



Findings from the Kuching Smart Villages Workshop

John Holmes



10 key points arising on energy access for off-grid communities in Southeast Asia

Summary

The Smart Villages Initiative held its second major international workshop in Kuching, the capital city of Sarawak, Malaysia in January 2015. The workshop was the outcome of a collaboration between the Smart Villages Initiative, Akademi Sains Malaysia (the Malaysian Academy of Sciences) and Universiti Malaysia Sarawak (UNIMAS). It brought together a diverse group of around 80 people working on energy access for off-grid villages to review their experiences to date, and to identify barriers to further progress and how they may be overcome. The workshop focused on the provision of off-grid energy in Southeast Asia.

This note provides a summary for policy makers of the workshop's findings. A more detailed report of the workshop, together with copies of the presentations made at the workshop, is at www.e4sv.org.

1

Cultural Sensitivity

To be successful, off-grid energy initiatives in Southeast Asia require an understanding of, and sensitivity to, distinctive local cultures without which local needs and aspirations may not be met, resulting in lack of buy-in and possibly in resistance. This takes time, and requires an interdisciplinary approach involving anthropologists and social scientists. Social audits should be undertaken at an early stage and repeated regularly. In respect of the development outcomes targeted for energy-access initiatives, it is best to aim for incremental improvements that are consistent with what villagers have and value, and that embrace local wisdom. Villagers should be afforded control over their development path, which should build on their unique endowments and strengths.

2

Local Partners

A major part of the effort of any energy-access project should be devoted to engagement, and building good relationships with the local community, partnering with individuals and organisations who are already known and trusted by the community if possible. This is essential to secure community buy-in and ownership, which are key to achieving successful outcomes. It is appropriate to make use of community resource management systems and in-kind contributions, and to identify, train and support local champions who have the future of the community at heart and a vision for where it should be 10 or more years' time. Resistance may be met at different stages of the project; this needs to be monitored and a flexible approach taken in evolving strategies to deal with it.

3 Financial Viability

The use of energy access to support new employment opportunities and productive enterprises should be emphasised and supported in order to secure the financial viability of projects and to enable further progress up the energy ladder. Otherwise, energy services may largely be used for leisure activities or innovations aimed mainly at improving quality of life. While such uses may well be appropriate, coupling them with productive uses is likely to enhance the sustainability of initiatives in the longer-term. Steps should be taken to ensure that the poorer members of rural communities have access to the opportunities arising, not just the more powerful.

4 Capacity Development

There is an urgent need for capacity development to enable the benefits of off-grid energy solutions to be maximised. This capacity development includes increasing the awareness of villagers of the benefits of energy access and the possibilities to enhance existing, and to introduce new, productive enterprises. It should also provide for training in the maintenance and use of technologies, and the skillsets needed by new enterprises to provide and use energy services.

5 ICT

Information and communication technologies (ICT) are often an early priority for villagers once they have an electricity supply. Key drivers are a desire for improved education and Internet access: the latter provides a desired connection with the outside world and is seen as a key enabler of new income streams from commerce and tourism. While ICT and Internet access hold some dangers and can be divisive, if appropriately managed they can bring together the young and old, for example in initiatives to preserve indigenous traditions such as music, dances and cooking methods, and local knowledge of biodiversity and life-skills ('living in the rainforest').

“ identify, train and support local champions who have the future of the community at heart

“ICT is an early priority for improved education and connection with the outside world

6 Snowballing Success

There are sufficient examples to date to provide confidence that the smart village concept can be delivered and that the development benefits will flow. 'Seeing is believing' and more good and well-publicised case studies of smart villages are needed. First steps are important, and early successes can have a snowball effect.

7 Responsive Technology

Energy initiatives should not be led by technology; rather the choice of technology should be responsive to users' needs. These needs will evolve and so there is a premium on flexible and modular technologies such as solar panels. Micro-hydro systems are often a preferred choice in Southeast Asia given their ability to offer power levels sufficient to support productive enterprises at a competitive cost, but they are somewhat less flexible in meeting evolving needs. Direct Current (DC) nano-grids supplying a cluster of homes are emerging as a promising technology, particularly when combined with low energy DC appliances, but may have limited capability to support productive enterprises. The choice of technologies and the design of energy systems should have regard to their operation and maintenance in remote communities possibly with limited skill levels locally available. Villagers need to be educated in the use of energy technologies, not least to avoid misuse of batteries, a frequent cause of system failure.

“Seeing is believing. More good, well-publicised case studies of smart villages are needed”

8 Policy Frameworks

Supportive policy frameworks should be put in place, but often are missing. They need to facilitate scale-up, which means bringing in private investment. Finances will be more readily available if effective mechanisms can be established to reduce transaction costs, for example by bundling many small projects.

“Supportive policy frameworks are often missing”

9 Prioritising Clean Cooking

Energy needs for cooking in rural communities in Southeast Asia are much higher than those for electricity, and there is a good case that cleaner and more efficient cooking technologies should be prioritised in energy-access initiatives. Substantial gains in energy efficiency and cleanliness can be achieved with simple technologies and at low cost, so in many ways this is an area where there are 'low-hanging fruits'.

“Evaluation should be routinely embedded in all initiatives.”

Collecting Metrics

Better metrics are needed to inform policy, for example on levels of energy access, as monitoring and evaluation schemes often do not reflect realities on the ground. Evaluation of the effectiveness of energy schemes and of the development impacts that follow should be routinely embedded in all initiatives. Both quantitative and qualitative measures are needed and may usefully include measures of individual and community ‘happiness’ or well-being. Mechanisms need to be in place to learn from failures that may otherwise not be shared publicly.

Comparing Continents

The Smart Villages Initiative’s first major international workshop, held in Arusha, Tanzania in June 2014, focused on off-grid energy access in East Africa. While there are significant differences between countries within East Africa and within Southeast Asia, there was generally a stronger emphasis on the use of energy access to support productive enterprises in rural communities in East Africa. Also, Southeast Asian countries such as Malaysia have sufficient resources available to governments that they can take a stronger role in delivering energy access and public services such as healthcare and education.

Notes

Smart Villages aims to provide policy makers, donors and development agencies concerned with rural energy access with new insights on the real barriers to energy access in villages in developing countries - technological, financial and political - and how they can be overcome. We have chosen to focus on remote off-grid villages, where local solutions (home- or institution-based systems, and mini-grids) are both more realistic and cheaper than national grid extension. Our concern is to ensure that energy access results in development and the creation of ‘smart villages’ in which many of the benefits of life in modern societies are available to rural communities.

www.e4sv.org | info@e4sv.org | [@e4SmartVillages](https://twitter.com/e4SmartVillages)

CMEDT – Smart Villages Initiative, c/o Trinity College, Cambridge, CB2 1TQ

© Smart Villages 2015

The Smart Villages initiative is being funded by the Cambridge Malaysian Education and Development Trust (CMEDT) and through a grant from the Templeton World Charity Foundation (TWCF). The opinions expressed in this publication are those of the authors and do not necessarily reflect the views of the Cambridge Malaysian Education and Development Trust or the Templeton World Charity Foundation.

This publication may be reproduced in part or in full for educational or other non-commercial purposes.