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Original research article

# Powering institutions for development—Organizational strategies for decentralized electricity provision

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A R T I C L E I N F O

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A B S T R A C T

The study addresses the question of how to achieve and sustain well-functioning local service delivery in institutionally difficult contexts, characterised by low levels of generalised trust, widespread corruption and poor institutions. We study a relatively successful case of decentralized electrification in Tanzania, and the process whereby an international NGO establishes a small-scale hydropower system with a local utility to own and operate it. Building on institutional theory, we investigate how to build trust in an organization, through a strategy of credible commitment; and how free-riding problems can be handled in a local development project. The qualitative study includes 119 semistructured interviews with project staff, villagers, and local and district government, observations and document analysis. The results indicate the importance of a positive 'history of play', sustained over time, and keeping distance from corrupt institutions, in order to build trust. Strict enforcement of rules was decisive for handling free riding behaviours, and impartiality in enforcement for perceptions of legitimacy and trustworthiness. Deviations undermined relations of trust. The results add nuance to more generic theoretical propositions and provide insights on un/intended consequences of institutional strategies. These are relevant for creating and sustaining local service organizations for electricity access and other public goods.

## 1. Introduction

Implementation of 'community electrification projects' in poor rural communities become arenas where local politics and institutions encounter the financial and engineering logics of electricity provision as well as the donor-driven development logic of 'participatory development'. The Sustainable Development Goal 7: to 'ensure access to affordable, reliable, sustainable and modern energy for all' highlights the importance of modern energy services for development, but does not signal how much contestation and negotiation external and local actors providing and using such services are engaged in. In this paper, we approach the overarching question of how to achieve and sustain well-functioning local service delivery, in contexts characterised by poverty, low trust and corruption. We do so by drawing on institutional theory and a case study of a mini hydropower plant in the Southern Highlands in Tanzania.

In sub-Saharan Africa, decentralized ('off-grid') and small-scale service solutions are increasingly contributing to electricity access for the rural population and there are many potential system configurations of various sizes that can cater to different needs and contexts. Unfortunately, previous work on energy and development clearly demonstrates that in the sub-Saharan region rural electrification projects in general, and not least decentralized energy systems, tend to result in less positive impact than anticipated and face significant obstacles [1–8].

Whereas in many locations, local power stations and grids provide affordable, reliable and sustainable electricity services and support economic and industrial development, the experience in sub-Saharan Africa, as well as in other poor regions of the world, has been disappointing with a large number of poorly functioning systems, or failed service delivery [9–12]. Still, new investments in local generation and micro and mini grids are currently being made [13,14] and the International Energy Agency ([15]: 496) expects in their New Policies Scenario that around 140 million people in sub-Saharan Africa will be connected to between 100,000 and 200,000 mini-grids by 2040.

The current energy literature – in rich as well as poorer countries – is dominated by technical and economic studies [16]. A small, but growing, body of work explores social, cultural, political and institutional (as well as technical and economic) aspects of decentralized electricity supply in the context of rural and/or poor communities

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[17–31]. These have provided crucial insights on the reasons why projects achieve their goals or not, and why electricity access does not necessarily translate into poverty alleviation.

A number of studies address political and institutional barriers and frameworks at inter/national level related specifically to the diffusion of (small-scale) renewable energy systems for expanding electricity access [1,32–37]. However, there is a significant gap in the current energy and development literature regarding political and institutional challenges at the *local* level; and the role of the functioning and design of institutions in explaining why many micro and mini-grids fail to sustain well-functioning service delivery (for an exception see [38]). Given the lack of institutional theoretical grounding in the current literature on decentralized electricity provision, we will build on theories from the wider set of literatures that apply institutional perspectives on development, aid and public service delivery. Institutions, or the "rules of the game" [39] can be informal (norms, codes of conduct) or formal (constitutions, laws). They shape and constrain individual and collective actors' beliefs, expectations and behavior, and are therefore central in understanding the outcomes of collective processes [40,41]. In the present study, much focus is on institutions in terms of the rules governing the electricity utility, and the organization around as well as the enforcement of these rules.

Using qualitative research methodology, we study the process whereby an international non-governmental organization (NGO) implements a rural electrification project and establishes a small-scale hydropower station and mini-grid, and a local utility to own and operate these. The case represents a relatively successful institution building process in a difficult context, and we move from generic theoretical propositions in the wider literature on institution building in challenging contexts to the richness of the empirical case and back again, helping inform theory and shed new light on the mechanisms through which a 'difficult' institutional context (Tanzania is typical in this respect) challenges decentralized electricity provision. Far from seeing electrification projects as neutral welfare schemes, our analysis engages with local politics, conflicts, and struggles over resources and influence [42]. Importantly, we contribute new knowledge regarding viable *strategies* for institution building in these contexts. This is, perhaps surprisingly, a gap in current knowledge. Despite the vast amount of studies in the 'good governance' field, this literature does little in explaining instances of good governance within contexts of poor governance. While 'poor governance' clearly is a very sticky problem, there are nevertheless examples of organizations that – against what would be expected from the surrounding institutional environment – manage to bring corruption under control (see [43]). More research on these unusual successful cases is needed, and some of the insights from our case of electricity provision are, hence, relevant for other kinds of service delivery. Finally, existing studies of institution building in difficult contexts have mainly focused on government at various levels. Very little, if any, prior work has sought to understand how some non-governmental development projects succeed despite unfavourable preconditions.

This article examines how the institutional context, in terms of trust levels, levels of corruption and clientelistic relations, impact on the processes of institution building in local utilities, and which strategies are adopted to meet those challenges. There are two research questions. We investigate first how trust in an organization can be built, to the extent that people are prepared to invest in the organization for long-term gain. Second, we study how free-riding problems can be handled and the degree to which it is considered effective and legitimate. We are aware of the uniqueness of our case and its context, however, the grounding in theory and case selection [44,45] allow us to inform theory and identify more generic empirical lessons that can be helpful for other scholars and of strategic interest to practitioners.

The next section describes the context in which the development project is set and introduces the case. This is followed by a theoretical section, where we review literature on the role of institutions and institution building, mainly from the fields of comparative politics and development, relevant to understand the challenges facing the implementing organization. After a section on methodology, we report the results. The first part of the empirical section engages with the research question on trust building, and the second part with enforcement. The final section concludes.

## 2. The case and the context

The project we have chosen to study is a hydropower project in the village Mawengi, located in Ludewa District in the Southern highlands in Tanzania. Governmental stakeholders as well as donors consider the Mawengi project a very successful example of rural electrification. Since 2010, Mawengi and neighbouring villages in the area are supplied with electricity from a 300 kW hydropower station in the Kisongo river. The power station is owned and operated by the local utility organization LUMAMA. The process of initiating, constructing and operating the electricity system has been described in detail elsewhere [18]. In short, the local Catholic church took initiative and contacted the international development cooperation organization ACRA (Cooperazione Rurale in Africa e America Latina). ACRA carried out a feasibility study in 2005, successfully applied for project funding, and started the construction process in 2006. Towards the end of the construction phase, informal collaboration was formalised through the establishment of a local utility organization named LUMAMA as a legal entity to own and operate the system once service delivery started. ACRA exited the project in 2014, by which time LUMAMA was able to handle daily operation and customer service delivery as well as maintenance and repair of infrastructure. In 2015 the utility delivered high-quality electricity services to around 1500 customers, with very few blackouts and at a reasonable cost. The electricity services were widely appreciated by the users and included public goods, such as outdoor lights and improvement of public services through electrification of schools and medical centres. Electricity facilitated economic development, for example by making milling significantly cheaper (compared to diesel generators) or less time-consuming than milling by hand. Local enterprises, such as tailoring, barbers, furniture and mechanical workshops, were able to improve their services and offer new ones, like phone charging.

The Mawengi project was implemented in Tanzania, which provides a challenging institutional context in terms of poor institutions, corruption and low trust. In Tanzania, there is an uncertain legal environment for organizations to operate in. According to the World Bank's Worldwide Governance Indicators, Tanzania scores low on both Rule of law, Regulatory quality, and Control of corruption [46]. The lack of control of corruption is reflected in perceptions about corruption. According to the East African Bribery Index 2014, 68% of the respondents in Tanzania described the level of corruption in their respective country as high and felt it had increased in the past 12 months [47]. Moreover, levels of generalised trust are relatively low in Tanzania. According to the 2005 Global Barometer Survey, 87% of the respondents agreed with the statement that 'You must be very careful in dealing with people' [48]. Similar characteristics regarding the quality of institutions and trust levels apply to many countries, in sub-Saharan Africa as well as in other parts of the world, making Tanzania a relevant and representative case to learn from.

## 3. Theoretical framework

The existing literature on institution-building is broad and concerns many different sectors, organizational levels and phenomena. In order to relate more general theoretical propositions to the type of projects and processes we study, we will exemplify and specify challenges often faced by actors within development cooperation, and how we approach these theoretically.

Donor-funded and NGO-driven projects working with service provision can face two related problems: (1) how to become a trustworthy organization in the eyes of people in the area, and (2) how to make the service providing organization a credible enforcer to avoid project failure due to free-riding.

Before we turn to the more general theoretical propositions, we will illustrate how these problems can manifest themselves by using examples from the project under study. Regarding the first problem, ACRA asked for substantive contributions from people in the area – both in terms of land and labour – in order to get distant returns. This is common development practice in Tanzania [49]. Land was needed for transformers, lines, and other parts of the infrastructure. Labour was needed to dig trenches for cables, erecting poles, etc. Moreover, private economic investments by future customers were required: they needed to pay for internal wiring before service delivery could start. Many of the contributions had to be made years before the (uncertain) benefits would come. Thus, in the first project phase the challenge for ACRA was to make people trust the organization to the extent that they were willing to invest for the future.

Regarding the second problem, new challenges arose when electricity service provision started in Mawengi. It became necessary to handle the collective action problem (CAP) of free-riding. Although there are important differences between the electricity system and what we think of as public goods – personal access (but not indirect access) to electricity was in principle both excludable and rivalrous as the system could suffer from overload – there were ways in which it was possible for some to free-ride on the contributions of others. One type of free-riding in this context is illegal access: that people connect to the system without paying, or – which is possible in systems with flat tariffs – connect to the system at the lowest tariff level and then, through rewiring inside the house, make it possible to use more electricity than what is being paid for. Not paying for the electricity used was another type of free-riding that emerged during the project, which is described in more detail in Section 3.2. Thus, it became necessary to make sure that the enforcement system functioned. In phase 2, the challenge (for LUMAMA) was therefore to become a credible and legitimate enforcer.

In the following, we review theories from the literatures on state building, corruption and clientelism that we argue are relevant to understand the challenges posed by the institutional context, and mechanisms behind the processes of successful institution building, starting with the issue of trust (subsection 3.1) and then questions of enforcement (subsection 3.2).

### *3.1. Building trust in a low-trust environment*

For individuals to be willing to invest resources in a development project, they must be convinced that they will, at some point, be able to reap the benefit of their efforts. Some level of trust in the actor that is to deliver the benefits in the end is therefore necessary. The importance of trust for reducing transaction costs is often highlighted, as it increases individuals' willingness to enter collaboration and risk-taking for future gain [50].

Two commitment mechanisms are commonly discussed in the institutionalist literature. The first is to make a commitment credible by introducing some kind of mechanism through which the dominant actor can be held accountable, which limits its ability to renege on the commitment [51]. This strategy is often not an option within development projects. When implemented by external NGOs, it is very difficult for people in the area to hold the responsible organization accountable by any formal means, even if failure of the project meant that all the efforts would be for nothing. Instead, the option available to external development actors may be the second strategy discussed in the literature, namely to go for a *reputational* solution to the commitment problem ([52]: 59). This entails building a credible commitment by signalling the organizations trustworthiness through repeated, positive interaction – a positive history of play [52,53].

In the literature, this approach is often discussed in relation to how a government's actions can promote or undermine trust. If a government has a good track record in terms of delivering on its promises, citizens are more likely to trust the government also in situations with limited monitoring possibilities [54]. The perception that a government is untrustworthy is related to its failure to keep promises.

Importantly, we should expect that attempts to convince people to invest in an organization for long-term gain, through strategies of building trust in the organization, face specific challenges in a context where people are relatively poor, promises tend to be non-credible, corruption is widespread, and generalised trust is low. Existing theories offer three insights on the specific difficulties and what these mean for institutional strategies:

*First*, it is commonly argued that poverty tends to increase risk aversion and shorten individuals' time-horizons, making 'uncertain and distant rewards' less appealing ([55]: 857). Widespread poverty creates a group-level pattern of undermining long-term investments because people with small or no economic margins find it harder to prioritise uncertain long-term gains above immediate needs.

*Second*, when it comes to the credibility of promises, we argue that in contexts where people have bad experiences with political actors as well as organizations – for example due to corruption – promises are not worth much. In other words, a history of poor performance by political actors and organizations may have negative consequences for future actors to secure confidence in their operations.

In terms of strategies for reducing the credibility deficit (in a low-credibility-situation where mechanisms for accountability are hard to ensure), actors have two options: they can either *invest* in their credibility by building good reputation; or they can rely on intermediaries, i.e. making use of already existing channels of patronage. Building a credible commitment requires repeated interaction, sufficiently low discount rates for the future, and the possibility to observe actions taken. Since building a good reputation is costly and time-consuming, especially in a context where poverty is relatively widespread (and thus the future may be heavily discounted), reliance on patrons is often a tempting alternative [56].

While discussed in the context of political actors in new democracies, these arguments are relevant also for development projects since NGO-led projects often face a credibility deficit that needs to be handled somehow. In many cases this is done – intentionally or not – by making use of existing channels of patronage, for example by collaboration with local elites [49]. The problem with such a 'clientelism shortcut', however, is that it may undermine efforts to build trust in the organization itself. Where actors prefer to rely on patrons, they do not invest in their own credibility [56]. It is, in our view, relevant to ask if this mechanism can apply also to development projects led by NGOs.

*Third*, it has been pointed out in the literature that for a reputational solution to the problem of credible commitment to work, it is crucial that the actor giving a commitment never reneges on that promise. If the actor defects at any point, people are likely to disregard future promises from that actor ([52]: 59). Arguably, this is particularly relevant in contexts characterised by corruption and low trust, suggesting that we cannot expect trust levels to rise swiftly after institutions have improved. Low – or fragile – trust is likely to persist for long, and be an ongoing challenge that needs to be handled.

### *3.2. Solving collective action problems: credible enforcement as a key aspect of institution building*

Free riding is commonly discussed in the context of public and semi-public goods production as these require collective action, and brings forth the common problems associated with such action [57,58]. In the production of public goods, cooperation is obviously preferred to defection. Nevertheless, this regulatory interest – shared by all – tend to coexist with an individual interest in defection: the temptation to free ride on the efforts of others, which creates a CAP of the first order [57]. Already in 1965, Mancur Olson argued that some kind of selective incentives (rewards or penalties) are necessary to make a group of individuals act in their common interest [58]. Elinor Ostrom conducted pioneering studies of CAPs in relation to common pool resources, and developed theories of collective action under such circumstances. In her work, she highlighted the importance of, for example, self-determination, effective monitoring and mechanisms of conflict resolution – but also of trust and reciprocity [59–61]. CAPs are likely to be especially severe where generalised trust is low, as in many contexts where development cooperation projects are implemented. Even if people are sympathetic to the goals of an organization, the suspicion that others will not contribute may prevent them from doing their part [62]. In this situation, institutional arrangements that enforce the rules are crucial, since 'in absence of the authoritative interpretation and enforcement of the rules, it is particularly easy to find excuses for breaking them' ([62]: 240).

CAPs have gained increased attention in the political science literature, and legitimate coercion in order to solve free-riding problems has been called 'the fundamental problem of governance' ([63]: 9). Despite its relevance for international development cooperation, it is more rarely discussed in that context (for an exception, see [64]). In principle, many development projects in fact have the ability to be "credible enforcers" [65] in that they can monitor compliance and have the authority to exclude people who do not follow the rules. In reality, however, development projects sometimes refrain from using their enforcement power. There are at least two reasons why a development actor may fail to use its enforcement capacities: *First*, since the *raison d'être* for development projects is to help the poor, the actors with the capacity to enforce rules may be very hesitant to do so, if it means making poor people pay. *Second*, the social cost – especially for locally employed staff – may be seen as too high. The problem that enforcing agents meet strong social disapproval has been called the 'friendship dilemma' [66] and it is highly relevant for locally based organizations. Development organizations have strong incentives to be responsive to individuals' preferences rather than to override them.

Responsiveness, however, is a democratic ideal that may bring new challenges. In their account of state capacity development, D'Arcy and Nistotskaya [65] argue that if democratic responsiveness is introduced before an actor (the state) has established itself as a credible enforcer, its capacity to override welfare-undermining preferences of individuals will be reduced. This logic could in many cases be applied to the governance of development projects that need cooperation and contributions from individuals who have incentives and possibilities to defect. Still, an important difference between enforcement in this context and how enforcement commonly is discussed in the literature on state capacity is that we study not mainly the *existence* of enforcement capacity, but rather the *choice* to use or not to use this capacity.

The paradox is that despite being particularly sensitive in a development cooperation context, enforcement may in fact be particularly important to sanction free-riding in such situations. If there is no sanction against people who do not pay their bills, willingness to pay tends to decrease quickly. In order for electricity services to contribute towards social and economic development – and in the longer time perspective a reduction in poverty – reliability and quality of service are equally important as affordability. A well working system for payment, together with tariff levels above cost-recovery, is necessary in order to achieve economic viability of local utilities. Hence, electricity provision for free or at subsidised rates is criticised by scholars as being counterproductive, as it drains utilities of resources needed to maintain and extend service delivery [4,67].

Apart from its obvious function in limiting free-riding, we argue that credible enforcement can also serve an important function during institution-building in contexts characterised by corruption and poor leadership [68]. Where corruption is widespread, enforcement of rules becomes arbitrary, as rules can be ignored upon the payment of bribes, and leaders tend to bend the rules to their favour. In such a situation, effective and non-arbitrary enforcement sends a strong signal to the community that the enforcing organization stands apart from the surrounding institutional environment. This signal should be especially strong if it becomes clear that old leaders cannot bend the rules of the organization in their favour. Credible enforcement can thus help establishing an organization's reputation as trustworthy.

This is related to the argument made by Margaret Levi about how a government can both build and undermine trust depending on its actions in relation to enforcement. To show its capability to secure the compliance of the otherwise non-compliant is a way to build trust, since 'citizens are more likely to trust a government that ensures that others do their part' ([54]: 90). If citizens instead doubt that the commitment of the government to enforce laws is not credible, the ability of the government to generate trust will decrease.

A final insight from the literature, is that the extent to which enforcement is seen as *legitimate* could impact on its ability to serve an institution-building function. Given that 'the best coercion is legitimate coercion' ([63]: 11), how can legitimacy in enforcement be achieved?

In a study of a large-scale land use issue, Grimes [69] found that assessments of *procedural fairness* – citizens evaluating the design and quality of procedures for decision making as more or less fair – did positively affect individuals' trust for the authority as well as their willingness to accept a decision outcome. Rothstein and Teorell stress impartiality: more specifically, implementing institutions should be impartial when exercising public authority; meaning that enforcing agents "shall not take into consideration anything about the citizen/case that is not beforehand stipulated in the policy or the law" ([70]: 170; see also [71]). This means that implementing actors should not only be non-corrupt, but also refrain from giving special treatment due to friendship, kinship, and personal likes and dislikes when enforcing the rules. Impartiality in enforcement does not, however, contradict the possibility to transparently set rules that differentiate between groups in order to make services available also to the poor.

## 4. Methods

The analysis is based on empirical work conducted by the authors in 2013. A first visit took place in 2012, followed by an in-depth qualitative case study in 2013. Together, the authors collected data during 3.5 months in Tanzania, with about nine weeks living in the electrified villages, and five weeks in the nearby town of Njombe. The following analysis is based primarily on qualitative semi-structured interviews – often undertaken with the help of a Tanzanian interpreter – with people involved in the project. We have 119 interviews about the project (27 with project staff, 81 with villagers, and 11 interviews and meetings with local and district government). All interviews were done with assistance by the same interpreter, who became familiar with the communities and people, and she was instrumental in creating good communication between the respondents and us as researchers. We also hired a local person as our guide, and this person walked (or drove sometimes) with us to people's homes and made a first introduction. In order to ensure the quality of translations, we later had transcriptions done by another person than the interpreter, hence, the translations between Kiswahili and English were double-checked.

The material also includes notes from observation, informal interaction with villagers and project staff, and project documentation. The first author has returned to the villages for shorter follow-up visits on the project – including meetings and interviews – in 2014 and 2015. The repeated visits have helped establish a relation characterised by, over time, more open and straightforward communication and provided an opportunity to share results, discuss and reflect further, allowing our analysis to be informed by knowledge of how things have developed over time.

The joint analysis work was structured according to a coding scheme, which we specified prior to analysis based on the research questions and theoretical perspectives, and developed during the course of coding material. Most material was coded using coding software, and all interviews were checked for concordance and divergence [72].[1] The work here builds on a significant analytical work already undertaken for previous publications (see [18,73]).

Since we were interested in the role of trust in making people willing to cooperate, take risks and invest in the future, only verbal statements such as the level of confidence respondents have in an organization are likely to be of limited value. What we wanted to know was whether their perceptions of ACRA – as trustworthy or not – were consequential for their willingness to engage with the project. We therefore did not ask the respondents explicitly about trust levels. Instead, the interviews were as much as possible based on open questions, combined with more detailed follow-up questions on concrete situations.

## 5. Case study

This case study section is organised into two parts, starting with the question of how to build trust in a context characterised by low levels of generalised trust, high levels of corruption and poor institutions (subsection 5.1). Thereafter, we address the question of how free-riding problems can be handled (subsection 5.2).

### *5.1. Phase 1: building trust for long-term investment*

As mentioned, ACRA needed significant contributions in terms of voluntary labour in the construction, and economic investments by customers who needed to do internal wiring before service delivery could start. Initially, ACRA found it difficult to convince people that the project was actually going to happen and that it would benefit the community at large. There was a general lack of trust in development projects and promises made by outsiders. Many people said that when they first learned about the project they thought it was an empty promise. As one of the villagers, who came to be much involved in the project, explained:

> **Local staff member:** For the first time when they introduced this project, I thought that it will not be possible (…) because we are in a very remote area, so I thought that it was just politics. But later, when they started construction, I started to believe that it is going to happen because I saw some materials coming like the poles and wires. (…) Finally I believed [it was true] after seeing the light turned on.
>
> **Interviewer:** What do you mean by politics?
>
> **Local staff member:** The issue of bringing electricity in our area was first mentioned by politicians (…) during their campaign. So when this issue came again people thought it was the same issue, which was mentioned every time by politicians without any implementation.

This relates to theoretical arguments about challenges organizations face when promises tend to be non-credible. It became clear that this was a context where broken promises by outsiders are the norm rather than the exception, and that this had a profound impact on how people interpreted promises.

Many of the interviewees mentioned broken promises by politicians, government officials and NGOs as a reason for not believing in ACRA from the start.

> **Customer:** At the time I did not believe it, because we were often being promised things but we did not get them.
>
> **Interviewer:** Who promised these things that did not happen?
>
> **Customer:** The government, for example, was promising us many things. For example, they promised to put tarmac on the road but they have not yet done it.

Apart from the lack of trust in politicians, there was a clear credibility deficit also for NGOs:

> **Customer:** At the beginning, I thought it was just a lie. Because a lot of Europeans [other than ACRA] were coming and did a survey of the [water] intake and said that it was ok [but did not do anything].
>
> **Interviewer:** When did you start to believe it would come true?
>
> **Customer:** When they came and started to work. Because before, other people came and just surveyed and then left.
>
> **Interviewer:** Do you remember what it was like when ACRA first came, and said they wanted to bring electricity here? What did you think then?
>
> **Customer:** I did not believe it was true.
>
> **Interviewer:** Why not?
>
> **Customer:** Because many organizations [from outside of Tanzania] were coming and said they would bring electricity, but they never came back again.

This credibility deficit for foreign NGOs is something that ACRA was well aware about.

> **ACRA staff:** [T]here are so many associations led by European persons, and maybe they failed or maybe they just promise something and it never happens; and here in Tanzania, the associations from Europe or from … let's call it first world countries; they were hundreds! In the beginning, they said: 'This is one of the hundreds (…) we can't believe this.'

Facing this credibility deficit, ACRA chose to invest in its own credibility. One of the first things ACRA did was to hold public meetings in the three larger villages that were to be connected and to establish a small working committee of elected men and women from each village. This committee was involved in the work throughout the entire construction.

What eventually led people to believe in the project – and be willing to invest their time and labour in the construction, as well as their own money in buying materials and doing internal wiring of the house in order to be connected – was the way ACRA slowly built trust by being very careful to not make any promises that they could not hold. Instead, they promised small things that they were absolutely certain that they could deliver – seedlings, paint, cement, etc. The importance of keeping every little promise that was made was highlighted by several people in the organization. As one staff member put it: 'You have to say what you do and do what you say'. The rule was to never promise anything that they were not 100% sure to deliver – 99% were not enough to make a promise. The strategy of limited – and fulfilled – promises reoccurs in the interviews as one of the reasons people began to trust ACRA.

> **Customer:** When they [ACRA] promise something, they do it. There is no instance when they have made a mistake.
>
> **Customer:** The community has a primary school not far from here. So ACRA said that 'if you build we will bring iron roof, paint, nails'. And they did. So when they promise something, they do it.

Moreover, ACRA added *detail* to the limited promises they made. For example, not only did they say that they would bring certain goods, or hold a meeting; they also said exactly *when* they would bring the goods or hold the meeting. Again, this is noticed by people in the area and becomes, to them, a reason to trust ACRA.

> **Customer:** If they [ACRA] promise anything, they fulfil.

[1] This means that we analyze and compared between interviews to identify points of disagreement and contradiction, examining whether respondents have similar views, concerns and explanations. It is a step in the analysis that helps assess the credibility of inference.

**Interviewer:** How do you know? What makes you sure?

**Customer:** They promised that tomorrow we bring poles, and then they brought them the next day.

Notably, people perceived a difference between ACRA and LUMAMA in how well they kept their promises.

**Customer:** At a very high percentage, everything ACRA is promising, they are also doing.

**Interviewer:** What if LUMAMA gives a promise?

**Customer:** I can't say, because there are a lot of promises, but some of them they fulfil and some of them they don't fulfil.

When we asked follow up questions, it became clear that LUMAMA had in fact delivered on the promise, only a bit later than promised. The dramatic consequences of such limited failures can be better understood if we take into account the specific challenges of the context.

As suggested in the theoretical section, where people have a lot of experience with corruption and broken promises from leaders, trust in a new organization can be expected to build slowly and stay fragile over a long period of time. People's perceptions and expectations about institutions could thus hold back trust in an institution, even if it is largely credible. This proposition is supported by our data: as our interviews show, even small deviations from a positive track record can have consequences far beyond what we would expect in contexts with generally better institutions. The failure to deliver *exactly* as promised is interpreted against a background of broken promises and has consequences for trust in the organization.

In sum, ACRA built a positive reputation over an extended period of time. There are two important lessons from this experience. The first is that it is, in fact, possible to make a credible commitment based on reputational credibility also in a context as difficult as the one in this case – but it takes time. The second, however, is that when pursuing such a strategy, there is no room for mistakes. Any deviation from a positive track record may instantly undermine the hard-won trust.

Given the efforts that are needed in order to strengthen the organization's own credibility, it is easy to understand why some actors – not least within international development projects – wish to find 'credibility short-cuts'. As discussed in the theoretical section, a common strategy is to rely on existing patron-client relationships. In many instances, it is necessary to establish collaborations with the political elite in order to formally 'enter' the community and gain permission to carry out projects. The local church acted as host for ACRA, helping to establish relationships with all local political leaders who gave their support for the project. Over time, the NGO distanced itself from local political institutions and in many instances, chose not to rely on local leaders. For example, ACRA soon decided to directly employ and pay people to work on construction rather than to rely on local politicians for mobilizing the villagers to do voluntary work.

ACRA also used institutional strategies in order to delimit the influence by politicians on the project. First of all, politicians are not allowed to have any positions of leadership in LUMAMA. This choice is motivated in this interview with one of ACRAs (Tanzanian) staff members:

**Local staff:** Politicians – they should not be candidates for election [to the board of LUMAMA]. […] It's something which we should be very careful with because these people they do things to make sure that their party is getting support. Let's say, you have the elections and somebody is a leader; a *mwenyekiti*, I mean, the chairman of the board, and you are doing a party election. What do you think, if they don't have enough funds? They could take funds from LUMAMA and begin to use it to do the elections.

Second, the organizational structure has three levels of decision-making and these do not correspond to existing geographical borders of local government. The lowest organizational level in the membership based utility is the level of transformer (each transformer supplies electricity to a specific area). The transformer groups select their representatives for the higher level of zone, at which the members in turn elect representative for the General Assembly. The transformer groups' geographical borders do not align with the local administrative borders. This makes it hard for individual local leaders to say that the transformer is under his/her area of influence, and to use it for own purposes.

### 5.2. Phase 2: institution building through credible enforcement

In the second phase of the project, when the power plant had started functioning, new challenges appeared, this time related to enforcement. This section illustrates the dilemmas involved in making enforcement both credible and legitimate and at the same time being responsive to poor peoples' situation.

The first years, the majority of households and public institutions paid flat tariffs, based on the number of power points in the premises. Public institutions, households with higher consumption, many businesses and all milling machine owners had meters and paid a unit cost per kWh, differentiated according to activity.[2]

In the area of Mawengi, people had no previous experience of paying monthly bills or reading customer contracts. In 2013, the accountant explained that LUMAMA was facing a challenge because many customers did not pay their bills on time, which led to a budget deficit for the utility. In the interviews, various reasons why people did not pay their bills on time were identified: lack of experience, distance to the office and lack of money due to seasonal cash flow – but also that customers were not expecting enforcement, and that some held attitudes that one can free ride. A collective action problem was clearly present – the individual incentive to delay payment was working against the common interest in a financially sustainable electricity utility.

Facing this challenge, the decision was taken that customers who did not pay on time would be disconnected after only one month, rather than after two or three months, which was the initial rule. In order to be reconnected again the customer also had to pay a fine of 25,000 TZS, which is a substantial amount in this context.

At first, people did not expect LUMAMA to enforce the new rule. This was not an unreasonable expectation. As discussed above, development projects sometimes refrain from using their enforcement power – since they have strong incentives to be responsive to individuals' preferences rather than to override them – which gives people a real possibility to free-ride without being punished. LUMAMA, however, chose a different route. The first month the new regulation was in force, LUMAMA disconnected *all* households that had not paid the bill on time. This was clearly against the preferences of the customers, and something that was criticised by many in the interviews: while most said that it is legitimate to disconnect those who do not pay their bills, very few felt it justified to do so after only one month of delay. They argued that LUMAMA should show consideration for how poor people are. However, despite the negative reactions to this enforcement, it had the intended effect: after the customers had realised that the rules were being strictly enforced, the number of delayed payments was drastically reduced, and in the coming months, much fewer households had to be disconnected.

As discussed in the theoretical section, one reason why locally based development actors fail to use its enforcement capacities has been called the friendship dilemma, meaning that the social cost of enforcement – especially for locally employed staff – may be seen as too high. The friendship dilemma was clearly present also in Mawengi. For example, one of the employed local technicians explained how he felt

[2] During 2014, the system with flat tariffs has been replaced by a pre-paid system with meters for all customers.

very bad when they went to disconnect customers who were late with payments.

**Interviewer:** When you go disconnecting people, how do they react?

**Technician:** 'I don't like it (he shakes his head). I feel bad about it. Even for the customer it is the same.

Not all staff felt that using the sanction of disconnection was problematic. The manager and accountant saw it as a necessary and positive action. They were also strongly supported by ACRA staff to enforce the customer regulation, and they saw it as being their responsibility in exercising good governance the way they had been trained. In the encounter with customers about to be disconnected, the manager refers to the contract which stipulates the rules:

**Interviewer:** Did you meet any of the people who you disconnected?

**Manager:** Yes

**Interviewer:** And how did they react?

**Manager:** Because we already announced so they knew that today we are going to disconnect, so while we were disconnecting few of them came to apologise and they paid so we didn't disconnect them and the rest came to pay for their bills and fines today.

**Interviewer:** Was anyone upset?

**Manager:** Yes, there are two people who were upset but they came to pay for their bills and we gave them clarifications and because what we did is stated in our contract then they understood.

To illustrate the mechanisms through which free-riding problems, if not dealt with, over time can threaten the survival of projects, we will briefly consider a contrasting case of rural electrification studied by the first author [74]. A Tanzanian NGO, TaTEDO, implemented a small 'Energy Service Platform' providing multiple services to the village Leguruki in Arusha region in 2008. The NGO owned the system but it was managed by a local village energy team and operated by a local technician employed in the project. For grid customers, individual monthly tariffs were based on planned consumption and individual ability to pay. The decision was taken jointly by the energy team and grid customers in a meeting. The procedure was thus democratic and implemented a partial principle for setting of tariffs.

However, the collection of monthly tariffs became a problem after a few months. Some grid customers delayed payments or refused to pay, either because they were not happy with the service provided, because they felt their tariff was too high – or because they had heard rumours that the NGO would pay for fuel, and they therefore expected that they would not have to pay. The people on the energy team who were responsible for collecting payments found it socially challenging to convince their neighbours and relatives to pay, i.e. they experienced the friendship dilemma. They could have used the sanction of disconnection but chose not to. Instead, the lack of income made it difficult to buy new fuel and the committee had to reduce the hours of service delivery. The reduced quality of service and the free-riding quickly eroded the willingness to pay also among the other customers. Technical and institutional weaknesses combined to aggravate the economic situation. As the NGO did not have funding to do necessary repair and extend the system to more customers, local actors took the decision to stop the grid service after about a year and half, and all customers lost access to electricity. This brief example, when contrasted to the Mawengi case, shows that the choices regarding enforcement that are made within development projects can have profound consequences for project success or failure.

Enforcement is also related to questions of legitimacy and social status. 'Treat all customers alike' was a guiding principle for LUMAMA, and one of its implications is that local leaders have to follow the same rules as everybody else. On more than one occasion, LUMAMA disconnected local people with high social status.

**Manager:** In our project we don't look at people's positions, we treat all customers equally, that is why we disconnected the [specifies a local politician] because he is not paying the tariff. (…) So we just follow what is in the constitution and our rules, I can even be disconnected, even the parish priest [the local church partner] could be disconnected.

Recalling the theoretical discussion, impartiality in implementation could have a legitimizing function [70]. The fact that sanctions were used also against local leaders won the support of ordinary villagers – it had a legitimizing effect. In such instance, it served an important function of making LUMAMA a credible and non-corrupt organization in the eyes of villagers. From the interviews, it is clear that the fact that also powerful people are being disconnected is considered a very good thing by many:

**Customer:** If you delay the payment, all people are disconnected. It does not matter who you are.

**Interviewer:** Do you think that this is a good thing or a bad thing?

**Customer:** It is a good thing. It is not choosing people

**Customer:** It is the same for all people.

**Interviewer:** Even a very powerful person?

**Customer:** [laughs] Yes, they disconnect for all.

**Interviewer:** What do you think about that?

**Customer:** They are putting all the people in equal position. No rich and no poor. […] This is perfect because all people are equal.

Through the act of disconnecting people who normally are 'above the law', LUMAMA has established its authority and the importance of rules. This may be part of the reason why generally, villagers in our study consider LUMAMA to be non-corrupt and doing a good job.

Many perceived the use of disconnection, also of ordinary people, to be a legitimate sanction when bills were not paid. In many instances, the fact that enforcement was 'following the rules' makes it predictable and thus acceptable.

**Interviewer:** Have you been disconnected?

**Customer:** Yes.

**Interviewer:** What did you think about that?

**Customer:** It was just OK, they disconnected me because I was not around; I was travelling. I came home and found that they had disconnected. It was according to the contract so it was just OK. (…) All the people know that if you can't pay your bill, they disconnect.

**Interviewer:** Have you been disconnected?

**Customer:** Yes.

**Interviewer:** What did you think about that?

**Customer:** It was ok because I already got the information that they were coming to disconnect.

In sum, the procedural fairness in enforcement – manifested not least in a strong impartiality norm – had a legitimizing effect. One indicator that enforcement over time became regarded as legitimate is that when it comes to illegal access people contributed to the enforcement by reporting on people who did re-wiring inside their homes.

However, while disconnecting local leaders is seen as legitimate, and reflects positively on LUMAMA, disconnecting a poor family is not considered equally legitimate. This indicates that effective regulation based on a 'treat all customers alike' principle is not necessarily perceived as 'fair', since people may prioritise pro-poor rules over equal treatment.

**Customer:** My opinion is that LUMAMA should put the customers in two categories: those who can afford to pay and old people that are taking care of orphan children. They should consider them more.

It is also with the purpose of being fair that the management of LUMAMA makes its only deviation from the impartiality norm: in situations where customers failed to pay the bills because they had some kind of crisis in the family – sickness or temporary economic difficulties – the staff sometimes lowered the level of the fine that had to be paid for reconnecting. For example, in a group discussion with the staff we learned that a woman who cried and was very polite when coming to pay the fine had paid only 10,000 TZS instead of the stipulated 25,000 TZS. The staff felt they had to consider the family situation and told of multiple occasions when they, in this way, compromised and deviated from the principle 'treat all customers alike'.

However, as other customers found out about this deviation from the impartiality norm, it had consequences for the legitimacy of LUMAMA. Some customers, being aware that the enforcement of fines was not strict, drew the conclusion that a bribe had been paid:

**Customer:** The fine is ok but the leaders are using segregation. Because some people they can pay 20,000 and some they can pay 10,000. But all of them are disconnected.

**Interviewer:** Why do you think they do it differently?

**Customer:** These leaders in the office, they know; and maybe they are getting something from these people that are paying less. It must be that they are getting something. But I am not sure.

**Interviewer:** How do you know that people pay different fines?

**Customer:** People talk to the community. […] So maybe those who pay 10,000 tell their fellow customers they only paid 10,000. So they make other customers jealous, to not feel good.

Again, this illustrates how in contexts characterised by corruption and low trust, small deviations from an otherwise good track record can have large consequences for an organization's credibility. It is not surprising that special treatment – even when it is done in order to be fair – is interpreted as corruption, when this is how special treatment tends to be achieved. Based on this, we suggest that actors seeking to have 'pro-poor' approaches can handle this dilemma by being more 'partial' when formulating the rule, but to implement it impartially. The point made by Grimes [69] is that procedures need to be such that citizens judge them as fair and legitimate, or else they may see it fit to contest, circumvent or evade decisions.

To some extent, the staff was aware of rumours of corruption but felt the trust in LUMAMA was growing. The problem was attributed to low levels of trust in the community, rather than the deviation from rules.

**Manager:** This is something that is happening also with the technicians of LUMAMA. People are saying they are getting bribes but you find they are not. You find maybe someone has a very large house, and then you take more than one technician there to do the work quickly. And then they think that people may have given them bribes to do that.

**Interviewer:** Do you think rumours like this could undermine trust in LUMAMA?

**Manager:** These rumours are not affecting us; we just continue to do our work. Instead of listening to the rumours we just continue to do our work.

**Interviewer:** Do you think there are more rumours now than before, or less?

**Manager:** At the beginning there were more rumours, but now it is less.

**Interviewer:** Why do you think there is less now?

**Manager:** Because the result is good.

Survey data has showed that many Tanzanian respondents do not report instances of corruption because they feel that no action would be taken to resolve their complaint [47]. This problem is illustrated in these quotes about a typical kind of corruption incident in the area:

**Customer:** Maybe two persons are having a quarrel. Then you go to the local government. Then, you think that you have a case, but they tell you the argument is over.

**Local staff:** But if let's say somebody does something and takes to the village authority […] somebody gives the village chairman, or whoever, some kind of bribe, then it ends up like that. Somebody is not getting what is right. […] In that situation [as the one above] who can they call? With the leaders, let's say government leaders; there is not much they can do.

Within LUMAMA, a complaint mechanism has been introduced. A telephone number is posted everywhere, and on flyers brought to the meetings it says 'in case you have a problem or you want to communicate, this is the number you should use for communication'. It is also ensured that action is taken every time there is a complaint.

**ACRA staff:** Everybody is to report or refer about cases of customers that are complaining […]. It is their [LUMAMA management and the LUMAMA board] duty to try to investigate immediately and not wait until these rumours become something big. So that is also why there was this reaction from LUMAMA to the [local leader who spread rumours about LUMAMA]. Maybe it [rumours] is something that will never end. What is important is to stop it, or to investigate, or to show to the people that you are present – you, the Board of LUMAMA – that you are consistent and you investigate it immediately.

The challenges associated with building up a new local organization and establishing it as trustworthy, non-corrupt and credible as an enforcer are significant, context-specific and dynamic. As we hope that these examples show, there is a constant interplay between wider institutional and contextual factors and the people involved in the project. The process in Mawengi is unique, but we think it contributes some insights of more general theoretical importance.

## 6. Conclusions

Through analysing a NGO-led small-scale electrification project with a relatively successful institution building process this paper has aimed at making a contribution to the literature on sustainable decentralized electricity provision, as well as the literature on institution building in challenging contexts. The study contributes with a theoretically and empirically grounded analysis of political and institutional challenges and strategies for sustainable electricity provision. It shows how it is possible for local service organizations to build a credible commitment through a positive track record also in a context characterised by low levels of generalised trust and high levels of corruption. Also, it points to how these factors make the process more challenging: unlike a more stable institutional context where trust is reasonably high, in this context any mistake could erase trust. In that sense, this study indicates that the link between high quality institutions and trust might be less straightforward than sometimes is acknowledged. Whereas we should expect that trust is likely to diminish in a context of poor institutions, we should be aware that the building of good institutions is unlikely to give an immediate payoff in the form of high and stable trust levels. Rather, we should expect that good institutions and low levels of trust could co-exist for quite some time, which has to be taken into account by all actors trying to build institutions in difficult contexts. Moreover, as trust does rise, it is likely to stay fragile over an extended period of time.

Consequently – and this is another conclusion from our analysis – it is essential to set the expectations right. The people from ACRA whom we interviewed underlined the importance of never increasing expectation beyond what is realistic; and, thus, never promising anything that you are not completely sure to be able to deliver. Importantly, ACRA also had a long-term perspective and could devote time to increasing trust during a substantial period before the plant started operating. This is not always (or usually) the case in development projects, where arrangements can be insecure or temporary. Also, part of the successful strategy was to create distance from existing institutions by keeping local leaders at arm's length instead of taking a 'clientelist shortcut' which again is something that development projects sometimes do.

This study also shows that impartial enforcement can serve an important function in the institution building process, not the least by deterring attempts at elite capture [68]. An emerging free-riding problem was solved through strict enforcement of a new rule regarding disconnections. The enforcement came as a surprise to many people, indicating that it was only with the new rule that LUMAMA established itself as a credible enforcer. Moreover, by enforcing the rule also on powerful persons, LUMAMA was able to show that it had 'teeth', and it appears to have contributed to a widely shared view of LUMAMA as both strong and legitimate (although contested by some people). Our analysis suggests that while this enforcement came at immediate social and emotional cost for the staff, it contributed to long-term institutional benefits.

This study also contributes to our understanding of legitimacy in terms of being seen as non-corrupt. Institution builders in contexts with high levels of corruption and low trust are facing two herculean tasks with regard to corruption: First, there is of course the challenge to build an organization with a management that upholds high standards in terms of good governance. The other challenge is to actually convince people that the organization is non-corrupt. As we saw, very small deviations from the impartiality norm [70] in enforcement led to rumours of corruption, which may be enough to undermine confidence in the institution. In this case, the management sometimes accepted a lower payment from people who were poor, upset, and genuinely worried about the fine. According to the interviews, this way of handling the issue by the management fit well with popular demand – although tough enforcement was accepted in principle (and easily accepted when applied to powerful people) many respondents argued for a softer approach towards poor families. However, when rules were *not* strictly enforced towards the non-privileged, rumours of corruption started to flourish. In other words: in order to increase legitimacy by abiding by a norm of fairness, LUMAMA deviated from the impartiality norm, with the consequence that the organization's legitimacy was weakened in another respect – some people now thought that the management was corrupt.

Finally, one lesson learned from this study is that building trust and enforcing rules in challenging contexts takes time and comes with substantial costs while the benefits of doing so are long-term, and this needs to be taken into account by actors working for sustainable local electricity provision.

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## References

[1] H. Ahlborg, L. Hammar, Drivers and barriers to rural electrification in Tanzania and Mozambique – grid-extension, off-grid, and renewable energy technologies, Renew. Energy 61 (2014) 117–124.
[2] T. Bernard, Impact analysis of rural electrification projects in sub-Saharan Africa, World Bank Res. Obs. 27 (1) (2012) 33–51.
[3] M. Gullberg, et al., Village electrification technologies–an evaluation of photovoltaic cells and compact fluorescent lamps and their applicability in rural villages based on a Tanzanian case study, Energy Policy 33 (10) (2005) 1287–1298.
[4] E. Ilskog, B. Kjellström, And then they lived sustainably ever after? Assessment of rural electrification cases by means of indicators, Energy Policy 36 (7) (2008) 2674–2684.
[5] S. Karekezi, L. Majoro, Improving modern energy services for Africa's urban poor, Energy Policy 30 (11–12) (2002) 1015–1028.
[6] K. Louw, et al., Determinants of electricity demand for newly electrified low-income African households, Energy Policy 36 (8) (2008) 2812–2818.
[7] M. Madubansi, C.M. Shackleton, Changing energy profiles and consumption patterns following electrification in five rural villages South Africa, Energy Policy 34 (18) (2006) 4081–4092.
[8] P. Mulder, J. Tembe, Rural electrification in an imperfect world: a case study from Mozambique, Energy Policy 36 (8) (2008) 2785–2794.
[9] L. Gollwitzer, All Together Now: Institutional Innovation for Pro-Poor Electricity Access in Sub-Saharan Africa, University of Sussex, 2017.
[10] C. Greacen, The Marginalization of Small is Beautiful: Micro-Hydroelectricity, Common Property, and the Politics of Rural Electricity Provision in Thailand, University of California, 2004.
[11] M. Millinger, T. Mårlind, E.O. Ahlgren, Evaluation of Indian rural solar electrification: a case study in Chhattisgarh, Energy Sustain. Dev. 16 (4) (2012) 486–492.
[12] D. Palit, et al., The trials and tribulations of the Village Energy Security Programme (VESP) in India, Energy Policy 57 (2013) 407–417.
[13] Bloomberg, Q1 2017 Off-Grid and Mini-Grid Market Outlook, Bloomberg New Energy Finance, 2017.
[14] IRENA, Innovation Outlook: Renewable Mini-Grids. Summary for Policy Makers, The International Renewable Energy Agency, 2016.
[15] IEA, World Energy Outlook 2014, OECD/International Energy Agency, Paris, France, 2014.
[16] B. Sovacool, What are we doing here? Analyzing fifteen years of energy scholarship and proposing a social science research agenda, Energy Res. Soc. Sci. 1 (2014) 1–29.
[17] E. Adebayo, B.K. Sovacool, S. Imperiale, It's about dam time: improving microhydro electrification in Tanzania, Energy Sustain. Dev. 17 (4) (2013) 378–385.
[18] H. Ahlborg, M. Sjöstedt, Small-scale hydropower in Africa: socio-technical designs for renewable energy in Tanzanian villages, Energy Res. Soc. Sci. 5 (2015) 20–33, http://dx.doi.org/10.1016/j.erss.2014.12.017.
[19] C. Bastholm, A. Henning, The use of three perspectives to make energy implementation studies more culturally informed, Energy Sustain. Soc. 4 (1) (2014) 3.
[20] M. Bazilian, et al., Improving access to modern energy services: insights from case studies, Electr. J. 25 (1) (2012).
[21] J. Cloke, A. Mohr, E. Brown, Imagining renewable energy: towards a Social Energy Systems approach to community renewable energy projects in the Global South, Energy Res. Soc. Sci. 31 (2017) 263–272.
[22] J.M. Eder, C.F. Mutsaerts, P. Sriwannawit, Mini-grids and Renewable Energy in Rural Africa: how diffusion theory explains adoption of electricity in Uganda, Energy Res. Soc. Sci. 5 (2015).
[23] E. Ilskog, et al., Electrification co-operatives bring new light to rural Tanzania, Energy Policy 33 (10) (2005) 1299–1307.
[24] A. Jacobson, Connective power: solar electrification and social change in Kenya, World Dev. 35 (1) (2007) 144–162.
[25] C. Kirubi, et al., Community-based electric micro-grids can contribute to rural development: evidence from Kenya, World Dev. 37 (7) (2009) 1208–1221.
[26] H. Müggenburg, et al., Social acceptance of PicoPV systems as a means of rural electrification—a socio-technical case study in Ethiopia, Energy Sustain. Dev. 16 (1) (2012) 90–97.
[27] P. Rolffs, D. Ockwell, R. Byrne, Beyond technology and finance: pay-as-you-go sustainable energy access and theories of social change, Environ. Plan. A 47 (12) (2015) 2609–2627.
[28] B.K. Sovacool, A qualitative factor analysis of renewable energy and Sustainable Energy for All (SE4ALL) in the Asia-Pacific, Energy Policy 59 (2013) 393–403.
[29] B. Tenenbaum, et al., From the Bottom Up: How Small Power Producers and Mini-Grids Can Deliver Electrification and Renewable Energy in Africa Directions in Development, World Bank, Washington, DC, 2014.
[30] K. Ulsrud, et al., The Solar Transitions research on solar mini-grids in India: learning from local cases of innovative socio-technical systems, Energy Sustain. Dev. 15 (3) (2011) 293–303.
[31] K. Ulsrud, et al., Village-level solar power in Africa: accelerating access to electricity services through a socio-technical design in Kenya, Energy Res. Soc. Sci. 5 (2015) 34–44.
[32] H.-E. Edsand, Identifying barriers to wind energy diffusion in Colombia: a function analysis of the technological innovation system and the wider context, Technol.

Soc. 49 (2017) 1–15.
[33] J.O. Kroesen, L.M. Kamp, Energy innovation systems in developing countries – experiences with the implementation of PV in Kenya, Knowledge Collaboration & Learning for Sustainable Innovation. ERSCP-EMSU Conference, Delft, The Netherlands, 2010.
[34] P. Newell, J. Phillips, Neoliberal energy transitions in the South: Kenyan experiences, Geoforum 74 (2016) 39–48.
[35] P. Newell, H. Bulkeley, Landscape for change? International climate policy and energy transitions: evidence from sub-Saharan Africa, Clim. Policy 17 (5) (2017) 650–663.
[36] D. Ockwell, R. Byrne, Sustainable Energy for All. Innovation, Technology and Pro-Poor Green Transformations, Routlegde, Oxon, New York, 2017.
[37] WB, Designing Sustainable Off-Grid Rural Electrification Projects: Principles and Practices, The World Bank, Washington, DC, 2008.
[38] L. Gollwitzer, et al., Rethinking the sustainability and institutional governance of electricity access and mini-grids: electricity as a common pool resource, Energy Res. Soc. Sci. 39 (2018) 152–161, http://dx.doi.org/10.1016/j.erss.2017.10.033.
[39] D.C. North, Institutions Institutional Change and Economic Performance, Cambridge University Press, Cambridge, 1990.
[40] J.G. March, J.P. Olsen, Rediscovering Institutions: The Organizational Basis of Politics, Free Press, New York, 1989.
[41] D.C. North, Institutions, J. Econ. Perspect. 5 (1) (1991) 97–112.
[42] B. Campbell, J. Cloke, E. Brown, Communities of energy, Econ. Anthropol. 3 (1) (2016) 133–144.
[43] E. Drápalová, Good Apples on Bad Trees Explaining Variation in Levels of Corruption in South-European Local Government, European University Institute, 2016.
[44] B. Flyvbjerg, Five misunderstandings about case-study research, Qual. Inq. 12 (2) (2006) 219–245.
[45] R.K. Yin, 4th ed., Case Study Research. Design and Methods vol. 5, SAGE Publications, Los Angeles, 2009 (Applied social research methods series).
[46] WB, The Worldwide Governance Indicators, (2015) < http://info.worldbank.org/governance/wgi/index.aspx#home > . Accessed Data downloaded: 2015-11-16.
[47] Transparency International, Reporting of Bribery and Public Confidence in the Fight Against Corruption Remain Low, Transparency International, 2014.
[48] Global Barometer, Global Barometer Round 1 Official Data File v.Jun2009, Global Barometer, 2009.
[49] M. Green, The Development State: Aid, Culture and Civil Society in Tanzania, James Currey, 2014.
[50] J.T. Murphy, Building trust in economic space, Prog. Hum. Geogr. 30 (4) (2006) 427–450.
[51] D.C. North, B.R. Weingast, Constitutions and commitment: the evolution of institutions governing public choice in Seventeenth-Century England, J. Econ. Hist. 49 (4) (1989) 803–832.
[52] P. Bardhan, Scarcity, Conflicts and Cooperation Essays in the Political and Institutional Economics of Development, MIT Press, Cambridge, MA, 2005.
[53] D. Acemoglu, J.A. Robinson, Economic Origins of Dictatorship and Democracy, Cambridge University Press, New York, 2006.
[54] M. Levi, A state of trust, in: V. Braithwaite, M. Levi (Eds.), Trust and Governance, Russell Sage Foundation, New York, 1998, pp. 77–101.
[55] H. Kitschelt, Linkages between citizens and politicians in democratic polities, Comp. Polit. Stud. 33 (6–7) (2000) 845–879.
[56] P. Keefer, R. Vlaicu, Democracy, credibility, and clientilism, J. Law Econ. Organ. 24 (2007) 371–406.
[57] D.D. Heckathorn, Collective action and the second-order free-rider problem, Ration. Soc. 1 (1989) 78–100.
[58] M. Olson, The Logic of Collective Action. Public Goods and the Theory of Groups, Harvard University Press, Cambridge, MA, 1965.
[59] E. Ostrom, Governing the Commons: The Evolution of Institutions for Collective Action, Cambridge University Press, Cambridge, 1990.
[60] E. Ostrom, A behavioral approach to the rational choice theory of collective action, Am. Polit. Sci. Rev. 92 (1) (1998) 1–22.
[61] E. Ostrom, A general framework for analyzing sustainability of social-ecological systems, Science 325 (2009) 419–422.
[62] J. Rawls, A Theory of Justice, Harvard University Press, 1971.
[63] J. Mansbridge, What is political science for? Perspect. Polit. 12 (1) (2014) 8–17.
[64] B. Rothstein, M. Tannenberg, Making development work: the quality of government approach, The Expert Group for Aid Studies, EBA, Stockholm, 2015.
[65] M. D'Arcy, M. Nistotskaya, State first then democracy: using cadastral records to explain governmental performance in public goods provision, Governance 30 (2) (2017) 193–209.
[66] M. De la Torre-Castro, Beyond regulations in fisheries management: the dilemmas of the beach recorders Bwana Dikos in Zanzibar, Tanzania, Ecol. Soc. 11 (2) (2006).
[67] S. Kankam, E.K. Boon, Energy delivery and utilization for rural development: lessons from Northern Ghana, Energy Sustain. Dev. 13 (2009) 212–218.
[68] G. Mansuri, V. Rao, Localizing development: does participation work? World Bank Policy Report, World Bank, Washington, DC, 2013.
[69] M. Grimes, Organizing consent: the role of procedural fairness in political trust and compliance, Eur. J. Polit. Res. 45 (2006) 285–315.
[70] B. Rothstein, J. Teorell, What is quality of government? A theory of impartial government institutions, Gov.: Int. J. Policy Adm. Inst. 21 (2) (2008) 165–190.
[71] B. Rothstein, Creating political legitimacy. Electoral democracy versus quality of government, Am. Behav. Sci. 53 (3) (2009) 311–330.
[72] A.J. Nightingale, Methods: triangulation, in: R. Kitchin, N. Thrift (Eds.), International Encyclopedia of Human Geography, vol. 11, Elsevier, Oxford, 2009, pp. 489–492.
[73] H. Ahlborg, Towards a conceptualization of power in energy transitions, Environ. Innov. Soc. Transitions 25 (2017) 122–141, http://dx.doi.org/10.1016/j.eist.2017.01.004.
[74] H. Ahlborg, Changing energy geographies: the political effects of a small-scale electrification project. manuscript under review.