

Long Seng To  
LCEDN Annual Conference  
University of Strathclyde  
3<sup>rd</sup> May 2019

# RESEARCH COLLABORATIONS FOR COMMUNITY ENERGY RESILIENCE IN LOW-INCOME COUNTRIES

# Aims

- Establish research collaborations
- Focus on opportunities to increase community energy resilience in on-grid, mini-grid and stand-alone electricity systems in South Asia and sub-Saharan Africa



# Resilience is...

“the ability of individuals, communities, organizations or countries exposed to disasters, crises and underlying vulnerabilities to anticipate, prepare for, reduce the impact of, cope with and recover from the effects of shocks and stresses without compromising their long-term prospects.”

- International Federation of Red Cross and Red Crescent Societies



# Why focus on community energy resilience?

## An observation

strategic use of energy by households and communities to improve their resilience

- in disaster situations
- in everyday life

## Implications for

- energy services for humanitarian aid & international development
- coordination between grid, mini-grid & stand alone electricity systems

# Objectives



# Events



Loughborough, UK

Jun 2018



Oxford, UK

Nov 2018



Kathmandu, Nepal

Feb 2019



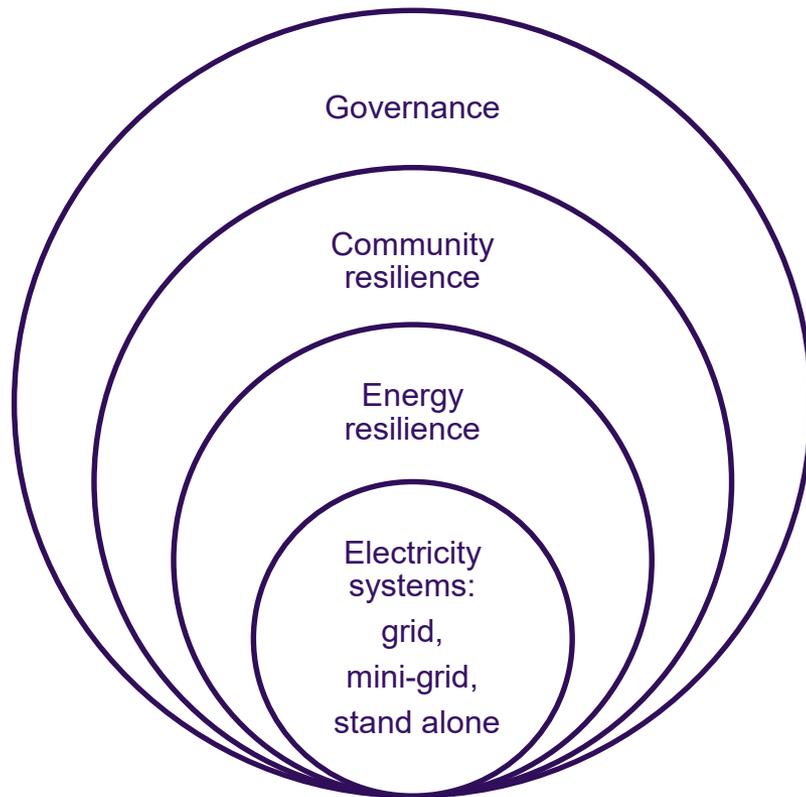
Malawi

Apr 2019

# UK Workshop



# UK Workshop

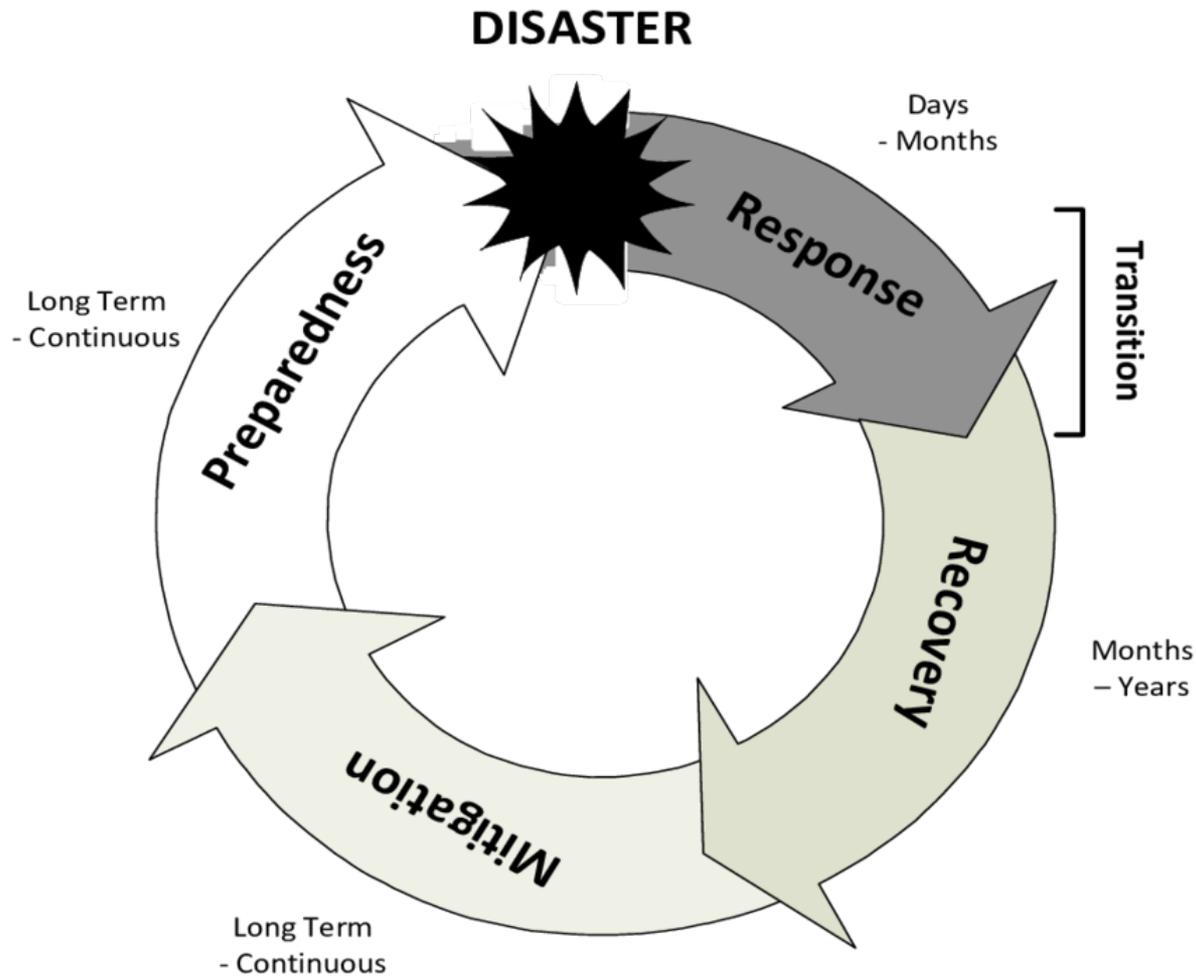


- Confirmed the need for research at each of these boundaries
- Need to focus on energy services
- Need for inclusion and capacity development

# South Asia Workshop



# South Asia Workshop

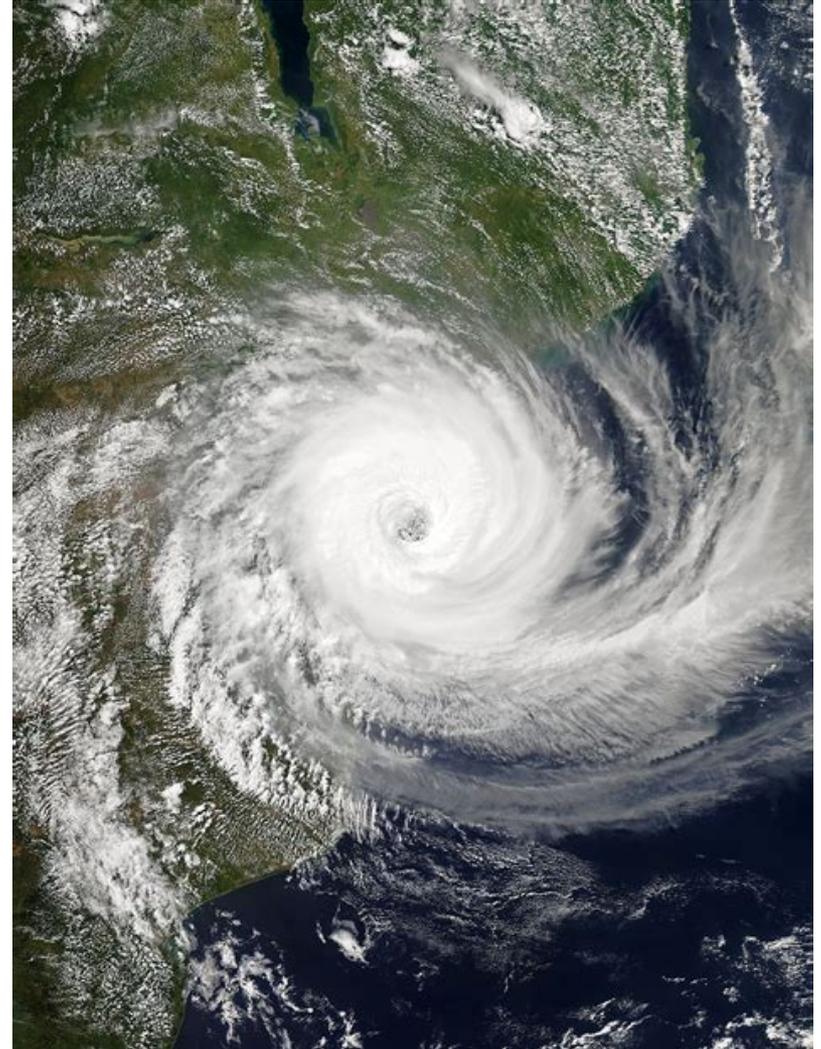


# Malawi Workshop



# Malawi Workshop

- Impact of Cyclone Idai
- Specific steps for dealing with floods and droughts in Malawi
- Governance and planning for resilience
- Remote monitoring for managing infrastructure



# Malawi Workshop: Emerging Research Qs

No.	Question
1	What are the critical aspects of energy systems that will make the system resilient?
2	How best can we engage and support communities in building energy resilience (last Mile)?
3	To what extent are investments made in energy in communities relative to others?
4	What are the differences in resilience between communities with and without access to energy?
5	How do we create a balance between biomass and alternative energy sources in building community resilience?
6	How far can we design for resilience versus self-failure.?
7	What are the structural and unstructural measures that can enhance energy resilience?
8	How best can we incentivize suppliers to operate in rural areas more than in urban areas?
9	How robust are our energy systems to withstand and recover from natural disaster?
10	How does community power dynamics affect community energy resilience?
11	What are the favourable community energy governance models that can enhance community resilience ?

# Malawi Workshop: Emerging Research Qs

## Results

No.	Question	No. of Votes
1	What are the critical aspects of energy systems that will make the system resilient?	5
2	How best can we engage and support communities in building energy resilience (last Mile)?	3
3	To what extent are investments made in energy in communities relative to others?	1
4	What are the differences in resilience between communities with and without access to energy?	1
5	How do we create a balance between biomass and alternative energy sources in building community resilience?	5
6	How far can we design for resilience versus self-failure.?	0
7	What are the structural and unstructural measures that can enhance energy resilience?	4
8	How best can we incentivize suppliers to operate in rural areas more than in urban areas?	2
9	How robust are our energy systems to withstand and recover from natural disaster?	3
10	How does community power dynamics affect community energy resilience?	4
11	What are the favourable community energy governance models that can enhance community resilience ?	4

# Thank you!

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