



Review

Dispelling common misconceptions to improve attitudes and policy outlook on charcoal in developing countries[☆]

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ABSTRACT

The production, use and trade of charcoal for domestic cooking and heating are characterized by contradictions, stereotyping, and misconceptions. Partial information, over-generalizations, and the tendency to consolidate charcoal with other biomass fuels have contributed to gross misrepresentation of charcoal in terms of its actual impact on forests, its role in improving energy access, and in appropriate interventions. An underlying and often amplifying challenge that results from this situation is the lack of reliable, consistent, and comparable data on the charcoal sector which would form a necessary baseline for robust decision making. Further, clarifying misconceptions and debunking of myths is paramount for demonstrating the contribution that charcoal could have in addressing energy access and economic challenges in developing countries. We present five commonly held myths about charcoal that are perpetuated by different stakeholders and actors in the sector. Namely, that: 1) Charcoal is an energy source for the poor; 2) charcoal use is decreasing; 3) charcoal causes deforestation; 4) the charcoal sector is economically irrelevant, and; 5) improved charcoal cook stoves reduce deforestation and GHG emissions. Using a review of the literature and our own experience with charcoal research and practice, we propose reasons for the existence of these myths, why they are highly disputable, and the consequences that the myths have had on policy and intervention responses to charcoal. Widespread beliefs of these myths have and continue to misguide policy response and intervention approaches relating to charcoal. We propose some policy and research recommendations to curb further perpetuation of misconceptions that have been particularly harmful for charcoal.

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Introduction

Charcoal is the main cooking fuel for millions of households in urban and peri-urban sub-Saharan Africa (IEA, 2009). To a significant but lesser extent, traditional lumpwood charcoal is also used for food preparation in South Asia (e.g. Jayakumar et al., 2009; Larpkern et al., 2011; Metz, 1994; Semple et al., 2010; Sood and Mitchell, 2011), Latin America (e.g. Estevez et al., 2010; Huszar and Bucher, 2001; Masera et al., 2010; Ramos, 1999; Torres, 1997; Xander, 1987) and the Caribbean (e.g. Checo, 2010; Knudson et al., 1988; Lea, 1996; Roth, 2001; Sagawe, 1991; Schneichel and Asmussen, 1998). In this paper, we focus most of our arguments on charcoal use in sub-Saharan Africa, being explicit when addressing other regions.

The production, use and trade of charcoal for domestic cooking are characterized by contradictions, stereotyping, and myths.ⁱ Partial information, over-generalizations, and the tendency to consolidate charcoal with other biomass fuels have contributed to gross misrepresentation of charcoal in terms of its actual impact on forests, its role in improving energy access, and in appropriate interventions (Fig. 1). At individual country levels policies are often unclear, conflicting, and unsure about the role that charcoal should play to meet current and future energy needs and to reduce energy poverty. In many charcoal-dependent developing countries policies are non-existent. Where they exist, they communicate the use of charcoal as 'traditional' or 'primitive' and as contradictory to development objectives (e.g. Owen et al., 2013-this issue). Improved cook stove programs and fuel switching to 'modern' and 'cleaner' fuels have been the dominant approach for addressing the charcoal 'problem'. Banning of production, trade, and use of charcoal has been enforced in several countries, but due to protests and the lack of viable alternatives, they tend to be lifted soon after they are implemented (Girard, 2002; Mwampamba, 2007; World Bank, 2010; Zulu, 2010).

Policies for addressing charcoal have – for the most part – been insufficient at meeting their objectives (Maes and Verbist, 2012). Rising costs of fossil fuels, accelerating impacts of climate change, and significant shortfalls in meeting energy access goals in the developing world calls for a re-examination of the potential that charcoal holds as a modern, renewable fuel contributing to low carbon development. A definitive fuel switch from firewood to charcoal is occurring today in many developing countries driven, primarily, by rapid urbanization (Girard, 2002; Maes and Verbist, 2012). This is in par with the 'energy ladder hypothesis' which – in its simplest interpretation – predicts that households will switch to increasingly cleaner and more efficient fuels with increase in affluence (Leach, 1992). Indeed, for users of dung, firewood and crop residues, cooking with charcoal can represent a significant upgrade in terms of exposure to smoke, safety, and convenience (Van der Plas, 1995).

Contrary to this hypothesis, however, charcoal users are not upgrading to kerosene, gas or electricity (fuels that are higher up the energy ladder) at the rate or scales expected (Hiemstra-van der Horst and Hovorka, 2008; Hosier and Dowd, 1987). A broader interpretation of the energy ladder hypothesis, however, predicts that with

increasing affluence, household diversify the types of fuels consumed and include increasingly more efficient fuels into the mix, a phenomenon referred to as 'energy stacking' (Masera et al., 2000). Thus, for the case of charcoal, the absolute number of charcoal users is increasing even though per capita use may be decreasing due to stacking (Arnold et al., 2006; IEA, 2009). New approaches and ideas are emerging on how to address charcoal (Carneiro de Miranda et al., 2013; Mwampamba et al., 2013; Owen et al., 2013-this issue) but their success depends on flipping around the policy outlook on charcoal while remaining conscious of the limitations and constraints.

A necessary starting point for understanding the charcoal sector today is to clarify misinformation, debunk harmful misconceptions, and identify more appropriate policy responses for the sector. Consequently, two objectives motivate this review. The first is to extract the charcoal story from the more general wood energy one. We argue that the tendency for the energy literature to address charcoal with other biomass fuels and to consolidate charcoal information into ambiguous terms such as 'woodfuels', 'fuelwoods', 'wood energy' or 'biomass energy' has and continues to distort what we know about charcoal, and subsequently what we do about it (i.e. interventions).

Our second objective is to debunk five common misconceptions (or myths) about charcoal that have materialized over time, largely due to the blended approach of handling charcoal data and analyses (Fig. 1), but also for other reasons. We address six myths that we believe are the most influential in either perpetuating negative attitudes towards charcoal or in misguiding interventions. Namely, these are that: 1) Charcoal is an energy source for the poor; 2) charcoal use is decreasing; 3) charcoal production causes deforestation; 4) the charcoal sector is economically irrelevant, and; 5) improved charcoal cook stoves reduce deforestation and GHG emissions. These myths are maintained and perpetuated by stakeholders of the charcoal sector which include – but are not limited to – the energy and forestry sectors, conservation and development organizations, research institutions, and consumers. Debunking these myths is paramount for demonstrating the contribution that charcoal could have in addressing energy access and economic challenges in developing countries.ⁱⁱ

Depending on stakeholders' values and objectives and on the information available to them, stakeholders believe or perpetuate these misconceptions differently. Consequently, contradicting myths can exist. We argue that the lack of cohesion over what is believed and not believed about charcoal perpetuates confusion in the sector and contributes substantially to the absence of appropriate policy responses in many charcoal-dependent nations.

We hope that this paper improves current understanding of charcoal as a domestic cooking fuel for developing countries and that it will stimulate adoption of more positive and balanced attitudes towards the sector and subsequently to better informed policies. Further, we hope it inspires more targeted and better designed research on charcoal that addresses and clarifies these and other misconceptions. To this end, we end the review with a list of recommendations for improving policy responses and research on charcoal.

ⁱ We acknowledge that charcoal is also used for heating, but often in combination with cooking. For the remainder of the paper we refer mainly to the application of charcoal for cooking.

ⁱⁱ Although the five myths about charcoal were independently derived, it became clear that most coincided with RWEDP's (1997) list of 14 "Misconceptions about Wood Energy" which addresses 'traditional' biomass in general.

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