Emissions and Deforestation Associated with Household Energy Use: A Case of the Thulamela Local Municipality, South Africa

SE Uhunamure
University of Venda, uhunamuresolomon@hotmail.com

NS Nethengwe
University of Venda

A Musyoki
University of Venda

Follow this and additional works at: http://dc.engconfintl.org/co2_summit2

Part of the Environmental Engineering Commons

Recommended Citation

This Abstract is brought to you for free and open access by the Proceedings at ECI Digital Archives. It has been accepted for inclusion in CO2 Summit II: Technologies and Opportunities by an authorized administrator of ECI Digital Archives. For more information, please contact franco@bepress.com.
Emissions and Deforestation in South Africa Associated with Household Energy Use: A Case of the Thulamela Local Municipality, South Africa.

Uhunamure SE*1 Nethengwe NS2 Musyoki A3

1,2&3 Department of Geography and Geo-Information Sciences, University of Venda, Thohoyadou, South Africa.

*Correspondence: uhunamuresolomon@hotmail.com

Abstract

Fuel wood is regarded as a major source of energy around the world, particularly in developing nations forming part of the energy mix. Most rural communities around the world, consider forests as the repository of stored energy. The study focused on the role of fuel wood in deforestation and the emissions of greenhouse gases (GHG) in the Thulamela local municipality in South Africa. Information regarding the fuel wood consumption was collected during a manual field survey of 200 households in four villages in the municipality using questionnaires and interviews. The carbon dioxide (CO₂) emissions were calculated using the generic formula and the emission factors were applied in calculating the emissions of carbon monoxide (CO), nitrogen oxide (NO) and methane (CH₄). According to our results, the combined greenhouse gases emitted in the four studied areas are CO₂ 14.91 Kg, CO 0.000349 Kg, NO 0.00548 Kg and CH₄ 0.01222 Kg. Calculated vegetation change using the Normalized Difference Vegetation Index (NDVI) for a 5year interval (2007-2012) indicated that a change percentage of 56.23 in the four villages.

Key words: Deforestation; Emissions; Energy; Greenhouse Gases; Fuel wood; South Africa.