

Country	GIZ INDIA
Full Name of the programme / Cluster	Promotion of Solar Water Pumps- Indo-German Energy Programme
PN (complete 12 digits)	2016.20814-001
AV / Program Director / Cluster coordinator	Mr. Nilanjan Ghose (AV)/ Mr. Philipp Johannsen (Cluster Co-ordinator)
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Project Reach (states / region)	Eastern and north-eastern parts of India
Duration of project	October 2018 – September 2024
Political partner	Ministry of New and Renewable Energy (MNRE)
Funded by	Federal Ministry of Economic Development and Co-operation (BMZ)
Co-financing	IKEA Foundation
Cluster	Energy
Gender Marker and Gender Competition Category	GG1

CONTEXT

Agrifood systems are a major employer of women globally and constitute a more important source of livelihood for women than for men in many countries. Agrifood systems comprise the entire range of actors and their interlinked activities that add value to food and non-food agricultural production and related off-farm activities such as food storage, aggregation, post-harvest handling, transportation, processing, distribution, and marketing. Women are key actors in food systems as producers, wage workers, processors, traders, and consumers. In the agriculture sector, evidence¹ shows that women have unequal access and, in some cases, unequal rights, to important resources, such as land, water, pasture, seeds, fertilizers, chemical inputs, technology and information, and extension and advisory services, which reduces their potential to be productive in agriculture, become empowered to make strategic decisions, act on those decisions, and realize their rights.

In India, about 97.64 million women are engaged in the agriculture sector either as a cultivator or labourer². More than 90 million women³ are associated with 7.7 million women’s self-help groups (SHGs)⁴. These rural groups in India are in most cases associated with the agro-food sector for livelihood and agriculture-based income-generation activities. The module, “Promotion of Solar Water Pumps” facilitates the deployment of renewable energy technologies across selected agriculture and allied sectors leading to the adoption of clean technologies and reduced use of fossil fuel. The module operates within the stark gender inequalities present in agrifood systems and addresses some of the key issues (like access to affordable capital/finance, complementary agricultural extension, and advisory services) with respect to farm mechanisation in a gender responsive manner. Working with

¹ [The status of women in agrifood systems \(fao.org\)](https://www.fao.org/)

² [Agriculture Statistics -At a Glance | Official website of Directorate of Economics and Statistics, Department of Agriculture and Farmers Welfare, Ministry of Agriculture and Farmers Welfare, Government of India \(desagri.gov.in\)](https://www.dceostat.gov.in/)

³ [PM inaugurates World Food India 2023 | Prime Minister of India \(pmindia.gov.in\)](https://www.pmindia.gov.in/)

⁴ [Schemes for Women through Self Help Groups | Ministry of Rural Development | Government of India](https://www.mrd.gov.in/)



women self-help groups can potentially act as an instrument to support promotion of clean technologies and address specific issues with respect to access to technologies for improved agri-outputs. The project contributes to the Green and Sustainable Development Programme as agreed between the Government of India and the Government of Germany. The PSWP module has a multi-disciplinary team of nine experts amongst which four are women experts.

PROJECT ACTIVITIES

On the lines of Germany's Feminist Development Policy, the module tries to address the three R's (Rights, Resources and Representation). The section below highlights how the module has been inclusive to improve access to resources and active participation of both men and women.

Deployment of renewable energy-based technologies

The module has adopted two approaches to ensure the deployment of technologies in a gender responsive manner.

- a) Deployment of clean energy technologies like micro-irrigation pumps with a special focus on women farmers:

Micro-solar irrigation pumps (up to 1 Horsepower) are an important technology as they are easy to operate, portable and can be used for smaller plots of land. Therefore, the technology becomes ideal for small and marginal farmers, especially women farmers, as they have smaller plots of land and do not have the necessary finances to avail higher capacity irrigation pumps. The module started with the piloting of some demonstrative projects with the effective use of 77 micro solar irrigation pumps mostly involving women farmers (48% are women farmers). The pilots reveal that access to micro pumps led to improved cropping intensity; enhanced diversification of agricultural production; increased income. The micro solar pumps have also seen greater adoption by women farmers involved in rearing of smaller livestock like poultry and piggery. Women are mainly responsible for cleaning and rearing of less resource intensive livestock and access to the water through solar pumps has reduced the drudgery for cleaning of the livestock. The pilots have generated further interest and have led to sales of an additional 39 micro-solar pumps. It is worthwhile to mention that 74% of the new farmers interested in the technology are women. This is indicative of the fact that the module has been successful in matching the micro solar pump with the appropriate target groups i.e., women farmers within the value chain.



*Raimoni Toppno,
Farmer, Jharkhand:*

"Due to micro solar water pumps, I am able to irrigate the fruit orchard along with paddy crop, which wasn't possible before."

- b) Focus on a value chain-based approach with a concentration of women for the promotion of relevant technologies (like solar dryers etc.):

Value chain-based approach for farm mechanisation has greater potential for matching the appropriate technologies with the most appropriate women farmers. The module specifically focuses on agricultural and allied sectors which have traditionally greater involvement and participation of women, such as fishery and dairy. Within the fishery and dairy sector, the value chain segments of drying fish and rearing cattle stock are activities that primarily involve the work of women. The needs assessment conducted by the module reflects that the promotion of clean technologies like solar dryers, solar-based milking machines, and solar pumps would ease the



existing drudgery of women and could create economic opportunities for increased livelihoods for marginalised women farmers.

Access to financing services

Most of the clean energy technologies (beyond solar irrigation pumps) are not matured and therefore are not eligible for subsidy from either the central or state government. The module has been able to support in designing of a financial instrument with a Non-Banking Financing Corporation (NBFC) catering to small ticket sizes up to 550 Euros with a repayment period of up to 24 months. One of the key features of the financial instrument is that it is collateral free. Therefore, the instrument has a huge potential to engage with women farmers, as most of them are unable to provide the necessary collateral required to access loans. The financial instrument developed has features that facilitate the repayment as per the agricultural cycle and is poised to cater to the needs of small and marginal farmers consisting of both men and women farmers. The instrument was launched early in November 2023 and hence the module is yet to have data on the uptake of the financial product.

Review of relevant literature indicates that women's participation and representation in community groups enhances resilience, increases access to important resources such as land or labour, facilitates access to relevant agricultural inputs including access to technologies, builds and facilitates social networks, and increases their influence and participation in community-level decision-making. There is a positive correlation between women's active participation in self-help groups and increased levels of information including participation in some agricultural decisions. The module is in the process of developing another financial product with a financial institution which specifically targets women self-help-groups. With 7.7 million women SHGs in India, we anticipate that the financial product being designed would have potentials for upscaling within the project region.

Access to agricultural extension services and advisory services

Access to information relating to agricultural extension services acts as an essential enabler for women farmers to improve their livelihood. The module has designed gender-sensitive training materials for improved awareness and dissemination. 804 male and female participants have attended the training programmes (out of which 14 percent are women) conducted through the module. The module has organized 10 entrepreneurial BOOT CAMPS for progressive farmers in the fishery sector within the project locations. The training programmes are organized jointly with men and women farmers keeping in mind the importance of social inclusion. 40-80% participants of the boot camp were women based on the specific location for the training. The module has initiated designing extension service sessions by women farmers for women farmers. Women farmers are in a better position to appreciate and acknowledge when good practices are shared by women farmers. The recognition of a women farmer as a trainer and an active change maker is also empowering for them as it promotes social acceptance and enhances self-respect within their family and peer groups.

In order to facilitate access to financial advisory services, the module has conducted classroom-based training in a gender-sensitive manner for 461 banking officials (12 percent of the trainees are women) working with nationalised banks and responsible for rural credit. The training creates an understanding of the techno-commercial features of the potential technologies. The module has made efforts to ensure that the language used in the module is gender neutral with specific reference to women farmers-based case studies. The module also encourages the bankers to explore group-based lending with the goal of targeting women self-help groups.



IMPACT

Digitized monitoring and collection of Gender disaggregated data for a flagship scheme.

The module has supported in digitization of monitoring and evaluation of the governmental flagship scheme titled Pradhan Mantri Kisan Urja Suraksha Evam Utthan Mahabhiyaan (**PM-KUSUM**) for solarization of the agriculture sector with a target of installation of 30.8 Giga Watt of solar capacity reaching to 3.5 million farmers in India. With support from the module, the political partner, Ministry of New and Renewable Energy in India has developed a digital portal to monitor the programme. The digital portal contains gender-segregated data of the beneficiaries who have availed the scheme. The portal contains details of 133772 farmers and about 12% of the beneficiaries are women farmers. Creation of the gender segregated database acts as the foundation to analyse the ground realities which thereafter can influence and facilitate policy makers to make gender responsive measures.

Dedicated financial product addressing small and marginal farmers (especially women farmers)

The process of access to finance from the Non-Banking Finance Company (NBFC) has been paperless and fully digitized. The digital process has reduced the time for processing loans and has also eased the process of repayment for both male and female farmers. The digital process to avail finance is especially helpful for women farmers as they often have limited means for mobility beyond the village and it also saves time as most of the unpaid care work within the household is also borne by them.

Co-operation and partnerships

The module has worked with different partners at the macro, meso, and micro levels to create complementary agricultural resources, technologies, and services which are more gender responsive. At the (macro) policy level, the module is working with the Ministry of New and Renewable Energy in designing [gender-sensitive communication materials](#) in 4 regional languages for the above stated flagship scheme. At a meso level, the module has worked with non-banking financial institutions and the private sector responsible for developing financial products and deployment of relevant technologies respectively with a focus on women. At the micro-level, the module is working with farmer's co-operatives and grassroots-level civil society organizations for last-mile service delivery in a gender responsive manner. Understanding of gender varies within the partnership spectrum. The module ensures that it creates a broader understanding of the gender across the spectrum and supports specific actors to deliver a gender responsive outcome.

OUTLOOK

Energy as a sector has been primarily gender neutral. The module has made conscious efforts to shift to a gender-sensitive and gender responsive approach in terms of its engagement with partners and delivery of services. The module recognizes that farm mechanisation through the promotion of clean technologies is an important means for women's empowerment and addresses gender inequality. Some of the measures undertaken by the module can be the foundation for more gender transformative pathways, for example, focusing on women-centric value chains for appropriate technology deployment and the design of collateral free financial instruments as well as exploring group-based financial instruments with a specific focus on women farmers. If awarded, the resource would be used for designing information-communication and training (ICT) materials on the optimal use of relevant technologies especially for women farmers (e.g., use of nutritional gardens along with solar irrigational technologies). Thus, it will be able to contribute to areas beyond the current result matrix. It is also worthwhile to mention that there are discussions to have a follow-on phase titled "Solar in Rural Areas" starting from October 2024 with a GG2 marker.

