AFRICA RESEARCH & IMPACT NETWORK

E-COOKING AND CLIMATE ACTION

PREPARED BY AFRICA RESEARCH AND IMPACT NETWORK

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Climate change is a global problem that disproportionately affects different social groups, sectors and regions. **According to an EPA report**, vulnerable communities will be greatly affected by the impacts of climate change, most of whom are ill-prepared to adjust to the changes, especially those in Sub-Saharan Africa (SSA) and Asia. Among the factors, contributing to global warming is the use of inefficient cookstoves and fuels that contributes significantly to greenhouse gas emissions and lead to the reduction of forest cover thereby reducing the carbon sequestration sinks. Clean cooking, therefore, offers a great opportunity to advance climate change mitigation and adaptation.

Approximately one-third of the world's population depends on the use of biomass fuels for their cooking needs despite the adverse effects they have on the environment. The situation is expected to intensify with increasing population growth, especially in the SSA. The use of biomass fuel is responsible for the emission of 25% of all reported black carbon in the atmosphere globally. In Kenya, for example, the use of biomass fuels by households for cooking accounts for between 22 and 35 million tonnes of carbon dioxide discharged annually, which is an equivalent of approximately 35% of the total greenhouse gas emitted in the country. The problem is aggravated by the **high demand for solid biomass** that leads to the excessive deforestation to meet the demand for charcoal and firewood cooking fuels. This in turn results in ecosystem imbalance, since the remaining forest cover cannot absorb the amount of carbon dioxide being produced through combustion. While cooking energy is central to human existence, the choice of cooking energy to embrace may jeopardize both human and environmental health. The use of biomass fuel for cooking is widely common in Africa including in Kenya.

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However, it is associated with negative human health effects such as respiratory illnesses and eye conditions and other health impacts usually attributed to exposure to Household Air Pollution (HAP). **The World Health Organization reports** that nearly 7 million premature deaths throughout the globe are attributed to both internal and external air pollution. Out of the figure, over 60% of the deaths, 4.3 million are associated with HAP. **In Kenya, HAP** is responsible for the deaths of about 21,560 people every year.

The adoption and massive uptake of clean cooking technologies including electric cooking, therefore, offers a great opportunity for the country, the continent, and the globe to cut emissions of greenhouse gases and to reduce deforestation due to cooking fuels and thus contribute significantly to the global climate action agenda. While the benefits of such transition may be outright clear, its achievement requires multi-stakeholder and multilevel inclusive collaborative efforts that addresses the political economy of e-cooking and explore the disaggregated components of gender, socio-economic facets, governance and technological domains. The integrated system approach to enhance clean cooking adoption varies from country to country as cooking is highly cultural and thus any significant change must address the underlying norms and demands besides the political and technological needs in the electric cooking value chain.

In Kenya, the Modern Energy Cooking services program has initiated an integrated and inclusive system approach to enhance electric cooking uptake. The approach followed a series of research and practical pilot studies using the Cooking diary protocols and the recently published e-cooking landscape analysis in the ecooking opportunities Techno policy report. The program has established regional electric cooking hubs in Kitui, Makueni, Nakuru, and Kisumu counties in partnership with the Kenya Power and Lighting Company and the Clean Cooking Association of Kenya. The regional hubs host clean cooking champions who have been trained and empowered to adopt electric cooking technologies and are in turn regional champions. Some of the impact and success stories of these champions have been documented in the recently published electric cooking impact stories in Kenya Booklet. The existing opportunity to explore e-cooking in Kenya exists and the Ministry of Energy is currently championing the development of the e-cooking national strategy. The strategy will offer a national guideline to enhance the adoption of electric cooking in Kenya towards the achievement of universal clean cooking energy access by 2028. The national adoption of electric cooking offers an opportunity to minimize dependence on biomass fuel that contributes to the emission of greenhouse gases (GHGs) and thus contributes to improving both human and environmental health. Significant climate impact can only be realized if e-cooking technology is widely embraced.

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While the upfront cost of energy-efficient electric appliances appears to be expensive when compared to locally available fuel alternatives, the wide range of benefits associated with their use far outweighs their cost coupled with the fact that they are cheaper in the long term. With efforts being made across the globe towards securing a low-carbon future, the progressive adoption of e-cooking technology will eventually bring about a complete positive change.

Besides, the adoption of electric cooking will also help address the problem of energy poverty owing to its sustainability. For instance, energy-efficient electric appliances such as electric pressure cookers (EPCs) and induction cookware not only offer an opportunity for clean cooking but also efficiency and convenience. The efficient appliances offer a great opportunity to use minimal time to cook different meals compared to other cooking methods or technologies owing to their increased energy efficiency, which automatically translates to the use of less energy. This works to ensure that the energy needs of current and future generations are met by transitioning to renewable energy systems and in the process reducing the impacts of climate change.

To catalyse the adoption of efficient electric cooking technologies, promotional campaigns have to be conducted often to sensitize the public on the effectiveness of e-cooking. The multilevel and multi-stakeholder system approach adopted by Modern Energy Cooking Services in Kenya allows an inclusive transition to an electric cooking energy campaign that will catalyse the achievement of the universal access to clean cooking energy by 2028 as set by the Kenyan Government. By reducing the dependency on biomass cooking fuels in Kenya, electric cooking will help in reducing greenhouse gases and thus the realization of the national emissions reduction targets as stipulated in the Second Nationally determined contributions (NDC) submitted in 2020.

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