



**Climate Adaptation and Resilience
(CARE) for South Asia Project**

Innovations in Climate Adaptation and Resilience (iCARE)

**Social Innovation Through Technology Nudging:
Developing A Behavioural Toolkit for Diffusing Solar
Irrigation in Bangladesh**

Project Name	Social Innovation Through Technology Nudging: Developing A Behavioural Toolkit for Diffusing Solar Irrigation in Bangladesh
Lead Organization Name	Durham University
Country of Implementation	Bangladesh
Summary Description	<p>Promoting climate-smart technology in agriculture is a pressing challenge in South Asia, the most climate-sensitive region. With a surge in extensive cropping, livestock rearing, and high-carbon input use, particularly in irrigation systems, greenhouse gas emissions have escalated significantly (Sapkota et al., 2021). Nieto et al. (2018) project alarming global and country-level emission increases by 2030 without effective mitigation measures, potentially leading to a 4°C global warming. Urgent action is needed for a swift transition to Climate-Smart Agriculture (CSA) by reducing dependence on nonrenewable energies. Despite advancements in CSA technologies, farmers resist adoption due to innate human reluctance to change (Kumar et al., 2020). Policy initiatives focusing on financial capacity have not effectively scaled up technology adoption, indicating the need to address the underlying human resistance to change for broader CSA technology coverage (Vernooy and Bouroncle, 2019).</p> <p>This project aims to address the challenge of promoting climate-smart technologies, with a specific focus on solar irrigation, within the context of South Asia. Building on the successful development of an innovative model “Advocacy, Demonstration, Omitting misinformation and Peer pressure for Technology (ADOPT)” adoption in 2021-2022, this initiative seeks to investigate the role of behavioural factors in incentivizing farmers to transition from diesel irrigation pumps to solar irrigation systems.</p> <p>The project will employ a field experimental approach to discern the behavioral factors influencing farmers' adoption of solar irrigation pumps. This approach will involve 1400 non-solar-using farmers across 28 districts in Bangladesh. Following the baseline survey, the farmers will be divided into two groups: 700 farmers will undergo the ADOPT training (treatment group),</p>

	<p>while another 700 farmers will undergo a placebo training (control group). Subsequent to the training intervention, the project will conduct an endline survey to delineate the subjective causal effect of the ADOPT model. Overall, the project informs climate change policy by identifying potential behavioural strategies in adopting carbon-reducing technologies in agriculture sector.</p>
Expected Outcome	<p>This project seeks to achieve the following four outcomes:</p> <ul style="list-style-type: none"> ■ Farmers' behavioural traits that influence their decisions in adopting climate-smart technologies are identified. ■ Farmers are trained to understand solar irrigation system. ■ Farmers are incentivised to adopt solar irrigation system. ■ Relevant policymakers are informed by obtaining evidence-based recommendations on incorporating behavioural insights into the adoption of solar irrigation policies.
Partner Government Agency(ies)	<p>The project aims to collaborate closely with the following government entities to identify solar irrigation adopters and non-adopters and share policy-specific findings to enhance the scalability of Climate-Smart Agriculture (CSA) initiatives:</p> <ul style="list-style-type: none"> ➤ Ministry of Agriculture, Government of Bangladesh ➤ Ministry of Power, Energy and Mineral Resources, Government of Bangladesh ➤ Ministry of Environment, Forest and Climate Change, Government of Bangladesh ➤ Sustainable and Renewable Energy Development Authority (SREDA), Bangladesh
Project duration	15 Months

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Supported By



Asian Disaster Preparedness Center

SM Tower, 24th Floor 979/66-70 Pahonyothin Road
Phayathai, Bangkok 10400 Thailand

Tel: +66 2 298 0681-92

Fax: +66 2 298 0012

E-mail: adpc@adpc.net

www.adpc.net



www.adpc.net



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