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Global data indicates that **more than 2 billion people lack access to clean cooking facilities.** In the case of India, 772 million people (66% of the total population) depend on the traditional use of biomass for cooking and 293 million do not have access to electricity. **Progress has primarily been driven by programmes in some countries that incentivized the use of liquefied petroleum gas (LPG) and clean air policies**. Access rates in 2022 reached 70% in India. In sub-Saharan Africa, which represents around half of the access gap, 29 countries have access rates below 20%, and the region has seen a continued increase in the number of people without access to clean cooking since tracking started, reaching around 960 million in 2023. The number of people gaining access to clean cooking barely exceeds population growth as switching from the traditional use of biomass to cleaner options faces both economic, logistic and cultural barriers.

The International Energy Agency (IEA) projects that by **2030, around 940 million people** will still be without access to clean cooking if current trends persist. Achieving universal clean cooking access can save up to 1.5 Gt CO₂eq by 2030, 900 Mt of which in sub-Saharan Africa alone. To achieve **the objective of the Net Zero Emissions by 2050 Scenario in line with SDG 7, nearly 300 million people need to gain access to clean cooking solutions each year.** Significant increase in policies and investments will be required to support this achievement and different clean cooking technologies and fuels needs to be deployed. This info brief presents information will provide some insights of some of the **Global LEAP AWARDS Studies, conducted by CLASP and ACTS in Kenya to provide critical insights into the performance, affordability, and adoption of energy-efficient off-grid appliances (induction cooktops) to help accelerate market development and innovation in clean cooking technologies**.



The Global LEAP AWARDS Studies: Purpose and Scope

The Global LEAP AWARDS Study conducted by CLASP in collaboration with the ACTS, aimed to evaluate and accelerate the adoption of energy-efficient, off-grid appliances, particularly induction cooktops, in Kenya. The study focused on **assessing the performance, affordability, and market feasibility of induction cooktops, which are seen as a sustainable alternative to biomass and LPG for clean cooking**. Given that over **80% of Kenyan households still rely on solid fuels such as firewood and charcoal for cooking,** the introduction of efficient electric cooking solutions could significantly reduce indoor air pollution, deforestation, and greenhouse gas emissions. The study evaluated cooktops based on energy efficiency, user experience, and compatibility systems, ensuring that these appliances meet the needs of both urban and rural populations.

Beyond performance testing, the Global LEAP AWARDS Study played a crucial role in promoting market development and innovation in the clean cooking sector. The study identified challenges such as high upfront costs, lack of consumer awareness, and infrastructure limitations, which hinder the widespread adoption of induction cooktops. Additionally, information gathered from the Kenyan participants showed that most participants weren't able to purchase the cooktops due to the high upfront costs, and most were willing to buy them in installments. Therefore, it was concluded that by working with financial institutions, manufactures should support initiatives like pay-as-you-go (PAYG) financing models, enabling low-income households to access modern cooking appliances affordably.

Additionally, the research informs government policies on clean cooking, advocating for investments in mini-grid expansion and renewable energy integration to make induction cooktops viable for off-grid households. As a result, **the studies serve as a foundation for accelerating Kenya's transition to sustainable, energy-efficient cooking solutions, aligning with the country's commitments to SDG 7 (affordable and clean energy) and SDG 13 (climate action).**











Adoption Trends and User Experience

Perceptions and acceptance of induction cooktops among Kenyan households

The adoption of induction cooktops in Kenya is gradually gaining traction, but perceptions remain mixed due to

economic. cultural. and infrastructural factors. Many households perceive induction cooktops as modern and efficient, particularly in urban areas where access to electricity is more stable. who have adopted Users the technology appreciate its speed. efficiency, and reduced energy smoke emissions, which significantly quality indoor air improve and convenience (CLASP cooking & ACTS, 2023). Additionally, studies have shown that induction cooking reduces energy consumption compared to traditional electric coils or LPG stoves, making it appealing to cost-conscious consumers in Kenya's rising middle class. However, despite these benefits, widespread acceptance faces several barriers.

lack of awareness about how induction with cooking works, coupled misconceptions about electricity costs, discourages many potential users. In rural areas, where biomass is the dominant cookina fuel. cultural attachment to open-flame cooking and concerns over compatibility with traditional cookware make adoption slower. Additionally, inconsistent electricity supply and high upfront costs limit accessibility, especially for low-income households. As infrastructure improves and awareness grows, induction cooktops have the potential to transform clean cooking practices in Kenya..

Barriers to Adoption

- Cultural preferences
- Awareness
- Infrastructure

Cooking practices in many Kenyan households, especially in rural and peri-urban areas, are deeply rooted in the use of biomass fuels such as firewood and charcoal, which are perceived as affordable, accessible, and effective for preparing traditional meals. Many households associate open-flame cooking with better food taste and texture, making it difficult for them to transition to flameless induction technology. Furthermore, large family sizes and communal cooking practices often require bigger pots, which may not be compatible with always induction further cooktops, discouraging adoption. Another major barrier is the lack of awareness misconceptions regarding and induction cooking technology.





Many consumers mistakenly believe that induction cooktops consume excessive electricity, making them unaffordable in the long run. **Inadequate consumer education on how induction cooktops work, their efficiency, and their cost-saving potential reduces willingness to switch from traditional fuels**. Additionally, **infrastructural limitations, including frequent power outages and unreliable grid connectivity in rural areas, further hinder adoption. Without consistent access to electricity, many households remain dependent on biomass, viewing electric cooking solutions as impractical.** To overcome these barriers, targeted awareness campaigns, financing mechanisms, and improvements in energy infrastructure are crucial. Expanding mini-grid solutions and subsidizing induction cooktops could significantly accelerate their adoption in Kenya, ultimately contributing to clean cooking transitions and environmental sustainability.

Market Development and Policy Implications

The adoption of energy-efficient cookstoves, such as induction cooktops, presents significant opportunities for Kenya's transition to clean cooking. With over 80% of households still reliant on biomass fuels, scaling up these technologies can reduce indoor air pollution, deforestation, and carbon emissions. **One key opportunity is integrating energy-efficient cookstoves with off-grid solar home systems and mini-grids, which would ensure that even remote households benefit from electric cooking**. Additionally, expanding **pay-as-you-go financing models allows low-income families to afford induction cooktops by making small, manageable payments over time.** Moreover, localized manufacturing of cookstoves can reduce import costs, create jobs, and improve affordability, making clean cooking solutions more accessible.

Additionally, Policymakers play a crucial role in accelerating clean cooking transitions by implementing supportive policies and incentives. One of the most effective measures is subsidizing energy-efficient cookstoves and renewable energy sources to lower upfront costs. Kenya's Ministry of Energy has already introduced initiatives like the Kenya National Electrification Strategy (KNES), which aims to increase access to clean and affordable energy, including electric cooking. Energy, 2018). Additionally, strengthening clean cooking policies through tax exemptions on energy-efficient appliances can make induction cooktops more affordable. Policymakers can also enforce minimum energy performance standards (MEPS) to ensure that cookstoves meet high efficiency and durability benchmarks. Moreover, increasing public awareness through nationwide campaigns on the benefits of induction cooking can shift cultural perceptions and encourage wider adoption. Lastly, public-private partnerships are essential for improving distribution networks, financing mechanisms, and consumer awareness of clean cooking technologies.

Collaborations between government agencies, private sector investors, and international organizations can help scale up access to energy-efficient cookstoves (Puzzolo et al., 2016). For instance, initiatives like the **Global LEAP Awards, supported by CLASP and ACTS**, have fostered partnerships between cookstove manufacturers and local distributors, ensuring that high-quality induction cooktops reach underserved communities (CLASP, 2023). Expanding such partnerships will be critical in achieving universal clean cooking access and supporting Kenya's climate and development goals.



Innovation and Future Directions in Clean Cooking Technologies

To achieve universal access to clean cooking in Kenya, a multi-faceted approach is required, addressing financial, infrastructural, and cultural barriers.

1. Expanding Financial Support and Subsidies

Affordability remains a major challenge for widespread adoption of induction cooktops and other clean cooking solutions. The government should introduce targeted subsidies and tax exemptions on clean cooking appliances and electricity tariffs to lower costs. Additionally, expanding pay-asyou-go (PAYG) financing and micro-loans through banks. SACCOs. and fintech companies help low-income can households purchase induction cooktops without financial strain.



3. Enhancing Consumer Awareness and Cultural

Acceptance

Public education campaigns should focus on addressing misconceptions about induction cooktops, such as high electricity costs and incompatibility with local cuisines. Partnerships with community-based organizations, influencers, and women's groups can promote adoption through demonstrations and cooking trials. Targeted messaging on health benefits, cost savings, and efficiency will encourage behavioral change.

2. Strengthening Energy Infrastructure and Reliability

Unreliable electricity in rural and peri-urban areas limits the feasibility of electric cooking. Investments in off-grid solar mini-grids and battery storage systems can enhance electricity reliability for induction cooking. Additionally, upgrading Kenya's grid capacity and stability will ensure that households adopting electric cookstoves have consistent access to power.

Key Takeaways and Next Steps

The Global LEAP AWARDS study highlights the potential of induction cooktops as a scalable clean cooking solution in Kenya. Findings indicate that affordability, infrastructure limitations, and cultural perceptions are key barriers, while successful pilot programs have demonstrated cost savings, efficiency, and improved health outcomes. To accelerate adoption, policymakers should introduce subsidies, tax exemptions, and energy access programs to lower costs and improve grid reliability. Businesses can invest in pay-as-you-go financing, localized manufacturing, and distribution partnerships to enhance affordability and availability. Development partners should support capacitybuilding, consumer awareness campaigns, and public-private collaborations to scale clean cooking solutions. Future research should focus on optimizing offgrid induction cooktops, improving energy-efficient designs, and integrating renewable energy sources. Innovation in battery storage, smart metering, and culturally adapted cooking appliances will be crucial for widespread adoption. Strengthening multi-stakeholder efforts will ensure Kenya moves toward a cleaner, healthier, and more sustainable cooking future.

