

**Enabling urban poor livelihoods policy making:
understanding the role of energy services**

DFID KaR PROJECT R8348

Briefing Paper
DRAFT AS SUBMITTED

Revised 1March 2006

This briefing paper has been prepared by:
Joy Clancy, Department of Technology and Sustainable Development¹,
University of Twente, The Netherlands

Introduction

This briefing paper summarises current knowledge on the linkages between urban poverty and energy use. The summary is based on a review of the existing literature on urban energy use and the findings from surveys in major cities in Brazil (Salvador), the Philippines (Metro Manila) and Nigeria (Lagos and Abuja)² funded as part of a DFID Knowledge and Research Programme. The effect of energy sector reforms and energy price rises on the urban poor's livelihoods are assessed. Some suggestions on policy instruments are given on how the increased availability of energy, that have occurred as a result of market liberalisations, can be turned into increased access by the urban poor. A list of key resources on urban energy is also given.

The paper is aimed at decision makers in development agencies, ministries of energy, ministries addressing issues related to urban poverty, and energy service companies who wish to improve their understanding of how energy services can contribute to moving urban people out of poverty. NGOs involved in poverty advocacy and those involved in urban energy projects may also find the recommendations useful in their work.

Acknowledgements

Thanks are due to the partners in the DFID KaR Project for their inputs into the briefing paper. Also acknowledged are the anonymous DFID reviewer and Dick Jones (GVEP) for their valuable comments. Any remaining weaknesses are entirely the author's.

Disclaimer

This document is prepared as part of the outputs of a project (KaR R8348) funded by the UK Department for International Development (DFID) for the benefit of developing countries. These views expressed in the paper are those of the author and do not necessarily reflect those of the DFID.

¹ Formerly part of the Technology and Development Group

² The country reports can be found on <http://www.urbanenergy.utwente.nl/>

Fuelling Urban Poor Sustainable Livelihoods A Briefing Paper for Converting modern energy sources availability into energy service access

Why focus on the urban poor?

In 1999, UNDP estimated that around half of the absolute poor would be living in urban settlements at the turn of the millennium with numbers expected to increase to almost two-thirds of the total by 2025. The increase in urban poverty is due to natural population increase, rural-urban migration and the down-turn in the global economy. Urban-rural family links remain strong with goods and remittances from urban family members forming important sources of rural household income. Therefore, helping the urban poor can also form part of a strategy of reducing rural household vulnerability.

Urban livelihoods are complex; contexts are shifting and uncertain. As a consequence, household members employ multifaceted and varied strategies, often living on credit and earning income through a variety of means, primarily in the informal sector. Evidence would suggest that the outcomes of poor urban households' livelihood strategies do not meet the most basic of needs, increasing the vulnerability of those already marginalized (CARE 1999).

What do we know about how the urban poor use energy?

Low-income urban households use a variety of fuels for different end-uses, relying on biomass fuels³ (or coal in some countries, such as China and South Africa) for cooking and space heating. Electricity is used first for lighting and entertainment. Kerosene and LPG, when used, are often restricted to times when speed is a priority. Not all fuel is purchased. Wood is obtained by scavenging or through rural connections.

Studies by DFID and the World Bank have shown that poor households spend a significant proportion (up to 25% of household income) on energy (see for example, Clancy et al (2005) and Barnes (1995)). The poorest 20% of households spend a higher proportion of their incomes than wealthier ones for lower-quality fuels (usually biomass and kerosene) for cooking and lighting.

How do poor urban settlements affect energy use?

Space restrictions in poor urban homes mean that if cooking is done with wood or charcoal, the stove is located outside. There is little data on how women's health is affected from the long-term exposure to smoke under such conditions. The evidence would suggest that it does not appear to be significant for the cooker although it does bring improvements for the other family members. However, kerosene stoves are used indoors and this can be a safety hazard with

³ Wood, charcoal, agricultural residues and dung.

cooking often being done in communal corridors. Homes in poor urban settlements are often built of readily available, often scavenged, materials, such as wood and cardboard. These materials are flammable and the physical assets of the poor can rapidly be destroyed by fire caused by sparks from a fire or a knocked over kerosene lamp (CARE 1999).

Electricity utilities are reluctant to provide connections to homes made of non-permanent materials or are not able where there is no legal address. This can lead to residents of poor urban settlements making illegal connections which can be a fire hazard.

Is there gender equality in energy use in poor urban households?

In Tanzania, it was found that women-headed households in urban areas use a higher average percentage of income than men-headed households for purchasing energy (Hosier and Kipondya, 1993). Another study in Tanzania found that poor women-headed households were less likely to use modern fuels than poor male-headed households (Meikel, 2005).

Men are actively involved in decision-making, either independently or jointly with their wives, about household energy equipment even for cooking. In Nigeria, in 2004, 226 households⁴ reported in a survey of 1200 households in Lagos and Abuja that the man made the decision about the fuel, 63 - the woman and in only 22 was it a joint decision. Therefore men need to be mainstreamed into programmes related to urban household energy.

What coping strategies do the urban poor adopt in response to fuel price increases?

Prices rises of petroleum fuels have had different effects on consumer behaviour depending on two factors: how long a household has been using a particular fuel and the availability of woodfuels. The longer a household has been using LPG the less likely they are to switch to other fuels. Where access to wood or charcoal is a possibility people make use of these options.

Energy prices rises have also induced changes in consumer behaviour which have health implications. In the Philippines, a 1000 household survey in 2004 reported that approximately one quarter of the households sampled had changed their food preparation techniques due to increases in energy costs, in a small number of cases this can be as extreme as skipping breakfast while others resort to buying cooked foods. The survey in Nigeria mentioned above, found that most women have reduced the number of times they cook daily.

Are energy prices rises affecting the health of the urban poor?

Clean water is a high priority for the urban poor. Boiling water for purification is a priority in low-income households. A reduction in water boiling is a last resort and a clear sign that households are vulnerable.

In the Philippines, the urban poor were found to be increasingly turning to informal food vendors to reduce their own cooking energy costs. However, these vendors face their own energy price rises which cannot easily be passed on to customers. So vendors adopt other strategies to keep costs down, such as

⁴ This is totalled across all households (married and unmarried with male or female head).

poor quality food, which affects poor people's nutritional standards and combined with the lack of hygiene has worrying implications for poor people's health.

Are energy prices rises affecting informal sector enterprises?

Small-scale informal sector enterprises form an important part of the coping strategies of the urban poor. The number of urban poor is increasing as are the number of informal enterprises. Competition is getting fiercer and there is a strong incentive to save on costs, such as energy. Evidence from the three countries surveyed indicates that the 2004-5 oil prices rises have had negative effects on small enterprises including businesses closing, expansions being put on hold and staff being laid off.

How can addressing household energy help with household incomes?

There is a strong link between households and informal sector enterprises with a significant part, if not all, of the enterprise activity taking part in the family home. Women's enterprises in particular have strong household linkages often using standard household equipment for income generation.

Doesn't urban transport give the urban poor more opportunities for income generation?

Transport costs have also increased significantly due to petroleum price rises, increasing the vulnerability of enterprises and households. The direct effect on low-income households is a reduction in mobility in search of work and leisure. Evidence shows that the effects on enterprises are increased input costs, including for energy, and restrictions on travelling for taking goods to market.

Can micro-finance enable energy access for the urban informal sector enterprises?

No evidence has been found that there are special programmes for urban enterprises and improved energy access. However, in Nigeria, a programme for upgrading enterprise efficiency was found to lead to entrepreneurs adopting cleaner energy, such as LPG and electricity.

Women's enterprises may need special attention since women are often reluctant to take even micro-finance loans. Their businesses are often not registered and the cash flow is on a daily basis with very little accumulation of capital.

Have energy sector reforms helped the urban poor?

Energy market liberalisation has generally led to better availability of petroleum fuels and a reduction in power cuts, these gains have been matched by price increases.

In actually enabling access to modern energy sources for the urban poor, the petroleum sector has fared better than the electricity sector.

Utilities appear to be concentrating on dealing with illegal connections in a punitive way instead of developing creative mechanisms for converting the illegal into legal consumers.

There are examples of best practice in protecting the urban poor. The petroleum sector regulator in the Philippines carries out inspections and investigation of LPG

establishments and gasoline stations in response to complaints about tampering with cylinders. The utility in Salvador, Brazil, organised an energy conservation campaign targeting low-income urban households helping to repair faulty electrical equipment such as refrigerators.

How can we convert the improved availability of modern energy to better access for the urban poor?

Step 1 Recognise barriers to access and fuel switching		Step 2 Support to transforming policies	
Barriers	Comment	Instruments to overcome barriers	Who
Cost of access to a new energy source	Cost is not the sole determinant of access	Smart subsidies to overcome high connection costs.	Government
Household and enterprise confidence in supply reliability	Electricity – brownouts and power surges damage expensive appliances encouraging use of stand-by generators. LPG – users worry about supply management since no simple mechanism to judge quality and quantity. Large cylinders are expensive for low-income households.	Performance targets for utilities.	Regulator
		Development of low cost mechanism to give gas quantity.	Government
		Ensure supply standards	Regulator
Household and enterprise confidence in adopting new cooking practices		Promotional campaigns through radio and TV.	Government
		Cooking demonstrations at market places in low-income districts.	Government NGOs
Availability of low cost reliable	Poor urban households use	Energy conservation	Utilities NGOs

equipment	second hand equipment.	campaigns, including free repair of faulty equipment.	
Lack of women's empowerment in the household influences who makes decisions on energy forms and conversion technologies.	Men making decisions about purchasing energy forms and conversion technologies even in women's sphere of influence such as cooking.	Promotional campaigns directed at men on benefits of modern energy for cooking.	Government NGOs

Key resources on Urban Energy

- Barnes D (1995), *Consequences of Energy Policies for the Urban Poor*, FPD Energy Note No 7, The World Bank, Washington DC. November 1995. <http://www.worldbank.org>
- Clancy, J.S., (2004), *Urban poor livelihoods: Understanding the role of energy services*. Paper prepared as part of Research Project DFID KaR R8348.
- Doig A (1998), *Energy Provision to the Urban Poor*. Report of the Household Energy Development Organisation Network IX Meeting. DFID Energy Research Newsletter, Issue 7, November 1998. http://www.etsu.com/dfid-kar-energy/html/7-urban_poor.html
- ESMAP (1999), *Household Energy Strategies for Urban India; the case of Hyderabad*. Report 214/99, World Bank, Washington, June 1999.
- Future Energy Solutions et al (2002) *Energy, Poverty and Sustainable Urban Livelihoods*. DFID KaR R7661.
- Hosier, R.H., and Kipondya, W. (1993), *Urban household energy use in Tanzania*, Energy Policy, May, pp454-473.

Additional References used to prepare this paper

- CARE (1999), *Household livelihood security in urban settlements*. CARE International UK Urban Briefing Notes. December 1999 (1)
- UNDP (1999), *Rural and Urban Poverty: Similarities and Differences*. <http://www.undp.org/sl>