overview-021025-jp.pdf>.

World Bank. (2024b). United Republic of Tanzania. Clean cooking background note. Country Climate and Development Report. The World Bank, 1818 H Street NW, Washington, DC 20433, USA; Group.
<https://openknowledge.worldbank.org/server/api/core/bitstreams/1510c761-ea15-4232-b3da-664ee18b3cfb/content>

World Bank. (2026). *The Multi-Tier Framework for Energy Access: Insights and Impact from a Decade of Surveys* (English). Washington, D.C.: World Bank Group.
<http://documents.worldbank.org/curated/en/099040126145541234>

WRI. (2023). *Energy Access Explorer: A geospatial platform for energy planning*. WRI.
<https://www.energyaccessexplorer.org>

Zanzibar Electricity Corporation. (2023). *Overview*. <https://zeco.co.tz/>

