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Smallholder: an inconvenient label in the adoption of water pumping technologies?

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Use of water pumping technologies (WPTs) to drive pressurized systems in smallholder irrigation schemes is one of the key interventions to secure water, hence to increase yields and to potentially alleviate poverty, as well as to foster local and global food security. Whichever the chosen WPT, smallholders face many decision-making variables when considering them: finances, information, technical performance, ease of use, market characteristics, and even environmental concerns are amongst them. We will present evidence that suggests that the way smallholders deal with those factors cannot be predicted based on mere land size-based classifications that are used in many existing policy studies and actual policies. As there are not many specific studies that focus on understanding the influence that the aforementioned variables, directly and indirectly, have on smallholders' adoption of WPTs, we conducted field work in three different contexts—Nepal, Indonesia and Malawi—to identify the multidimensional gaps and relations between farmer and technology.

Due to the nature of the study, which comprised several (subjective) variables across a number of contexts and individuals, a triangulation of data collection techniques (e.g. direct observations, semi-structured interviews, surveys) was preferred. The main research method was Q-methodology, an increasingly popular inverted technique of factor analysis that combines the strengths of qualitative and quantitative research. Furthermore, one of its main advantages is that representativeness of the subjectivity does not depend on large samples of respondents but rather on their diversity.

By this process, it became evident that clustering farmers under the “smallholders” label—in line with the traditional farm size-based approach—did not reflect their heterogeneity in the WPTs' adoption process. As a matter of fact, some smallholders are willing (and able, at times) to make substantial investments in WPTs for agricultural irrigation, thus moving away from the “external support-reliant-farmer” image. In conclusion, smallholder's behaviour, thus decision making, is highly contextualized and cannot be underpinned by solely and simplistically looking at the holding size.