

Natural vegetative strips in degraded calcareous soil environments: Successful stabilization of steep slopes in Central Philippines

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ABSTRACT

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While a good understanding exists of the effects of low-cost natural vegetative contour strips (NVS) and their contribution to enhanced land productivity in deep acidic soil environments, little is known about the benefits and constraints of this soil conservation technology under severely degraded calcareous soil conditions. Shallow calcareous soils are common in Central Philippines covering more than half of the total land area of the Visayan islands. Based on the results from the documentation of the traditional use of NVS in Bohol, the World Agroforestry Centre (ICRAF) has conducted on-farm trials since May 2001 to assess the local practice in more detail. Observations made over a period of 1 1/2 years since NVS establishment, confirmed that the vegetative strips are highly effective in collecting eroded sediments in soils derived from either limestone or marl. The accumulation of the eroded in and above the NVS resulted in the formation of terraces that made landcultivation easier and further reduced soil erosion. Consequently, the maize yield on lower terrace zones improved right from the 1st cropping season after NVS establishment, presumably because of the deeper soil and higher water retention capacity resulting from the accumulation of sediment behind the NVS. Improved maize growth compensated for the 20% loss of crop area to the vegetative strips. Together with the findings derived from research on deep acidic soils in Northern Mindanao, findings of this research support the exploration of the NVS technology from ICRAF's research sites to the major soil environments of the Philippine uplands.

Keywords: natural vegetative strips, soil conservation, calcareous soils, indigenous knowledge

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