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## Environmental Burden of Charcoal Production and Use in Dar es Salaam, Tanzania

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### ABSTRACT

Tanzanian forests are excessively threatened by increased charcoal production fuelled by increased demand crucially in Dar es Salaam city which consumes nearly 70% of all the charcoal produced in the country. Through use of ecological modeling software STELLA® the environmental burden of charcoal production and use in Tanzania has been established. The study has revealed that the country losses 150,433 ha of forest per year. Due to increase in population by year 2030 almost 2.8 million ha of forests will have been lost. This is equivalent to 8.5% of the total forest cover the country had in 2009. The environmental burden includes air pollution characterized by a total emission of 49, 1.0, and 9.0, 12 million tonnes of CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub>, and CH<sub>4</sub>, respectively by 2030. Other adverse impacts include loss of forest cover which ultimately causes degradation of soil quality by increased soil erosion, degradation of water sources and disruption of rainfall pattern including inducing draught. Taking into account that the agriculture in Tanzania is primarily rain fed, this has an adverse impact in agricultural production. In the current exploitation of this important natural resource, its sustainability is severely challenged and the whole concept of the forest being renewable is put into question. From these findings, it is recommended that concrete and deliberate efforts be made to reduce and eventually prohibit the use of charcoal in cities and towns.

### KEYWORDS

Charcoal Production, Environmental Burden, Forest Loss, Ecological Model

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