

# Why India's Solar Push Could Kill The Livelihood Of Pastoral Communities

Author - Karthikeyan Hemalatha, Published on - 8.8.2019



*The Charanka solar park is spread over 5,384 acres of land where cows, buffaloes and goats raised by the local maldhari community used to graze. It is now out of bounds for them.*

**Charanka, Patan:** The parched brown of the land in Charanka village in north-west Gujarat, around 50 km from India's border with Pakistan, seemed endless. In peak summer, during one of the **worst droughts** to hit the region in 30 years, it seems devoid of all life--even doughty bush plants have lost most leaves. **Cyclone Vayu**, that hit the Gujarat coast in June 2019, did little to revive the district of Patan.

This perhaps explains why the official [website](#) of the Gujarat Power Corporation Limited describes the 5,384 acres across which the Charanka solar park is spread as "unused" land. A [project map](#) available at the park's office differs from this assessment--of the 5,417 acres, close to 2,000 acres are under cultivation, it showed. The rest, as per the map, is "government land".

The villagers were livid at these labels. "What do they mean that the land is unused and that it belongs to the government?" asked Raku Ben, a livestock rearer. "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 2010, has been functional since April 2012. It sits on what used to be the pasture for the region's livestock herders, called maldharis. They have traditionally never owned the land where their animals graze but it is critical for their livelihood. The maldharis were once a nomadic community but some 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 2018. The words "compensation" or "livelihoods" do not figure anywhere in the solar power policy.



Karthikeyan Hemalatha Solar park on the right, reserved forest on the left, there is no place left for the cattle herders to take their animals grazing. Charanka's livestock has dwindled since these grazing lands were taken over for the park. Having lost access to the grazing lands, maldharis can no longer rear goats, sheep, cows or buffaloes. And the forest department denies them entry to other fertile patches in the region. "As a result, the once self-sustaining and independent community has now been reduced to doing daily-wage labour in either agricultural fields in neighbouring villages or working as cleaners in the solar park," said Anu Verma, the focal person in India for the **South Asia Pastoralist 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 (NDC) commitment made at the Paris Agreement in 2015 which sought to keep global temperature rise under 1.5 deg C. One of the key commitments was to increase electricity generation from renewable sources to 40% of total energy generated in the country by 2030. India's solar capacity has grown from 3,744 MW in 2014-15 to 28,181 MW as of March 2019, according to an annual report of the Central Electricity Authority of India. The country, however, is likely to achieve this target a full decade ahead, according to a study by the Institute for Energy Economic and Financial Analysis (IEEFA), a US-based think-tank that analyses governance and energy. The cost of solar power has plummeted to Rs 2.44/kWh--in 2011, before the start of the solar revolution, the cost had reached Rs 12.76/kWh. 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 *IndiaSpend* reported in March 2017. Solar energy is one of the most land-intensive sources of power and large tracts of arid and semi-arid are being covered by solar panels. "Review of existing literature suggests that the average land requirement per MW of solar power installed capacity is in the range of 4-5 acres while the average land requirement for 1 MW of wind power is around 1 Ha (or 2.47 acres)," said a draft report

by the Ministry of New and Renewable Energy (MNRE). "Hence, the opportunity cost of land is estimated in terms of (agricultural income/acre) / (installed capacity/acre), i.e. (Rs/Acre)/(MW/Acre)." [Grasslands or not: the debate](#) Villagers allege that the solar parks encroach on their grassland but officials of the Gujarat Power Corporation Limited (GPCL) denied this. "GPCL follows prevailing rules, acts and regulation of land acquisition act in the state for solar park land," said Rajendra Mistry, GPCL's chief project officer and information officer. "As far as the Charanka solar project is concerned, GPCL has not taken [gauchar](#) land (grassland) for the park." There are two types of government land as per revenue records--government wasteland and grassland, Mistry pointed out. "GPCL has



Karthikeyan Hemalatha

A maldhari takes his buffaloes grazing.

(only) taken government wasteland," he said.

The transmission lines in the background rise from the Charanka solar park. 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. Solar parks do not need environmental impact assessments (EIA) before being commissioned, said the environment ministry in an August 2017 note. "MOEF&CC (Ministry of environment, forests & climate change) have clarified that the provision of EIA Notification, 2006 is not applicable to solar PV (photovoltaic) power projects," said the office memorandum, adding that the disposal of PV cells will attract provisions of the Hazardous and Other Waste (Management and Trans-Boundary Movement) Rules, 2016. The memorandum 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-soil processes. "However, the ecological implications of the land-use change caused by solar parks are poorly understood." The study showed up significant impact of solar projects on microclimate. "From spring to autumn, for example, soil under the panels was up to 5.2oC 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 low evaporation of water from plants and thus, lower photosynthesis rates and fewer plants. But in hot regions these panels could boost plant growth. "Less solar radiation (which can stress plants) under panels in sunny regions, such as the European Mediterranean, could actually boost plant growth, for instance," said the study. **Forced to take on paltry jobs** Villagers have taken on low-paying jobs at the park--cleaning panels, cutting grass and laying cables. "This pays us Rs 200 a day, but we never get more than three days of work in a month and during rains, even less," said Neeru



Karthikeyan Hemalatha

Ben, a cattle herder.

"Ten years ago, each of the hundred families in the village had at least 350 sheep and the whole village had around 1,200 cows," recalls Neeru Ben, a herder. "Now only 20 families have livestock. I have seen my own sheep die of hunger because there are no grazing lands."

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 Charanka. While landowners got between Rs 80,000 and Rs 1.5 lakh per acre as compensation, the rest got nothing. "We are forced to travel to neighbouring villages because we can't find work as agricultural labourers in our village," Neeru Ben added. The current government has systematically broken down all safeguards that protect the rights of local communities, alleged Lalji Desai, the national head of the Congress [Sevadal](#), the

grassroot 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 its traditional custodians, he added. **'State rule on grazing lands not followed'** "Even according to the policies of the state government of Gujarat, at least 40 acres need to be demarcated for every 100 animals that pastorals own but this rule has not been followed," said Desai. "Apart from this, the government also needs the consent of 70% of landowners before acquiring them, according to LARR (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. The livestock count has fallen in Charanka. "Ten years back, each of the hundred families in the village had at least 350 sheep and the whole village had around 1,200 cows," recalled Neeru Ben. "Now only 20 families have livestock. I have seen my own sheep die of hunger because there are no grazing lands." Fodder is available at Rs 22/kg in the market but the villagers cannot afford it. "Each cow needs at least 12 kg of fodder everyday," said Neeru Ben. "How can we afford this?" Before the solar park came, the then chief minister of the state, Narendra Modi visited Charanka in 2011 for the stone-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 Janu Ben, a cattle herder. "I somehow got in. He (Modi) promised us free water, electricity and even a hospital. None of these promises have been fulfilled to this day." [Stuck for a solution](#) At an average of five acres of land needed for every MW of solar energy, some 140,000 acres (570 sq km) of land are already under solar panels across the country. If India is to meet its solar target of 100 GW by 2022, which many analysts are sceptical about, nearly 3,00,000 acres (1,214sq km) of land will have to be under panels across India. Of the 100 GW target, 60GW would need to come from large solar parks, and 40 GW from rooftops. Land is a state subject, with limited central role, maintained officials of both the MNRE and the Solar Energy Corporation of India

(SECI), a public sector undertaking dedicated to solar energy. "We will only tie up the land and give it to developers," said Praveen Kumar, additional secretary at the MNRE. "We are not in the business of acquiring or buying it. Whatever the policies the state government has regarding compensation to landless communities, these should be followed." He refused to comment on whether the central government can issue guidelines to state governments on the question of compensation for cattle herders who do not own the land they graze animals on. SECI officials *IndiaSpend* spoke to were 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 SECI. "If it (compensation to communities who do not own land) is not a part of any policy or not mandated, we cannot spend any amount (on compensation). It should be arrived at by the state government." The most SECI can do is to inform the MNRE of Charanka villagers' problem or propose a solution. "(But) I don't know whether the central government will be able to enforce this: The state should own that responsibility," he said. In 2011, following a Supreme Court [order](#), the then state development commissioner had put out a circular instructing that all encroachments on the grasslands be removed. **Land use factor cannot be ignored: activists** Not taking into account various aspects of land--especially its importance in historical and political struggles--is a blinkered view, said land conflict experts. "Not recognising land for its occupational use, ecological importance and cultural significance is a deliberate attempt to categorise them as wastelands, giving the impression that these are empty spaces than can be easily transferred for government use or for private sector projects," said Kanchi Kohli, researcher at the Centre For Policy Research, a public policy think-tank based in New Delhi. "The Solar Project Developer shall be responsible for obtaining the land for setting up and operating solar power project," said the Gujarat Solar Power 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 (RFCTLARR) Act, 2013 recognise the importance of grasslands for pastoral communities. "However, they can be applied only when the land's uses and importance is recognised," said Kohli. Experts working on just 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." First published by [IndiaSpend](#) on 5 Aug. 2019