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<b>Abstract Title</b>	Characterize small-scale irrigation schemes in Northern Ethiopia based on socioeconomic, technical, and institutional aspects
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<b>Preferred Type of Presentation</b>	Oral Presentation
<b>Thematic Area:</b>	Other

#### **Abstract Submission**

Irrigation is vital for realizing the full potential of the agricultural sector and is an important means for achieving food security in many arid and semi-arid countries, including Ethiopia. In order to maximize the benefits of irrigation, situational analysis is important. However, there are limited studies in arid and semi-arid parts of Ethiopia that characterize existing irrigation developments from multi-dimensional perspectives. This study was conducted in the Zamra catchment, which is a semi-arid region in Tigray, Ethiopia. The main aim of this study is to characterize existing irrigation schemes based on socio-economic, technical, and institutional perspective. A survey was conducted, interviewing 242 farmers, split in three groups based on the source of irrigation water, which included traditional diversion, dam and modern diversion water users. Focus group discussions with elders, the water users association (WUA) committee and women headed households were also conducted. Descriptive statistics and the One-way Analysis of Variance (ANOVA) were used for quantitative analysis. Descriptive statistical methods such as arithmetic means and percentages were used to describe and examine the respondents' socioeconomic characteristics. Besides, the One-way ANOVA was used to show the significant difference between irrigation schemes on farmer's income. The income of the households that utilize dam earns more money (ETB 19582.02) than traditional diversion households (ETB 17475.75) and modern diversion households (ETB 12923.33). Additionally, the result indicates that there is a significant difference in farmers' income between modern diversion and dam ( $= p < 0.01$ ). However, there is no significant difference between dam and traditional diversion and similarly modern diversion and traditional diversion. The result also shows that the majority of farmers are satisfied with their participation in irrigation, highly satisfied (65%), moderately satisfied (34%) and not satisfied (1%). Finally, alternative mechanisms must be put in place to update scientific technologies in relation to water irrigation management and need instruments which help to improve the irrigation water use efficiency in small-scale irrigation schemes.

#### **Abstract Keywords**

Characterize. Ethiopia. Small-scale irrigation.Zamra catchment

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