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RESOURCE CONSERVATION AND ECONOMIC UTILIZATION OF YAMUNA RAVINE LAND THROUGH BAMBOO (*DENDROCALMUS STRICTUS*) PLANATATION

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ABSTRACT

The present study evaluated bamboo plantation (*Dendrocalmus strictus*) for protective and economic utilization of degraded lands in the Yamuna ravines at Manikpura village in district Agra (U.P.). Ravine micro watershed (9.8 ha) of Uttangan river, a tributary of Yamuna river system was selected for the study. Two rows of bamboo were planted in staggered manner as vegetative barrier in bed of ravine for the analysis of hydrological behavior, growth and economic analysis. Hydrological results revealed that runoff was reduced from 9.6 % to 1.8 % and soil loss from 4.2 to 0.6 t/ha/yr in last four years. The growth performance of bamboo plantation was observed to be very good with the average culm height and culm collar diameter of 11.76m and 42.11mm. The average crown size and number of culms per clump were recorded to be 7.27 m and 29.60 numbers respectively. The soils under bamboo plants were improved in terms of decreased pH and enhanced soil organic carbon. The economic analysis suggested a cash outflow of ₹ 48,000 ha^{-1} from 7th year onwards to the stakeholders in the region, in addition to the benefits accrued to society at large in terms of value of nutrient (₹ 2125 – 5555 ha^{-1}) saved through soil conservation. From the study it can be concluded that cultivation of bamboo on the ravine area has the potential for good earning to the resource poor farmers and improving livelihood. To promote the use of bamboo on degraded Yamuna ravine, a policy frame work is urgently required for undertaking plantation on large scale.

Key words: Bamboo plantation, Degraded land, Economic analysis, Financial analysis, Livelihood, Ravines.