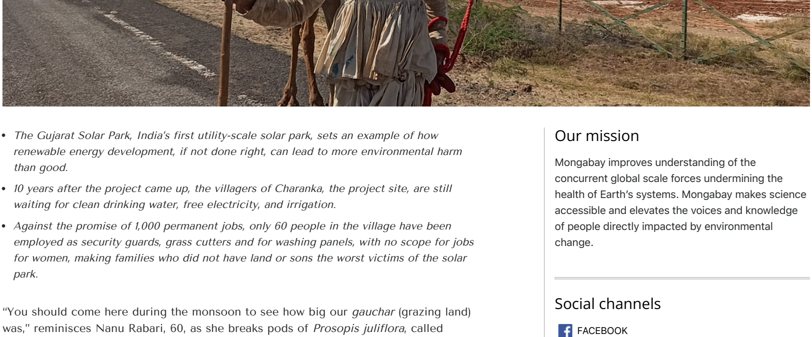
Mongabay Series: Clean Energy, Environment and Her, Just Transitions

A decade on, India's first solar park has many promises left to fulfil

by Ravleen Kaur on 18 March 2022



- *The Gujarat Solar Park, India's first utility-scale solar park, sets an example of how renewable energy development, if not done right, can lead to more environmental harm than good.*
- *10 years after the project came up, the villagers of Charanka, the project site, are still waiting for clean drinking water, free electricity, and irrigation.*
- *Against the promise of 1,000 permanent jobs, only 60 people in the village have been employed as security guards, grass cutters and for washing panels, with no scope for jobs for women, making families who did not have land or sons the worst victims of the solar park.*

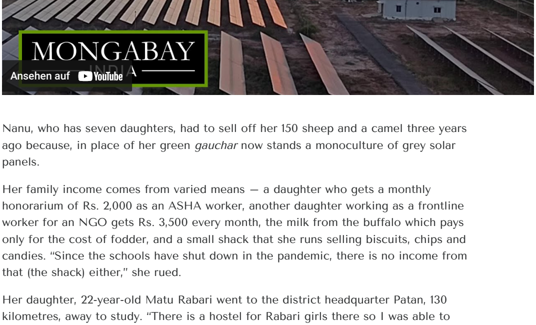
"You should come here during the monsoon to see how big our *gauchar* (grazing land) was," reminisces Nanu Rabari, 60, as she breaks pods of *Prosopis juliflora*, called *gando bawal* (mad tree) in Gujarat, to feed her only milking buffalo. Rabari is a resident of Charanka, a sleepy village near the India-Pakistan border that garnered worldwide attention 10 years ago for housing India's first and Asia's then-largest solar park. The Gujarat Solar Park (GSP) in Charanka village of Gujarat's Patan district came with promises of jobs and development but apart from Rabari's grazing land, it took away the main water sources of this already-parched village.

Thirty six companies operate in the GSP, spread across 5,384 acres (2,178.82 hectares), producing 730 megawatts (MW) of solar power. Further, projects of 20 MW are under implementation including a 15 MW project which is being opposed by the villagers.

The 5,384 acre Gujarat Solar Park in Patan and other solar parks in Gujarat's Kutch district. Maps by Technology for Wildlife.

The solar park was launched on December 30, 2010, and was commissioned on December 31, 2011. A bumpy road lined with open drains marks the entry to Charanka, a stark contrast to the visuals of a "world-class" project that the Gujarat Power Corporation Limited (GPCL) advertises.

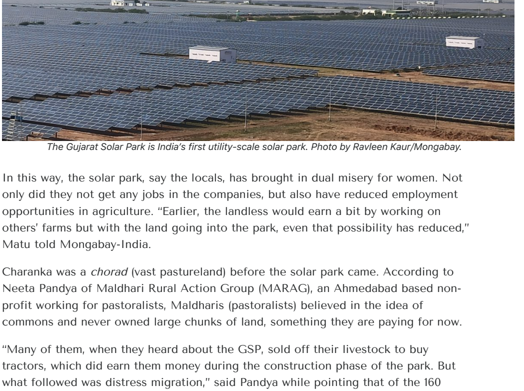
"If the government was really concerned about us, they should have given us a canal, not a solar park. We have no use for it … neither it feeds our animals nor us," Nanu, who cultivated fodder on a two-acre plot of government wasteland that has now been taken over by the GSP, told Mongabay-India. "Irrigation would have meant a better crop and less spending on buying fodder," she said.



Nanu, who has seven daughters, had to sell off her 150 sheep and a camel three years ago because, in place of her green *gauchar* now stands a monoculture of grey solar panels.

Her family income comes from varied means — a daughter who gets a monthly honorarium of Rs. 2,000 as an ASHA worker, another daughter working as a frontline worker for an NGO gets Rs. 3,500 every month, the milk from the buffalo which pays only for the cost of fodder, and a small shack that she runs selling biscuits, chips and candies. "Since the schools have shut down in the pandemic, there is no income from that (the shack) either," she rued.

Her daughter, 22-year-old Matu Rabari went to the district headquarter Patan, 130 kilometres, away to study. "There is a hostel for Rabari girls there so I was able to study up to graduation hoping that I would get a job back home in the solar park. But there is no job for girls here. Earlier, we would go to cut grass 1-2 times in a month and get Rs. 300 but even that option is not there anymore," Matu, now a graduate, said. The jobs at the companies are available through sub-contractors.



The Gujarat Solar Park is India's first utility-scale solar park. Photo by Ravleen Kaur/Mongabay.

In this way, the solar park, say the locals, has brought in dual misery for women. Not only did they not get any jobs in the companies, but also have reduced employment opportunities in agriculture. "Earlier, the landless would earn a bit by working on others' farms but with the land going into the park, even that possibility has reduced," Matu told Mongabay-India.

Charanka was a *chorad* (vast pastureland) before the solar park came. According to Neeta Pandya of Maldhari Rural Action Group (MARAG), an Ahmedabad based non-profit working for pastoralists, Maldharis (pastoralists) believed in the idea of commons and never owned large chunks of land, something they are paying for now.

"Many of them, when they heard about the GSP, sold off their livestock to buy tractors, which did earn them money during the construction phase of the park. But what followed was distress migration," said Pandya while pointing that of the 160 Maldhari families in Charanka, only about 10 have livestock now.

Unfulfilled promises

When the Gujarat Solar Park was dedicated to the country in April 2012, Narendra Modi, the then chief minister of Gujarat, declared that a 'Surya Tirth' and a picnic spot on the lines of the Modhera sun temple will be built in Charanka. "GSP would be the new sun temple, creating 30,000 jobs including in the manufacturing of solar panels," he announced.

"Modiji also promised a school from Class 8 to 12, a hospital, drinking water and free electricity to the village, none of the above in the list is checked till now," said Sumersinh Jadeja, the Sarpanch (village head) of Charanka.

Jadeja emphasised that "the companies who had set up the plant here in 2011-12 are still selling power at the rate of Rs. 15 per unit so a plant is earning Rs. 75,000 on every one megawatt of power produced per day. With that kind of profit, the little they could do was build some facilities for the village. The GPCL says that they have transferred Rs. 50 lakhs (Rs. five million) for CSR to the Collector's office in Patan. Nothing has come our way till date though," Jadeja told Mongabay-India while pointing towards the solar park.

The promises of free electricity, drinking water, transport and schools — which the residents have been waiting for — were made verbally. But there seem to be no written records to hold anyone accountable. The people of the village though, have been keeping track of all the promises made and not met.

Matu Rabari fought financial distress and went to the district headquarter Patan, 130 kilometres, away to study. Photo by Ravleen Kaur/Mongabay.

Sami Ben (name changed), a resident of Charanka, said "there is an electric line from the park to the village but instead of free electricity, the bills have only gone up in recent years. From Rs. 500-1000 earlier, it is Rs. 2,500 now."

Drinking water supply has been another unfulfilled promise, she adds. "The government supply is once in 5-7 days when we fill our 500 or 1,000-litre tanks. If more is needed, we have to buy water tankers at the rate of Rs. 1,000 per tanker from the nearby Fangli village. Water was always scarce here but with the company coming in, we expected at least clean drinking water," said Sami Ben.

The one *parab* (a public drinking water stall) by PLG Photovoltaic Pvt. Ltd., with no pipeline attached, stands testimony to the remarkable absence of any CSR (Corporate Social Responsibility) scheme in the village.

A GPCL official, when asked about water supply promises, said they had planned to install an RO system for the village but the forest department had already installed one. "So we put it on hold. We realised that the Panchayat (local administration) has not been able to maintain that system and it is lying as waste. So, we didn't go ahead about installing a new system," he told Mongabay-India on conditions of anonymity.

Another promise — a school till class 12 — also remains unfulfilled so far. The only school in Charanka is till Class 8 and for lack of transport (three buses a day from Charanka to Santalpur was part of the promise) to Santalpur town that is 20-kilometres away, most children, especially girls, are forced to drop out of higher education.

Anjali (name changed), could not study beyond grade 8 because, in the Rajput community, to which she belongs, she alleged girls are not allowed to go out of the village alone. "If only the company had fulfilled their promise of building a school till class 12, my dream of further education would not have shattered," she told Mongabay-India.

"I have not seen any written record of the above promises. However, we have placed a tender for an ambulance and a fire brigade for the village. The facility will soon be here," said the GPCL official.

Read more: Given land for power, Pavagada residents now powerless

Land deals made farmers rich?

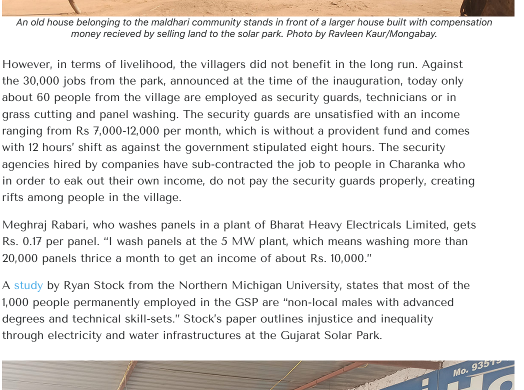
The GSP is built on 5,384 acres (2,178.82 hectares) of 'unused' land, says the website of the GPCL, a claim easily disputed. A map of the GSP, available with Mongabay-India, shows that about 1,900 acres (768 hectares) of private land were acquired from the village, 207 acres (84 hectares) were grazing land while the rest was government wasteland. But about half the families in Charanka did earn a big buck from the GSP by selling off their land.

In 2011, GPCL paid a rate of Rs. 690,000 per acre of land, said Shambhu Dan Ghadvi, secretary of the Charanka Dairy Cooperative. However, not every landholder got lucky. For instance, Lilabhai Rabari owned 10 acres of land. Some people approached him in 2010 and told him to sell it off or the government will acquire it anyway. "I got only Rs. 400,000 for my land (less than 50,000 per acre for 10 acres) on which I grew fodder and castor. The money eventually got used in meeting household expenses," Lilabhai told Mongabay-India.

Jadeja says that the value of land in Charanka till 2006 was not more than Rs. 20,000-30,000 per acre but suddenly, in 2009, a lot of outsiders, including businessmen from Ahmedabad started coming to buy land in the village. "The illiterate villagers were told that since this land is saline, they will never be able to earn much out of it. They told people to sell off land or the government will acquire it anyway. I myself sold off 10 acres at Rs. 40,000 per acre because I had to pay my father's hospital bills," he said.

Mero Rabari from nearby Rozu village said his brother was one such middleman who earned out of these land deals. "In 2011, he bought land from villagers at Rs. 100,000 for an acre and resold it at double or triple the price. But that money ended soon as he bought a vehicle, travelled and finished it all. Now, he works as a labourer in somebody else's fields," said Mero.

Some others alleged that sudden money led to the villagers buying cars even as there are no roads to drive them on. Some people, who didn't have a pucca house, made one while some others bought land in nearby areas.

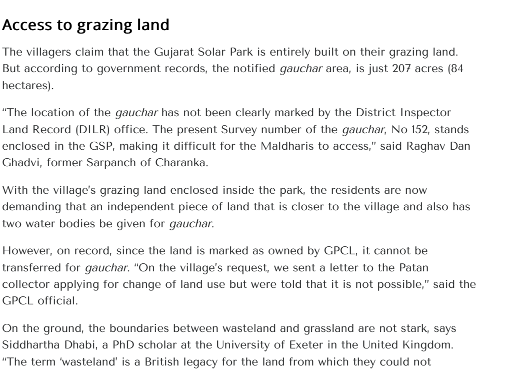


An old house belonging to the maldhari community stands in front of a larger house built with compensation money recieved by selling land to the solar park. Photo by Ravleen Kaur/Mongabay.

However, in terms of livelihood, the villagers did not benefit in the long run. Against the 30,000 jobs from the park, announced at the time of the inauguration, today only about 60 people from the village are employed as security guards, technicians or in grass cutting and panel washing. The security guards are unsatisfied with an income ranging from Rs 7,000-12,000 per month, which is without a provident fund and comes with 12 hours' shift as against the government stipulated eight hours. The security agencies hired by companies have sub-contracted the job to people in Charanka who in order to eak out their own income, do not pay the security guards properly, creating rifts among people in the village.

Meghraj Rabari, who washes panels in a plant of Bharat Heavy Electricals Limited, gets Rs. 0.17 per panel. "I wash panels at the 5 MW plant, which means washing more than 20,000 panels thrice a month to get an income of about Rs. 10,000."

A study by Ryan Stock from the Northern Michigan University, states that most of the 1,000 people permanently employed in the GSP are "non-local males with advanced degrees and technical skill-sets." Stock's paper outlines injustice and inequality through electricity and water infrastructures at the Gujarat Solar Park.



The security guards at GSP work 12-hour shifts as against the government stipulated eight hours and they are unsatisfied with their income. Photo by Ravleen Kaur/Mongabay.

Access to grazing land

The villagers claim that the Gujarat Solar Park is entirely built on their grazing land. But according to government records, the notified *gauchar* area, is just 207 acres (84 hectares).

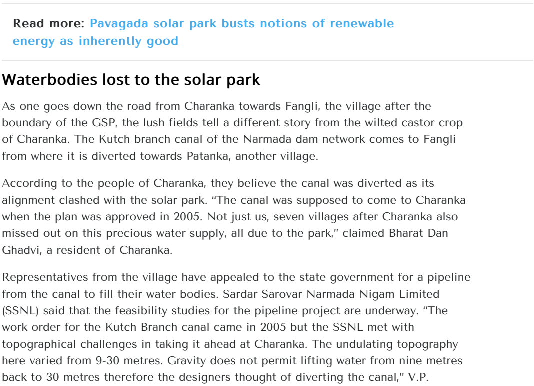
"The location of the *gauchar* has not been clearly marked by the District Inspector Land Record (DILR) office. The present Survey number of the *gauchar*, No 152, stands enclosed in the GSP, making it difficult for the Maldharis to access," said Raghav Dan Ghadvi, former Sarpanch of Charanka.

With the village's grazing land enclosed inside the park, the residents are now demanding that an independent piece of land that is closer to the village and also has two water bodies be given for *gauchar*.

However, on record, since the land is marked as owned by GPCL, it cannot be transferred for *gauchar*. "On the village's request, we sent a letter to the Patan collector applying for change of land use but were told that it is not possible," said the GPCL official.

On the ground, the boundaries between wasteland and grassland are not stark, says Siddhartha Dhabi, a PhD scholar at the University of Exeter in the United Kingdom. "The term 'wasteland' is a British legacy for the land from which they could not generate revenue for the Queen back then. Unfortunately, even the government of independent India retained this term, rendering a land crucial for livestock grazing as waste and now acquiring it for all sorts of projects," Dhabi, who is working on the ecological impact of renewable energy with reference to windmills in Kachchh, told Mongabay-India.

Mongabay-India contacted Supreet Singh Gulati, the Patan Collector, and Rajendra Mistry, who is the Chief Project Officer of GPCL, but did not get a response.



A large part of the solar park was built over grazing land.

Photos by Ravleen Kaur/Mongabay.

Read more: Pavagada solar park busts notions of renewable energy as inherently good

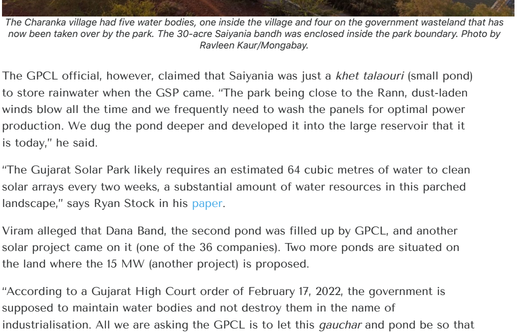
Waterbodies lost to the solar park

As one goes down the road from Charanka towards Fangli, the village after the boundary of the GSP, the lush fields tell a different story from the wilted castor crop of Charanka. The Kutch branch canal of the Narmada dam network comes to Fangli from where it is diverted towards Patanka, another village.

According to the people of Charanka, they believe the canal was diverted as its alignment clashed with the solar park. "The canal was supposed to come to Charanka when the plan was approved in 2005. Not just us, seven villages after Charanka also missed out on this precious water supply, all due to the park," claimed Bharat Dan Ghadvi, a resident of Charanka.

Representatives from the village have appealed to the state government for a pipeline from the canal to fill their water bodies. Sardar Sarovar Narmada Nigam Limited (SSNL) said that the feasibility studies for the pipeline project are underway. "The work order for the Kutch Branch canal came in 2005 but the SSNL met with topographical challenges in taking it ahead at Charanka. The undulating topography here varied from 9-30 metres. Gravity does not permit lifting water from nine metres back to 30 metres therefore the designers thought of diverting the canal," V.P. Kapadia, director of the SSNL told Mongabay-India.

The Charanka village had five water bodies, one inside the village and four on the government wasteland that has now been taken over by the park. The 30-acre Saiyania bandh was enclosed inside the park boundary. "Now that there is a tall boundary wall on three sides, the animals cannot drink at it. The land that they are calling grazing land now was earlier cultivable land where people grew cumin by lifting water through pumps from Saiyania. Only *gando bawal* grows here now," Viram Kanthad Rabari, who spearheaded the movement to save the *gauchar* last year, told Mongabay-India while showing the area.



The Charanka village had five water bodies, one inside the village and four on the government wasteland that has now been taken over by the park. The 30-acre Saiyania bandh was enclosed inside the park boundary. Photo by Ravleen Kaur/Mongabay.

The GPCL official, however, claimed that Saiyania was just a *khet talaouri* (small pond) to store rainwater when the GSP came. "The park being close to the Rann, dust-laden winds blow all the time and we frequently need to wash the panels for optimal power production. We dug the pond deeper and developed it into the large reservoir that it is today," he said.

"The Gujarat Solar Park likely requires an estimated 64 cubic metres of water to clean solar arrays every two weeks, a substantial amount of water resources in this parched landscape," says Ryan Stock in his paper.

Viram alleged that Dana Band, the second pond was filled up by GPCL, and another solar project came on it (one of the 36 companies). Two more ponds are situated on the land where the 15 MW (another project) is proposed.

"According to a Gujarat High Court order of February 17, 2022, the government is supposed to maintain water bodies and not destroy them in the name of industrialisation. All we are asking the GPCL is to let this *gauchar* and pond be so that the villagers have some respite," said Raghav Dan, former Sarpanch of Charanka.

"Roughly 94% of India's solar parks under development in agrarian spaces will be exposed to medium-to-high levels of water risk in the near future, further imperiling the future vitality of solar energy and dryland agriculture," says Stock's paper.

The GPCL employee that Mongabay-India spoke to responded that they want to preserve and maintain the pond and had asked the Charanka Panchayat to give a written representation but have received nothing so far.

Against the 30,000 jobs from the solar park, announced at the time of the inauguration, today only about 60 people from the village are employed as security guards, technicians, or in grass cutting and panel washing. Photo by Ravleen Kaur/Mongabay.

Banner image: A Maldhari going to Banaskantha through the Gujarat Solar Park. Photo by Ravleen Kaur/Mongabay.

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