B-61 Contour shift mapping technique to assess soil movement

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Soil erosion process in agricultural lands cannot be properly understood through soil loss data, therefore, study of soil movement has become important.

Contour shift mapping technique is proposed in this paper with some field examples, as a method to study soil movement in agricultural lands. Intensive topographical surveys are to be carried out in a cultivated land before and after the season. Two contour maps emerging from these surveys are superimposed to produce the *shifted contour map*. An *erosion severity map* can also be prepared by mapping depth reduction contours. In order to understand how erosion process varies along the slope downward, *cumulative depth reduction graphs* are prepared.

A chena plot survey indicated that during Maha 1988/89 season soil erosion was at an average rate of 1.7 cm. Another chena survey during the period, 1989 -1990 showed that the soil erosion during the one year period was at an average rate of 2.3 cm showing a very wide intra-field variation. Further, it was found that in some places erosion was as high as 16 cm per year.

A survey exercise was carried out in a rainfed upland farming site to determine the effect of a conservation bund on soil movement during the period October 1994 to November 1995. Average net reduction of soil depth due to erosion found in the study was 2.6 and 4.8 cm in plots with and without conservation bunds respectively. This shows that 46% protection has been provided by the earth bund. The depth reduction cumulative curves indicated that the most dominant erosion types in rainfed farming lands in the dry zone are splash and inter-rill erosions, therefore, improvement of soil resistance and presence of a cover are the most important aspects to be considered in soil conservation.