

TELLING NUMBERS

Sex ratio at birth: Kerala on top, Northeast states show decline

THE SEX RATIO at birth (SRB) in the country, defined as the number of female births per 1,000 male births, improved from 914 to 919 between the third and fourth National Family Health Surveys (NFHS), carried out in 2005-06 and 2015-16 respectively. The highest improvement was in Punjab at 126 points, but its SRB remained among the lowest among the states at 860 in NFHS-4. The sharpest decline was in Sikkim, where the SRB dropped 175 points to reach 809, the lowest among all states in 2015-16. These trends emerge out of state-wise data tabled by the Ministry of Health and Family Welfare in reply to a question during the recently concluded Parliament session.

Next to Punjab, the highest improvement in SRB was in Kerala, by 122 points from 925 in 2005-06. Its 1,047 in 2015-16 was the highest SRB among all states.

2015-16: TOP 6 & BOTTOM 6

Kerala	1,047
Dadra & Nagar Haveli	1,013
Meghalaya	1,009
Chhattisgarh	977
Tripura	966
Goa	966
Punjab	860
A&N Islands	859
Puducherry	843
Haryana	836
Delhi	817
Sikkim	809

Source: NFHS-4 via Ministry of Health

Next to Sikkim, the five states with the highest declines included four more in the Northeast.

HIGHEST IMPROVEMENT

State	NFHS-3 (2005-06)	NFHS-4 (2015-16)	Change
Punjab	734	860	+126
Kerala	925	1,047	+122
Meghalaya	907	1,009	+102
Haryana	762	836	+74
Tamil Nadu	897	954	+58
Maharashtra	867	924	+57

SHARPEST DECLINE

State	NFHS-3 (2005-16)	NFHS-4 (2015-16)	Change
Sikkim	984	809	-175
Jharkhand	1,091	919	-172
Arunachal	1,071	920	-151
Assam	1,033	929	-104
Mizoram	1,025	946	-79
Manipur	1,014	962	-51

Source: Ministry of Health & Family Welfare

THIS WORD MEANS

PREDICTIVE SHOPPING/ANTICIPATORY SHIPPING

Using algorithms to anticipate orders and deliver faster

AMAZON HAS over the past few years developed and patented a technology called 'anticipatory shipping', which enables it to package items for a certain geographical area even before a customer has placed an order. The precise delivery address can be added after the order has been placed, and customers in certain places can receive their order in under 30 minutes. Amazon can 'anticipate' orders because it has an abundance of actionable data about its customers, and knows when a customer is likely to buy what. It can use this foresight to get into 'predictive' shopping, most probably with the consent of customers. Amazon has held the patent for anticipatory shipping for several years, but with the latest advances in deep learning and AI, it is now in a position to roll out the technology with significant accuracy. E-commerce companies have been

doing this manually, especially for products bought repeatedly, say, diapers or toilet paper. They would reach out to customers days before a pack might be expected to run out, and offer to send more; or offer a subscription for delivery at pre-defined intervals. With predictive shipping, an e-commerce company uses algorithms that know, based on a customer's earlier purchases, the product that she will want at a particular point in time, and ships it to her.

Online companies are gradually reducing the distance between warehouses and customers to cut shipping time. Across the world, more hubs are being created to cater to more remote areas. Anticipatory shipping can help keep a product ready closer to a potential customer. In case she wants it, the package is already nearby.

NANDAGOPAL RAJAN



AMITABH SINHA
PUNE, AUGUST 8

A NEW report by the Intergovernmental Panel on Climate Change (IPCC) released Thursday presents the most recent evidence on how land affects, and is affected by, climate change. What use land is put to — forestry, agriculture, industries, urbanisation — has an impact on greenhouse gas emissions. At the same time, activities like agriculture are directly impacted by global warming.

The Geneva-based IPCC is mandated by the United Nations to assess the science related to climate change. It produces periodic reports, called Assessment Reports, that provide a comprehensive account of the state of climate system.

Among the headline statements, the report says land-based activities like agriculture, forestry and "other land use" contribute almost a quarter of all greenhouse gas emissions in a year. This amounts to about 12 billion tonnes of carbon dioxide equivalent every year.

It says that the global food system, which would include activities such as cattle rearing, agriculture, food processing industries, energy and transportation, could account for as much as a third (21 to 37 per cent) of all greenhouse gas emissions.

The report, after assessing all different kinds of impacts due to land-use and changes in land-use, provides the possibilities of containing emissions from land in different future scenarios of land-use, without compromising on global food security.

Land & climate change

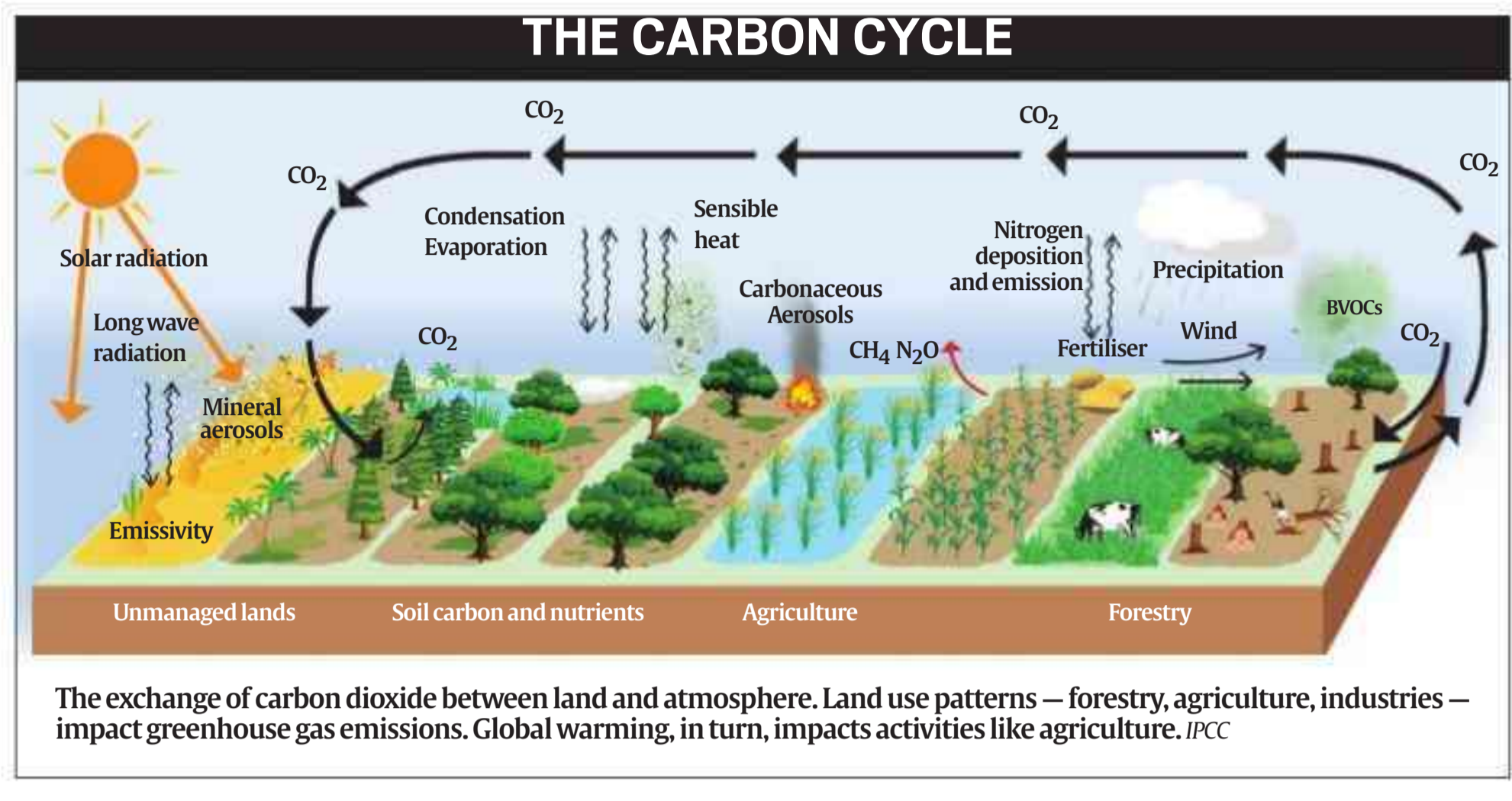
Land use and changes in land use have always been an integral part of the conversation on climate change. That is because land acts as both the source as well as a sink of carbon. Activities like agriculture and cattle rearing, for example, are a major source of methane and nitrous oxide, both of which are hundreds of times more dangerous than carbon dioxide as a greenhouse gas.

At the same time, soil, trees, plantations, and forests absorb carbon dioxide for the natural process of photosynthesis, thus reducing the overall carbon dioxide content in the atmosphere. In fact, nearly 50 per cent of all carbon dioxide generated on earth is trapped by land and oceans, and the rest is released in the atmosphere. In a complex but constant natural interaction known as the carbon cycle, car-

SIMPLY PUT

How land relates to climate

A major new IPCC report has underlined the contribution of food production to climate change. As a source as well as a sink of carbon dioxide, land and its use, including agriculture, are key to climate conversations



The exchange of carbon dioxide between land and atmosphere. Land use patterns — forestry, agriculture, industries — impact greenhouse gas emissions. Global warming, in turn, impacts activities like agriculture. IPCC

bon dioxide is continuously exchanged among land, ocean and atmosphere. The debate over the life spans of carbon dioxide in ocean, land and atmosphere is not yet settled. The contribution of livestock — cows, pigs, even chicken generate emissions, mainly methane — to greenhouse gases is also contested.

Because of the fact that land is both the source as well as a sink of carbon dioxide, large-scale changes in land use, like deforestation or urbanisation, or even a change in cropping pattern, have a direct impact on the overall emissions of greenhouse gases in the atmosphere.

The impact of land use changes on emissions is a separate point of discussion at the international climate change negotiations. And, activities like afforestation or restoration of forests are considered important strategies in the fight against climate change. India's action plan on climate change too has a crucial component on forests. India has promised that it would create an additional carbon sink of about 2.5 billion to 3 billion tonnes by 2032 by increasing its forest cover, and planting more trees.

The IPCC report

This is the first time that the IPCC, whose job it is to assess already-published scientific literature to update public knowledge of climate change science, has focused its atten-

tion solely on the land sector. It is part of a series of special reports that IPCC is doing in the run-up to the sixth Assessment Report (AR6) that is due around 2022.

Last year, the IPCC had produced a special report on the feasibility of restricting global rise in temperature to within 1.5°C from pre-industrial times. Later this year, it is scheduled to come out with a special report on ocean systems and cryosphere. These three reports were specifically sought by the governments to get a clearer picture of specific aspects of climate change. For the first time, a majority of the scientists who contributed to the report belonged to developing countries.

The assessment

The report says that the land sector had been contributing about 5.2 billion tonnes of carbon dioxide (not all greenhouse gases) every year between 2007 and 2016. During this same period, the land sector absorbed almost 11.2 billion tonnes of carbon dioxide every year. "The sum of (these two processes)... gives a total net land-atmosphere flux that removed about 6 billion tonnes of carbon dioxide per year during 2007 and 2016," it says.

About the impact of climate change on land systems, the report notes that 25 per cent of ice-free land was subject to degradation due

to human use. And that this process was being exacerbated by climate change. Global food security was already under threat because of warming, changing precipitation patterns and greater frequency of extreme weather events, and this could come under further risk.

The report points out that that nearly 25 per cent of all food produced globally was either lost or wasted. And even the decomposition of the waste releases emissions.

Suggestions

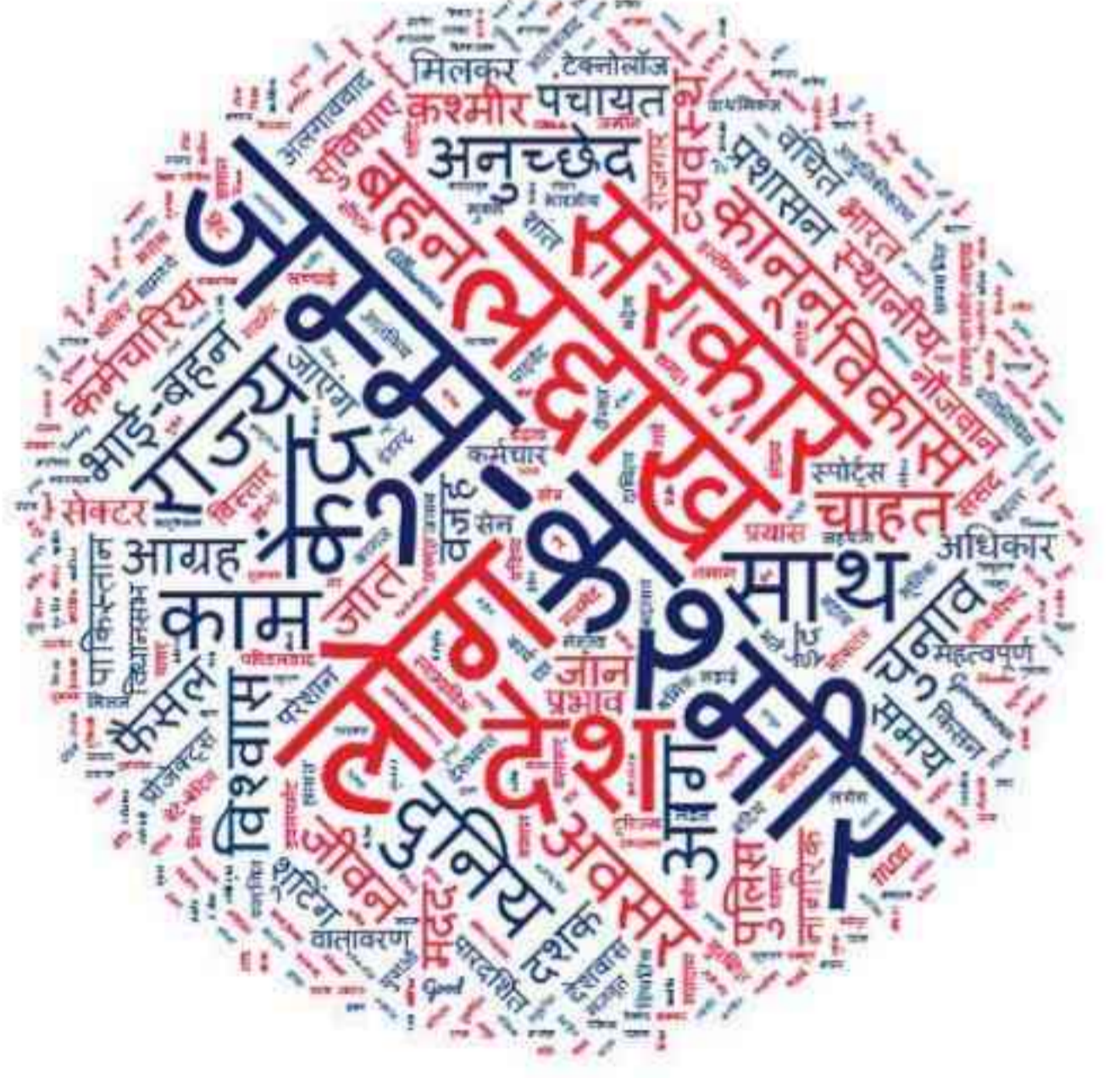
IPCC reports do not offer any policy prescriptions. They do not even recommend the best course of action. Instead, they just provide the possible pathway scenarios under different assumptions of responses offered by countries. It does mention that reduction in food waste, sustainable agriculture practices, and shifting of dietary preferences to include more plant-based food could avoid a part emissions emanating from land systems without jeopardising food security. In fact, it would also have co-benefits in terms of human health.

It says it was possible to avoid between 2.3 and 9.6 billion tonnes of CO2 equivalent per year from agriculture and livestock activities by the year 2050. Similarly, it was possible to avoid up to 8 billion tonnes of CO2 equivalent every year by the year 2050 just through a change in people's dietary habits.

DECODING

MODI'S ADDRESS ON J&K

Words and ideas in the Prime Minister's speech



IN HIS ADDRESS to the nation two days after Parliament ratified his government's decision to end the special status of Jammu and Kashmir and split the state into two Union Territories, Prime Minister Narendra Modi sought to explain the reasons for the move, and to allay the misgivings of a section of the population.



MODI SPOKE directly to the people of India, including those in Jammu and Kashmir and Ladakh, and assured them that Article 370 of the Constitution had been removed for their benefit, to fulfill the aspirations of the people, and to lift roadblocks on the path to development and progress of the region.

IN HIS SPEECH, delivered in Hindi, the Prime Minister used the words Jammu-Kashmir and Ladakh 65 times and 28 times respectively, and referred to *desh*

(nation) 22 times. There were 18 mentions of *sarkar* (government), 10 mentions of *log* (people), and eight of *vishwas* (faith). Article 370 was mentioned on seven occasions.

SHRUTINAIIR

Why Gujarat and MP are arguing over Narmada water and hydro power

ADITIRAJA
VADODARA, AUGUST 8

OVER THE last two weeks, Madhya Pradesh and Gujarat have engaged in war of words over the sharing of Narmada river waters. Madhya Pradesh has threatened to restrict the flow of water into the Sardar Sarovar Dam, located in Gujarat. This was after Gujarat, in April, had requested the Narmada Control Authority for permission — which was granted — not to start generation at a power house until the dam fills to its full level.

The power equation

The Sardar Sarovar Project includes two power houses, the River Bed Power House (RBPH; 1,200 MW) and the Canal Head Power House (250 MW). Power is shared among Madhya Pradesh, Maharashtra and Gujarat in a 57:27:16 ratio. The RBPH has been shut since 2017, when the gates were closed and the reservoir height was raised

to 138.63 m. Gujarat has sought that generation should not start until the water reaches the full reservoir level (FRL).

"The protocol is that once the dam crosses 131 m, we ought to release some water as it fills to its FRL. For this, we have to resume power generation in the RBPH, where the turbines release the water downstream into the river. If the inflow exceeds the capacity of the water released by the turbines after power generation, then too we have to open the gates. The dam cannot just be filled to 138.63 metres without balancing the outflow," said Rajeev Kumar Gupta, Managing Director, Sardar Sarovar Narmada Nigam Ltd (SSNNL).

On Thursday, the SSNNL issued a circular announcing an upcoming 6-cusec release, in keeping with the 131m protocol. The current level is 129.65 m

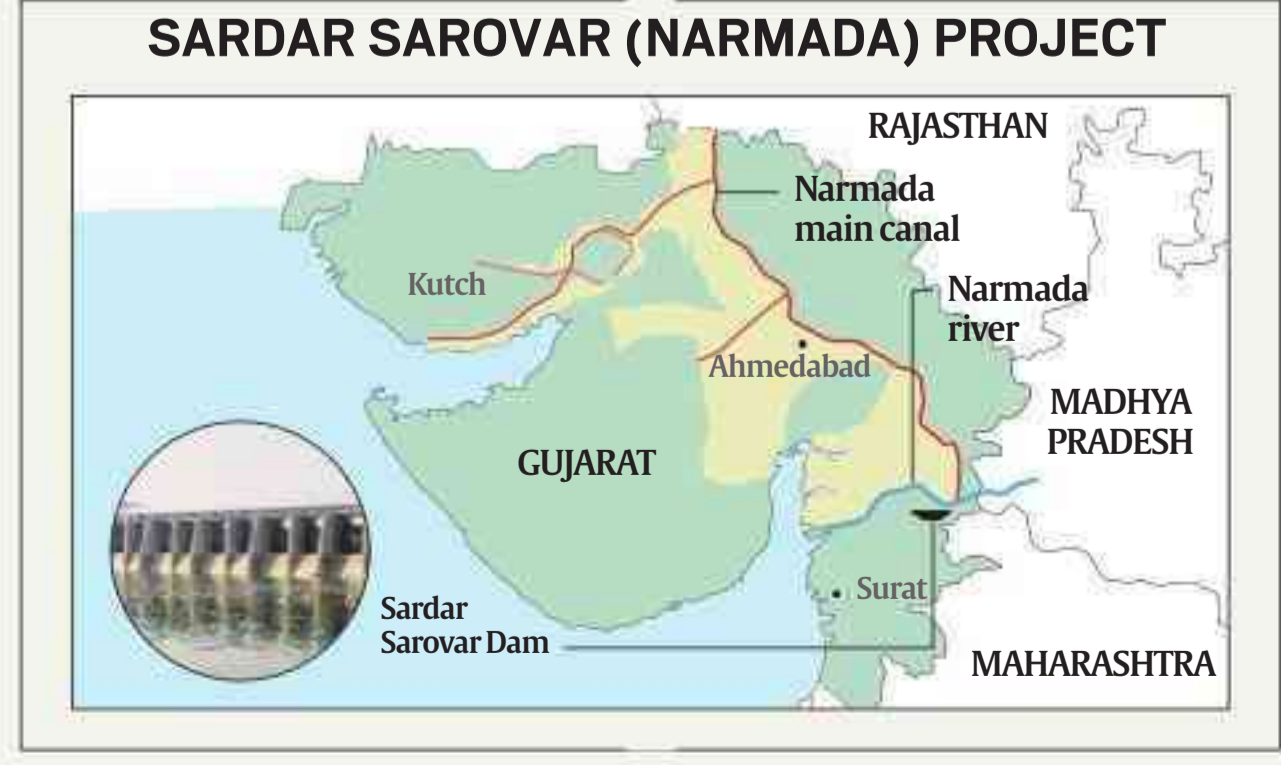
What Gujarat wants

In April, the SSNNL approached the Narmada Control Authority which granted its request not to start production until the

water reaches 138.63 m. Gujarat has been facing a rain deficit in 2017 and 2018, when the reservoir reached levels of 130.75 m and 129 m. Engineers in Gujarat say reaching the FRL is necessary for testing whether the concrete can withstand the thrust at that level. The construction has lasted close to five decades with gaps of several years. Filling the reservoir is possible only when the RBPH is closed because the water used for generating hydro power cannot be reused — it is drained into the sea. The Garudeshwar Weir is still being constructed to store water released after generation of power at the RBPH. Once the weir is ready, the water can be stored and pumped back using reversible turbines during non-peak hours of the grid, officials say.

Why MP objects

While MP Chief Minister Kamal Nath has indicated that the state will follow the Authority guidelines in letter and spirit, the government has raised an objection to its consent to Gujarat, terming it 'unilateral',



and has refused to share its surplus water with Gujarat that would allow the reservoir to be filled. MP took that position after frequent power outages led to discontent, the

political power having just changed hands. The BJP attacked the government saying MP has returned to the "dark days" of the previous Congress rule of 1993-2003. The gov-