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**Influence of location on irrigation scheme size: Empirical evidence from farmer-managed river diversion schemes in Southeastern Sri Lanka**

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Irrigation has continued to influence the continuity of human civilizations from ancient times. Minor irrigation systems are historically constructed by communities and are mostly managed by them even today. Abundance and size of individual systems over a large river basin depict a large variation. There is a paucity of empirical studies on potential factors that contributed to this diversity. This study was conducted in Kirindi-Menik-Kumbukkan composite river basin in southeastern Sri Lanka, where there is well documented history on irrigation. This study can therefore draw useful insights to the understanding of generic systems elsewhere.

Objectives of this research were a) to establish a pattern of irrigation scheme size within the study river basin, b) to empirically investigate the relationship between scheme size and its location relative to the origin of the river, and c) to identify relationships among identified factors. Data were obtained from the database on village irrigation systems published by the Department of Agrarian Development. Data were disaggregated by river-basin, type and location and arranged by divisional secretary's area as the lowest level of geographical domain. Three regions for each river as a) source areas, b) middle reaches, and c) lower reaches were demarcated based on the characteristics identified. Each scheme was identified as located in one region.

Mean scheme sizes for minor river diversion schemes in source areas of the three rivers, Kirindi, Menik and Kumbukkan are respectively 10.8, 5.5, and 11.4 ha, while that for middle reaches are 28.3, 19.0 and 17.8 ha. Mean scheme sizes in middle reaches in all three river basins are larger than that of upper reaches and this relationship is statistically significant at 0.01 levels based on the independent sample t-test. It can be concluded that the scheme sizes of minor river diversion schemes increases as distance from the origin of the river to the scheme location increases. While this study provides empirical evidence on the pattern of irrigation systems in the study area, methods applied can be replicated to establish generic patterns to draw insights into the factors that contributed to the emergence of small-scale irrigation systems.

**Keywords:** Southeastern dry zone, terrain characteristics, water availability, water history, agricultural production