Efficient Electric Pressure Cookers (EPCs)

Why to choose this solution?
In Tanzania, TaTEDO in collaboration with SESCOM (which is a social enterprise) are participating in the Modern Energy Cooking Services (MECS) program, which is led by Lough borough University and financed by UK Aid. The implemented activities include awareness raising, importation of EPC and spare parts, marketing, research, advocacy and lobbying for conducive policies for EPC and other clean cooking solutions. Most of the people do not consider electricity as a cooking fuel, as they perceive it to be expensive. After discovering that cooking using electric pressure cooker is relatively cheaper than LPG, charcoal and a hot plate, the adoption rate increased sharply. The increased awareness and capacity-building have contributed to addressing the knowledge gap, which exists in Tanzania.

Savings per day or production:
The cost saving depends on the price of the electricity. In Tanzania, the EPC was approximately 7 times cheaper than kerosene, 10 times cheaper than LPG, and 13times cheaper than charcoal for boiling heavy foods, based on 2020 market prices of the electricity.

Cost in money and in own time to construct:
EPC costs about twice as much as an electric hotplate. Market prices in Tanzania range from Tsh 180,000 to 250,000 (USD 77 to 107) for quality EPCs with capacities of 4- to 6 liters, depending on the point along the market chain at which the appliance is bought by end-user.

Lifetime:
About five to six years.

Maintenance needed:
Requires replacement of rubber seal on the lid after being used for some time.

Resources needed in use:
Electricity from grid, mini-grid, and solar home systems can be used.

Problems and limits:
Use only one type of pot. Not suitable for some food like nyama choma, chapatti, and deep frying. Looks complicated at first.

Where and how can you get it or make it?
Most of them are imported from China, Japan, South Africa, Europe, etc., and distributed by various companies including SESCOM in Tanzania. To produce EPCs, you need investment to establish a factory.

Skills needed to produce, install. maintenance, use:
EPCs are manufactured in factories and special engineering knowledge is required. Training is required to be able to provide after-sale services. Simple training/introduction is required on how to use EPCs.

How to use it:
It is good for cooking many types of food, e.g., meat, potatoes, and beans. A cookbook and several short films are available published by TaTEDO.

How to maintain it:

Climate effect (if any):
Saves forests by providing an alternative clean cooking solution. Avoids emissions from combustion of biomass. Decrease CO2 emissions, when the electricity used is from renewable sources.

Where it is used and how many users are there?
Mostly used in households in Dar es Salaam city, Dodoma, Kilimanjaro, Arusha, Mwanza in Tanzania. Also used in Saranda and Londoni village of Singida region, Changombe village in Gairo by customers with mini-grid electricity operated by the PoweGen company.

Why is it successful?
A pressure cooker cooks 2-6 times faster than regular cooking as the temperature will be higher under pressure. The water starts to boil on higher temperature when the pressure is higher. The cooker is insulated, which increase the efficiency. SESCOM which is a social enterprise involved in promoting, importing, and marketing of EPCs, along with TaTEDO, which focuses on support services, i.e., research, awareness-raising, capacity- building, market development, and lobbying for conducive environments for EPCs under the support of a MECS programme financed by DFID. Awareness and capacity-building have contributed a lot in addressing the knowledge gap which exists in Tanzania. Most of the people do not consider electricity as a cooking fuel, as they perceive it to be expensive. After discovering that the use of EPCs is the cheapest way of cooking, the adoption rate has increased sharply.

If you can make it, a short description, typical problems, materials needed:
N/A

How to make it (if possible):
N/A

How is it delivered and by whom?
Main actors in the supply chain of EPCs include importer, distributors, retailers, and end-users. SESCOM imports EPCs directly from manufacturers and takes them to agents (distributors) and end- users. Some of the consumers of SESCOM EPCs are mini-grid developers who intended to introduce efficient electric appliances to the mini-grid customers.

Successful financial model
EPCs are delivered with a pay-as-you-go financing model to the mini-grid customers, whereas customers who cannot pay the whole price at once are linked to micro-financing institutions, which arrange for them to make payments on an installment basis.

What policies and strategies helped the success?
The National Energy Policy (2015) promotes energy efficiency and alternative energy (use of biomass for cooking). Micro finance Policy (2017) creates an enabling environment for an efficient and effective microfinance sub-sector in the country that serves the needs of low-income individuals, households, and enterprises. Other supportive strategies and regulatory frameworks include SE4ALL Action Agenda (2015), Electricity Act of 2008, Rural Energy Act of 2005, and Environmental Management Act 2004.

More info:
https://data.verasol.org/products/epc/sescom9?viewall=true , https://sescom.co.tz/news/24-tatedo-win-1st-for-the-2020-electric-pressure-cooker-competition and https://tatedo.or.tz/attachments/article/43/Ecook%20Book%20(english).pdf

Sources:
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