



Workshop on Strengthening Institutional Capacities for Sustainable Management of Solar Power Irrigation Systems (SPIS) in Bangladesh

Date: 11 April 2019 | Venue: in Dhaka, Bangladesh

INTRODUCTION AND CONTEXT

In Bangladesh, the growth of renewable energy, spearheaded by solar power has been remarkable. With daily radiation averaging between 4 to 6.5 kw/hr and an annual average of 340 to 345 sunshine days, the country has substantial solar potential and Bangladesh had become the world's largest market for solar home systems by 2015. Standalone photovoltaic (PV) technologies are being increasingly used for midsize pumping applications across the world. This trend can also be seen in the irrigation sector in Bangladesh. Solar powered irrigation systems (SPIS) projects started in Bangladesh in 2009 and today have more than 50,000 solar-powered irrigation pumps in the pipeline set to be installed by 2025 through public-private partnerships.

While SPIS can be a viable option to address energy deficiency in irrigation, there have been concerns that this technology may enable farmers to extract excessive groundwater. The Groundwater Management in Agricultural Activities Bill, 2018 has been passed to regulate groundwater resources for agricultural production, reintroducing licensing to restrict installation of tube wells in areas where groundwater level is falling rapidly. However, local institutions tasked with licensing and monitoring lack the capacity to perform such responsibilities. Diesel and electricity powered irrigation pumps have offered some level of control, as farmers were constrained by the price of diesel for pumping groundwater. However, solar PV systems offer virtually zero marginal energy cost of pumping and no motivation towards highly productive water use. Thus, policy interventions focussed on solar powered irrigation systems need to recognise water related risks and take into account the implications of SPIS on groundwater regulation and use in the country.

One key challenge of SPIS technologies is affordability for smallholder farmers, as a result the farmer becomes a passive recipient of power and water. They are often overlooked in subsidy schemes or loan programmes, as some of the pre-conditions to obtaining a loan are often beyond the smallholder farmers capacity.

Given this context, the Food and Agriculture Organisation of the United Nations (FAO) has initiated a technical assistance project 'Strengthening institutional capacities for sustainable management of solar powered irrigation systems while addressing groundwater risk'. The project will work towards the enhancement of agricultural productivity through diversification/intensification, promote the sustainable management of natural resources, and ensure the use of quality inputs and mechanization.

As a part of this project, a Bangladesh Country Assessment Report (CAR) has been developed to assist in the understanding of the sensitive differences in scale of operation, organizational structures, policy and legal frameworks; investments and financial arrangements of SPIS. In addition to the CAR, FAO has partnered with International Centre for Integrated Mountain Development (ICIMOD) to produce:

1. An in-depth policy brief, and
2. An SPIS feasibility map (taking into consideration the groundwater resources, sustainability, equity, governance and regulatory environment).



THE WORKSHOP

A workshop focussing on the development and national contextualisation of the CAR, the policy brief and the SPIS feasibility map will be organised on 11 April 2019 in Dhaka, Bangladesh.

The one-day workshop will bring different stakeholders, including policymakers, research community, and private sector representatives to provide an overview and draw lessons from the successes and failures of existing SPIS programmes in the country. The main aim of the workshop is to deliberate on the following to discuss the intended feasibility assessment and policy tool kit to be produced under this program of work:

- Key factors determining the success and failure of SPIS on the ground (biophysical, technical, agronomic, managerial, organisational and financial aspects, social aspects);
- Inter-linkages of farm-level application of SPIS and national policy frameworks and support structures;
- Policy options for the promotion and regulation of SPIS with specific regard to groundwater resources and equitable access;
- Key factors determining the feasibility of SPIS from a multiple perspective including equitable access to groundwater as well as government support, and technical and financial feasibility;
- Development of a policy toolkit for determining SPIS feasibility aimed at benefiting the poorest farmers from the technology where water resource conditions are suitable; and
- Enabling environment including ways to regulate SPIS so that water is sustainably and equitably used by these systems.

Workshop outputs:

1. Identified parameters for the design and scope of policy tools to be developed under this project;
2. Identified target areas and key leverage points for high impact policy making; and
3. Identified government priorities in SPIS to facilitate a more targeted scope for the policy brief and policy tools.