

The Kisumu's E-Cooking Hub Launch



Photo credit: Brian, CCAK, 2022

Authored By:

*Emily Bolo, Tom Randa, Joanes Atela, Salome Okoth, Haron Akala, & Paul Osogo
Africa Centre for Technology Studies*

'This material has been funded by UKAid from the UK government; however the views expressed do not necessarily reflect the UK government's official policies.'

Introduction

Achieving affordable, reliable, and sustainable modern energy for all by 2030 remains to be a big challenge considering the proportion of the population that is still relying on the use of biomass for their cooking needs. Nevertheless, with appropriate campaigns aimed at creating awareness on the need to transition to clean cooking, the ambitious task can be realized. For that reason, the African Centre for Technology Study (ACTS) researchers in collaboration with its project partners under the [Modern Energy Cooking Services](#), facilitated the setting up e-cooking hubs in different regions of Kenya with the aim of accelerating the adoption of eCooking technologies by breaking the barriers and raising local champions from every part of Kenya. Through the initiative, 3 hubs have been launched so far in [Nakuru](#), [Kitui](#), and Makueni Counties with the recent one being launched at Ramogi Institute of Applied Technology (RIAT), Kisumu on the 29th of June 2022. The event was graced by the presence of representatives from the project partners; the Kenya Power and Lighting Company, Clean Cooking Association of Kenya, and Gamos East Africa and other stakeholders in the clean cooking sector such as Practical Action, Kijani Testing, Nyalore Impact, and Strathmore University among others were also represented. The Launch was also graced by the County Government of Kisumu senior officers in charge of Energy including the Director of Energy and Industrialization and the chief officer in the same docket, representing the minister and the governor. The hubs are meant to accelerate the clean cooking adoption by enhancing awareness creation on the existence of such technologies and their benefits, enhancing technology skills transfer, promoting technology accessibility, and most interestingly promote partnerships and collaborations of various stakeholders in the clean cooking and electrification sectors. Through a bottom-up approach, the hubs raise local champions who can own the eCooking adoption agenda and draws the support and partnership of various stakeholders across sectors and scales.



Figure 1: Lynette Odhiambo gives her speech (Photo credit: Brian, CCAK, 2022).

The Kisumu region eCooking Hub is Unique

Hosted at an advanced technology research institute with over 5, 000 student population, the hub is unique as it offers an opportunity to advance the technologies and develop further eCooking technology prototypes. The hub is one of its kind in the region and thus offers an opportunity to partner with the local communities and community-based organizations to advance the clean cooking agenda. The hub therefore offers two great opportunities of advancing the technology research and testing and working with the local communities leveraging on its student population and local partnerships to advance the clean cooking agenda.

According to remarks made by Mrs. Lynette Odhiambo, the deputy principal, RIAT serves as a hub for research in science, technology, and innovation (STI) in the region. Through its renewable energy center, it underscores the role of energy as a major driver for industrialization, development, and more particularly, environmental well-being at both national and global levels. RIAT in collaboration with ACTS and other partners has been working on effective ways to realize the dream. RIAT has benefited from being part and parcel of the research supported by ACTS previously e.g in the areas of solar PV and solar water heating technology training. Further, as per the relevant article, RIAT and ACTS have an MOU on technology brokerage. The two institutions have worked jointly to help bring new

technologies and exchange networks. RIAT assured ACTS that it will provide requisite resources for the realization of intended technology transfer, currently MECS.



Figure 2: Dr. Joanes Atela emphasizes the need to adopt innovative cooking technologies (Photo credit: Brian, CCAK, 2022).

Echoing the deputy principal was Dr. Joanes Atela, Director of Partnership and Impact, ACTS and MECS Kenya lead. ACTS under the MECS project has been working closely with the Kisumu county government. Besides, one of the fundamental elements of RIAT is advanced technology and innovation. “With less forest cover, we need to adopt innovative cooking options to prevent further degradation of the ecosystem, especially on upper catchments of cutting trees and burning charcoal,” said Dr. Atela. He continued by stating that Kisumu County has a big opportunity as a government to preserve the Lake Victoria ecosystem owing to its recognition as an international ecosystem. Deforestation is one of the major drivers of climate change effects due to tree cutting for firewood. The launch of the hub in Kisumu thus presents a good avenue for the residents to adopt e-cooking technology. It is an opportunity for Kisumu county to tap and embrace clean cooking. Electricity should not just be used for lighting but should be explored and utilized to improve access to electricity connections. The hub will serve as an information and capacity-building center that will help foster partnership in e-cooking. Dr. Atela concluded by saying that E-cooking should be mainstreamed in the curriculum so that clean energy opportunities may be created to better the livelihoods of the community.

Remarks from the County Government Officials

Joseph Oganga – County Chief Officer, Energy and Industrialization



Figure 3: Joseph Oganga giving his official remarks (Photo credit: Brian, CCAK, 2022).

Cooking is a daily activity and therefore the choice of fuel used is of great importance. Using biomass for cooking directly contributes to the emission of greenhouse gases. The community continues to become more vulnerable to the effects of greenhouse emission such flooding, food shortage, epidemics, and respiratory inflammation among others. Action needs to put in place to reduce the magnitude of the impact especially at the household level. For instance, the number of fatalities linked to inhalation of smoke owing to Household air pollution (HAP) will increase, and by extension, constant floods and droughts in the region will continue to be witnessed. It is estimated that HAP causes 14,300 deaths every year, a figure that is much more than the national death toll arising from road accidents. 14.9 million people in Kenya are directly affected by HAP with the main groups being households using open fires in built-in kitchens, female cooks, institutional cooks, kitchen helpers, and school-going students who use kerosene lamps for studying. Of these, the household category constitutes about 67%.

In a recent access to energy assessment that was done in Kisumu County in all the 7 sub-counties, it was surprising to find learn that out of the 300,745 households, charcoal and firewood were found to be the predominant sources of energy. Charcoal use accounted for 35.9%, firewood 35.8%, and kerosene 3.2% thus totalling 74.9% of those using unclean sources of energy. The chief energy officer also mentioned that there is a significant increase in LPG access, especially in the rural areas which stand at 21.3% in the entire county. However, the adoption and usage of biogas and briquettes are

extremely low at 1%. Recent concern has been on electricity for cooking that only accounted for 1.5% for cooking with reasons such as cooking with electricity is very expensive being cited. The reason was affirmed by the chief energy officer who hoped that the e-cooking hub that was launched will help demystify the myth and that a majority of the population will adopt the technology.

The county government has partnered with the Rural Electrification and Renewable Energy Corporation (REREC) to improve electricity access in the region, particularly rural areas, something that will make universal access to clean cooking by 2028 achievable. The county is also working on a vision to achieve universal access to reliable and affordable 100% renewable energy for sustainable development by 2050. This will accelerate the uptake of renewable energy, increase energy efficiency, and promote clean cooking to help realize SDG 7 and other SDG goals. Moreover, the county has likewise developed a sustainable energy policy that will help transform the livelihood of people in the region by providing clean, sustainable, affordable, and reliable energy services. It is, consequently, the duty of everyone to consider taking urgent action to collectively address the issue of energy poverty and make way for sustainable development.

Joseph Sunguti - County Director Technical and Vocational Education and Training (TVET)



Figure 4: : Joseph Sunguti receiving an EPC from Dr. Jon Leary (Photo credit: Brian, CCAK, 2022).

According to the county director, we eat to live and not live to eat. For that reason, we need to cook the food that we eat. “If what we eat as humans is going to cause a problem, we are going to live a very short life,” said the director. While using the biomass, households tend to inhale fumes and particles which sometimes leads to respiratory problems. Besides, it gets worse for individuals who have

underlying condition such as asthma when they are exposed to HAP. That may partly help to explain why the life expectancy in some Sub-Saharan African countries is lower than elsewhere. Wood fuel will not kill you the same day you use it, but it will shorten your lifespan. It may be worth noting that many people opt to use firewood as that is what they can afford/access easily. Nevertheless, it is also worth noting that cheapness may be expensive in the long run as it will come with other health complications that require medication. Besides, the cost that is incurred at the household level to prepare meals when compared to the use of modern technology is expensive. As such, by embracing the technology, households can divert the money saved on fuel to other household needs. As a result, there is a need for research organizations to support action research and provide better solutions that can be adopted. Stakeholders in the energy sector likewise ought to implement e-cooking policies that will facilitate uptake and make it possible for low-income persons to afford the appliances.

E-Cooking Opportunity in Kisumu



Figure 5: From left Emily Bolo of ACTS, Dorothy Otieno of Nyalore Impact, Wairimu Njehia of KPLC, and Neema of Strathmore during the e-cooking demonstrations. (Photo credit: Brian, CCAK, 2022).

Kisumu is a commerce hub in the Western Kenya region and hosts the third-largest city in the country. The strategic position of the county functions as a gateway into the other Great Lakes region in Africa.

Besides, it exhibits a relatively great opportunity for the development of e-cooking in different areas with electrification, policy landscape, and cooking technology among others being the main ones.



Figure 6: Participants getting to learn more about the technology (Photo credit: Brian, CCAK, 2022).

As per the 2019 census, the county had a population of 1,155,574 with 61.8% of the population residing in rural areas. The rate of electrification rate is lower at 52.6% when equated to the national average of 75% with a majority of the population still relying on the use of unclean fuels for cooking. Many households are yet to be electrified and transitioned to e-cooking from the use of firewood and charcoal. This presents a good avenue where awareness and sensitization programs, as well as intervention practices, can be targeted to the specific regions within the county to promote the adoption of the technology and ease the pressure on wood fuel. Most importantly, the county has a set of specific policy documents and legal frameworks that supports its plans to endorse clean cooking and electrification apart from the national regulations and policies that are in place. The laws work in synergy to govern the clean cooking and electrification sector while at the same time strengthening the county's policy landscape, which may help the two sectors to maintain a positive trajectory.

E-Cooking Live Demonstrations



Figure 7: Showing participants the actual units used for cooking different foods (Photo credit: Brian, CCAK, 2022).

During the launch, a wide range of local food items was prepared using the electric cooking appliances especially the electric pressure cookers and the induction cookers. Participants had a chance to taste the different dishes and see for themselves the actual electric units used. For example, only 0.3 units were used to cook lentils, 0.4 for beans, and 0.3 for chicken broiler. All the questions that the participants had were answered to their satisfaction and they were convinced about the effectiveness of the technology. Particularly, Joseph Oganga, the County Chief Officer, who had earlier asserted that electricity for cooking was expensive was persuaded about the energy-saving abilities of the energy-efficient cooking appliances when he witnessed the little time and units used to cook different meals. As such, he volunteered to be a champion of the clean cooking agenda at the county. He continued by stating that the governor of Kisumu is very particular about the uptake of renewable energy where they work with relevant departments to promote the use of clean energy while creating employment for the youths to grow the economy.

Impact Stories from Kisumu Region

Evelyne Khisia



Figure 8: Evelyne Khisia narrates her experience (Photo credit: Ruth,Gamos, 2022).

Evelyne is a trainer at Ramogi Institute of Applied Technology (RIAT), Kisumu. To her, the EPC is a new technology that she came to learn about a day to the e-cooking hub that was launched in Kisumu County on the 29th of June 2022. She had a very good experience from the training that was done a day to the launch, and she learned so many things about the appliance. According to her,

1. The EPC saves on time. One gets to prepare their cereals in the shortest time possible thus creating time to do other things.
2. It is affordable in terms of wood fuel when compared with the cost of charcoal and other fuels used to cook.
3. It is clean energy. One is not limited to the kitchen. Food can be prepared in the sitting room while chatting with friends and family. Due to its cleanness, neighbours will not even notice when one is cooking.
4. It has a hidden advantage. The mere fact that food is cooked in its medium implies that little water will be used in the process. The little water used helps to save on nutrients. Most of the time, nutrients tend to be washed away while cooking because of too much water used to boil cereals that are afterward discarded.

5. Though a new technology, it is easy to operate as all the functions are programmed.

She concluded by stating that the technology is worth adoption, not only at the institutional level but also at the household level.

Linda Otieno



Figure 9: Linda Otieno shares her experience (Photo credit: Brian, CCAK, 2022).

Linda is a student at RIAT undertaking a diploma course in food and beverage. She was among the five students who were trained to be champions of e-cooking technology. During the initial training, she was impressed by the fact that little effort is exerted while cooking with an EPC and the less time taken to prepare heavy meals, something that made her feel at peace with it. To Linda, the technology is more convenient than other cooking fuels since energy is retained in the gadget, and none escapes. Though she interacted with it for only a day, she recommends its use because of the benefits she got to see on a first-hand basis.

Conclusion



Figure 10: Tom Randa engages the participants (Photo credit: Brian, CCAK, 2022).

The e-cooking hub launch in Kisumu was a success and set to catalyse the eCooking adoption in the western part of Kenya. The eCooking technologies were well-received by all participants as it offers an opportunity to transfer such skills to the students at the institution and the community around. The County Chief Officer specifically volunteered to be a good ambassador of the technology in the entire county of Kisumu and champion the clean cooking adoption agenda. He intends to target corporate societies/saccos, women in energy enterprises, and other small enterprises. He wants the technology to penetrate the market since in so doing, it will be easier for the county government to achieve the 100% renewable energy transition. On his side, Mr. Ephren Ouma, the Director of Renewable Energy stated that he had been using the hot plate to cook but he will now shift to the EPC, which is much more convenient and saves on energy. Moreover, Joseph Sunguti, the Director TVETs Kisumu County, alluded to the fact that the EPC encourages small families. He, therefore, urged the electrical students at RIAT to take the challenge and develop a prototype of the EPCs with a large capacity that will be ideal for those with bigger families and institutions.



Figure 11: Dorothy displays ugali prepared in an EPC (Photo credit: Brian, CCAK, 2022).

Reiterating the sentiments of Dorothy of Nyalore Impact, the EPC is a technology that can revolutionize the cooking sector greatly. In Homa Bay, young men are cooking for their mothers and in the process, being changed to cooks. The EPCs is one technology that can help address the many myths revolving around the cooking space such as the kitchen is not a place for men, and it is not the responsibility of men to cook. Given the convenience of the EPC and the ease of use, it is becoming attractive to many single men who previously would not even consider cooking and who now are increasingly embracing it.