

Household energy choices in Ethiopia

Lessons for encouraging pro-poor innovation in the effective use of biomass

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Pro-poor innovation – The case of effective biomass usage in rural households
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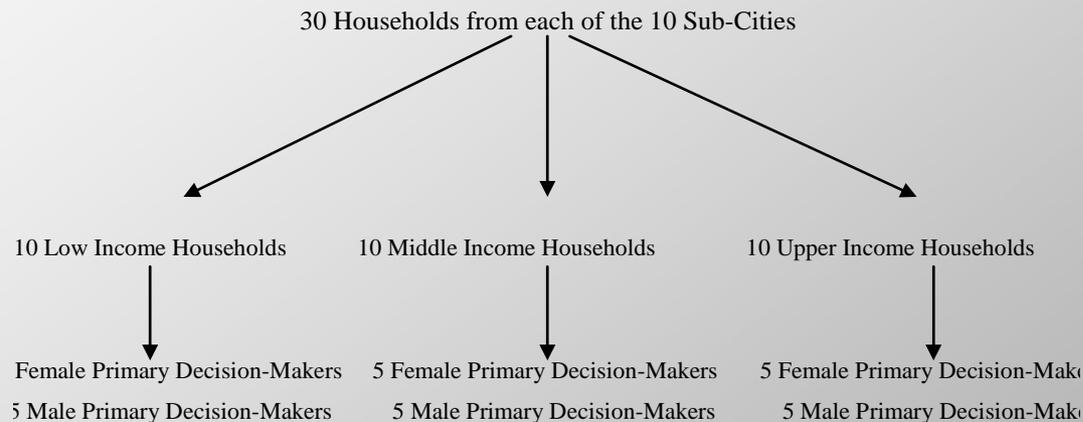
Introduction

- **Presentation theme: Energy choices of Ethiopian households**
 - Choices summarised in this presentation based on PhD, 2005 to 2009
 - Data gathered through survey of three hundred households in the urban capital of Addis Ababa
 - Covered all income levels

Despite emphasis on all income levels in an urban environment, important lessons for targeting innovative biomass stoves at the rural poor

Survey Background - 1

Sample stratification



Interviewed up to 3 individuals in each household:

- The primary decision-maker;
- The spouse of the primary decision-maker, if married; and
- The primary cook, if different from one of the above

Primary decision-maker defined as: *He or she who makes or has the greatest influence on the majority of major decisions (e.g., lead decision-maker on large purchases, accommodation type/location, etc) within the household.*



Survey Background - 2

- **Survey Questions**
 - **Demographic characteristics, including measures of bargaining power**
 - **Patterns of decision-making for each fuel and stove used in the household, including:**
 - **Identification of decision-maker and those using**
 - **Relative usage over the past year and any reasons for change**
 - **Influences on decision**
 - **Patterns of decision-making for non-fuel items**
 - **Influence of domestic servants**
- **6 specific preferences explored on detailed basis:**
 - **Cost**
 - **Tradition**
 - **Health**
 - **Level of Smoke/Smoot**
 - **Appropriateness of related stove**
 - **Whether individual has to use the fuel/stove**
- **Patterns of decision making examined using:**
 - **Quantitative (simple statistical analysis, regression analysis, cluster analysis); and**
 - **Qualitative analysis (open-ended questions, focus groups, etc.)**

What influences fuel choices? Traditional Fuels for non-*injera* cooking in poor homes

	Primary Decision-Maker as Primary Cook		Spouse as Primary Cook		"Other" as Primary Cook	
	Significant Influences	Direction of Influence	Significant Influences	Direction of Influence	Significant Influences	Direction of Influence
Individual Making Decision	Cost	Positive	Smoke	Negative	Cost	Positive
	Smoke	Negative	Health	Negative	Tradition	Positive
	Health	Negative	Cost	Positive	Health	Negative
Primary Cook	Health	Negative	Smoke	Positive	Smoke	Negative
	Tradition	Positive	Health	Negative	Health	Negative
	Appropriate Technology	Negative	Tradition	Negative	Smoke	Negative
			Appropriate Technology	Negative	Health	Negative



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	Primary Decision-Maker as Primary Cook		Spouse as Primary Cook		"Other" as Primary Cook	
	Significant Influences	Direction of Influence	Significant Influences	Direction of Influence	Significant Influences	Direction of Influence
Individual Making Decision	Cost	Positive	Smoke	Negative	Cost	Positive
	Smoke	Negative	Health	Negative	Tradition	Positive
	Health	Negative	Cost	Positive	Health	Negative
Primary Cook	Tradition	Positive	Smoke	Negative	Smoke	Negative
	Appropriate Technology	Negative	Health	Negative	Health	Negative
			Tradition	Negative		
			Appropriate Technology	Negative		

More than cost influences energy decisions.

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	Primary Decision-Maker as Primary Cook		Spouse as Primary Cook		"Other" as Primary Cook	
	Significant Influences	Direction of Influence	Significant Influences	Direction of Influence	Significant Influences	Direction of Influence
Individual Making Decision	Cost	Positive	Smoke	Negative	Cost	Positive
	Smoke	Negative	Health	Negative	Tradition	Positive
	Health	Negative	Cost	Positive	Health	Negative
	Tradition	Positive			Smoke	Negative
Primary Cook	Appropriate Technology	Negative	Smoke	Negative		
			Health	Negative	Smoke	Negative
			Tradition	Negative	Health	Negative
			Appropriate Technology	Negative		

Both preferences of the primary cook and individual making decision are influential.



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	Primary Decision-Maker as Primary Cook		Spouse as Primary Cook		"Other" as Primary Cook	
	Significant Influences	Direction of Influence	Significant Influences	Direction of Influence	Significant Influences	Direction of Influence
Individual Making Decision	Cost	Positive	Smoke	Negative	Cost	Positive
	Smoke	Negative	Health	Negative	Tradition	Positive
	Health	Negative	Cost	Positive	Health	Negative
Primary Cook	Tradition	Positive	Smoke	Negative	Smoke	Negative
	Appropriate Technology	Negative	Health	Negative	Health	Negative
			Tradition	Negative		
			Appropriate Technology	Negative		

Cost is not influential, in a statistically significant sense, to the primary cook when the primary cook is different from the individual making the decision.





What influence s fuel choices? Traditional Fuels for non-*injera* cooking in poor homes

- Men favour cost slightly more than women, with no statistically significant difference for the remaining preferences
- Female decision-makers are just as likely to choose traditional fuels as male primary decision-makers
- In households with varied preferences, increased bargaining power, as measured by the 'standard proxies', does not improve a wife's chances of having fuel choices that match her preferences more than her husband's.

What influences fuel choices? Electricity for *injera* cooking in poor homes

	Primary Decision-Maker as Primary Cook		Spouse as Primary Cook		"Other" as Primary Cook	
	Significant Influences	Direction of Influence	Significant Influences	Direction of Influence	Significant Influences	Direction of Influence
Individual Making Decision	Tradition Health	Negative	Cost Tradition	Negative Negative	Tradition Health	Negative Positive
		Positive	Health	Positive	Smoke	Positive
		Positive				
Primary Cook	Smoke	Positive	Tradition	Negative		
	Cost	Negative	Smoke	Positive	Health	Positive
			Health	Positive		



What influences fuel choices? Electricity for *injera* cooking in poor homes

	Primary Decision-Maker as Primary Cook		Spouse as Primary Cook		"Other" as Primary Cook	
	Significant Influences	Direction of Influence	Significant Influences	Direction of Influence	Significant Influences	Direction of Influence
Individual Making Decision	Tradition	Negative	Cost	Negative	Tradition	Negative
	Health	Positive	Tradition	Negative	Health	Positive
	Smoke	Positive	Health	Positive	Smoke	Positive
Primary Cook	Smoke	Positive	Tradition	Negative		
	Cost	Negative	Smoke	Positive	Health	Positive
			Health	Positive		

Trade-off between tradition and health for this key food staple.



Key Lessons for pro- poor innovation in effective use of biomass - 1

- **Modernity is important**
 - Dominant themes in World Bank's campaign to promote electric *injera* cookers:
 - Significant reduction in smoke
 - Modern
 - Campaign successful – in own survey, 25% of the 'poorest poor' and 65% of marginally poor homes used an electric *injera* rather than the traditional biomass stoves
 - Open-ended questions of survey showed import of modernity:
 - Households use because do not want to be seen as lacking in 'modernity'
 - Long-term cost savings, which also a theme of the World Bank's campaign, not influential

Key Lessons for pro- poor innovation in effective use of biomass – 2

- **Do not assume that the choice to use biomass is due to people not understanding the issues**
 - Preference for tradition is negatively correlated with preference for reduced smoke/health
 - Many of these households expressed an understanding of the negative health benefits, but simply valued tradition and the flavour the smoke gave over the health benefits

Key Lessons for pro- poor innovation in effective use of biomass – 3

- **More than one individual influencing decision**
 - **Cannot just target the female in the house, the cook, the head of the household, etc.**
 - **Rather, will need to convince a number of household members of the need to adopt the proposed technology**

Key Lessons for pro-poor innovation in effective use of biomass – 4

- **Different influences exist for different food types**
 - In Ethiopia, over half of all energy use is for the baking of *injera*, the daily staple
 - The relative influence of various preferences on the decision for which fuel and stove to use for *injera* baking vary from those for non-*injera* cooking
 - It is socially acceptable, and even expected, to not use electricity for non-*injera* cooking
 - The decision to not use electricity for *injera* baking is greatly influenced by the desire to maintain tradition, including in the traditional flavour achieved through the smoke of biomass

Key Lessons for pro- poor innovation in effective use of biomass – 5

- **Focus on the customer**
 - **Poor households are customers, and are willing to spend on something that fulfils their needs**
 - **Non-poor households also use biomass – over half in the sample**
 - **Use in non-poor households often by employment of ‘poor’ domestic servants or relatives – what value in reaching the poor if continue to conduct cooking over inefficient stoves?**

Questions?

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