LAND STRUGGLES

'Our livelihood depends on this land': A solar park in Gujarat is hurting a pastoral community

The Charonda solar park has very high India reach its renewable energy goals, but it has a hidden cost.

Aparthi Begum Hamadha, India Spend.com
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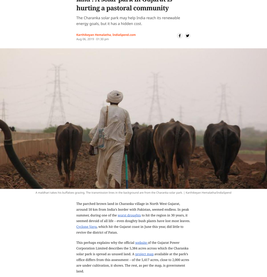

A solar park near Charonda village. The Charonda Solar Park is located just on the Charonda-Lodai road. | Aparthi Begum Hamadha/India Spend

The parched brown land in Charonda village in North West Gujarat, around 18 km from India's border with Pakistan, seemed endless. As pick-up trucks kicked up dust, the sun was at its zenith. It was hot, and the mercury neared 42 of 108 – even draughty hard places have hot mean factor. Cricket Tests which for the Gujarat coast in June this year, did little to revive the desire of Pawa.

This perhaps explains why the official website of the Gujarat Power Corporation Limited describes the 5,384 acre across which the Charonda solar park is spread as unused land. A project map available at the park's office differs from the assessment – of the 5,457 acres, close to 2,000 acres are under cultivation, it shows. The rest, as per the map, is government land.

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The villagers were kind of these labels. "What do they mean that the land is unused and that it belongs to the government?" asked Kala Bro, a livestock owner. "We use it for grazing livestock, and our livelihood depends on this land. It doesn't belong to anyone, it belongs to everyone."

The solar park project launched in December 2014 has functioned since April 2012. It sits on what used to be the pastoral for the region's livestock herders, called maldhari. They have traditionally never owned the land where their animals graze but it is critical for their livelihood. Maldharis were once a nomadic community but now have opted to settle down.

These factors are not reflected in the state's latest solar power policy of 2015 or the Gujarat Wind-Solar Hybrid Power Policy of 2016. The socio compensation or livelihoods do not figure anywhere in the solar power policy.

Kala Bro, a dairy farmer in the Lodai village in Kutch, Gujarat, is worried that the solar farms to take their pastures grazing. Credit: Aparthi Begum Hamadha/India Spend

Herding land across to the grazing lands, maldharis can no longer ever graze, cluster, or water their livestock. And the Farm Repurchase Obtain Rates entry is other British practice in the.

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"As a result, the once self-sustaining and independent community has now become dependent on the government for food and water, supplied by neighbouring villages or working as cleaners in the solar parks," said Nora Verma, the food process in India for the South Asia Responsible Alliance, a network that advocates pro-pastoralist policies on commons lands, livestock, food and environment.

A switch to renewable energy is at the heart of India's Nationally Determined Contributions commitment made at the Paris Agreement in 2015 which sought to keep the global temperature rise within 1.5 degrees Celsius. One of the key commitments was to increase electricity generation from non-fossil fuel sources to 40 percent by 2030 from the current level of 36.5 GW. India's solar capacity has grown from 2.34 megawatts in 2014 to 32.48 megawatts as of March 2019, according to an annual report of the Central Electricity Authority of India.

The country between is likely to achieve this target a full decade ahead, according to a study by the Institute for Energy Economic and Financial Analysis, a US-based think-tank that analyses governance and energy. The cost of solar power has plummeted by 81.5 per kilowatt-hour – in 2015, before the start of the solar revolution, the cost had reached $1.12 kilowatt-hour.

However, activists working with indigenous communities feel that the real cost of this power is not being taken into account, despite clear signs of emerging conflict, as Pakistan reported in March 2017. Solar energy is a land-intensive industry, requiring large tracts of land and large tracts of land and semi-arid are being crowed by solar parks.

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"Review of existing literature suggests that the average land requirement per megawatt of solar power installed capacity is in the range of 4 acres-2 acres while the average land requirement for 1 megawatt of wind power is around 1 hectare (or 2.47 acres)," said a draft report by the Ministry of New and Renewable Energy. "Hence, the opportunity cost of land is estimated in terms of agricultural inconvenience. Unrelated capacity(ies), that is, the land(s)(Ha)(Acres)."

Grasslands or not?

Villagers allege that the solar parks encroach on their grassland but officials of the Gujarat Power Corporation Limited denied this. "Gujarat Power Corporation Limited has not encroached upon any grassland belonging to villagers or to the state for solar purchase," said Rajendra Bhatty, Gujarat Power Corporation Limited's chief project officer and information officer. "As far as the Charonda solar project is concerned, Gujarat Power Corporation Limited has not taken grazing land (grassland) for the park."

There are two types of government land as per revenue records – government wasteland and grassland. Bhatty pointed out. "Gujarat Power Corporation Limited has (only) taken government wasteland," he said.

The Charonda solar park is spread over 5,384 acres of land where cattle, buffaloes and sheep graze. Villagers allege that the solar park has encroached on their grazing land. Credit: Aparthi Begum Hamadha/India Spend

While the economic cost of land acquisition is being calculated for compensations to land owning farmers, livelihood loss is being ignored, activists said. The draft report makes no mention of the social costs of generating renewable energy.

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Solar parks do not need environmental impact assessments before being commissioned, said the environment ministry in an August 2017 note. "Ministry of Environment, Forests and Climate Change have clarified that the provision of environmental clearance (EC) under the EIA notification is not applicable to solar photovoltaic power projects," the note said. However, it added that the disposal of photovoltaic cells will attract provisions of the Hazardous and Other Waste (Management and Trans-Boundary Movement) Rules, 2016.

The environmental also added that the development of solar parks will attract provisions under the Water Act, 1974 and Air Act, 1981, both focussed on pollution.

The long-term impact of cutting off sunlight and rain from the land on which solar parks stand needs to be studied and considered before large parks are commissioned, said experts. "There has been a large increase in solar parks around the world, which has led to significant land use change," said a report commissioned by the European Commission that looked into the impact of solar parks on microclimate and plant and processes. "Moreover, the ecological implications of the land use change caused by solar parks are poorly understood."

The study showed up the significant impact of solar projects on microclimate. "Temperature differences of up to 4 degrees Celsius in the panels was up to 1.5 degree Celsius cooler, on average, than soil in the gap and control plots," said the study. "Lower soil temperatures are likely to affect many important plant-soil processes, including productivity and decomposition."

The study also found less moisture in the air below panels, meaning less evaporation of water from plants and thus, lower photosynthesis rates and fewer plants. But in hot regions, these panels could have plant growth. "Low, cool, moist microclimates in the shade of solar panels in more regions, such as the Mediterranean Basin, could actually boost plant growth, for instance," said the study.

Forced to take on pattry jobs

Villagers have taken on low-paying jobs at the park – cleaning panels, cutting grass and laying cables. "This pays us Rs 240 a day, but we never earlier earned Rs 240 a day. We used to be in a month and during rains, even less," said Veera Bro, a cattle herder.

"We years ago, each of this hundred families in the village had at least 250 sheep and the land belonged to us," said Veera Bro, a cattle herder in Charonda village. Credit: Aparthi Begum Hamadha/India Spend

These changes have caused distress in the region, according to activists. "In my interactions with the villagers, it is very clear that their self-esteem and their sense of identity has taken a hit since the solar park came up," said Verma of the South Asia Pastoralist Alliance.

The project has also taken up nearly 2,000 acres of cultivated land around Charonda. While landowners get between Rs 80,000 and Rs 1,15,000 per acre in compensation, the rest get nothing. "We are forced to travel to neighbouring villages because we can't find work as agricultural labourers in our village," Veera Bro added.

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The current government has systematically broken down all safeguards for pastoral and forest communities. Amendments to the Forest Rights Act, national board of the Gujarat Jurisdiction, the grievance organisation of Indian National Congress, a farm leader and maldhari himself. This is especially true of those who do not have direct land ownership but have been in traditional customary, for decades.

Dying livestock

"Even according to the policies of the state government of Gujarat, at least 40 acres need to be demarcated for every 100 maldhari families, and this but this rule has not been followed," said Desai. "Apart from this, the government also ended the consent of 70% of landowners before acquiring them, according to the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013."

Maldharis were once nomadic livestock herders. Some are now opting to settle down. Credit: Aparthi Begum Hamadha/India Spend

Before the solar park came, the then chief minister of the state, Narendra Modi visited Charonda in 2011 for the cross-laying ceremony. Villagers alleged that they were forcibly kept out of the event. "Ironically, the police only allowed people from neighbouring villages to attend the programme," said Jesra Bro, a cattle herder. "I somehow got in. He (Modi) spoke about how this (solar park) will create a hospital. None of these promises has been fulfilled to this day."

Stock for a solution

As a result of the arrival of solar parks, the number of grazing land has reduced, says Desai. "Each cow needs at least 12 kilograms of fodder every day," said Bero Bro. "How can we afford this?"

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Solar Energy Corporation of India officials Ambalkhan spoke to state not sure if there are mechanisms to calculate compensations for those who do not own land or other assets. "Everything involves money," said Sanjay Kumar general manager contract and procurement at Solar Energy Corporation of India. "It is compensation to communities who do not own land) is not a part of policy yet not mandatory, but cannot spend any money on compensation. It should be arrived at by the state government."

The state of the Solar Energy Corporation of India can do is to inform the Ministry of New and Renewable Energy of Charonda villagers' problem or "it can write to the state, but the state government is independent and will be able to enforce this," he said. "We state should not be responsible."

In 2011, following a Supreme Court judgment, the state does development commissioned land pool and a circular instructing that all encroachments on the grasslands be removed.

The land-use debate

But taking into account various aspects of land – especially its importance to pastoral communities – is critical, says Ashish Kothari, one of the Indian experts. "For recognising land for its occupational use, ecological importance and cultural significance is a deliberate attempt to comprise them as wasteloads, giving the impression that these are empty spaces that can be easily transferred for government use or for private sector projects," said Kaosha Mehta, researcher at the Centre for Policy Research, a public policy think-tank based in New Delhi.

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"The Solar Project Developer shall be responsible for obtaining the land and for payment of compensation and resettlement and rehabilitation," Gujarat Policy 2015. Laws like the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 and the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 recognise the importance of grasslands for pastoralists.

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"However, they can be applied only when the land's uses and importance is recognised," said Kohli.

Experts working on the transition to renewable energy believe that specific laws are needed to protect these communities. "The rate at which these projects are operating, the real ecological cost and the opportunity cost that others are paying [for them] are not being accounted for," said Harjeet Singh, global climate lead at ActionAid. "The solar and renewable energy revolution has just started and we should not allow it to go without proper scrutiny and later realise its real costs to both the environment and the people."

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