

Economics of soil conservation: A case study for rainfed uplands farming in Dry Zone of Sri Lanka

Soil erosion in its broadest sense is one of the major problems, highland farming in dry zone agricultural frontier is facing at this moment in Sri Lanka. It depresses soil fertility and crop yield and leads to reduce income(s) of rainfed farmers in the Dry Zone as well as incomes in down-stream irrigation agriculture and hydropower generation via externalities. Meanwhile, many of the agroforestry programs designed to minimize the above problem have fallen short of expectations: often small farmers have not adopted recommended agroforestry practices or have abandoned them once the project(s) are terminated.

An extent of household's participation in agroforestry is dependent on the expected levels and variations in the marginal profit to labour gained from such practices. The aim of the study is to examine expected value of household's participation in agroforestry in a given locality using labour supply function of households.

Many have pointed out that it is difficult to accept the view that the marginal productivity of labour ($MPLa=0$) is always near or equal to zero in subsistence

agriculture in developing countries. Several empirical studies suggest that the MPLa is greater than zero ($MPLa > 0$). If this is true, then there will be positive opportunity costs due to a transfer of labour from on-farm/off farm to conservation since such a transfer will tend to reduce the level of on-farm output/or off- farm income.

The study therefore, uses a labor supply framework for identifying factors contributing to participation of households in alley cropping a form of agroforestry within highland rainfed farming. A case study was undertaken in Huruluwewa watershed area in the north Central Province, Sri Lanka. The study provides empirical evidences to confirm the theoreticla framework.

The model indicates that farmers with substantial off-farm employment and income tend to invest in soil conservation than those without. The model identifies three important recommendatins: at micro-level. (a) farmers' objectives should be clearly understood so that agroforestry programmes can be designed with greater acceptance, (a) agroforestry programs should minimize expenditures that farmers would be willing to make on their own and (c) long term credit and banking facilities should be made available for agroforestry programmes.