

## Solar Powered Community Lift-Micro-irrigation Project in Talwara and Hazipur Blocks of District, Hoshiarpur

**Problem statement:** The Kandi belt comprising 10% of the total area of Punjab is mostly rainfed. The area suffers from severe shortage of drinking water and poor socio-economic conditions of the farmers. Hoshiarpur district falls in this Kandi belt. Soil erosion is another major concern in this area as during monsoon period most of fertile soil gets eroded, resulting in unavailability of assured irrigation source coupled with soil degradation. Being sub-mountainous and remote area, the electricity supply is highly unreliable. The productivity is also very less as the farmers are only able to do mono-cropping and that too depends on rainfall only. The Govt of Punjab, taking stock of this situation, constructed Kandi canal which became lifeline of Kandi area. However, there was another problem in that area. The right canal bank being at lower elevation is possible to be irrigated through gravitational flow whereas the left canal bank being at higher elevation could be irrigated utilizing lift irrigation only.

**Intervention:** The Govt of Punjab approved a Solar Powered Lift-Micro-irrigation project with total cost of Rs. 42.10 Cr. with funding from under RKVY and NABARD. The project was started in January 2015 and commissioned on 7<sup>th</sup> August 2017. The project is operated and maintained by hand holding local community and Water User Associations (WUA's) for initial 7 years thus providing gestation period for farmers to develop their fiscal and technical capacity. The project was designed as integrated solar powered, fully computerized and automated micro-irrigation project. The solar energy gives leverage over grid-based systems. The micro-irrigation and automation (SCADA, Remote Terminal Units, Hydraulic Valves, Level Transmitters, Pressure Transmitters etc.) help in water conservation and equitable distribution of scarce resource respectively. The project consists of 3 main lift points from Kandi canal and booster stations (sump wells) are also provided at various points to enable water to reach at higher elevations. A total of 1,200 households and 8,500 beneficiaries have been benefitted by this project. The project beneficiaries include 3,730 women and 2,450 SC people.

**Impact:**

- Increase in income has been observed in the range of around 85% to 229% (Maize: 85%, Wheat: 127%, Mustard: 125%, Sesamum: 229% etc.)
- The project has given employment opportunity to local youth, who are working in the project as helper, guard etc.

- People who earlier migrated for work have started cultivating their own lands. Linkages established with local processing units are also helping these farmers getting instant cash return
- The farmers are getting demo of best practices, knowledge about latest agricultural practices, water conservation technologies etc. through the established training centres and experts from prestigious institutions. These training centres are also providing livelihood-based training sessions to landless and women community
- Due to proximity of urban areas, allied activities such as dairy farming is also growing

**Replicability:** Water scarcity issue is also prevalent in many other states (e.g. Haryana, Rajasthan etc.) in India. In those states, many areas suffer from unreliable electricity supply. Hence, similar model can be adopted across those areas to leverage benefits of micro-irrigation and improve socio-economic condition of farmers.

**Sustainability:** Being solar energy based, the project has ensured sustainable resource use in terms of energy. The project has focused on sustainable water resources management through efficient water use by micro-irrigation systems. Training centres are educating the beneficiary farmers and WUAs for effective O&M of irrigation assets, sustainable use of water etc., helping in proper utilization and maintenance of irrigation assets.

(Reference: <https://dswcpunjab.gov.in/contents/success-stories/Solar-Powered-Community-Lift-Micro-Irrigation-Project.html>)