



The KeyMaker Model

Energy Agriculture Nexus Workshop, 27th November 2019



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About NESP II

- Technical cooperation programme.
- Funded by **European Union** and German Federal Ministry for Economic Cooperation and Development (**BMZ**).
- Implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (**GIZ**) in collaboration with Federal Min. of Power (**FMP**).
- Aim: Enabling and fostering investments in renewable energy (RE) and energy efficiency (EE) (incl. **clean cookstoves**).
- Budget: EUR 33M – EUR 20 M (EU) and EUR 13M (BMZ).
- Implementation period: 2018 – 2020.



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Technical Assistance to the NESP Program

INENSUS together with INTEGRATION is supporting NESP on various activities in the off-grid sector, including:

- REA MAS and IMAS Tender Process
- NERC MYTO Tariff Tool and Online Application Process
- FMP Tender for Sokoto and Kaduna Solar Mini-Grids

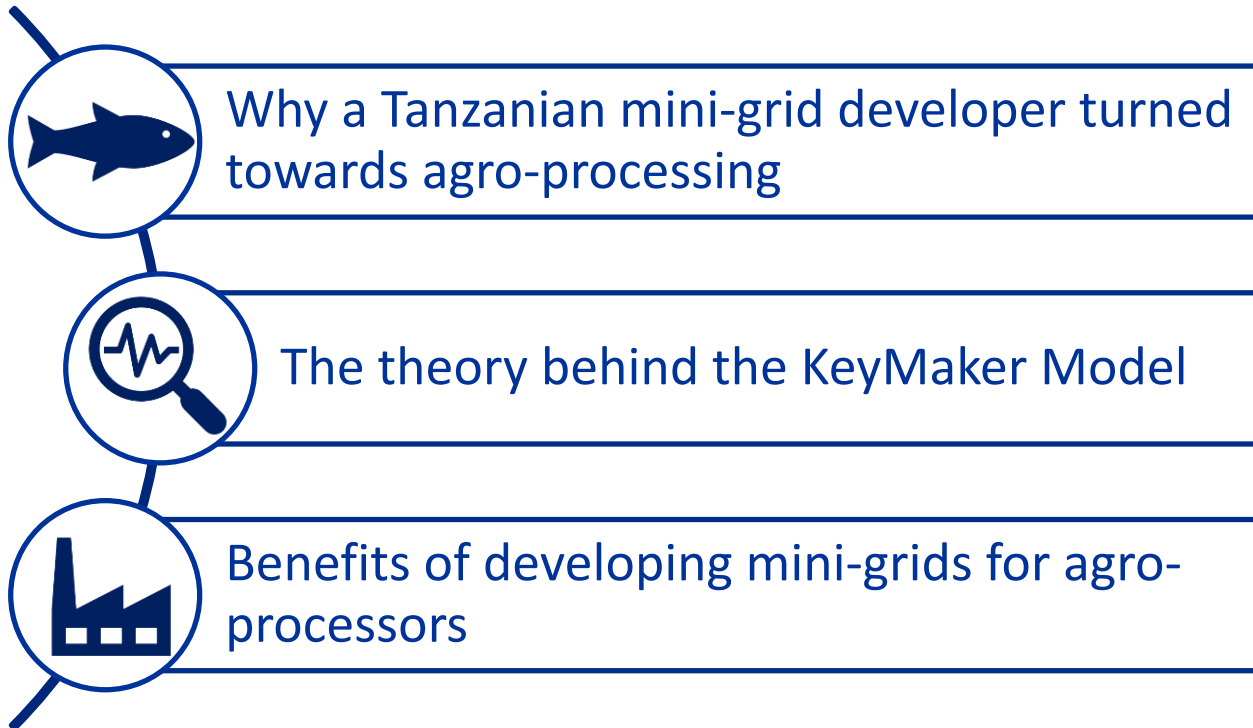
This presentation has been developed under this collaboration.



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A story of how agro-processors can become mini-grid developers





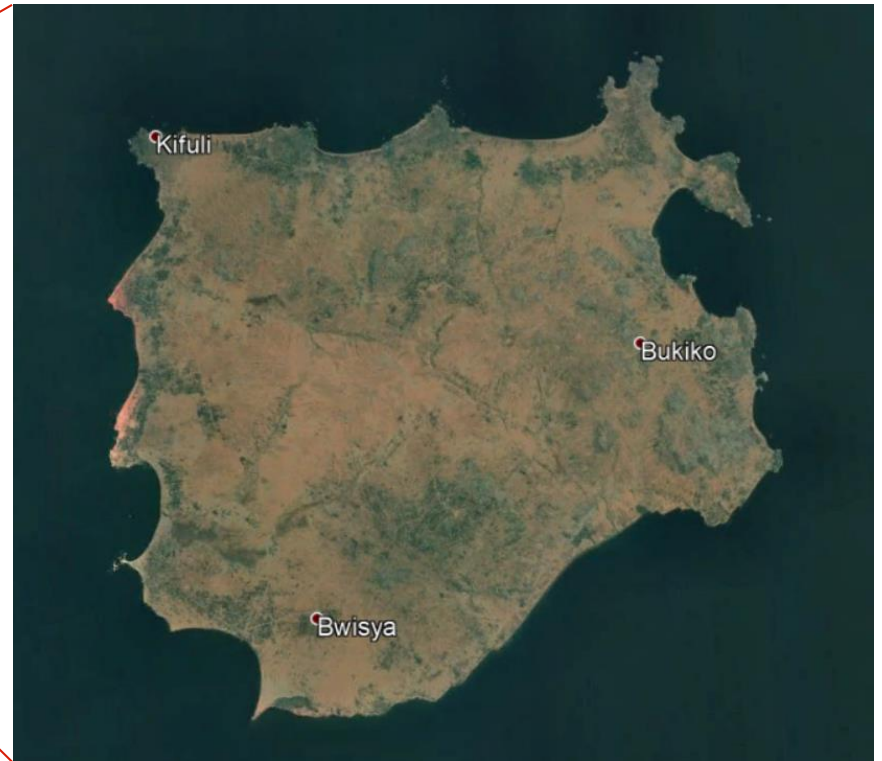
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Lake Victoria, Tanzania



Source: Britannica



Source: Google Earth



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Bwisya, Tanzania



Source: Google Earth



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Bwisya, Tanzania





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Source: Google Earth



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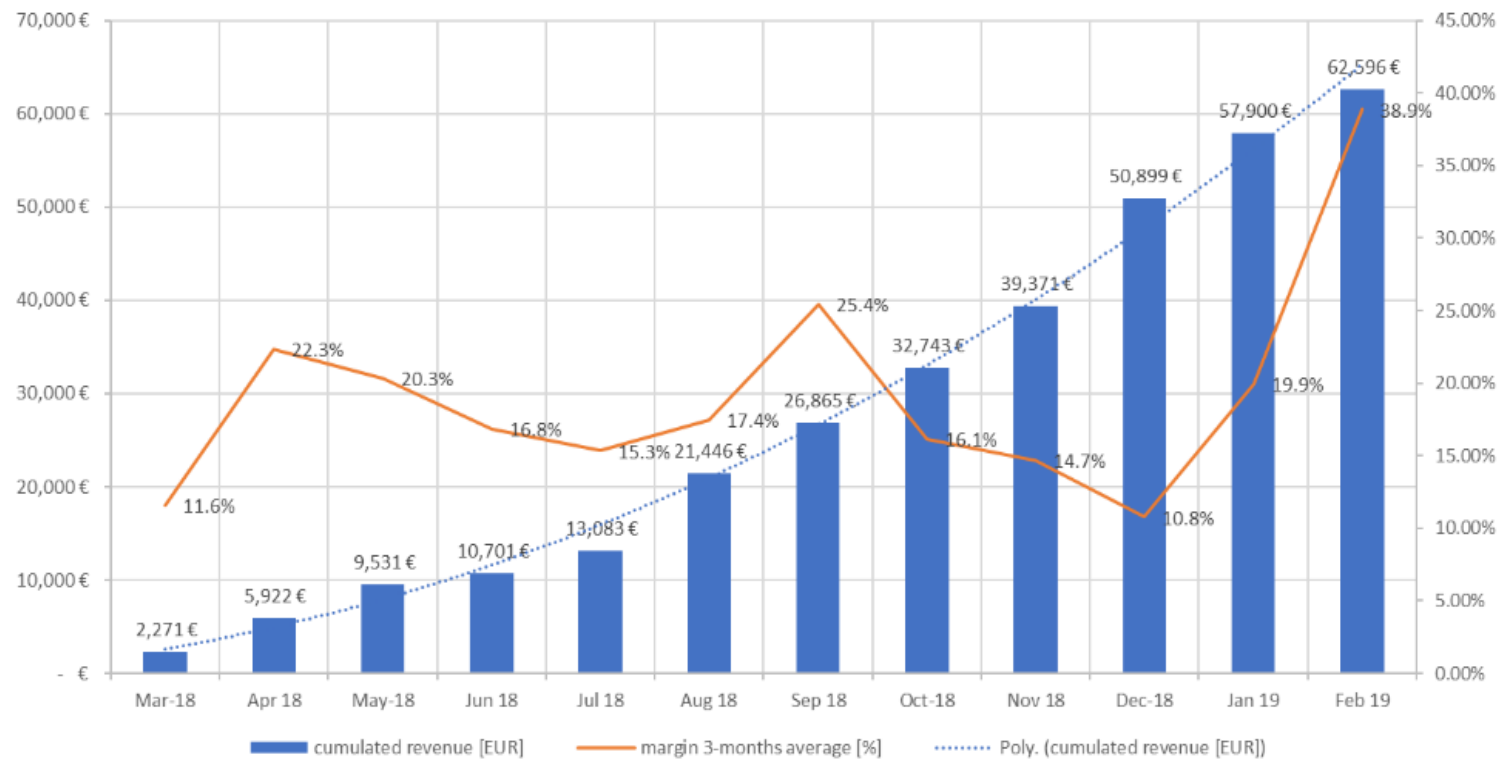




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Revenue and margins from the trade of Tilapia

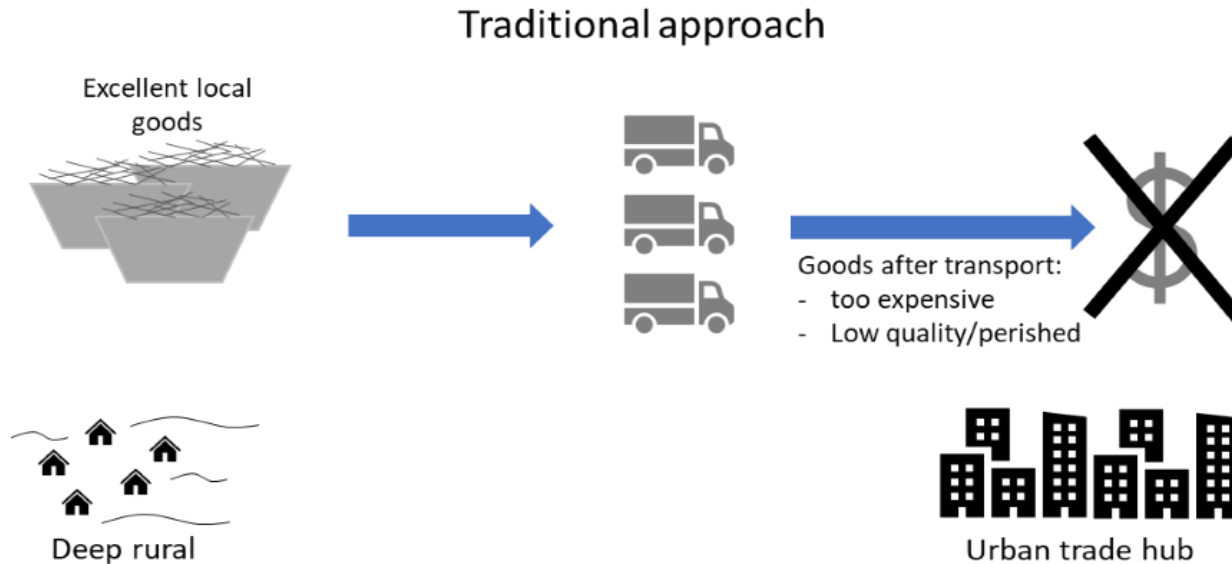




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Deep rural goods traditionally do not reach the urban market



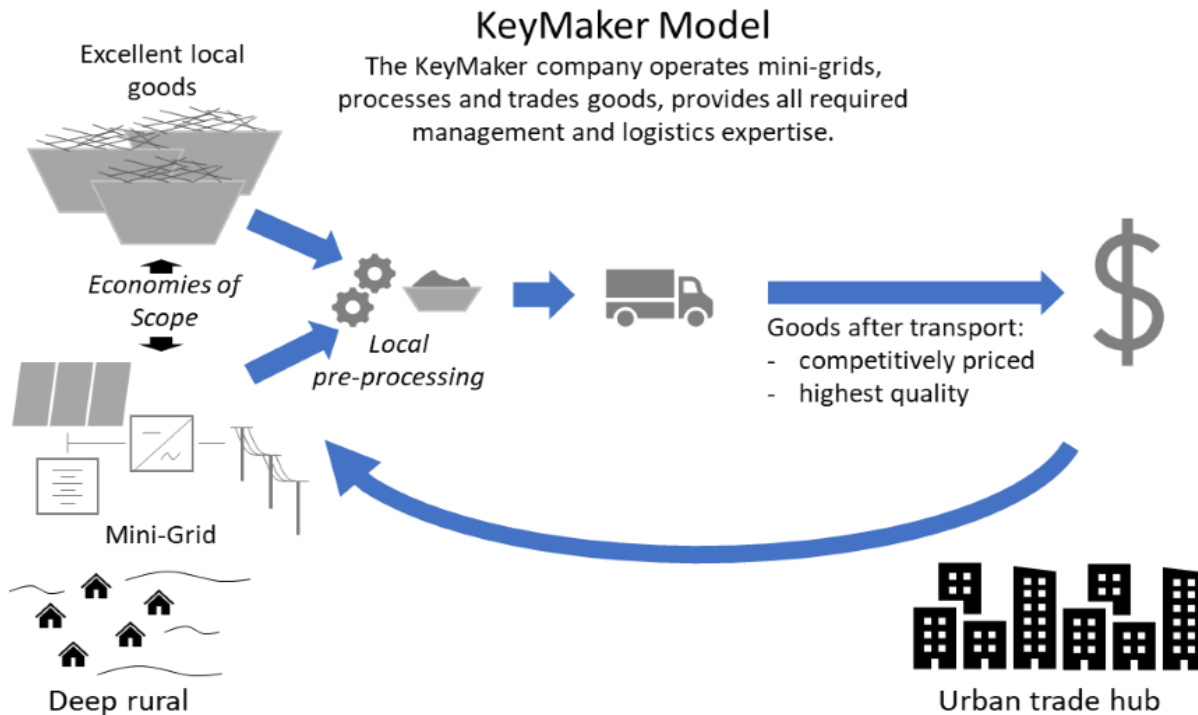
Source: KMM Fundamentals paper, to be published by the AfDB GMG Help Desk



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Key Maker Model: An Entrepreneurship Opportunity



Source: KMM Fundamentals paper, to be published by the AfDB GMG Help Desk



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The electricity supply from mini-grids is the **Key**,
the mini-grid operator the **KeyMaker**.



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Benefits of the KeyMaker Model (KMM)



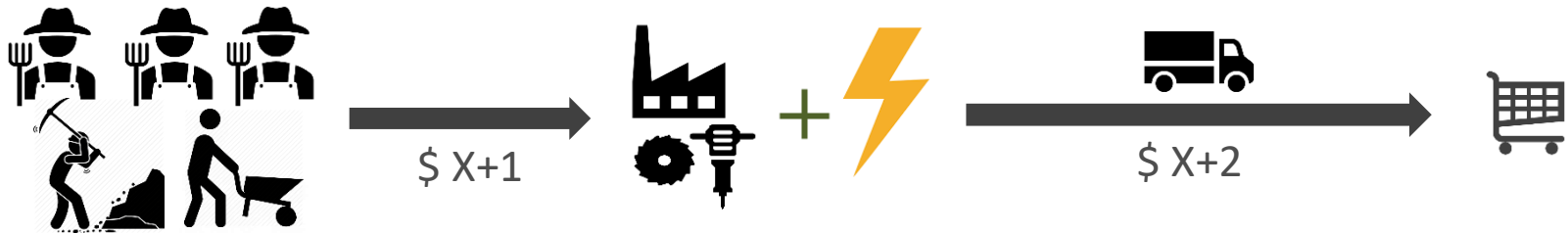
- ✓ Enables rural industrial activities.
- ✓ Encourages the processing of indigenous raw materials.
- ✓ Creates additional employment opportunities in the village, immediate and steady revenue to local families
- ✓ Integrates rural areas into the national economy



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Benefits of the KeyMaker Model (KMM)



- ✓ Enables rural industrial activities.
- ✓ Encourages the processing of indigenous raw materials.
- ✓ Creates additional employment opportunities in the village, immediate and steady revenue to local families.
- ✓ Integrates rural areas into the national economy.
- ✓ Opens up additional profit potential for the mini-grid developer.
- ✓ Strengthens the developer's relationship to the rural community.
- ✓ Reduces the mini-grid developer's exposure to demand fluctuation risks.
- ✓ Can be utilized for load management



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Benefits of the KeyMaker Model (KMM)

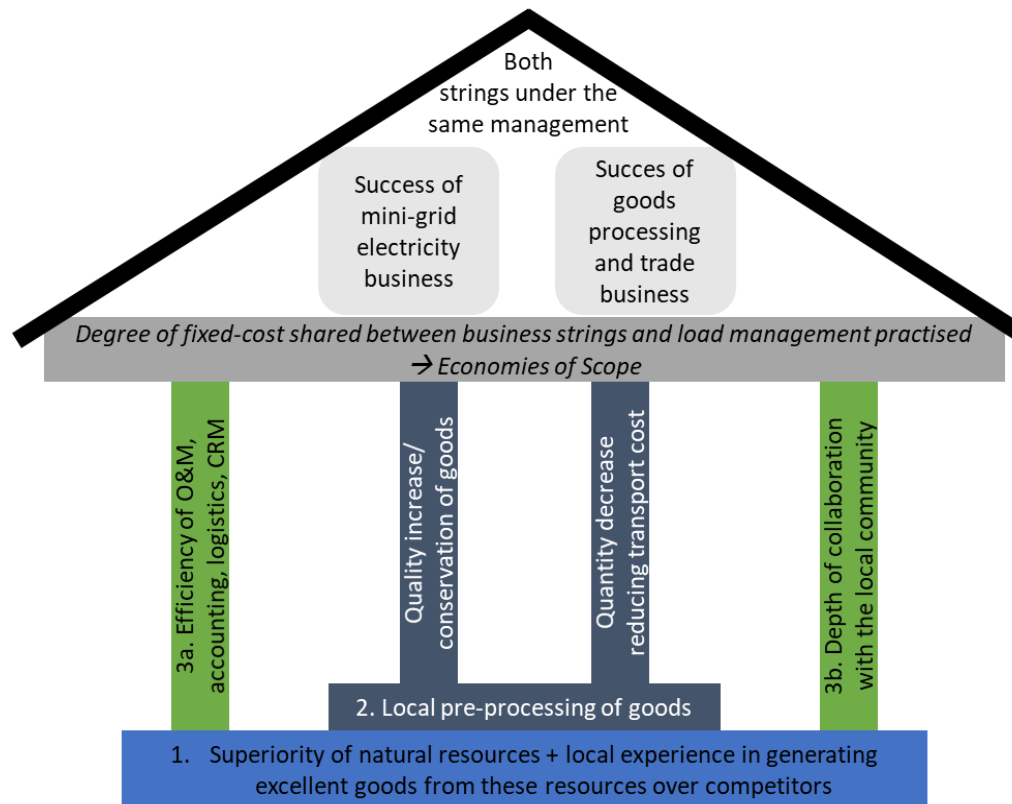
The KeyMaker Model is an approach to electrify rural areas while enabling rural manufacturing and successful trading of goods from deep rural areas of developing countries into competitive national and international markets.



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The mini-grid and local trading business share economies of scope



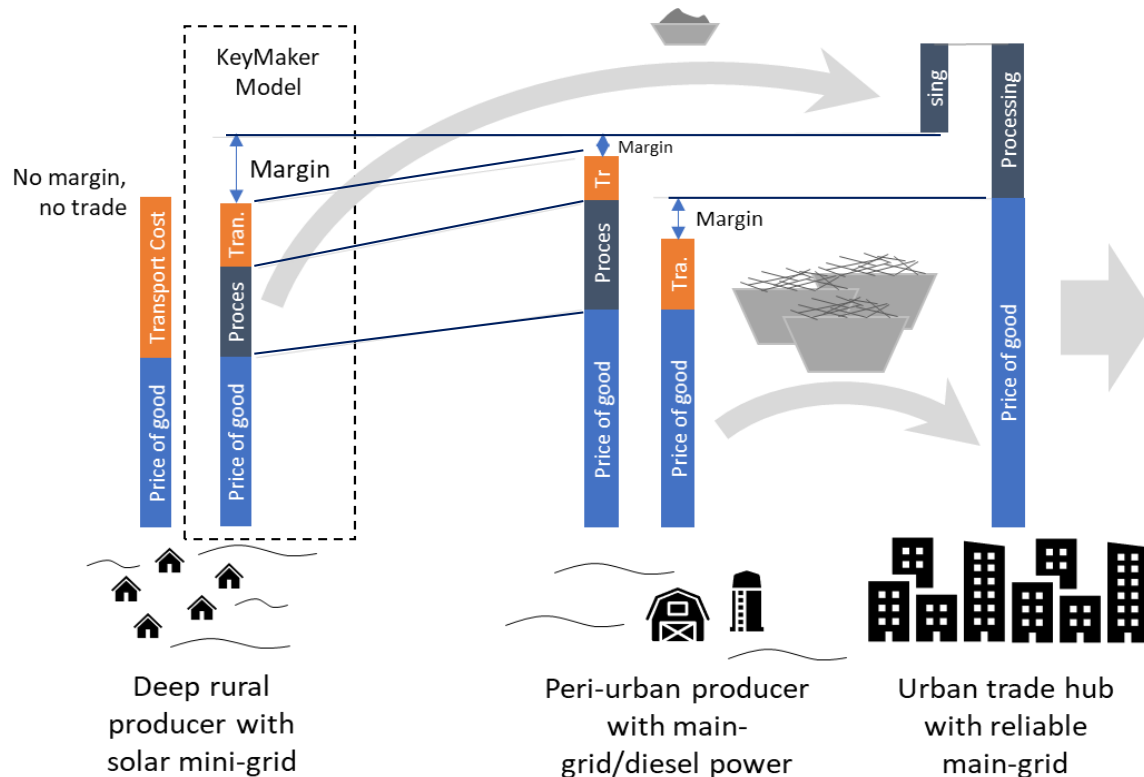
Source: KMM Fundamentals paper, to be published by the AfDB GMG Help Desk



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Competitive advantages from KMM cost sharing structure



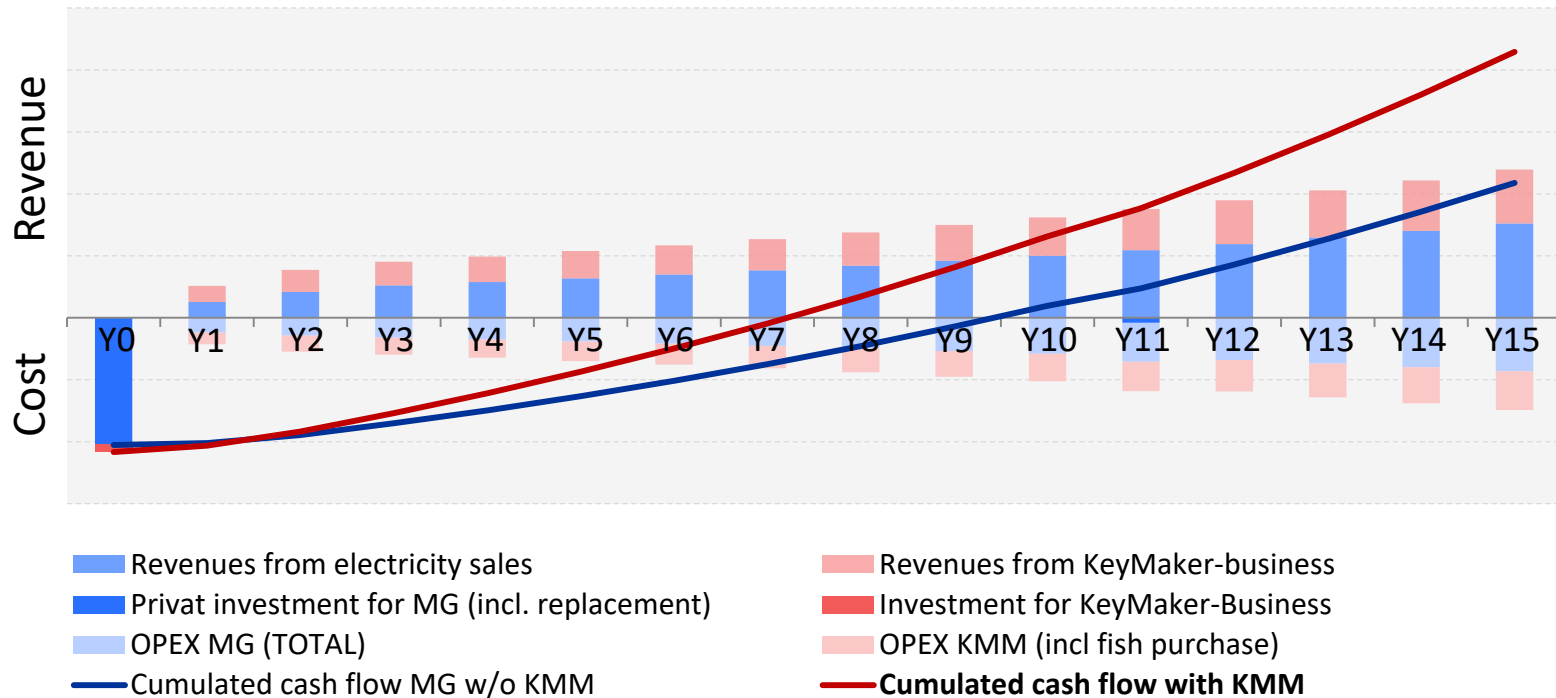
Source: KMM Fundamentals paper, to be published by the AfDB GMG Help Desk



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A strong and well-selected KMM has strong profit potential



Source: KMM Fundamentals paper, to be published by the AfDB GMG Help Desk



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The success of the KeyMaker Model depends on four factors.



The KeyMaker goods are superior in quality compared to those manufactured closer to the city due to superior local natural resources (water, soil, lake, minerals, climate).



The two business strings (electricity and KeyMaker Model) have significant cost sharing benefits.



The processing of goods using mini-grid electricity drastically reduces transport costs of the goods.



The recipient community is positively impacted in terms of economic value and stable job creation.



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Opportunities for application in Nigeria





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KeyMaker Model rollout for mini-grid firms

- ✓ Already part of the Mini-Grid Acceleration Scheme (MAS) run by NESP and REA
- ✓ Can be added onto existing mini-grids, particular those with low demand uptake and/or a modular design
- ✓ Further opportunities include future tenders both by electricity agencies, but also by agricultural development organisations
- ✓ Thanks to profit potential, can be added onto mini-grids currently under development to ensure financial sustainability
- ✓ Large processing companies may choose to invest directly into mini-grids



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Challenges faced for agro-processors

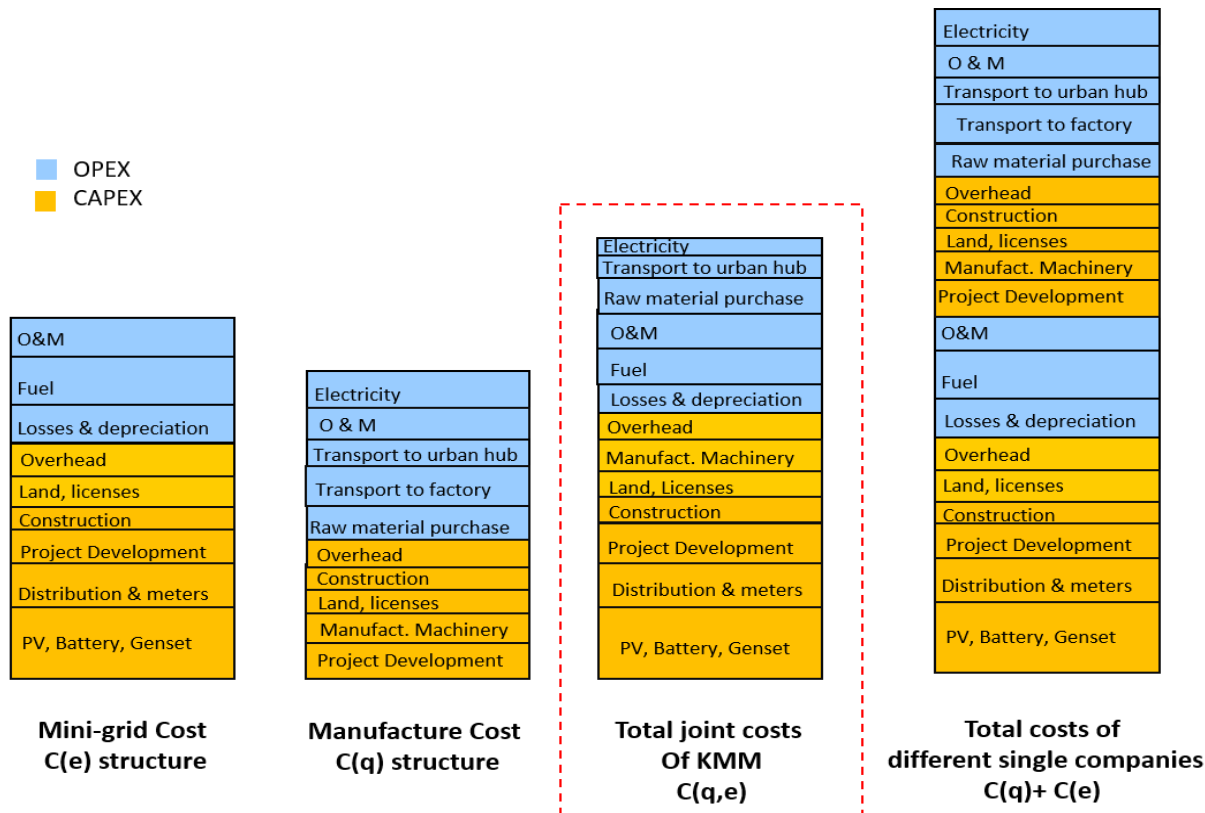
- ! Access to raw materials/sufficient crops to ensure agro-processing plants run at operational capacity
- ! High transport costs of crops to processing sites due to underdeveloped infrastructure
- ! Post-harvest losses (at about 60%) as a consequence and lack of cold storage infrastructure along the supply chain
- ! Low quality of seeds leading to low yields. Lack of water also sometimes a challenge to enable production during dry season



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Vision for a „future-proof“ processing company





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Vision for a „future-proof“ processing company

Processing companies should choose to invest directly in mini-grids in rural areas to:

- ✓ Make use of economies of scope, combining the CAPEX, management and operations of the mini-grid with that of the processing facility
- ✓ Set up cold storage infrastructure to eliminate produce wastage
- ✓ Decentralise and derisk their business by opening up a secondary income stream, i.e. sales of electricity
- ✓ Increase the quality of their product offering through the selection of superior produce
- ✓ Improve their profit potential through significantly reduced transport and processing costs
- ✓ Minimise transport losses along the supply chain and thereby increase plant output
- ✓ Develop closer ties with the community they are receiving produce from, providing insights and leverage into how produce is farmed, e.g. through improved seedlings



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Thank you for your attention.

If you have further questions please contact
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References

González Grandón T. and Peterschmidt N. (2019) "KeyMaker Model Fundamentals" Green Mini-grid Se4all Africa, AFDB.