Can Tea-Coffee Agroforestry Model Restore Tea, Coffee Production, Above Ground Biomass, Bio Diversity and Soil Health?

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Global agriculture is now facing challenges, and important challenges for agriculture at the global level may be identified. Climate change, limited arable land area, and limited agricultural inputs are all common among the primary challenges stated, and they all require common solutions. Experts recommend going with green agriculture as a solution, as well as developing and testing ways to restore damaged areas to arable status. The purpose of this study is to assess the appropriateness of a naturally generated tea-coffee agroforestry integrated ecosystem model for restoring degraded lands to arable status. In the study, the tea-coffee agroforestry model was compared to the natural forest ecosystem and tea cultivated land. As major sections of study, the aboveground biomass, soil health, bio diversity, and economic production were all tested in three ecosystems. For that, each ecosystem was examined for, soil parameters (total nitrogen, available potassium, available phosphorus, pH, EC, OM%, OC%, soil macro faunal density, physical parameters: sand%, silt%, clay%, bulk density), Biological parameters (floral variety, floral density, soil surface insect density, aboveground biomass), and economic outcome from each ecosystem. The one factor factorial experimental method was used to analyze data, and mean comparisons revealed that soil organic matter%, soil organic carbon%, soil EC, average Shannon Weiner index, average floral species evenness, average floral density (<5cm diameter), average floral diversity (<5cm diameter), and total average ground insect count had comparatively higher and significant different values. Different levels of soil total nitrogen, available potassium, soil average pH, and floral species density were shown to be comparably lower and significant in the findings (all plant species from ground cover). As a consequence of the findings, the tea-coffee agroforestry model is in the midst of the secondary successional phase and may be successfully applied to create arable land from degraded land.

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