SMART VILLAGES
New thinking for off-grid communities worldwide

South Asia Media Dialogue: Colombo Workshop Report

Workshop Report 12

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Smart Villages

We aim to provide policymakers, 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.

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MALAYSIAN COMMONWEALTH STUDIES CENTRE

CAMBRIDGE MALAYSIAN EDUCATION AND DEVELOPMENT TRUST

TEMPLETON World Charity Foundation, Inc.

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1. Introduction

More than one billion people in the world still do not have electricity: over three billion cook on dirty, inefficient and harmful stoves, and four million people die prematurely each year as a result. The UN's Sustainable Energy for All (SE4All) initiative aims to achieve universal access to modern energy services by 2030. Widespread recognition of the importance of this initiative led to energy access becoming one of the key themes running through the new Sustainable Development Goals (SDGs) adopted in September 2015. The Smart Villages Initiative aims to contribute to meeting the SDGs by providing an insightful "view from the front line" of the challenges of providing sustainable off-grid energy to remote villages as a catalyst for development and how they can be overcome.

Smart villages are proposed as a rural analogue to smart cities and could shift the balance of opportunities between cities and villages. While we may expect that their particular features will be context specific, common features will include access to good education and healthcare, better opportunities to earn a living, greater participation in governance processes, and more resilient communities. All these development benefits are enabled by energy access together with modern information and communication technologies.

The Smart Villages Initiative is evaluating the barriers to energy access in rural communities in developing countries and how those barriers can be overcome. Its focus is off-grid villages where local solutions (home- or institution-based systems, and mini-grids) are cheaper than national grid extension. Its aim is to generate new insights to inform the decisions and programmes of policy makers, donors and development agencies concerned with rural energy access for development.

As an integral part of that activity, the Smart Villages Initiative aims to raise public awareness of rural energy access issues, sustainable energy technologies, and entrepreneurial approaches to energy in the developing world. To help meet this goal, we seek to promote objective, informed, and balanced coverage of the issues, challenges, and opportunities through media dialogue events in both local and international media. In this way we hope the main stakeholders—including policy makers, funders, entrepreneurs, civil society, and the general public, including potential smart villagers themselves—can be made aware of the potential of off-grid rural energy provision. We also provide them with appropriate information to permit informed discussion of the issue. We are targeting high-profile international media outlets as well as the mainstream media organisations in countries where rural energy access is important.

By holding these regional media dialogue events, we hope to gain insights from local journalists as well as introducing or updating them with some of the latest technological innovations in the area, together with the regulatory, finance and entrepreneurship/business challenges and opportunities that apply in their region. In this manner we hope to encourage a greater focus on this complex area that involves technology, business, politics and rural development. Despite its importance in terms of the magnitude of the affected populations, rural energy access has hitherto not been a mainstream media priority.[1]

Details

This third workshop took place over the course of two days in November 2015 in Negombo, Sri Lanka in the period between the adoption in September of the new SDG's and the COP21 talks in Paris in December. It featured a mixture of background briefings and case studies by local and international technical experts and practitioners, including local entrepreneurs, and interactive discussions and professional development exercises, facilitated by independent media trainers and mentors. The workshop also featured case studies of prototype smart villages and innovative renewable energy use by several of the participating journalists.

Sri Lanka was chosen as the venue to enable participation from across the South Asia.

1 This approach derives, in part, from the successful Bitosciences for Farming in America project (b4fa.org), funded by the John Templeton Foundation, which worked with local media organisations in Africa to encourage high-quality reporting of scientific and technical development issues through a combination of dialogue workshops, field trips, and networking with the research community.

2. Participation

In our selection process we sought to identify editors and senior journalists from countries in the region—Sri Lanka, Bangladesh, India, Nepal and Pakistan—who would take an interest in both energy provision and Smart Villages. We selected print, broadcast, and new media journalists who showed an interest in energy, science, and technology, environmental, or development reporting. In addition to SciDev.Net and The Guardian, we took recommendations from local partner organisations in the countries and researched the published portfolios of the candidates.

Interest was high, and we invited 17 journalists from Bangladesh, India, Nepal, Pakistan, and Sri Lanka. All participated, except for two journalists from Pakistan due to visa problems. For continuity and to help foster an international network of "Smart Village" journalists, an editor and journalist who had attended the Seoul workshop and written on the topics were also invited. The Smart Villages Initiative provided travel, accommodation, and expenses for those who participated.

Biographies

Presenters

C S Sreekanth

C S Sreekanth took the plunge into the sunshine off-grid renewable energy sector after stints with large multinational companies like Nokia and Infosys. He has over six years of experience in strategy, market assessment, project management and supply chain. At E-Hands, Sreekanth handles business development, key account management and investor relations. Sreekanth holds PGDM from Indian Institute of Management, Bangalore (IIMB)

Rao Rajesh

Rao Rajesh has comprehensive skills in staffing, training, strategic planning, and organisation development. He has extensive hands on experience in designing and implementing people management strategies. He has over 20 years of experience in the corporate sector and has worked in various capacities across Sales, HR & Training functions in the information technology and financial products space.

Sebastian Groh

Sebastian Groh holds a PhD from Aalborg University (Denmark) where he wrote his thesis on the role of energy in development processes, energy poverty, and technical innovations. He is living and working in Bangladesh as the director of two startup companies, ME SOLshare Ltd. and ME Fosera BD Ltd.

Praveen Vechi

Praveen Kumar Vecha is a rural business professional with over 15 years of experience. He has held leadership roles in financial services and agri inputs. In his current role, Praveen works as a Senior Vice President in the Rural Business division of Fullerton India Credit Co Ltd. He is responsible for managing the business in the southern states of India. He has been a part of the startup team at Fullerton India and has built the rural business from scratch to become one of the best rural financial services business in the country. Praveen started his career with Coromandel International the largest phosphatic fertilizer company after a Masters degree in Agribusiness Management.

Sharon Schmickle

Sharon Schmickle has been a journalist for MinnPost.com since 2007. Before that she worked for the Minneapolis Star Tribune where she reported from the paper's Washington bureau and covered wars in Iraq and Afghanistan. Her awards include Pulitzer Prize finalist,

National Press Club's Washington Correspondent of the Year, and Overseas Press Club of America for best business reporting. She has taught writing and journalism at Macalester College, the University of St. Thomas and the University of Minnesota's Humphrey Institute. Since 2011, she also has worked as a journalism mentor in Ghana, Nigeria, Uganda, Tanzania and Rwanda. She is a graduate from the University of Minnesota's School of Journalism and she was a Templeton-Cambridge Fellow in science and religion at Cambridge University.

Julia Vitullo-Martin

Julia Vitullo-Martin is a New York-based independent journalist who is a senior fellow at Columbia University's Center for Urban Real Estate, and also director of the Center for Urban Innovation at the Regional Plan Association. Her work focuses on development issues such as comparative economic analysis, planning and zoning, waterfront development, public housing, environmental review, and historic preservation and design. Vitullo-Martin has been widely published in a variety of newspapers and magazines, including the Wall Street Journal, The New York Times, the New York Review of Books, the New York Post, the New York Daily News, Monocle, Forbes, and Fortune, as well as academic journals. She has authored and edited three books, including Breaking Away: The Future of Cities (Century Foundation Press, 1996). She served as co-director of the Templeton-Cambridge Journalism Fellowships at the University of Cambridge from 2003 through 2011.

Participants

T K Rohit

Journalist, photographer, wanderer... TK Rohit has straddled the worlds of business, politics and sports reporting in a career spanning 10 years. Known for his really, really bad jokes, he also did a Master's in International Relations at the University of York in the United Kingdom. While there, he spent more time with the camera, leading many to believe that he was studying photography. "Sachin is highly overrated", is the most common sentence you will hear him saying while discussing cricket.

Kumar Lopez

Kumar Lopez is CEO of the Sri Lanka Press Institute. His role entails advocating and networking with Senior Government, Diplomatic Missions and International Organizations in regard to media issues. He also develops and manages programmes in partnership with donors to enhance the capacity of Journalist and professionalize media in Sri Lanka. Kumar is also a visiting Lecturer at the International College of Business & Technology (ICBT). He teaches on the MBA programme at the Cardiff Metropolitan University of Wales.

Pralhad Giri

Pralhad Giri is a freelance journalist from Nepal, and has over 20 years of experience of writing, communication, and journalism in national and international media. Currently columnist of Karobar National Daily, Mr. Giri regularly contributes articles to different broadsheet dailies, news portals, weeklies and periodicals. He has covered the humanitarian aspect of poor and marginalised people. Mr. Giri was program producer/presenter of talk show Youth Forum at Nepal Television (state-owned TV station) for 5 years in the past. He has filmed various documentaries based on ethnic groups, humanitarian crisis and environment. Mr. Giri is also associated with central bank of Nepal for communication, media and training related activities where his focus is to communicate the communities with local-led initiative on renewable energy, tourism, and microcredit for sustainable development.

Yao Hua Law

Yao-Hua Law is a freelance science writer and radio show producer based in Kuala Lumpur, Malaysia. He studied insect behaviour for his

Ph.D. (University of California-Davis) and taught in Universiti Putra Malaysia for three years. He has been writing for almost two years covering research in ecology, conservation and health. Yao-Hua has published in Discover Magazine, SciDev.Net, PopSci.com, The Scientist and Cosmos Magazine. He produces shows on health and science for the Malaysian business radio station, BFM89.9. Yao-Hua won First Prize in the Asian Scientist Writing Prize 2015 for a story on asbestos.

Joel Andriano

Joel Adriano is Southeast Asia and the Pacific Coordinator of London-based SciDev.Net. He is an award-winning freelance science journalist based in the Philippines and an experienced consultant on science, agriculture, environment and education. He has been involved in various projects for the World Bank, USAID, ADB, and UNICEF.

Rathindra Kuruwita

Rathindra Kuruwita is Director of Research and Publications at the Centre for Human Rights, Sri Lanka. He has previously worked as a research assistant at the Nanayang Technological University. He worked in the military studies department focusing on the management of defence technology and military developments in the Asia Pacific.

Dinesh Chandra Sharma

Dinesh Chandra Sharma is an award-winning journalist, author, and columnist with about 30 years' experience of reporting on science, environment, and health-related issues for Indian and international media outlets. His latest books include a history of India's information technology industry (The Outsourcer, MIT Press, 2015) and a science travelogue based on his visit to the Arctic. He is a Fellow at the Centre for Media Studies, New Delhi, India."

Manipadma Jena

Manipadma Jena is a senior international environmental journalist in India. Winner of the Best Media Reporting Award in 2012 from the Asia-Pacific Climate Change Adaption Forum in Bangkok, she writes for the London-based Thomson Reuters Foundation and for Rome based IPS – Inter Press Service News Agency, the 5th largest global news agency. Manipadma travels widely within Asia and in her country to cover environment and climate change issues and events, and within these contexts, highlights food security, renewable energy, natural disasters, gender and indigenous communities.

Melinda Dias

Melinda Dias has over 15 years of experience in public interest broadcasting journalism, having worked in capacities of Reporter, News Editor, and Director of News for India's National Broadcaster (All India Radio and Doordarshan TV News) in Mumbai, Delhi, Panaji and Kohima, in Northeast. Currently she functions as Special Foreign Correspondent based in Dhaka, Bangladesh. While she covers all beats, she has a strong and abiding interest in environment and have done special reports on climate change, green technology transfer, green building, river governance, water management, etc. I am a Fellow of Panos South Asia Climate Change Award in 2012 and Indo-American Fulbright Environmental Leadership Programme in 2004.

Gopi Warrier

Gopi Warrier is regional manager for environment at Panos South Asia, and Secretary at the Forum of Environmental Journalists in India. He is an experienced communicator and journalist specialising in agricultural, environmental, and developmental issues. He has developed relationships with key stakeholders for public-funded international research organisation and non-governmental organisations. As a journalist he specialises in communicating complicated environment and science stories in simple language, linking the macro with micro developments.

Narayani Ganesh

Narayani Ganesh currently holds the position of Associate Editor, at The Times of India (TOI). She writes leader articles on issues concerning the environment, science and technology, tourism, travel, heritage, philosophy, and health and edits two popular columns on philosophy, spirituality, sustainable living and wellness, "The Speaking Tree" and "Sacred Space", on the opinion page of TOI. She is editor of The Speaking Tree on Sunday, a broadsheet newspaper published from seven cities across India. She edits books published by the Times Group. She is guest faculty with the Times School of Journalism, New Delhi. Narayani first joined the TOI group in 1987. She has a Master's Degree in Economics from the University of Madras, India.

Rina Mukherji

Rina Mukherji has spent over two and a half decades in the Indian print and online media, and won several fellowships and awards for her writings on sustainable development. She also holds a doctorate in African Studies, and has specialized academically in Third World conflict situations and developmental problems.

Dominick Rodrigues

Dominick Rodrigues is presently Senior Editorial Consultant with Millennium Post English daily newspaper (Delhi) and based in India's financial hub—Mumbai—covering politics, environment/renewable energy, business, finance, and infrastructure inter-related sectors. Over 30 years covering news in all beats—especially environment—in Canada, the Middle East, and India. He received the Environment Award from Emirates Environment Group presented by UAE Environment Minister for his coverage of crown-of-thorns starfish epidemic as well as environmental damage by marine oil spills, effects, and clean up efforts. He worked for India's top news agency (24 years in Press Trust of India), newspapers and magazines in Toronto, UAE and India. He has written a lot about smart cities and is now focusing on smart villages in view of farmers committing suicide over failed crops due to bad monsoons. Keenly following the Smart Villages Initiative to discover the answers to these farmers' problems and implement them through his coverage of politics. He also made a short documentary film on the man-eating leopards menace in Mumbai's Sanjay Gandhi National Park, created a music album about Mumbai's environment, and wrote two (yet to be published) fiction books.

Workshop participants together as a group

Urmimala Bhattacharjee

Urmi Bhattacharjee is a television journalist working for the English television channel NDTV. She reports on issues related to border conflicts, politics, climate change, natural disasters, environment, clean energy, and sustainable livelihood in the northeast India.

She has been a consultant with the well-known river and dams advocacy NGO International Rivers in California and is a former fellow with Centre for Science and Environment."

Darsana Ashoka Kumara

Darshana Ashoka Kumara is a radio journalist of the Sri Lanka Broadcasting Corporation. He is also a freelance features writer of Ceylon Today newspaper of Sri Lanka. Darshana has been covering a wide array of issues of Sri Lanka for more than 10 years, specializing enviornment. He is a past fellow of Asia Journalism Fellowship of Singapore. He is currently serving as the Honorary Ambassador to the Radio Netherlands Training. Darshana is also a visiting lecturer of the University of Colombo.

Smart Village Staff

Bernie Jones

Based in Oxfordshire, Bernie Jones works on a number of projects in the science-policy-development-communications nexus. He was formerly Media Programme Director of the Biosciences for Farming in Africa (B4FA) project. He has extensive experience of working with international academies of science, as Head of International Policy at the Royal Society, Executive Director of EASAC, and interim Executive Director of the InterAcademy Panel and InterAcademy Medical Panel. He has also worked elsewhere in the non-profit sector, as International Director of Shaw Trust, and in the corporate sector in a variety of roles at British Airways. Bernie is a graduate of the Universities of Cambridge and Edinburgh, in Computer Science, Experimental Psychology and Cognitive Science.

Richard Hayhurst

Richard Hayhurst is communications director for the Smart Villages Initiative. He has been involved in science and healthcare communications for over thirty years, having established and sold several leading agencies. He has worked internationally with clients across the spectrum, from early-stage biotechs to multinationals, the EU, countries, academic institutes and NGOs, formulating communication strategies for topics such as cloning, stem cell research, agbio, genetic testing, vaccines, HIV, renewable energy and nanotechnology. Richard has degree in modern history from the University of St Andrews.

Sandy Evans

Sandy Evans is the administrator and finance coordinator for Smart Villages. Based in Wiltshire, UK, she has been working in administration and personal/executive assistant roles in local government and the not-for-profit sectors since 1982. From 2002 she supported senior charity executives, including CFO, CEO and Director General, and board-level directors. In this capacity she has also worked extensively with international networks, partners and subsidiary organisations. She set up her own business in 2013 offering virtual/personal assistant services to individuals (both privately and professionally), projects and organisations where she worked extensively with an organisation working on projects in 4 African countries.

Meredith Thomas

Meredith Thomas works as communications officer for Smart Villages. He undertook a Master's degree in biomedical engineering at Imperial College before going on to study science communication. He has worked as a writer for the Wellcome Trust and the Observer.

3. Workshop Proceedings: Day 1

The workshop was held over two days with a comprehensive and varied programme of presentations, group discussions and breakout sessions. These are summarised below.Copies of presentations are accessible on the Smart Villages website www.e4sv.org.

Welcome and workshop aims

Richard Hayhurst

Richard related that Smart Villages is a three-year project with related activities in six regions: East Africa, West Africa, Southeast Asia, South Asia, South America, and Central America and the Caribbean. Richard explained that the Smart Villages Initiative is being undertaken by a project team based mainly at Cambridge and Oxford Universities, working in collaboration with the national science academies and their networks, and with two organisations with extensive hands-on experience of village energy projects for development: Practical Action and The Energy and Resources Institute (TERI). Following a two-year preparatory phase, the three-year project commenced in October 2014.

He described how Smart Villages is investigating the possibility of providing sustainable off-grid energy to rural communities and the potential impact. Richard Hayhurst emphasised that the initiative was taking a bottom-up approach by listening to people's ambitions, mapping existing initiatives. One of the core goals of the initiative is to offer policy advice to national and international policymakers and leaders. He explained that this workshop would give journalists information about the initiatve and off-grid energy in general. He also stressed that the timing was appropriate: in the upcoming COP21 talks in Paris, wealthier countries, BRICS, and developing nations were planning to commit to ambitious national renewable energy targets. Off-grid provision was expected to form a substantial part of the delivery.

He commented that the journalists would encounter some new thinking around these issues. Stressing that he valued their insights, independence, and individuality, he hoped that the workshop would provide inspiration, context, case studies, and contacts to enable them to follow the project over the next two years. Regarding the format, there would be a mix of presentations, case studies, exercises, and discussion. He hoped this would be interactive and that as well as resulting in this report and a network, would give them ideas and angles to produce stories. Examples of energy-focused topics included:

- COP21 Paris
- Launch of new Sustainability Goals (SDGs)
- Local off-grid situation in their own countries
- How technology leapfrogging could benefit rural development
- Examples of energy leapfrogging

Finishing with a tour de table, each journalist described their background and expectations from the workshop.

The Jetwing Blue Lagoon Resort Manager, Mr Wester Felthman gave a short description of the resort. Since being taken over by the Jetwing Group in 2011, the hotel was the first commission of the famous Sri Lankan architect, Geoffrey Bawa, in 1965. The Jetwing Group has taken a number of measures designed to both reduce energy consumption and carbon emissions because

"energy is a valuable commodity and conservation of energy is the need of the hour". These include solar panels and most recently the installation of LED lights. In addition, the resort is air conditioned via a vapour absorption chiller run from the steam of a biomass generator using cinnamon waste wood. This commitment to sustainable energy is complemented by other green measures such as zero plastic waste targets, the use of glass bottles, and a salt water rather than chlorine pool. Their environmental commitment has led to numerous prizes including the Best Green Hotel in Sri Lanka. The journalists later had a tour of these impressive facilities, which helped to place the workshop discussions in context.

The Smart Villages concept

Dr Bernie Jones

Project Co-Leader Bernie Jones presented the Smart Villages concept and progress so far. More than one billion people in the world still do not have electricity, while three billion are still cooking on dirty, inefficient, and harmful stoves. Four million premature deaths are caused by household air pollution from cooking with solid fuels, more than malaria, tuberculosis, and HIV combined.[1] The importance of energy access has led to the United Nations (UN) Sustainable Energy for All (SE4ALL) initiative, which aims to ensure universal access to energy for all by 2030. The vast majority of people without energy access live in rural areas. Despite growing urbanisation, 47% of the world's population and 70% of the world's poor still live in rural areas . But only 30% of these people can be reached by grid extension by 2030, presenting a major opportunity for mini-grid and home-based solutions. Furthermore, energy access is now seen not just as a poverty alleviation measure but also a real catalyst for development with implications for food security, education, health and welfare, livelihoods, democratic engagement, and entrepreneurship. Against this background, the Smart Village Initiative's aim is to discover whether "smart villages" could be created as an analogy to the well-known concept of "smart cities" and possibly redress the balance of opportunities between cities and villages. The key features of the initiative include:

- Maintaining a focus on finding local solutions for rural communities, based on mini/micro-grid and home-based approaches
- Encouraging engagement by bringing together key players from scientists and policy makers to NGOs, entrepreneurs and villagers themselves
- Providing policy advice based on views from the frontlines on the barriers to energy access and how to overcome them.

The Smart Villages Initiative has several funders and partners, including the Cambridge Malaysian Educational Trust, the Templeton World Charity Foundation, TERI, Practical Action, the Universities of Cambridge and Oxford, Kopernik, and Inter-Academy Panel (IAP). The initiative will have six regional engagements over a three-year period until November 2016. Each engagement includes workshops to produce reports and policy briefs, briefings, capacity building events, media training workshops, an entrepreneurial competition, and a final event pulling together key stakeholders. Running in parallel are cross-cutting activities, including "Forward Look" workshops, research projects, communications activities, interactions with policymakers and stakeholders, and two concluding events related to the European Union and the UN.

1 *http://www.who.int/mediacentre/factsheets/fs292/en/*

Video presentation of proto-smart village in Terrat, Tanzania

To allow the journalists see an example of a "smart village", they watched a video about Terrat village in Tanzania, which the team had visited during the first Smart Villages workshop in 2014. Terrat lies some 80 km from the nearest grid connection in Arusha and is at the centre of Maasai territory. Under the leadership of village elder Martin Saning'o Kariongi, the community had set up the Institute for Okonerei Pastoralists Advancement (IOPA) to implement off-grid electricity projects. This idea has led the village to build a 300 kW diesel-generating plant, fuelled by biofuel from jatropha that in turn supports a mini-grid supplying over 100 households, a radio station, a dairy, a village training and social centre, and several small businesses and workshops. The video showed how the social impacts have included improved health and offered new opportunities for income generation, giving villagers reasons to continue to reside in the village. The video provoked a great deal of discussion, particularly since it illustrated a central tenet of the Smart Villages Initiative: a bottom-up approach is essential when promoting development. Any initiative must take into account the ambitions and motivations of villagers and build on indigenous knowledge.

Video Presentation—Light Up Borneo

The next video showed three examples of villages in Borneo and Central Malaysia where the local social enterprise Lighting Up Borneo has brought electricity successfully to remote villages. Over 30% of Sarawak and 25% of Sabah are without lighting. Lighting Up Borneo decided to concentrate primarily on mini-hydro provision. Since 2013 they have installed 18 mini- and pico-hydro units in 18 villages. The three case studies showed the diverse challenges they faced. The first village, Kg Nygol, is a five-hour hike from the nearest road. Everything had to be carried over difficult forest trails. It was hard work, but the villagers said they were happy to help since they needed energy access. The second village of Gun Musang was a day from the nearest road . Everything had to be carried over difficult fore However, the water flow in the village of 60 psi was enough for a 3 KW generator. Thirdly, Long Pasia in Sabah was 10 km from the nearest waterfall but had a strong river running through it. Lighting Up Borneo and the villagers created Swan 2, a floating hydro station to provide enough electricity for lighting and other energy uses. Already the impact on education is being seen with extra hours to study and the Smart Villages Initiative is now looking at these and other villages in Borneo as opportunities to conduct impact studies .

Video Presentation—Terrat, Tanzania

As a result of power being provided to Terrat, there has been an increase in the number of youth staying as there are more prospects. If we had smart villages everywhere with communication capabilities, the effects and costs of Ebola around the world would have been significantly lowered. Returning to the central theme of energy access, Bernie pointed out that in the new UN SDGs, energy access and the concept of "smart villages" applies to 16 of the 17 goals, although it was later pointed out that actually the missing goal, ocean sustainability also had a link.

Several questions were then asked about what would constitute success for the initiative. Bernie Jones described the impact studies that the Smart Villages Initiative has initiated to help develop metrics for success for both the project and policymakers and other stakeholders. He also pointed out that smart villages will have different drivers in different regions. For example, Africa is driven by communities and what the communities need with some

government support. Malaysian initiatives are supported by the government, but there are also projects not supported by government that can apply for funding or get representation from local government sources. India has high energy subsidies. The government wants to encourage development, and subsidies for finance packages are available. Other questions focused on locating existing "smart villages" and sources in general. Bernie Jones emphasised that this was primarily a case of field research and sharing sources, which he hoped the journalists would help carry out in their region. Journalists did share sources and discuss examples of potential villages during the course of the workshop.

E-Hands Energy powering rural villages

Sreekanth C.S

E-Hands Energy (India) is a for-profit social enterprise that has grown rapidly and offers off-grid solutions to remote villages and Indian armed forces. Sreekanth CS, Associate Vice President, Business Development and Energy Access, explained that they usually install a hybrid mini-grid based on solar and micro wind systems that provide DC power. They focus on the intended uses of energy rather than technology for its own sake. As for financing, they used a combination of MFIs, NGOs, and corporate social responsibility. He referred to a survey E-Hands had conducted of 400 customers across 90 villages in India. A range of activities including weaving and handicrafts, and egg and food production yielded as much as US$260 extra income per month. He illustrated this by showing a video of a remote village in Tamil Nadu where the women are able to pick flowers for market earlier and also now increase weaving activities. In addition, because of the light, people can start and finish earlier and thus have more time at home with the children. Maternity units are able to work 24 hours as they have light and therefore women and babies' mortality rates are lowered. People are also able to see snakes after dark before they reach children or adults.

Another major factor that could influence increased energy access in India according to Sreekanth is the recent law requiring companies to devote 2% of their revenues to corporate social responsibility programmes. From a combined net profit of US$60 billion, he revealed this would yield US$1.2 billion for CSR. He was particularly pleased to attend the workshop since he firmly believed that the media can help by raising among companies of the value and impact of designating this money for energy access projects and supporting entrepreneurs involved in developing off-grid solutions. Three examples of successful projects each illustrated a particular benefit of energy access.

The first in Basti, Uttar Pradesh involved a 1.5 kW wind-solar hybrid to power a community toilet and pathway that had a major impact on sanitation and healthcare. The other was a solar mini-grid for a remote hamlet in Palghar, Maharashtra. This was to provide light for both the school and pupils. The other was a solar mini-grid for a remote hamlet in Palghar, Maharashtra. Lastly, he gave the example of Kalap in Uttarakham, one of the remotest locations in India. The aim here was to see if energy access could provide a meaningful livelihood option.

Key to the success of both noted Sreekanth was ensuring community buy-in, an issue that has cropped up throughout the Smart Villages Initiative. He advised taking extra time to articulate the benefits of a project to villagers. In first instance a 1 kW solar mini-grid was installed to deliver basic lighting and mobile phone charging for 20 households. This is designed to feed into a development plan. Aims include turning the village into a responsible tourism destination and promoting female entrepreneurship through textile production. He believes local acceptance and enthusiasm is

Sreekanth C.S, E-Hands Energy

best ensured by careful articulation of benefits. Once convinced, further development becomes easier. In the case of the school, locals found the additional space and money to build a battery storage unit. Sreenkanth ended his presentation with a series of questions that showed the cost of not introducing energy access, such as how could children learn properly, healthcare operate effectively, and farmers farm productively.

A general conversation then ensued particularly around the CSR and finance. Sreekanth talked about one particular trend he welcomes and hopes will spread: advocate volunteerism. The Japanese have always been particularly keen on this practice of sending young executives as volunteers - to understand and help develop new markets. They are now looking at extending advocate volunteerism to remote, rural economies. Indeed, both Sreekanth and a later speaker, SolShare, were in contact with several companies.

Sreekanth also called for joined up thinking. For example, toilets are not used at night as there is no light, so this needs to be factored into sanitation projects. Similarly, schools are often the only places that have power and internet access and need to kept open longer. On the question of buy in, it was stressed that local people need to being trained to maintain equipment. On the practicalities of financing projects, Sreekanth revealed that village entrepreneurs can be funded by E-Hands, who collect money on a monthly basis into a joint bank account.

Fullerton non-bank financing

Praveen Vecha

Fullerton India Credit describes itself as the leading non-bank financing provider in India to both individuals and SMEs. Fullerton cover 400 cities and towns and over 45,000 villages. Their 446 branches employ over 7500 people and have a portfolio of over US$1.5 billion. They have more than a million customers. Praveen Vecha, Senior Vice President, Rural, described their approach as marketing socially and economically relevant financial products to existing customers that further aid health and productivity. This approach involves concentrating on the end use of the additional

product to be purchased and calculating whether it would help the enterprise or individual become more prosperous and thus able to repay the loan. Examples of products include solar lamps, water filters, sewing machines, eco-friendly stoves, and bicycles. A new cooker and solar lamps could help a household reduce fuel bills, give more time for working and education, and reduce health risks, possibly resulting in an overall uplift in household income. Similarly, lighting and new equipment could help a small business increase both operating hours and productivity. However, Praveen Vecha did not attempt to hide the fact that there are still considerable challenges in bringing these products and services to remote communities. The sheer cost of goods transportation to remote locations results in lower margins and makes it difficult to get distributors involved; likewise, service costs are high. There is also poor, if any, understanding of products and their use on the side of the consumer, while providers are hesitant to commit marketing resources.

Fullerton have come up with their own solutions to these challenges. Firstly, they target a number of loans to a community and try to enable volume distribution. Secondly staff in their branches create awareness of and trust in products minimizing marketing costs for suppliers. Finally, they help end users afford and choose products that will change their lives and financial situation and thus ability to pay. Stakeholder collaborations can help improve the situation even further. Media, public relations, and governmental agencies could assist with education, whilst companies can inprove skill development of rural entrepreneurs, and researchers and product developers could provide better products more suited for integration.

Rural energy reporting

Julia Vitullo-Martin and Sharon Schmickle

The next session moved on to practical matters for the journalists: how to develop stories around “smart villages”. Veteran journalists Julia Vitullo-Martin and Sharon Schmickle led this session. With its emphasis on rural energy access and its recognition of fundamental inequalities in the developing world, the Smart Village Initiative is inherently intriguing to the media. Yet while it offers a fresh approach to understanding and resolving some of the world’s most intractable issues, the initiative does not necessarily make for easy coverage. For one thing, rural stories are nearly always more difficult to cover than urban stories.

Nevertheless, Julia Vitullo-Martin and Sharon Schmickle stated the Smart Villages workshop in South Asia came at just the right time for news coverage of the initiative’s core topics. In daily journalism, the timing of news reports is crucial, and the workshop occurred as South Asia was under intense international pressure to find clean and affordable energy alternatives in advance of COP21, a major United Nations climate change meeting in Paris in December 2015.

Most of the senior journalists at the workshop indicated that they had covered renewable and alternative energy. The challenge was to broaden their perspectives and expand their story opportunities. In well-established news organisations, the topics incorporated in the Smart Villages Initiative traditionally have been covered from the energy beat. Throughout the discussions of practical applications for news coverage, Julia Vitullo-Martin and Sharon Schmickle encouraged the journalists to think beyond the energy beat by looking for stories about health, entrepreneurial opportunities, education, food security, democratic engagement, and the implications of energy access for women and children.

Julia and Sharon also urged the journalists to follow through on coverage of energy developments by monitoring outcomes, following the money as it was spent, and reporting whether government officials fulfilled initial promises. The journalists agreed that such stories could be constructive. "Instead of dismissing failures, we can do stories on why a project failed . . . not meant to fault find but as a primer for other people to learn from the mistakes," said one journalist.

In an introductory round of discussions, the journalists stressed a common need for up-to-date and readily available technical and scientific information. What, for example, is universal access, and should it be measured as access to a national grid? Or should it be measured as access to electrical sources, including highly decentralized ones? "We need a tool kit, not only for smart villages but also for renewable energy," one journalist said. Another journalist said, "Every time I am writing a story, a lot of new technology is coming up." Speakers agreed that both technology and reasonable pricing are available for renewables, but that information is not efficiently transferred to communities—or to journalists. Worse, said the journalists, much of the most important data strikes readers as old (five year-old surveys, for example), requiring them to find sources who can legitimately interpret and update old numbers. This is especially urgent in newsrooms in which some traditional energy reporters are hostile to rise of the renewables.

Another impediment to the coverage, they said, was a lack of reliable, up-to-date data as well as expert sources who could comment for stories or simply provide background information. "The challenge is finding our own government data," one journalist said. Data sources the group shared with one another included the website Energypedia (described as "the most trusted, professional site for data"), rural development data released by the CGIAR Consortium, IRENA, Global Tracking, and reports published by embassies of various countries. Julia Vitullo-Martin and Sharon Schmickle also recommended the world development indicators on Google Public Data Explorer as well as data sets and international rankings published by organizations such as the World Bank, the International Monetary Fund, the UN Population Division, Global Entrepreneurship Monitor and the Global Competitiveness Report. As for expert sources, the journalists were advised to comb through authors of published scientific papers, attend relevant science and technology conferences, consult colleagues, and join relevant organisations of specialised journalists.

Political considerations can create obstacles. Indian government subsidies for coal, for example, are very high, while subsidies for renewable energy are meagt. Articles pointing this our or making implications must be rigorously researched because they will be challenged.

Asked why they were interested in the workshop, the journalists stated their goals including: learning about sustainability and energy, contributing to a better quality of life in their countries, improving environmental coverage, gaining skills to write in-depth stories and even books, improving business coverage, and learning from peers about story opportunities and challenges.

The journalists analyzed three articles that had been written by participants in the workshop and published in their respective newspapers.

Local financial lapses beset solar scheme for energy-poor Indians, by Manipadma Jena, took readers to a forest village in a remote block of India's eastern Odisha state where a government program had provided solar lighting kits in 2010 (Thomson Reuters Foundation, August 8, 2013).

The government aimed to increase opportunities for children to study and adults to supplement incomes by advancing entrepreneurial ventures. Instead, the power was being used for entertainment such as playing DVDs and amplifying music during weddings and other festivities. Further, only 10% of the villages had gained the skills and training that would enable them to maintain their lights after a government maintenance service expired. A lively discussion followed on choice, market decisions, and government regulatory oversight. The journalists applauded the story as an excellent example of following through on coverage. Jena said she was able to do the in-depth report because she received a Thomson Reuters Foundation fellowship. "In a normal newspaper, we don't have the resources," she said. "We need support from media houses and/or more fellowships." The other journalists agreed.

As a second example, the journalists analysed an article by Narayani Ganesh that was Q&A piece based on an interview with Steven Chu, the former U.S. Energy Secretary who was awarded the 1997 Nobel Prize in physics jointly with two other physicists (The Economic Times, July 8, 2013, bit.ly/1PguhRo)

Ganesh localised the interview by asking Chu questions about India and effective solar energy business models. Other journalists commented that the Q&A format offers yet another approach to covering the smart village issues. But several people said that their editors are not always open to that format.

A third article was written by Dinesh C. Sharma was an opinion commentary questioning whether policymakers, government officials and politicians "are alive . . . at all" to the issue of climate change (Deccan Herald, April 22, 2014, bit.ly/1R4vD5L). Sharma tied the piece to a new report from the Intergovernmental Panel on Climate Change, but drilled deeper, gathering information from several sources to report that politicians were failing to deliver on earlier promises to develop renewable energy. Sharma said he published the piece just before a general election because a lack of energy had left villages suffering severely during extreme weather events that scientists had linked to climate change. Participants agreed this was a very nice example of enterprise reporting.

Technology futures

Dr Bernie Jones

The next session focused on the current state of renewable off-grid power technologies that go beyond solar. These technologies include wind, hydro, and biofuels. The participants were unaware of a hybrid approach to power generation. Bernie Jones stressed that he was not offering answers, but rather signposts for the journalists to conduct their own research locally. The Smart Villages Initiative is technology-neutral and cautioned that sometimes a sustainable energy/diesel generator set hybrid might be the most practical solution. The overview began with a reminder of the uses of the various fuel sources:

- Ethanol, biodiesel: lighting, power
- Solar photovoltaic: lighting
- Water mills: lighting, power

Bernie Jones then ran through the latest developments in each sector. Biomass, for example, is becoming a more efficient energy source thanks to a combination of factors: better cookstoves and more effective biogas production, transportation and storage. Similarly, second and third generation biofuels have been developed that are based, for example, on agricultural waste; unlike

first generation biofuels, these do not utilise potential sources of food. In solar there seem to be two opposing trends, both of which have strengths. More efficient solar PV panels are utilising perovskite. On the other hand, low-cost thin film organic solar cells offer another option. The loss in efficiency might be a price worth paying in exchange for thin film's flexibility and low cost. With solar and wind usually capturing the headlines and the lasting association of hydro with mega infrastructure projects such as the Hoover and Aswan dams, it was no surprise that journalists found developments in mini-hydro compelling. Many of the advances are also based around low-tech innovation.

Bernie Jones then moved on to two neglected areas, including geothermal energy and tidal energy. Geothermal energy has made greats strides in Kenya, Ethiopia, and some parts of the Caribbean. There is also interest now in undersea geothermal energy. Tidal and wave power has also long been seen as having great potential, but after initial government investment in the United Kingdom, enthusiasm has waned. Bernie then reported on the revival of the oldest form of power generation: physical. From inventions powered by donkeys, bicycles, and humans, this area has more than novelty value. Finally, he mentioned ocean thermal energy conversion using the difference in temperature between ocean layers and Stirling engines, which almost seem to have attracted a cult following. Attention then shifted to the other major challenge in off-grid areas: energy storage. Bernie Jones suggested tackling the problem by creating situations where storage is not needed, i.e., anchor loads that only need to run when the sun shines or the water flows. Several experiments along these lines are being conducted in China. However, batteries are a major topic of international research and progress is being made, witness the new Tesla products. Advances in liquid gas and biofuels also help. Other possibilities researchers are exploring include thermal and kinetic storage.

For the second part of his presentation, Bernie looked at the other side of the equation – how to increase energy efficiency. This is an area belatedly gaining attention and largely driven by the success of LEDs, which are now being considered as a way of purifying water. This has encouraged a movement not just by social enterprises, but increasingly by large corporations to look at developing more efficient appliances and tools: lower power fridges, freezers, laptops, televisions, grinders, and welding equipment. Another issue that is being tackled is that electric motors are very inefficient, especially AC varieties. Thus there is a drive to switch to low voltage DC.

Bernie Jones then touched on other innovations that would benefit a Smart Village and enable it to develop. These include communications technology advances such as Facebook's satellite-based internet.org project and Google's balloon-based Loon project, information use in agriculture and new medical diagnostic systems . Furthermore, progress is being made in distribution through low-voltage DC grids and power sharing. Technology also enabling commercial development from using mobile phone technology for payments/metering/system control.

Technology is evolving fast with a lot of research still under the radar. Even during the short period Smart Villages has been in operation, it has been clear in all the regions that new technology opens the door to impacts on the ground. Another observation is that often an opportunity is being missed since researchers have not considered the rural energy access application of their high-tech research. He appealed to the journalists to be advocates for increased rural energy access and use of suitable innovative technologies.

Dr Sebastian Groh, ME SOLshare

ME SOLshare, Bangladesh

Dr Sebastian Groh, ME SOLshare

The day closed with a case study by Sebastian Groh, the CEO of ME SOLshare, a platform provider for reliable, sustainable and affordable electricity access to low-income people in rural Bangladeshi areas. Solar energy is well-established in Bangladesh with most villages having at least one panel. Indeed, in many areas solar performance is better than the grid. As well as improving supply continuity, solar home systems (SHS) waste at least 25% less energy. Also, the new appliances being linked to solar supply are more energy efficient. Sebastian pointed out that the price of the panels is not the issue now, but the cost per KWh. He and his colleagues have come up with a novel way of the tackling the problem they call “swarming”.

The idea is get SHS owners in villages to sell excess supply to neighbours, enabling them to raise their standard of living, buy their own, and repeat the process with their neighbours. Already ME SOLshare has seen this rapidly create mini-networks that start to link with each other and create “swarms” with enough capacity to stimulate real growth and offer a realistic alternative to the grid. Sebastian revealed they had installed a single wi-fi tower in villages to improve one-stop communication to the cloud. The journalists were intrigued by this approach. They were sceptical, however, regarding the “swarm” since in many areas there is a long tradition of “borrowing” from the grid. Sebastian replied that so far this had not been an issue since the close knit nature of the villages precluded neighbours stealing from neighbours.

4. Workshop Proceedings: Day 2

After using Day 1 to set the scene and look at renewable energy provision, technologies, and reporting challenges, Day 2 focused on the other pillars of development described in Bernie Jones' presentation: ICT, entrepreneurship, and health.

Off-grid electricity in the Sundarban islands

Rina Mukherji

Veteran Indian journalist, Rina Mukherji giving a presentation of the remotest parts of India that she has reported on extensively that rely on renewable energy—the Sundarban Islands. Many of these remote islands can only be reached by boats: only 48 out of 100 are inhabited. This has meant the central government has made little attempt to electrify the islands leaving them in darkness. However, despite their remoteness, the inhabited islands have an extremely high population density, exacerbated by several large waves of illegal immigrants from neighbouring Bangladesh fleeing from poverty and strife. Such density naturally creates health issues, but introducing effective sanitation without power has been problematic. Now, however, progress is being made by NGOs introducing solar pumps for toilets.

Rina Mukherji illustrated this with one example from Kultali. Solar pumps are being used to transfer water from a pond to the local BTS-run school's toilets. Overall energy is being introduced through solar and biomass with some wind power. Not every village has solar panels, but the solar lantern is almost ubiquitous. It is common to see a lone rickshaw moving in the dark streets bordered by forests with a solar lantern lighting the way. The introduction of lanterns and solar panels has already stimulated related sales and repair businesses that NGOs and social enterprises have helped to foster. The Sundarbans are becoming known as the biggest green energy hub in the world thanks to the efforts of Dr Santipada Gon Chaudhuri, the Ashden award-winning scientist and ex-Director of the West Bengal Renewable Energy Development Agency. He is known as the inventor of both the solar lantern and the micro-grid. His latest projects include solar-powered vehicles, cold storage systems, and computers.

Dr Chaudhuri received a grant from the Department of Science and Technology (DST) to develop a portable computer that can run on solar panels mounted on a van rickshaw. The solar modules can turn and are always facing the sun. The inverter is highly efficient, converting the DC output of the device into the AC required to run the computer. The computer was popularised by the NGO Change Initiatives, and it gained immense popularity in the villages of West Bengal where villagers used it to access knowledge and information. One of his latest projects focuses on solar fan equipped jackets that are ideal for police and other workers needing to spend a long time in the sun. She concluded by pointing out how solar-based innovation was bringing rays of hope to what still remains one of the poorest regions of the world, now threatened by raising sea levels, soil erosion, and global warming.

Catalysing entrepreneurship, Coca-Cola EKOCENTER

Following on from eHands Energy appeal for the new CSR money in India to be harnessed for smart villages, Richard Hayhurst presented Coca-Cola's EKOCENTER video, which offered a private-sector viewpoint on how energy can catalyse sustainable development and in particular entrepreneurship in

villages. In a previous workshop in Arusha, the director of the EKOCENTER project, Mr Simon Bartlett, had stressed the global reach of companies like Coca-Cola and the scale of private sector financial resources: consequently, there is a need to engage the private sector in development (as part of the golden triangle of government, business and civil society). A key premise for Coca-Cola is that a business can "do well by doing good".

Coca-Cola's EKOCENTER is a "community centre in a box". The EKOCENTER is a modular solar-powered kiosk that can be delivered as a flat-pack and is easily assembled. It provides clean drinking water, allows people to connect to the Internet, and provides a suite of products and services that are determined by each community. There are 25 to 30 EKOCENTERS planned in operation in five different countries in Africa already, and one in Vietnam. They are planning to scale up quickly to have a transformational impact.

Provisionally, the business model is that the EKOCENTER will be franchised to a female entrepreneur from the local community. Each woman will be trained by Coca-Cola and partners and will need to generate an operating profit, reinvest, and grow. The revenue streams will primarily flow to the kiosk operator and her staff. The presentation itself generated a great deal of interest among the journalists, but they expressed serious scepticism about the motivation and value of industry involvement, especially major global corporations.

QuantuMDx & Swasthya Slate

Richard Hayhurst briefed the journalists on how current technological advances could open the way for villagers to have access to services previously thought to be only the preserve of the rich. The cost of sequencing human genomes has come down to a few hundred dollars and that collecting mass data from populations would be the key in future to affordable high-quality healthcare. He then linked this to Smart Villages by revealing to the journalists just how far technology has advanced with a presentation on QuantuMDx.

This emerging UK-based company is developing a hand-held battery-powered DNA sequencer that will be able to sequence an individual's DNA from a saliva sample in less than 15 minutes. Richard forecast that this could truly democratise healthcare by making sophisticated analysis available and affordable in villages across the developing world. It has attracted a great deal of interest from organisations such as the WHO and The Clinton Foundation as well as healthcare providers. Currently, the instrument is being tested for a series of applications to prove its utility. In Africa, for example, it enables different malaria strains to be tested on the spot and ensure the right drugs are prescribed, saving money and avoiding the development of drug resistance. At the other end of the scale, a trial is also underway looking at characterising individual cancer patient's tumours by their bedside in hospital or clinic.

Richard Hayhurst introduced another innovation: Swasythaya Slate, an Indian example of how the presence of reliable energy supplies and ICT provision can revolutionise healthcare in rural communities. Kanav Kahol is the inventor, and his video presentation introduced the public health situation in India, where, like much of the developing world, there are diverse health issues and insufficient frontline health workers. As a result, Dr Kahol saw the potential for a technological interface to improve the capabilities of health workers. He has produced diagnostic unit that—within a single tablet computer—can have multiple diagnostic tools. The Swasthya

Slate interfaces with Android tablets and mobile phones to conduct up to 33 diagnostic tests as well as a water quality tests. It is designed on a 'plug-and-play' basis, and healthcare workers require relatively little training to be able to use it effectively.

Although the video showed the Swasthya Slate in an urban setting, it also has the potential to make a major impact on rural communities with poor healthcare access. It is approximately 1/100th the cost of its component diagnostic tools and is expected to further decrease in cost after mass production. The Swasthya Slate stores information in the cloud. Each user is given a registration number, making it easy for clinics and hospitals to access patient data. Currently, it is running in various trials throughout India, being used by both doctors and nurses to run basic and specialised health clinics. It was presented to Prime Minister Modi at a recent international health conference, and both he and several other countries' leaders were interested in it. The journalists were extremely interested in the ways both QuantuMDx and the Swasthya Slate could help democratise healthcare and the link with energy access; they asked to remain informed about its progress.

Bernie Jones explored other impacts, starting with education. He showed videos from the Philippines and Tonga on projects to provide solar power to remote schools. The Philippines' project was delivered through the CSR activities of SACOSOL, the San Carlos Solar Energy Company that operates in Negros, a far-flung province. Having installed the first solar power plant in the provincial capital, San Carlos City, the company decided to electrify off-grid schools in both Negro and the neighbouring province of Leyte. This involved installing a ground-mounted, off-grid solar installation on a pilot school's campus and was funded from money donated at 4th annual Cleantech Congress in Frankfurt, Germany by SOCASOL's development partner, the Thomas Lloyd Group. Camaniangan Elementary school was chosen and received 24 PV panels delivering a total capacity of 6000 Wp to the school. To supplement the electricity generated, batteries were fitted into the connection and rechargeable lanterns were also donated to pupils' families to enable them to continue learning at home. Following the success of the project, there are plans to repeat the community, local government, school, and industry collaboration throughout the rest of the province. The Fiji video showed a similar success story. Solar energy was used to replace expensive diesel; it powers the local church, which acts as the focal point for community activities including the school.

Bernie Jones showed another short video from Indonesia focusing on entrepreneurship and the impact of a solar-powered milling machine. A day's work could now be done in less than an hour and the machine is proving so successful that word has spread, and it is being commercialised. Bernie described other applications the Smart Villages' team has come across including the growth of sewing enabling production of high-value handicrafts. Similarly, the use of fridges or cooled spaces keeps cheese and other dairy produce fresh longer to boost incomes. The audience also volunteered other examples of the impact of energy, from keeping fish fresh rather than drying to use of mobile phones for better weather information, which has actually saved lives on numerous occasions.

Imagining a "smart village"

Yao-Hua Law and Meredith Thomas

At this stage of the programme, journalists were asked to imagine the benefits of a smart village. What will a smart village look like in 5–10 years?

Following his enthusiasm for the topic in Seoul, Yao Law was asked to lead the first group, which came up with both a novel approach—looking at how a day in a smart village would unfold for the inhabitants if they had reliable energy access.

- Firstly, the day will get off to a good start since a healthy breakfast can be cooked on healthy biogas stoves.
- Using both new appliances and lighting, housework will be done first.
- Children will be taken to schools in solar/hybrid vehicles.
- Internet will be available for online selling and buying.
- Sewing and tailoring will be done.
- Improved cooking facilities and capacity could lead to catering businesses.
- Subsistence farming will become "smart farming", with energy powered irrigation and access to information, knowhow and markets through the internet.
- Schools will have 100% attendance due to the combined attractions of the internet, Facebook, fresh water, toilets, and touchscreen technology.
- Evenings will be spent with friends around gathering places where people can enjoy movies, football, and discos.
- Solar streetlamps will keep places safe and provide Wi-Fi for the whole village.
- Children will be able to study on phones as well as play games and download music.
- Digital libraries will be available to all.
- Overall wellbeing and health will improve with access to telemedicine and vaccination access.

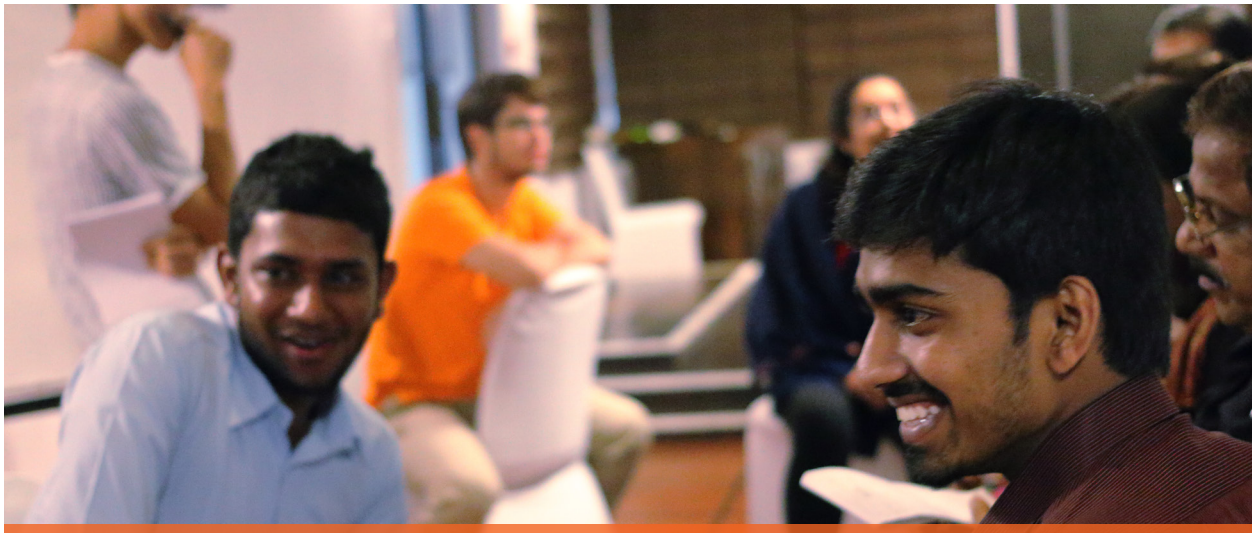
Meredith Thomas' group had a different approach looking at the bigger picture and societal implications rather than focusing on benefits to individuals. Their starting point was that the possibilities opened up by renewable energy developments would indeed encourage governments to adopt long-term policy goals of achieving 100% energy access with the following results:

- Households will have enough energy for lighting, cooking, refrigeration, TV, fans (sustainable), and be energy efficient from the beginning.
- Livelihoods will change around the new infrastructure.
- Social life will improve through playing games and downloading music.
- Farmers will be able to manage productivity. Smart irrigation and education will ensure better crop selection.
- E-commerce will enable villagers to sell goods.
- Access to finance sources and banks will result in mobile money for all.

- Villages will have a health centre, school, and community hall.
- Waste management and proper sanitation will be available with the added benefit of biomass waste providing fuel resources.
- Mobile telecentres will appear with internet access.
- Pure water will be available for all.
- Concluding Remarks, Richard Hayhurst & Bernie Jones

As the workshop drew to a close, Richard Hayhurst summarised ways in which the journalists could interact with the project going forward. Firstly, he outlined his belief that the project offers a wealth of stories, not just on energy access and related technologies but also its impact in areas such as healthcare, sanitation, education, gender, and entrepreneurship. He also returned to Bernie's presentation on Day 1 about new technologies to present a few more examples of technology advances that the Smart Villages team hoped would inspire the journalists. These included harvesting bio-energy from plants, storing energy in trees, floating hydro, and frugal technology such as low-cost baby incubators. Since the need for metrics had been a recurring theme throughout the workshop, he encouraged the journalists to follow the impact studies the Smart Villages Initiative has initiated already in Rwanda and Borneo. He noted there would be findings related to gender. Lastly, he discussed sources that the journalists might find useful and ways to stay in touch with the project.

Bernie closed the workshop, summarising the main discussion points and highlights. In the South Asian context these seemed to crystalise in the major opportunity for renewables to help advance rural electrification and the considerable local ingenuity that could be tapped. Finance did not seem to be an issue with the advent of the new CSR law predicted to have a big impact. The major stumbling block appeared to be government commitment, especially with economic growth powered by fossil fuels. He emphasised that the Smart Villages Initiative saw this moment as the start of a long-term relationship with the participating journalists, together with colleagues back at their media houses, in continuing to work to bring important rural energy and related stories to national and international attention. In addition, he reinforced the links between the topic and the new Sustainable Development Goals and COP21.



Participants engage in lively discussion during the 'Imagining a Smart Village' excercise

5. Conclusion & Recommendations

As in both Kigali and Seoul, the workshop received positive feedback from participating journalists and also from the experts who contributed their time and insights to the discussions. However, unlike previous workshops, the journalists already had a good understanding of the both need for and potential of off-grid energy. The Indian participants put forward many examples of remote areas that could benefit from the Smart Villages concept. The expert practitioners in the region viewed media engagement as crucial to their efforts to electrify remote communities and initiate discussions on the potential economic and development benefits. The Smart Villages concept and experience, its relevance to the SDGs and COP21, and the insight into emerging technology captured their attention and proved the value of the workshop.

The Smart Village Initiative team leading the workshop believes that it was correct to include an emphasis on media engagement in the project activity. The intention to hold further workshops in South Asia, South America, West Africa, Central America, and the Caribbean is justified. The format is also flexible enough to respond to local and regional needs, and it can be adapted for specialised journalists (e.g., energy, business, etc.) and journalists covering multiple beats.

Whilst the workshop was well-attended, in hindsight more effort should have been made to work through local partners due to the difficulty of obtaining contact details and connecting with journalists. We also attempted to work through editors with limited success. Another lesson was to look beyond energy correspondents to environment correspondents due to their growing interest in renewable energy and sustainability as a way of combatting climate change. Finally, it was clear that although there was interest in the concept of CSR, there was strong suspicion, if not outright hostility, towards the corporate sector and their potential involvement as well as scepticism of government-led initiatives. Whilst on the whole the integrity of the Smart Villages Initiative was accepted, it is clear that we should not take this for granted.

Building on previous experience, we were able to achieve a good balance between formal learning and interaction. All of the presenters gave balanced and informative rather than overtly commercial presentations. We are also benefiting from being 18 months into the initiative. We have gathered numerous examples of “smart villages” as well as a range of workshop reports and policy briefs. This now needs to be taken further: it was suggested that Smart Villages could “accredit” villages as “Smart Villages” and create a worldwide network. It was also gratifying to have participants offer local case studies and share reporting experiences. The journalist exercises and “Imagining a smart village” session were especially productive.. However, it would have been useful to include demonstrations of solar lights and other materials, although the hotel itself served as an excellent demonstration “lab”.

Overall the Smart Villages Media Dialogue for South Asia was enthusiastically received. The audience was different to both Rwanda and Kigali. On the whole the journalists were more experienced, and environment journalists attended for the first time. They all grasped the concept of Smart Villages and were able to link it to local circumstances. In addition, they understood the wider context of the SDGs and COP21. This led to excellent discussions and debates. With the South Asian series of Smart Village events upcoming, it is anticipated that the workshop has paved the way for significant coverage.

Annex: Workshop Programme

Day 1: Saturday, 14 November

0900 **Welcome, Workshop aims & introductions**
Richard Hayhurst, Smart Village Initiative

0915 **Welcome**
Vester Feldman, General Manager, Jetwing Lagoon Hotel

0930 **The Smart Villages concept**
Dr Bernie Jones, Smart Village Initiative
Video case studies

1030 **Break**

1100 **eHands Energy's off-grid initiatives**
Sreekanth C S and Rao Rajesh, eHands Energy

1145 **End user financing for clean energy products**
Sreekanth CS and Praveen Vechi

1230 **Lunch**

1400 **Rural energy reporting**
Facilitators Sharon Schmickle & Julia Vitullo-Martin

1530 **Break**

1600 **Technology futures**
Dr Bernie Jones, Smart Village Initiative

1645 **ME SOLshare**
Dr Sebastian Groh

1730 **Close**

Day 2: Sunday, 15 November

0900 **Recap of Day 1 & Day 2 theme**
Richard Hayhurst, Smart Village Initiative

0945 **Case Studies: Sri Lanka Jetwing Hotels and India, Assam**

1030 **Break**

1100 **Productive use and microenterprise**
Video case studies:
Catalysing Entrepreneurship, Coca-Cola EKOCENTER
Personalised Medicine, QuantuMDx
Village telemedicine, Swasthya Slate, India
Village Infrastructure Angels, Sumba, Indonesia
Discussion: news- and development-worthy productive uses in South Asia

1230 **Lunch**

1330 **Group exercise: "Imagining a Smart Village"**
Introduction Dr Bernie Jones. Facilitators Meredith Thomas and Yao-Hua Law

1700 **Concluding session**
Dr Bernie Jones and Richard Hayhurst, Smart Village Initiative

1730 **Close**

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SMART VILLAGES

New thinking for off-grid communities worldwide

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