

Household income and natural forest conservation by agroforestry: an analysis based on two agro-ecological zones: Bagrot and Jalalabad in Northern Pakistan

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Abstract

The rapidly growing population poses increasing pressure on natural resources and the environment. Among the natural resources forest will become critical in the future because of over exploitation for firewood and timber. Especially in the northern areas of Pakistan the biophysical limitations of the environment exacerbate the problem. In such conditions agroforestry is an appropriate alternative to combat the situation and reduce the risk and vulnerability of farmers livelihood. Therefore, to make the farmers realise the significance of agroforestry, this study reveals the contribution of agroforestry in household farm income and its impact on natural forest. The specific objectives of the study were to understand the role of agroforestry in farmer's livelihood by analysing the agroforestry income, to evaluate the effect of agro-ecological zone on agroforestry income and to identify relationships between agroforestry and natural forest conservation.

The study was carried out in two villages of northern areas of Pakistan; Jalalabad and Bagrot valley. A total number of 120 households were surveyed randomly. Pre-structured questionnaire, key informant interview and direct observation were employed to collect the information. Secondary data were used to complement the information. Statistical tools were employed to analyse the agroforestry income, agro-ecological effect on agroforestry income and impact of agroforestry on natural forest conservation.

The results revealed that the contribution of annual crops and the tree component into agroforestry income was 63% and 37% respectively, and tree components increased the over all household farm income. Farm size and operational costs have positive relationship with the agroforestry income, no significant relationship was with household size. There was significant difference in agroforestry income in two-agroecological zones. The double cropping zone has more agroforestry income as compared to the single cropping zone. The agroforestry income and cultivated land had linear relationship such that with the increase of farm size agroforestry income increased.

It was observed that agroforestry increased the production of tree components on farmland and minimized the dependency on natural forest for fuel wood and timber that imposed positive impact on natural forest conservation.

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