Economic value of the soil conservation benefit of Sinharaja Rain Forest

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Rain forests provide many ecosystem services such as soil erosion reduction, nutrient recycling, pollination, biological control of pests, carbon sequestration, watershed protection and biodiversity conservation. These ecosystem services cannot easily be valued in economic terms as they are not traded in the market. This study attempts to place a value on one of the most important ecosystem services, namely soil conservation. The method adopted for soil conservation benefit in the present study was the replacement cost approach i.e. the cost of re-establishing soil productivity following deforestation and soil erosion. Soil productivity of the undisturbed forest was estimated using available secondary data on the basis of N, P, K, Mg, organic matter and mineral soil contained in a unit area of forest that would be lost if deforestation occurred. Replacement cost was based on the quantities of fertilizers, organic matter and mineral soil that are required to restore the soil to its original condition. The cost of these materials and the cost of labour needed to carry out the task were taken into account.

According to the results cost of organic matter, nutrients and mineral soil are Rs 203.46, Rs 82.63 and Rs 1200 per hectare repectively. The application cost for the total weight of nutrients, organic matter and mineral soil was estimated to be Rs 3000 per hectare. Finally total ecosystem value of soil conservation benefit per hectare in Sinharaja Forest was estimated to be Rs 1.95 million. Although we acknowledge that there are many conceptual and emperical problems inherent in producing such estimates for the indirect benefits of tropical rain forests, this type of exercise is essential in order to establish a first approximation of the relative magnitude of global ecosystem services

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