



WORLD SUSTAINABLE DEVELOPMENT SUMMIT 2022

**TOWARDS A RESILIENT PLANET:
ENSURING A SUSTAINABLE AND EQUITABLE FUTURE**

February 16-18, 2022



Climate Resilience through Solar Irrigation

18 February 2022 | 14.45-16.15 IST

About the World Sustainable Development Summit (WSDS)

The **World Sustainable Development Summit (WSDS)** is the annual flagship Track II initiative of **The Energy and Resources Institute (TERI)**. Instituted in 2001, in 2021, the Summit series marked 20 years in its journey of making 'sustainable development' a globally shared goal. Over the past two decades, the Summit platform has pioneered conversations by bringing together governments, scholars, corporates, youth groups, thought leaders, and civil society representatives from across the world.

The present state of planetary health and humanitarian crises calls for revisiting the agenda around global action and equity. The 21st edition of the WSDS is being held under the umbrella theme of '**Towards a Resilient Planet: Ensuring a Sustainable and Equitable Future**' from **16th to 18th February 2022** in a virtual format.

Background note

Solar irrigation has the potential to provide energy and water security to farmers, enhance productivity and incomes, and decarbonize the agricultural sector – enabling countries across South Asia and Africa to achieve some of the UN's sustainable development goals (SDGs). In 2019, India launched one of the largest solar irrigation initiatives in the world, called the PM-KUSUM scheme. The scheme aims to provide clean energy to 38 lakh (3.8 million) farmers and contribute towards India's nationally determined contribution (NDC) target of achieving 40% of installed power generation capacity from non-fossil fuel sources by 2030, made at the 2015 Paris Climate Accord.

Despite the potential benefits of solar pumps, there is mixed evidence on their impact on groundwater tables, which is why care must be taken to implement solar irrigation schemes sustainably. There are complicated interconnections between water, energy and food –often called the “water–energy–food nexus” or WEF nexus – where interventions in one area can cause unexpected impacts on another, as well as on ecosystems. This is particularly concerning since climate change induced rainfall variability is likely to adversely affect agriculture and the impact will be disproportionately felt by poor farmers in developing countries, who may face food insecurity.

In order to achieve the socio-economic objectives of solar irrigation schemes, while minimizing their negative externalities, a guidebook has been developed by a GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) supported research consortium, comprising IISD (International Institute of Sustainable Development), TERI (The Energy and Resources Institute), CEEW (Council on Energy, Environment and Water) and ISEP (Initiative for Sustainable Energy Policy), in cooperation with India’s Ministry for New and Renewable Energy (MNRE). The guidebook follows an earlier study where the research consortium had mapped out the WEF policy nexus in India.

The guidebook aims to support state-level policymakers and agencies in implementing solar irrigation schemes sustainably, by maximizing economic benefits while addressing critical questions on social and environmental sustainability. First, how can solar irrigation schemes benefit low-income and marginalized farmers? Second, how can schemes minimize the risk of groundwater over-withdrawal in water-stressed regions? The guidebook provides evidence-based recommendations by drawing on practitioner experience, through consultations with policymakers, experts and civil society organizations, as well as synthesizing past research on solar irrigation and the WEF nexus.

The research consortium is hosting a thematic track, ‘Climate Resilience through Solar Irrigation’, at the World Sustainable Development Summit (WSDS), to present the guidebook findings and provide a platform for experts from South Asia and East Africa to deliberate and discuss ways in which climate resilience in the agriculture sector can be advanced through solar irrigation, with a focus on preventing groundwater depletion in water-stressed regions and supporting marginalized farmers.