RESEARCH PROGRAM ON Water, Land and Ecosystems

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Contact: Neil Palmer n.palmer@cgiar.org
+94 777 443836

Payday for India's first ever "sunshine farmer"

Innovative new scheme could protect water reserves, boost farmer incomes and guard against climate change

(*Gujarat, INDIA – 12th June 2015*) – A smallholder farmer in India's arid Gujarat state has started harvesting what could become the country's most climate-smart cash crop yet – sunshine.

Ramanbhai Parmar, a producer of wheat and banana in Anand district, has become the first farmer to sell energy back to the power grid from the solar panels that drive his water pump.

He will receive his first payment for his "solar crop" today.

With up to 3,000 hours of sunlight each year, Gujarat is one of India's sunniest states. But extended hot, dry spells, and increasingly unpredictable rains mean many farmers are feeling the heat. Vital groundwater reserves are also suffering as farmers take advantage of subsidised energy to pump water for irrigation, often extracting more than they need.

There is a danger that the recent, rapid rise of solar-powered pumps – while providing a cleaner energy source than diesel pumps - could add to the problem because the energy is regarded as free. By giving farmers the opportunity to sell excess electricity generated by their solar pumps, experts hope it will encourage them to pump only the water they need. The buy-back scheme could also protect farm incomes in the event of crop failure, and if adopted widely, help relieve pressure on the state's overburdened electricity board.

Farmer Parmar will receive 7,500 Indian Rupees (approx. US$120) for 1,500 kWh of electricity generated by his solar panels over four months. If he had used this energy to run his pump instead, he would have extracted an estimated

additional 8 million litres of groundwater. Today's payment to Parmer will be made by the International Water Management Institute (IWMI), which led the pilot study in Gujarat.

"'Solar crops' are a very exciting example of a triple-win," said IWMI senior fellow Tushaar Shah. "Farmers, the state, and precious water reserves all benefit from a single intervention.

"We know that India's farmers are extremely responsive to incentives that improve productivity and incomes. By offering them the chance to sell the electricity generated by their solar-powered water pumps, we could make agriculture in India cleaner and greener."

The initiative, known as SPaRC (Solar Power as a Remunerative Crop), offers farmers a guaranteed buy-back of the surplus solar power they produce, provided they are connected to the electricity grid. It is monitoring on-farm electricity generation, income, water efficiency and crop production as part of the pilot study.

SPaRC was established by IWMI as part of the CGIAR Research Program on Water, Land and Ecosystems. It is managed by the IWMI-Tata Water Policy Program and supported by Tata Trusts. The CGIAR Research Program on Climate Change, Agriculture and Food Security has pledged additional support for scaling up the pilot.

Nationwide, IWMI estimates around 11 million farmers currently connected to the electricity grid could, in principle, install solar-powered water pumps and sell the surplus energy they produce. Widespread adoption of this approach will depend upon multiple factors, including the commitment of local electricity companies.

Today's payment to Parmar was made by IWMI.

Additional Information

The International Water Management Institute (IWMI) is a non-profit, scientific research organization focusing on the sustainable use of water and land resources in developing countries. IWMI is a member of the CGIAR Consortium. CGIAR is a global partnership that unites organizations engaged in research for a food-secure future. It leads the CGIAR Research Program on Water, Land and Ecosystems which examines how we can intensify agriculture while still protecting the environment and lifting millions of farm families out of poverty. iwmi.org

The IWMI-Tata Water Policy Program (ITP) is a partnership between the International Water Management Institute (IWMI), Colombo and The Tata Trusts, Mumbai. The program presents new perspectives and practical solutions

derived from the wealth of research done in India on water resource management. Its objective is to help policy makers at the central, state and local levels address their water challenges – in areas such as sustainable groundwater management, water scarcity, and rural poverty – by translating research findings into practical policy recommendations. Through this program, IWMI collaborates with a range of partners across India to identify, analyze and document relevant water-management approaches and current practices.

The CGIAR Research Program on Water, Land and Ecosystems (WLE) combines the resources of 11 CGIAR Centers, the Food and Agriculture Organization of the United Nations (FAO) and numerous national, regional and international partners to provide an integrated approach to natural resource management research. WLE promotes a new approach to sustainable intensification in which a healthy functioning ecosystem is seen as a perquisite to agricultural development, resilience of food systems and wellbeing. This program is led by the International Water Management Institute (IWMI), a member of the CGIAR Consortium and is supported by CGIAR, a global research partnership for a food-secure future. wle.cgiar.org

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is a strategic partnership of CGIAR and Future Earth, led by the International Center of Tropical Agriculture. CCAFS brings together the world's best researchers in agricultural science, development research, climate science and Earth System science, to identify and address the most important interactions, synergies and tradeoffs between climate change, agriculture and food security. ccafs.cgiar.org

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