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The path to reaching ecological civilization as a developing nation through the knowledge of ecological footprint

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Statement of the Problem: Ecological footprint measures the cumulative effect of impact of human activities on the environment; its increase has become an environmental threat to mankind. It is expressed as the amount of land required to sustain human use of natural resources influenced by the human population, consumption per person, global natural resources and water intensity. The aim of this paper is to provide a comprehensive review on Ecological Footprint in developing nations in other actions and how they can sustain and attain ecological civilization.

Methodology: This article, reviewed papers and data discussing ecological footprint and related environmental topics, from online search engines, journals and reports of the United Nations and the department responsible for environment and development, reports of international agencies with effort from few governments. The Anthesis ecological footprint calculation model was used to determine the ecological footprint of a developing nation used as a case study. The relationship between ecological footprint and other sustainability measuring scales were reviewed and compared with values of the ecological footprint of nations.

Findings: It was revealed that most developing nations are experiencing varying degrees of ecological deficit with depleting reserves and these poor countries are worse hit by the ecological impact; many of them are yet to fully initiate their nations' plans, and with their respective economies heavily relying on high carbon emission growth model, it has resulted in worsening environmental degradation and extremes of weather conditions. Hence there is a need to urgently intervene globally and nationally.

Conclusion & Significance: The article advocates for changes in every aspect of human lives and also advocates for international collaborations with financial incentives, and aid for these poor developing nations will ensure that they eventually shift away to more eco-friendly energy efficient system. Recommendations were made to help mankind attain ecological civilization.

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Modeling the impact of highland settlements on ecological disturbance of streams in Choke Mountain Catchment: Macroinvertebrates' assemblages and water quality

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Human disturbances of waterways in Ethiopian highlands have increased throughout the last century due to population growth and increased land use. Despite this there is a lack of knowledge on macroinvertebrate responses to human disturbances and the application of biological monitoring in tropical highland waterways in general. In this study, we have evaluated the human impact on the ecological integrity of the Chemoga River catchment in the Choke mountain watershed at the northwestern region of the Ethiopian highlands. During wet and dry seasons, the water quality and macroinvertebrate assemblages were assessed. Multivariate statistics and Canonical Correspondence Analysis (CCA) were used to identify factors influencing macroinvertebrate community structures in highland streams in the northwest regions of Ethiopia. A total of 66 taxa of benthic macroinvertebrate were recorded, among which Diptera (38%) and Coleoptera (21%) were the dominant. The biomonitoring results revealed a severe decrease in the ecological integrity of the Chemoga River in terms of macroinvertebrate composition at higher altitude. The ordination and cluster analysis clearly indicates extremely low macroinvertebrate diversity at sites where human impact is severe and a strong effect of altitude. Moreover, anthropogenic activities may have caused changes among physicochemical parameters, which have led to depletion of aquatic macroinvertebrates in the Chemoga River. These results highlight the need to protect the ecology of Chemoga River and that of similarly degraded watersheds in the Ethiopian highlands.

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