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Adoption potential for sustainable small-scale irrigation with solar pumps in Burkina Faso

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Abstract

Farmer led irrigation (FLI), is expanding rapidly in Africa, particularly in Burkina Faso, where thousands of farmers mobilise water from close-by water sources in the dry season or during dry spells of the rainy season. Further expansion of irrigation is limited by often painful, inefficient, or unsustainable practices. However, there are several promising innovations, developed by farmers themselves, by private firms or by research and development agencies, which are often unaffordable or poorly adapted. Barriers to the adoption of such innovations are not only financial, but also technical, social, and organisational. As part of the IRRINN project (www.irrinn.org), this contribution focuses on small scale irrigators, and their attitude towards solar pumps. With the aim of determining the adoption likelihood of these pumps, we explored the innovation environment, identified and analysed drivers and constraints to adoption, as well as proposed actions for further promotion. Methodologically, a variant of the QAToCA research tool called QAT'RRINN, has been applied in four villages around Ouagadougou, where over 30 stakeholders provided detailed input on the tool's indicators in a participatory workshop. Findings revealed inhibiting factors from the participants' perceptions such as limited knowledge and funding, difficulties in accessing inputs, the limited duration of the promoting organisation's engagement, and weak dissemination support from local private organisations. Also, the lead-farmer approach was not used, while technically, the minimum plot size required could hinder adoption. Supporting factors for adoption are easy integration into the existing agricultural system since farmers are already experienced with irrigation. At the organisational level, it is appreciated that the implementing organisation works well with project partners and disposes of qualified staff. Furthermore, the innovation is compatible with the local context and does not face resistance from neighbouring farmers. We recommend accompanying up-scaling by providing technical information through extension, facilitating access to related inputs, and enhancing access to financial resources (e.g., loans and subsidies). The study underlines the importance of observing the whole context of an innovation's environment, not only focussing on its technical performance. Results of this study can help to overcome adoption obstacles or even question its appropriateness in the local context.

Keywords: Adoption, innovation, irrigation, small-scale agriculture, solar pumps