Tropentag, September 17-19, 2013, Stuttgart-Hohenheim

"Agricultural development within the rural-urban continuum"

Improved Charcoal Production for Environment and Economics of Blacksmith: Evidence from Nepal

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Abstract

Blacksmiths in Nepal are marginalised and disadvantaged occupational caste, however, very popular for their handicraft works mainly in making iron tools and equipments. With the advancement of technology, there have been many innovative technologies in many other sectors but blacksmiths in Nepal are still dependent on their indigenous and conventional practices which have direct negative consequences for environment, biodiversity conservation and health. Recently, improved charcoal production technology has been implemented among the blacksmith households in Sindhupalchowk district as a pilot project. However, there is little research about the impact of improved charcoal production on forest resources conservation and people's livelihoods. This study therefore made an effort to explore the impact of improving charcoal production technology and firewood consumption on conserving the environment and promoting sustainable livelihood of marginalised households in rural areas of Nepal. Findings of the study revealed that improving charcoal production technology has positive impacts on forest tree conservation by reducing the fuel wood consumption up to 40 % with 60 % energy efficiency as compared to the traditional system. The improved charcoal production pilot project has reduced annual CO_2, CH_4 and CO emissions in the study area by 2.4 – 3.1 t, 3.3 – 4.3 t and 2.6 – 3.5 t, respectively. Furthermore, improved charcoal production system increases blacksmiths' welfare through generating social, human, and economic capital and quality attributes like environmental sustainability. Introducing improved charcoal production and controlling heavy firewood collection at rural villages of Nepal will help to increase carbon sequestration and reduce the sources of carbon emission in context of global climate change.

Keywords: Blacksmith, charcoal, climate change, Nepal

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