

Barefoot College — The Solar Mama Who Never Went to School

Magan Kanwar was a sanitation worker in Rajasthan. She could not read or write. She had no formal education, no technical training, no credential of any kind. She came to Barefoot College in Tilonia and left six months later as a solar engineer — capable of building, installing,....

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This is not a motivational story about overcoming odds. It is an institutional argument about where knowledge lives, who can acquire it, and why the barriers between communities and technical competence are constructed rather than natural.

Barefoot College, founded in 1972 by Sanjit 'Bunker' Roy in Tilonia, Rajasthan, is built on a specific and radical premise: illiteracy is not a barrier to expertise. The village women who have no formal schooling also have no formal schooling's particular blindspot — the belief that knowledge comes only from books, that technical skills require academic preparation, that practical competence is somehow lesser than theoretical understanding. They learn by doing, because doing is what they have always done.

Who They Are

Barefoot College — formally the Social Work and Research Centre — has operated from Tilonia since 1972, running entirely on solar energy. Founded by Bunker Roy on Gandhian principles of each village being self-reliant, it recruits students primarily from the poorest rural villages and teaches them technical skills — solar engineering, water system installation and repair, healthcare, architecture, dentistry — without requiring literacy or prior formal education.

The campus itself is a demonstration: built by students, maintained by students, powered by solar panels installed by students. The Barefoot approach to education is embodied in the place where it happens.

The Solar Mamas: 18,000 Women, 83 Countries

Barefoot College's most documented programme is the Solar Mama initiative: training rural women as solar engineers. Over 18,000 women from 83 countries have received skills training at Barefoot College across various fields, with solar engineers remaining the most impactful graduates. These women have provided light and power to over 1,500 villages and more than 500,000 people worldwide.

The training methodology addresses the most obvious practical barrier: language. When women from Afghanistan, Ghana, Burkina Faso, Fiji, and different Indian states arrive in Tilonia simultaneously, they share no common language with each other or with their instructors. Barefoot College uses sign language, visual demonstration, and hands-on practice — bypassing verbal instruction entirely for the technical content. A teacher at Barefoot College describes it: "It is fascinating to see how women from diverse countries, with no common language between them, communicate and become solar engineers. Initially, it may seem the communication is difficult, but by the end of the six-month course, all the women communicate with each other and be engineers."

The three women from Afghanistan who trained in Tilonia and returned to make theirs the first ever solar-electrified village in Afghanistan — and then trained 27 others, creating over 100 solar-electrified villages across the country — are the model working as designed. The solar mama is not the end of the value chain. She is the beginning of one.

The Gandhian Architecture

Bunker Roy's educational philosophy is explicitly Gandhian: decentralised, practical, rooted in the knowledge that villages already possess. The Village Energy and Environment Committee that communities form before Barefoot College begins work in a village determines the rates that villagers will pay for solar panels and identifies which of the poorest residents will go to Tilonia for training. This governance structure — community ownership of the selection process and the pricing structure — is what makes the solar electrification sustainable after Barefoot College has moved on.

The opposite of the Barefoot approach is when a development programme installs solar panels, trains a technician from outside the community, and leaves behind a system that nobody in the village can maintain and nobody feels ownership over. This is how solar electrification programmes fail. Barefoot College's model produces the opposite: community-owned, community-managed, community-maintained systems whose technical custodian is a village woman who cannot read but can diagnose and repair any electrical fault in the equipment she installed herself.

The March 2023 Legal Milestone

A counterfeit institution calling itself "Barefoot College International" had been trading on the original college's name and reputation. In March 2023, the Delhi High Court ruled in favor of Barefoot College, preventing the imitation from using its name and branding — an acknowledgment of the institutional value of the Tilonia identity.

Why This Matters for Odisha's Tribal Communities

Odisha's tribal women — from the Dongria Kondh in Rayagada to the Bonda in Malkangiri to the Saura in Gajapati — face exactly the conditions that Barefoot College's model was designed for: practical intelligence without formal credentialing, communities that need technical skills but have been structurally excluded from formal skill development pathways.

The green skills focus that Barefoot College is now developing — solar and EV mechanics — is precisely the skills pipeline that Odisha's renewable energy expansion will need in tribal areas. IREDA's partnership with Barefoot College to train 80 women solar engineers is a direct precedent for similar models in Odisha's tribal districts, where International Solar Alliance and MNRE programmes create the demand that community-trained solar engineers can supply.

Contact and Further Reading

Website: barefootcollegeinternational.org | **Campus:** Tilonia, Ajmer District, Rajasthan

Key evidence:

- CSRBox Solar Sahelis profile: 18,000 women, 83 countries, 1,500+ villages, 500,000+ people
- The Borgen Project: Barefoot College India — Women Becoming Solar Engineers (July 2024)
- CHANGEMAKR.ASIA: How Rural Women Are Powering A Global Solar Revolution (February 2025)
- Skoll Foundation profile: organisational overview and Gandhian philosophy
- Scientific literature: The Barefoot College 'eco-village' approach to women's entrepreneurship in energy (Environmental Innovation and Societal Transitions, 2024)

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