



ENERGY JUSTICE

HOUSING

RESETTLEMENT AND REHABILITATION

SANITATION

VISUAL REPORT





ENERGY JUSTICE FOR THE URBAN POOR

Around the globe more than 1.3 billion people have no access to electricity, and even 2.7 billion people still have to rely on wood, animal dung or kerosene for cooking and heating. Energy poverty is often considered as a rural problem but globally around 220 million people are living in cities without access to electricity in spite of the fact that the grid is so close. India is the fourth-largest producer and consumer of electricity in the world. However, still around 304 million Indians have no access to electricity in India from which 18.24 million live in urban area.

Often formal institutions don't provide electricity to the urban poor because they live in informality. One has also to keep in mind that a grid-connection does not automatically mean a secured access to electricity: in 66% of the developing world's cities, power outages are a daily problem. Furthermore 433 million urban dwellers are dependent on polluting fuels like wood, dung or kerosene which constitute major health threats to them .

Focussing only on the number of people without access to modern energy service also misses out the fact that energy poverty goes beyond that. Households that spend more than 10% of their income on energy services are considered as energy-income poor. Often both problems are connected, especially the poorest spend a considerable share of their income for energy services and are still forced to cook with wood, dung or kerosene and suffer from electricity blackouts of more than 4 hours every day.

The energy justice story is also an embedded part of the climate change challenge that nation, states and the global community face. The poor who contribute least to climate change are often the most vulnerable to its consequences in forms of heat waves, flooding and increased spread of water-borne diseases. Energy Justice for SPARC means that the poor have full access to modern energy services at affordable rates. In order to achieve this electricity tariffs, energy subsidies and government programs have to be much more conceptualized in a pro-poor way.



THE INDIAN ALLIANCE

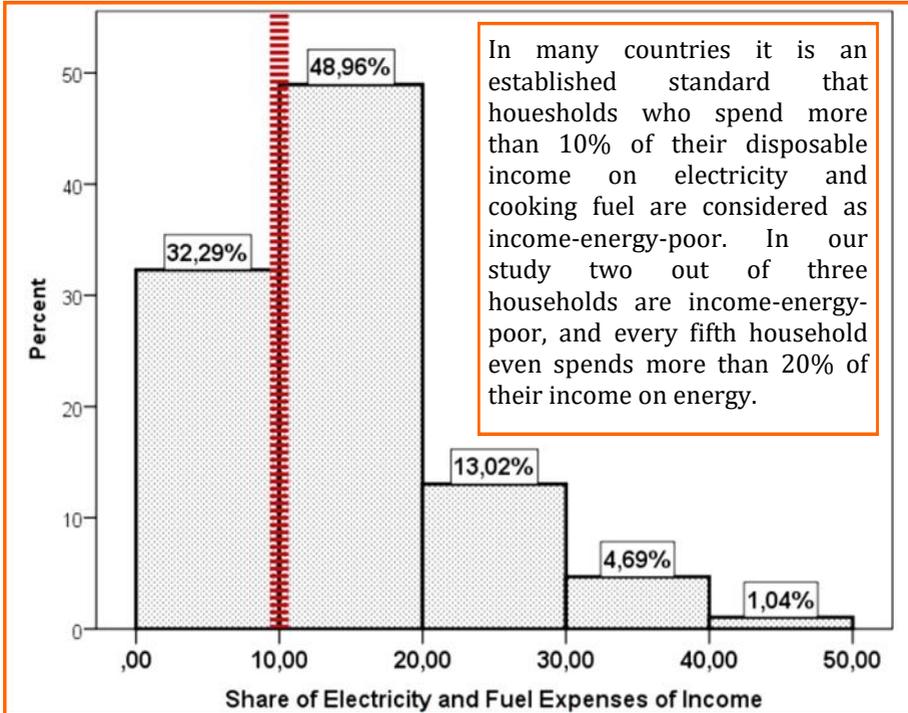
SPARC supports the mobilization and organization of communities of the urban poor in India and through its membership in Slum Dwellers International (SDI), seeks these possibilities throughout the developing world. The Alliance of SPARC, an NGO based in Mumbai and its partners NSDF and MM (organised communities of the urban poor based in cities around India) empower the urban poor to gain access to the resources they need to obtain secure tenure and basic services as well as upgrade and formalize their settlements. Through exploring solutions that communities can drive in sanitation, housing and such areas, the alliance has negotiated with many cities and various government institutions for provision of sanitation and housing for the urban poor.

One of our most urgent challenges is to explore how energy access to households of the poor can be measured and its impact on the lives of the poor understood by the communities themselves. The alliance has a history of building capacity among the urban poor communities to undertake surveys and analyse the results with a view to understand the challenges. Based on this they begin to examine how to seek change in their own practices as well as seek a response from the state and market. As a first step the alliance is exploring within its own constituency how to create knowledge and reflections about energy access and energy justice in order to examine how to place this in the larger debate of energy justice for all.

Between 2014 and 2015 we conducted a household survey in order to get a clearer and fact based picture on the energy consumption patterns, issues related to access of energy, needs and demands, as well as challenges of the urban poor. The survey has covered more than 240 households in Mumbai, Bangalore and five medium sized cities in India (Nashik, Ahmednagar, Jalgaon, Thane and Raipur). This is a visual report of the survey results which are discussed in greater detail in the main report: Energy Justice and the Urban Poor—A household survey 2014—2015.



ENERGY POVERTY

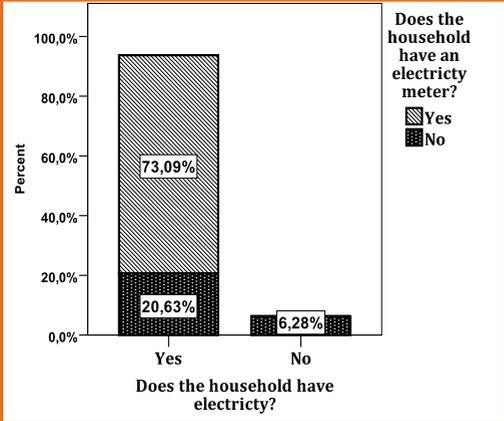


Income-energy-poverty is more prevalent in medium sized cities. One explanation is that energy prices are the same, but the income in Mumbai is nearly double as high as in medium-sized cities.

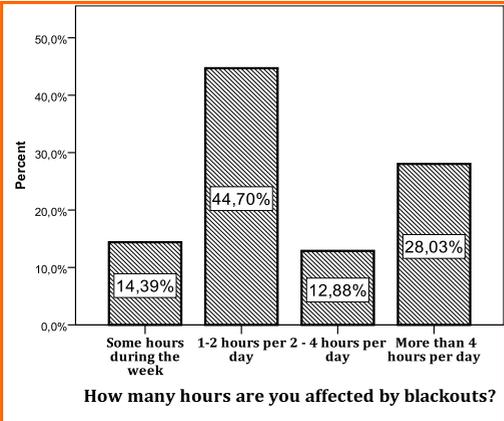
	Mumbai	Bangalore	Medium Cities
Extreme Energy Poor (more than 20% of income)	18,87%	16,67%	21,21%
Energy Poor (more than 10% of income)	35,85%	42,86%	57,58%
Not Energy Poor	45,28%	40,48%	21,21%



ELECTRICITY



Left: Most slum-dwellers in India have access to electricity. Only **6,28%** of the households we have interviewed were not connected to the grid. Mainly pavement dwellers and „labour camps“ were affected, (settlements of daily labourers usually close to construction sites). However, around **20%** have unmetered and therefore illegal connections.

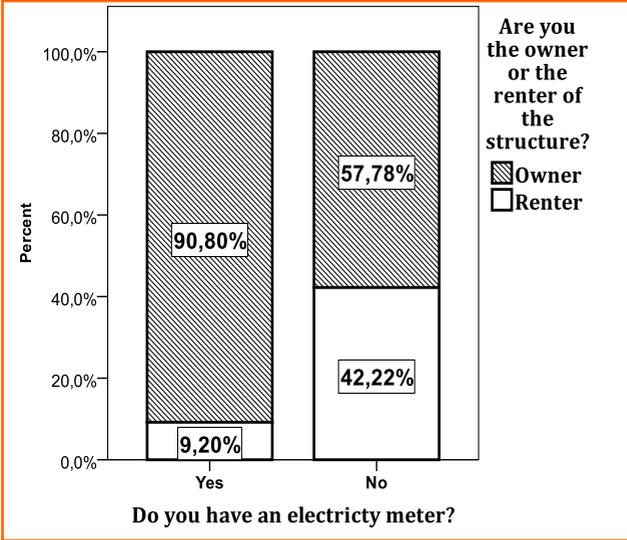


Left: More than 80% of the slum dwellers face daily blackouts, and around 28% even more than 4 hours every day which is especially problematic during the hot months of the year.

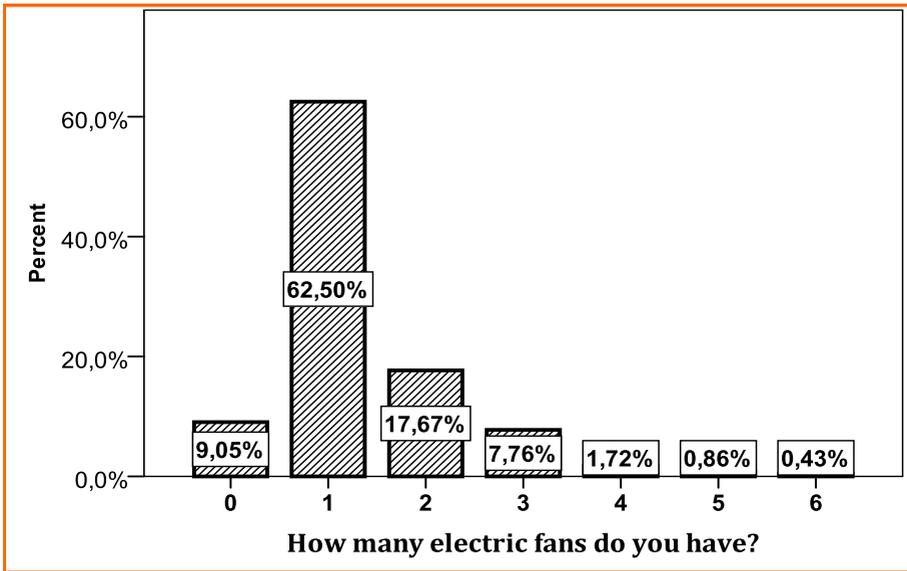
Below: A settlement of daily labourers („labour camp“) without electricity or water connection in Bangalore. Most people live here since 20 years.



ELECTRICITY



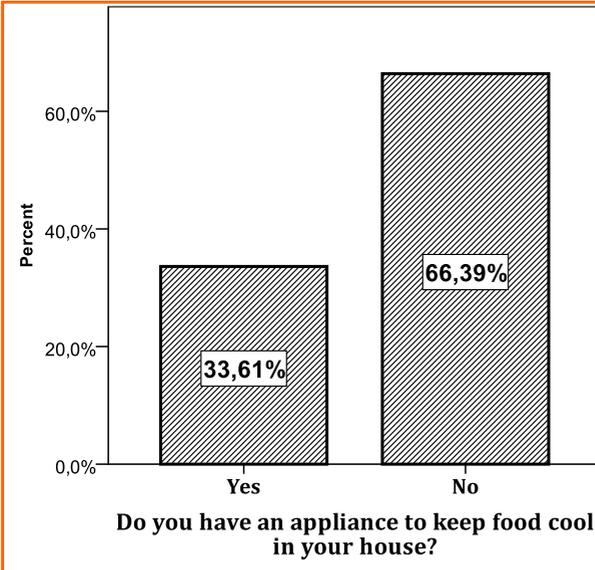
Left: Around 20% of the slum dwellers have illegal connections. The share of renters among them is significantly higher. It is difficult for them to obtain legal connections because they often lack the necessary formal documents.



Above: Most slum households have at least one ceiling fan for cooling. They run often more than 16 hours per day, in the summer months even 24 hours. They are the major electricity consumers in the households. Only one of 240 households was using an AC for cooling.

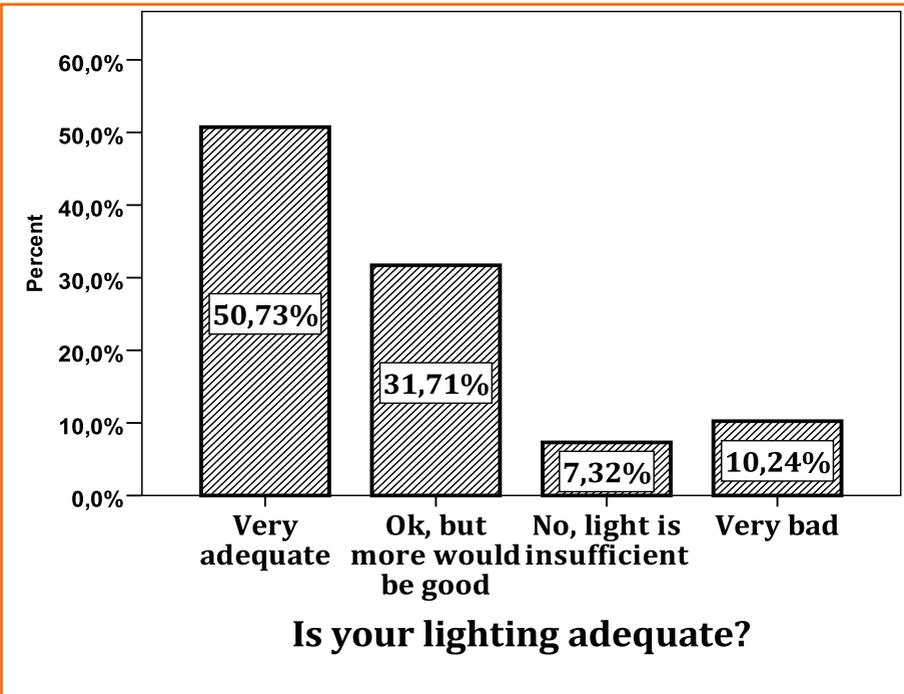


ELECTRICITY

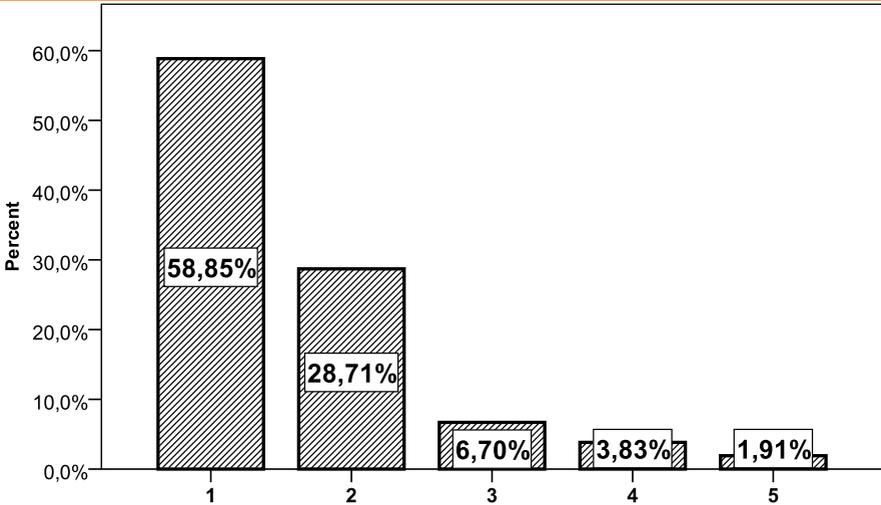


Left: About two third of the slum dwellers do not have appliances to keep their food cool, which means in a country like India that they cannot store fresh food.

Below: For 18% of the urban households the lighting is inadequate. These are mostly households without electricity or with frequent blackouts.



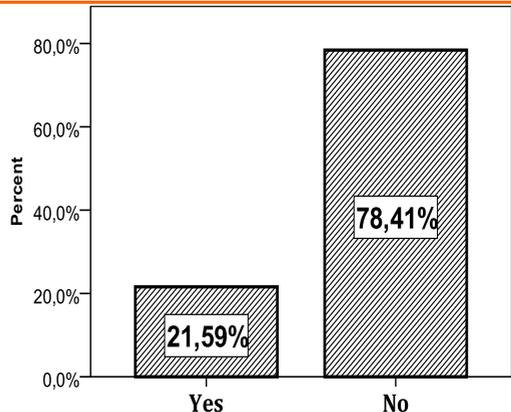
ELECTRICITY



How many mobile phones does the household have

Left: Almost 90% of the slum households have a cellphone nowadays reflecting its importance. Even the poorest, daily laborers, need cellphones to be available for potential jobs. In average every household has 1,5 cellphones. Pavement dwellers often charge their phones at closeby kiosks for 10 Rupees.

Right: Although most slum dwellers have a cellphone, only every fifth household has access to internet. Recently a new scheme (DELP) has been started where households can obtain LED-bulbs for 30% of the market price—but households need to register online for the scheme first. This means that most of the urban poor are excluded from it.



Do you have internet at your house?

ELECTRICITY



WHICH APPLIANCES DO SLUM HOUSEHOLDS HAVE IN AVERAGE?



More than 90% of slum households have at least one cellphone

75% have a TV, mainly old tube-TVs.



60% have a mixer

30% have an iron



8 % of the families have a dvd player

Only 5 % have a washing mashine



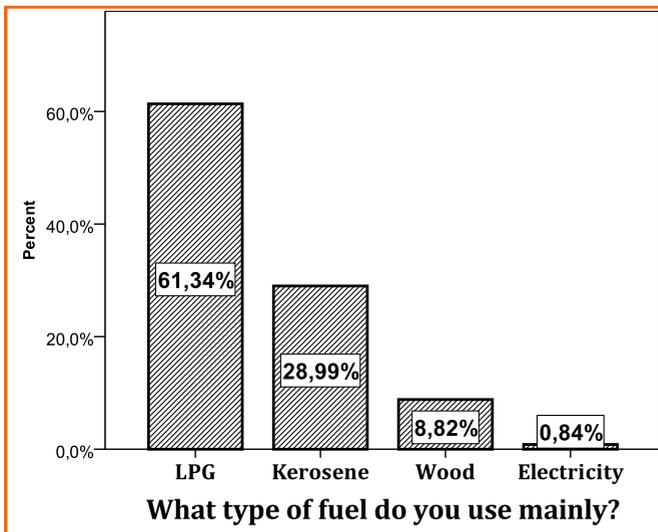
Only 5 % have a computer at home



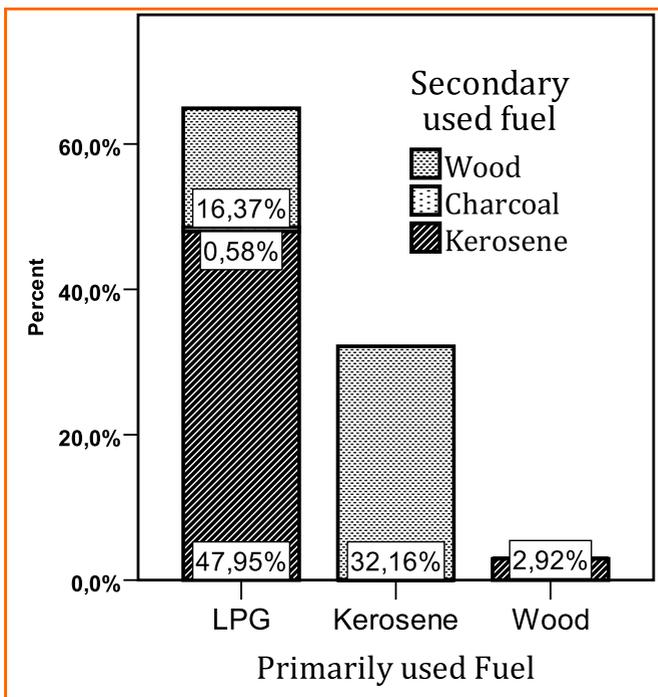
1 % have a microwave or toaster



COOKING—FUEL TYPES USED

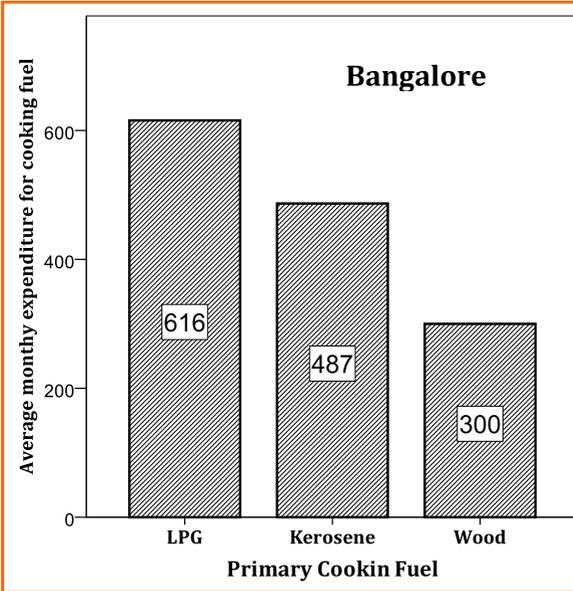


Most households in slums already use LPG as their primary cooking fuel. Poorer households use either Kerosene or Wood as primary cooking fuel, which are both health threatening.



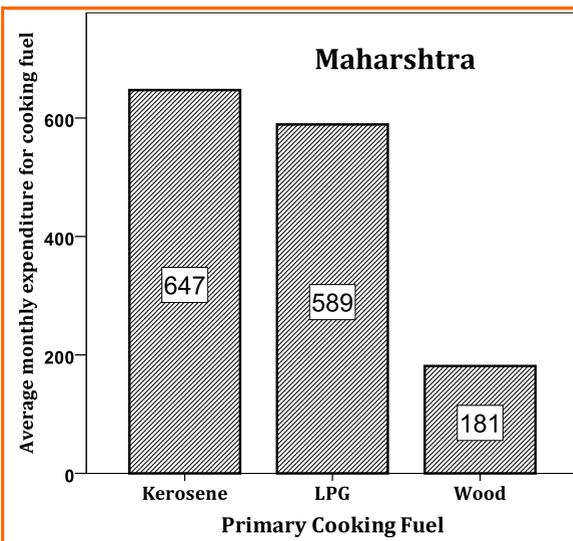
Most households use a second cooking option either as a backup for the primary fuel or to cook water and make bread with it. The pattern is that LPG users have Kerosene as a second option and Kerosene users have Wood as their second option. This reflects the „energy ladder“ from clean to polluting fuels.

COOKING—DIFFERENCES IN COSTS



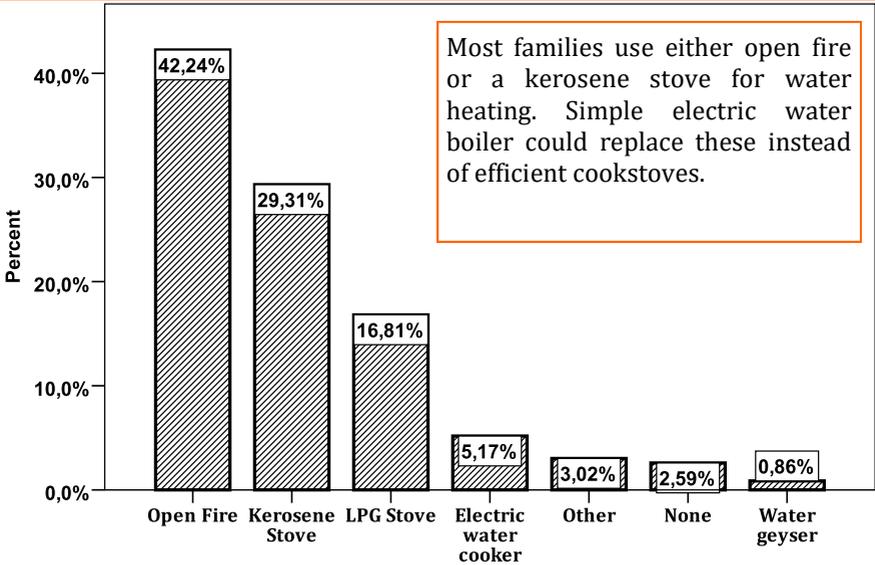
Left: In average households spend 523 Rupees for cooking fuel each month in Bangalore. The graph shows that kerosene and wood are cheaper in Bangalore and therefore the logical option for poorer households. However, the differences are not so big. Only 36% of the households use LPG and 60% use kerosene.

Households in smaller and medium sized cities are often able to collect wood whereas in larger cities like Bangalore most people have to buy the fuelwood on markets. The medium cities in the survey are all located in Maharashtra.



Left: In Maharashtra households which primarily are using kerosene as cooking fuel pay more per month in average than households which are using primarily LPG. This is because most households which rely on kerosene do not get enough at the ration shops (PDS) and have to buy additional kerosene on the black market for 4 times the prize.

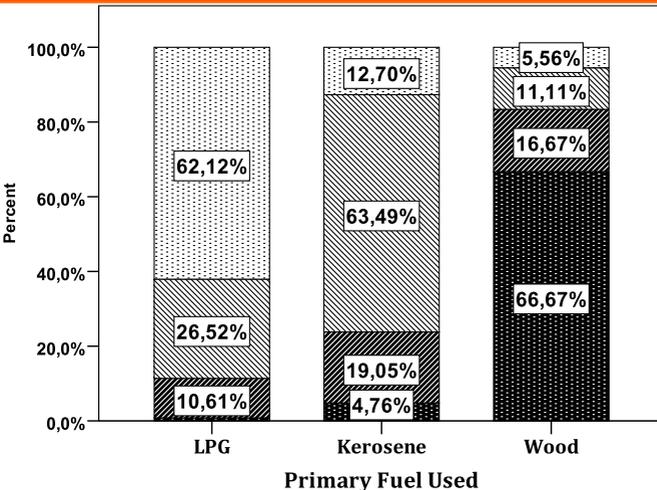
COOKING



Most families use either open fire or a kerosene stove for water heating. Simple electric water boiler could replace these instead of efficient cookstoves.

What do you use for water heating?

Below: It is no big surprise that especially households who cook primarily with wood perceive the fuel as polluting. Although aware of the problem families have no other option then to use wood since this is the cheapest cooking fuel. Kerosene is perceived as less polluting but also has negative effects on health.



Do you feel that the stoves in your household burn cleanly or are polluting?

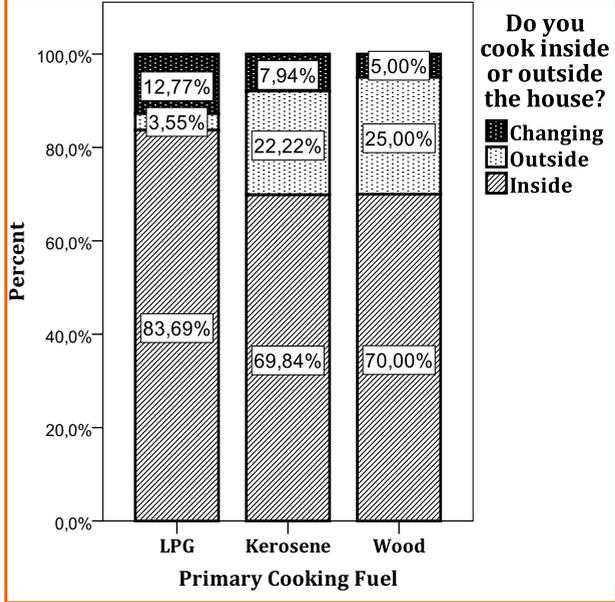
- Very Clean
- Ok, but improvable
- Rather polluting
- Very Polluting



COOKING



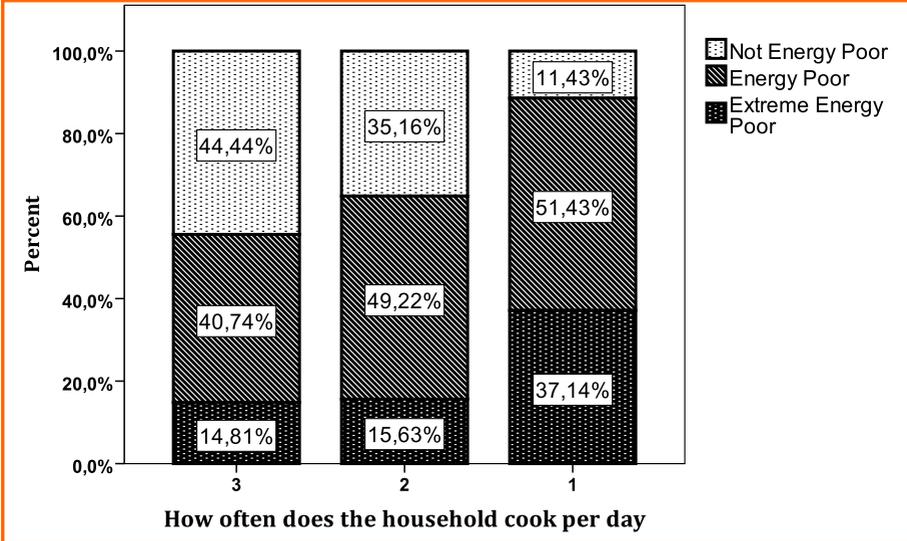
Right: Only 8-10% of the slum dwellers rely on wood as the main fuel, but from these an alarming 70% are cooking indoors. The same holds true for kerosene, though it's less health threatening. Indoor smoke pollution causes heavy respiratory diseases and is globally responsible for more than 4 million premature deaths according to the WHO.



Above: rather the exception —a man in Ahmedabad is cooking **outside** of his house while his wife is preparing the food inside. Many slum dwellers are cooking with wood inside their houses.



COOKING

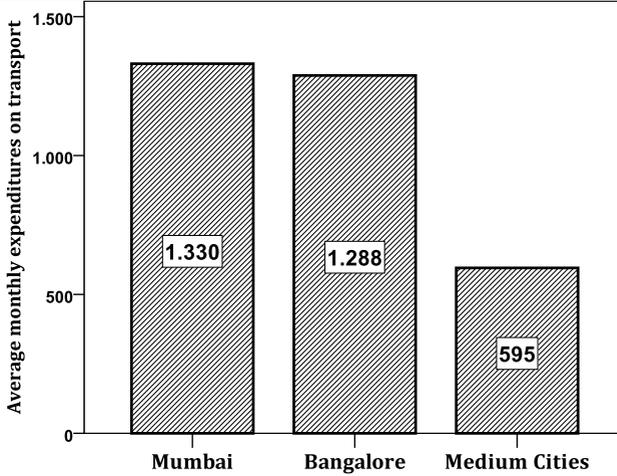


Above: The graph shows the relation between the number of meals per day that a household cooks and its expenditures on energy. Energy poor or extreme energy poor households can often only afford one meal per day. Increases in either energy prices or food prices have to be balanced within the tight budget these households are operating on.

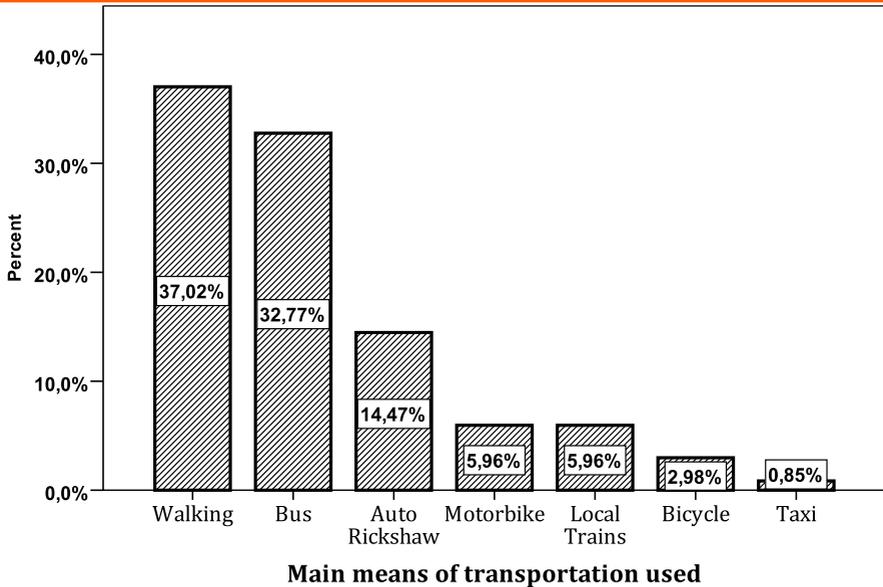
Below: Conducting the survey while one woman is cooking on a typical three-stone-stove in front of her house in the evening.



MOBILITY

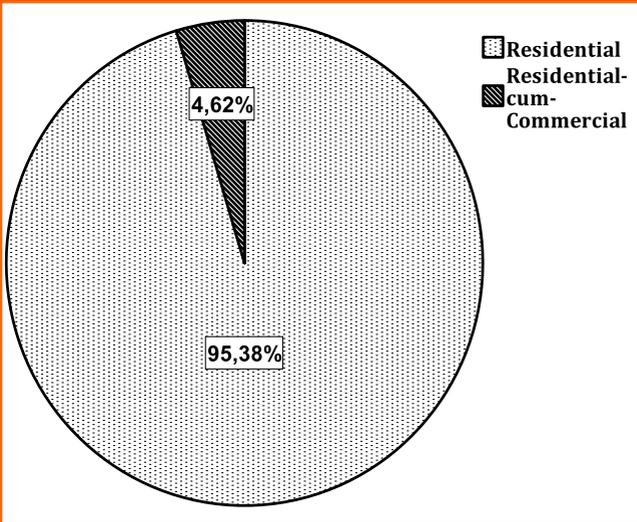


Left: Families living in larger cities like Mumbai and Bangalore spend more on mobility each month than households in medium cities—nearly double as much as on electricity (531Rs/month) or cooking fuel (544Rs/month).



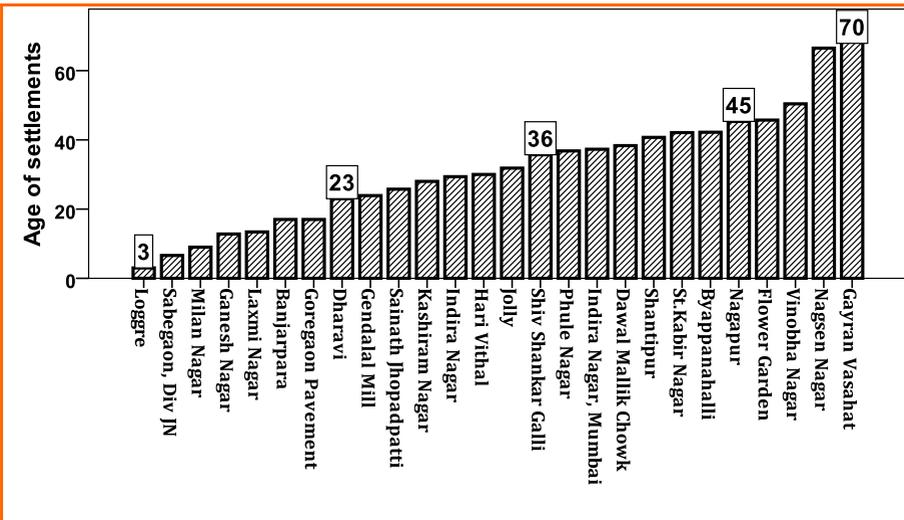
Above: Slum dwellers mainly are walking and using public transport systems in cities. „Local trains“ is ranking relatively low because it is only available in Mumbai. Only 6% of the slum dwellers use a motorbike for transportation and we did not find any car owner.

BACKGROUND INFORMATION



Left: Most of the interviewed households are not running a business at home or are manufacturing anything (95,38%).

There are only few exceptions, like Dharavi, where the portion of „Residential-cum-Commercial“ units is considerably higher. Most slum dwellers commute



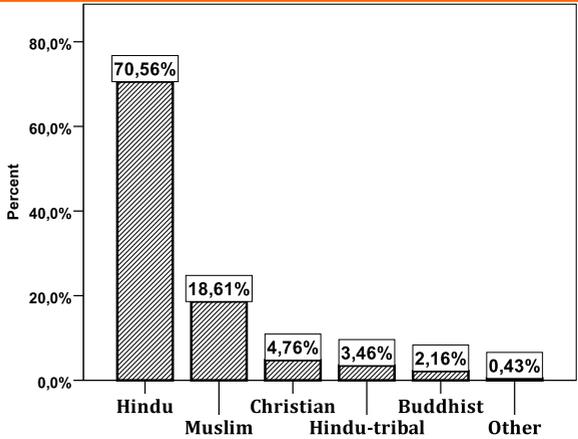
Above: The age of the settlements varies considerably. As a general rule the access to energy situation is worse in the younger slums whereas affordability is a problem in all settlements.



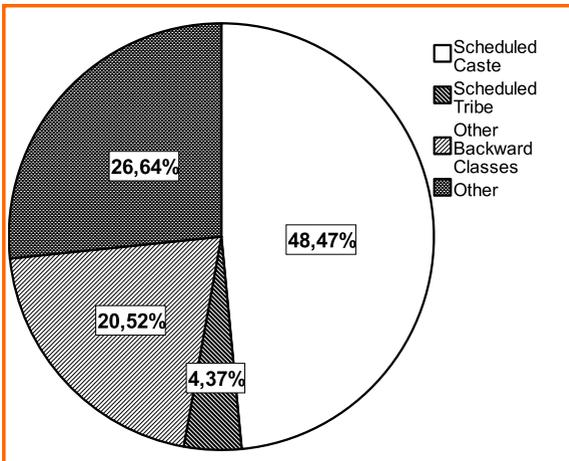
BACKGROUND INFORMATION



Right: The vast majority of the households are hindus followed by muslims with 18,61 percent. The survey represents quiet well the general religious demography of India. We did not find any major differences between the religious groups in access to electricity or income levels.



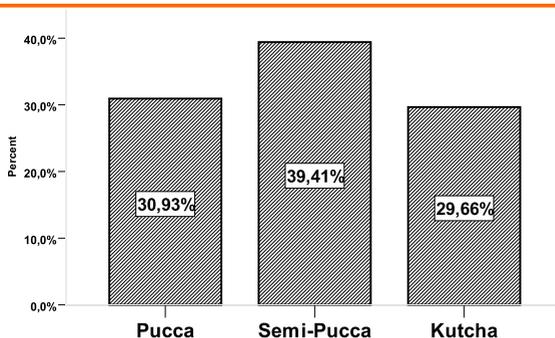
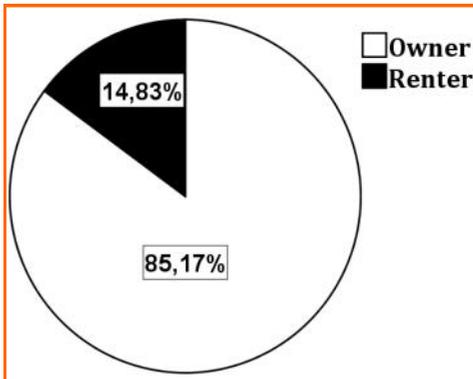
Left: One of our colleagues while conducting the household survey in a settlement in Dahisar, the north of Mumbai region. We always looked at the electricity bills of three different months.



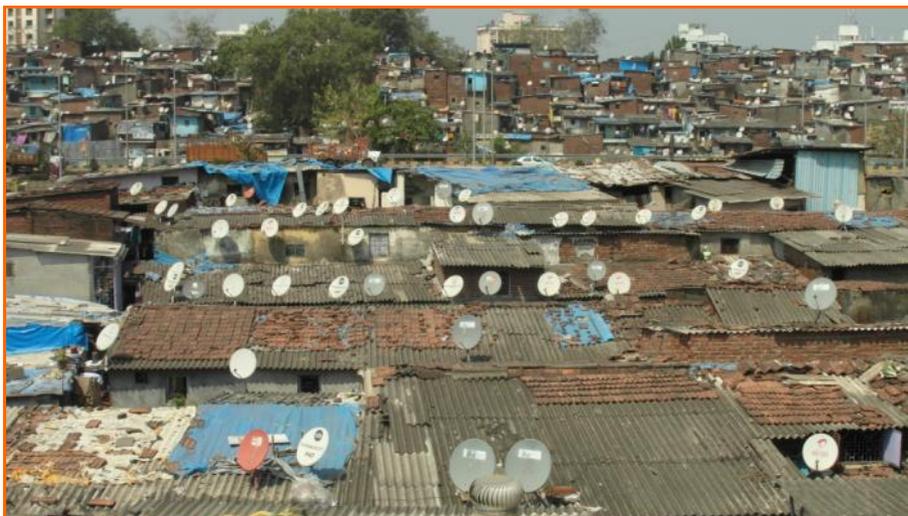
Left: More than the half of the households interviewed belong to either Scheduled Castes (SC) or Scheduled Tribes (ST). The SC and ST comprise only 19.7 percent and 8.6 percent of the general population in India, but OBC nationwide comprises 41 percent and in slums only 20,52 percent.

BACKGROUND INFORMATION

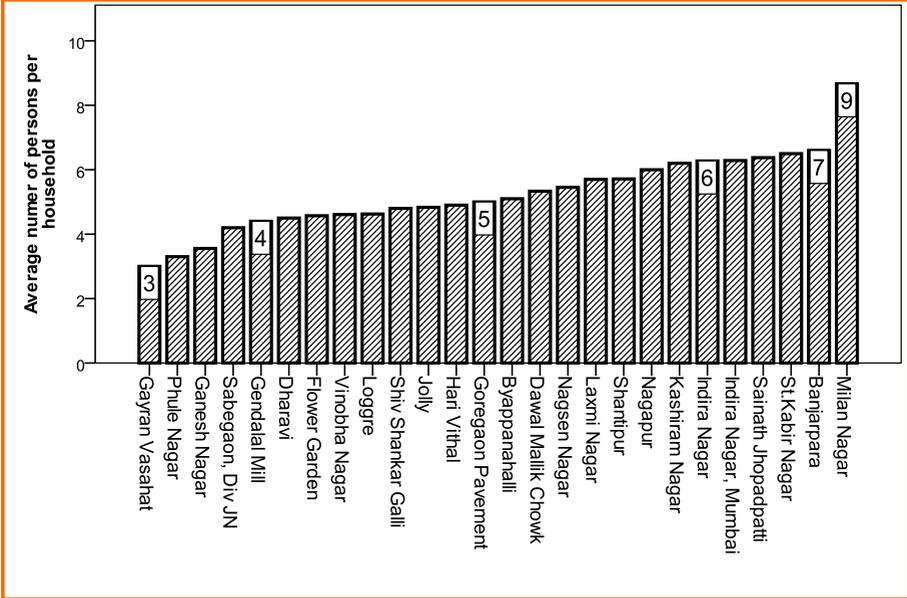
Right: Renters make out only a small proportion within the slums, but they are the ones who often have difficulties to obtain a legal connection because they can not provide the legal documents. Their only options left are then shared meters or illegal connections.



Left: We seeked to include different types of housing equally in the survey. This is reflected by the fact that the proportion of Pucca (durable constructions), Semi-Pucca and Kutcha houses (temporary makeshift constructions) is quite balanced.



BACKGROUND INFORMATION

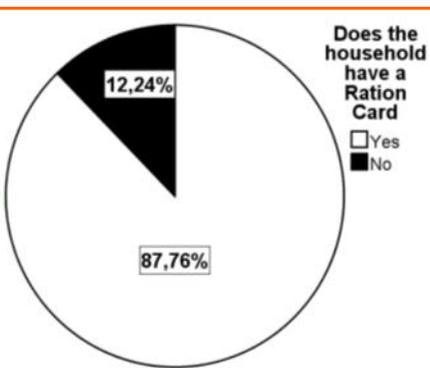
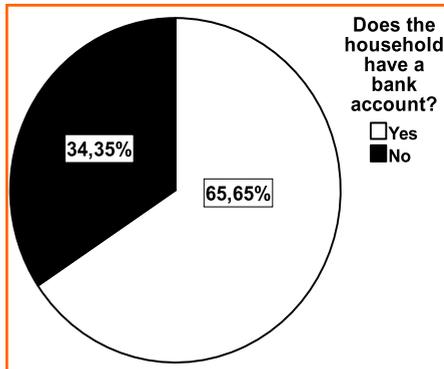


Above: Subsidies are calculated for standardized household sizes. Whereas in average 5,2 persons live in a house we found a considerable variation between settlements ranging from 3 to 9 persons per household. In one household 14 people were living on only 240 sqft.

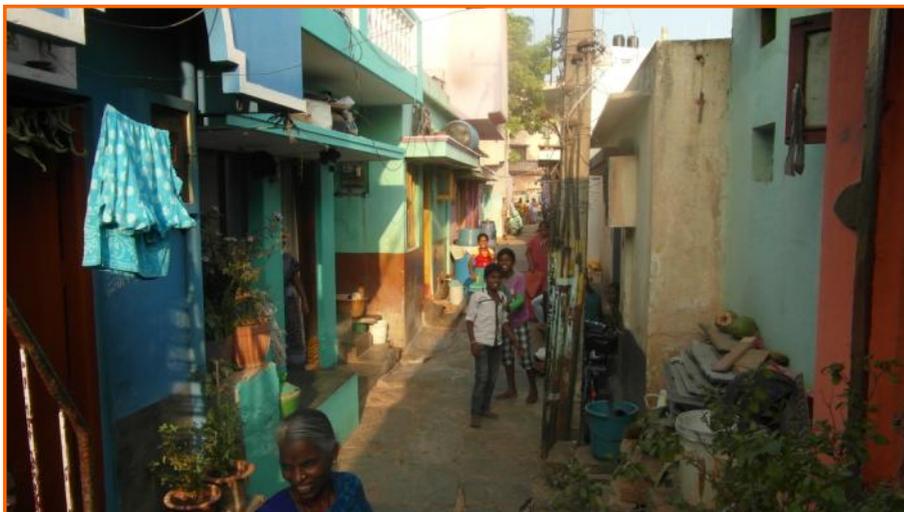
Left: Because of the narrow lanes in slums households often have to use electric light and fans throughout the day and night, which results in high electricity bills.

BACKGROUND INFORMATION

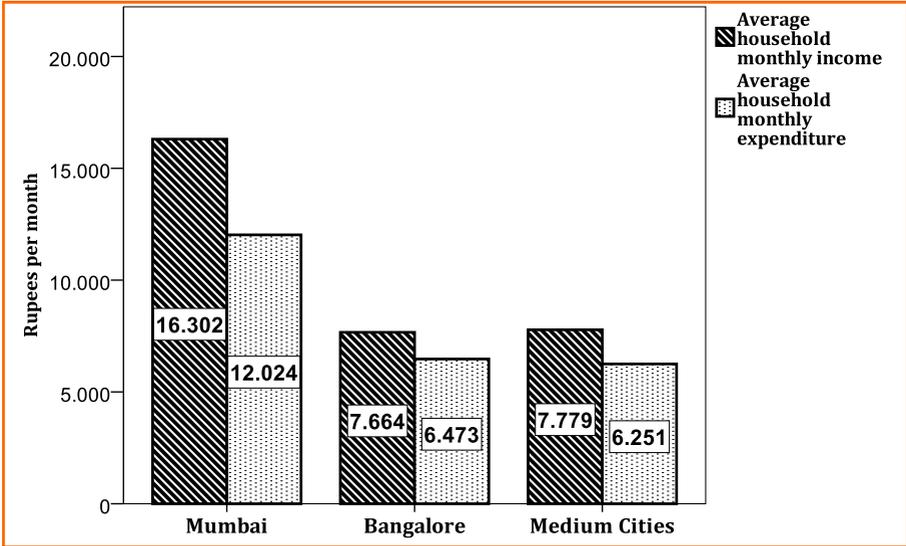
Right: In 2015 the subsidy scheme for cooking LPG has been changed in most states of India and will now be disbursed directly to the bank account of customers (PAHAL DBTL). This is a major obstacle for one third of the slum dwellers who have no bank account and use LPG for cooking.



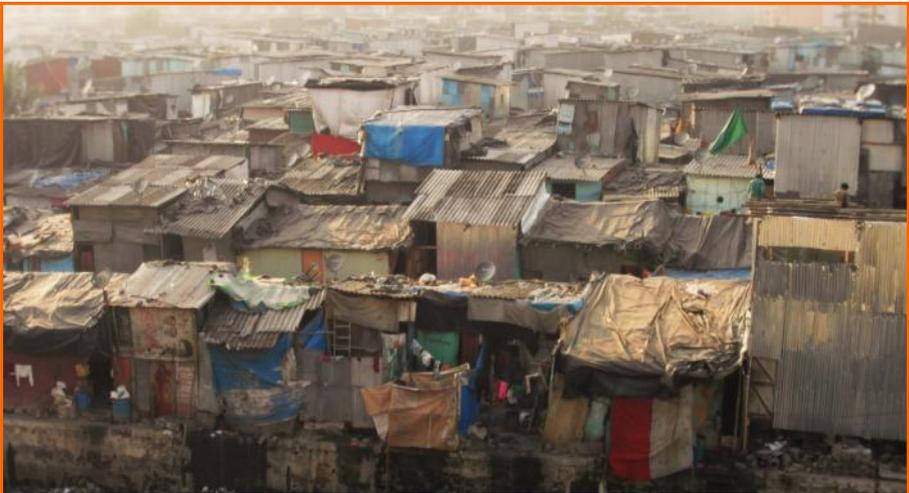
Left: Most households we have interviewed had ration cards, which allow their owners for example to purchase subsidized kerosene from the PDS-shops. However, this figure is probably not representative for other slums since one of the central activities of SPARC and the Indian Alliance is to enable communities to obtain ration cards and proper documents from the authorities.



BACKGROUND INFORMATION



Above: The average monthly income is more than double as high in Mumbai than in Bangalore or medium sized cities, but also the expenditures. In average households in Mumbai can save more than 4000Rs per month. However, this is misleading since the median is at 0Rs for Mumbai. This means 50% of the slum dwellers can not save any money, whereas the other ones save quite something. It shows the big polarization in Mumbai, even within slums





ENERGY JUSTICE FOR THE URBAN POOR



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BRINGING ENERGY JUSTICE TO
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