

# Rising electricity consumption: Driving forces and consequences. The case of rural Zanzibar

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## Keywords

electricity use, consumption, social change, gender relations, spirits, cooking technologies, negotiations

## Abstract

The paper addresses the current, rising electricity consumption in the southern, rural locality of Zanzibar and seeks to account for the range of driving forces behind people's changed practices. The author argues that these forces are, on the one hand, determined by the availability of new technologies and through global and national institutions and influences such as Islam, commercials and changes in the governmental sector (health, education). On the other hand, the paper explores the way such influences interplay with the internal dynamics related to increasing consumption. Through an analysis of the particular character and dynamics of social and cultural life in this region, the author explains why some practices are less likely to change than other practices. For example, people in Zanzibar keep electricity (freezers and stoves) at a distance from their food. By contrast, electric light is perceived as intimately related to education, as illustrated when school children are sent to school for night classes before important exams.

To which extent may general approaches to the study of energy consumption draw on this empirical case from Zanzibar? In other contexts, the patterns of people's electricity use certainly differ. In terms of sustainable energy policies, each locality has a particular set of challenges and goals, which to varying degree may be related to poverty reduction and concern for the environment. Methodologically, however, the author argues that the phenomenon of energy consumption may be studied and understood within the same framework of analysis; one that pays attention to both external and internal dynamics, the

material and social aspects of technologies and the importance of power relations, gender and negotiations.

## Introduction

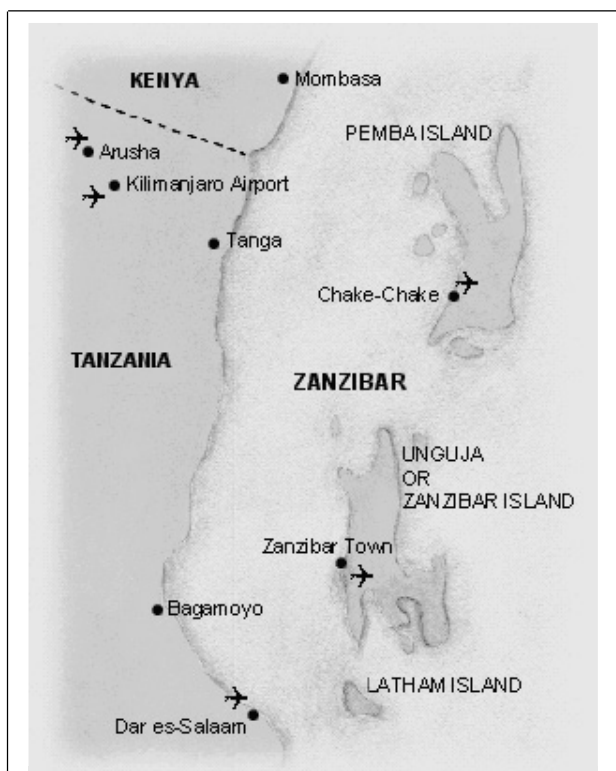
In rural Zanzibar, 66 % of the population have obtained access to electricity during the last 15 to 20 years.<sup>1</sup> Before the arrival of the electricity network in Unguja and Pemba through a governmental electrification project (from 1986 and onwards) there were a few diesel generators in the rural areas.<sup>2</sup> When available, electricity was used for public services.<sup>3</sup> However, the supply was unreliable, spare parts were difficult to obtain and the cost of diesel was considered to be expensive. In short, electricity supply in rural areas was poor. With the construction of a submarine cable (45 MW) between the Tanzanian mainland and Zanzibar in 1979-80, the Zanzibari and Tanzanian governments saw an opportunity to introduce stable electricity supply also in rural areas on Pemba and Unguja Islands, see Map 1. Protection of the environment was also mentioned in Zanzibar's energy strategies at the time in support of the rural electrification programme; firstly, by substituting diesel generators with mainly hydroelectric power imported from the mainland. Secondly, it was stated that in the long run, a change in cooking

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1. Data from the project office, Phase IV, Zanzibar September 2006.

2. Zanzibar is a semi-autonomous state, part of Tanzania, and consists of two main islands, Unguja and Pemba, see Map 1. The population of Zanzibar is about 1 million.

3. There were some water pumps, electrified health institutions and also a public television set in some of the villages for educational and political purposes. This idea can be traced back to the days of Zanzibar's first president Abeid Karume, who was assassinated in 1972.



Map 1: Zanzibar (Unguja and Pemba Islands)

technologies towards electricity would help reduce deforestation in Zanzibar and reduce the work load of women.

The Norwegian Agency for Development Cooperation (NORAD) responded to the request to support the rural electrification project and has spent 110 million NOK through its four phases. An extension of Phase IV is planned for 2006-2008, after which the grid is expected to provide electricity to 82 % of Zanzibar's rural population. This 'degree of electrification' is exceptionally high in an African context. On the mainland of Tanzania, the electrification degree in rural areas does not reach 5 %.<sup>4</sup> Given general budget constraints but also a political decision to provide electricity, Zanzibar's limited geographical size also accounts for the fact that the grid now covers 66 % of the villages in Unguja.<sup>5</sup>

Electricity supply is a major challenge, however. In Pemba, where the supply relies on diesel generators, a feasibility study is being conducted at present to examine the possibility to provide the island with a cable directly from the mainland. In Unguja, the situation will soon become tight, as the capacity of the submarine cable has already been reached. Figure 1 shows the development in the maximum load (demand) in Unguja from 1984 to 2006. Increasing tourism accounts for a considerable part of the rising peak load (MW) and thus electricity consumption (MWh). In 2004, the tourist sector accounted for

one third of Unguja's total electricity consumption (ZECO office 2004).

### Rural household connections

From the perspective of the household, having access to electricity in one's village is one thing. It means that water pumps are run steadily; that the schools, mosques and dispensaries are likely to be connected; and, in the village of Uroa, it implies that there is light outdoors at night time. However, obtaining electricity within households living on the margin is quite another challenge. Household customers must in average pay around 180 EURO to obtain connection (including the wiring inside the house) which constitutes 4-6 months' income for an ordinary Zanzibari man. Yet, about ten thousand households, that is, 20 % of the whole rural population in Unguja today have electricity in their homes<sup>6</sup>. Taking the high installation cost into account, this speaks of electricity's significance in rural Zanzibar.<sup>7</sup> In addition, and what makes electricity quite special as a commodity; it must continuously be paid for, in bulk, after usage. This causes considerable amounts of frustration in rural Zanzibar.<sup>8</sup> Nevertheless, every fifth household have adopted the expensive habit of obtaining and using electricity to the extent that the new technology and some of its associated appliances have rapidly becoming normalised. I will argue that certain aspects in this process, without disregarding the particularities of social and cultural life in this region, reveals some of the general dynamics embedded in normalisation processes.

This article deals with the phenomenon of the rapidly increasing electricity use in rural Zanzibar: How may one explain people's eagerness to become connected? What are the driving forces behind this development? What is electricity used for and how do gender relations enter the picture? To which extent may one conclude that the current change in energy consumption in Zanzibar is sustainable?

The theoretical framework applied is, most basically, that electricity consumption, like any other form of consumption, is a social phenomenon. A quote from Mary Douglas regarding the driving forces for consumption is worth recapturing: "[p]eople need goods to commit other people in their projects" (1982:23). In this respect, people's acquisition of freezers in rural Zanzibar has parallels with practices observed in Båtsfjord, Norway (Lien 1987:49). But the way people use freezers in these two (randomly) selected places and their reasons for doing so, may vary. Secondly, the perspectives that technologies

4. Tanzania Poverty and Human Development Report 2005. The report does not include Zanzibar. [http://www.repoa.or.tz/research\\_analysis\\_working\\_group/publications.php](http://www.repoa.or.tz/research_analysis_working_group/publications.php)

5. The total area of Zanzibar is 2,332 sq.km (Unguja: 1464 sq km and Pemba: 868 sq km). Unguja is 91 km long and has an average width of 22 km.

6. Data on customers: obtained from ZECO September 2006. Population data: Tanzania Census Survey 2002. In rural Unguja the total number of households is 52411 according to the survey, adjusted with the 2,1 % annual population growth for Unguja South stated by the same census.

7. In 2005, people in the village of Makunduchi, Unguja, were said to be selling parts of their livestock in order to pay the installation cost. Elsewhere I have treated the way people finance electricity. Important in this respect is that brothers and families cooperate to make electrification possible. Noteworthy, women's income from seaweed and other cash producing activities are increasingly used for supporting the family while men's wage is used for electrical costs, appliances and paying for their use (Winther 2005).

8. In Unguja at large (rural and urban), domestic customers accounted for 60 percent of ZECO's sales (MWh) in 2004. In average, domestic rural households use 25 kWh (units) per month (Winther 2005). Until recently, this group paid the minimum bill (up to 50 units), which was 1,5 EURO per month. In 2006 the price was changed into a progressive tariff, with the cost of 1,1 EURO per month for no consumption (only service charge), 1,7 EURO for 25 units and 2,3 EURO for 50 units.

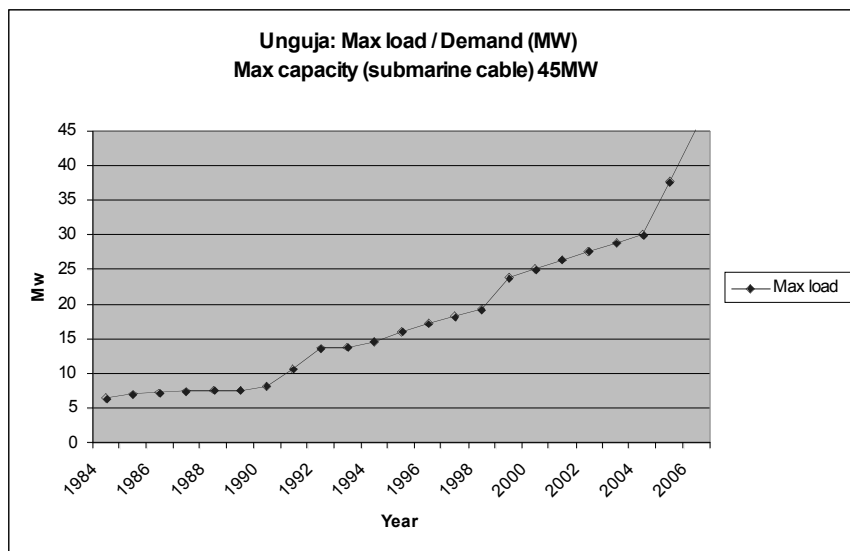


Figure 1 Maximum load /demand (MW) from 1984 to 2006, Unguja Island, Zanzibar. Data have been obtained from Zanzibar Electricity Corporation (ZECO). Max load in the years 1986, 87, 01, 02 and 03 have been estimated.

may be considered as chains, is fruitful. There are crucial links between the availability and promotion of technologies in the supplying end – to the implications and meanings produced through consumption in everyday life.<sup>9</sup> Thus, the paper will show that the range of factors that influence women’s choices in cooking technologies in Zanzibar include elements as different and yet interconnected as i) the price of electricity purchased by their husbands, ii) the availability of cooking technologies iii) the size and form of cooking pots and spoons perceived as suited for producing various dishes with a particular taste, to iv) concepts of fertility and the importance of maintaining bodily strength (*nguvu*) to resist penetration of evil powers. Thirdly, the study of social change in the present case will draw on material culture studies as elaborated by Daniel Miller (1994, 1998) by keeping a focus on people’s use of objects, following Bourdieu (1977), but notably where scenarios of both continuity and change can be expected. Miller highlights a dialectic model of ‘objectification’, in which people are considered to produce (not only mirror) the values that guide them (Miller 1994:54 f.n.)<sup>10</sup>. The present study thus takes practice theory as one of its overall framework for analysis. At the same time, it investigates signs of change and the way external and internal dynamics influence social life at present. Henrietta Moore’s (1994) emphasis on embodied experience underpins the discussions, through the main focus will be on people’s use of electricity and electrical appliances. Electricity both strengthens and shapes cultural values and identities in contemporary Zanzibar.

### Fieldwork, method and Uroa village

The article draws on 14 months of fieldwork in rural Zanzibar over a time span of 13 years (1991, 2000-01 and 2004), which I conducted as part of my studies in power engineering (MSc 1991) and social anthropology (PhD 2005). In addition, by being engaged as a consultant in 2005 and 2006, it has been possible to return to Zanzibar and observe the changes further, also in the primary village selected for study, Uroa, which is located on the east coast of Unguja Island.

In 1991, Uroa fascinated for the manner in which the village became connected to the grid.<sup>11</sup> The place had not initially been included as a target for electrification. But in 1990, the village leaders, after a year with initiatives, plans and meetings, managed to attract electricity to their place. They did so by engaging actively with the project management at the time; particularly highlighting in the aftermath the writing of letters, digging of ditches and serving these partly foreign people a wonderful Zanzibari meal. The feeling of accomplishment and pride can still be sensed when one arrives in Uroa and asks how electricity ended up here. Thus untypical in this respect (most electrified villages in Zanzibar have at some point been selected for the programme through the administration in Zanzibar town), Uroa was a place in which I expected to find relatively many customers in 2000. I had also obtained personal connections with some of the families in Uroa and wished to study the changes caused by electricity’s coming over time. Therefore, Uroa became an easy choice also for the 10 months’ fieldwork in 2000-01. I lived in a rented guest house together with my little family (husband and a daughter aged 2 years), engaging in everyday activities with my neighbours. Participant observation, observation, interviews and informal talks in Swahili form the main type of data on which this article is based. In addition, an extended household survey was conducted in 2000-01, covering 23 % of all households in the village (106 out of

9. In a mid-position here is the actual and social organisation of technologies (for electricity; its metering, accounting and fining system). The latter is important, but will not be dealt with here in detail (for a treatment of this aspect in Zanzibar see Winther 2005, chapter 6).

10. See also Miller (1994:297) for a discussion of what he calls the “fixity” of Bourdieu’s model. Though drawing extensively on Bourdieu, he criticises the author for not accounting for how individuals translate habitus into action.

11. I spent 3 months in Zanzibar in 1991 of which I had the occasion to spend two weeks with a family in Uroa.

480). The sample was selected strategically to obtain contact with people residing in different wards.<sup>12</sup> Another criterion for sampling was whether the household had electricity or not. In each household, both husband and wife were included.<sup>13</sup> In addition to general population data, the survey covered questions on consumption, electricity, people's tastes in food, information and travel habits. Simple statistics from the survey results will be referred to. In 2004, I returned for a brief visit and observed that considerable changes had taken place.

The electricity company in Zanzibar (ZECO), its staff and the electrification project have also been important sources. Day-load curves and information about customers' consumption levels, bills and payments form part of the material. I also learned about these matters and the relationship between the company and its customers by accompanying a man employed by the company to read electric meters in more than 500 homes (different villages). An important background for understanding the process of electrification in Uroa can be captured by the following simple figures related to its 'connection rate', that is, the percentage of connected households in electrified villages: In Unguja at large, there was an average connection rate of 10 % in 1995, some years after electricity's gradual introduction in various areas. In comparison, the connection rate in Uroa reached 21 % only one year after village electrification (1990). In 2001, it had risen to 33 %, in 2004 it was nearly 50 %, and today it is beyond 50 %. Uroa is not exceptional today, but corresponds to other villages located by the sea, such as Paje. Here, income from fishing (men), seaweed farming (women) and, to a modest but potentially large extent, tourism, increases people's possibilities to obtain connection. In inland areas, with relatively few changes in the agriculture sector, there are so far fewer opportunities for cash-production and thus electricity connection. The governmental sector constitutes an increasingly important employer in Zanzibar in general. With electricity, and people's desire for the new technology and the services it can provide, money is more and more becoming a central aspect of rural household finances. Correspondingly, the significance of the subsistence economy (production and distribution) appears to diminish. This is also how rural Zanzibaris evaluate the trend. Let us now turn to the objects of desire and approach the driving forces for the increasing electricity demand. I start by accounting for what appliances people keep in their homes.

### Electrical appliances and driving forces for increased demand

Among Uroa households with electricity in 2001, the following appliances were observed in people's homes: Bulbs (99 %)<sup>14</sup>, radios (88 %), fans (44 %), television sets (33 %), irons (20 %), freezers (19 %), fluorescent light (19 %), fridges (4 %), water

kettle or cooker (coil type) (2,3 %), blender (1,5 %) and video (0,8 %). Light bulbs and radios are always the first things to put in use (people tended to own radios also before electricity's coming). The other items are gradually obtained in the years after household connection. In 1991, many men expressed that they would purchase a freezer and cooker, and women tended to wish for a cooker (if not too afraid of such items). In comparison, the observed numbers in 2001 tell us that fans and television sets have been given higher priority. And in 2004, the emphasis on television sets had been further accentuated, as will be discussed in a moment.

Women and men in Uroa give quite specific answers when asked why they have obtained electricity, lamps, freezers, TV sets and so on. For example, they want to be able to read at night, to do business (for example, produce frozen, sweet ice) or to get information and entertainment. Some also refer directly to the importance of 'moving with the times', thus linking electricity and electrical appliances directly to the Zanzibari, Tanzanian and/or global development discourse (which are not necessarily identical, but share this aspect of moving forward).<sup>15</sup> The Zanzibari development discourse gains impetus at present and comes into play in the village in various ways. Governmental institutions like the nursery, primary and secondary schools in Uroa and the dispensary are key institutions through which the authorities signal their intentions of promoting development in rural areas – and what this is about. The virtue of education has a particularly important place in Zanzibari ideas about development. This is also the case in rural areas. In practice too, people demonstrate their emphasis on education. The enrolment ratio in primary and secondary school taken together (children between 7 and 18 years old) is as high as 95 % for boys and 93 % for girls.<sup>16</sup> In 2004, there were also night classes at school, attended by selected age-groups for 1-3 months in advance of important national exams. "We want to have the best pupils", was a statement I heard many times. Electricity is perceived to provide enlightenment in more than one sense. In 2005, the night classes had been cancelled due to signs of evil spirits residing in the school area at night time. Therefore, children were sent to private homes for night classes in smaller groups. In Zanzibar, the presence of spirits (good or bad) affect any changes in the natural and social environment and people's use thereof. This was also the case when electricity first arrived, as elaborated elsewhere (Winther 2005).

The TV medium channels the Zanzibari development discourse in important ways. With electricity in rural areas, the state owned channel, Television Zanzibar (TVZ) has obtained a

12. In rural Zanzibar, people residing in different wards are often positioned in opposition to one another based on ideas and myths of origin.

13. 31 % of the 80 men interviewed had more than one wife. Usually, each wife lives in a separate house, which in the survey was treated as a household. Men's affiliation with more than one household partly accounts for why the number of men interviewed were lower than the number of women (106).

14. This implies that the appliance was observed in 99 % of the 131 electrified households visited, that is, the accessible electrified homes in Uroa at the time. Only working appliances were counted.

15. To achieve development, to move forwards, is often treated as synonymous to 'obtaining new ideas' (not only things). In rural Zanzibar, development has no down-side, it is perceived in unison as beneficial change. This does not imply that people perceive electricity's coming and use to be without negative side-effects. The level of conflicts is high in a time of change such as the present. But these effects and conflicts (to be treated below) are not treated as aspects of development as such. This corresponds with Christine J. Walley findings on Mafia Island, in Tanzania and the Swahili region, where people tend to refer to development (maendeleo) as "the ability of individuals to 'get ahead' economically" (2004:63).

16. Figures obtained at the Uroa school correspond to findings from the household survey conducted by the researcher. Children in Zanzibar attend school to a higher degree than what is otherwise the case in Tanzania. In the country at large, the average primary enrolment rate was 57 % in 1999 and increased to 86 % in 2004. Tanzanian figures for secondary school have been difficult to establish. [http://hdr.undp.org/hdr2006/statistics/countries/data\\_sheets/cty\\_ds\\_TZA.html](http://hdr.undp.org/hdr2006/statistics/countries/data_sheets/cty_ds_TZA.html)

massive distribution.<sup>17</sup> The channel has a deep impact on life in the villages. Often the topic of conversation in the fields centres on issues touched upon or observed in programme that was broadcasted and consumed on the previous days. Men prefer to watch news and give sports as their second choice, whereas women have a preference for Swahili dramas and, secondly, news. 74 % of the men and 52 % of the women watch television at least three times a week. In average, the amount of time spent each time is 2 hours for men and 2 hours and twenty minutes for women.

Television programmes provide an important driving force for new commodities by its way of displaying such items in commercials as well as in Swahili dramas. Such programmes, and notably peoples' interest in and admiration for what they see, produce an image of the town as an ideal within the context provided by the development discourse. In other contexts, when general comparisons are made between urban and village life, life in town is said to be more problematic. From the village point of view, townspeople lack the high degree of solidarity which is fundamental in the village. Furthermore, people in town are perceived to be lazier, and theft and politics (*siasa*) are also aspects associated with town in a negative way. But when situated in front of the television, admiring items such as furniture, cold drinks, mobile phones and electric water kettles, life in town is an ideal, considered worth following. In the village, individuals who keep houses equipped in a similar way, are admired and said to possess the best kind of houses in Uroa. In rural Zanzibar, houses count. When people were asked in 2001 what they would buy next if they had the money, 30 % of men answered that they would improve their house, 20 % would get a freezer and 20 % a television set. The corresponding top priorities (as stated) by women were that 23 % would obtain a freezer, 17 % a television set and 15 % an electric cooker.<sup>18</sup> Such answers, of course, reflect what the people asked wish to express to the foreign researcher at the time of the interview. As seen by comparing 1991 and 2001 data, they are not necessarily realistic or even probable answers. The answers nevertheless have a value in themselves. This is embedded in the perspective of perceiving people's multiple identities. Men and women experience, express and construct their identities in partly shifting ways.

In sum, the current processes, with a growing range of customers and an increasing amount of appliances appearing in the village, lead to an intensified focus on the objects in question. To start nesting the various processes behind this trend, five elements should be noted. First of all, "electricity is there", as one of the teachers in the village pointed out to me. Availability is the first condition and is far from a trivial fact. The presence and nature of infrastructures such as electricity matter. Electricity's arrival in rural Zanzibar was not an externality nor a given. The processes at work and the network's gradually stabilised configuration need close inspection if one is to understand the way electricity is becoming implicated in people's

lives. On the level of technological objects, these carry 'scripts' which determine the way users will act (Latour 1994 and Akrich 1994). The electric meter, mediating the relationship between the utility and its customers, is a central object in this respect (treated in Winther 2005). When further considering the ways both material and non-material objects (and agencies) are linked in chains, like they are within an electricity system, the concept of 'lock in' is also useful. Thus in our case, a range of elements in the chain are relevant to the analysis: from electricity supply to second-hand shops in Zanzibar Town where people go to buy appliances to people's access to bulbs in shops in the village. In this picture, ideologies and the cultural and social context is of no less importance. Below I will demonstrate the way gender relations and electricity's organisation are interlinked and mutually shape each other, which at present produce particular constraints on women's access to electrical appliances. The crucial point is thus that the arrival and design of the electricity grid provided people both with new options and new constraints. At the same time, people seek to shape the 'system' according to their interests and resources.

The second driving force towards increasing demand for new objects relates to money. Due to the arrival of new occupations, such as seaweed farming and the construction of hotels and guesthouses, there is an increasing amount of money in circulation in the village. This adds to some groups' range of choices as to how resources should be allocated and consumed. In short, people possess increasing amounts of money with which appliances can be bought. In turn, as mentioned, electricity (acquisition and use) also creates a demand for cash, thus the trend towards people's increasing focus on cash is spiralling at present.

Thirdly, people have an economical incentive in substituting former energy sources with electricity. Kerosene and batteries, extensively in use for light and radios in non-electrified households, are perceived to be more expensive than electricity. This is the case in the long run. In 2005, the calculated payback time for investment in electricity was 9 years in an ordinary household. In 2006, the payback time was reduced to 4 years due to the high (though volatile) kerosene prices.<sup>19</sup>

Fourthly, the governmental institutions (partly equipped with appliances) and notably their advices channelled through television and radio ("boil water in the rainy season") have an impact. Commercials are also frequently showed on TVZ. In sum, the images presented on TV of lifestyles and goods elsewhere accentuate the increasing demand for electricity and appliances.

Fifthly, and perhaps most importantly, Uroans have become convinced about the benefit of using electricity for various purposes by observing the objects and their use at first hand. I maintain that after 10-15 years with electricity, it is people's own (and their neighbours') experiences with the new technology

17. TVZ was established in 1974, two years after President Karume's assassination, but on his initiative. TVZ was the first station in Sub-Saharan to provide pictures in colour

18. Only 47 (41 %) of the 106 women and 40 (35 %) of the men interviewed in the household survey responded to this question. In many poor household I avoided to ask this question because of fear that I would cause them inconvenience by making them focus on their own (presumed) experience of poverty.

19. In 2005, a project team in Zanzibar (Information project Phase IV) made calculations for the information material to be handed out in the villages. At that time, the payback-time, that is the time it takes before the investment in electricity connection is paid back, was 9 years. Only one year later, due to rising kerosene prices, it was 4 years. This means that after 4 years, the customer will start saving money by using electricity compared to what would be the case with use of former technologies to provide light and radio programmes. Electricity's investment costs and consumption costs for both el and non-el alternatives are included in the calculations. Electrical appliances (radios etc) are not included. The calculations are elaborated in Winther et al. 2005:45 and Winther 2006:25.

and the services it provides that constitutes the most important driving force for further use. Such experience is certainly not characterised by individuals positioned in a social vacuum, longing for the new objects in themselves. This is rather where the social analysis can start. To open up this 'black box' as to how the internal dynamics works towards more use of electrical appliances, including the way certain objects become 'normal', we will now consider how appliances enter people's homes, shift from novelty to everyday things, and, successively, the ways in which they are used. A gender perspective is vital.

### How objects become normal

Khamis one day told me that the aches in his arms and legs had worsened to the extent that he had difficulties to continue farming and fishing. He is a busy man running several economic enterprises and seldom has time to relax. Subsistence production is important to the way he manages to provide for his wife and three children. This is his duty as a husband, according to Islam in Zanzibar. In addition, he is expected to help his less productive brothers and his aging mother on a daily basis. Thus he tends to give them some of his catch from the ocean (when there is any), and takes what remains to the daily auction at the fish market in Uroa. His financial situation, however, is similar to most people in Uroa; very tight. Subsistence is certainly not sufficient – the family relies on cash to a considerable extent. He makes about 1 EURO on fishing per day. From this, he pays the children's school fees, uniforms and note books. He provides the family with medicines and imported staples such as rice, flour and sugar, which all need to be purchased. Then there is the house, which is never 'finished' but always in the process of being constructed, as is usually the case in the village. Khamis obtained electricity in his house in 1993, however. He highly enjoys the change of life electricity provided. But as a result of this connection, he must also handle his monthly debt to the state owned utility company. He is afraid of the company, in particular that the employees will discover that he has secretly provided a poor, neighbouring relative with a connection to his house. There is a huge fine and the threat of disconnection if they find out. Nevertheless, considerations for the relative count a lot to Khamis.

Together, Khamis and I went to see a healer in Zanzibar Town. Through a two-step possession ritual, the doctor was able both to diagnose Khamis' condition and provide a cure to solve the problem. The cause of the problem was said to be an identified, jealous relative of Khamis'. This man had become upset when Khamis purchased a television set in 1998. The pain had notably started three months later, and was now, in 2001, becoming unbearable. The remedy consisted of another possession ritual in which the doctor (or his spirit) was able to suck out snails from various parts of Khamis' body. Towards the end of the ritual, a kernel came out from Khamis' mouth, which the doctor apparently managed to withdraw with the use of a feather. Khamis' problems were temporarily solved because the evilness had been removed, although there was a risk that evilness would reappear. However, when I met Khamis again in 2004 and asked if the problem had recurred, he said with a smile that "today there is no problem; everybody owns a television set these days". His perceived link between normality and safety is crucial and will now be analysed in detail.

In 2004, more than half of the electrified households in Uroa kept a television set (having risen from 33 % in 2001). Also, in contrast to what used to be the case, new customers now tended to purchase a television set at the same time (or even before) as becoming connected to the grid. The appliance had become 'normalised' during the years; firstly, in the sense of being a common thing to keep in the village. Secondly, as objects, electricity connection and television sets have gained the status of what people are expected to possess. Importantly, the latter implies an aspect of judgement by both ego and the people (and spirits) surrounding him or her.

Today, having electricity in one's house is the norm; a house without electricity is not 'complete' or 'finished'. The question of what constitutes a 'complete house' is partly open, and people in general have difficulties 'finishing' their houses, as mentioned. Nevertheless, electricity has become an important element of what a house should contain. For example, in 2001, I met a young man in Uroa who said that he had to install electricity in his house before he could get married. In 2004, he was still waiting, saving money for electricity, as he put it. There might of course have been several reasons why his aspirations to get married had been delayed. It is nevertheless significant that he mentioned the lack of electricity when explaining the situation, and giving this argument at two different points in time.<sup>20</sup>

The normalisation of electricity puts a social pressure on those who cannot afford the new technology – or choose to continue to live without it. Men who do not provide their families with electricity may be regarded as bad providers in general. This evaluation sometimes comes to the surface, particularly in conversations about the number of wives a man has or should have. Young men, for instance, would criticise elderly men for marrying up to four wives - without having the capacity to provide for them in an appropriate manner, that is, to offer houses installed with electricity. Thus electricity appears as an indicator of what it means to provide 'enough'. Linked to this, old men with limited capacity to support a family's living are sometimes criticised for getting too many children. By referring to the importance of education and the need to 'move forward', poor men with several wives and many children are denoted as 'old fashioned'. Electric light and its very visible nature and symbolic power, contributes to producing a new set of criteria for village differentiation which partly challenges former hierarchies (elaborated in Winther 2005).

The discourse about electricity and a man's number of wives is also linked with another, generally acknowledged ideal. In material terms, a husband should treat his wives equally. In practice, many men have one house with electricity and another without, but this is not considered to be a good solution in the long run. Jealousy among co-wives is a phenomenon often spoken of – and vividly dramatised in Swahili dramas on the television. Until recently, the electricity company accepted private connections between houses if it was due to a man having several houses and wives. Today however, such arrangements are not accepted. Due to safety reasons, the regulations (written as well as practiced) say that each house should be registered and have a separate main switch, fuse and electric meter. Elec-

20. Although the man was aware that I was interested in electricity, which could have affected his bringing up of the topic, we knew each other well enough for other things to be just as relevant issues in our conversations.

tricity's high installation cost thus constitutes a barrier which may, firstly, delay a man's entry into marriage, and secondly, reduce the likelihood of marrying more than one woman.

Electricity was introduced in Uroa as a common project (if not in practice, then as an idea although the level of tension was high at that time). By this, they declared their difference vis-à-vis other villages, by resembling more a town and gaining prestige. But internally, the joint character of the process meant that individuals who obtained connection were not particularly exposed to social sanctions. Electricity became normal in an early phase. Mika Pantar has treated the symbolic trajectories of commodities towards their normalisation (1997, found in Shove 2003:50). One may say that the meaning of 'household connection' in Uroa at the same time went through the three steps of the normalisation process identified by Pantar: i) It was an object of desire; ii) its acquisition was legitimised in rational and functional terms; and iii) the object became so ordinary (and in our case, so quickly) that its acquisition needs no justification. As discussed, people today may even be criticised for not providing a connection to their house.

The status or meaning of television sets has followed a similar path, but in a way that makes each step observable (and I would add that in the village at large, each step continues to have relevance). In 2004, Khamis considered acquisitions of television sets to be unproblematic, thus not in need of justification (i.e. step 3). The device has become 'an everyday thing' (*kitu cha kawaida*). Three years earlier, however, the acquisition and display of the same object had constituted a threat to him. Clearly, the television set had been an object of desire at that time (i.e. step 1). The acquisition (and presumably part of his motivations for doing so) also served to mark Khamis' levelled position vis-à-vis his friends and social observers. Pantar's model notably emphasises 'difference' when explaining how novelties become normal. The drive for "reevaluation of difference" is what leads to innovation (Shove 2003:49). Elisabeth Shove, who has worked in Western contexts, here notes that people's acquisitions of objects of desire might be socially dangerous (ibid.: 50). This is clearly the case in rural Zanzibar, and strongly articulated. Frugality reigns and people must carefully balance their wish to be different and make changes in everyday life with the importance of showing modesty.<sup>21</sup> The same tension was brought up in rural Zanzibar in the 1980s when some individuals started purchasing and covering their houses with corrugated iron roofs (today the most common type of roof) instead of palm leaves. The sanctions are said to have been the same as those just described for television sets around 2000. Perhaps the introduction of mobile phones in Uroa around 2004-5 triggered similar cautions and reactions. Such objects were the latest incoming new goods, and kept by about 20 people at that time. Certainly, there will be new objects coming to the village in the years to come, which will go from being dangerous objects of desire, to becoming justifiable in functional terms to finally reaching the status of being normal, everyday things.

Dangerous acquisitions in Zanzibar are revealing in their ways of exposing what is considered appropriate behaviour. In

21. Through speech and exchange of gifts and services, people otherwise stress the importance of demonstrating an equal standing with their friends. Modesty is a deeply embedded cultural value in rural Zanzibar.

general, the particular socio-cultural dynamics will influence the form and the extent to which sanctions are perceived to be produced (if at all). In Zanzibar, the risk, or perceived danger, is high. Through the use of magic and calls for evil powers to intervene, 'bad people' (*watu wabaya*) may do devastating harm. Spirits may also be evil (or good) by nature and act on their own initiative. But socially, dangerous acquisitions are markers of difference and therefore morally ambiguous. One may say that there is a high degree of social negotiations going on when new objects are introduced and appropriated in rural Zanzibar. Also noteworthy, it is not the purchasing itself that puts the owner in danger in such cases. Objects in Zanzibar are not endowed with inherent and possibly evil qualities as those Birgit Meyer describes from Ghana (2002).<sup>22</sup> In rural Zanzibar, the significant moment appears when the object is displayed in the village to become appropriated (rejected or approved) by various people in the social environment. I stress that the judgements of appropriateness are made by individuals situated in particular relationships. The strongest reactions are likely to be triggered among one's equals, that is, one's own kin.

### Barriers to female ownership to electrical appliances

A short description of the principles related to ownership to things and household finances provide a reference for discussing electricity and gender in our case. Women seldom own houses, they move to the husband's place when getting married, and, correspondingly, they leave the house in case of a divorce. Divorces are frequent in rural Zanzibar.<sup>23</sup> According to Islamic law divorces are much more easily obtained by men than by women. Thus on the one hand, the risk of divorce affects a woman's choices as to what she invests in. On the other hand, and apparently encouraging individual priorities as to what to buy, Islamic law prescribes that each person has singular ownership to his or her possessions. What a person has earned or otherwise obtained is, in principle, his or hers.

Nevertheless, electrical appliances are uniquely purchased and owned by men (apart from radios, which are sometimes kept also by women). This is interesting in view of women's increasing income, the verbalised individual emphasis as to the

22. Many of the objects that trigger desire and anxiety, such as TV sets, freezers and sewing machines, are elements within the development discourse. Moreover, these objects have been imported to Zanzibar. This could indicate that perceptions of "globalisation" have relevance in our context. In Ghanaian pentecostalist discourse, imported goods are particularly dangerous due to their origin in the West (Meyer 2002). According to Meyer, this discourse "problematizes the alienation which consumers experience vis-à-vis foreign commodities" (ibid.: 768, original emphasis). She speaks of "alienation" as people's feelings of inability to control the processes by which objects are produced, marketed and consumed rather than being simply a result of people's limited insight in such processes, as Appadurai (1996) makes use of the notion. Appadurai holds that a double set of illusions are at work in the present transnational context. "Production fetishism" involves the masking of where and how objects have actually been produced. This generates alienation, in Marx's sense as a social distance, but also spatially. On the other hand, according to Appadurai, is the "fetichism of the consumer" who is falsely taken to be the seat of agency (1996:41-2). For rural Zanzibar, I think one should not exaggerate the implications of where objects originally come from. In contrast to the way they enter caves, stones and forests; spirits in rural Zanzibar do not possess commodities. Neither is there a general discourse of the need to appropriate foreign appliances with modesty. Islamic leaders voice their critique of Western styles in relation to proper conduct, and they find certain TV programmes to be sources of negative influence. However, they are overrepresented as owners of electrical appliances and give no general warning against acquiring such objects.

23. Based on data collected in one whole ward of Uroa (60 households), I would estimate that 30 % of marriages ends with divorce. Many remarry several times.

spouses finances, and the fact that women to the same extent as men express their desire to obtain a range of appliances. As in many contexts elsewhere, wealth is gendered in rural Zanzibar (Weiner 1976, Johnson 1998). Through descent and ownership, men are linked with houses. The maleness of the house has consequences as to how electricity is conceptualised and organised. Men handle the installation of electricity. They are also primarily the ones who engage in the customer relationship with the utility. In addition, electrical appliances consume current; that is, they represent a cost (to the male customer) each time they are used. Here, the script and lock in of the technology as represented with its male connotations in Zanzibar, produce barriers for women when it comes to making decisions about what to buy. Furthermore, I have argued elsewhere that the wedding institution and corresponding gifts a woman receives for her first wedding (that is, never electrical appliances) are also central for understanding why women do not buy or possess electrical appliances (Winther 2005). There is also another factor that might be relevant, which relates to whether the norm of individual ownership of objects also applies in practice. The following glimpses of conversations will illustrate that certain grey zones exist, and that uncertainty itself may keep women from investing in appliances.

A new, integrated cupboard had been installed in Hija and Zawadi's home. When being asked who it belonged to, Zawadi said "It's his. It doesn't leave." (*Ya yeye. Haitoki.*) Women leave the house in the event of a divorce. Physically integrated objects stay. However, not only fixed objects may remain. One of my male friends elaborated in English: "If there is a divorce, big things must stay in the house." He gave the (hypothetical) example of a large, electrical stove. According to this view, it becomes less relevant who first provided and owned the item. Its physical shape influences the degree to which it will stay.<sup>24</sup>

Furthermore, over time, objects may be regarded as a part of the house and thereby become irremovable. Most people contest such ideas and say that a woman has the right to bring with her every item she has acquired. However, many would add with regret that this is not always the case. If there is a conflict and the man is angry, he might just 'throw her outside' (*anamtupa nje*). Implicitly, she is forced to leave her 'big things' behind under such circumstances. The inherent uncertainty in what a woman can take with her - probably a locus of conflict in real cases - could also be relevant to the discussion of why they do not become owners of big, electrical appliances.

Indirectly, however, women contribute substantially to the purchasing of such devices. I have shown (Winther 2005) that women's new income from seaweed farming, which coincided with the arrival of electricity, constitutes at least one third in monetary value of what men make in total from selling fish at the market, the most important source of income in the village. To an increasing extent, women use their income to support their families in everyday life, which is otherwise considered to be a man's duty. Studies of what family members

spend money on give evidence to the fact that both husband and wife (wives) contribute with cash to provide for the household (food, clothes, medicine, children's education and so on). Thus, whereas men increasingly tend to tie up their resources in long lasting items (houses and appliances) women have come to support the family's everyday expenses to a greater extent than before. This is also normally the case in the household of Khamis and his wife.<sup>25</sup> Women's contributions here tend to be muted, though. To the observer, it appears that both women and men like to preserve the idea of a good life where men are the sole providers of their families.

When it comes to the way appliances are used, the male biased ownership has some, but only marginal implications. Women spend more time at home than men, and they frequently and with ease administer the use of freezers, light switches, remote controls and the like. When appliances are put in use, it is rather the boundary between the household and the outside world that appears most relevant, and not the internal relations within the family. All members residing in a house are associated with the objects it contains and the services they produce. With the introduction of new objects, the household as such gain prestige. However, in the same way as the danger of new acquisitions is linked with people's wider social network, the realm of consumption is no less socially conditioned. The wider kin-group and ordinary neighbours have their share when it comes to the services electricity provides. I shall describe selected types of practices, that is, how electric light, television, freezer and cookers are put to work.

## Appliances in use

Some of electricity's uses represent a substitution of former technologies which used to serve similar purposes. Electric light substitutes the kerosene lamp. Radios and tape recorders are run by electricity instead of batteries. These shifts may be pragmatically and economically motivated. Switches and bulbs are considered easier to use than having to walk to the closest shop to purchase kerosene, return home and fill up the little container made of recycled material from oil cans. Price-wise, as mentioned, the provision of electricity (installation and consumption) for these two purposes is cheaper in the long run than the alternative. Batteries are very expensive and oil and kerosene prices have risen considerably in recent years. In addition, there is a material and qualitative shift implied, beyond the ideal shift electricity represents towards living modern lives and moving forward.

The sound from radios does not change with an electric cable, but due to the reduced energy cost, radios and tape recorders are used much more extensively than before. In Uroa, radios are turned on all day long and help people in keeping track of time (watches are not common). Electric light, however, and fluorescent light in particular, is valued for its brightness which brings about a good atmosphere (*mazingira*), as Uroans put it. The character of a room becomes completely transformed with electric light. It eradicates shadows and corners of darkness, makes the place purer, more transparent and allows for a range of activities at night time which were not possible before elec-

24. The use of 'big things' (*vitu vikubwa*) and 'small things' (*vitu vidogo*) is sometimes expressed as the opposition 'heavy' (*-zito*) and 'light' (*-epesi*). The notions' meanings are very context dependent. Generally, what is 'big' is connected to size and weight, such as a bed. Freezers, fridges, cookers, TV sets (and everything fixed) tend to be classified as 'big'. 'Small' appliances are: irons, blenders, radios, table fans. In practice, though, all these items are owned by men, apart from radios, which women in some cases also obtained before electricity's arrival.

25. At the time of field work (2000-01) his wife had reduced capacity for work due to an illness.



tricity's arrival. In combination with the use of television sets, I have earlier shown (Winther 2005) how living rooms shifted from being of a same-sex character to becoming a mixed setting in the evening. The new enlightened place now hosts women and men in a way that would be 'impossible' without these specific appliances; the television as the focus of attention, and the bright light rendering the room transparent and proper.

In Khamis and his wife's home, 8-12 neighbours and members of the extended family gathered daily. Men were positioned in the back of the room, and women and children were seated in the front. In sum, the living room appeared as a sort of microcosm of a gender segregated society. Before, men tended to be with their friends outdoors in the evening. With television and electric light, the man 'came home' in Uroa, but not alone. The crowd accompanying him (men and women) would share in the consumption of television programmes with the two hosts. The guests also constituted an audience for the couple who provided the new source for education and entertainment. The spouses sat side by side in the back of the room, positioned so that they could keep an eye at the front door at the same time as watching television. In contrast to the guests, the hostess loudly commented events and objects on the screen, and clearly enjoyed her particular position in this setting. Together, wife and husband displayed their capacity to act and live like a modern couple. To include the wider network in this kind of practice formed the reference with which cultural values of solidarity and equality resonated.

The same kind of sharing was observed in the way freezers were used in the village. These are mainly used for cooling water and sweet ice (not fish, as people had tended to say in 1991 when asked what appliance they would get and for which purposes). Relatives frequently come to put their things in one's freezer, particularly during Ramadhan. Breaking the fast with something cold or having it later at night during this month of celebration is highly appreciated. Thus, in contrast to the individualised form of ownership to appliances, in use, these objects serve to strengthen family ties and other sorts of social relations. Consumption is deeply social. One could associate this kind of practice with the second step in Pantar's normalisation model referred to above: The justification for acquiring a television set is here made through acts of shared consumption. The shared experience produces legitimacy for why the acquisition was a reasonable thing to do. In a way, Khamis can, by offering view time, be seen to pay back the price of having challenged his equals when he first purchased the appliance. He feels obliged, for instance, to remain awake and entertaining until all the guests have decided to go home, which is sometimes close to midnight. This being said, Zanzibaris highly enjoy being together. Socialising is a deeply embedded part of what it means to relax and live a good life. It is every reason to expect that Khamis had the family's greater network in mind as a future audience when he purchased the appliance. Living rooms in rural Zanzibar were physically becoming enlarged at the time of fieldwork, precisely because of owners' wish (or need) to host large crowds in the evening. The 10 % households in Uroa who kept a television set in 2001 provided view-time to ca 80 % of adults who used to watch television at least once a week. In addition comes all the children. The new practice of



Picture 1 Homes with television sets in rural Zanzibar become the evening gathering point in the neighbourhood

watching television produced shifts in the physical and social configuration of houses.

To end this quick dive into changed patterns in energy consumption in rural Zanzibar, I shall bring up a kind of practice where changes might seem unlikely to occur. That is the realm of cooking. Again, I wish to look beyond purely economical explanations, though important, and fill in the picture a little further. In line with the way rural Zanzibaris keep their food at a distance from freezers, they continue to cook with firewood on the three-stone stove.<sup>26</sup> This contrasts what people would tell me in 1991. At that time, electric stoves were said to be among both men and women's highest priorities. However, in 2001, only two electric cookers were kept in Uroan homes and they were not regularly in use. To be able to observe food being prepared with the use of electricity (coil type; a sort of plate, but with open access to the heating element, which constitutes a risk if water enters), I agreed with one of the women that I could come for a period and observe her cook (while paying their electricity bill in the same period). It turned out that she had engaged her younger sister to come and demonstrate the appliance for me, being too afraid to use it herself. Many precautions had to be made; wearing gloves and rubber sandals, using wooden spoons, putting the item on a table inside the house instead of working on the earth floor in the semi-open kitchen, and keeping children away due to the hazard associated with the appliance. It was not possible to use the clay pot, which has a bowl-shaped bottom surface, so the aluminium dish (*dishi*) was the only alternative. This in turn limited the types of dishes that could be made. Moreover, rice cooked in coconut milk and *pilau* (pilaff, Zanzibar's national dish) need heating from above and beneath, which is impossible with the coil and plate type of stove. Finally, *ugari* (maize porridge) needs heavy beating, which is difficult to practice on an unstable stove which in addition is dangerous to hold on to even with the use of a cloth. The most likely type of dish that could be made with electricity, apart from heating water for tea, was the soup that often accompanies rice in a Zanzibari meal. After 5 days, however, the electric outlet was said not to be working any more and our little experiment had to cease.

26. In average, each household (women) in 2001 spent 12 hours per week collecting dry firewood for cooking purposes.

As also elaborated by women with whom I interviewed on the matter, the (hypothetic) change from firewood to an electric cooker would involve a range of barriers in terms of cooking utensils and technologies. Of course, these discussions were marked by the types of stoves people had in mind, which in rural Zanzibar were primarily the coil or plate type, and not an oven, which would be far too expensive both to purchase and in use. Also important, there was a clear difference in the way men and women spoke about the taste of food, respectively. Men tended to emphasise the extraordinariness of Zanzibari food and the superior taste firewood provides to any kind of dish. The cooks, on their side, were of a more mixed opinion, but tended to highlight the time one might save on using electricity. This, they related both to the reduced amount of trips to the bush (collecting firewood) and the time it takes to actually cook. A majority of women expressed in interviews that they “would like to try to cook with electricity”. In in-depth conversations this trend in opinion was strengthened. To women, in contrast to men, taste was not the central topic. Instead they would stress a range of pragmatic concerns, and show a positive attitude towards these items, while also expressing their opinion that electric cooking is more dangerous than cooking by the hearth.

Where does this lead us? Is the conclusion simply descriptive in that Zanzibaris have rapidly included television programmes in their everyday life but rejected to modify their cooking practices? What are the distinct dynamics at play and is the realm of food stuff not likely to change? Despite their positive evaluations of such items, the cooks appear to meet a range of barriers to modifications in the way they prepare food. The male ownership to houses and appliance, and electricity's organisation appear to support such a hypothesis. Electric cooking is costly and paid by men, in comparison with firewood which is available for ‘free’. The ‘lock in’ of existing cooking technologies also appears as a conservative force. Yet, women in electrified villages have already changed their cooking habits in a striking way. They have reduced the number of meals cooked per day from three to two. Their argument for doing so is to save time so that they can earn more money during daytime and relax (in a new way) at night. For the day's third (and sometimes, fourth) meal, they serve leftovers.

Thus cooking practices are already changing in some respects, as they probably always have (for example, women today increasingly use the aluminium pot instead of the clay pot because the latter tends to break more easily). The perspective adopted for grasping these changes is that transformations tend to involve negotiations between parties with different interests and concerns. Such processes take place when large infrastructures are introduced – and at the micro level in each household on a daily basis. When I re-visited Uroa in 2004, twelve women (mainly teachers) had in fact taken up loans and purchased an electric stove of the one or two-plate type. One of the women said she has agreed to share the electricity bill with her husband and she keeps a close eye to the way consumption increases when the device is in use. A concern for saving time was again the argument for why women wished to change, and changed, some of their cooking practices.

There is a potential for change in every kind of practice. I will nevertheless argue that some practices are more likely to be

changed than other. In Zanzibar, the hearth is linked with the idea of a complete household, where the central position of the housewife sitting by the fire is vital. Food and cooking procedures are closely connected to perceptions of Zanzibari identity and a symbol of fertility of the group as such. Food is also said to affect one's health. Some men hold that particular types of heavy (*-zito*) foods prepared in particular ways (firewood from particular trees) are important for maintaining bodily strength (*nguvu*) and resisting penetration of evilness (*vitu vibaya*). In sum, a range of factors may explain the way men in particular judge the taste of food cooked with firewood to be the better. People's choice not to keep food in the freezer appears to be linked to similar factors. For instance, cooked rice that has been frozen is said to become ‘waterish’ (*maji-maji*) and thus of inferior taste. More in-depth accounts elaborate on this by describing how unfortunate it would be if food stuff became too cold (*baridi*). Such accounts resemble descriptions of the importance of balancing the human body temperature. The concept of taste is fascinating in the way it encapsulates a range of conceptualisations, positions and preferences. When comparing the use of cookers and freezers in rural Zanzibar, the latter appliances are notably already widely in use. In theory, women have access to storing cooked food in freezers, which in other contexts is extensively practiced. I think one again must look to the scripts of objects to find parts of the explanations. There are few opportunities to reheat rice by using a cooking plate, without burning the food. Other explanations are no less relevant. Food and electricity are kept separately in rural Zanzibar.

Nevertheless, just as changes clearly happen in the way people get together at night time, where some people have the resources and courage to play with modern identities, there are signs of similar dynamics in the realm of food. The availability of new technologies produces a new field of possibilities. The shaping of the content and form of this field is partly determined by the material objects and the way these are linked in chains, but also by the ideologies incorporated through existing practices, cultural values, social relations and agencies of the people at work.

## Conclusion

This article has sought to account for the driving forces behind the increasing use of electricity in rural Zanzibar at present. The construction of the electricity network is the primary condition, but this does not explain the fact that 20 % of domestic homes have become connected during the last 20 years. From an economic point of view, the price of electricity as compared to energy sources it may substitute is important when explaining the increasing demand. But other factors have also been noted and the ideological and social aspects have been highlighted. There are external influences such as governmental institutions, the Zanzibari development discourse and Islam which voice the benefits of modern, proper living, the importance of education and electricity's role within this scheme. Likewise, commercial forces encourage people to change their energy use into a way that resembles life in town, that is, more appliances, more furniture and more mobile phones. All these kinds of institutions effectively reach people in the villages through television and radio broadcasting. Thus, in a way one could say that electricity becomes a means for marketing its own services. Furthermore,

the contributions of the internal, social dynamics towards more consumption and new objects have been treated. In particular, people's wish to signal difference and social standing was pointed to, but notably also the risks involved in such an enterprise. Zanzibaris continuously balance between the desire for new objects (as far as they can afford them) and the cultural value of showing modesty. By scrutinising the way the meaning of television sets changed from 2001 to 2004 in one man's circles, we came closer to understanding some of the general dynamics embedded in normalisation processes; moving from objects of desire to functional legitimacy to ordinary item and no justification needed. We also observed the ways sanctions against inappropriate behaviour are perceived and expressed in this region. The choice to follow electricity and its associated services from supply to organisation to acquisition and, finally, its meaningful use, is a way to underscore that energy use and demand cannot be understood by reference to price and access alone. People are socially positioned and the gender perspective proved to be particularly important for understanding energy use in Zanzibar at present. This is so because men and women are unequally positioned in the technological chain in question, and they have different concerns and expectations.

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