

# **Knowledge and Perception of farmers on Solar Irrigation Pumps (SIPs) in Gadag District, Karnataka State, India**

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Solar Irrigation Pumps (SIPs) constitutes for an eco-friendly and green energy options in pumping irrigation water in developing economies like India. Studies estimate that India's potential for harnessing solar energy to be 10 to 70 million solar irrigation pumps that could save around 255 billion liters of diesel per year (Pullenkav, 2016). The market potential for SIPs seems to be great as prices of photovoltaic PV panels continue to drop significantly in recent years. However, farmers' access to Solar Irrigation Pumps remains to be limited, especially in the agriculture sectors of India. Therefore the study focuses on understanding the farmer's point of view; their knowledge and perception with regards to the usage of SIPs at ground level, to understand the current challenges in the adoption of new technologies like the one with solar-powered irrigation pumps.

The study is thus based on the 50 in-depth farmers interviews held at five different taluks of Gadag district, India. This research address questions like, the benefits SIPs have over conventional methods of irrigation? What risks do SIPs pose? What are the existing schemes and regulations governing the promotion of SIPs? What are the farmers' opinions? What perception do farmers hold with regards to the innovation?.

Nonetheless, there are current challenges that this research tries to explore with the sustainability of SIPs over the long run. It found out that farmers' information sources and mentioned the problems in accessing information related to SIPs in rural regions of the district. The study explores the subsidy benefits under the scheme called "Surya raitha" and tries to address possible policy changes for agrarian development in general.

Research also stresses the importance of groundwater management in the region. SIPs can improve access to water for rural households; however, without a proper policy in check for moderate water consumption, there is a problem of overexploitation of groundwater in the region.

Finally, this study looks at different opinions of the farmers to understand the possible challenges and risks that come along with the adoption of SIPs. As such, it is the timely

reflection of the past adopted farmers which clearly highlights the possible challenges and issues concerned with the nature of adoption of SIPs in Gadag district, Karnataka, India.

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