Adapting the Innovation Histories method for a workshop on Solar Home Systems uptake in Kenya

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Part of the project: **Pro-poor, low carbon development: Improving low carbon energy access and development benefits in Least Developed Countries (LDCs)**
www.steps-centre.org/project/low_carbon_development

Project briefing
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Summary

This briefing reflects on the adaptation of the Innovation Histories method for our research project on the uptake of solar home systems (SHSs) in Kenya. It provides an overview of the method itself, how we adapted it to fit with the aims and theoretical perspectives of our research, and it reflects on our practical experiences of this process, including how we might do it differently in future. Our aim is to provide a practical point of reference for other researchers considering applying this method, particularly in the context of policy-oriented research.

The Innovation Histories method was originally designed as a participatory tool for reflecting on a process of innovation in relation to a specific technology. It therefore seemed an appropriate method to use in our own research, which is concerned with innovation in relation to SHSs in Kenya. But our research seeks to inform policy on low carbon energy technology transfer and uptake in developing countries more widely; policy that can deliver against the needs of poor countries and poor and marginalised people. In particular it seeks to inform the emerging Climate Innovation Centres (CICs) approach. Our analysis begins with mapping the key events and key actors which facilitated the relative success of SHS uptake in Kenya and understanding how policy initiatives, and CICs in particular, might replicate this to facilitate wider uptake of low carbon energy technologies. We therefore sought to use the Innovation Histories method as a participatory, stakeholder engaged approach to facilitating this mapping and analysis. We also sought to adapt the Innovation Histories method to fit with the theoretical perspectives that our research adopts, particularly the STEPS Centre's Pathways Approach, together with insights from Strategic Niche Management and Innovation Studies.

Innovation Histories workshop, Kenya, June 2013

Background to the workshop and the wider project

In the context of climate change, finding ways for developing countries to develop whilst keeping carbon emissions as low as possible is an urgent challenge. Energy production is one of the most carbon intensive sectors, but energy is fundamental to the attainment of other development goals, like healthcare, education and basic needs such as warmth, lighting and cooking. Thus the expansion of, and access to, low carbon energy technologies is crucial in any attempt to achieve pro-poor, low carbon development.

> "Access to low carbon energy technologies is crucial in any attempt to achieve pro-poor, low carbon development"

In Kenya, the uptake of one such technology – the solar home system (SHS) – has been comparatively successful. It provides an ideal case study for examining the key enabling and constraining events and actors in this success, and how policy approaches, such as CICs, might seek to replicate this in relation to SHSs and other low carbon energy technologies. A workshop applying the Innovation Histories method was convened in Nairobi in June 2013 to draw on the knowledge and experiences of key stakeholders active in the Kenyan SHS market. This formed part of a research project being conducted via a partnership between the African Technology Policy Studies Network (ATPS) and the ESRC STEPS Centre at the University of Sussex.

Kevin Urama, ATPS executive director addresses the workshop

Innovation Histories method

The Innovation Histories method was developed by Boru Douthwaite and Jacqueline Ashby (2005) as a way of drawing on experience from past innovation processes. The authors base their method within the wider Learning Selection Model developed by Douthwaite (2002). The method comprises a set of flexible guidelines on how to run a workshop with stakeholders involved in an innovation process. A step-by-step summary of the method as conceived by Douthwaite and Ashby (2005), and then as adapted in this project, is provided in Box A, on the next page.

The method can be used both as an intervention to improve the innovation process while it is unfolding, or to facilitate an in-depth historical analysis to inform future innovation projects. We adopt a holistic definition of the term innovation, including not only technological innovations, but also social or organisational innovations (for instance car-sharing initiatives), viewing innovation as much more than something "new to the world". It is equally innovative if a firm, farmer or person adopts a technology or process for the first time, or is the first in an industry, region or village to adopt a new technology, process or technique (OECD 2005).

> "The method can be used both as an intervention to improve the innovation process while it is unfolding, or to facilitate an in-depth historical analysis to inform future innovation projects."

Moreover, incremental and adaptive innovation processes are often observed to be far more important than radical innovations in driving broader processes of change and development (Bell, M. 2012). In other words, innovation is not synonymous with invention. The widespread adoption of SHSs in Kenya is therefore an example of innovation across multiple scales. In this sense, the context in which we applied the Innovation Histories method is broader than the focus on the uptake and adaptation of (or to) single technologies that forms the basis of Douthwaite's work.

"The method...is a way of drawing on [stakeholders'] unique knowledge and experience as well as engaging them in the research process"

Douthwaite and his co-authors emphasise the method is a reflection tool to learn from any experience, whether it be positive or negative. For instance, perceived "failures" are often not reported, although they are critical to the learning process. The Innovation Histories workshop should therefore try to provide an open and trustworthy environment, so participants feel comfortable enough to share information and to reflect critically on their experiences. Furthermore, for participants to be able to voice their opinions, workshop facilitators must be sensitive to power relations between the stakeholders. Ideally the interaction between participants at a workshop will elicit dynamic discussions, with participants prompting and reminding each other and negotiating the significance of the events and other factors identified.

BOX A: INNOVATION HISTORIES METHOD

Douthwaite & Ashby (2005) suggested key steps	**Key steps as applied in this project**
1. Clarify the objectives and expectations of stakeholders 2. Define the innovation 3. Construct innovation timelines and actor network maps 4. Write up the learning history 5. Use the innovation history as a catalyst for change via a follow up workshop that uses it to discuss shared visions 6. Write up the publishable innovation history to share learning with broader audiences	1. Define and specify the innovation 2. Circulate background information and examples of what participants will be asked to do at the workshop 3. Clarify aims and expectations of stakeholders via introductory workshop discussion 4. Individual work to construct personal timelines reflecting actors' individual experiences 5. Group work to construct timelines of key events, actors, roles, significance and potential available documentation – here actors are asked to think more broadly about key events of significance beyond their own personal experiences 6. Group work seeking participatory review of overall timeline from participants 7. Post workshop, write up information into an Innovation History and circulate to participants for further feedback 8. Follow up with detailed, semi-structured interviews with relevant participants 9. Triangulate via interviews with other actors identified during the workshop, or identified during follow up interviews and wider literature review 10. Further triangulation with available published sources 11. Write up and make Innovation History available online and circulate widely throughout its development for feedback and critique 12. Publish innovation history in peer reviewed journal to articulate contribution in the context of existing academic and policy research

The method not only pays attention to events but also to projects, processes, products and actors that influenced the development of an innovation (including technical, financial, social and policy aspects). Douthwaite and colleagues propose the workshop includes stakeholders from all levels and stages of engagement in the innovation process, from the researchers, designers and manufacturers to the end-users (and in the context of our work, policy makers, donors and other significant actors). This way the context of the innovation process is more likely to be taken into account, as well as enabling feedback from the users' perspective. Another benefit of this method is its participatory nature. It enables different stakeholders to tell their stories and voice their opinions. It is a way of drawing on their unique knowledge and experience as well as engaging them in the research process.

Notably, Douthwaite and colleagues emphasise there is no fixed recipe on how to organise and structure the workshop or the write-up of the innovation history, but that it can be adapted flexibly according to the needs of each project. For instance, they suggest the workshop could include the drawing of timelines and actor network maps. These can first be constructed individually and then shared in groups to discuss, compare and integrate where possible. The discussions and results recorded during the workshop can be used to write up an innovation history, which provides room to narrate various perspectives and controversies. Before it is published the innovation history should be read and commented on by the participants, in order to double-check the researchers' interpretation.


Participants at the workshop

Why this method?

The Innovation Histories method was chosen to inform the analysis of SHS uptake in Kenya in order to ensure the participation of key stakeholders in the research process. It is hoped this form of engagement will help the stakeholders to feel some ownership of the research, to understand its arguments and thereby increase the impact it is likely to have. If stakeholders are actively involved in the analysis and feel that their opinions are being heard, they are able to direct the research to be useful to them, at the same time as making a substantive contribution to the research itself. In this way, stakeholders active at different levels are able to influence policy through their contribution to the workshop and the research's subsequent engagement with policy makers in Kenya and internationally.

> "If stakeholders are actively involved in the analysis...they are able to direct the research to be useful to them"

The participatory nature of the method therefore assists in adhering to the research team's normative commitment of achieving impact via an approach based on three key principles:

1) Engagement between researchers and other groups across society can improve the quality and substance of the research as well as ensuring that research contributes to learning;

2) Interaction with a diverse set of other actors can provide not only useful inputs into research but can also protect against undue influences by any one group;

3) Independent researchers can provide the setting in which to bring together diverse groups from across society to discuss difficult challenges, or can provide intermediary functions.

The workshop plan

A briefing, timetable, background information on the method and an example innovation history timeline (see page 9) were sent to the 20 participants who registered for the one-day workshop in response to invitations. Prior to the workshop we intended to familiarise participants with the ideas behind the method and to encourage them to start thinking about and completing their personal innovation history timelines. The timeline consisted of a table with five columns, asking for the event date, description of the process or project, others involved (actors), significance, and for any documentation. A professional facilitator was invited to help plan and guide the workshop, assisted by the researchers.

The day was to begin with a brief introduction to the research project, the method and the aims of the day. An hour was allocated for participants to complete their personal innovation history timeline (see example on page 9), with tables on A4 paper provided. Next, a group work session, with participants split into two groups, was scheduled to combine personal timelines into one broader national timeline. For this session flip chart-sized tables would be hung on the walls allowing participants to complete their rows with the dates and other information on paper strips. These could then be stuck on the flip chart columns and moved around by using sticky Blu-Tack. This session was also intended to provide a space for dynamic interaction and discussion between stakeholders.

After lunch, both groups would switch rooms and peer review the other group's timeline. Sticky Post-It notes would allow comments, agreements and contentions to be added to the timeline. It was hoped this would prompt further memories and discussions. Subsequently the two groups would come together to share findings and discuss points of contention.

Towards the end of the day there would be time for reflection on the workshop using an evaluation form as well as asking participants how the research might benefit them and what needed further examination. Throughout participants would also be asked to record the name, organisation and contact details of any other stakeholders they thought should be contacted for further information on the evolution of the SHS market. The researchers intended to avoid using jargon, keeping the language inclusive to participants who were unfamiliar with the literature and method.

"The researchers intended to avoid using jargon, keeping the language inclusive to participants"

The workshop in practice

The start was slightly delayed after the group decided to wait for latecomers. Consequently some spontaneous reorganisation of the day occurred and, rather than splitting participants into two groups, they remained in one group throughout. A lower number of participants was beneficial in that there was time to introduce each participant to the group, and each had more time to share their experience and to interact with the facilitators and each other. The workshop provided a networking opportunity for stakeholders, which may be beneficial to their subsequent interactions and further development of SHS uptake in Kenya.

The first session went well as participants dedicatedly completed their personal timelines. These were collected and kept for further investigation. In the first group session participants were actively engaged, but quite quiet, with less interaction than had been hoped for. Looking at the completed flip chart timeline, the researchers realized it would be useful for participants to comment briefly on their contributions.

After lunch, participants were asked to give one-minute explanations of the events/projects/processes they had listed. Although this was helpful for understanding their descriptions, the session drew out and some participants became a little disengaged. However, it also meant every participant spoke and some asked each other questions. After a short coffee break, Post-It notes were distributed. Rather than asking for comments, participants were invited to rank the three most significant events. This did help to visualise agreement and thereby underline key events, but because participants were getting tired towards the end of the afternoon it was conducted with more haste than would be ideal. It is also possible participants simply ranked their own contributions rather than properly engaging with others' input. At the end of the day, stakeholders were thanked for their participation and asked for feedback on the day and further suggestions for the research.

"The main objectives were achieved... gathering the stakeholders' knowledge and experience...facilitating interaction between them and engaging them in the research"

Overall, the workshop differed from the plan and it was difficult to pick up on power dynamics between participants in only one day, without meeting them previously. However, the main objectives were achieved, i.e. gathering the stakeholders' knowledge and experience of key events/processes/projects and actors, facilitating interaction between them and engaging them in the research. The information gained from the workshop will be followed up with more in-depth individual interviews with some of the participants and other identified stakeholders. Efforts will also be made to further triangulate the data gathered via detailed review of available published and grey literature and making the developing timeline publicly available for comment via the project website.

What might be done differently?

Working with a smaller group than anticipated was not problematic and the spontaneous activities were fruitful, leading the researchers to think future workshops might be better run with smaller numbers of participants. Furthermore, it may be useful to focus more on the actor networks, finding strategies for understanding key roles and visualising their interactions. This does not necessarily mean using the Social Network Analysis suggested by Douthwaite and Ashby (2005), but possibly using alternative qualitative and visual approaches.

"It may be useful to focus more on the actor networks, finding strategies for understanding key roles and visualising their interactions."

It depends on the objectives of the workshop, but it is important to keep in mind the suggestion by Douthwaite and Ashby (2005) to involve end-users of the technology in the evaluation process.

Participants working on the timeline

This group was not represented at the workshop and the researchers were unsure of how to engage them in this process without in-depth, village fieldwork. This could be useful in understanding what aspects enabled or hindered end-users from accessing SHSs, as well as understanding how the technology impacted on end-users' lives. It may also be valuable for users to be present at the workshop to enable direct communication and interaction between for instance policy makers, technicians and users.

Participant evaluation

The feedback from participants was very positive, with most evaluating the objectives and achievements of the workshop and the general organisation as 'very good' or 'excellent'. Further, the majority of participants found the length of the workshop to be 'adequate' or 'just sufficient', whereas the evaluation for time allocation for various activities was more varied, with judgements ranging from 'adequate' and 'just sufficient' to 'not sufficient'.

The suggestions for next steps to ensure that the pro-poor, low carbon development research project in Kenya is of benefit to stakeholders included more engagement with stakeholders, such as government agencies like the Energy Regulatory Commission and Ministry of Energy, as well as evaluation by the research users, and enforcement of standards. Suggestions for improvements to the workshop included giving participants as much advance warning as possible and conducting a longer workshop. Some of the aspects that participants found most useful about the workshop were the networking opportunity, the simplicity of the tasks, sharing individual experiences and perspectives of the evolution of SHS uptake and the discussions. Box B, below, provides some key points for consideration during workshop planning.

Box B: Innovation History Workshop planning

Key aspects to prepare and questions that are useful to consider when planning the workshop.

- What is the innovation under investigation? (define clearly)
- Who were the stakeholders involved in the innovation process?
- What aspects of the innovation are you trying to understand? What are the objectives of the workshop? (Do you want to focus on events, projects, products, actors?)

— Decide which stakeholders are most likely to inform this understanding and able to answer these questions

- Invite stakeholders early and inform them in simple terms of the method and aims of the workshop
- Ask them to think about and possibly prepare the innovation history timeline (provide them with a template and examples to guide them)
- Organise facilitators and people to help record the information gathered during the workshop

— Who will be helping to run the workshop on the day and what will their roles be?

- Plan the group work: How big do you want the groups to be, how will you synthesise the group work into the bigger group?
- How can you get as many people as possible to be active and to contribute?
- How can you prompt and engage shy or quiet participants?
- Prepare the materials for the timelines or actor network maps (will you be able to read participants' handwriting and will you understand the descriptions they are giving?)
- How will you react to and resolve any conflicts or tensions between stakeholders?
- How will you analyse the data you gather during the workshop?
- How will participants be able to evaluate the workshop and the conclusions drawn from it?
- How can you best channel the data collected to inform policy?
- How will it impact and benefit stakeholders and users?
- How do you intend to follow up the workshop?

Conclusion

The Innovation Histories method may be useful across a range of research fields in the environment, sustainability and development context. The inclusion of a broad range of perspectives and the encouragement of critical reflections – so that dominant narratives and accounts can be questioned – may also be useful to researchers. It also provides a voice to stakeholders who otherwise may not get heard, which is particularly important for empowering poor and marginalised stakeholders. Although the extent to which the perspectives of marginalised stakeholders were represented in our workshop is questionable, participatory approaches such as this will hopefully increase the relevance and impact of the research on policy thinking with subsequent benefits in terms of facilitating broader uptake of technologies with combined development and climate change benefits.

References

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Further reading

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STEPS Briefing 46: Energy Pathways in Low Carbon Development http://steps-centre.org/wpsite/wp-content/uploads/Energy_pathways1.pdf

Rob Byrne, Adrian Smith, Jim Watson and David Ockwell (2012) Energy Pathways in Low Carbon Development: The Need to Go beyond Technology Transfer, in Ockwell, D and Mallett, A. (Ed.s) Low carbon technology transfer: from rhetoric to reality. Routledge, Abingdon

Project Briefing: Pro-poor, low carbon development: Improving low carbon energy access and development benefits in Least Developed Countries (LDCs) http://steps-centre.org/wpsite/wp-content/uploads/Low-Carbon-Development-briefing.pdf

Find out more

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Credits

This briefing was edited by Julia Day

Personal innovation history template - a hypothetical example

Name: John Smith Organisation: Solar Promo Limited

Date (as accurate as possible)	Description (what was the event, project or process?)	Others involved (who else was involved in this, as far as you can remember?)	Significance (why was this important and for whom?)	Documents (what documents are there describing this event, project or process?)
August 1981	UN Conference on New and Renewable Sources of Energy, held in Nairobi	About 3000 delegates: international actors (governmental and non-governmental), also attended by Harold Burris	Brought together many actors interested in, and working on, renewable energy technologies in Kenya; many studies on energy technologies produced in preceding few years	El-Hinnawi, E., Biswas, M. and A. Biswas (eds.) (1983) New and Renewable Sources of Energy, Tycooly International Publishing Ltd., Dublin
December 1996-March 1997	Survey conducted through Energy Alternatives Africa (EAA) covering 410 SHSs in 12 districts across Kenya	EAA (research); ESMAP (funding)	Articulates market demand, user-practices and savings from use of SHSs compared with kerosene	Hankins, M., Ochieng, F, and J. Scherpenzeel (1997) PV Electrification in Rural Kenya: A Survey of 410 Solar Home Systems in 12 Districts, Final Report for ESMAP, World Bank, November. van der Plas, R. and M. Hankins (1998) "Solar Electricity in Africa: a reality", Energy Policy 26(4):295-305
21 May-December 2002	DfID-funded policy dialogue, managed by EAA	EAA plus multiple actors from different sectors – see Policy Dialogue website and documents	Articulates renewable energy policy proposals from specialist perspectives; interaction with "official" energy policy making (but controversial at times); claim to influence official energy policy	Mutimba, S. (2002a) "Third Policy Dialogue Meeting on Sustainable Energy in Kenya", Press statement, ESD, August. Mutimba, S. (2002b) "Fourth Policy Dialogue Meeting on Sustainable Energy in Kenya", Press statement, ESD, September. Mutimba, S. (2002c) "Sixth Policy Dialogue Meeting on Sustainable Energy in Kenya Focusing on International Financing Mechanisms", Press statement, ESD, December.

About this project

Pro-poor, low carbon development: Improving low carbon energy access and development benefits in Least Developed Countries (LDC)

A partnership between the African Technology Policy Studies Network in Kenya and the University of Sussex in the UK (including the STEPS Centre, Sussex Energy Group and Tyndall Centre), this project is funded by the Climate and Development Knowledge Network (an initiative which is in turn funded by the UK Department for International Development, DFID).

The project aims to inform the development of Climate Innovation Centres in various developing countries by analysing the history of, and actors involved in, the adoption of solar home systems in Kenya. The objective is to improve the ability of policy to facilitate the transfer and uptake of low carbon technologies in developing countries, and to do so in ways that can assist in their economic development. Especially challenging but of critical importance to this economic development, the project aims to identify ways in which low carbon technologies can benefit poor people by improving access to modern energy services.
Find out more: www.steps-centre.org/project/low_carbon_development

About Us

The Africa Technology Policy Studies Network (ATPS) is a transdisciplinary network of researchers, policy makers, private sector actors and civil society actors that promotes science, technology and innovation (STI) policy research, dialogue and practice, for African development. With a Regional Secretariat in Nairobi, Kenya, it operates through National Chapters in 29 African countries and Africans in Diaspora with an expansion plan in place to cover the entire Africa.

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The Sussex Energy Group undertakes academically rigorous, inter-disciplinary research that engages with policy-makers and practitioners. The aim of our research is to identify ways of achieving the transition to sustainable, low carbon energy systems whilst addressing other important policy objectives such as energy security. We have funding from a diverse array of sources. We are a core partner in the Tyndall Centre for Climate Change Research and part of the UK Energy Research Centre.

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The STEPS Centre (Social, Technological and Environmental Pathways to Sustainability) is an interdisciplinary global research and policy engagement hub uniting development studies with science and technology studies. Based at the Institute of Development Studies and SPRU Science and Technology Policy Research, at the UK's University of Sussex, we work with partners around the world and are funded by the Economic and Social Research Council.

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