



Eco-Village Development Practices in South Asia

Stories and Case Studies

Prepared by
Climate Action
Network South Asia



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Pico-grid an Option for Climate Smart Village: A Case Study from Jhansi

Four villages in Babina Block of Jhansi District of Uttar Pradesh made a history in the region by taking the initiative of making their own energy from solar pico-grid. Development Alternatives helped them in establishing the pico-grid, developed the capacity of the communities especially women and youth to manage the grid, helped them not only putting the LED bulbs in their houses but also helped them in establishing solar irrigation pumps and therefore, managed to develop four climate smart villages in Jhansi district. This initiative started to address the request of local youth and women to provide alternatives to kerosene oil for lighting their homes and diesel irrigation pump set for reducing the cost as well as the pollution free environment.

DA came up with the idea of establishment of pico-grid and distribution of decentralised electricity to the villages and thereby forming an eco- village or climate smart village. A pico-grid can generate 300-500 WP electricity and can be connected to maximum 30 households for providing them basic need of electricity consisting of a LED light bulb and a telephone charging facility. The biggest challenge in establishing these pico-grids in any rural areas is the continuity of the facility. Lack of ownership

becomes the biggest threat for the sustainability of this initiative. To overcome these challenges and to continue the process, several meetings were organised by DA with the community especially with the women and youth who were the prime customer of this facility, exposure visits were arranged to the places where these are run by the community successfully.

In Babina block the facility is running really well for last five years. Before the solar panels, the community have been trained in such a manner that it became their own initiative. Initially 25-30 households were formed a cluster and a three members' committee was formed from each of the cluster named as 'hamari bijli mahila samity' who took the charge of revenue collection of Rs.120 per household per month for maintenance of the system, cleaning of the panels, ensuring security of the panels, paying the AMC of the system and taking the ownership. A bank account was opened in the name of the committee and the expenditure was incurred directly from bank to maintain the transparency to the system.

Another committee named 'hamari bijli kisan samity' was formed for maintaining the irrigation system in these four villages. One samity



was consisting of 6-12 farmers. The solar panels were put up in one farmer's land but the ownership of the panels rested with all the six farmers who are under the same cluster. The youth of these villages made to take the responsibility of collecting revenue from each farmer for maintaining the system, cleaning of the panels and ensuring security of the panels and for paying AMC to the vendors. The local youth from the communities trained on operations and maintenance of the grid and resolving small technical issues and Annual Maintenance Contract (AMC) with technical vendors. The initial cost of each farmer was Rs. 500 and after that it became Rs. 200/- per month. A bank account was opened and maintained for bringing the transparency in the expenditure.

These initiatives resulted in access to reliable, affordable source of energy for households, reduced expenditure on electricity, as compared to kerosene (from Rs. 200/ month to Rs. 120 / month), children got more time to study in the evening and it was a clean source of energy which reduced adverse impact on health, households received cheaper and better access to communication owing to mobile charging facility within their own homes, households started getting better returns from their farming operations, including better agriculture yield which in

turn empowered both the women and the youth to take decisions on behalf of the family. The pico-grid finally improved the overall environment of villages by reducing the carbon dioxide emission from kerosene and diesel.

The factors played behind the successful implementation of the initiatives were:

- Community ownership and women and youth mobilised to volunteer and take responsibility of managing the systems
- Bank accounts opened for transparency with respect to account management
- Ensuring zero political involvement / interests helped tackle caste issues
- Youth were mobilised and engaged effectively, which led to more ownership and contributed to their taking leadership roles
- Catering to demand created by neighbouring villages for grid installation led to additional pico-grids being installed and hence greater awareness towards solar based lighting

These four villages of Babina block became an exemplary model for climate smart villages in the whole Jhansi district and these needs to be replicated in other areas of rural India for overall socio-economic development and environmental improvement of the country. ■



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