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DIFFUSION OF SOLAR ENERGY TECHNOLOGIES IN RURAL AFRICA: TRENDS IN KENYA AND THE LUAV EXPERIENCE IN UGANDA

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Overview

- Introduction
- Approach
- Findings
- Recommendations & Conclusion

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Introduction

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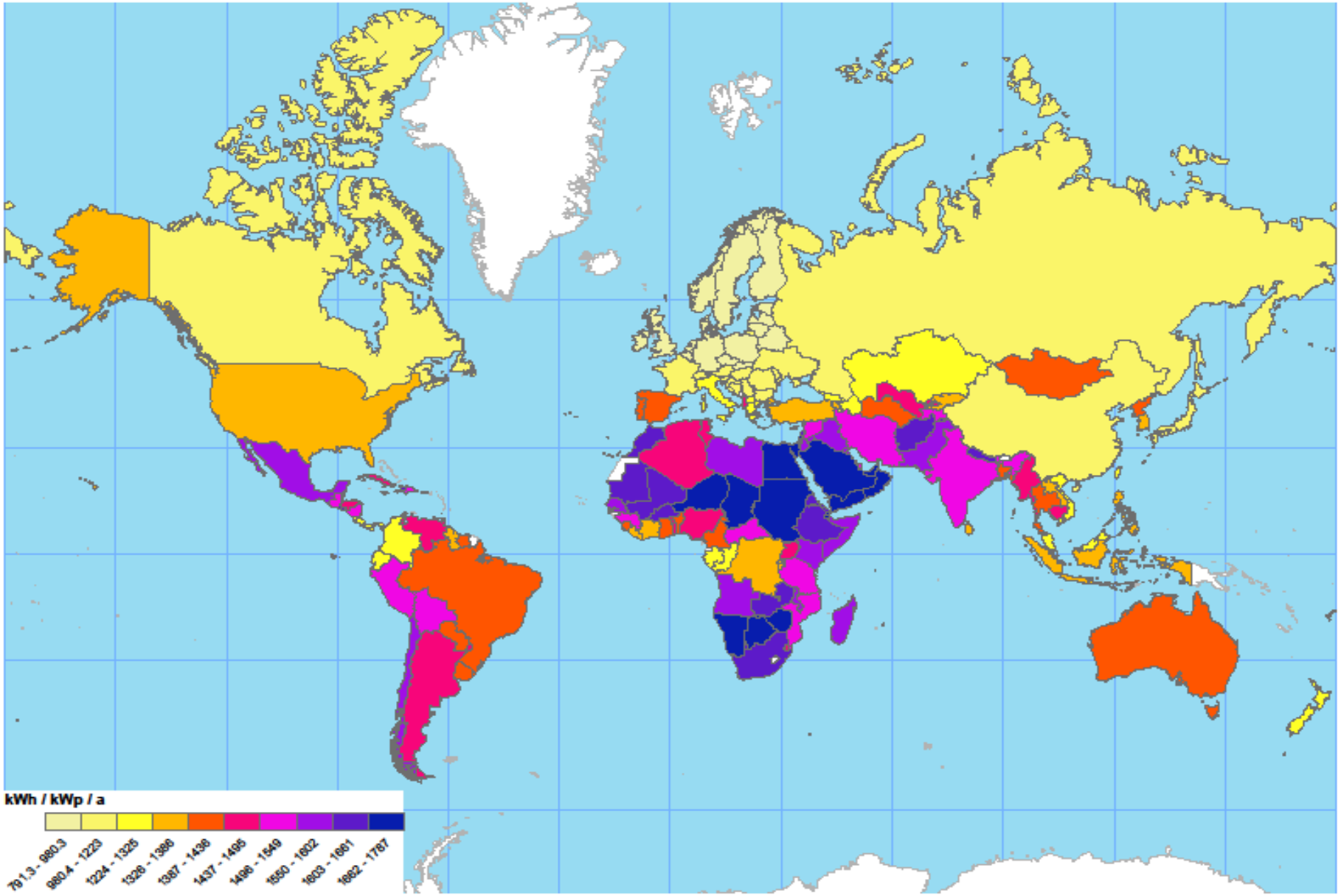
Global Solar Radiation Levels



Ondraczek et al., 2013

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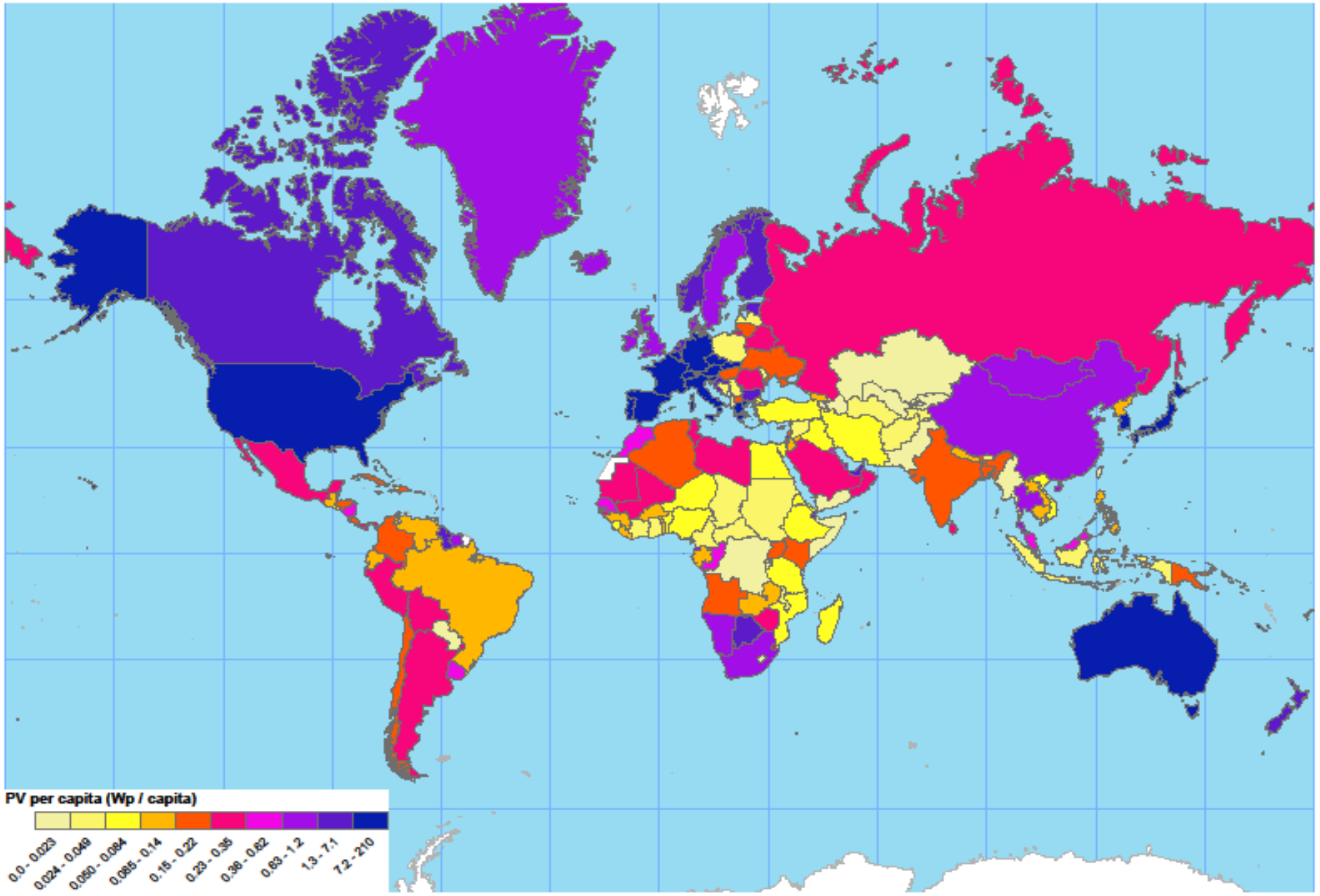
Global Installed Solar PV Capacity Per Capita



Ondraczek et al., 2013

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Challenges facing diffusion of Modern Energy Technologies - METs

- Access to Finance
- Awareness
- Access to Technical Support Services
- Enabling Environment

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Approach

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Approach

- Study identifies major challenges of solar technology diffusion in Africa as well as highlight some factors driving the adoption of the technology
- A comparison of diffusion patterns of mobile telephony technology (MTT) and the Modern Energy Technologies (METs) in East Africa was undertaken
- Further, a review of a successful MET business model in East Africa was carried out.
- Success factors were identified, highlighted, and recommendations made on key factors that would arguably drive rapid adoption of METs.

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Findings

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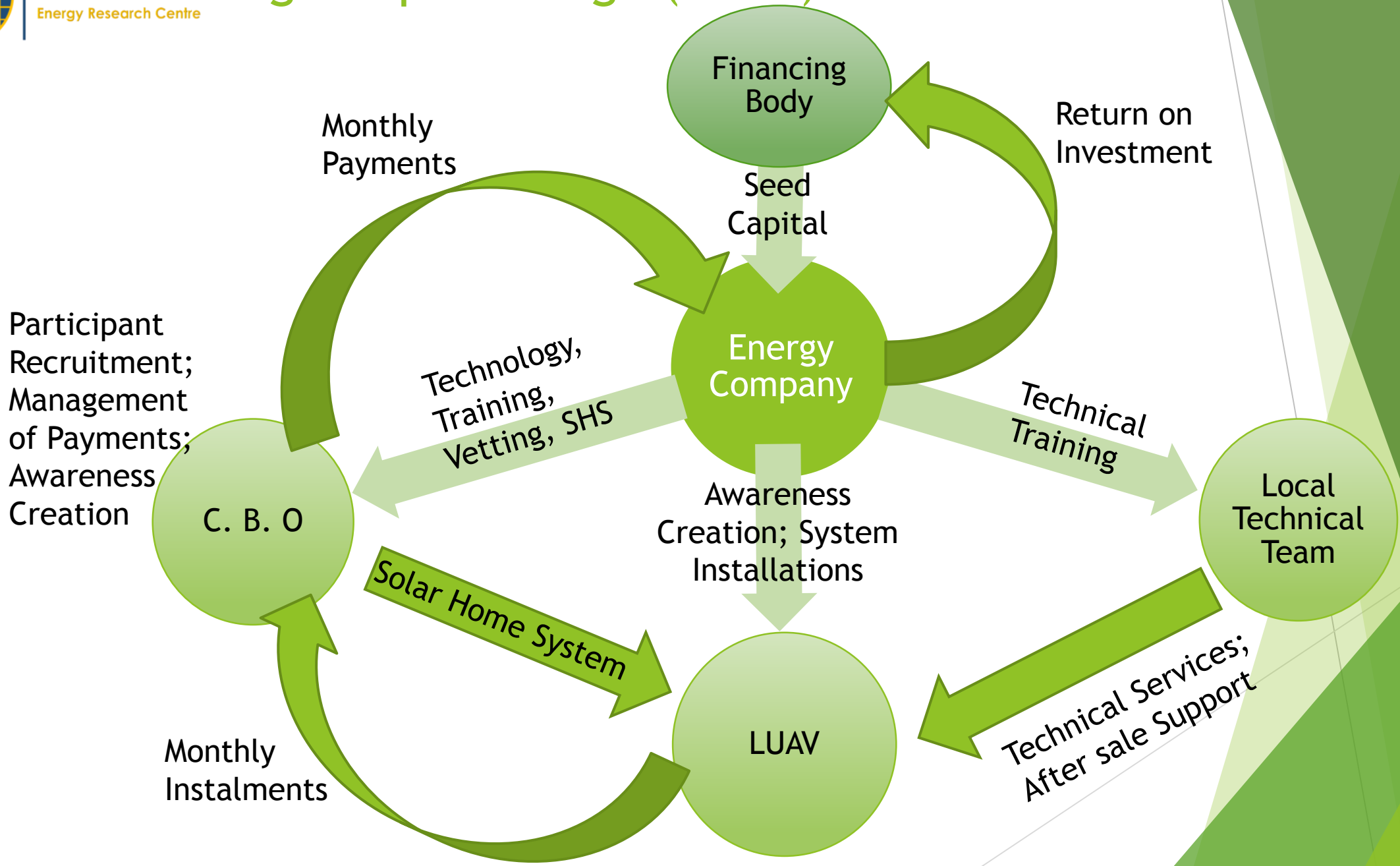
MET vs MTT penetration (Yr 2013)

Country	MTT penetration	MET penetration
Kenya	93%	16%
Uganda	46%	12%

- Minimal government intervention noted in MTT penetration
- Significant variances noted in entrepreneurial capacity of MTT firms vs MET firms (Batte & Da Silva 2013)
- Recruitment and retention of trained personnel was higher in MTTs firms than METs firms

Light-Up a Village (LUAV) Model Structure



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Features

- A LUAV consists of at least 100 households organized into a CBO
- Energy company sets up a revolving fund for each CBO through a financial intermediary
- Management of the revolving fund and collection of payments is done by CBO
- Households access the SHS at 130 USD payable over 12 months to the CBO.

Success to date

- Over a 12 month trial period,
  - 18 LUAVS set-up to date
  - 3000 households have accessed SHSs
  - Low delinquency rate noted – Only one CBO defaulted

- BFP Connect 600
  - 6 Wp Polycrystalline Panel
  - 4 Ah AGM Sealed Battery
  - 4 LED lights
  - 2 USB Output Slots
  - One 12V Output Port

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Recommendations & Conclusion

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Recommendations & Conclusion

- Frequent review of national policies in line with the ever reducing cost of solar PV modules Ondrazcek, (2014)
- Proximity to operational solar technology solutions increases uptake. Lay et al., (2013)
- Leveraging the collaborative efforts of Energy Companies and local CBOs increases levels of trust and reduces the risk of delinquency
- Local collaborations improve the effectiveness of awareness campaigns

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Recommendations & Conclusion

- Training of technicians and entrepreneurs in the community ensures continuity and assures end users of quality support services which eventually results in low levels of delinquency.
- Facilitates the set up of a **revolving fund** that allows end users to pay for the technology in **installments** of up to 12 months to be **managed by** the prequalified local partner **CBO** at a marginal cost.
- Creates awareness with campaigns run through the CBO and proximity of participating households in the community.
- Ensures continuity by signing up at least 100 households per project. This number ensures a sustainable market for the technician.

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Q&A

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