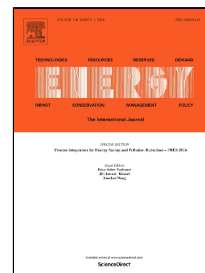


Accepted Manuscript

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Karabee Das, Moonmoon Hiloidhari, D.C. Baruah, Sanderine Nonhebel



PII: S0360-5442(18)30456-0
DOI: 10.1016/j.energy.2018.03.048
Reference: EGY 12506
To appear in: *Energy*
Received Date: 22 August 2017
Revised Date: 06 March 2018
Accepted Date: 09 March 2018

Please cite this article as: Karabee Das, Moonmoon Hiloidhari, D.C. Baruah, Sanderine Nonhebel, Impact of Time Expenditure on Household Preferences for Cooking Fuels, *Energy* (2018), doi: 10.1016/j.energy.2018.03.048

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Impact of Time Expenditure on Household Preferences for Cooking Fuels

Karabee Das¹, Moonmoon Hiloidhari², D C Baruah³, Sanderine Nonhebel¹

¹Center for Energy and Environmental Sciences, ESRIg, University of Groningen, The Netherlands

²School of Environmental Sciences, Jawaharlal Nehru University, India

³Department of Energy, Tezpur University, India

ABSTRACT

Access to energy for cooking is one of the major challenges that rural India faces. Most of the rural households of North-Eastern India rely heavily upon fuelwood and traditional open-fire cookstoves for cooking activities. And everyday collection of fuelwood is time-consuming. Hence, women often gather fuelwood to make charcoal. While the use of charcoal has some advantages, it is not clear whether the investment of time in making charcoal is worthwhile. In this paper, we compare household time investments for fuelwood and charcoal production. The study is done using survey data on Napaam village situated in Sonitpur District of Assam, Northeast India. We developed a model to analyse fuelwood needed and time spent upon the introduction of improved cookstoves and/or charcoal production. This analysis reveals that improved cookstoves using fuelwood results in the least time expenditure on the production of cooking fuel. Whilst introducing charcoal marginally reduces the amount of fuelwood, but increases time spent on cooking, due to the time required to produce the charcoal. Hence, rural households who make their own charcoal spend more time on producing cooking fuel than those households relying on direct use of fuelwood.

Keywords

Fuelwood

Charcoal

Cookstove

Rural area

Time efficiency

1. Introduction

Energy access is one of the basic issues of rural areas and is a key to socio-economic progress for developing nations. In rural areas it is not always possible to secure a continuous supply of energy where often there is no connection to a central grid. In most of the developing countries, bioenergy serves as the primary fuel for rural people [1]. In fact, bioenergy can provide independent and decentralized energy in rural areas [2][3][4].

Fuelwood is the most vital source of bioenergy, providing 9% of the global primary energy supply [5][6]. It is an essential energy source for cooking, for water and space heating, for cooking feed for livestock and for rice beer preparation in rural areas [7]. However, there are also several disadvantages to the use of fuelwood. First, the growing use of fuelwood leads to deforestation. Furthermore, for rural households, precious time is lost in the collection of fuelwood, thereby reducing time for other productive work which might help to increase their financial resources [8][9][10][11][12]. Yet, it can be difficult to secure an adequate supply of fuelwood [13][14][15]. It is estimated that about 20% of the time per day is spent for the collection of fuelwood alone [16]. There is a steady growth of fuelwood consumption, though the growth has been slow in recent years [17].

Dependence on fuelwood often leads to drudgery for women and children and as a result

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