Regional Dialogue on Strengthening Institutional Capacities for Sustainable Management of Solar Powered Irrigation Systems (SPIS) in South Asia

Date: 10 – 11 September
Venue: The International Centre for Integrated Mountain Development, Kathmandu, Nepal

Introduction and Context

In recent years, solar powered irrigation systems (SPIS) have become increasingly viable for countries as a reliable, clean-energy solution for agricultural water use, especially in areas with high-incident solar radiation. Within this context SPIS has proven to be a valuable technology in playing a central role in national climate change mitigation strategies and ensuring access to energy for agriculture, specifically for users in rural areas that lack reliable access to electricity or where diesel fuel is expensive.

However, while not discounting the benefits of this new technology, there have been concerns that this technology may enable farmers to extract excessive groundwater. Previously diesel and electricity powered irrigation pumps offered some level of control over groundwater extraction, as farmers were constrained by the price of diesel for pumping groundwater. When placing SPIS in this context, in light of the expansive subsidy programs being rolled out in South Asia, there is a clear transformation happening in the agricultural energy market, whereby solar PV systems offer virtually zero marginal energy cost of pumping and are being rolled out cheaper and cheaper each year either by technology innovations or highly effective government subsidy programs. This issue is concerning as many countries where farm power supply is often heavily subsidized – already experience groundwater over-pumping. Solar pumps, which offer 2,300-2,500 hours a year of uninterrupted, daytime free energy, could just exacerbate the problem by, in essence, removing further barriers to groundwater extraction.

The conditions for SPIS vary from country to country, including biophysical and climatic suitability, techno-economic feasibility, institutional arrangements, regulations and policy support, financing and economic viability. It holds true that SPIS are most suitable to areas of high solar irradiation, many business models and government programs have been targeting these areas to maximize the effectiveness of SPIS. However, few SPIS programs have introduced controls or constraints to the SPIS technology to ensure environmental safety measures.

As SPIS expansion and promotion continues in South Asia, there is an opportunity to carefully consider the impacts of this technology. While the notions of innovation, financing and organization have been explored in depth to understand how SPIS can improve energy access in rural areas, it is necessary to also turn our attention to better understanding how this technology

effects groundwater regulation and use, in addition to exploring financial models and policies that can ensure the poorest farmers benefit from the technology where water resource conditions are suitable.

Given this context, the Food and Agriculture Organization 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.

FAO in partnership with International Centre for Integrated Mountain Development (ICIMOD) has developed, country assessments, policy briefs and SPIS suitability maps for Bangladesh and Pakistan to explore the sensitive differences in scale of operation, organizational structures, policy and legal frameworks; investments and financial arrangements, and environmental conditions of SPIS.

This project calls the participation of countries in the South Asian region to discuss, deliberate and confirm, the need to introduce environmental safeguards for this very valuable technology.

The Regional Dialogue

The dialogue will focus on presenting and contextualizing the work carried out by the project so far, while also seeking insights, inputs and perspectives from the region.

The two-day dialogue 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 region. The main aim of the dialogue is to deliberate on:

- SPIS feasibility mapping with environmental constraints
- Training package contents
- The SPIS policy environment/policy package
- Lessons from the region to enhance future policy making

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.

Agenda: Regional Dialogue on Strengthening Institutional Capacities for Sustainable Management of Solar Powered Irrigation Systems (SPIS) in South Asia

Chair: *To be Confirmed*
Special Guest: *To be Confirmed*

Day 1: 10 September 2019		
TIME	FORMAT	TOPIC
9:00 AM – 9:30 AM		**Registration and tea**
9:30 AM – 9:50 AM	Presentation	Welcome remarks
9:50 AM - 10:20 AM	Special Address	Special Address
10:20 AM – 10:40 AM	Presentation	Introduction to the project 'Strengthening Institutional Capacities for Sustainable Management of Solar Powered Irrigation Systems (SPIS)'
10:40 AM – 10:50 AM		**Tea Break**
10:50 AM – 11:10 AM	Presentation	Country Assessment and Policy findings in Bangladesh
11:10 AM – 11:30 AM	Presentation	Country Assessment and Policy findings in Pakistan
11:30 AM – 12:00 PM	Presentation	SPIS Feasibility Mapping
12:00 PM – 1:00PM		**Lunch**
1:00 PM – 1:20 PM	Special Address	The situation in Bangladesh, referring to the country assessment and policy findings – leading to group discussion
1:20 PM – 1:40 PM	Special Address	The situation in Pakistan, referring to the country assessment and policy findings – leading to group discussion
1.40 PM to 2.00 PM	Special Address	The situation in India, reflecting on the India experience from the Pakistan and Bangladesh experience.
2:00 PM – 2:30 PM	Presentation	SPIS in South Asia: When and where do they become best-bet technologies?
2:30 PM – 2:40 PM		**Tea Break**
2:40 PM – 3:00 PM	Presentation	SPIS experience in India in the context of the Water Energy Food Nexus
3:00 PM – 4:10 PM	Group Work	Feedback on the policy brief, mapping and toolkit
4:10 PM – 4:40 PM	Plenary	Reporting on group work & discussion
4:40 PM – 5:00 PM	Presentation	**Summary & Closing the Day**

Day 2: 11 September 2019		
TIME	FORMAT	TOPIC
9:00 AM – 9:30 AM		**Registration and tea**
9:30 AM – 9:45 AM	Presentation	Summary of previous day
9:45 AM – 10:00 AM	Presentation	Setting the Agenda for the Day
10:00 AM - 10:30 AM	Panel Discussion	Panel Discussion: SPIS country-specific institutional and policy contexts with relation to groundwater and SPIS
10:30 AM – 11:00 AM	Presentation	Lessons from SPIS farmers in Nepal
11.00 AM – 11.20 AM	Presentation	Case studies from behavioral studies in India, Bangladesh, and Pakistan
11:20 AM – 11:30 AM		**Tea Break**
11:30 AM – 12:30 PM	Group Work	Capacity development needs and introduction to SPIS toolkit
12:30 PM – 1:30 PM		**Lunch**
1:30 PM – 2:30 PM	Panel Discussion	Improving the Viability of SPIS: Getting the Institutional and Policy Settings Right
2:30 PM - 3:30 PM	Group Work	Policy Solution Round Tables
3:30 PM – 3:45 PM	Presentation	Discussion on next steps
3:45 PM – 4:00 PM		**Vote of Thanks & Closing**