

## Parallel Session 1-Groundwater sustainability, adaptation and mitigation

### Solar Irrigation and Groundwater Sustainability - Contributing to the Global Discourse

Time: 13:30 – 15:00 Venue: Himalaya Ball Room, Hotel Himalaya

#### Background

There have been concerns raised that the projected rise in the number of solar irrigation pumps, in part brought about by the replacement of diesel pumps or non-subsidized electric pumps will lead to an increase in the volume of groundwater abstracted, increasing risk of overexploitation. This concern is derived from the experiences in areas where highly subsidized electricity for groundwater pumping has facilitated unsustainable rates of abstraction, that in turn, has led to groundwater overexploitation, diminishing well yields and falling water tables. Whether groundwater abstraction will increase under solar irrigation will depend on the change in farmer irrigation pumping behavior that directly and/or indirectly depends on upscaling strategy of solar irrigation, underlying hydrogeological conditions and prevailing agricultural systems. This session will explore how upscaling solar irrigation can impact groundwater sustainability.

#### Objectives of the session

This session will present evidence from multiple countries on impact of solar irrigation on farmers groundwater use. This will be followed by panel discussion with panellists deliberating on what improvements are needed for upscaling solar irrigation while ensuring groundwater sustainability.

Time	Presentation	Speaker
13:30 -13:40	Impact of solar irrigation on groundwater sustainability: Evidence from India and Bangladesh	Mr. Mohd Faiz Alam, Regional Researcher, IWMI India
13:40 – 13:50	Groundwater vulnerability index	Dr. Mohsin Hafeez, Director of Water, Food and Ecosystem, IWMI Pakistan
13:50 – 14:00	Groundwater and Solar irrigation in Africa: Addressing the threats	Dr. Paul Pavelic, Senior Researcher – Hydrogeology IWMI Laos
14:00 – 14:10	Q&A on presentations	

**Moderator:** Dr. Sunil Kumar Ambast, Chairman, Central ground Water Board (CGWB)

**Panelists:**

	<b>Panelist</b>	<b>Question 1</b>	<b>Question 2</b>
1	Ratan Jain [IN]	Groundwater abstraction is neither regulated nor priced in most of South Asia. How do you think solar irrigation pumps could possible impact groundwater irrigation and could it provide an entry point to manage the same?	What policy measures or regulatory frameworks do you suggest encouraging the widespread adoption of solar irrigation pumps while ensuring groundwater sustainability?
2	Anwar Zahid	What role can groundwater modelling play in informing solar irrigation policy interventions?	
3	Prof. Dr. Netra Chettri	How do you think solar irrigation may influence farmers irrigation behaviour and what Institutional and technological innovations can be done to limit any adverse impact on groundwater?	
4	Marie-Charlotte Buisson	Grid-Connected SIPs are one model proposed to incentive groundwater sustainability? Can it work and if so, how should feed-in tariffs be devised to consider not only energy but also the value of groundwater?	
5		What are the opportunities and threats you see in Jordan/MENA region for expanding solar irrigation and what lessons can be taken from Asia where solar irrigation is fast expanding?	
6	Dr. Phonevillay	What are the opportunities and threats you see in Laos/SEA region for expanding solar irrigation and what lessons can be taken from Asia where solar irrigation is fast expanding?	

**Session Custodian:** Mohammad Faiz Alam

**Rapporteurs:** Anurag