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"Reconcile land system changes
with planetary health"

Farmyard manure enhance phosphorus stocks in maize-based mix farming system in himalayas range

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Abstract

Nepal's agriculture is predominantly small scale with around 66 % of the total population employed in agriculture sector. Despite its contribution to the nation's GDP, covering one third, the sector is affected by soil health due to low levels on nutrient inputs and unsustainable farming practices. Soil fertility is declining in Nepal due to intensive cultivation, soil erosion, inadequate supply of the organic sources, soil acidification, and improper management of crop residue etc. Application of Farmyard Manure (FYM) is one of the viable options for sustainable soil management for farmers. Due to unavailability of inputs, farmers mostly use local sources at their disposal including a mixture of animal manure, crop residues, and urine, bedding material, fodder residues, household waste and other locally available biomass to prepared FYM. The practice was efficient under low-intensity cropping systems but as farming intensifies, the sustainability is compromised. We surveyed 350 farm plots in Khotang and Surkhet Districts of Nepal regarding the geo-linked to FYM usage and we observed the use of FYM enhanced soil nutrient content in farm. The Phosphorus level (mean 133ppm) compare to less use of FYM (mean 100ppm). Nonetheless, the current manure management practices including open pit and open mounds expose the manure to GHG emissions and nutrient losses. Due to improper management of manure, the soil fertility is decline regularly. There is need to understand the farm dynamics including farmer agency and devise efficient and viable management approaches for sustainable soil management in mix farming system in Himalaya range of Nepal.

Keywords: FYM, Himalayan, mix farming, Phorous, soil

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