

Gender Assessment Report for Dodoma Urban and Rural Areas of Hai District, Kilimanjaro Region, Tanzania

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Executive Summary

The issues of energy access and gender equality are linked, and targeted action on both issues provides greater development impact, for example in fields such as health, livelihoods poverty, and food security. Within energy access, access to clean cooking solutions is a critical driver of gender equality. The research described in this report (and accompanying reports) as part of the Thriving Market research project by TaTEDO has strived to take a gender mainstreaming approach. It has been conducted with awareness of the gender context of Tanzania and clean cooking, and participatory methodologies have been used to ensure both women and men are included. The aim is to contribute to understanding the gender context in order to be able to design interventions that address the clean cooking transition and gender inequality at the same time, and so promote the advancement of women.

The information of gender report is partly from a literature review and is partly from findings of focus group discussions conducted with 24 participants who participated in the cooking diaries studies in Dodoma and Kilimanjaro.

According to the gender assessment performed in Dodoma and Kilimanjaro, domestic activities in households include food preparation and cooking, washing dishes, fetching water, securing cooking fuel and shopping for food stuffs and other domestic items used in the kitchen. A total of 18 out of 24 participants agreed that all these activities are mostly performed by women.

EPCs as energy efficient appliances can relieve users from the time constraints and drudgery involved in cooking including implementation of other household chores. Since women are ones involved with cooking in most of the households, it is relevant to support them in all steps of preparing and cooking foods. EPC will reduce drudgery for women associated with food preparation, cooking, securing cooking fuels and paying attention to prevent food from burning while cooking. Women estimated that they spend just over three hours less per day on cooking activities after receiving the EPCs.

A majority of the participants reported that the freed-up time will be used for economically productive activities. The introduction of the EPC had several effects in the existing cooking practices. Having received the EPCs and having experienced cooking with electricity, participants agreed that the EPC could be their primary cooking device for cooking and other stoves will be their secondary cooking devices which will be used during power-cuts. At the end of the study, all households used multiple cookstoves to meet their needs through fuel stacking. There were three (3) women in Dodoma and other four (4) in Kilimanjaro, who decided to become retailers (sales agents) of EPCs to other women in their communities by the end of the study.

The discussions explored the issue of resistance to behaviour change in cooking practices. Whether or not participants were willing to change their behaviour was influenced by previous experiences of using similar cooking energy appliances, awareness of EPC as an efficient, clean and safe cooking appliance, socio-cultural attributes and types of cheaper alternatives available to end-users.

Introduction of EPCs to households and communities is also expected to transform gender roles from women to men especially for young families in Dodoma and Kilimanjaro. Cooking with EPCs has the potential to transform existing gender roles, not only by reducing cooking drudgeries for women and creating more time for social and economic activities, but also potential for influencing men to support women in cooking. Across two areas of Dodoma and Kilimanjaro, EPCs will enhance the



household cooking support between men and women and start to redefine men's role as economic provider and decision-maker.

The gender assessment has established findings on how gender dynamics effect the everyday experience of cooking and food preparation in Dodoma and Kilimanjaro Regions as new livelihood transformation for women and men. Introduction of clean cooking services by using EPCs has brought to the surface hidden potential impacts, barriers and drivers for modern energy cooking services. Although gender related policies, strategies, plans and documents discuss the idea of gender equality; socio-cultural practices are quite different. Men and women are continuing with their lives as usual amongst them suffering from fuel collection, difficulties in cooking and other domestic chores. The clean and efficient cooking appliances like EPCs have potential of becoming solutions for breaking these socio-cultural practices and transforming cooking in households. EPCs will reduce the hard work of food preparation, and at the same time cause reduced indoor air pollution, inability to burn food and allowing women to work on other household chores.



1.0 Introduction

The report presents one part of the detailed in country research carried out to explore the cooking practices for modern energy cooking services in Dodoma and Kilimanjaro, Tanzania. The work aims to gain much greater insight into culturally distinct cooking practices and explore how compatible they are with modern energy cooking services. The report is rich with detail and is intended to provide decision makers, practitioners and researchers with new knowledge and evidence. This report presents findings from four focus groups designed to inform the future development of modern energy cooking services in similar regions in Tanzania. It is one component of a broader study on Promoting Thriving Market for Modern Energy Cooking Services in Tanzania designed to assess the cooking practices that lay ahead for clean cooking in high impact potential markets, such as Kilimanjaro and Dodoma Regions, funded by the FCDO UK Aid through Gamos Ltd and University of Loughborough, UK (Shuma et al. 2022). A much deeper analysis of the data collected during this project was supported by the Modern Energy Cooking Services (MECS) programme, which included the writing of this report.

1.1 Country Energy Overview

The United Republic of Tanzania in Eastern Africa has a total area of 945,087 km2. The country has a tropical type of climate which is divided into four main climatic zones notably: the hot humid coastal plain; the semi-arid zone of the central plateau; the high-moist lake regions and the temperate highland areas. The Government of Tanzania is composed of 26 administrative regions, 98 districts, 114 councils and 12,317 villages. Almost about two-fifths of the country's population is engaged in agricultural production. The major food crops are corn (maize), rice, sorghum, millet, bananas, cassava (manioc), sweet potatoes, barley, potatoes, and wheat (NBS and OCGS 2021).

The population of Tanzania based on interpolation of United Nations data stands at 63.46 million inhabitants in the year 2022. According to the Energy Access and Use Situation Report (2020) 78.4% of the population have access to electricity overall (69.8% in rural areas). However, only 37.7% of households are connected to electricity and there is a large disparity in connectivity between urban areas, with 73.2% connected to electricity compared to rural areas where only 24.5% of households are connected (NBS and REA 2020). There are also large differences with the distribution of access to electricity across regions in Tanzania. The population of Dar es Salaam all have access to electricity (100%), and other regions such as Kilimanjaro (93.6%), Mwanza (89.9%), Mbeya (89.0%), Mara (87.7%), Coast (85.8%), and Geita (84.4%) have a high percentage of the population connected to electricity (NBS and REA 2020).

Rural Areas of Hai District, Kilimanjaro Region





Tanzania has a variety of potential energy resources, such as biomass fuels, hydropower, natural gas, coal, uranium, wind, geothermal and solar which are yet to be fully exploited. The total primary energy use pattern is dominated by biomass fuel and has almost doubled in the last decade. Cooking energy data shows that 63.5% of households in Tanzania are using firewood as the main source of energy for cooking, followed by charcoal (26.2%), Liquefied Petroleum Gas (5.1%) and electricity (3%) (NBS and REA 2020). About 76.6% are mainly using electricity for lighting (ibid).

The Energy Access and Use Situation Report (2020) stipulates that 26 million m3 of firewood is consumed in rural areas, and of this, 24 million m3 is used for household cooking and 2.03 million m3 for rural small and medium-sized enterprises (ibid). 14.4 million m3 is used as charcoal, mainly in urban areas (ibid). In 2012, the majority of biomass was used in households (90%), and only 4% of the biomass consumed across Tanzania was sustainable (Ministry of Energy and Minerals 2015b). The high proportion of household energy consumption is explained by the use of inefficient stoves for cooking with firewood and charcoal. The remaining (10%) is used by home-based enterprises and commercial, institutional and industrial sectors. The government is struggling with added pressure on energy consumption as the country's economy diversifies and shifts away from agriculture, making the low access rate and other supply limitations obstacles to economic growth (IRENA 2017).

The Renewables Readiness Assessment for Tanzania, published by IRENA in 2017 elaborates on the development of the electricity sector in Tanzania (IRENA 2017):

"Electricity is mainly generated from hydropower, oil and natural gas. Costly oil products account for around one-fifth of power generation and are mainly required for off-grid applications and emergency on-grid power supply. The electrical supply varies in times of drought and is highly dependent on hydropower generation, leading to rolling blackouts. What is more, a quarter of power produced is lost due to the state of the grid infrastructure. The unreliability of power supply has had a negative impact on the development of Tanzanian industry. Although Tanzania has excellent wind, solar, geothermal and biomass resources for power production, only 4.85% of non-hydropower renewable electricity was considered in the Electricity Industry Reform Roadmap to 2025.

"The country's abundant renewable energy potential offers the possibility to overcome some of the challenges faced by the energy and power sector in a cost-effective way. This would lead Tanzania towards economic growth that is sustainable.

"A renewable energy zoning study carried out by the International Renewable Energy Agency (IRENA) and the Lawrence Berkeley National Laboratory (LBNL) in 2015 found that the oil-based power in Tanzania can be displaced by wind power due to the high correlation of wind resources. According to this study, an examination of the characteristics of the least-cost energy system for Tanzania found that utility-scale for solar PV and wind projects could reach 3.7 gigawatts (GW) and 1.9 GW by 2030, alongside 694 megawatts (MW) of gas-fuelled power plant investment already in the pipeline. The report estimated that the overall share of renewable in electricity production, including large hydropower, could reach 78% by 2030. This requires investments of USD 11.4 billion in generation and USD 6.7 billion in transmission and distribution investment between 2013 and 2030. The average generation cost would fall to rate of 17% between 2013 and 2030. This calls for a revision of the existing electricity master plan as well as a roadmap to realise the desired least-cost power system investment strategy.



"On the policy and regulatory framework side, the draft Electricity Systems Operations Act 2016, under approval, gives priority for dispatch to the electricity generated from renewable energy sources and indigenous sources. However, this act does not specify guidelines for the power forecast period. Despite the existence of feed-in tariffs and small power purchase agreements (SPPAs) for grid-connected projects, renewable-based power generation is unattractive to private investors. This is due to the weak financial position of TANESCO, the sole off-taker, and the government's inability to guarantee payment of TANESCO defaults." (IRENA 2017)

1.2 Context of the Potential Landscape Change by Modern Cooking Services

The use of biomass (or solid bio-fuels) for cooking is the daily pattern for 85% of the population in Tanzania (Ministry of Energy and Minerals 2015a). This pervasive use of solid fuels including wood, coal, straw, and dung and traditional cookstoves results in high levels of household air pollution, extensive daily drudgery required to collect fuels, and serious health impacts. J. Leary et al (2019) note: 'Cooking is mainly done on traditional, low-efficiency stoves that use biomass fuels that are produced locally through inefficient, informal and uncontrolled value chains and with basic, low-yield technologies' (Leary et al. 2019). Extensive and inefficient use of those fuels combined with unsustainable harvesting practices is the single largest cause of depletion of natural forests in the country. The adverse socio-economic effects of the current practices are partly caused by the lack of access to sustainable cooking solutions, a poverty trap that creates high barriers to economic development.

Alternative fuels and appliances that are suitable for domestic clean cooking are available but have been limited by acceptability from the community because of unawareness of those cooking appliances. The different alternatives such as LPG, ICS, kerosene and biogas represent different improvement potentials and are important parts of the solution. LPG represents lower long-term average cooking costs for households than ICS, but it has logistical challenges; dependence on the import of LPG influences the level of energy security of this option and requires higher investments for users. Toby D. Couture and David Jacobs in their report 'Beyond Fire: how to achieve electric cooking (2019)' outline some of the challenges of relying on LPG, including high price volatility, greater geopolitical and related risks, and supply chain challenges. They conclude that although 'LPG may be seen as a transitional fuel; it is arguably not, however, a long-term solution to challenge the achievement of sustainable cooking' (Jacobs and Couture 2019).

Electricity is one of the cleanest cooking solutions and if used in efficient appliances will be affordable to most people, even poor segments in the community, if financing is carefully considered. The challenge at the moment is low awareness of the type of modern energy appliances and services as a barrier to efficient cooking and appropriate business models for reaching the majority of the population in the country.

1.3 Introduction of Modern Cooking Services

Modern energy, particularly electricity, plays a key role in rural development. Concerning the country's goal of achieving a small and middle industrialized economy, access to affordable, reliable and safe electricity can greatly improve food, education, and health services, and improve opportunities for income generation.



Increasing the pace of electricity connection, especially in rural areas, is one of the fundamental principles of the Rural Energy Agency (REA). The 2020 Energy Access Situation Survey results show a significant improvement in electricity connection at the household level in both rural and urban areas of the Tanzania Mainland since 2011 (NBS and REA 2020).

The National Energy Policy is focusing on a transition to modern cooking fuels and technologies, moving away from the use of biomass for cooking. The policy includes a reference to cooking and biomass consumption under the Electricity Sub-sector and only addresses an ambition for transition to modern fuels. Specifically, the relevant objective is to improve the quality of life through the use of modern fuels and the associated policy statements include; i) enhancing fuel switch from wood fuel to modern energy and (ii) facilitating the adoption of appropriate cooking appliances to promote alternatives of woodfuel (Ministry of Energy and Minerals 2015a).

J.Leary et al in the Policy and National Markets Review for eCook in Tanzania (2019) explore the various incentives the government of Tanzania has provided, such as tax relief and results-based financing, to stimulate the use of LPG in the country. The report elaborates (drawing on (Ministry of Energy and Minerals 2015a)): 'Over the past ten years, the LPG supply for household cooking has increased significantly. The total volume of LPG imported in the financial year 2010/11 was 24,470 MT compared to 69,148 MT in the financial year 2014/15. The trend shows that the LPG market is growing rapidly, especially in urban centres' (Leary et al. 2019).

2.0 Energy and Gender

The issues of energy access and gender equality are linked, and targeted action on both issues provides greater development impact, for example in fields such as health, livelihoods poverty, and food security. Within energy access, access to clean cooking solutions is a critical driver of gender equality. In Tanzania, energy poverty affects a large number of women and girls who disproportionately bear the burden of energy poverty because of gender norms and traditions, which hinders equal access to modern energy services.

The international network Energia notes that women do three times as much unpaid domestic work as men at the household level, cooking being one of these tasks, and they bear the brunt of the health diseases associated with cooking with traditional stoves and fuels (Energia 2022). Women are also usually the ones going out to collect fuel, which can put them at risk of violence in remote areas and is in any case a time-consuming and burdensome task. Energia note that 'Access to electricity for indoor powering of end-use appliances can significantly reduce women's drudgery and energy poverty' (Energia 2022). Certainly, eCooking would contribute to reduced time spent collecting fuels (and so a reduction in personal risk when doing so), reduced time spent on direct cooking activities, and reduced exposure to harmful indoor air pollution. Time which becomes available can be spent pursuing leisure or income-generating activities.

As Energia note: 'By ensuring energy access to all, we tackle some of the persistent gender inequalities. In turn, a more gender-balanced energy sector contributes to a broader socio-economic development and a faster transition towards a cleaner future' (Energia 2022). Therefore, it is important to apply a gender lens to programs that aim to understand potential energy transitions or set up interventions to do so. One approach to applying a gender lens is to use 'gender mainstreaming'. The European Institute for Gender Equality defines gender mainstreaming as follows: 'Mainstreaming a gender perspective is the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all



levels. It is a way to make women's as well as men's concerns and experiences an integral dimension in the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality' (European Institute for Gender Equality 2022).

Guidelines for a gender mainstreaming process (drawn from (Energia 2021) and (UNIDO 2014)) can be summarised as follows:

- Examining roles of women and men, considering economic, political, social, and cultural context.
- Identify any imbalances or gaps that exist between genders.
- Identify any strengths or opportunities for the different genders.
- Identify different needs and priorities, and the different knowledge or skills that might be present between genders.
- Understand the impact an energy intervention will have on each gender and consider how both genders can benefit from it.
- Ensure both women and men can benefit from any capacity-building activities.
- Ensure that women and men can both contribute to decision-making processes and can take on leadership roles.

Energia also notes that by incorporating a gender mainstreaming approach into energy interventions, women should be enabled and supported to take on new roles beyond their traditional roles, getting involved as '*job-creators, employees, entrepreneurs, and leaders in the energy sector*' (Energia 2021).

The research described in this report (and accompanying reports) as part of the Thriving Market research project by TaTEDO has strived to take a gender mainstreaming approach. It has been conducted with awareness of the gender context of Tanzania and clean cooking, and participatory methodologies have been used to ensure both women and men are included. The aim is to contribute to understanding the gender context in order to be able to design interventions that address the clean cooking transition and gender inequality at the same time, and so promote the advancement of women.

3.0 Objective

The main objective of this report is to examine the MECS interventions and their implementation processes to ensure that they yield the maximum possible benefits for both genders.

Specific Objectives of this study are:

- Identify the likely impacts of MECS on women and men, looking for opportunities to maximise the positive impacts, e.g. by connecting time savings with specific entrepreneurial opportunities;
- ii) Make recommendations for how MECS could have the biggest impact on quality of life for women and men in Dodoma, Kilimanjaro and elsewhere,
- How could the positive impacts be maximized?
- How could the negative impacts be mitigated?



• How should the MECS interventions should be carried out to maximise the participation of both genders in the design phases as well as implementation?

iii) Identify gender-specific marketing strategies to enable modern energy cooking services to rapidly reach scale.

4.0 METHODOLOGY

The findings presented in this report are based upon data obtained from the following sources:

- Literature review on gender and energy issues in Tanzania.
- Notes taken during personal interviews and a focus group with participants undertaken during the cooking diaries study; 24 participants received EPCs and they were expected to record their cooking for a period of close to three weeks with emphasis on energy readings, quantity and type of food being cooked.
- Analysis of gender-focussed questions from the cooking diary studies.
- Past experience having worked on improved cook stoves in Tanzania for several decades.

5.0 Results

5.1 Time Saving and Drudgery Reduction

EPCs as energy efficient appliances can relieve men and women from the time constraints and drudgery involved in cooking and managing household chores. Since women are ones involved with cooking in most of the households, this is particularly relevant for involvement of women in food preparation.



Traditional Three stone Fireplace

According to the gender review from participants, domestic activities in households for both Dodoma and Kilimanjaro included food preparation and cooking, washing dishes, fetching water, securing cooking fuel and shopping for food stuffs and other domestic items used in the kitchen. A total of 18 out of 24 participants agreed that all these activities are mostly performed by women with the exception of two; securing cooking fuels which is mostly done by men and shopping which is more or less shared equally between household members. Fuels for cooking in these two areas are bought from vendors especially commercial fuels like LPG and

charcoal. Some firewood for Kilimanjaro are collected from household farms, river valleys or natural forests while bio-wastes (maize cobs and saw mill wastes) are obtained from harvested agricultural crops and saw mill factories in Hai District. Firewood collection is role of women in both periphery of Dodoma Urban and rural areas of Hai District in Kilimanjaro region.

EPC will reduce drudgery for women of food preparation, cooking, securing cooking fuels and taking care of food stuff (from burning) during cooking practices. Women suggested that they spend just over three hours less per day cooking after receiving the EPCs. Time spent for collecting firewood dropped from an average of 14 hours per week to 3 hours per week after receiving the EPC. There is



no fear of burning the foods while cooking and EPC has removed drudgery of staying near to the cooking appliance while cooking.

5.2 Income Generation

A majority of the participants reported that they used the freed-up time and energy for economically productive activities. The introduction of the EPC had several effects on existing cooking practices. At the end-line, all households used multiple cookstoves to meet their household needs through fuel stacking. The period after transition from existing cooking practices to cooking with electricity households reported that the EPC will be their primary cooking device and other stoves will be their secondary cooking devices which will be used when there is power cuts. Six households reported that the traditional wood stove will no longer be used. The reason is that EPC has minimized their household budgets by more than 60%. Some of the participants said they used to buy charcoal in Dodoma for more than TZS 60,000 per month, with EPC, it is possible to reduce this amount by half.

There were three (3) women in Dodoma and other four (4) in Kilimanjaro, who decided to become retailers (agents) of EPCs to other women who were not in the study. These female sales agents accepted to become sales agents and promoters of the EPCs in these areas. They were linked to the suppliers of the EPC in Moshi and Dodoma where they will get EPCs for disposing to their customers. However, there are more women who have emerged as sales agents and enter into contract with supplier to market EPCs in both Dodoma and Kilimanjaro.

5.3 Resistance to Change

Resistance to change is a factor which is influenced by various aspects, including previous experiences of using similar cooking energy appliances, awareness of EPCs as efficient, clean and safe cooking appliances, socio-cultural attributes and types of cheaper alternatives available for end-users. The previous experiences of using non-electric pressure cookers was observed to be one of the attributes which is worrying participants to use EPCs due to explosion. The users in Dodoma said that they banned using manual pressure cookers because they had an experience where it exploded and its lid broke the ceasing board of the kitchen. The EPC, contrasting to the previous types of pressure cookers, has been improved with safety features. It does not allow opening when the pressure has built up, it locks up and only opens after pressure has been released. This is an important perception which should be changed in the mind of people that the new pressure cooker is not like the previous type of pressure cooker in terms of safety and security of users.

The socio-cultural attributes that contribute to resistance to change include perceptions about the type of foods which cannot be cooked in the EPCs. There were reports that smoke emitted from cooking was also used to repel insects and preserve food in the households. **Some women in Kilimanjaro said that heat from open three stone fireplaces was also used for space heating which cannot be obtained from EPCs.** Type of foods which cannot be cooked in an EPC may restrict use of EPC to the certain extent in the Kilimanjaro Region. There are traditional foodstuffs with recipe



Gender Discussion in Dodoma Urban

with content of bicarbonate soda. These foods include Ngararimu, Ikatwe, Ndala, Kiburu and



Mangolo. However, there socio-cultural issues require awareness creation or training to users for brushing out their minds and find alternatives of these attributes.

The awareness of EPC as efficient, clean and safe cooking appliance is another factor which may cause resistance to change. This constraint can be reduced by ensuring larger campaigns of EPC and its benefits and value proposition to men and women in the community.

Availability of cheaper fuels such as firewood collected from nearby forests may limit use of EPCs. Woodfuels in Kilimanjaro and Dodoma are bought from vendors although for Kilimanjaro they have alternative bio-wastes from agriculture for a short period of time. It will take a long time for people to get rid of these fuels completely because they are still available in their areas.

There is also a false perception in Kilimanjaro and Dodoma that cooking with electricity is too expensive. In fact, the evidence explained to other women and men in these study by cooking diary participants has enlighten other households and decided to buy EPCs.

5.4 Transformation of Gender Roles

Introduction of clean cooking solutions in the households and community of using EPCs is also expected to transform gender roles from women to men especially for young families in Dodoma and Kilimanjaro. Cooking with EPC has the potential to transform existing gender roles, not only by reducing cooking drudgeries for women and creating more time for social and economic activities,

but also potential for influencing men to support women in cooking. Most men, before they get married, are good cooks; once they get married, they become cripples of cooking. Whenever it is necessary for them to cook, men will prepare and cook fast and soft foods. Introduction of EPC in their families will enable some men in areas where they are unrestricted with cultural practices to continue with fast cooking of foods and support food preparation in their households. Men may also support other



Gender Data Collection in Hai, Kilimanjaro

kitchen activities such as minimizing cleaning requirements (EPC pots since is non-sticky, making EPC clean, boiling water for drinking, etc). According to women in Kilimanjaro, the responsibility and care of men to women increase whenever women are nursing babies (four months after baby birth) in the families. It is when women get all care and needs they are supposed to get from men.

Other issues which will make them to transform gender roles will emanate from time and energy saving that may increase leisure time by using EPC for both men and women. EPC does not cause indoor air pollution (no smoke), no soot in the houses/kitchen, it does not burn food and it allows women to work on other household chores while cooking and reduced treatments for women and children on smoke related diseases. All these benefits may transform tendency of buying stove by women and many men will buy EPC for their wives and families.

Across the two areas of Dodoma and Kilimanjaro, EPCs will enhance the normative association between men and their role as economic provider and decision-maker. More free time for women due to use of EPCs is widely expected to contribute to income generation and economic success on their part which can challenge men's position. This situation will influence economic competition in



the community between men and women since women will have more income than men at the same time men would like to control over income and maintain their role as economic provider. This may transform roles of economic provider from men to women in the long run.

6.0 CONCLUSION

The gender assessment has established findings on how gender affects the everyday experience of cooking and food preparation in Dodoma and Kilimanjaro Regions as new livelihood transformation for women and men. Introduction of clean cooking services by using EPCs, has surfaced hidden potential impacts, barriers and drivers for modern energy cooking services. Although gender related policies, strategies, plans and documents discuss embrace the idea of gender equality, socio-cultural practices are quite different. Men and women are continuing with their lives as usual amongst them suffering from fuel collection, cooking and other domestic chores. The clean and efficient cooking appliances like EPCs have potential of becoming solution for breaking these socio-cultural practices and transform cooking in households since EPC will be lessen hard work of food preparation in households at the same time benefiting from other effects of EPC to users such as reduced indoor air pollution, inability to burn food and characteristic of allowing women to work on other household chores. The key to achieving use of EPCs for cooking is to change the perception of old pressure cookers as dangerous and electricity as too expensive for cook for men and women in households.



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