

India's barefoot solar engineers fight climate change and poverty

Rajasthan, India: At first glance, the scene is no different than any other amid the deserts of western India. There is a tent, made of brown sacking and held up by the branches of a tree. Camels laze in the shade. The surrounding scrubland is dry, and unbearably hot. Then you start to notice the differences.

A popular Bollywood tune wafts through the air. And you see a strange-looking device – a flat oblong panel - strapped onto the side of the tent.

Inside, listening to the music on a cassette player, sits a small, ragged looking boy, aged about 12. The tent is his home, shared with five brothers and sisters.

The boy, Rosanna, says their parents spend months away from home, traveling from village to village trying to earn a living by selling salt and chilies. So he and the other children are looked after by their grand-parents.

Life here, in the Indian state of Rajasthan, is tough. The heat in summer can reach 45 Centigrade. But the children recently acquired something which has made life easier, and placed them in a different category from other impoverished Indians in this area.

They have electricity.

They do not get it from the national grid – the grid does not reach this remote community. It comes from the sun. And it is free.

Rosanna says the simple, low-cost solar panel on the side of their tent has totally altered their lives. It generates enough power to run the cassette player, the light and a mobile phone charger.

"We used to have a kerosene lamp," he said. "When there was wind there was no light, when there was rain there was no light. And it was dangerous. Now we can eat in the light, we used to eat in darkness. I can read and write in the light".

This change has come because of one person - a local woman named Dipsika.

Dipsika teaches infants in the surrounding villages. But she has also trained to be a solar engineer. She can assemble and repair solar lanterns and install and maintain solar panels and batteries that offer power after dark.

Without meaning to Dipsika has become a pioneer, at the forefront of what the International Labour Organization (ILO) – the UN agency that deals with work and workplace issues – calls Green Jobs; jobs which are created as a result of economies adapting to climate and environmental change.

"Women are very vulnerable to the effects of climate change because they represent the majority of the world's poor and are proportionally more dependent than men on threatened natural resources," said Vincent Jugault, ILO Senior Specialist in Environment and Decent Work. "Green economic sectors that are getting support from the economic crisis stimulus packages, for example sustainable transport and construction, are largely male-dominated. That's why locally-based initiatives like the training of barefoot solar engineers in remote or rural areas should be promoted and replicated. Green jobs can offer great opportunities for women by bringing extra money to their families and communities".

The Green Jobs concept is also getting a boost from the ILO's current year-long Global Gender Campaign, which highlights the importance of gender in areas such as climate change, entrepreneurship, skills development and social security. The campaign will culminate with a debate between the 3,000-plus international delegates due to attend the ILO's annual conference in Geneva in June.

"The Global Gender Campaign shows how women and men are affected differently by existing approaches to a wide range of crucial work-related issues, such as the access to rights, employment, social protection, entrepreneurship, climate change, and occupational safety and health," said Jane Hodges, Director of the ILO's Bureau of Gender Equality. "These differences are important because they prevent both men and women from fulfilling their potential. Changing this will require a change of attitudes at all levels - policy makers in governments, employers and workers. But the first step is to be aware of the problem".

As a result of the work and entrepreneurialism of Dipsika 11 families in her local community have already installed the panels, which cost fifteen hundred rupees each (equivalent to 30 US dollars). Many others have solar lanterns.

Shanaaz Bhanu, another of the so-called barefoot solar engineers, stands next to a large round object, about 10 ft tall, shaped like a satellite dish. The surface is covered with hundreds of small mirrors. In front of it there is a small square metal box.

It's a solar oven. The mirrors on the dish reflect the sun's light and focus it onto the box where the food is cooked. What's more, at the rear of the dish is a mechanism that keeps it slowly turning throughout the day and pointing towards the sun. This was assembled by local women from bicycle parts bought at the local market.

Shanaaz says the solar oven has many advantages. "It doesn't cost anything to run, it doesn't use up natural resources, like wood which is getting scarce, and unlike burning wood, it doesn't cause any pollution," she says.

This ability to build things using local materials and expertise is central to the philosophy of the institution that trained the two women, the Barefoot College in the Rajistani village of Tilonia. Their courses are based on the principle that answers to rural problems must come from within the community itself. The College has trained hundreds of women who have then gone back into their community to apply their skills.

The work of the College has now spread far beyond helping just its own community. With the green jobs solar technology, the idea is to spread the skills across the developing world. Villages in Afghanistan, Mali, Senegal, Cameroon, Bolivia and elsewhere now have solar power.

Currently the college is training a group of nearly forty women from Africa in the basics of solar engineering. The African trainees do not speak any of India's many languages; their Indian tutors do not speak any African languages. They try to communicate through a mixture of sign language, pictures and broken English.

Nevertheless, the idea and the willpower are so strong that the message is getting across, loud and clear.

“My entire village chose me to come here,” said 27-year-old Aisatsoo Bangura from Sierra Leone. “When I go home, I am going to teach every village there about solar”.