

Deforestation Decreases Fertility of Land

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ABSTRACT

The Fact of Rapid Deforestation has become the important concerns since last decades. Deforestation affects the interactions of the carbon, nitrogen, phosphorus, and sulphur cycles on three levels—element supply, ratios of element availability, and specific interactions. Deforestation causes increased losses of carbon, nitrogen, phosphorus, and sulphur from terrestrial ecosystems. Where deforestation is followed by conversion to other than forest land uses, the effects of deforestation are magnified. The major causes of organic carbon losses are harvest, burning of forest residue, accelerated decomposition, decreased production of wood and roots, and erosion. Nitrogen and sulphur are lost by the same pathways, and additionally by leaching of nitrate and sulphate to stream-water and ground-water and by the anaerobic production of N- and S-containing gases. Losses of these elements following deforestation are most rapid in sites with high decomposition rates, especially in the tropics and on fertile soils. The interactions of the C, N, P, and S cycles affect losses of any element through nutrient limitations to biological transformations, ratios of element availability, which cause either biological mobilization or immobilization, and anion/anion interactions in the soil solution. The most important interaction in the cycling and loss of carbon, nitrogen, phosphorus, and sulphur in deforested ecosystems is simply that many of the major transformations of these elements are biological transformations. As such, they are carried out by organisms which require relatively large amounts of each element to grow and carry out any transformation, and a low supply of any of these elements can inhibit transformations for all of them.