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Design with social impact for rural communities in Africa

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Introduction

Four case studies from rural **Africa**, this paper examines the significance of design in solving social problems. The first three cases are of solar energy innovations in **rural communities** in Kenya and Uganda. The innovations in these cases demonstrate how design can be used to meet pressing needs and improve the social welfare of low-income rural communities. In the fourth case study is a co-creation process in the development of a health training manual for rural Kenya.

In the context of design education and practice it is concluded that more emphasis be put in social design, co-creation, empathy and lead user research.

Design thinking – serves humanitarian efforts
grounded on a broader understanding that develops multi disciplinary skills especially in human behavioural science.

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Design strides

- Focus on social change (Ambole 2016).
- Mainstreaming universal design. M'Rithaa K. Mugendi (2015)
- HCD (Paulson, 2014)
- Product design to design systems (Manzini 2014, Papanek & Fuller 1972).

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1. Solar Milk Cooling System

- Lose of milk due to unreliable electricity supply – up to 60%.
- No connection to the electricity.
- No refrigeration.
- Plastic containers for transportation.
- Distance to collection point is far and they have to make 2 trips per day.
- Rejection of milk
- Increased poverty.

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Solutioning

- 1 farmer – decided to do something about it.
- Undertook research
- Invested resources – estimated at 50,000 US$.
- Mobilized the farmers.
- Is optimistic that he will get back his investment as more farmers form groups.

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2. CoolSystem, Uganda

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Problem

- **"Find a way for the milk to be cooled so that it can either enter the formal or the informal market, where it can fetch a good value for the farmers."**
- Kisaalita, an engineer, saw that the farmers were losing up to half of their milk output. He started searching for a solution in order to boost farmers' profits and by extension increase food production in Uganda (Taylor, 2009).
- Remote area
- No electricity

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Solutioning

- Investigated/collected beer coolers from Europe, Asia.
- Worked with farmers on the ground.
- Farmers pay for the coolers (between 600 and 800 US$) in comfortable instalments.
- Has other life saving benefits.

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3. Kitonyoni Solar Mini-Grid Project

- **Good DRE and Social design model.**
- Solar system
- Reliable electricity to more than 50 businesses, more than 500 homes, schools, clinics.
- Community mobilization – ownership.
- Increased security – business can open longer.
- Secondary benefits includes rain water harvesting.
- High capacity for scalability.
- Healthy public.

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4. Health Training Manual Development

- A multi-sectoral, easy to reference and appropriate in size and content, and developed with the available resources.

“Training Manual for Prevention, Management and Treatment of Disabilities”.

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Problem

- Need for quick, convenient information.
- Emergencies.
- Easy to carry, access.
- Unhealthy public
- Unsafe deliveries
- Preventable disabilities caused by nutrition, un-timely intervention, lack of information, mismanagement (e.g hand washing campaign)

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Solutioning

- Development of reference manual – to provide timely information for prevention, treatment and management of disabilities.
- Team – clinicians (nutritionists, physiotherapists, paediatricians and public health) and designers.

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Co-creation

- Collaborative design process
- Users are core to the design process - "the person who will eventually be served through the design process is given the position of "expert", and plays a large role in knowledge development, idea generation and concept development (Sanders & Stappers, 2008).

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Design with social impact

- Social design
- Co-creation
- Empathetic
- Lead users
- Design thinking –serves humanitarian efforts
- Grounded on a broader design education that develops multi disciplinary skills especially in human behavioural science.

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Conclusion

- **LEARN:** multidisciplinary team members need to learn from each other and form a shared understanding of the problem
- **EMPATHISE:** after forming a shared understanding, the team needs to immerse itself into the social and cultural context of the problem
- **IMPLEMENT:** the team should then proceed and implement their co-created solutions in collaboration with the communities who will use the solution.

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