B-61: Farming packages to improve catchment hydrology of village tanks

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One of the major constraints in tank-village agriculture is the shortage of water for both rainfed upland and irrigable lowland cultivations. This study evaluates the present status of hydrology in village tank catchments and identifies alternative farming methods for the rainfed upland in order to improve the system hydrology.

The assessment was carried out by establishing rainfall-runoff relationships for existing land uses: forest, fallow and chena. Similarly, 4 farming methods were tested by their performance on rain water movement. The methods included 2 conventional types (ploughed land, land developed with conservation bunds) and 2 introduced types (strip mulch farming and graded hedgerow farming). In strip mulch farming a trash bund is formed at 5 m spacing with crop and weed residues and a leguminous creeper. In graded hedgerow farming *Gliricidia sepium* is planted on graded ridges at 5 m spacing.

Results showed that bunded land and ploughed land generate low runoff: 20 and 21 % respectively of annual rainfall. Relatively high percentage of runoff was observed in strip mulch and graded hedgerow land as 32 and 35 % respectively. Further, these new methods tend to generate more runoff only in wet months (April, October, November and December) leaving low rainfalls occurring in dry months for soil moisture replenishment.