

## SoLAR Innovation Fund Grantee PARC's Initiative To Improve Livelihoods Through Responsive Drip Irrigation

Livelihood Improvement of fragile and vulnerable communities through '*Energy and Water-Efficient Responsive Drip Irrigation Systems*' by Pakistan Agricultural Research Council (PARC) aims to enhance resilience and livelihood of small-scale, marginal communities and women farmers.

Under this project, RDI systems are being tested by piloting water-scarce areas for vegetable and horticulture production. Under this, the IF grantee PARC will further integrate RDI with a clean and efficient solar pumping system. In addition, these research cum learning sites will demonstrate the novel concept to the farmers, policymakers, governmental and non-governmental organizations for its adoption and upscaling.

A site was selected at the experimental area of CEWRI, NARC, and the proposed experimentation has been started by growing vegetables and lychee orchard on the RDI system. As a trial, a new orchard of Lychee has been established. The orchard is divided into four different sections; every section is equipped with a different irrigation system. A comparison between water usage by drip irrigation, bubbler irrigation, surface irrigation and RDI is intended through this experiment. Furthermore, in another experiment, summer vegetable crops, i.e., tomato, chillies, and capsicum, are cultivated using RDI. Seasonal water consumption data and morphological data of lychee orchards and vegetables are being collected. Data on seasonal water consumption will be used to design a micro solar pumping system.

In collaboration with Responsive Drip Irrigation (RDI), the USA, and Eva-Anna Farms, PARC conducted a two-day Climate Smart Innovative Water Management Training at NARC, Islamabad, from 17-18 March 2021. The training was aimed to bring more visibility to research on innovative water management techniques in Pakistan, share RDI methodology and approaches for water management, enhance institutional capacity in implementing a standard method for innovative water management, and understanding irrigation techniques for crop production. Twenty-five participants joined hands-on training at NARC, and thirteen joined online from various parts of Pakistan. Participants were from the irrigation department, On-Farm Water Management, research institutions, universities and private sectors.



Picture 1: Layout map of Lychee trial at RDI and other types of irrigation systems



Picture 2: Trenching and RDI installation



Picture 3: Water meter and pressure gauge



*Picture 4: Vegetables transplanted on ridges*



*Picture 5: Tomato crop growing on RDI*



*Picture 6: Spreading RDI downward*



*Picture 7: RDI around lychee plant*

**Climate Smart Innovative Water Management Training (Glimpses from the training)**



