Public Abstract

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Title:Development of an Online Planning Tool for Designing Terrace Layouts

A web-based conservation planning tool for terrace layouts was developed to aid in conserving soil and water resources in an agriculture setting. Terracing is a common conservation practice used to decrease soil erosion by water. Terraces consist of broad channels constructed down the slope of a field which reduce the field slope length and allow sediment to settle from runoff. Locating terrace systems is a complicated and time consuming process, taking up to 50% of the total terrace design time. Therefore, an online tool was developed to aid NRCS staff, land developers, and land owners with designing terrace location in a field. The terrace layout tool was developed by modifying a terrace layout program (TERLOC), developed by Sudduth and Gregory (1982) and revised by Ghidey et al. (1992). The program was incorporated to an interactive web-interface and modified to accommodate a range of field topographies, boundaries, and orientations. Additional design parameters were added to assist the user with selecting a best design layout including: varied terrace spacing, non-erosive channel grades, underground and interconnecting outlet selection, and multiple key terraces. When compared to manual terrace layout results, the web-based terrace layout tool provides close estimations for terrace placement as well as overall terrace construction cost. The program expedites the planning process, potentially saving time and money in the terrace design process. It also allows NRCS staff, land developers, and land owners to design an optimal terrace layout rapidly and efficiently.