

A **DownToEarth** ANNUAL

# STATE OF INDIA'S ENVIRONMENT **2021** IN FIGURES

AGRICULTURE AND LAND ■ FOREST AND WILDLIFE ■ CLIMATE CHANGE ■ CITIES ■  
AIR POLLUTION ■ WATER AND RIVERS ■ WASTE ■ ENERGY ■ HEALTH

## FOCUS

**State of the states:** Climate change vulnerability ■ Distribution of farm labourers and cultivators  
■ Quality of land records ■ Performance of aspirational districts ■ Energy ■ Natural ecosystem services  
**COVID-19:** Rural v urban India ■ Health infrastructure ■ Economy and unemployment



A **DownToEarth** ANNUAL

**STATE OF  
INDIA'S  
ENVIRONMENT  
2021  
IN FIGURES**

**Editorial and research directions:** Sunita Narain and Richard Mahapatra

**Design Direction:** Ajit Bajaj

**Authors:** Kiran Pandey and Rajit Sengupta

**Editorial support:** Dakshiani Diyvesh

**Infographics & Design:** Sanjit Kumar and Mukesh Singh

## NOTE

This work is primarily based on government data available in the public domain. The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of Down to Earth. The boundaries, colours, denominations, and other information shown on any map in this work do not imply any judgment on the part of Down To Earth concerning the legal status of any territory or the endorsement or acceptance of such boundaries

Please notify us about any publications that result from the use of this book by sending your bibliographic citation to [kiran@cseindia.org](mailto:kiran@cseindia.org)

Material from this publication can be used with acknowledgement



**DownToEarth**  
SCIENCE AND ENVIRONMENT FORTNIGHTLY



© 2021 Centre for Science and Environment

**Price:** ₹200 (US\$15)

Maps in this report are indicative and not to scale

## Published by

Centre for Science and Environment  
41, Tughlakabad Institutional Area New Delhi 110 062  
Phones: 91-11-40616000  
Fax: 91-11-29955879  
E-mail: [cse@cseindia.org](mailto:cse@cseindia.org), Website: [www.cseindia.org](http://www.cseindia.org)

# CONTENTS

## Foreword

07 Data can drive policy

08 An antigen for the artificial intelligence

## STATE OF DEVELOPMENT 09

### Global economic risks 10

Infectious diseases enter the list of economic threats for the first time since 2006

### Sustainable Development Goals 11

India faces major challenges in 10 of the 17 SDGs

### Environmental Performance Index 14

India lags in critical issues of air and water quality, biodiversity, and climate change

### Environmental crimes 16

Courts need to dispose of 137 cases a day to clear the backlog in a year

### Aspirational districts 18

Progress remains slow under agriculture and water resources, and health and nutrition

## STATE OF PANDEMIC 23

### India's second wave 24

May 2021 was a tragic month for India as it saw over 9 million cases and 120,000 deaths

### Changing geography 26

In May, every fourth case reported in the world was from rural India

### Rural health infrastructure 28

There is a shortage of health centres and staff across rural India

### Deflated rural demand 32

Slow economic recovery in rural India might impact 2021-22 GDP

## 37 STATE OF LAND & AGRICULTURE

### 38 Quality of land records

14 states saw deterioration in the quality of their land records in the last one year

### 40 Farmers v labourers

India has more farm labourers than cultivators

### 44 Farmer suicides

In 2019, over 28 farmers and farm labourers committed suicide in the country every day

### 46 Farmers' unrest

India recorded 165 major protests across 22 states/UTs

### 47 Organic reality

Only 2 per cent of the country's 140 million hectare farmland is under organic cultivation

## 49 STATE OF CLIMATE

### 50 Rising temperature

2011-2020 was the warmest decade for India

### 52 Climate vulnerability

All the 29 Indian states are significantly vulnerable to climate change

### 68 Internal displacements

Over 3.9 million people in India were displaced in 2020 due to disasters

### 71 Major weather events

21 major weather events claimed over 1,374 lives in 2020

### 72 Storm brewing

Last decade saw the highest number of cyclonic storms since 1970s

### 73 India's spending on calamities

Odisha, Rajasthan and two other states/UTs have reduced their spendings on natural calamities

# CONTENTS

## STATE OF ENERGY 77

### Renewables 78

India has met only 55% of its target of installing 175 GW of renewable capacity by 2022

### Solar parks 80

It has been almost seven years and India is yet to launch its first solar parks project

### Rooftop solar 81

The gap between the target and the achieved has only widened over the years

### Access to Energy 82

Rural Haryana receives electricity for only 16 hours a day on average

## STATE OF BIODIVERSITY 87

### Ecosystem services 88

14 states/UTs registered a drop in the carbon retention services of their forests between 2015-16 and 2017-18

### Forest fires 93

India has seen a drastic rise in forest fires since the start of 2021

### Threatened species 95

12 per cent of India's 1,212 animal species in the IUCN red list are endangered

### Shrinking hotspots 96

The four biodiversity hotspots in India have been reduced to 10% of their original extent

## STATE OF WATER 99

### River quality 100

During the 2020 lockdown, the water quality in Ganga and four other rivers worsened

### Melting glaciers 102

There are 39 highly disaster-prone glaciers that need to be monitored closely

## STATE OF CITIES 105

### Ease of living 106

Only three state capitals feature in the top 10 list of most livable cities

## 109 Sewage overload

Only 28 per cent of India's sewage gets treated

## 113 STATE OF WASTE

### 114 Biomedical waste

India still disposes 12 per cent of its hospital waste without any treatment

### 116 COVID-19 waste

Just five states account for almost 50 per cent of the COVID-19 waste

### 117 Hazardous waste

India has added almost 2,400 more hazardous units in just two years

## 121 STATE OF AIR

### 122 Deaths due to pollution

Air pollution killed 1.67 million Indians in 2019, accounting for 18 per cent of the total deaths in the country

## 127 STATE OF INDUSTRIES

### 128 Grossly polluting industries

India has 2,976 GPIs, which is 8 per cent more than the units in 2019

## 131 STATE OF HEALTH

### 132 National Family Health Survey

In the past five years, India has made progress in certain key indicators but has slipped in several others

### 134 Cancer registry

Cases have increased in all the 28 cancer registries in India; mortality up in 13

## 137 STATE OF EMPLOYMENT

### 138 Unemployment

Urban unemployment rate shot to 14.7 per cent in May 2021

### 140 MGNREGA

J&K, Bihar, West Bengal see the maximum payment delays in the employment scheme

# Data can be the much needed knowledge to drive policy

**SUNITA NARAIN**

Editor, Down To Earth

There is drama in numbers. But there is even more informed drama when the numbers tell you a trend—are things getting better or worse. It is even more powerful when you can use the trend to understand the crisis, the challenge and the opportunity. Ultimately, it is about knowledge that can move the mountain of action that is needed.

The *State of India's Environment: In Figures (SOE) 2021* captures the story of change. This is data journalism, through which we can use measurements—how to track economic and ecological indicators so that we can know what is happening.

We know that the quality of data is poor—it is either missing, unavailable publicly or its quality is suspect. But improving the quality of data only happens when we use it and we use it for policy. Just consider how we have suffered in this past year because we do not have sufficient or accurate data on the tests done for COVID-19; or even the number of deaths or the serological surveys on antibodies or the genomic sequencing of the variants. In each case, each data-point was and is critical for policy making. It is accepted today that one of the reasons we missed out on the virulence and speed of the second wave is because the model for predictions did not have adequate data on the immunity surveys on the populations. So, data collection is important—it is part of the art of governance—but it is equally important that entire data sets are shared and worked upon so that it can be critiqued and through this process used and improved upon.

Similarly, we had and continued not to have, data on the migrants in our cities and so every time there is a lockdown, governments are caught unprepared by the exodus from cities. This is compounded by the fact that there is out-migration—people are leaving their homes because of many reasons of economic and ecological distress—extreme weather and disasters is making the situation dire.

*SOE in Figures* tells that in 2020, 76 per cent of internal displacement were triggered by climate disasters. We also learn that India was the fourth worst-hit country in the world because of disaster displacement. And between 2008 and 2020 some 3.73 million people per year were displaced because of floods, earthquakes, cyclones and droughts. The map of the significant weather events of 2020 is the new cartography of the country. Then add to this, the fact that governments are spending massive amounts in repairing the damage from these not so natural calamities and you understand how the development dividend is being squandered with every such event.

So, five data sets, visualised and explained, tell us the story of 10,000 words.

This is the power of data. This is what we must use and exploit—we need knowledge to drive policy. This is the state of what is happening in the world around us—put together succinctly and graphically so that we can grasp and communicate it. We hope it will work to push the change we need so desperately in our world.

# An antigen for the artificial intelligence

**RICHARD MAHAPATRA**

Managing Editor, Down To Earth

We have created a parallel ecosystem to the natural one. This is the ecosystem of data. Like in the planetary ecosystem, even here, each of us has a reason for presence, and each of us has a role to play. Whoever we are, wherever we are, and whatever we do, each of our activities is a set of data. And in the new ecosystem of data, we are all a piece of data that is somebody's interest.

My mobile phone gives away crucial weather information to a global behemoth dealing with climate data processing. At the same time my movement in my contrived world is let out to a search engine that in turn makes an assessment of the country's overall mobility amidst a pandemic. My mobile phone's voice receiver works in discreet ways to listen to my conversations with others to pick up a set of key words so that advertisers could target their product to me. My telephone number is a powerful medical instrument for the government to track and treat COVID-19 patients.

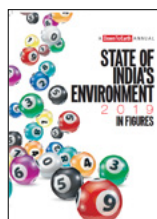
The ecosystem of data also has that unseen "power" that plays metaphysical roles. We call it the technology of artificial intelligence (AI). It is the science of simulating human intelligence in machines, and data is the food for its "intelligence". According to one estimate such is the power of this technology backed by data that by 2024, 75 per cent of companies/businesses have to operationalise AI.

It feels as if in this ecosystem of data, we have also created an impeccable governance system that can simulate us and perform effectively. This ecosystem is at the crossroads, with unbridled power to process us as a piece of data and also to manipulate us, our behaviours and choices.

The *State of India's Environment: In Figures*, the annual e-publication, challenges this notion. The data-driven annual statement on the state of India's environment reiterates the fact that there is no artificiality about handling data. We communicate through data because we believe that it is the state of affairs without any prejudices affixed to it. One cannot artificially simulate data to reach a decision. Rather, data as processed in this publication, is the very basis of forming an opinion on the natural ecosystem that we are part of.

As the world of data gets further refined and crafted as a convenient product for millions of users, the *State of India's Environment: In Figures* will continue to play that traditional role of a gatekeeper: letting you inside the real world of state of affairs in the environment sector. Using data, It does so what it is supposed to do in a conventional world: "suspect your intelligence". Without the character of suspicion, one might just become a citizen of the artificial world. Each piece of data used here is not processed by deploying artificial intelligence but by a group of researchers with decades of experience in dealing with tons of official documents. The visualisation to communicate this data is not created by any "tools" but by infographic visualisers who know numbers more than colours.

So, deploy your own intelligence to these data. Verdict is your own.





# State of Development

---

## **Global economic risks**

Along with climate-related risks, infectious diseases enter the list of economic threats for the first time since 2006



## **Sustainable development goals**

India continues to face major challenges in achieving 10 of the 17 goals, which is pushing down its global ranking on SDG preparedness



## **Environmental crimes**

At its current pace, the courts will be able to clear their backlog of cases under The Environmental (Protection) Act by 2040

# GLOBAL ECONOMIC RISKS

Though climate-related risks are most likely to jolt the global economy, infectious diseases are expected to have the greatest impact on the global economy in the next decade

## WHAT IS GLOBAL RISK

It is an uncertain event or condition that can cause significant negative impact on several countries or industries in the next 10 years

## TOP 4 GLOBAL RISKS IN TERMS OF LIKELIHOOD

Extreme weather events have remained the top risk in the past five years

### RISK TYPES

■ Economic 
 ■ Environmental 
 ■ Geopolitical 
 ■ Societal 
 ■ Technological

|   | 2011                | 2012                     | 2013                     | 2014                   | 2015                           | 2016                   | 2017                  | 2018                | 2019                   | 2020                   | 2021                       |
|---|---------------------|--------------------------|--------------------------|------------------------|--------------------------------|------------------------|-----------------------|---------------------|------------------------|------------------------|----------------------------|
| 1 | Storms and cyclones | Income disparity         | Income disparity         | Income disparity       | Interstate conflict            | Involuntary migration  | Extreme weather       | Extreme weather     | Extreme weather        | Extreme weather        | Extreme weather            |
| 2 | Flooding            | Fiscal imbalances        | Fiscal imbalances        | Extreme weather        | Extreme weather                | Extreme weather        | Involuntary migration | Natural disaster    | Climate action failure | Climate action failure | Climate action failure     |
| 3 | Corruption          | Greenhouse gas emissions | Greenhouse gas emissions | Unemployment           | Failure of national governance | Climate action failure | Natural disaster      | Cyberattacks        | Natural disaster       | Natural disaster       | Human environmental damage |
| 4 | Biodiversity loss   | Cyberattacks             | Water crisis             | Climate action failure | State collapse or crisis       | Interstate conflict    | Terrorist attack      | Data fraud or theft | Data fraud or theft    | Biodiversity loss      | Infectious diseases        |

## TOP 4 GLOBAL RISKS IN TERMS OF IMPACT

Infectious diseases have returned to the list for the first time since 2006

|   | 2011                  | 2012              | 2013                        | 2014                   | 2015                        | 2016                        | 2017                        | 2018                        | 2019                        | 2020                        | 2021                        |
|---|-----------------------|-------------------|-----------------------------|------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 1 | Fiscal crises         | Financial failure | Financial failure           | Fiscal crises          | Water crises                | Climate action failure      | Weapons of mass destruction | Weapons of mass destruction | Weapons of mass destruction | Climate action failure      | Infectious diseases         |
| 2 | Climate change        | Water crises      | Water crises                | Climate action failure | Infectious diseases         | Weapons of mass destruction | Extreme weather             | Extreme weather             | Climate action failure      | Weapons of mass destruction | Climate action failure      |
| 3 | Geopolitical conflict | Food crises       | Fiscal imbalances           | Water crises           | Weapons of mass destruction | Water crises                | Water crises                | Natural disasters           | Extreme weather             | Biodiversity loss           | Weapons of mass destruction |
| 4 | Asset price collapse  | Fiscal imbalances | Weapons of mass destruction | Unemployment           | Interstate conflict         | Involuntary migration       | Natural disasters           | Climate action failure      | Water crises                | Extreme weather             | Biodiversity loss           |

Source: [The Global Risks Report 2021, World Economic Forum](#)

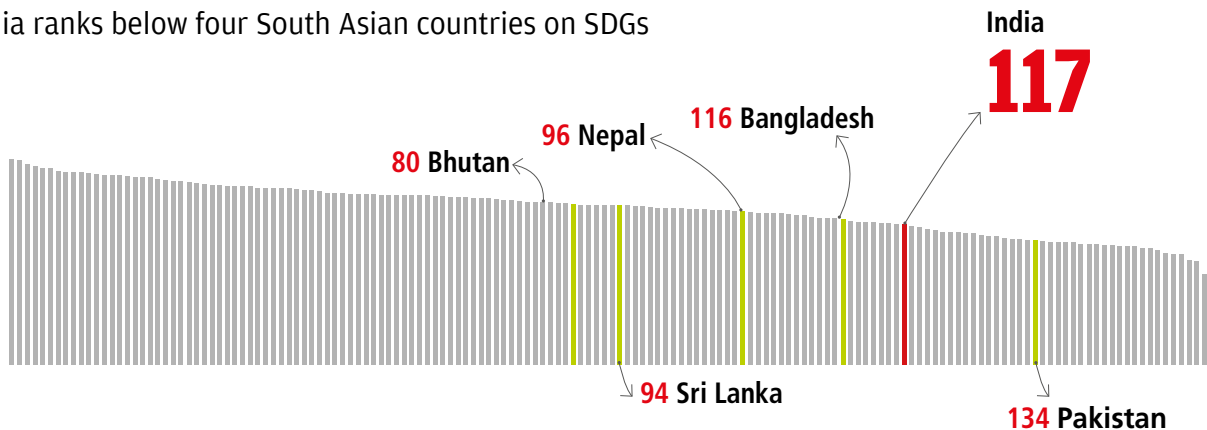
Note: The report is based on a survey where respondents were asked to assess 1) the likelihood of the risk occurring globally within the next 10 years, and 2) its negative impact on several countries or industries over the same time frame

# SUSTAINABLE DEVELOPMENT GOALS

India's rank has slipped by two places from last year primarily because of SDG 2 (zero hunger), SDG 5 (gender equality) and SDG 9 (industry, innovation and infrastructure)

## SLOW PROGRESS

India ranks below four South Asian countries on SDGs



## TOP 5

|         | Score |
|---------|-------|
| Sweden  | 84.72 |
| Denmark | 84.56 |
| Finland | 83.77 |
| France  | 81.13 |
| Germany | 80.77 |

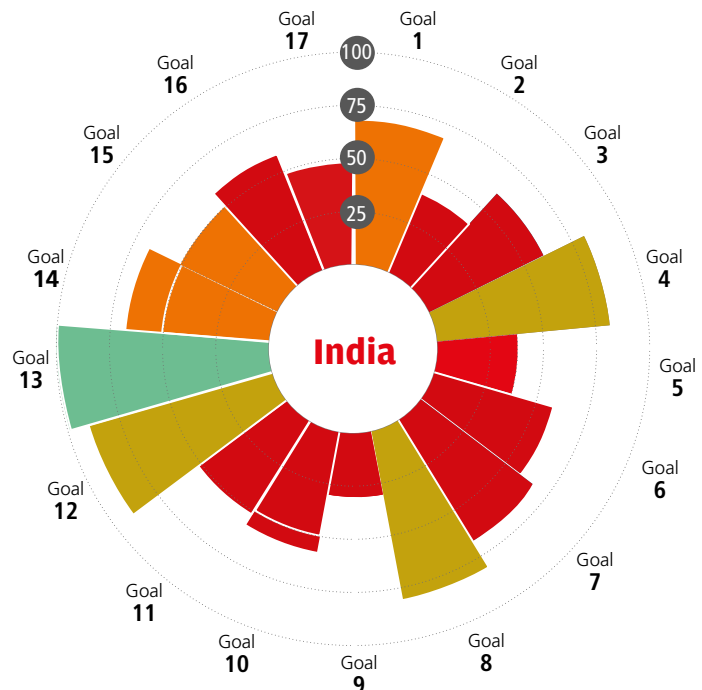
## Bottom 5

|                          |       |
|--------------------------|-------|
| Liberia                  | 47.12 |
| Somalia                  | 46.21 |
| Chad                     | 43.75 |
| South Sudan              | 43.66 |
| Central African Republic | 38.54 |

## POOR PERFORMANCE

India faces major challenges in 10 of the 17 SDGs. There are significant challenges in another three SDGs

- Major challenges
- Significant challenges
- Challenges remain
- SDG achieved



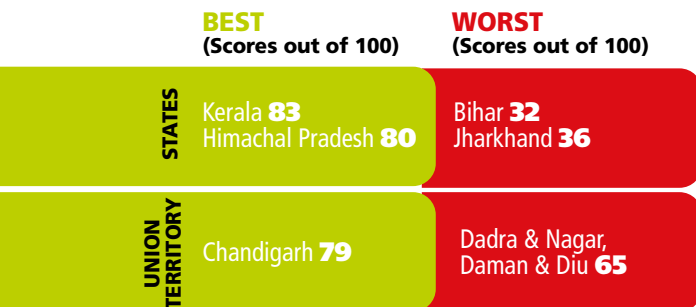
Source: [SDG Index and Dashboards Report 2020 by Bertelsmann Stiftung and Sustainable Development Solutions Network](#)

# SDG PREPAREDNESS OF STATES

Of the two states least prepared to meet the SDGs by 2030, the target year, Bihar and Jharkhand lag in seven and five of the 15 monitored SDGs respectively

## SCORECARD

The best and the worst states and Union Territories in each SDG according to the scores given by NITI Aayog



### Goal 1: No Poverty

**Best:** Tamil Nadu 86; Kerala 83; Goa 83; Delhi 81 (UT)

**Worst:** Bihar 32; Jharkhand 36; Odisha 41; Lakshadweep 61

**India average: 60**



### Goal 3: Good Health and Well-being

**Best:** Gujarat 86; Maharashtra 83; Tamil Nadu 81; Delhi 90 (UT)

**Worst:** Assam 59; Chhattisgarh 60; Uttar Pradesh: 60; A&N Islands 68 (UT)

**India average: 74**



### Goal 5: Gender Equality

**Best:** Chhattisgarh 64; Kerala 63; Himachal Pradesh 62; A&N Islands 68 (UT)

**Worst:** Assam 25; Arunachal Pradesh 37; Tripura 39; Delhi 33 (UT)

**India average: 48**



### Goal 7: Affordable and Clean Energy

**Best:** Goa 100; Telangana 100; Andhra Pradesh 100; Chandigarh 100

**Worst:** Meghalaya 50; Nagaland 69; Jharkhand 77; Dadra & Nagar 71 (UT)

**India average: 92**



### Goal 9: Industry, Innovation and Infrastructure

**Best:** Gujarat 72; Tamil Nadu 71; Punjab 69; Delhi 66 (UT)

**Worst:** Bihar 24; Meghalaya 25; Nagaland 30; Lakshadweep 40 (UT)

**India average: 55**



### Goal 11: Sustainable Cities and Communities

**Best:** Punjab 91; Goa 89; Maharashtra/Gujarat 87; Chandigarh 98 (UT)

**Worst:** Arunachal Pradesh 39; West Bengal 45; Nagaland 48; Lakshadweep 56 (UT)

**India average: 79**



### Goal 2: Zero Hunger

**Best:** Kerala 80; Goa 78; Punjab 73; Chandigarh 97 (UT)

**Worst:** Jharkhand 19; Bihar 31; Chhattisgarh 37; Dadra and Nagar Haveli (27)

**India average: 47**



### Goal 4: Quality Education

**Best:** Kerala 80; Himachal Pradesh 74; Goa 71; Chandigarh 79 (UT)

**Worst:** Bihar 29; Nagaland 39; Arunachal Pradesh 41; Jammu and Kashmir and Ladakh 49 (UT)

**India average: 57**



### Goal 6: Clean Water and Sanitation

**Best:** Goa 100; Telangana 96; Gujarat 93; Lakshadweep 100 (UT)

**Worst:** Rajasthan 54; Assam 64; Punjab 66; Delhi 61 (UT)

**India average: 83**



### Goal 8: Decent Work and Economic Growth

**Best:** Himachal Pradesh 78; Goa 76; Telangana 73; Chandigarh 70 (UT)

**Worst:** Manipur 36; Nagaland 48; Odisha 48; J&K 47 (UT)

**India average: 61**



### Goal 10: Reduced Inequalities

**Best:** Meghalaya 88; Tripura 85; Himachal Pradesh 78; Chandigarh 100 (UT)

**Worst:** Uttar Pradesh 41; Rajasthan 45; Nagaland 46; Puducherry 62 (UT)

**India average: 67**



### Goal 12: Sustainable Consumption and Production

**Best:** Tripura 99; Nagaland 91; Karnataka/Manipur 89; J&K/Ladakh 95 (UT)

**Worst:** Goa 47; Gujarat 50; Jharkhand 55; Delhi 50 (UT)

**India average: 74**



### Goal 13: Climate Action

**Best:** Odisha 70; Nagaland/Kerala 69; Lakshadweep 68 (UT)

**Worst:** Bihar 16; Jharkhand 25; Chhattisgarh 38; Dadra and Nagar Haveli 18 (UT)

**India average: 54**



### Goal 15: Life on Land

**Best:** Arunachal Pradesh 93; Madhya Pradesh 84; Odisha 83; Chandigarh 85

**Worst:** Rajasthan 43; Haryana/Mizoram/Punjab 48; Ladakh 27 (UT)

**India average: 66**



### Goal 16: Peace, Justice and Strong Institutions

**Best:** Uttarakhand 86; Gujarat 82; West Bengal 81; Puducherry 84 (UT)

**Worst:** Odisha 59; Assam 62; Goa 63; A&N Islands 46 (UT)

**India average: 74**

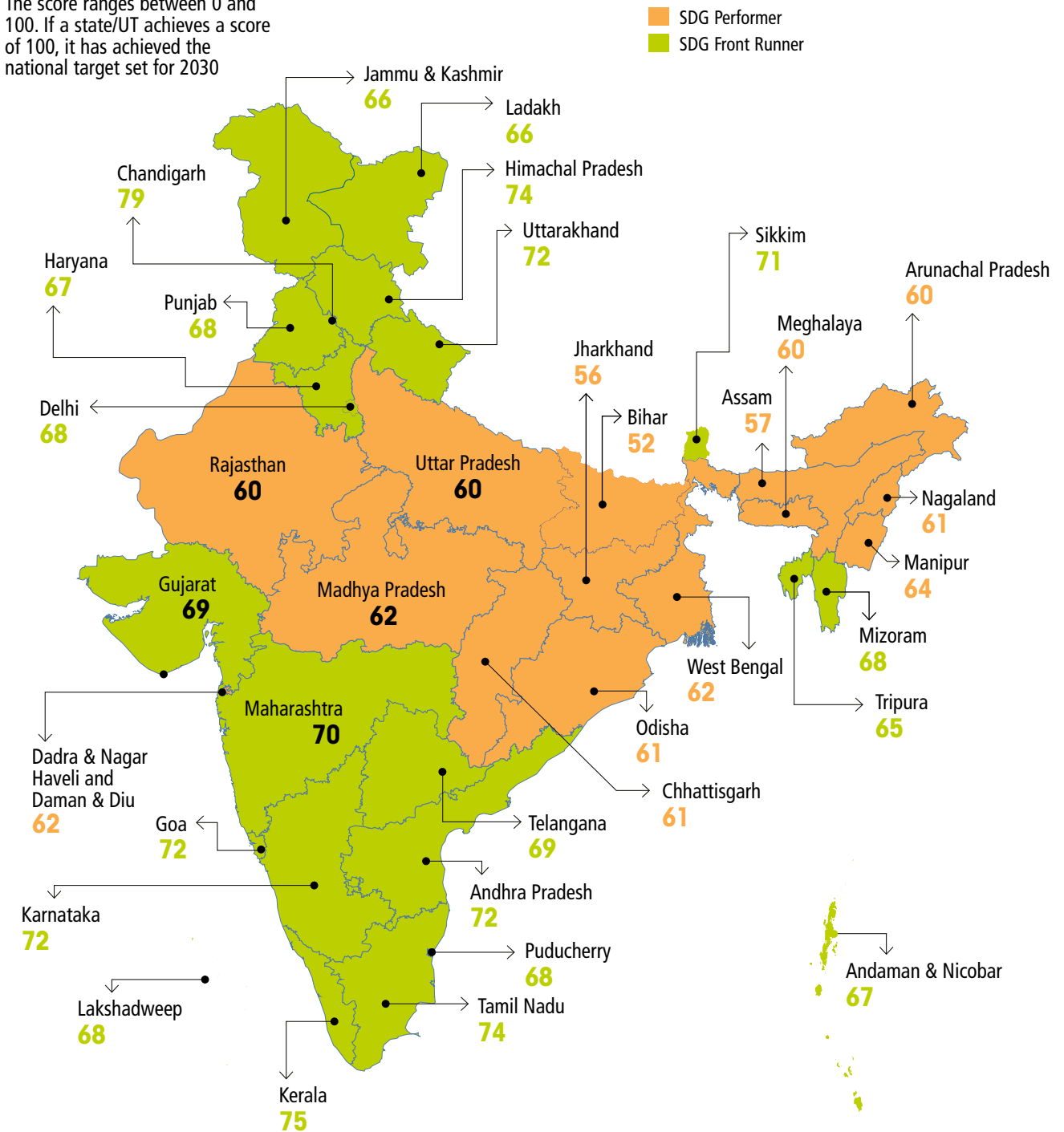


Note: Jammu & Kashmir is categorised as a Union Territory; The index has no information on SDG 17: Partnerships for the Goals and SDG 14: Life Below Water  
Source: [SDG India Index and dashboard 2020-2021](#) by NITI Aayog

## OVERALL SDG PERFORMANCE

The SDG Index score ranges between 52 and 75 for states; and between 62 and 79 for Union Territories

The score ranges between 0 and 100. If a state/UT achieves a score of 100, it has achieved the national target set for 2030



Note: Jammu & Kashmir is categorised as a Union Territory   
 Source: [SDG India Index and dashboard 2020-2021 by NITI Aayog](#)

# ENVIRONMENTAL PERFORMANCE INDEX

While India's overall ranking has improved since 2018, it continues to remain at the bottom in several individual indicators including air quality and climate change

## INDIA RANKS

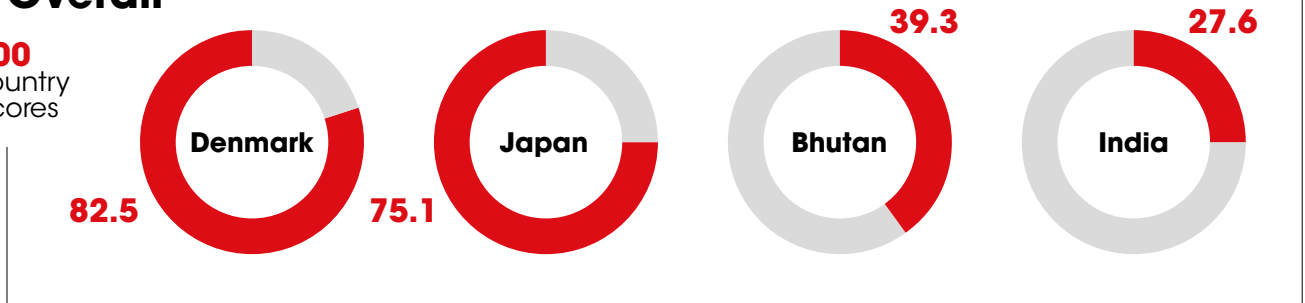
**168**  
of 180 nations globally  
and **Denmark** tops the list

**30**  
of 33 Asian countries  
**Japan** tops the list

**7**  
of 8 Asian countries  
**Bhutan** tops the list

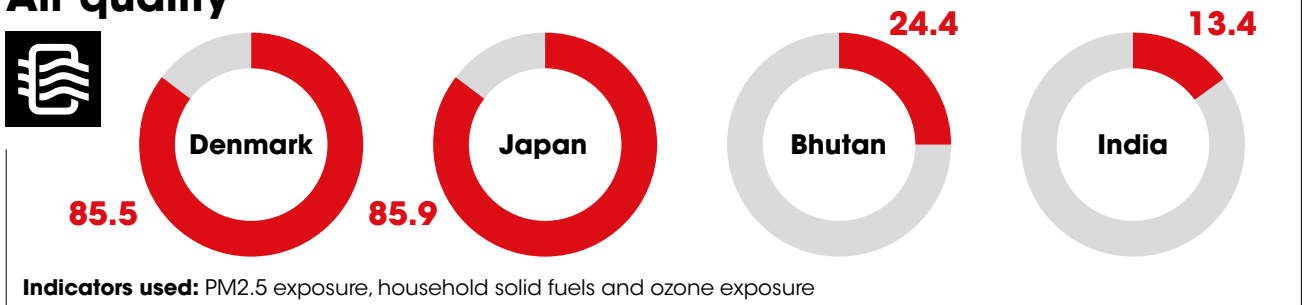
## Overall

100  
Country scores

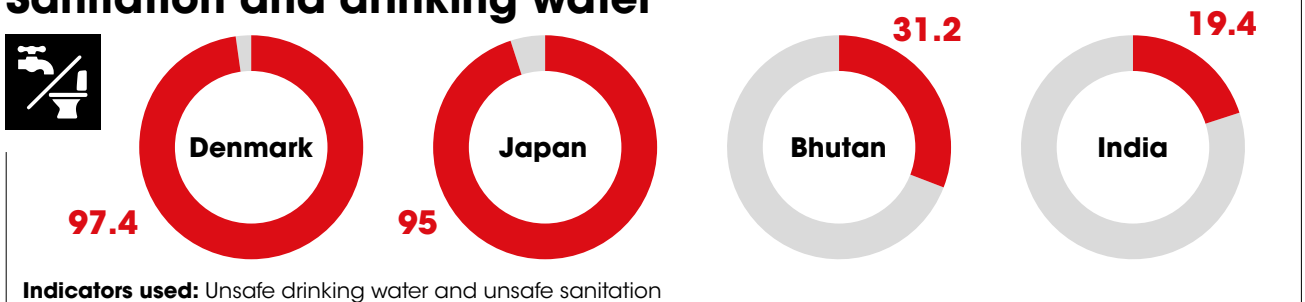


## ENVIRONMENTAL HEALTH CATEGORY

### Air quality

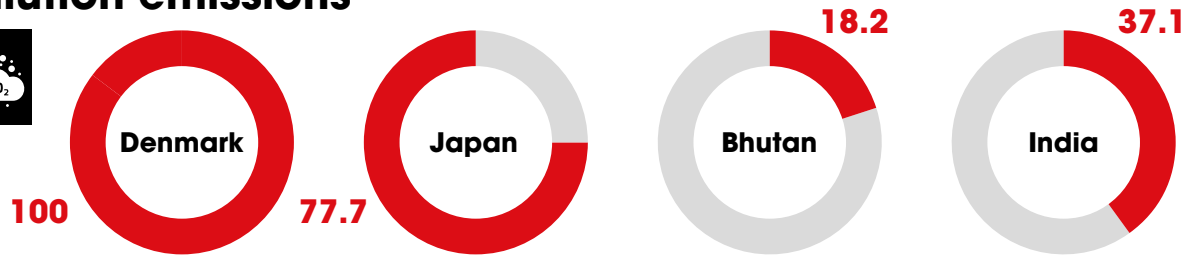
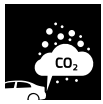


### Sanitation and drinking water



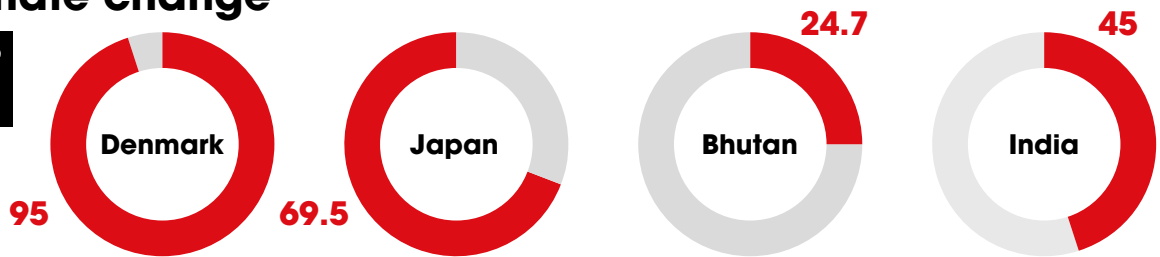
Source: [EPI 2020, Yale University](#)

## Pollution emissions



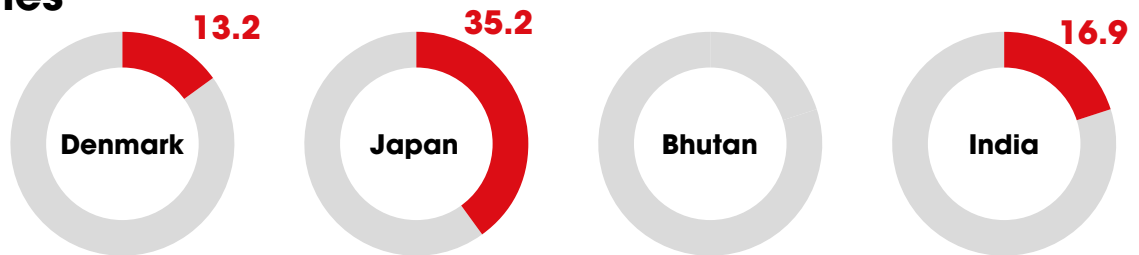
Indicators used: Adjusted emission growth rates for SO<sub>2</sub>, NO<sub>x</sub>

## Climate change



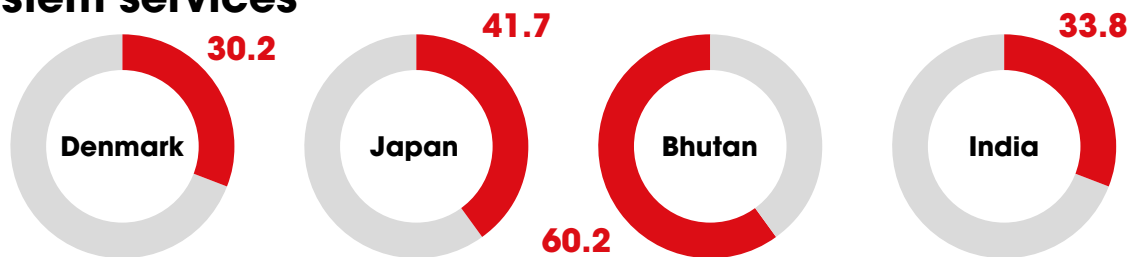
Indicators used: Emission growth rates for four greenhouse gases, greenhouse gas emissions per capita and six others

## Fisheries



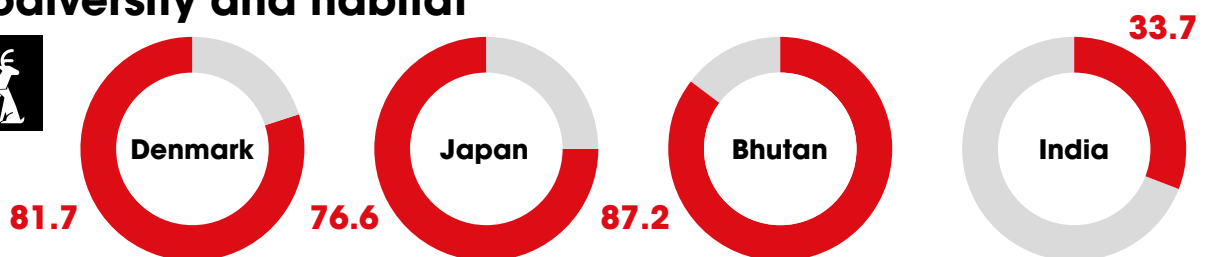
Indicators used: Fish stock status, marine trophic index, and fish caught by trawling

## Ecosystem services



Indicators used: Tree cover loss, grassland loss and wetland loss

## Biodiversity and habitat



Indicators used: Terrestrial biome protection, marine protected areas and seven others

# ENVIRONMENTAL CRIMES

There has been a drop in the number of wildlife crimes in the country between 2019 and 2020. Yet two cases are recorded every day. At the same time, courts are disposing of wildlife cases at a rate much lower than that of new cases recorded, suggesting a pile-up and delays

## IN 2019

**34,671**

Environment-related crimes registered

**7,164**

Cases pending police investigation

**49,877**

Cases pending trial in courts

## A LONG WAY TO GO

Courts need to dispose of 137 cases a day to clear the backlog in a year

|   | Average number of cases courts disposed of every day in 2019 * | Time courts will take to finish the backlog if it moves at its current pace** | Average number of cases courts have to dispose of daily to the backlog in a year*** |
|---|--|---|---|
| <b>The Forest Act &amp; The Forest Conservation Act</b>                                   | <b>5.89 cases</b>  | <b>8 years 5 months</b>   | <b>49.97 cases</b>  |
| States with most offences: Uttar Pradesh (1,145), Rajasthan (308), Himachal Pradesh (161) |  |   |   |
| <b>The Wildlife Protection Act</b>  | <b>0.66 cases</b>  | <b>13 years 3 months</b>  | <b>8.73 cases</b>   |
| States with most offences: Uttar Pradesh (194), Rajasthan (120), Maharashtra (89)         |  |   |   |
| <b>The Environmental (Protection) Act</b>   | <b>0.13 cases</b>  | <b>20 years 7 months</b>  | <b>2.68 cases</b>   |
| States with most offences: Uttar Pradesh (382), Maharashtra (42), Haryana (14)            |  |   |   |
| <b>The Air &amp; The Water (Prevention &amp; Control of Pollution) Act</b>                | <b>0.04 cases</b>  | <b>16 years 2 months</b>  | <b>0.65 cases</b>   |
| States with most offences: Uttar Pradesh (92), Rajasthan (28), Madhya Pradesh (22)        |  |   |   |
| <b>The Cigarette and Other Tobacco Products Act</b>                                       | <b>56.75 cases</b>   | <b>1 year</b>   | <b>57.61 cases</b>  |
| States with most offences: Tamil Nadu (13,256), Kerala (5,035), Rajasthan (2,182)         |  |   |   |
| <b>Noise Pollution Act</b>  | <b>22.43 cases</b>   | <b>9 months</b>   | <b>16.67 cases</b>  |
| States with most offences: Rajasthan (8,133), Madhya Pradesh (162), Tamil Nadu (55)       |  |   |   |
| <b>The National Green Tribunal Act</b>  | <b>0 cases</b>   | <b>Over 73 years</b>  | <b>0.32 cases</b>   |
| States with most offences: Meghalaya (55), Maharashtra (26), Uttar Pradesh (9)            |  |   |   |
| <b>Total environment &amp; pollution-related acts</b>                                     | <b>85.91 cases</b>   | <b>1 year</b>   | <b>136.65 cases</b>   |

\* Total cases disposed of in a year divided by 365 days

\*\* Cases pending at the end of the year divided by average number of cases disposed of every day

\*\*\* Cases pending at the end of the year divided by 365 days

Source: [Crimes in India 2019](#), National Crimes Records Bureau released in 2020



# WORRYING TREND

Uttar Pradesh, Rajasthan and Maharashtra accounted for 77% of wildlife crimes\* in 2019

States where wildlife crimes\* between 2018 and 2019 have

■ Decreased ■ Remained unchanged or ■ Increased

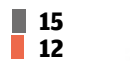
INDIA



DELHI UT



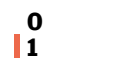
HARYANA



RAJASTHAN



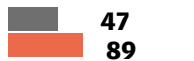
GUJARAT



MADHYA PRADESH



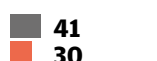
MAHARASHTRA



GOA



KARNATAKA



LAKSHADWEEP



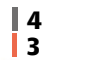
KERALA



HIMACHAL PRADESH



PUNJAB



JAMMU & KASHMIR



UTTARAKHAND



UTTAR PRADESH



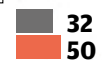
JHARKHAND



BIHAR



ASSAM



ARUNACHAL PRADESH



MANIPUR



MIZORAM



MEGHALAYA



WEST BENGAL



TRIPURA



CHHATTISGARH



TELANGANA



ANDHRA PRADESH



No cases were registered in Andaman & Nicobar, Chandigarh, Dadra and Nagar Haveli, Daman and Diu, Nagaland, Puducherry, Sikkim, Tamil Nadu, Lakshadweep

\* The Wildlife Protection Act, 1972  
Note: Jammu & Kashmir is categorised as a state  
Source: [Crimes in India 2019, National Crimes Records Bureau released in 2020](#)

# ASPIRATIONAL DISTRICTS

While all the districts have improved in the three years since the scheme's inception, progress has been slow under agriculture and water resources, and health and nutrition

## Left out

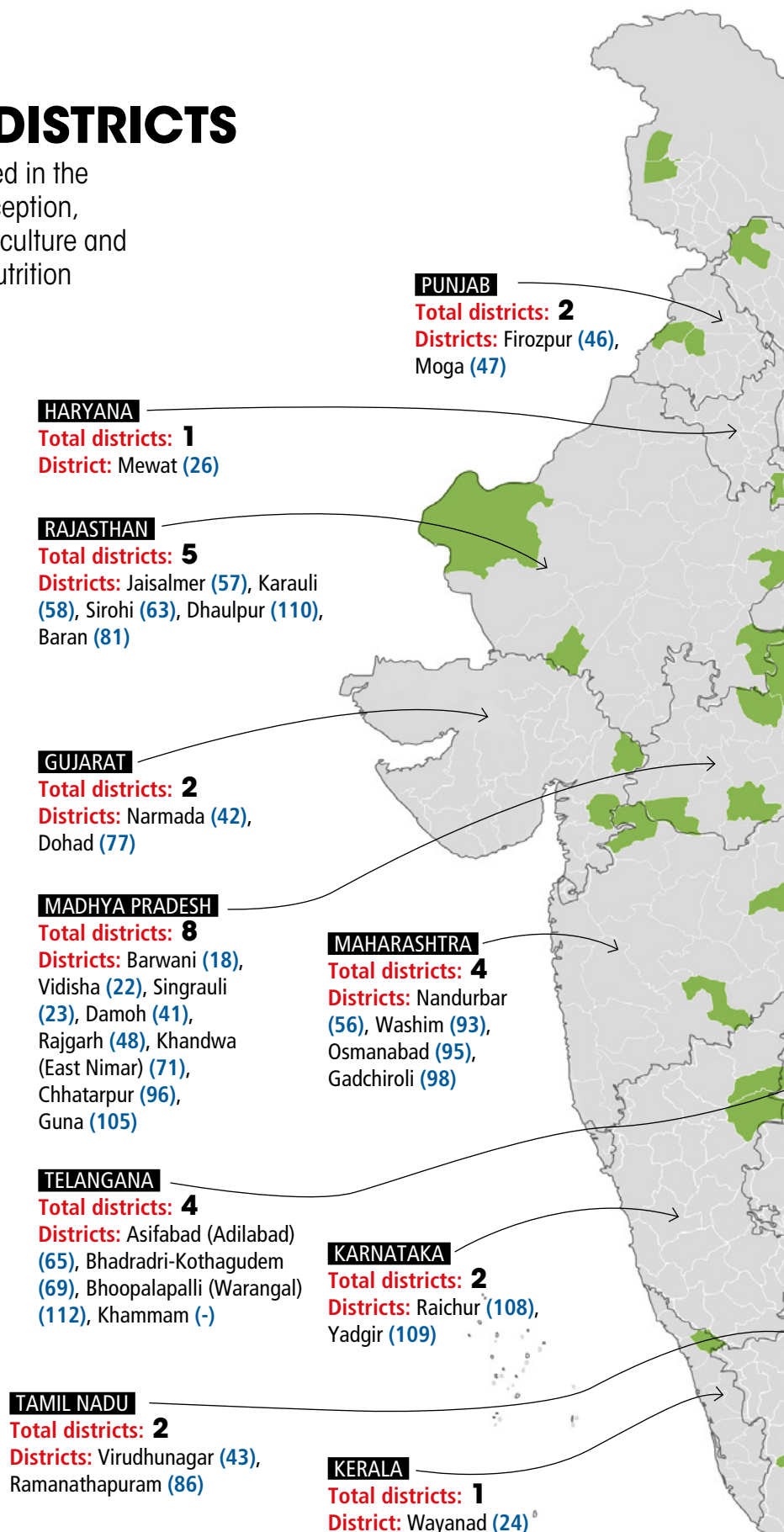
India has identified 115 aspirational districts that need immediate development attention

## WHAT ARE ASPIRATIONAL DISTRICTS

In January 2018, the Centre launched the **Transformation of Aspirational Districts programme** to quickly and effectively transform the country's **115 least developed districts that together have 8,603 gram panchayats**. As part of the scheme, the districts will be ranked monthly on 49 indicators across five sectors that include health and nutrition, education, agriculture and water resources, financial inclusion and skill development, and basic infrastructure

(XX) ranking

Source: NITI Aayog's [Champions of change dashboard](#), as on Feb 2021



**JAMMU & KASHMIR**

**Total districts: 2**  
**Districts:** Kupwara (34),  
 Baramula (97)

**HIMACHAL PRADESH**

**Total districts: 1**  
**District:** Chamba (51)

**UTTARAKHAND**

**Total districts: 2**  
**Districts:** Hardwar (70),  
 Udham Singh Nagar (94)

**UTTAR PRADESH**

**Total districts: 8**  
**Districts:** Balrampur (1),  
 Siddharthnagar (2),  
 Sonbhadra (7), Chandauli  
 (8), Fatehpur (9),  
 Chitrakoot (12), Shrawasti  
 (13), Bahraich (17)

**SIKKIM**

**Total districts: 1**  
**District:** West District (72)

**ASSAM**

**Total districts: 7**  
**Districts:** Darrang (4),  
 Goalpara (16), Barpeta (19),  
 Udalguri (38), Baksa (45),  
 Dhubri (52), Hailakandi (54)

**JHARKHAND**

**Total districts: 19**  
**Districts:** Ranchi (3), Simdega  
 (5), Palamu (27), Sahibganj  
 (30), Latehar (33), Lohardaga  
 (44), Godda (55), Khunti (60),  
 Giridih (67), Garhwa (74),  
 Hazaribagh (80), Pakur (82),  
 Gumla (83), Purbi Singhbhum  
 (84), Pashchimi Singhbhum  
 (88), Dumka (102), Bokaro  
 (103), Chatra (106), Ramgarh  
 (107)

**ARUNACHAL PRADESH**

**Total districts: 1**  
**District:** Namsai (14)

**NAGALAND**

**Total districts: 1**  
**District:** Kiphire (111)

**MEGHALAYA**

**Total districts: 1**  
**District:** Ribhoi (92)

**MANIPUR**

**Total districts: 1**  
**District:** Chandel (10)

**MIZORAM**

**Total districts: 1**  
**District:** Mamit (40)

**TRIPURA**

**Total districts: 1**  
**District:** Dhalai (20)

**BIHAR**

**Total districts: 13**  
**Districts:** Araria (6), Begusarai (15),  
 Sheikhpura (25), Khagaria (29),  
 Purnia (31), Banka (32), Jamui (35),  
 Katihar (36), Aurangabad (53), Gaya  
 (59), Nawada (75), Muzaffarpur (89),  
 Sitamarhi (87)

**CHHATTISGARH**

**Total districts: 10**  
**Districts:** Sukma (20),  
 Uttar Bastar Kanker (39),  
 Dantewada (62), Kondagaon  
 (66), Mahasamund (68),  
 Rajnandgaon (76), Dakshin  
 Bastar, Narayanpur (79), Bastar  
 (73), Korba (85), Bijapur (100)

**ODISHA**

**Total districts: 10**  
**Districts:** Koraput (11),  
 Rayagada (21), Gajapati  
 (28), Dhenkanal (37),  
 Kandhamal (49), Kalahandi  
 (50), Nuapada (78), Balangir  
 (91), Malkangiri (101),  
 Nabarangapur (104)

**ANDHRA PRADESH**

**Total districts: 3**  
**Districts:** Vizianagaram  
 (64), Visakhapatnam  
 (90), YSR (99)

## Overall ranking

Based on the district's performance on five parameters between April 2018 (inception) and Feb 2021



### Top 5

- 1 Balrampur (Uttar Pradesh)
- 2 Siddharthnagar (Uttar Pradesh)
- 3 Ranchi (Jharkhand)
- 4 Darrang (Assam)
- 5 Simdega (Jharkhand)

### Bottom 5

- 1 Bhoopalapalli (Warangal) (Telangana)
- 2 Kiphire (Nagaland)
- 3 Dhaulpur (Rajasthan)
- 4 Yadgir (Karnataka)
- 5 Raichur (Karnataka)

## Agriculture and water resources

61 districts have made less than 20 per cent progress since the scheme's inception

### MONITORED INDICATORS

- % area under micro-irrigation
- % of animals vaccinated
- Number of *mandis* linked to electronic market
- Number of Soil Health Cards distributed
- Artificial insemination coverage



### Top 5

- 1 Araria (Bihar)
- 2 Udalguri (Assam)
- 3 Gajapati (Odisha)
- 4 Goalpara (Assam)
- 5 Sukma (Chhattisgarh)

### Bottom 5

- 1 Balangir (Odisha)
- 2 Bhadradi-Kothagudem (Telangana)
- 3 Dhalai (Tripura)
- 4 Kalahandi (Odisha)
- 5 Giridih (Jharkhand)

## Basic infrastructure

38 districts have made less than 20 per cent progress since the scheme's inception

### MONITORED INDICATORS

- % of gram panchayats with internet connection
- % habitations with access to all-weather roads under Pradhan Mantri Gram Sadak Yojana (PMGSY)
- Cumulative kms of all-weather road work completed as a % of total sanctioned kilometres in the district under PMGSY
- % households with individual household latrines
- % of rural habitations with access to adequate quantity of potable water (40 lpcd) drinking water
- % coverage of establishment of Common Service Centres at Gram Panchayat level
- % of pucca houses constructed for households that are shelterless or have one or two rooms with kuchha wall and roof



### Top 5

- 1 Bhadradi-Kothagudem (Telangana)
- 2 Darrang (Assam)
- 3 Aurangabad (Bihar)
- 4 Palamu (Jharkhand)
- 5 Pakur (Jharkhand)

### Bottom 5

- 1 Baramula (Jammu and Kashmir)
- 2 West District (Sikkim)
- 3 Bijapur (Chhattisgarh)
- 4 Jaisalmer (Rajasthan)
- 5 Kiphire (Nagaland)

## Education

5 districts have made less than 20 per cent progress since the scheme's inception

### MONITORED INDICATORS

- Toilet access: percentage schools with functional girls' toilets
- Percentage of schools with functional drinking water facility
- Percentage of schools with functional electricity facility at secondary level
- Percentage of elementary schools complying with RTE specified Pupil Teacher Ratio



### Top 5

1 Balrampur (Uttar Pradesh) 2 Rayagada (Odisha) 3 Siddharthnagar (Uttar Pradesh) 4 Bhadradi-Kothagudem (Telangana) 5 Mewat (Haryana)

### Bottom 5

1 Bhoopalapalli (Warangal) (Telangana) 2 Yadgir (Karnataka) 3 Nabarangapur (Odisha) 4 Raichur (Karnataka) 5 Muzaffarpur (Bihar)

## Financial inclusion and skill development

30 districts have made less than 20 per cent progress since the scheme's inception

### MONITORED INDICATORS

- Total disbursement of Mudra loan (in ₹crore) per 1 lakh population
- No. of people certified under Recognition of Prior Learning to non-formally skilled workforce
- Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY): number of enrolments per 1 lakh population
- Pradhan Mantri Suraksha Bima Yojana (PMSBY): number of enrolments per 1 lakh population
- Atal Pension Yojana beneficiaries per 1 lakh population; % accounts seeded with Aadhaar to total bank accounts
- Number of accounts opened under Pradhan Mantri Jan Dhan Yojana per 1 Lakh population
- Percentage of youth certified in short term or long term training schemes to no of youth in district in age group 15-29
- Percentage of certified youth employed to number of youth trained under short term or long term training
- Number of apprenticeships completing to total number of trainees registered on the portal
- Percentage certified trained: women, SC, ST, OBC, minorities and differently abled



### Top 5

1 Goalpara (Assam) 2 Darrang (Assam) 3 Baksa (Assam) 4 Simdega (Jharkhand) 5 Udalguri (Assam)

### Bottom 5

1 Khunti (Jharkhand) 2 Kiphire (Nagaland) 3 Bijapur (Chhattisgarh) 4 Sukma (Chhattisgarh) 5 Dhalai (Tripura)

## Health and nutrition

69 districts have made less than 20 per cent progress since the scheme's inception

### MONITORED INDICATORS

- Percentage of ANC registered within the first trimester against Total ANC Registration
- Percentage of pregnant women (PWs) registered for ANCs to total estimated pregnancies
- Percentage of children fully immunised (9-11 months) (BCG+ DPT3 + OPV3 + Measles1)
- Tuberculosis (TB) case notification rate (Public and Private Institutions) as against estimated cases
- TB treatment success rate among notified TB patients (public and private)
- Percentage of pregnant women regularly taking Supplementary Nutrition under the ICDS programme
- % of pregnant women having severe anaemia treated, against PW having severe anaemia tested cases sex ratio at birth
- Percentage of institutional deliveries to total estimated deliveries and deliveries at home attended by an skilled birth attendant
- Percentage of newborns breastfed within one hour of birth
- % of low birth weight babies (less than 2500g); % of live babies weighed at birth; % of underweight children under 6 years
- % of severe acute undernourishment in children under 6 years to total children under 6 years
- % of moderate acute malnutrition in children under 6 years to total children under 6 years



### Top 5

1 Ranchi (Jharkhand) 2 Sukma (Chhattisgarh) 3 Balrampur (Uttar Pradesh) 4 Siddharthnagar (Uttar Pradesh) 5 Chandauli (Uttar Pradesh)

### Bottom 5

1 Nabarangapur (Odisha) 2 Malkangiri (Odisha) 3 Kiphire (Nagaland) 4 Purbi Singhbhum (Jharkhand) 5 Bokaro (Jharkhand)

## RESOURCES

### IN NEWS

[Asia-Pacific may achieve just 10% targets of sustainable development goals: UN report | March 16, 2021](#)

Out of 104 measurable targets of the SDGs, the region is on track to reach only nine by 2030, according to the report titled Asia and the Pacific SDG Progress Report, 2021 by UN Economic and Social Commission for Asia and the Pacific

[Work with nature, not against it in Anthropocene: Human Development Report](#)

New social norms, improved incentives could usher in a new era for humanity, without human-generated pressures on Earth

[India stopped counting poor; now the world in bind on how to achieve zero poverty by 2030](#)

World Bank's latest poverty report highlights how absence of poverty data in India, junked by the government last year, makes real assessment of world development skewed

[Addressing climate risks for climate finance takes centre stage, 30 April 2021](#)

The Indian government needs to introduce guidelines to standardise climate-related disclosures in all financial statements

### REPORTS/PUBLICATIONS

[Sustainable Development Goals-National Indicator Framework: Progress Report, 2020 \(Version 2.1\)| Ministry of Statistics and Programme Implementation| September 2020](#)

This is a report on National Indicator Framework (NIF) consisting originally of 306 national indicators

[EnviStats India 2021, Vol. 1: environment statistics| Ministry of Statistics and Programme Implementation| March 2021](#)

This is a compendium of statistical data on environment and development

[India VNR 2020- Decade of action: Taking SDGs from global to local| Niti Aayog| July 2020](#)

It is a review of India's progress on implementation of the 2030 Agenda and the SDG

[Measuring progress: environment and the SDGs| UNEP| May 2021](#)

This report on 92 environment-related Sustainable Development Goals (SDGs) indicators, analyzes the progress made in achieving the SDGs targets and identifies data gaps

[World Economic Situation and Prospects 2021 | World Bank | Jan 2021](#)

Although the global economy is emerging from the collapse triggered by COVID-19, the recovery is likely to be subdued

[Atlas of Sustainable Development Goals 2020| The World Bank| November 2020](#)

The Atlas of Sustainable Development Goals 2020 presents interactive storytelling and data visualizations about the 17 Sustainable Development Goals

[The Sustainable Development Goals Report 2020| United Nations| July 2020](#)

This report provides an overview of the world's implementation efforts to date, highlighting areas of progress and areas where more action needs to be taken to ensure no one is left behind

# State of COVID-19

---

## Changing geography

India alone accounted for more than half of the daily global cases on seven days in May. The peak was due to a surge in cases in the rural districts of the country



## Crawling pace of vaccination

India has till date fully vaccinated 3.12 per cent of its population, which is lower than the global average of 5.48 per cent



## Ailing rural health infrastructure

Community health centres in rural India need 76 per cent more doctors, 56 per cent more radiographers and 35 per cent more lab technicians



## Rural economy in a slump

The spread to fragile rural districts means that the country will take longer to recover. This is likely to slow down the GDP growth in 2021-22 as well

# INDIA'S SECOND WAVE

May 2021 was the most tragic month for India as it recorded over 9 million new cases and 120,000 deaths due to the coronavirus

## ALARMING SHARE

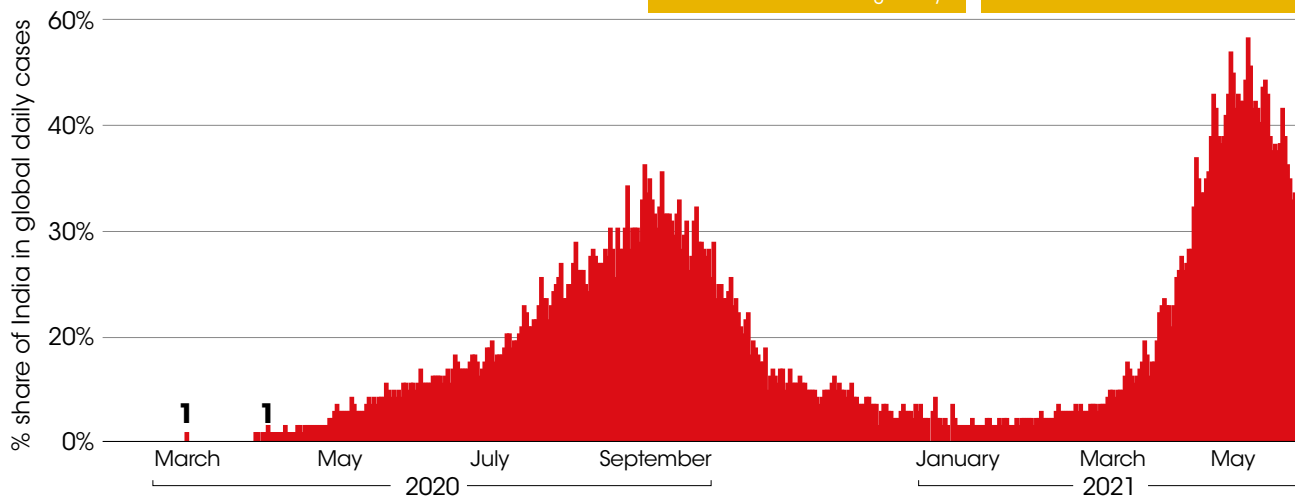
On seven days in May, India accounted for more than 50 per cent of global cases

**170.73 million**

Total COVID-19 cases globally

**28.18 million**

Total COVID-19 cases in India



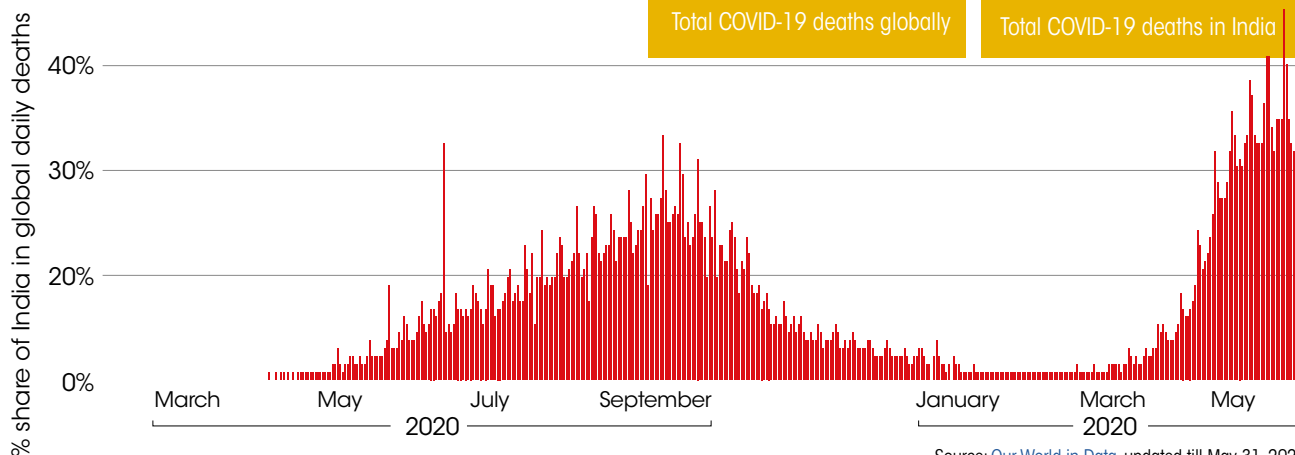
On 23 days in May, India recorded more than 30 per cent global deaths

**3.6 million**

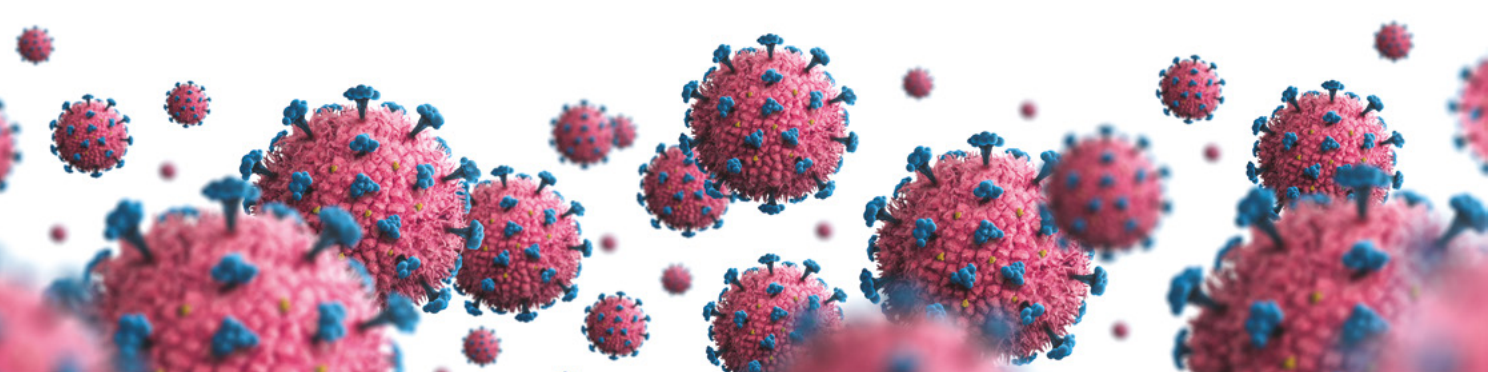
Total COVID-19 deaths globally

**0.3 million**

Total COVID-19 deaths in India



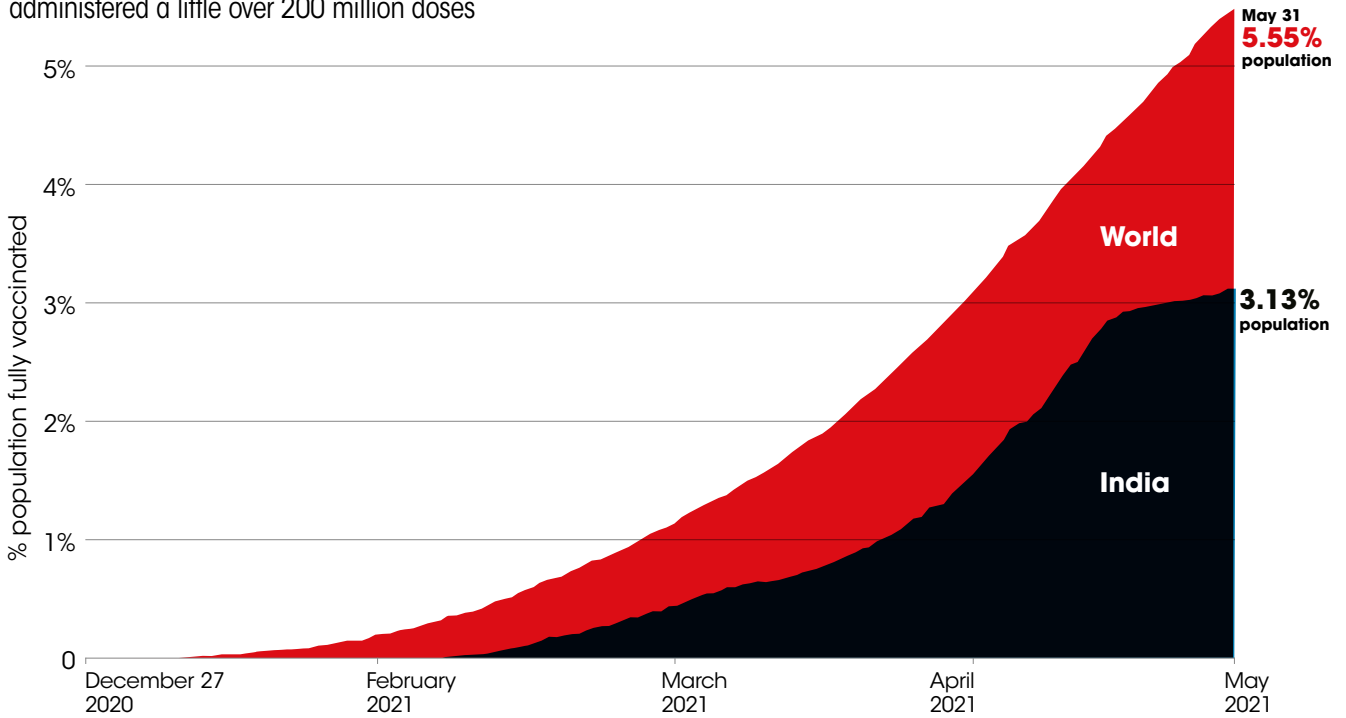
Source: [Our World in Data](#), updated till May 31, 2021





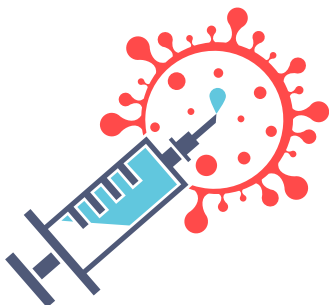
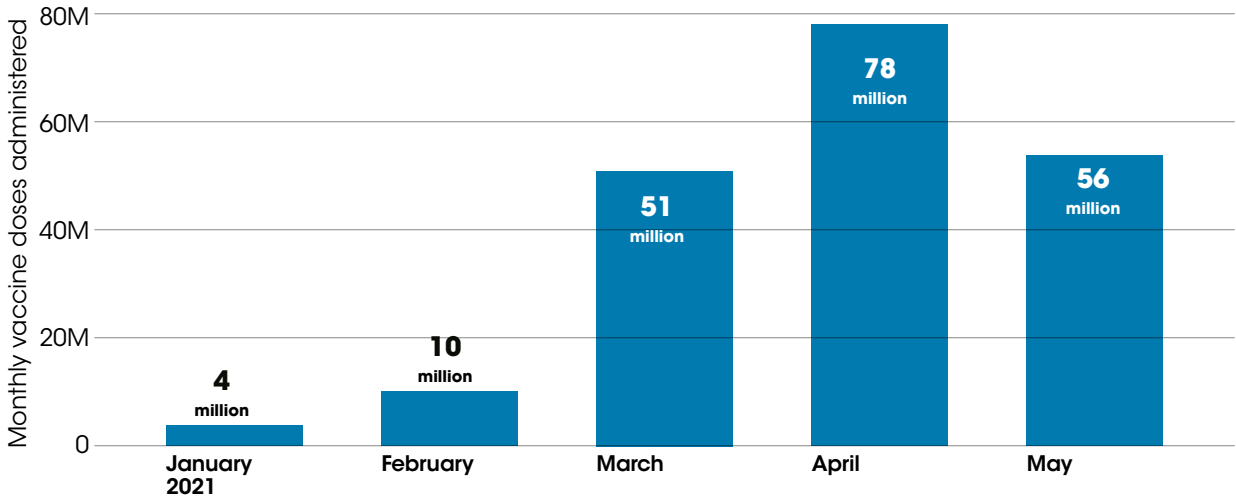
## LOW VACCINATION COVERAGE

Till May 31, the world had administered nearly 2 billion vaccine doses. Of this, India administered a little over 200 million doses



## DOWNWARD MARCH

After a peak in April, India administered almost 22 million fewer vaccine doses in May amid shortages



**Peak 0.7 million**  
on February 25

**Lowest 0.04 million**  
on February 25

**Peak 3.4 million**  
March 22

**Lowest 0.06 million**  
March 7

**Peak 4.3 million**  
April 2

**Lowest 1.2 million**  
April 18

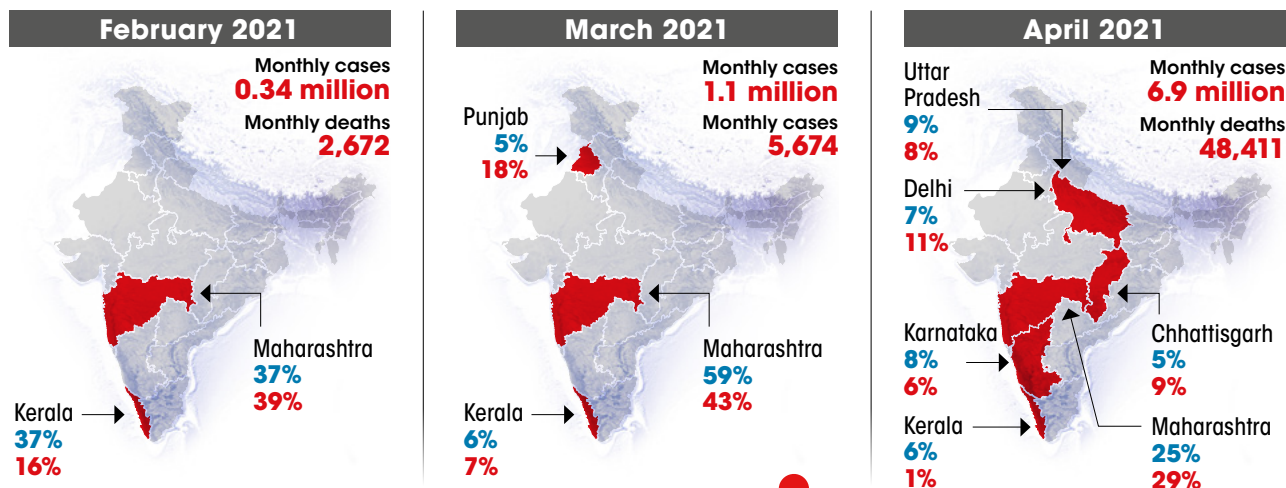
**Peak 3.9 million**  
May 29

**Lowest 0.6 million**  
May 2

Source: [Our World in Data](https://ourworldindata.org), updated till May 31, 2021

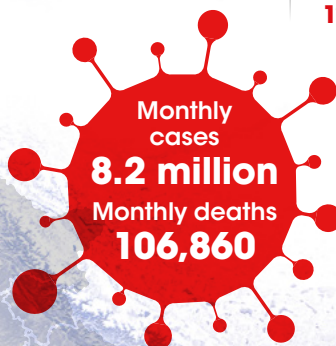
# CHANGING GEOGRAPHY

India had only two COVID-19 hotspots\* at the start of the second wave in February 2021. By May, it had increased to seven states



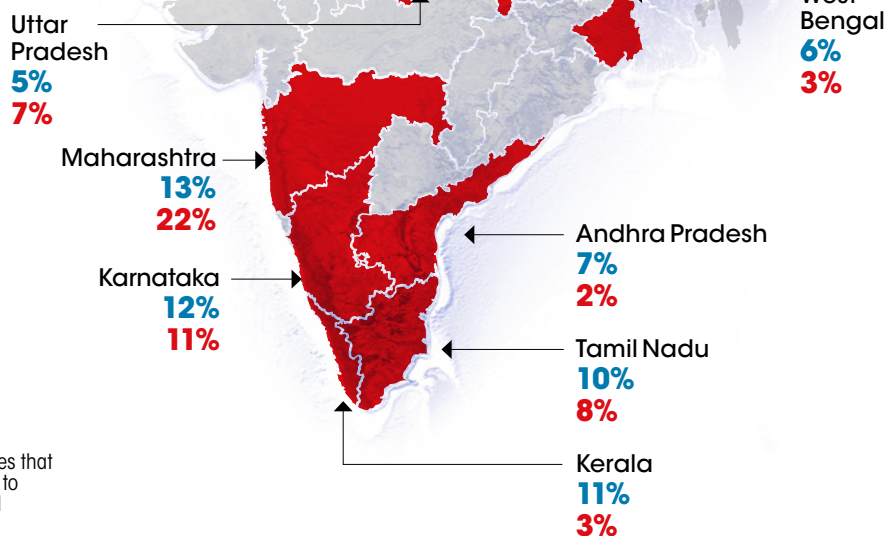
## May 1-28, 2021

India recorded a third of its total COVID-19 deaths in May alone. The month also saw the highest number of cases



00% share in total cases recorded in a month

00% share in total deaths recorded in a month



\* Hotspots are defined as states that contribute 5 per cent or more to India's total monthly caseload

Source: Covid19India; As on May 28, 2021

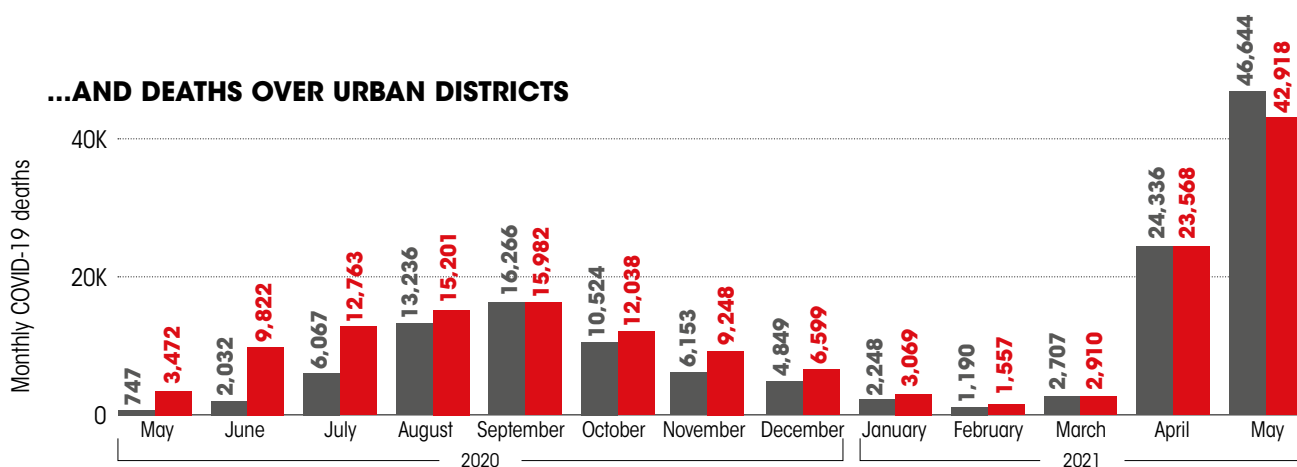
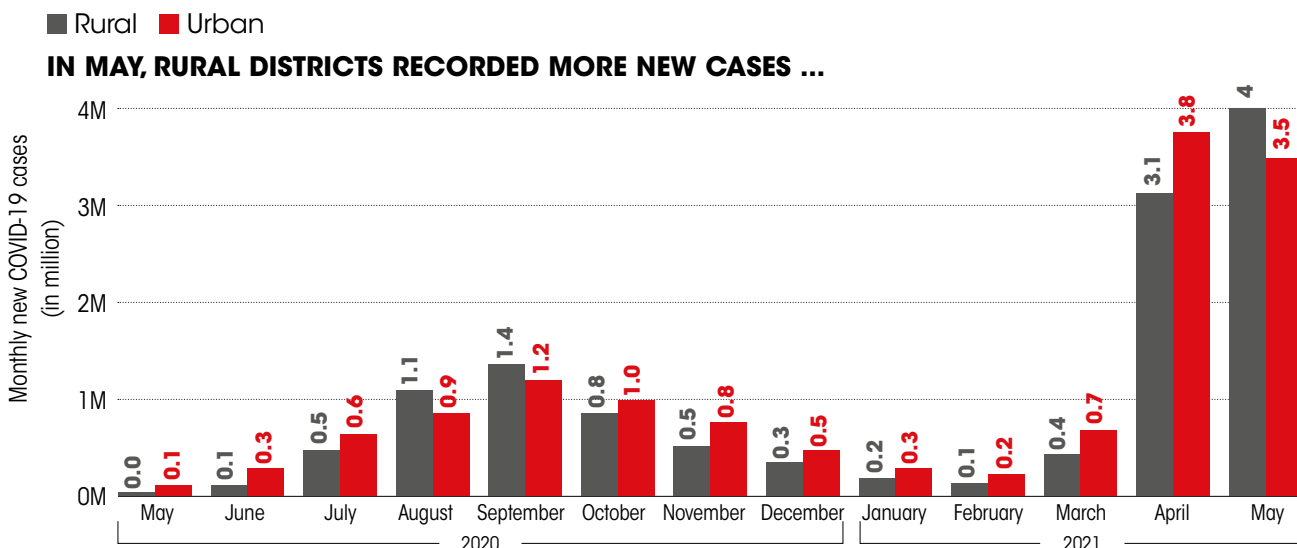
# RURAL ASSAULT

In the first 26 days of May, India accounted for every other new COVID-19 case and every third death due to the infection recorded globally. What escaped everyone's notice is that every second new case and death reported from India in May was from the rural districts. This means every fourth case reported in the world that month was from rural India

## IN MAY 2021

**53%** new cases were recorded in rural districts. September 2020 is the only other month when rural cases were higher than urban cases

**52%** new deaths were recorded in rural districts. India also recorded more deaths in April 2020



Source: [How India Lives](https://www.howindialives.com/); Census 2011 and various district websites; Data as on May 23, 2021  
 The analysis is based on district-level numbers for all states / Union territories, though partial data is available for Andaman and Nicobar, Assam, Goa, Manipur and Telangana;  
 Rural districts have at least 60 per cent of the population living in rural areas

# RURAL HEALTH INFRASTRUCTURE

India has a shortage of both rural health centres and human resources to run them



## Rural healthcare system in India

### Sub Centre

- Most peripheral contact point between Primary Health Care System and community
- Managed by one female health worker (auxiliary nurse midwife) and male health worker

### Primary Health Centre (PHC)

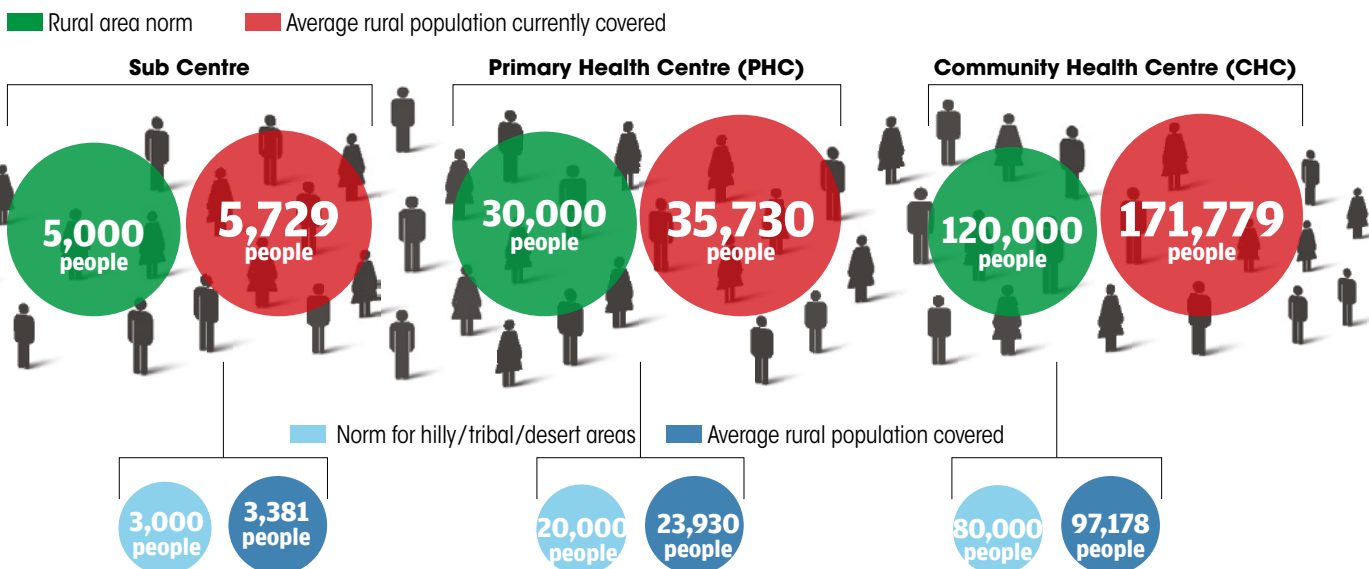
- It is usually a referral unit for six Sub Centres; 4-6 beds managed with a medical officer
- PHC is the first contact point between village community and the medical officer
- Staff includes a medical officer supported by paramedical and other allied staff

### Community Health Centre (CHC)

- It is usually a 30 bedded hospital/ referral unit for four PHCs with specialised services
- Staff includes specialist doctors and allied staff

## Rural health infrastructure coverage (As on March 31, 2020)

Health centres at all three levels are catering to more population than recommended



### Staff shortfall at CHC level

|                          |   |                            |                               |                                   |
|--------------------------|---|----------------------------|-------------------------------|-----------------------------------|
| Surgeons<br><b>78.9%</b> | Obstetricians & Gynecologists<br><b>69.7%</b> | Physicians<br><b>78.2%</b> | Pediatricians<br><b>78.2%</b> | Total specialists<br><b>76.1%</b> |
|--------------------------|---|----------------------------|-------------------------------|-----------------------------------|

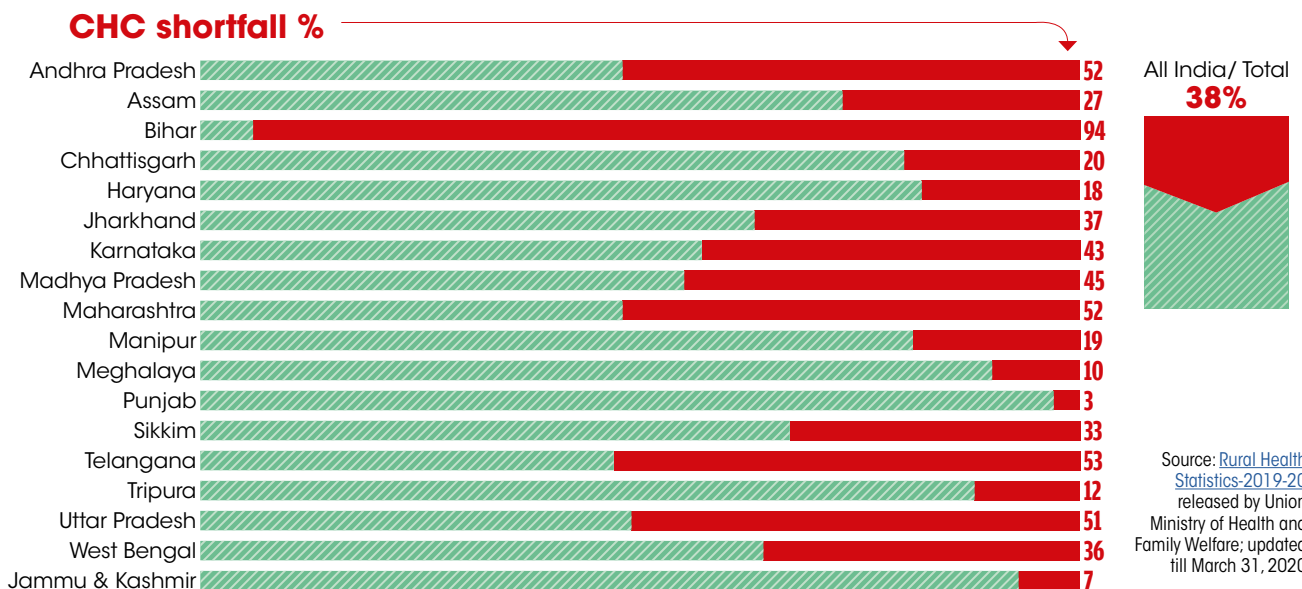
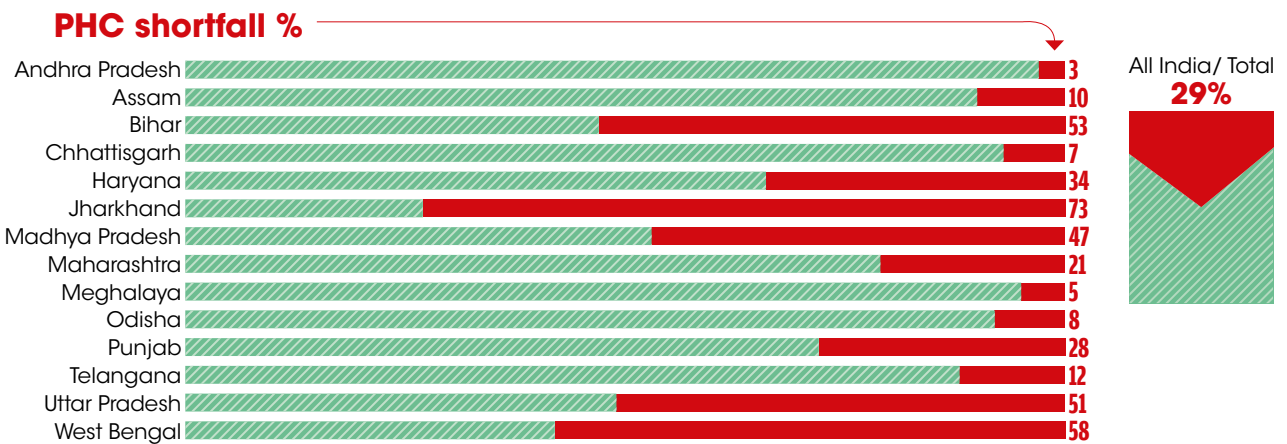
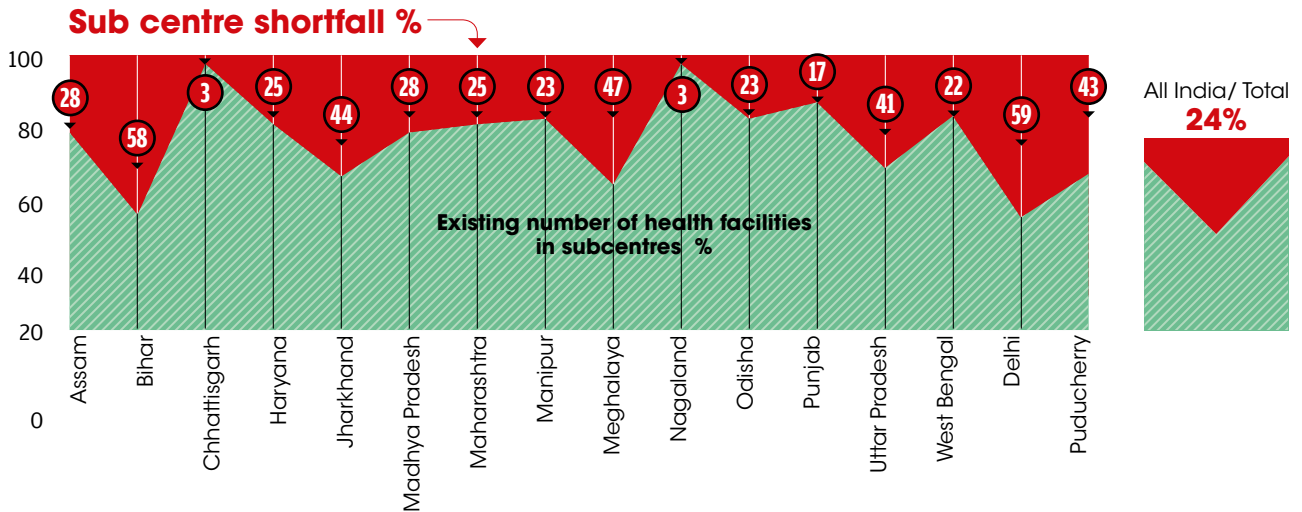
### Staff shortfall at SC and PHCs

|                     |                                      |                                |
|---------------------|--------------------------------------|--------------------------------|
| ANM<br><b>14.1%</b> | Health Worker (male)<br><b>35.5%</b> | Doctors at PHC<br><b>24.1%</b> |
|---------------------|--------------------------------------|--------------------------------|

Source: [Rural Health Statistics-2019-20](#) released by Union Ministry of Health and Family Welfare; updated till March 31, 2020

# Limited infrastructure

India needs at least 38 per cent more CHCs, which is the first level of health infrastructure where rural population get access to specialist doctors and radiographers



Source: Rural Health Statistics-2019-20 released by Union Ministry of Health and Family Welfare; updated till March 31, 2020

# Acute shortage of human resources

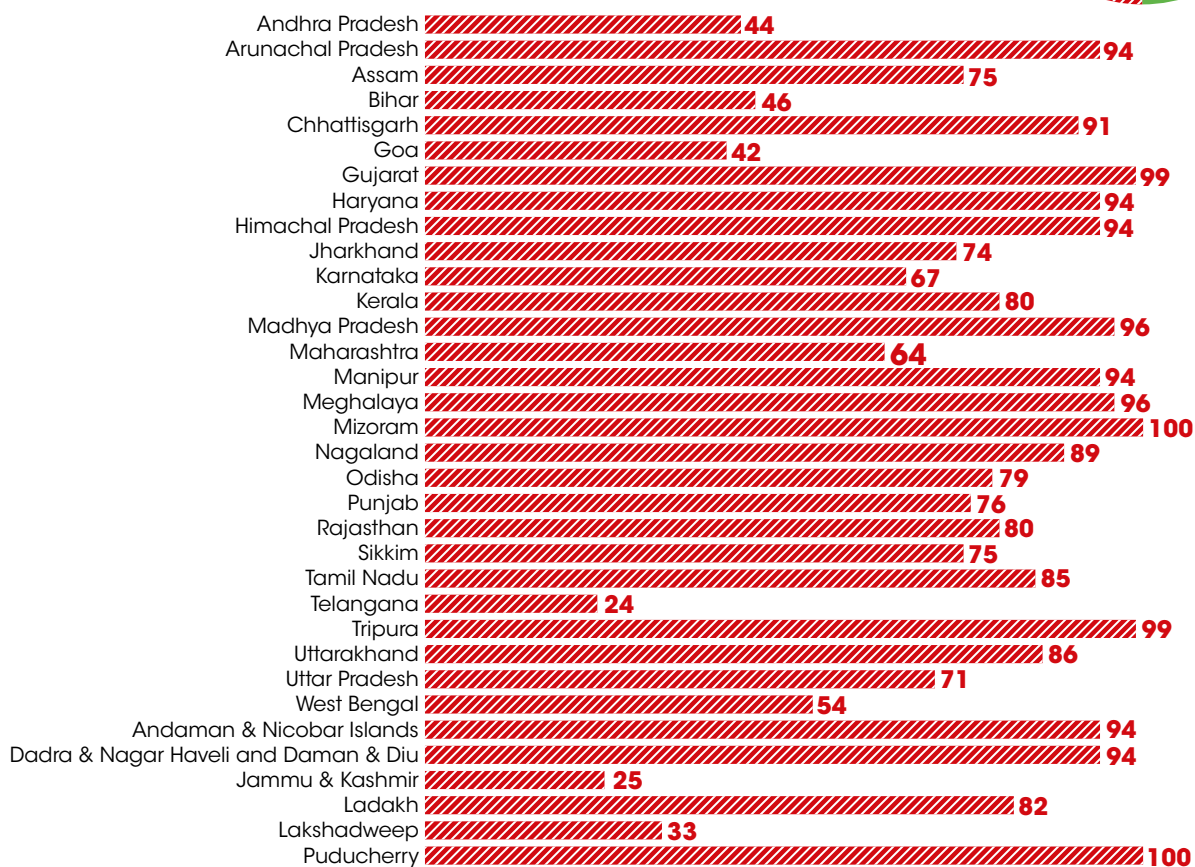
There is a rampant shortage of doctors and specialists like lab technicians and radiographers in rural health centres

Total shortfall in India (%)

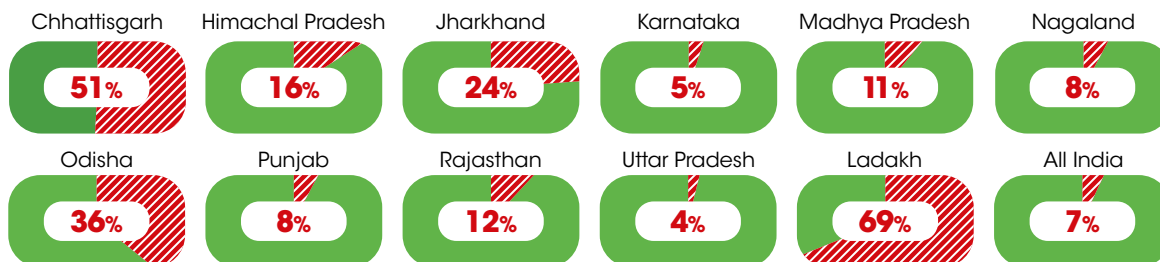
**76**



## State-wise shortage of specialist doctors at CHCs (%)



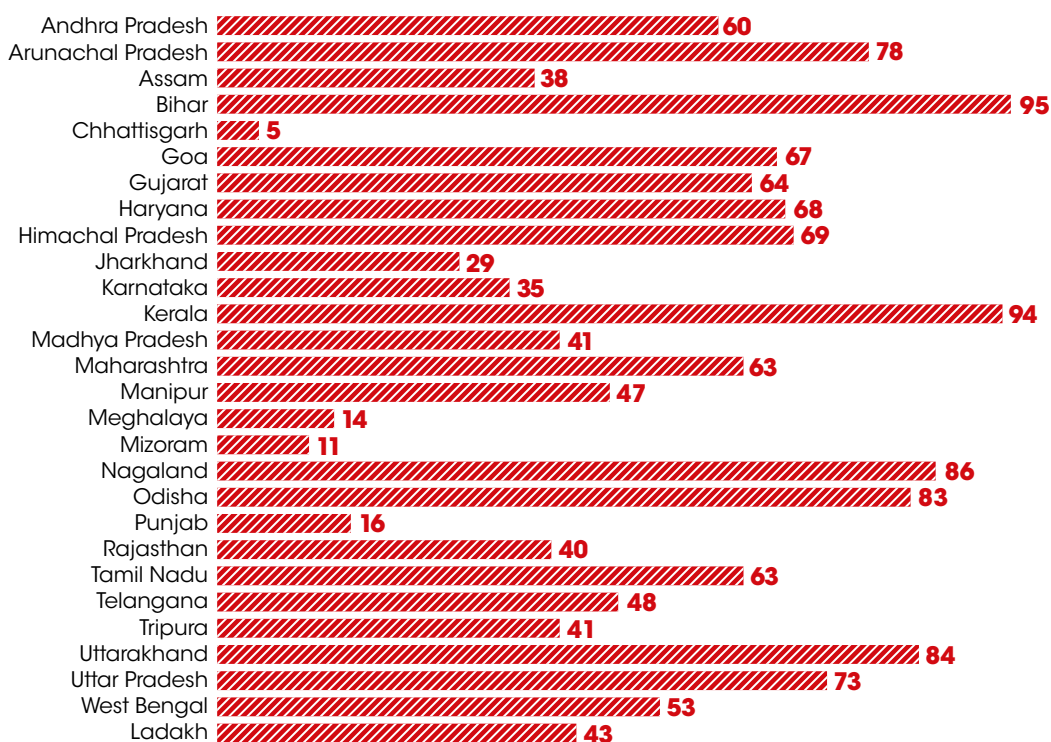
## State-wise shortage of doctors at PHCs (%)



Source: [Rural Health Statistics-2019-20](#) released by Union Ministry of Health and Family Welfare; updated till March 31, 2020



## State-wise shortage of radiographers at CHCs

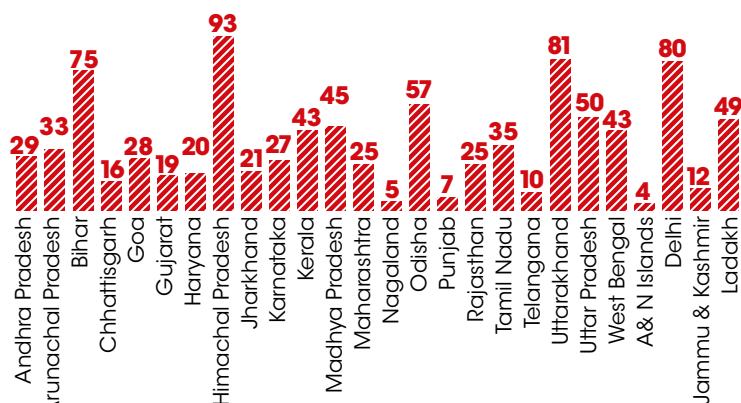


Total shortfall in India

**56%**



## State-wise shortage of lab technicians at PHCs and CHCs (%)



Total shortfall in India

**35%**

Source: [Rural Health Statistics-2019-20](#) released by Union Ministry of Health and Family Welfare; updated till March 31, 2020

## ECONOMIC IMPACT OF SECOND WAVE

The second wave impacted rural and semi-rural areas the most.

Rural is not as resilient as urban and hence the demand recovery will take longer. This will impact GDP in 2021-22

### THE SECOND WAVE WAS LESS SEVERE THAN THE FIRST WAVE...

In Q4 of 2020-21, GDP grew by 1.6 per cent. This has helped reduce the GDP contraction from 10.4% to 7.9%

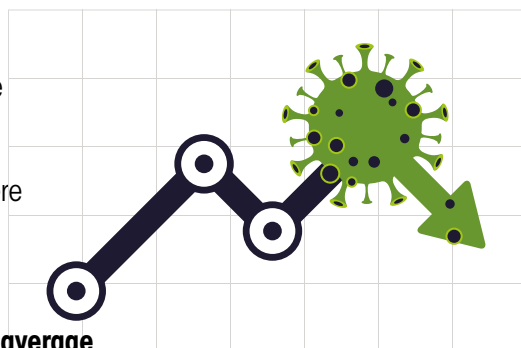
|  | FY20 |      |      |      |        | FY21  |       |      |      |        |
|--|------|------|------|------|--------|-------|-------|------|------|--------|
|  | Q1   | Q2   | Q3   | Q4   | Annual | Q1    | Q2    | Q3   | Q4   | Annual |
| <b>Agriculture</b>   | 3.3  | 3.5  | 3.4  | 6.8  | 4.3    | 3.5   | 3     | 4.5  | 3.1  | 3.6    |
| <b>Industry</b>  | 1.7  | -1.8 | -2.6 | -2.2 | -1.2   | -35.8 | -3    | 2.9  | 7.9  | -7     |
| Mining & quarrying   | -1.3 | -5.2 | -3.5 | -0.9 | -2.5   | -17.2 | -6.5  | -4.4 | -5.7 | -8.5   |
| Manufacturing  | 0.6  | -3   | -2.9 | -4.2 | -2.4   | -36   | -1.5  | 1.7  | 6.9  | -7.2   |
| Electricity, gas, water supply & other utility services                    | 6.9  | 1.7  | -3.1 | 2.6  | 2.1    | -9.9  | 2.3   | 7.3  | 9.1  | 1.9    |
| Construction   | 3.7  | 1    | -1.3 | 0.7  | 1      | -49.5 | -7.2  | 6.5  | 14.5 | -8.6   |
| <b>Services</b>  | 7.2  | 8.2  | 7    | 6.4  | 7.2    | -21.5 | -11.4 | -1.2 | 1.5  | -8.4   |
| Trade, hotels, transport, communication & services related to broadcasting | 6.2  | 6.8  | 7    | 5.7  | 6.4    | -48.1 | -16.1 | -7.9 | -2.3 | -18.2  |
| Financial, real estate & professional service                              | 8.8  | 8.9  | 5.5  | 4.9  | 7.3    | -5    | -9.1  | 6.7  | 5.4  | -1.5   |
| Public administration, defence and Other Services                          | 5.6  | 8.8  | 8.9  | 9.6  | 8.3    | -10.2 | -9.2  | -2.2 | 2.3  | -4.6   |
| <b>Total GVA at Basic Price</b>  | 5    | 4.6  | 3.4  | 3.7  | 4.1    | -22.4 | -7.3  | 1    | 3.7  | -6.2   |
| <b>GDP</b>   | 5.4  | 4.6  | 3.3  | 3    | 4      | -24.4 | -7.4  | 0.5  | 1.6  | -7.3   |

Source: SBI Ecowrap released on June 1, 2021



## ... AS IT HAS ADVERSELY IMPACTED THE RURAL ECONOMY AND SMALLER TOWNS

More rural districts had a crude fatality rate than the India average. At the same time, rural demand plummeted. They account for a lower amount of overall economic activity, thus the GDP loss due to the current wave is lower than that in the first wave where urban and semi-urban centres were affected more. However, rural is not as resilient as urban and hence the current pick-up in pent up demand is unlikely to make a large difference in FY22 GDP estimates



### Districts with CFR Above India average

|                   | Rural            |                  |             | Urban            |                  |             |
|-------------------|------------------|------------------|-------------|------------------|------------------|-------------|
|                   | No. of districts | First wave (CFR) | Second wave | No. of districts | First wave (CFR) | Second wave |
| Arunachal Pradesh | 4                | 0.05             | 1.2         | -                | -                | -           |
| Bihar             | 13               | 0.54             | 1.41        | -                | -                | -           |
| Chhattisgarh      | 10               | 0.68             | 1.63        | -                | -                | -           |
| Delhi             | -                | -                | -           | 1                | 1.92             | 1.68        |
| Gujarat           | 12               | 1.23             | 1.91        | 6                | 1.36             | 1.4         |
| Haryana           | 13               | 1.28             | 1.79        | 4                | 1.18             | 1.68        |
| Himachal Pradesh  | 10               | 1.3              | 1.6         | -                | -                | -           |
| Jharkhand         | 12               | 0.47             | 1.58        | 5                | 1.07             | 2.26        |
| Karnataka         | 9                | 1.58             | 1.49        | 3                | 1.89             | 1.11        |
| Madhya Pradesh    | 20               | 1.68             | 1.45        | 1                | 1.53             | 1.05        |
| Maharashtra       | 27               | 2.34             | 1.7         | 2                | 2.03             | 1.18        |
| Meghalaya         | 3                | 0                | 1.76        | 1                | 1.22             | 2.71        |
| Nagaland          | 7                | 0.07             | 2.6         | 2                | 0.17             | 2.57        |
| Punjab            | 16               | 2.86             | 2.82        | 6                | 2.89             | 1.98        |
| Rajasthan         | 9                | 1.11             | 1.24        | 1                | 1.49             | 1.08        |
| Tamil Nadu        | 3                | 1.63             | 1.39        | 10               | 1.72             | 1.32        |
| Tripura           | 2                | 1.2              | 1.11        | -                | -                | -           |
| Uttar Pradesh     | 35               | 1.39             | 1.76        | 4                | 1.89             | 1.53        |
| Uttarakhand       | 7                | 0.82             | 1.7         | 1                | 2.23             | 2.78        |
| West Bengal       | 3                | 0.86             | 1.11        | -                | -                | -           |
| Grand Total       | 223              | 1.11             | 1.64        | 48               | 1.6              | 1.8         |



### DENTED RURAL DEMAND

Diesel consumption, Two-wheeler and tractor sales, fertiliser sales, MGNREGA employment generated all declined in April 21

| Indicators                           | Jan-21 | Feb-21 | Mar-21 | Apr-21 |
|--------------------------------------|--------|--------|--------|--------|
| Diesel Consumption                   | -5.2   | -3.7   | 10.1   | -7.5   |
| Consumer Non Durables                | -7.1   | -2.1   | 5.9    | -      |
| Two Wheelers-Domestic                | 26.8   | -0.2   | 4.9    | -33.5  |
| Tractor Sales-Domestic               | 27.9   | -3.4   | 12.5   | -25.5  |
| Domestic Passenger Vehicle           | 9.3    | 1.7    | 3.4    | -10.1  |
| Fertilizer Wholesale                 | -9.4   | -19.1  | -26.3  | -13.9  |
| Fertilizer Retail                    | -18.1  | -24.4  | -9.7   | -55.3  |
| Rural Unemployment Rate              | 5.8    | 6.9    | 6.2    | 7.1    |
| MGNREGA (Person Days Generated)      | -1.9   | 10.6   | -20.7  | -8.5   |
| % of indicators showing acceleration | 36     | 18     | 40     | 11     |

Source: SBI Research

## IT HAS ALSO PUSHED THE PRICES EXORBITANTLY

Barring agriculture and allied activities, the Q4 year-on-year GDP deflator, a price index used to track the average prices of goods and services produced across all sectors of a nation's economy over time, has increased for all other sectors indicating rising prices.

Overall, Q4 deflator grew at a whopping 7.0 per cent. For the entire year GDP deflator has grown by 4.6 per cent as compared to 3.6 per cent in FY21. This will further slow down the rural economic recovery

## GROWTH IN SECTORAL DEFLATOR (YEAR-ON-YEAR%)

The price of most sectors has surged in Q4

|  | FY18 | FY19 | FY20 | FY21  |       |     |     |        |
|--|------|------|------|-------|-------|-----|-----|--------|
|  |      |      |      | Q1    | Q2    | Q3  | Q4  | Annual |
| Agriculture  | 5.4  | 3.9  | 7.9  | 2     | 4.1   | 3.3 | 2   | 2.8    |
| Industry   | 4.4  | 4.5  | 0    | -3.6  | -1.3  | 1.9 | 6.4 | 1.4    |
| Mining & quarrying   | 9    | 11.9 | -3.2 | -23.7 | -12.1 | -12 | 3.3 | -10.3  |
| Manufacturing  | 2.3  | 3.8  | -0.9 | -0.4  | 0.9   | 2.9 | 5.9 | 2.7    |
| Electricity, gas, water supply & other utility services                    | 8.2  | -2   | 5.2  | -2.3  | -6.1  | 0.2 | 0.6 | -1.7   |
| Construction   | 5.5  | 5.7  | 0.4  | -4.3  | -1.8  | 3   | 9   | 2.5    |
| Services   | 4.2  | 4.9  | 3.3  | 3.2   | 3.1   | 3.6 | 5.3 | 3.8    |
| Trade, hotels, transport, communication & services related to broadcasting | 2.8  | 3.8  | 2.2  | 0.6   | 2.7   | 3.2 | 5   | 3.3    |
| Financial, real estate & professional service                              | 5.5  | 5.7  | 3    | -0.2  | 1.6   | 3   | 5.7 | 2.4    |
| Public administration, defence and Other Services                          | 4.1  | 5.2  | 5    | 6.9   | 5.2   | 4.7 | 5   | 5.3    |
| Total GVA at Basic Price   | 4.5  | 4.5  | 3.3  | 2.8   | 2.2   | 3.2 | 4.9 | 3.4    |
| GDP  | 4    | 3.7  | 3.6  | 2.8   | 3.3   | 4.8 | 7   | 4.6    |

Source: CSO & SBI Research

## TOWARDS A SLOW RECOVERY

The slowing down of the rural economy, along with the projected third wave, will impact the FY22 GDP. As a result, the State Bank of India has revised its GDP predictions for the next year from 11 per cent before the second wave to 7.9 per cent

| Impact of Second Wave on FY22 Growth | GDP          | FY20  | FY21  | FY22 SBI Estimate    |                  |
|--------------------------------------|--------------|-------|-------|----------------------|------------------|
|                                      |              |       |       | Prior to second wave | Post second wave |
|                                      |              |       |       |                      |                  |
| Nominal                              | ₹ lakh crore | 203.5 | 197.5 | 227.1                | 221.6            |
|                                      | %YoY         | 7.8%  | -3.0% | 15.0%                | 12.2%            |
| Real                                 | ₹ lakh crore | 145.7 | 135.1 | 150.0                | 145.8            |
|                                      | %YoY         | 4.0%  | -7.3% | 11.0%                | 7.9%             |

Source: CSO & SBI Research

### IN NEWS

#### [The curious case of Covaxin royalties](#)

ICMR's contradictions and obfuscation on ownership of the vaccine's intellectual property is not helping in the fight against COVID-19

#### [Experts fear COVID-19 spread in Odisha's districts affected by Cyclone Yaas](#)

Many of those evacuated and housed at cyclone centres have been observed not adhering to COVID-19 protocol

#### [COVID-19: More than half of India still not testing enough, data shows](#)

Data shows that testing is relatively limited to people with high suspicion of COVID-19 and may miss new chains of transmission in the community

#### [COVID-19 second wave: Putting India first](#)

The Union government proclaimed victory against COVID-19 in September 2020. The result was an unrelenting, unforgiving second wave

#### [COVID-19 vaccines for all: Why COVAX is not working](#)

The initiative to deliver COVID-19 vaccines to the poorest countries has not succeeded in its goal so far due to over-dependence on a few manufacturers, advance booking of vaccines and fund shortage

#### [Building resilience amid COVID-19: Odisha's tribal youth show the way](#)

Amid COVID-19, 100 young volunteers have been building resilience among tribal communities in five districts of Odisha by promoting public health, volunteering, innovation and debunking myths

#### [Sick-building syndrome fuelling India's COVID-19 infections](#)

Greed of the air-conditioning industry and architects mean that India's new buildings don't get adequate ventilation; now, the Centre has released new guidelines that stress on adequate ventilation of indoors to stop COVID-19 transmission

#### [COVID-19 vaccines for all: India's supply story deconstructed](#)

Vaccination presents a way out of the COVID-19 mess India has landed in; but jabs are in short supply and there's no clarity on funds

#### [Is COVID-19 test data being fudged in UP? DTE investigates](#)

With more than 230,000 pending COVID-19 reports, the actual daily caseload of UP can be much higher

#### [COVID-19 may already have killed 650,000 people in India through May 5: Report](#)

Real death toll due to COVID-19 in India could be thrice the government figure, a new report has said

#### [Kumbh amid COVID-19: 1.3 million bathe at Haridwar as COVID-19 cases spike | April 14, 2021](#)

Officials at Kumbh Mela report decrease in number of pilgrims at second royal bath even as COVID-19 cases surge

#### [Is there a link between India's new COVID-19 wave and relaxed containment policies?](#)

In a month since India recorded the lowest stringency score, its active caseload jumped six times

## RESOURCES

## REPORTS/PUBLICATIONS

[National Health Profile | Ministry of Health and Family Welfare | 2021](#)

This publication provides vital information on significant health related indicators

[State of Working India 2021: one year of Covid-19| Azim Premji University | May 2021](#)

This report investigates how the COVID-19 pandemic impacted vulnerable households

[Ecowrap | State Bank of India | May 2021](#)

The forecast for the economic growth in the fourth quarter is pegged at 1.3 per cent, with downward bias, based on the bank's nowcasting model

[Direct and indirect effects of the COVID-19 pandemic and response in South Asia | UNICEF | March 2021](#)

The year 2020 brought a great shock to South Asia, as it did to the whole world says this report  
The causal effects of long-term PM2.5 exposure on COVID-19 in India| The World Bank| February 2021  
This study investigates the causal effects of long-term particulate matter 2.5 exposure on COVID-19 deaths, fatality rates, and cases in India

[COVID-19: make it the last pandemic| Independent Panel for Pandemic Preparedness and Response| May 2021](#)

With the release of this final report of the Independent Panel for Pandemic Preparedness and Response, the IRC is calling for G7 and G20 countries to commit excess vaccine doses and funding to crisis-affected countries.

[Review on meteorological and air quality factors affecting the COVID-19 pandemic |](#)[World Meteorological Organization \(WMO\)| March 2021](#)

This First Report of the WMO Research Board COVID-19 Task Team, provides an assessment of the state of knowledge of meteorological and air quality (MAQ) factors influencing the first year of the COVID-19 pandemic.

[COVID-19: missing more than a classroom - the impact of school closures on children's nutrition | UNICEF| January 2021](#)

More than 39 billion in-school meals have been missed globally since the start of the COVID-19 pandemic due to school closures, according to this report

[COVID19, the environment, and food systems: contain, cope and rebuild better| UNEP| December 2020](#)

This paper analyzes impacts from COVID-19 at the nexus of food systems and the environment

[Responding to COVID-19 and Recovering Better| United Nations Department of Economic and Social Affairs \(UNDESA\)| July 2020](#)

This report presents detailed analysis and solid evidence needed for effective decision-making on a number of critical social and economic issues

[Social protection and COVID-19 response in areas| FAO| April 2020](#)

Implementing adequate social protection measures in response to COVID-19 is critical to saving both lives and livelihoods

# State of Land & Agriculture

---

## **Land records quality**

14 states have registered deterioration in the quality of their land records in the last one year



## **Farmers v labourers**

52 per cent Indian districts have more labourers than cultivators



## **Farmer protests**

There has been an almost fivefold increase in farmer protests since 2017

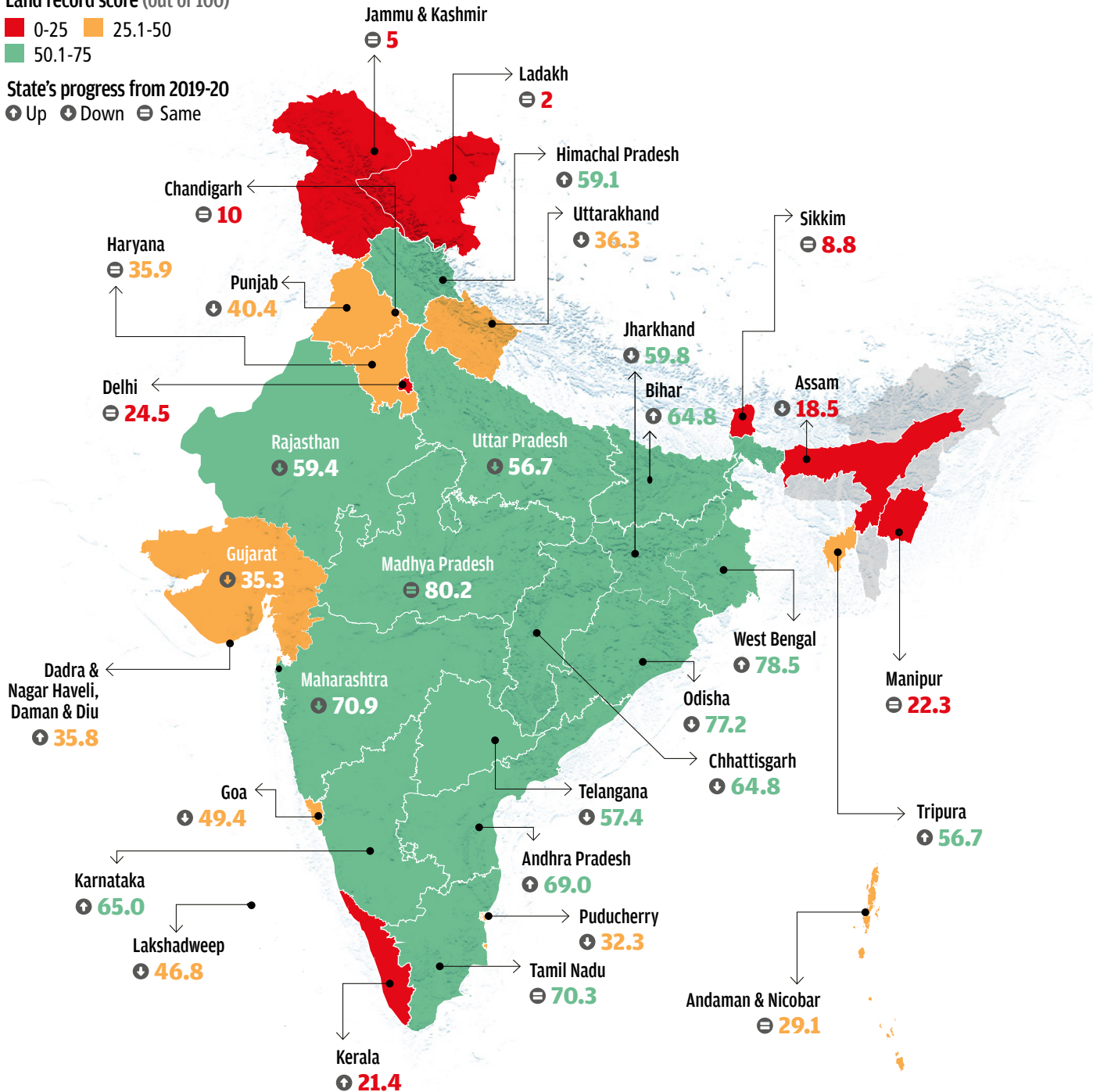
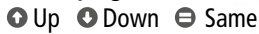
# LAND RECORDS

Odisha, Maharashtra and 12 other states have seen a deterioration in the quality of their land records. The performance of 10 other states/UTs have remained unchanged since 2019-20

Land record score (out of 100)



State's progress from 2019-20



Source: [Land Records and Services Index 2021](#) by the National Council of Applied Economic Research

## Quality check

The report looked at four parameters

**Textual Record**, commonly known as the Record of Rights (RoR), is the core land records accorded the greatest weightage in deciding issues of ownership and area or extent of land in India. The survey looked at the digitisation and availability of legally usable copies of RoRs

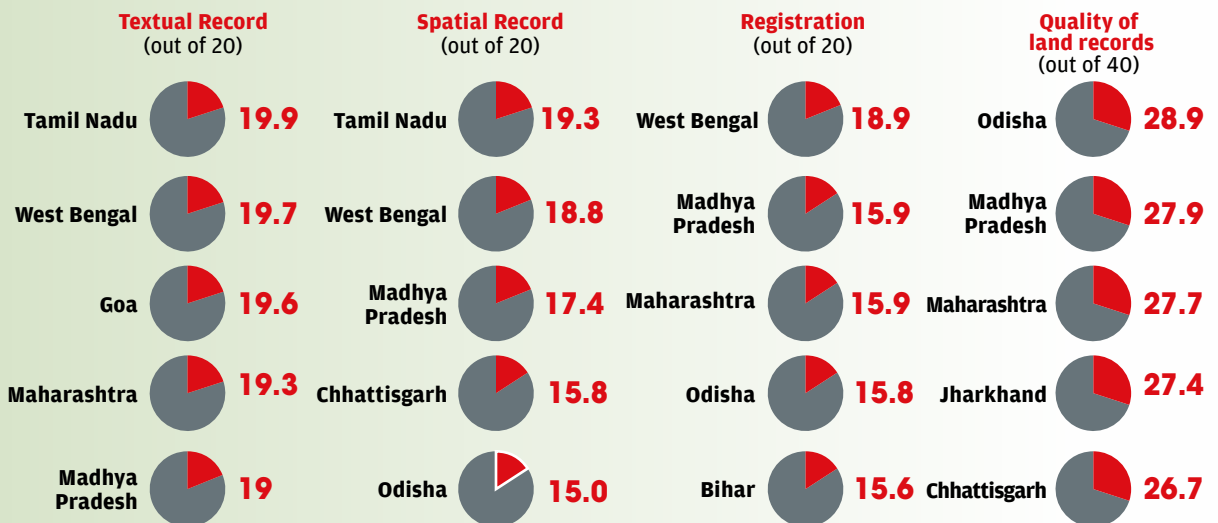
**Spatial Record**, stored as cadastral map, is a survey-based representation of the boundaries and extent of individual plots of land. The report looked at the digitisation and availability of legally usable copies of these maps

**Registration:** An increase in the computerisation of the registration process is an indicator of improvement in the level of services and enhances transparency in the process. The survey measured

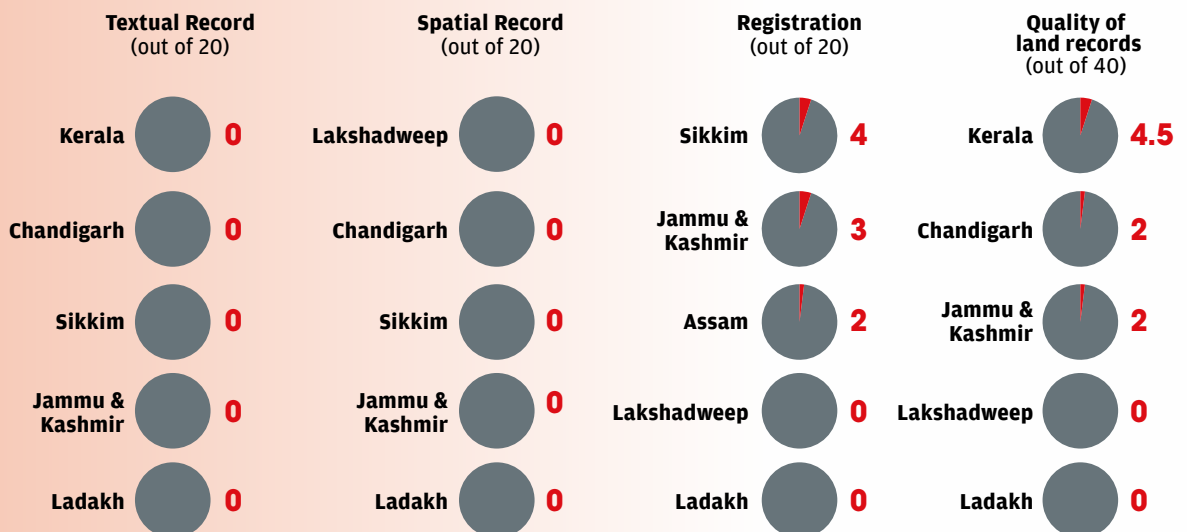
the computerisation of the registration process with respect to digital availability of the following five stages: facility for online entry of data with regard to the proposed registration; online updated circle rates; facility for online payment of stamp duty/ registration fee/e-stamp; online verification of payment/scrutiny of requisite details and completion of the registration process with digital signature; and immediate delivery of the digitally-signed registered document

**Quality of land records** has been assessed on five elements: updating ownership, extent of joint ownership, land use, land area or extent, and recording encumbrances. All these elements bear a relationship with the incidence of dispute and the ease with which transactions in land are effected

### 5 Top states



### 5 Bottom states



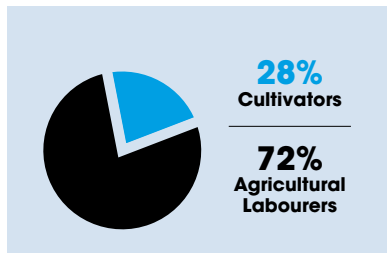
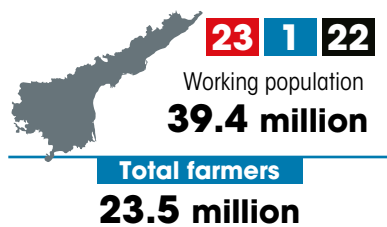
# INDIA HAS MORE FARM LABOURERS THAN CULTIVATORS

In 52 per cent of Indian districts, the population of farm labourers is higher than that of cultivators

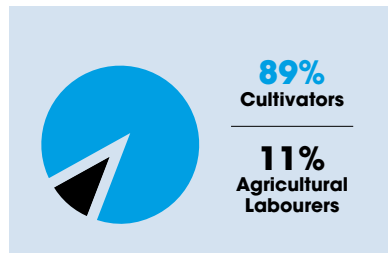
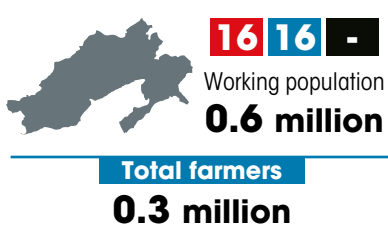
## BIHAR, KERALA AND PUDUCHERRY HAVE MORE FARM LABOURERS THAN CULTIVATORS IN ALL THE DISTRICTS

■ Total districts ■ Districts with more cultivators ■ Districts with more farm labourers ■ No data

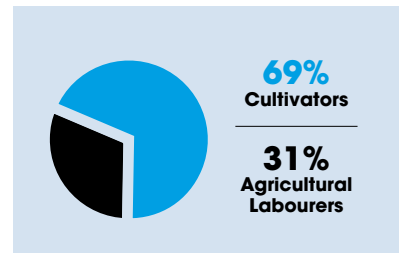
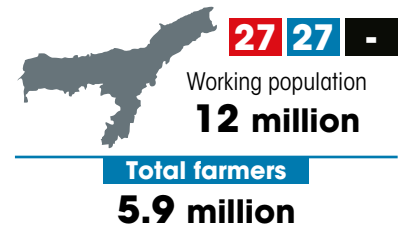
### ANDHRA PRADESH



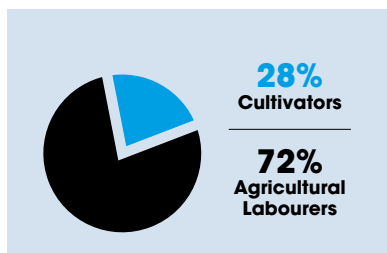
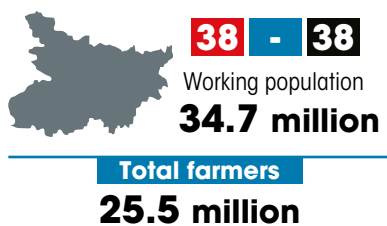
### ARUNACHAL PRADESH



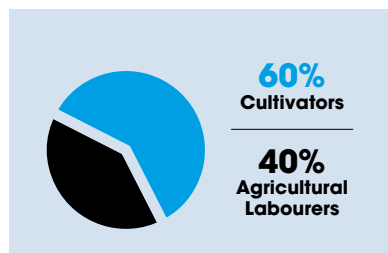
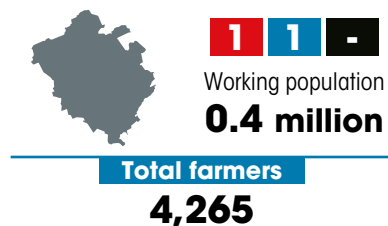
### ASSAM



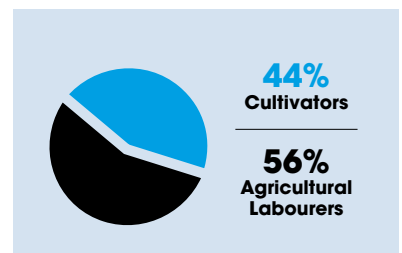
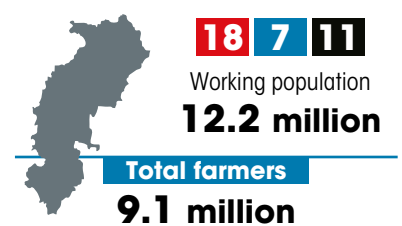
### BIHAR



### CHANDIGARH



### CHHATTISGARH



Figures rounded off to one place of decimal



### DADRA & NAGAR HAVELI



1 1 -

Working population  
**0.2 million**

Total farmers  
**45,963**



61%  
Cultivators  
39%  
Agricultural  
Labourers

### DAMAN & DIU



2 2 -

Working population  
**0.1 million**

Total farmers  
**3,038**



76%  
Cultivators  
24%  
Agricultural  
Labourers

### GOA



2 2 -

Working population  
**0.6 million**

Total farmers  
**58,114**



54%  
Cultivators  
46%  
Agricultural  
Labourers

### GUJARAT



26 9 17

Working population  
**24.8 million**

Total farmers  
**12.3 million**



44%  
Cultivators  
56%  
Agricultural  
Labourers

### HARYANA



21 16 5

Working population  
**8.9 million**

Total farmers  
**4 million**



62%  
Cultivators  
38%  
Agricultural  
Labourers

### HIMACHAL PRADESH



12 11 1

Working population  
**3.6 million**

Total farmers  
**2.2 million**



92%  
Cultivators  
8%  
Agricultural  
Labourers

### JAMMU & KASHMIR



22 18 4

Working population  
**4.3 million**

Total farmers  
**1.8 million**



69%  
Cultivators  
31%  
Agricultural  
Labourers

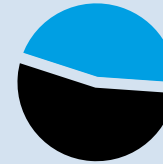
### JHARKHAND



24 10 14

Working population  
**13.1 million**

Total farmers  
**8.3 million**



46%  
Cultivators  
54%  
Agricultural  
Labourers

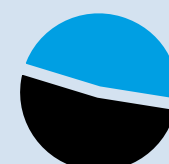
### KARNATAKA



30 11 19

Working population  
**27.9 million**

Total farmers  
**13.7 million**

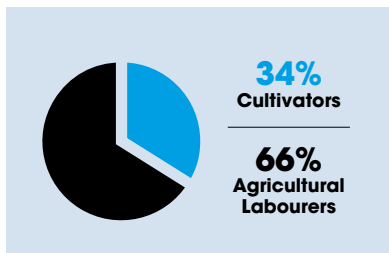
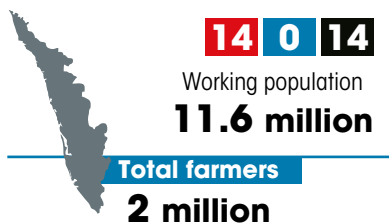


48%  
Cultivators  
52%  
Agricultural  
Labourers

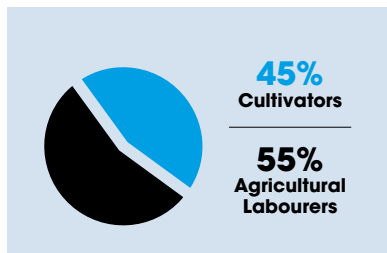
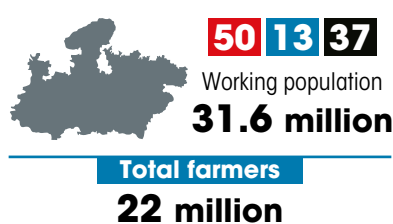
Source: Census 2011

# STATE OF LAND & AGRICULTURE

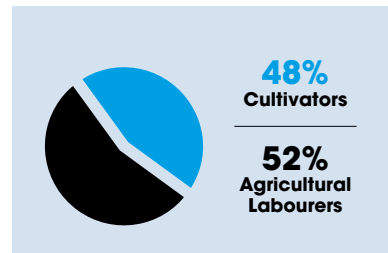
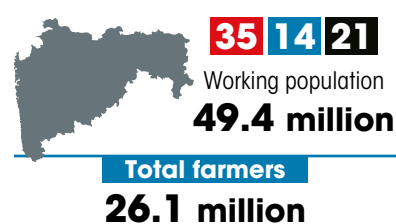
## KERALA



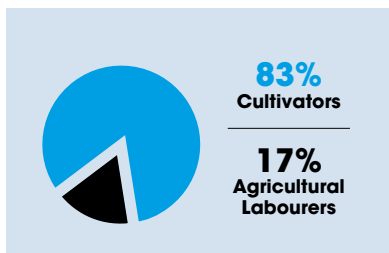
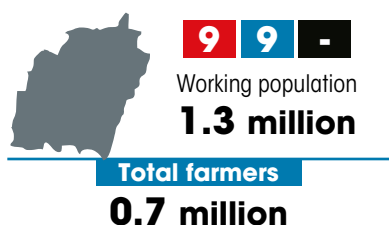
## MADHYA PRADESH



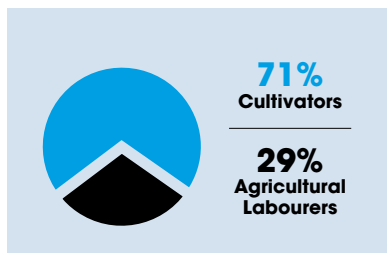
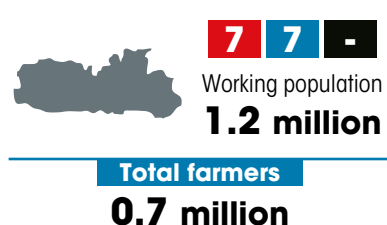
## MAHARASHTRA



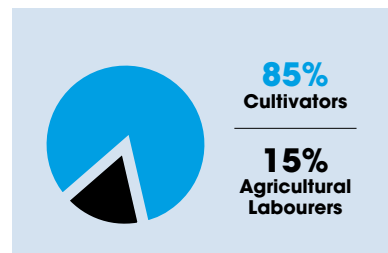
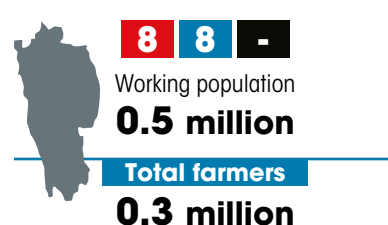
## MANIPUR



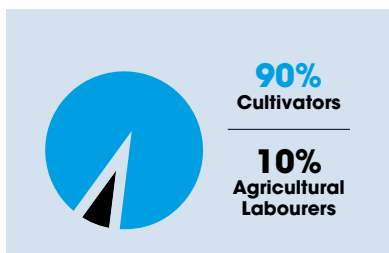
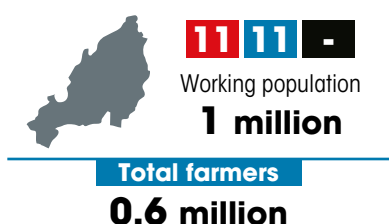
## MEGHALAYA



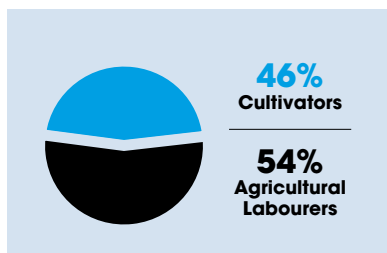
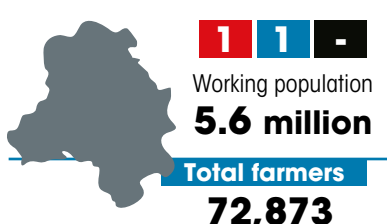
## MIZORAM



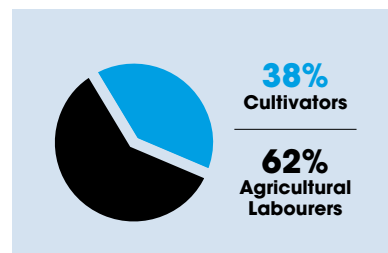
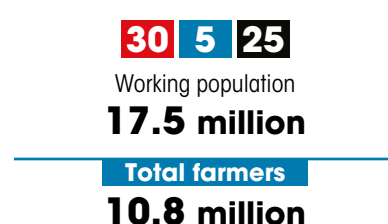
## NAGALAND



## DELHI

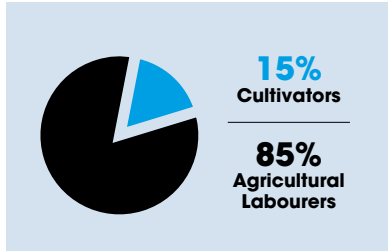
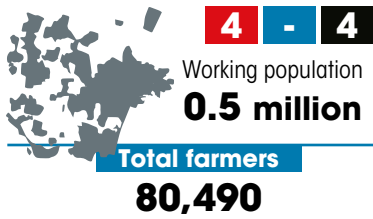


## ODISHA

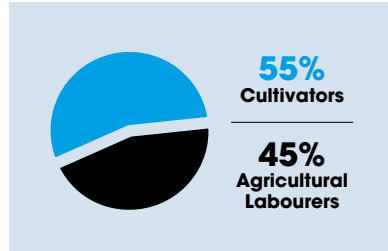
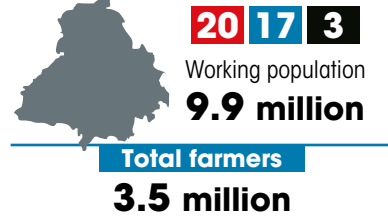


Figures rounded off to one place of decimal

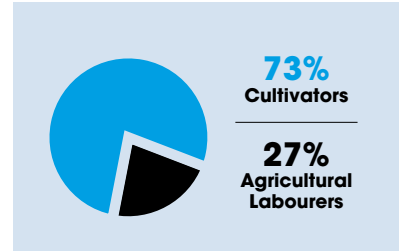
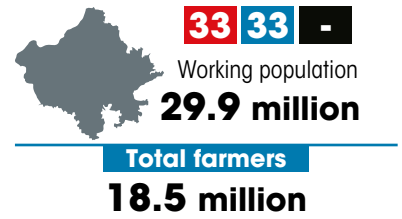
### PUDUCHERRY



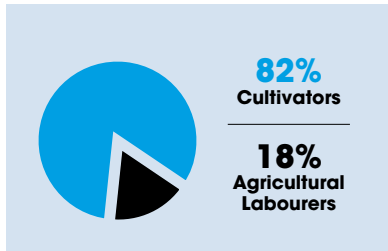
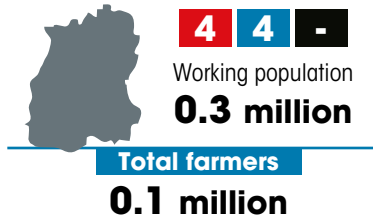
### PUNJAB



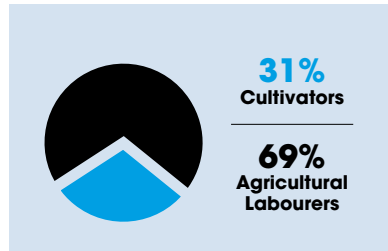
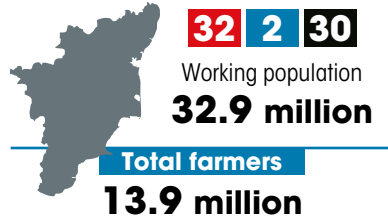
### RAJASTHAN



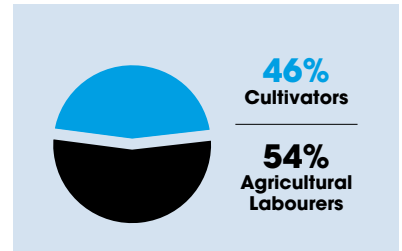
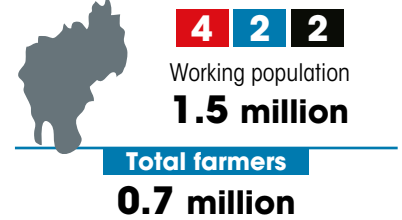
### SIKKIM



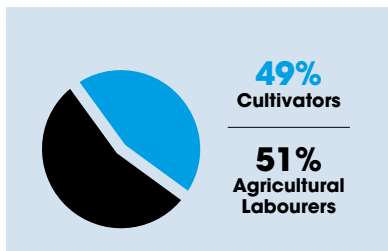
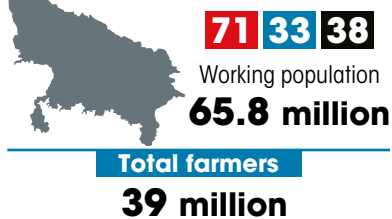
### TAMIL NADU



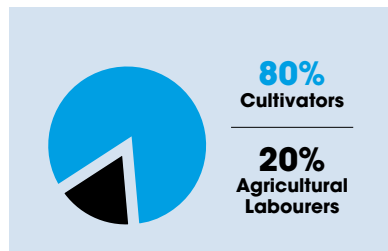
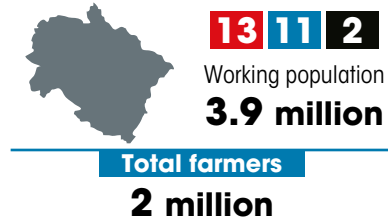
### TRIPURA



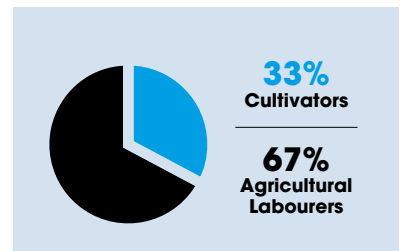
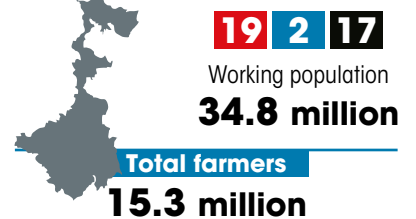
### UTTAR PRADESH



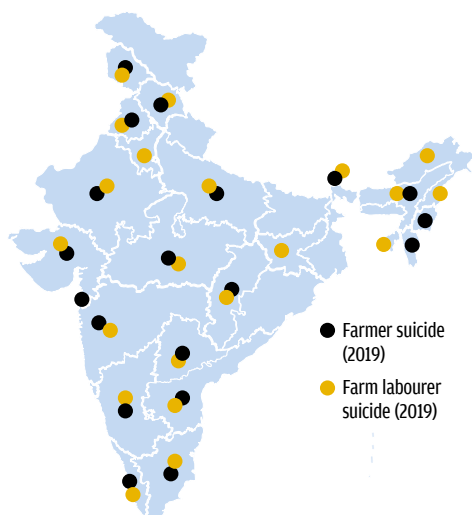
### UTTARAKHAND



### WEST BENGAL



Source: Census 2011



## FARMER SUICIDES

Over 28 farmers and farm labourers commit suicide in the country every day

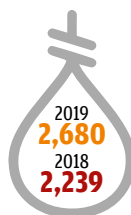
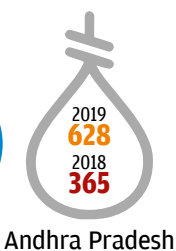
**17** states/UTs recorded farmer suicides in 2019. It was 20 in 2018

**24** states/UTs recorded suicides by agricultural labourers in 2019. It was 21 in 2018

**9** states/UTs recorded an increase in farmer suicides between 2019 and 2018

● 2019 suicides ● 2018 suicides

### FARMER# SUICIDES



Sikkim

Tamil Nadu

Telangana

Uttar Pradesh

Adaman & Nicobar Islands

Dadra & Nagar Haveli

Jammu and Kashmir is considered a state

Source: Report on Accidental Deaths & Suicides in India for relevant years, National Crime Records Bureau



## WHAT AILS OUR FARMERS

While National Crime Records Bureau remains silent on the reasons behind farmer suicides, government's Farmers Suicide in India: Causes and Policy Prescription report in 2016-17 cites three reasons:



Frequent crop failure due to vagaries of monsoon



Absence of assured water resources



Pest attacks/diseases

## FARM LABOURER\* SUICIDES



2019



2018



Andhra Pradesh



Arunachal Pradesh



Assam



Chhattisgarh



Goa



Gujarat



Haryana



Himachal Pradesh



Jammu & Kashmir



Jharkhand



Karnataka



Kerala



Madhya Pradesh



Maharashtra



Meghalaya



Mizoram



Nagaland



Punjab



Rajasthan



Sikkim



Tamil Nadu



Tamil Nadu



Telangana



Tripura



Uttar Pradesh

● 2019 suicides

● 2018 suicides

Jammu and Kashmir is considered a state  
# Agricultural labourers cultivate on leased land/work on lease/on other's land with or without assistance of agricultural labourers  
Source: [Report on Accidental Deaths & Suicides in India 2019](#) released by National Crime Records Bureau in 2020



# FARMERS' UNREST

Just a year before the target of doubling of farmers' income, India recorded 165 major protests across 22 states/UTs. In 2017, the country saw 34 major protests in 15 states



## Economic/ farm policies

includes the three controversial farm laws; state legislations along budget allocation to the farm sector

**Protest**  
**96**



## Farm infrastructure

includes irrigation, fertilisers and other inputs and protests around their unavailability or increased prices

**Protest**  
**4**



## Land acquisition

for developmental projects. It includes construction of highways, airports among others

**Protest**  
**17**



## Insurance and loan waivers

includes protests against the poor insurance coverage and delayed compensations and demand for farm loan waivers

**Protest**  
**7**



## Others

includes protests against the arrest of farm leaders to protest against international water disputes

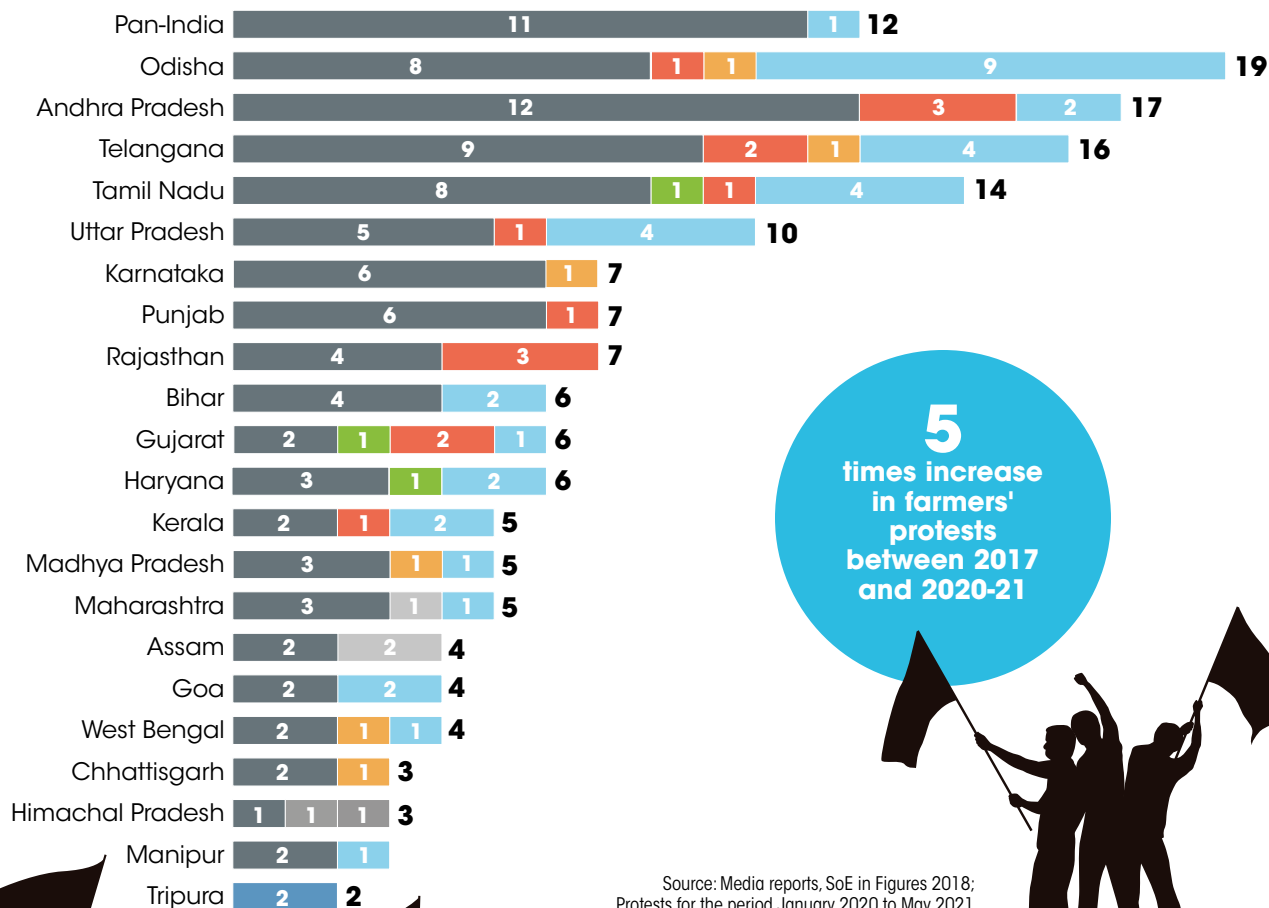
**Protest**  
**3**



## Procurement and fair price

includes protests against market and price related failures, demand for higher minimum support prices among others

**Protest**  
**38**



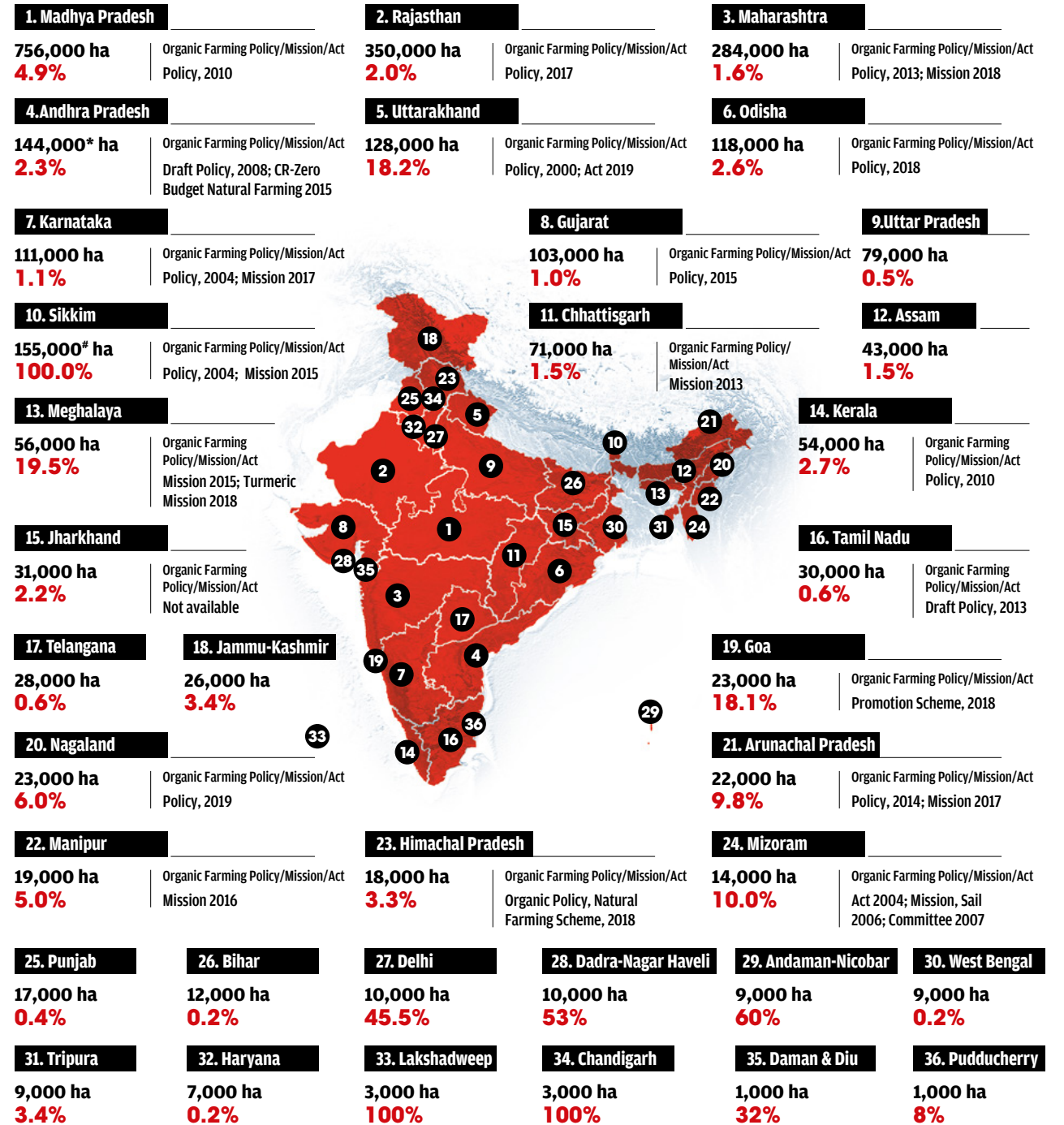
**5**  
times increase  
in farmers'  
protests  
between 2017  
and 2020-21

Source: Media reports, SoE in Figures 2018; Protests for the period January 2020 to May 2021



# ORGANIC REALITY

Only 2 per cent of the country's 140 million hectare farmland is under organic cultivation



00 Land under organic farming (in thousand ha) in 2019; 00 Share of land under organic farming in total cultivable land in 2019 (in%)

\*As per the latest data provided by Andhra Pradesh, the state's 2.9% land is under chemical-free farming

\*\* Data is for the state's total area under organic cultivation for 2014-15; data for Union Territories has been taken from various sources

# Sikkim is 100 per cent organic state. Its total area is 76,169 ha.

Source: [State of Organic and Natural Farming in India Challenges and Possibilities 2020](#), Centre for Science and Environment

## RESOURCES

### IN NEWS

#### [COVID-19 hurts farms: Hopes of profit dashed for Kandhamal's turmeric farmers](#)

Farmers were forced to sell their produce at half the usual market rate two years in a row

#### [Amid cold, heat, suicides, January 26, COVID-19, farmer protests complete 6 months](#)

The farmers protesting on Delhi's borders observed May 26 as a "Black Day" and vowed to continue the protests

#### [Cyclone Yaas: Heavy rains may spell doom for maize farmers of Bihar](#)

Bihar is likely to witness moderate to heavy rains along with high-velocity winds May 27 and 28

#### [Centre releases ₹20,677 crore via PM-KISAN](#)

West Bengal's farmers among 95 million to get PM-KISAN installment

#### [Direct cash transfer smooth in Punjab, but is it a hit with farmers](#)

State pays out 83% of wheat MSP due for rabi season in a month

#### [Unfavourable weather adds to worries of Bihar's litchi farmers recovering from 2020 losses](#)

High temperatures throughout March and heatwaves and hailstorms predicted for April and May might hit yield

#### [How millet production can empower women farmers, strengthen agriculture](#)

Boosting initiatives around millet value chain is one of the most effective ways to address agricultural challenges

#### [Wheat procurement season near, but no word from Punjab on direct MSP payment](#)

The FCI in March asked Punjab government to give it land records of farmers to enable direct, online

payment of MSP. The state has not responded so far

#### [The future of Indian agriculture](#)

There is a need for work on cost-effective technologies with environmental protection and on conserving our natural resources

#### [Small farmers, daily wagers take to vegetable retail selling in Himachal due to lockdown](#)

The development is being seen as a positive outcome of the COVID-19 lockdown

#### [Use revenue-sharing model for development, land acquisition](#)

Access to village commons improved livelihoods but some recent state policies seek to grab them

### REPORTS/PUBLICATIONS

#### [NCAER Land Record & Services Index N-LRSI 2021| NCAER| March 2021](#)

It is based on data collected over 2020-21 on two aspects of the supply of land records: the extent of digitisation of land records and the quality of these land records

#### [Agricultural Statistics 2019| Ministry of Agriculture and Farmers Welfare| April 2020](#)

It provides an exhaustive and updated data on important parameters, like area, production

#### [Revitalizing Indian agriculture and boosting farmer incomes| Springer| January 2021](#)

This book provides an evidence-based roadmap for revitalising Indian agriculture while ensuring that the growth process is efficient, inclusive, and sustainable

#### [Crop insurance and crop productivity: Evidence from rice farmers in Eastern India| IFPRI| January 2021](#)

The paper explores the spread of crop insurance in India and analyzes the factors affecting the demand for crop insurance



# State of Climate

---

## **Rising temperature**

India recorded 12 of the 15 warmest years between 2006 and 2020



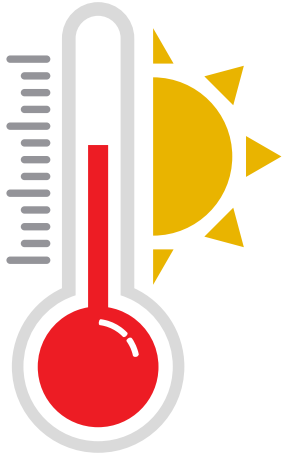
## **Climate vulnerability**

All Indian states are significantly vulnerable to climate change



## **Internal displacements**

India saw 3.9 million internal displacements in 2020 due to disasters



# Rising temperature

India experienced warmer than usual winter, monsoon and post-monsoon seasons in 2020

**8<sup>th</sup>**

2020 was the 8<sup>th</sup> warmest year on record. 2016 was the warmest, followed by 2009, and 2017

**12**

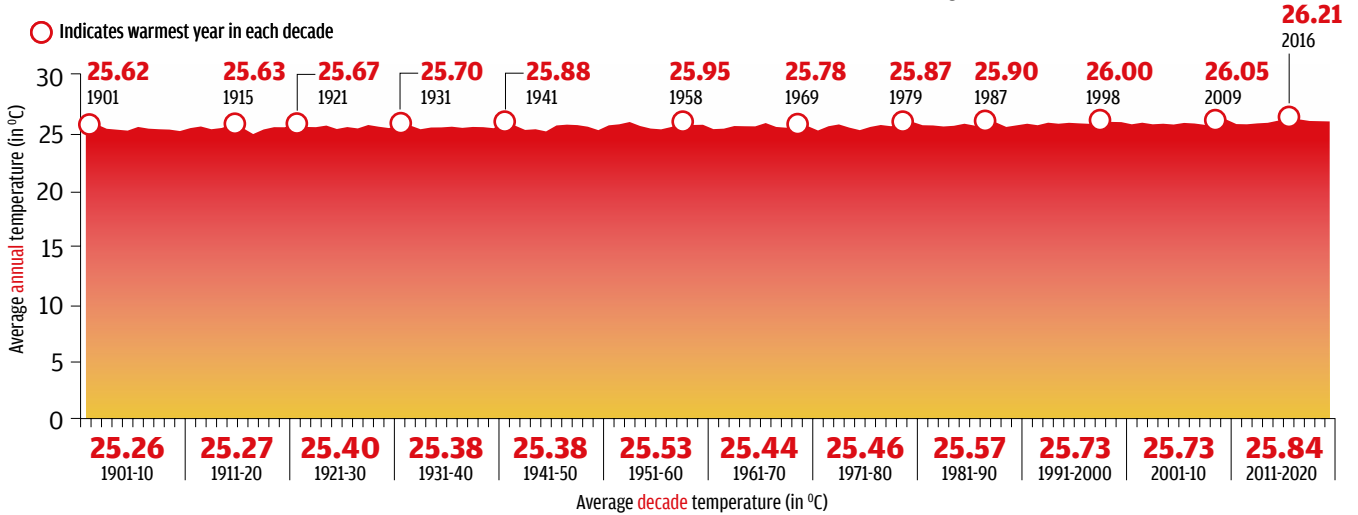
of the 15 warmest years were recorded between 2006 and 2020

**2011-20**

was the warmest decade on record with anomalies of 0.34°C above average

## Annual average temperature

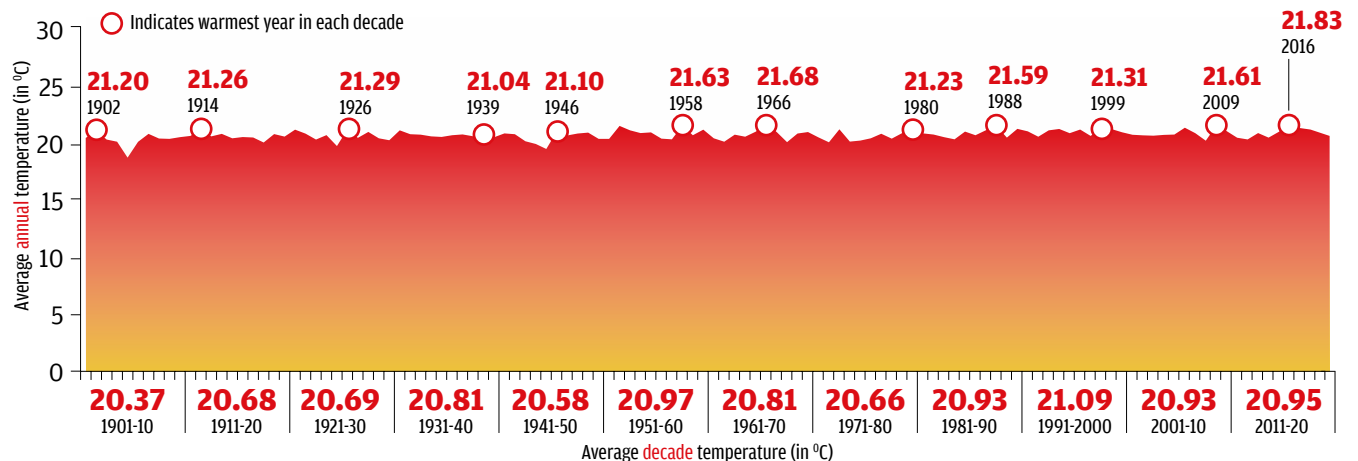
The 2020 annual mean land surface air temperature for the country was **25.78 °C**, which was +0.29 °C above the 1981-2010 period average



## Winter season

January to February

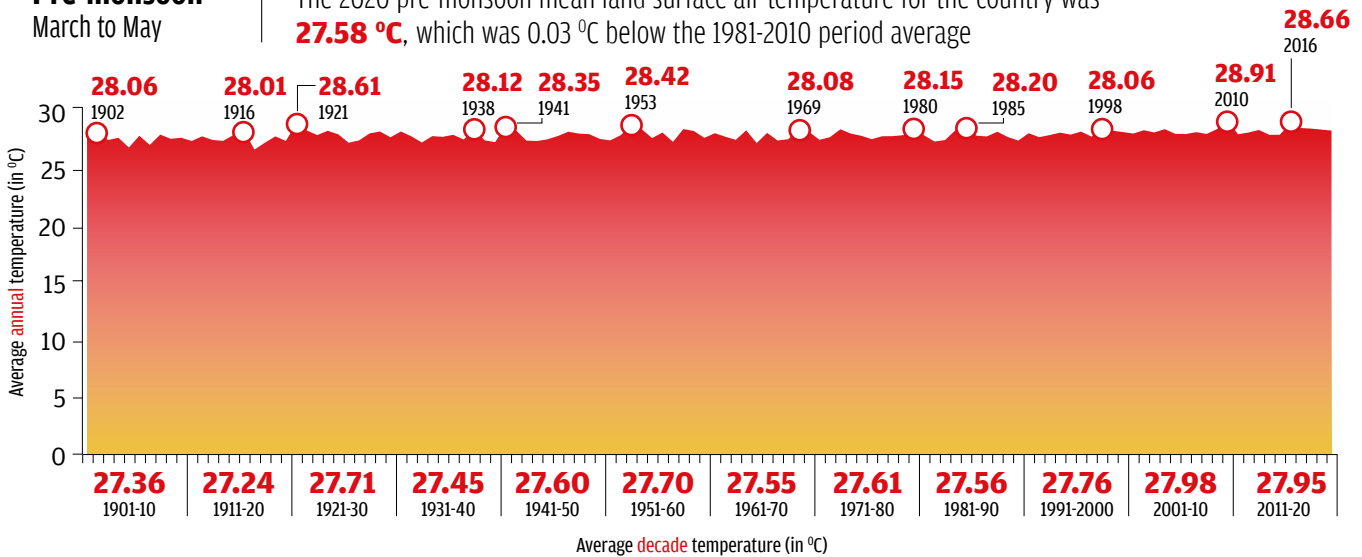
The 2020 pre-monsoon mean land surface air temperature for the country was **20.79 °C**, which was 0.14 °C above the 1981-2010 period average



Source: [India Meteorological Department, Ministry of Earth Sciences, 2020](#)

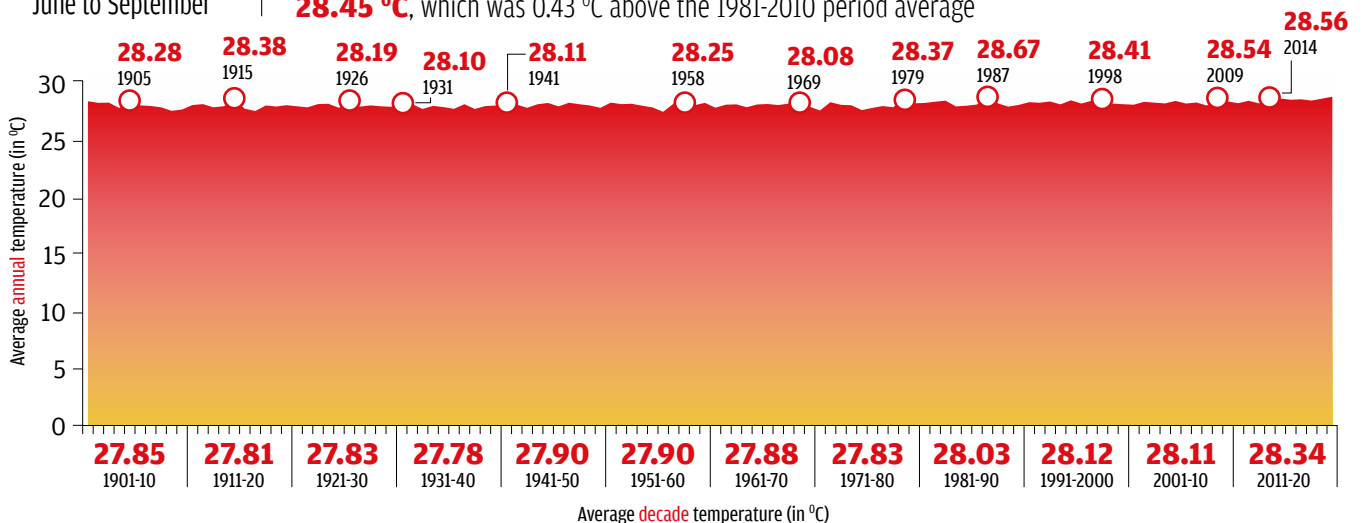
**Pre-monsoon**  
March to May

The 2020 pre-monsoon mean land surface air temperature for the country was **27.58 °C**, which was 0.03 °C below the 1981-2010 period average



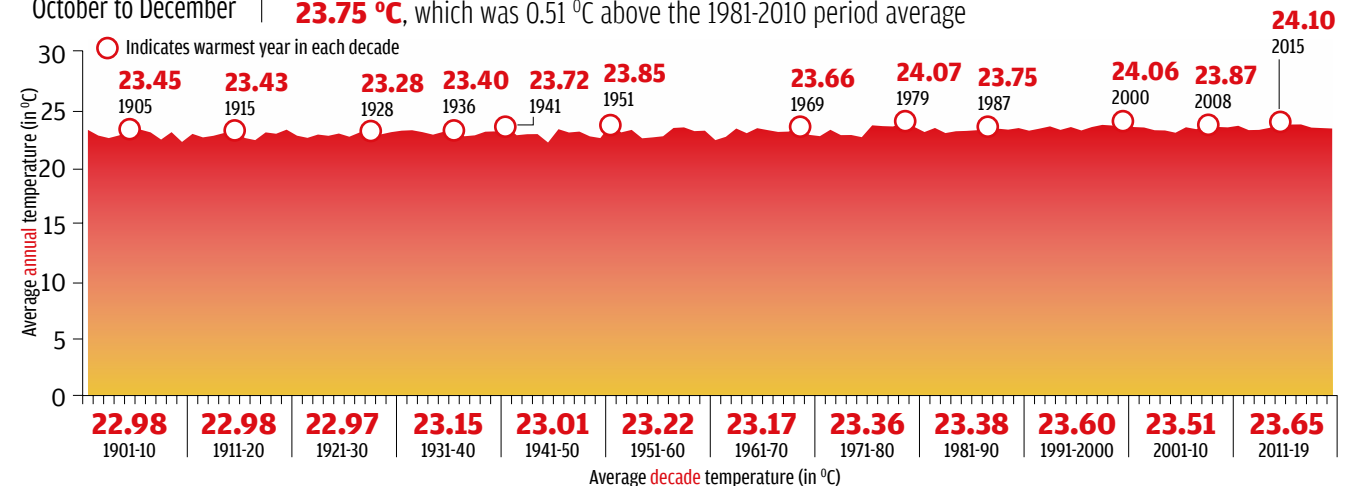
**Monsoon**  
June to September

The 2020 pre-monsoon mean land surface air temperature for the country was **28.45 °C**, which was 0.43 °C above the 1981-2010 period average



**Post-monsoon**  
October to December

The 2020 pre-monsoon mean land surface air temperature for the country was **23.75 °C**, which was 0.51 °C above the 1981-2010 period average



Source: [India Meteorological Department, Ministry of Earth Sciences, 2020](#)

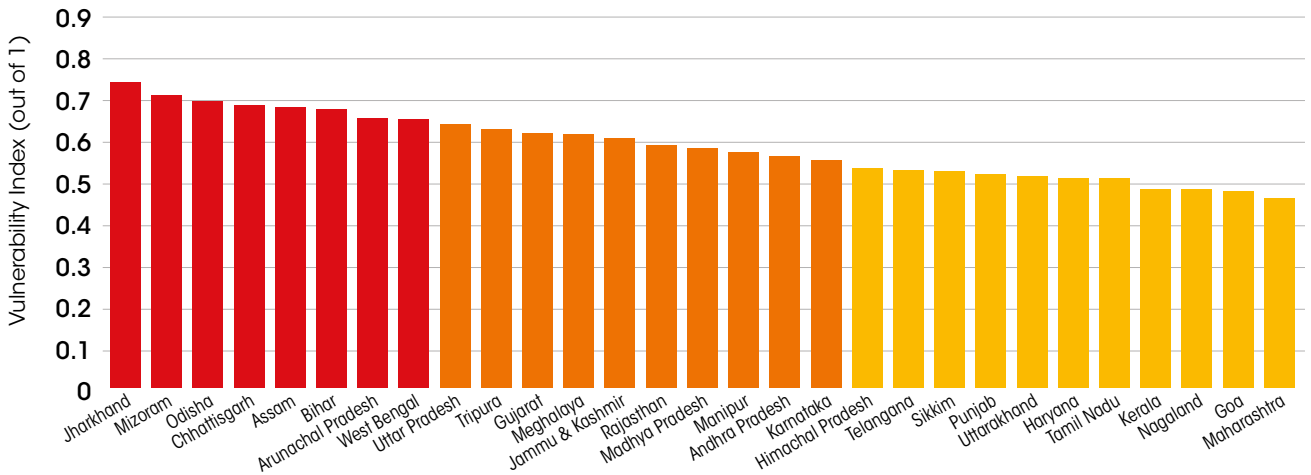
# CLIMATE VULNERABILITY

Even Maharashtra, the best performing state, has a high score in the vulnerability index, suggesting that all the 29 states are significantly vulnerable to climate change

## OMINOUS SIGNS

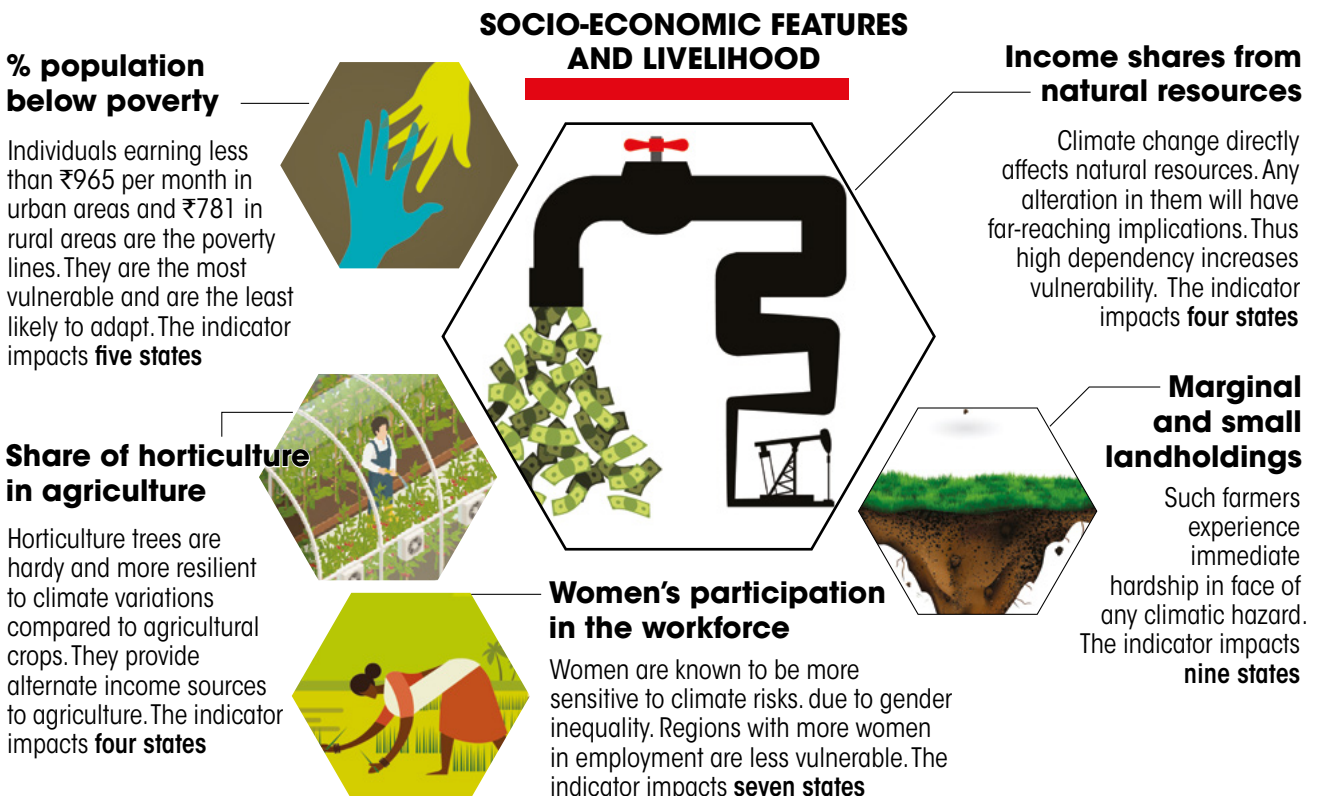
The index scores of the states vary over a small range (0.42-0.67)

■ High Vulnerability ■ Moderate Vulnerability ■ Low Vulnerability



## DRIVERS OF VULNERABILITY

The index uses 14 indicators to assess the sensitivity and adaptive capacities of states



## BIOPHYSICAL ASPECTS

### Yield variability of food grains

The agriculture sector is extremely sensitive to climate fluxes, particularly rainfall variability (delayed rainfall, dry spells, drought and floods) and this indicator captures this sensitivity. It impacts **seven states**



### Area under rainfed agriculture

Rainfed agriculture is highly sensitive to the vagaries of weather. Lack of irrigation indicates a lack of adaptive capacity to mitigate the impacts of climate risks. The indicator impacts **10 states**



### Forest area per 1,000 rural population

Forests are an important source of alternative livelihood and food through the extraction of non-timber forest products. They also provide essential ecosystem services for the rural population. The indicator impacts **17 states**



### Water-borne diseases

Lack of proper drainage, high incidence of open defecation, and frequent occurrence of floods lead to an increase in exposure to waterborne pathogens. The indicator impacts **six states**



### Vector-borne diseases

Temperature and rainfall variations can foster higher occurrence of dengue, chikungunya, kala-azar, acute encephalitis syndrome, Japanese encephalitis, malaria. The indicator impacts **six states**

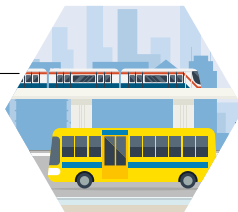
### Area covered under crop insurance

Crop insurance helps farming households mitigate losses caused by climate risks. This enhances their adaptive capacity. The indicator impacts **11 states**

## INSTITUTION AND INFRASTRUCTURE

### Road and rail density

This indicator focuses on accessibility and connectivity, which are essential in regions that are exposed to climate and disaster risks. The indicator impacts **seven states**



### MGNREGA

MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) provides an alternative source of income, particularly during livelihood hazards. The indicator impacts **one state**

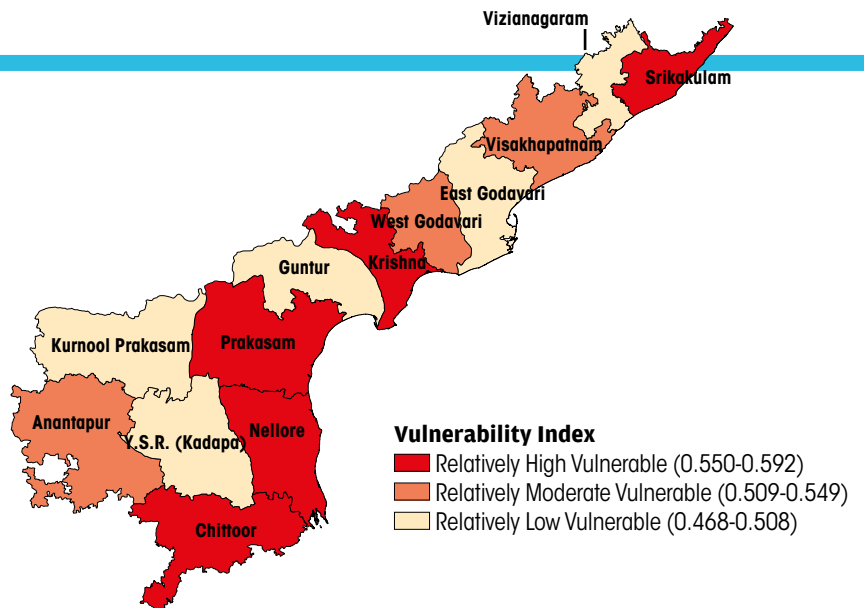
### Density of healthcare workers

Access to functional health care infrastructure is essential for the overall health and well-being of a community. The indicator impacts **eight states**



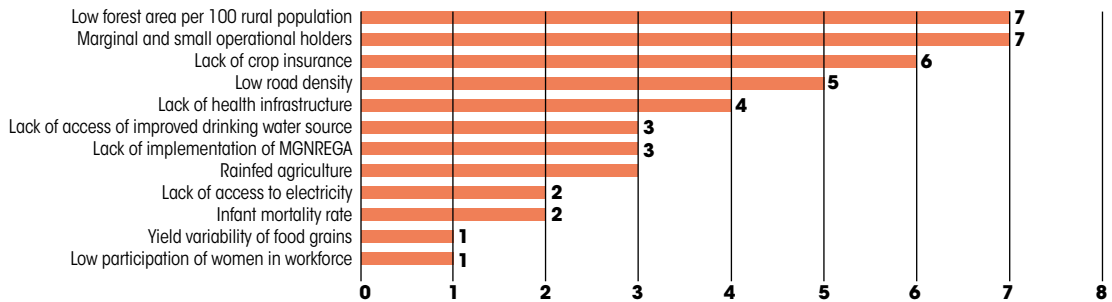
# ANDHRA PRADESH

There is a marginal difference in the scores between the best and the worst districts suggesting high vulnerability



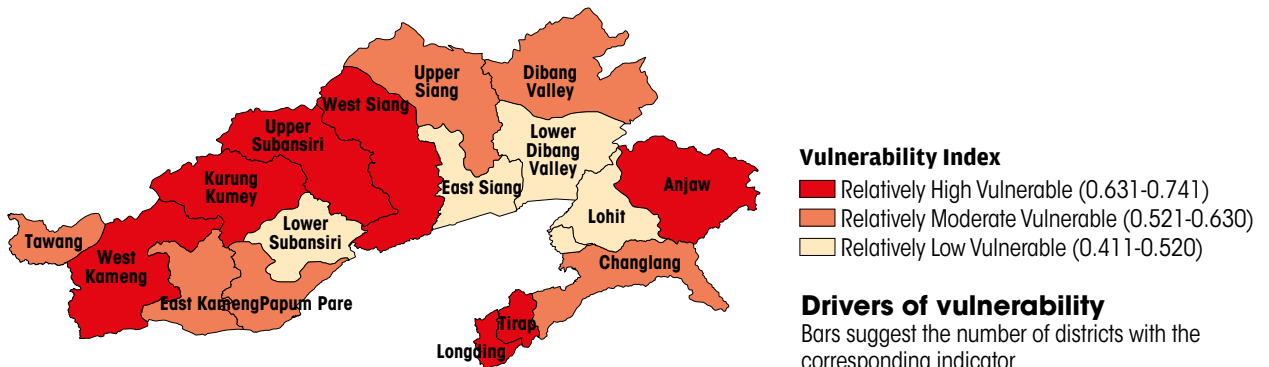
## Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator



# ARUNACHAL PRADESH

Agriculture vulnerability is the biggest challenge for the state

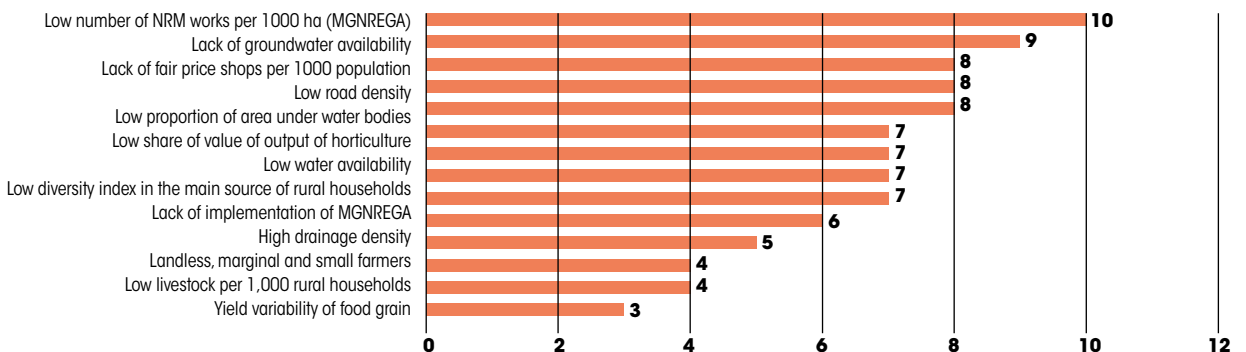


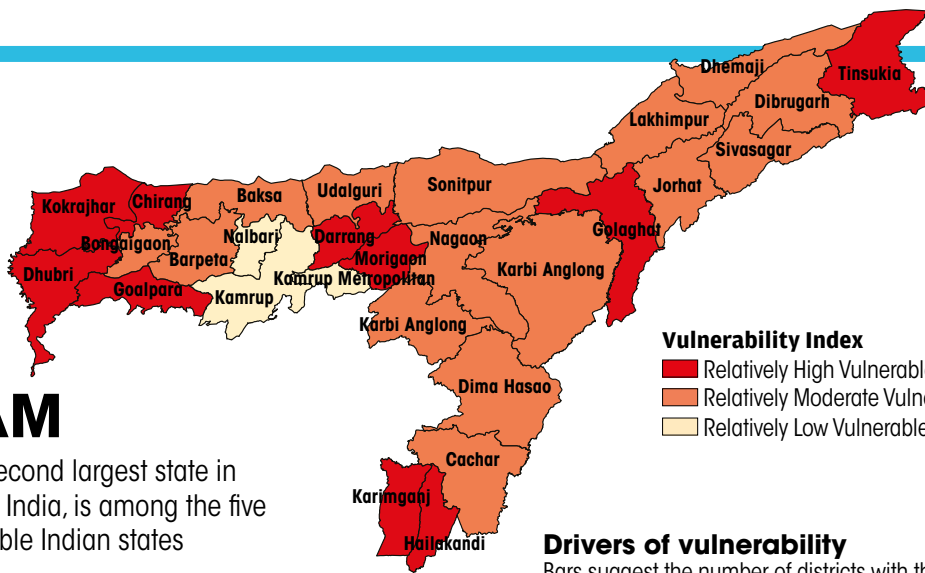
## Vulnerability Index

Relatively High Vulnerable (0.631-0.741)  
 Relatively Moderate Vulnerable (0.521-0.630)  
 Relatively Low Vulnerable (0.411-0.520)

## Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator





# ASSAM

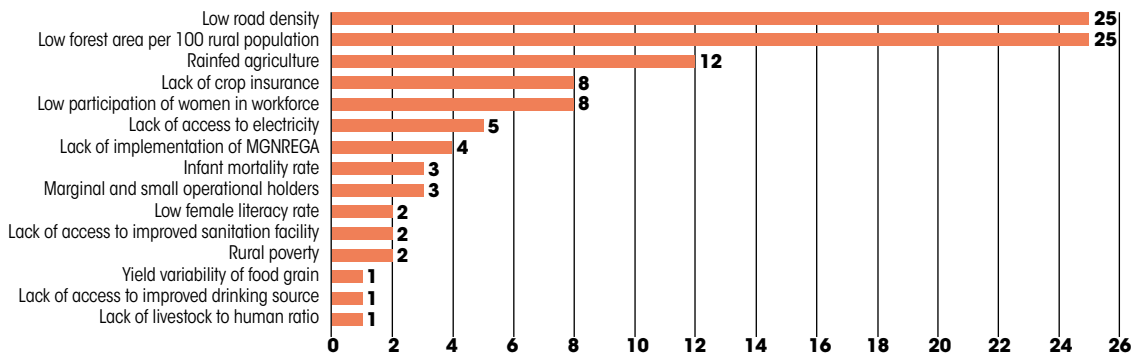
Assam, the second largest state in Northeastern India, is among the five most vulnerable Indian states

### Vulnerability Index

- Relatively High Vulnerable (0.640-0.748)
- Relatively Moderate Vulnerable (0.532-0.639)
- Relatively Low Vulnerable (0.425-0.531)

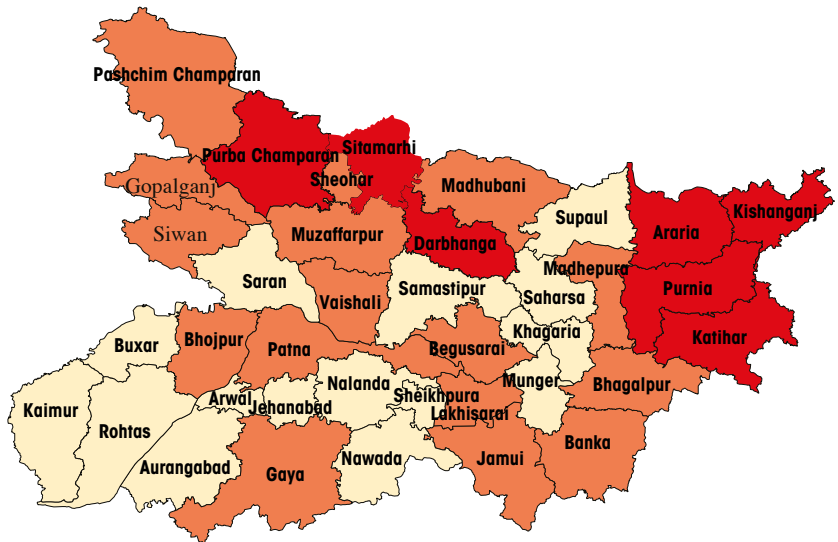
### Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator



# BIHAR

While poor health infrastructure is a problem across the state, the worst vulnerable districts are in the north

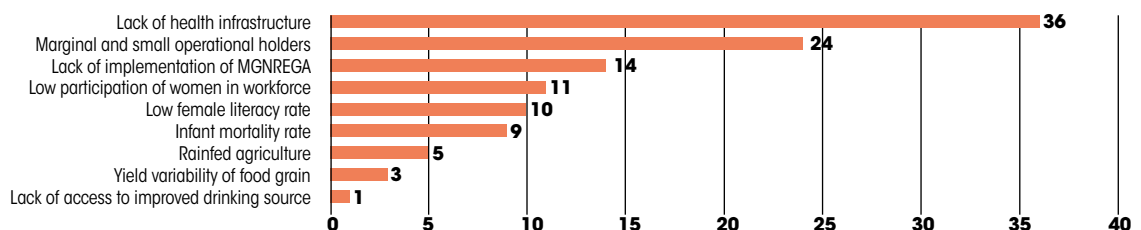


### Vulnerability Index

- Relatively High Vulnerable (0.612-0.735)
- Relatively Moderate Vulnerable (0.490-0.611)
- Relatively Low Vulnerable (0.367-0.489)

### Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator

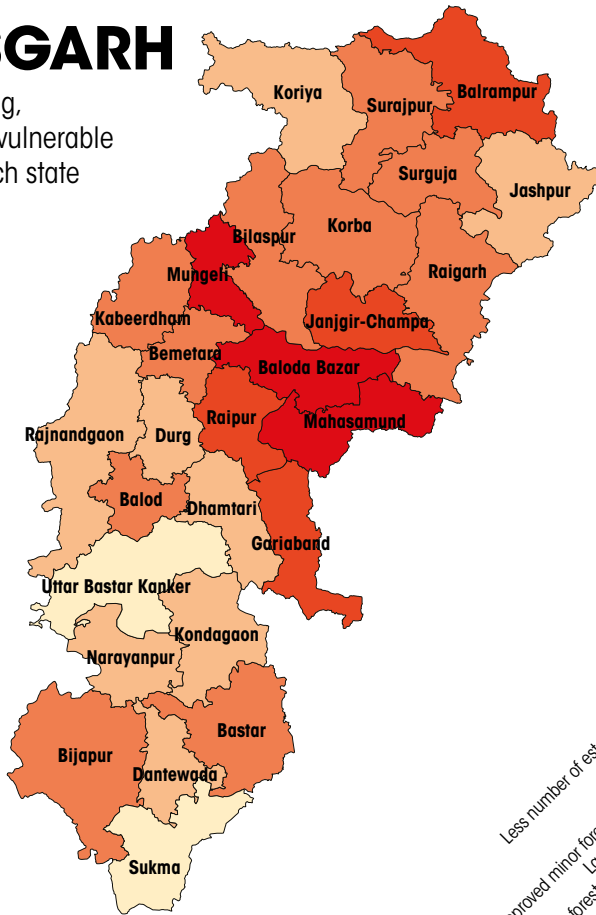


# CHHATTISGARH

Agriculture, forestry, mining, and energy are the most vulnerable sectors in the resource-rich state

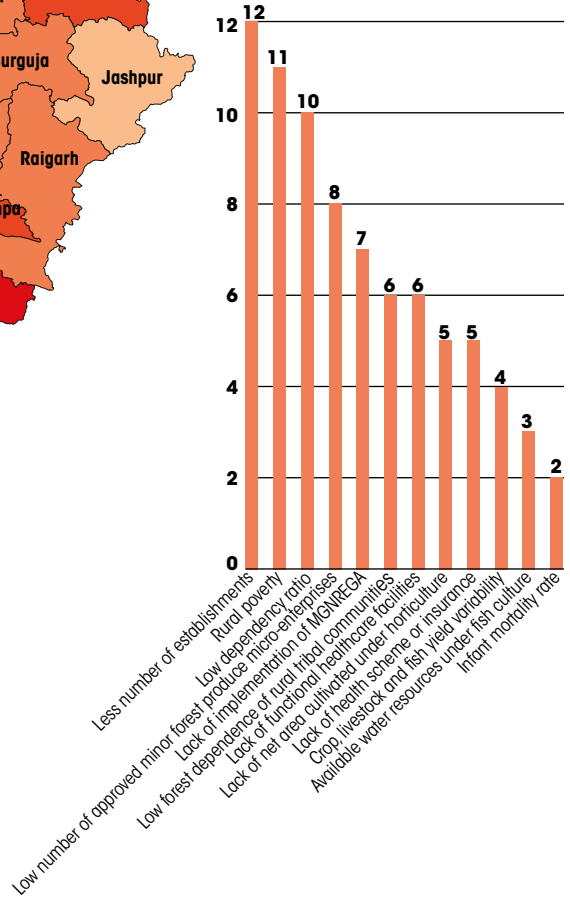
### Vulnerability Index

- Relatively Very High Vulnerable (0.68-0.76)
- Relatively High Vulnerable (0.60-0.68)
- Relatively Moderate Vulnerable (0.51-0.60)
- Relatively Low Vulnerable (0.43-0.51)
- Relatively Very Low Vulnerable (0.35-0.43)



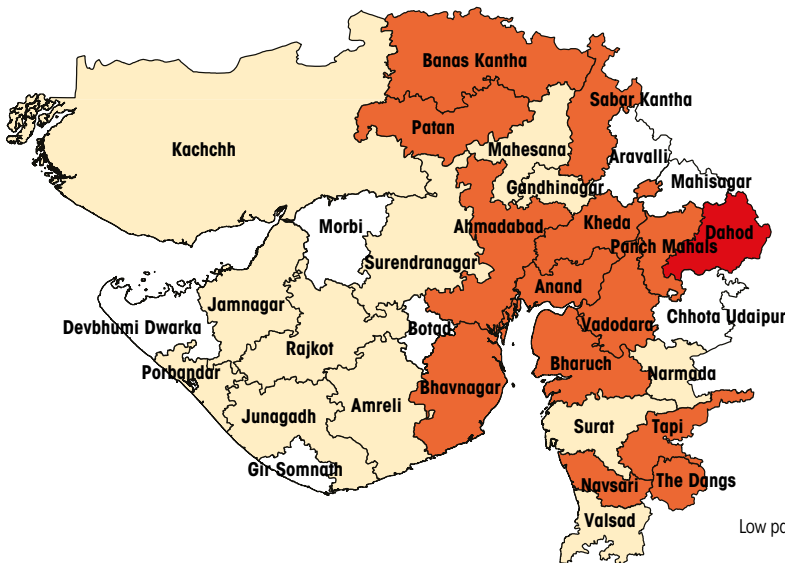
### Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator



# GUJARAT

Despite having the longest coastline in the country, the climate change vulnerability of most districts is relatively low

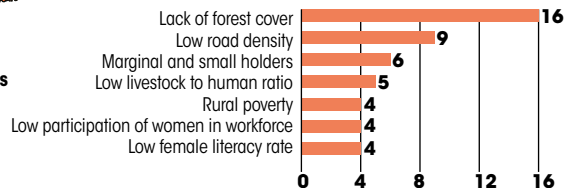


### Vulnerability Index

- Not covered under the index
- Relatively High Vulnerable (0.606-0.695)
- Relatively Moderate Vulnerable (0.517-0.605)
- Relatively Low Vulnerable (0.427-0.516)

### Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator



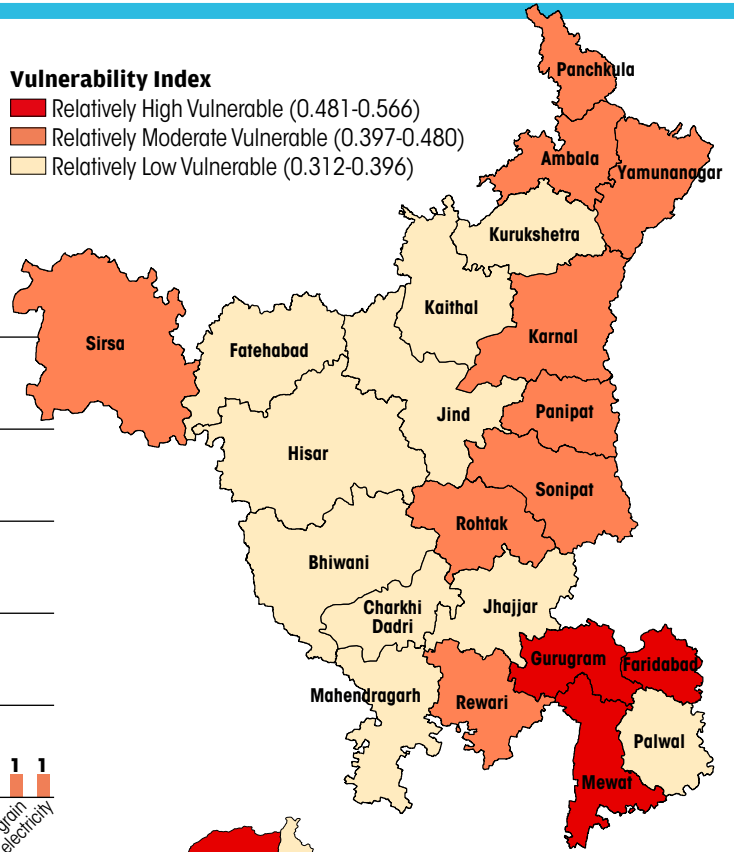


# HARYANA

Southern districts of Mewat, Gurugram and Faridabad have high vulnerability

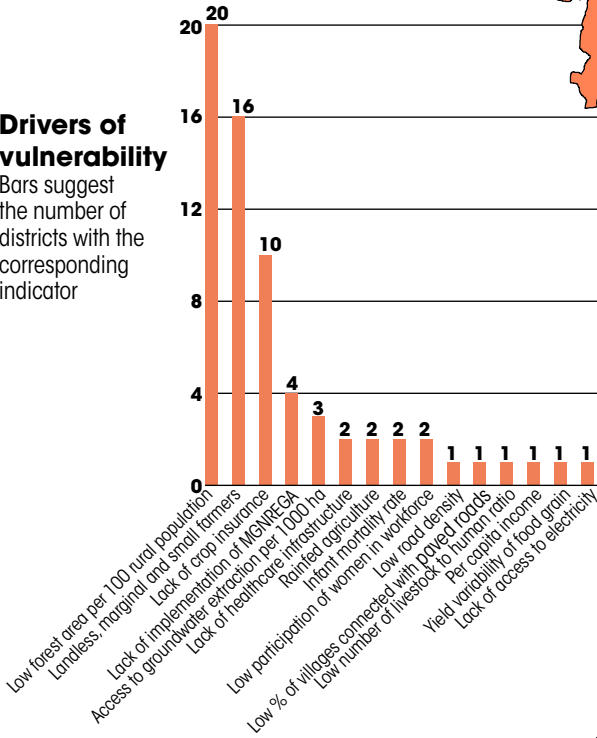
## Vulnerability Index

- Relatively High Vulnerable (0.481-0.566)
- Relatively Moderate Vulnerable (0.397-0.480)
- Relatively Low Vulnerable (0.312-0.396)



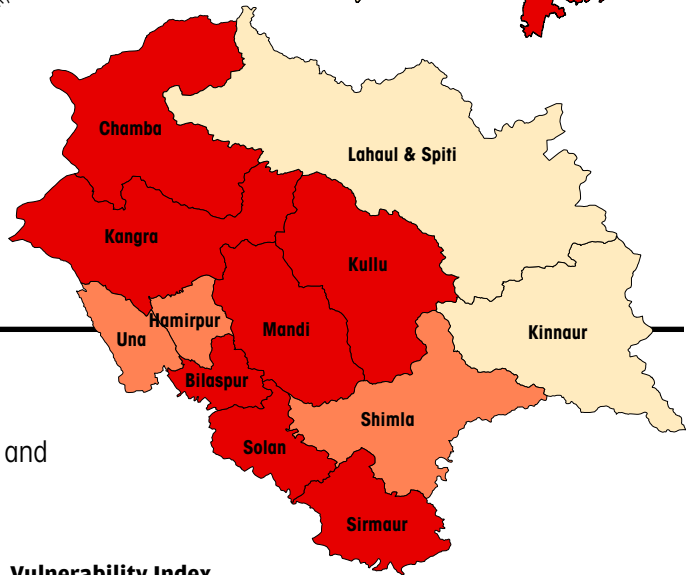
## Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator



# HIMACHAL PRADESH

Most districts in the hilly state fall within a small range and are almost equally vulnerable

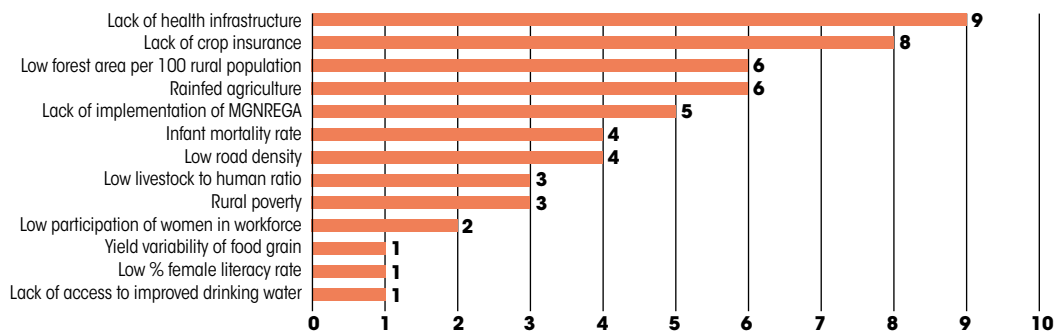


## Vulnerability Index

- Relatively High Vulnerable (0.558-0.635)
- Relatively Moderate Vulnerable (0.480-0.557)
- Relatively Low Vulnerable (0.403-0.479)

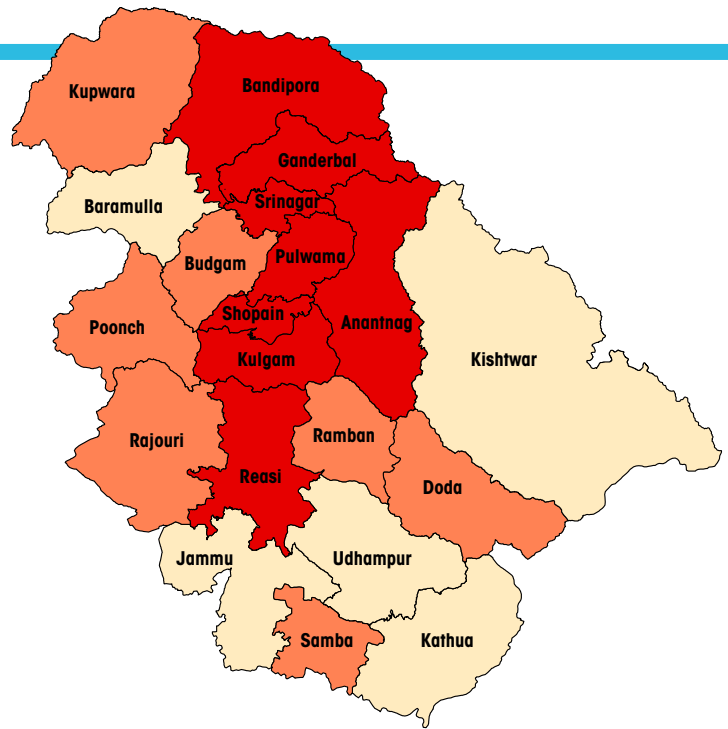
## Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator



# JAMMU AND KASHMIR

With 70 per cent population dependent on agriculture, the sector remains the most vulnerable

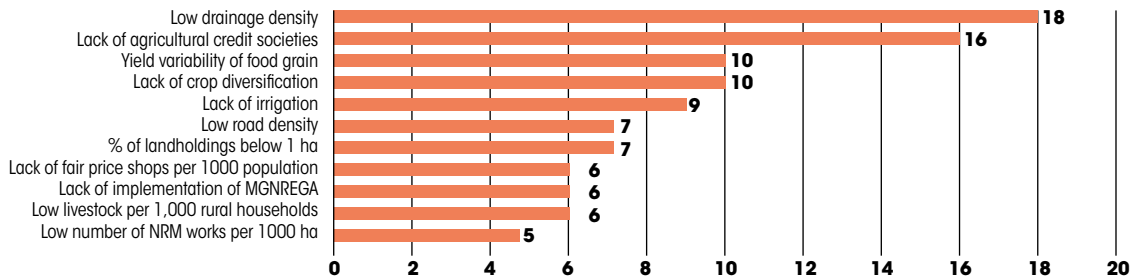


**Vulnerability Index**

- Relatively High Vulnerable (0.470-0.530)
- Relatively Moderate Vulnerable (0.410-0.469)
- Relatively Low Vulnerable (0.350-0.409)

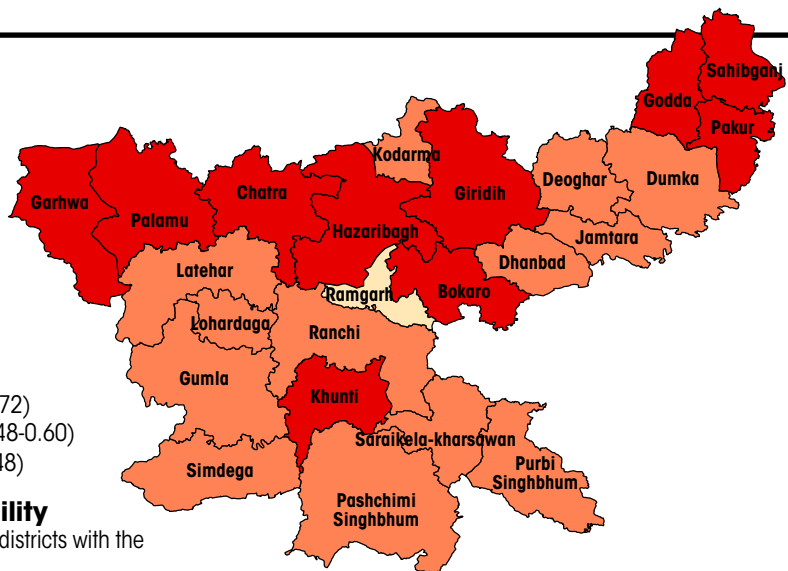
**Drivers of vulnerability**

Bars suggest the number of districts with the corresponding indicator



# JHARKHAND

Sahebganj and other districts in the north are highly vulnerable. Poor farm infrastructure remains the most common threat

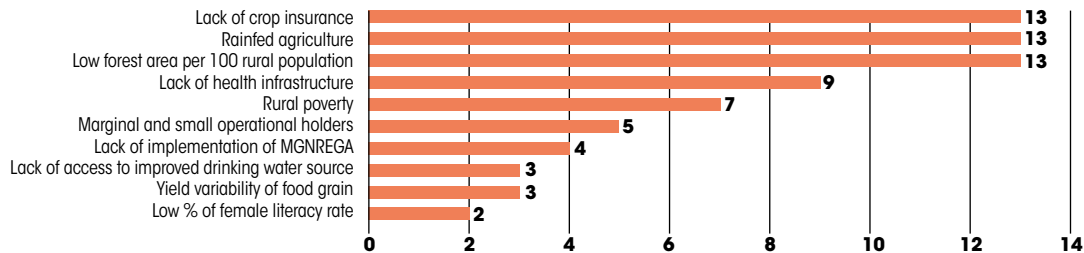


**Vulnerability Index**

- Relatively High Vulnerable (0.60-0.72)
- Relatively Moderate Vulnerable (0.48-0.60)
- Relatively Low Vulnerable (0.36-0.48)

**Drivers of vulnerability**

Bars suggest the number of districts with the corresponding indicator

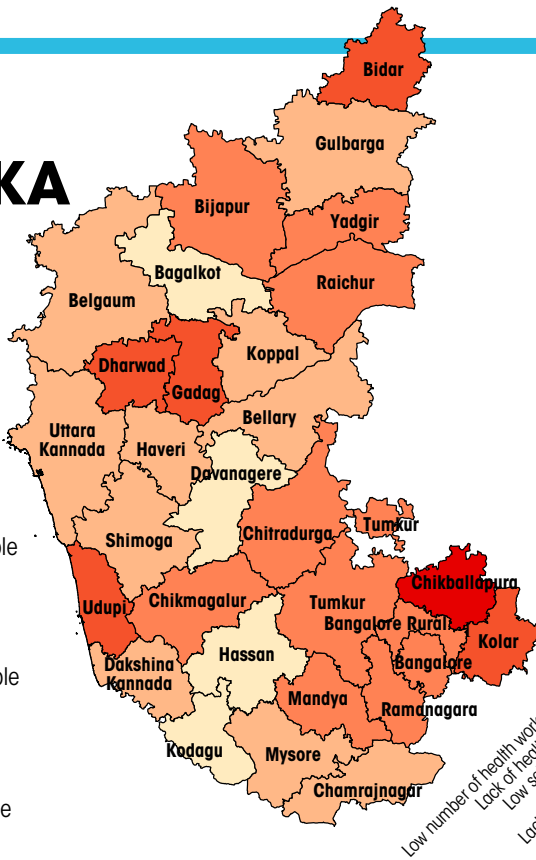


# KARNATAKA

Chikballapur is among the most vulnerable districts in the country. Its vulnerability is much higher than Kolar, the second most vulnerable district in the state

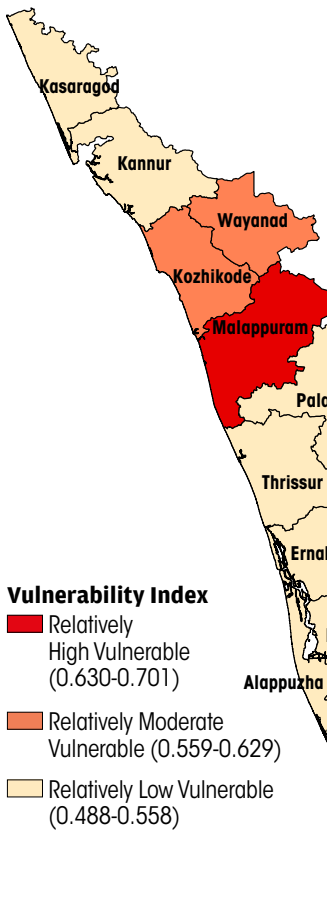
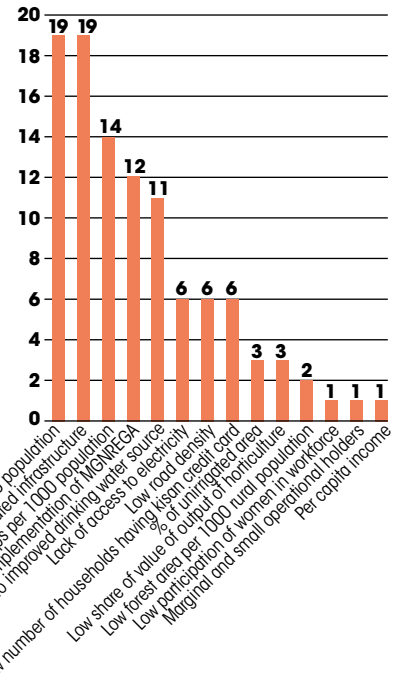
## Vulnerability Index

- Relatively Very High Vulnerable (0.681-0.728)
- Relatively High Vulnerable (0.634-0.680)
- Relatively Moderate Vulnerable (0.586-0.633)
- Relatively Low Vulnerable (0.539-0.585)
- Relatively Very Low Vulnerable (0.492-0.538)



## Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator



# KERALA

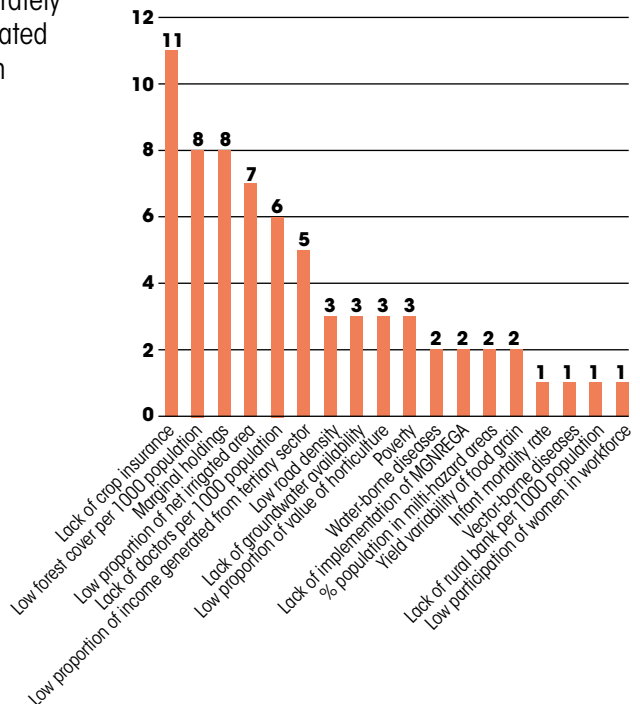
Mostly, the high and moderately vulnerable districts are located in the southern or northern part of the state

## Vulnerability Index

- Relatively High Vulnerable (0.630-0.701)
- Relatively Moderate Vulnerable (0.559-0.629)
- Relatively Low Vulnerable (0.488-0.558)

## Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator

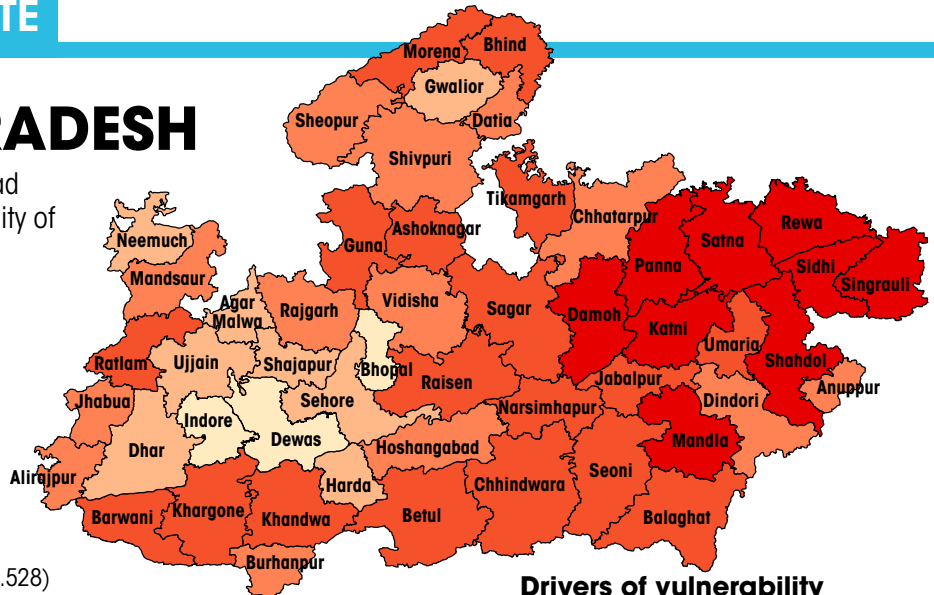


# MADHYA PRADESH

Poor farm infrastructure and road density increases the vulnerability of most districts in the state

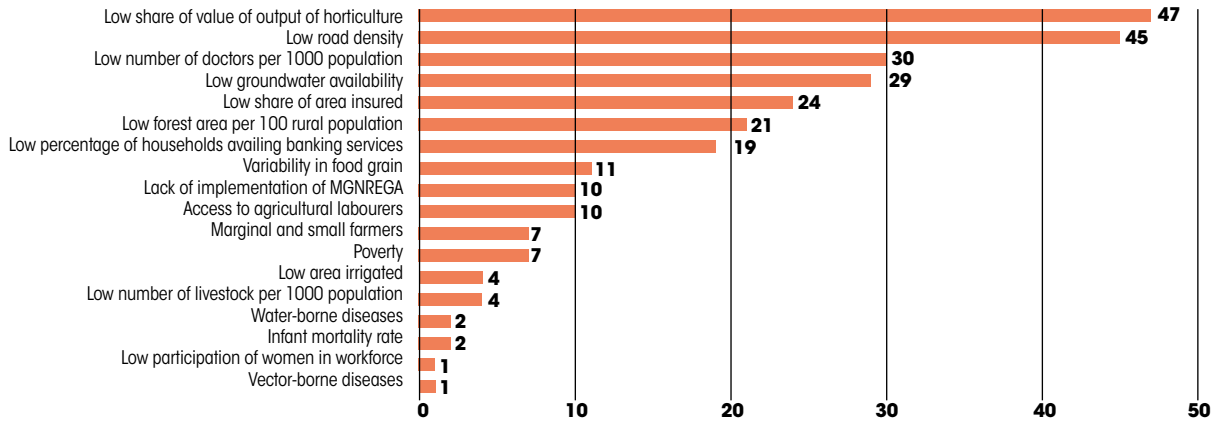
### Vulnerability Index

- Relatively Very High Vulnerable (0.638-0.692)
- Relatively High Vulnerable (0.584-0.637)
- Relatively Moderate Vulnerable (0.529-0.583)
- Relatively Low Vulnerable (0.475-0.528)
- Relatively Very Low Vulnerable (0.421-0.474)



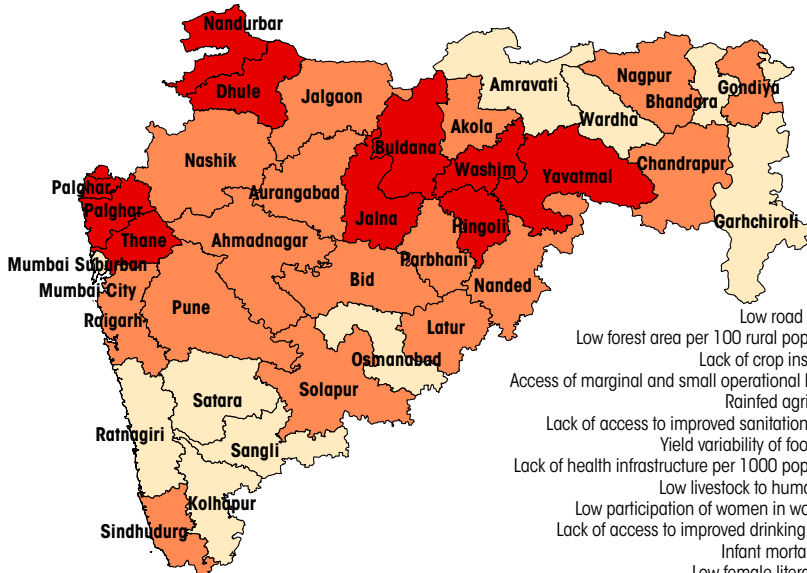
### Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator



# MAHARASHTRA

Low road density and limited access forest access to rural population are the two primary drivers of vulnerability. Mumbai is excluded from the analysis due to its different characteristics from other districts

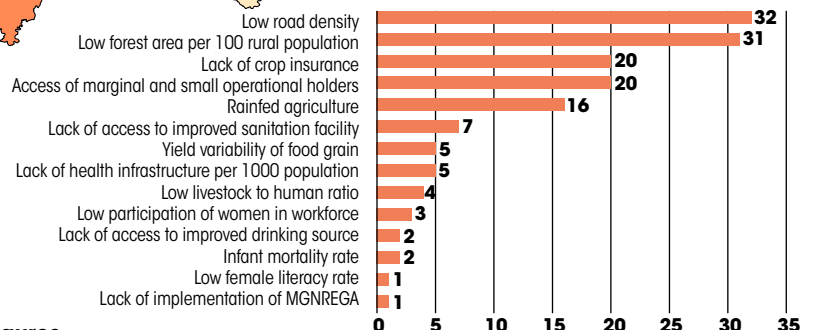


### Vulnerability Index

- Mumbai City
- Relatively High Vulnerable (0.631-0.695)
- Relatively Moderate Vulnerable (0.566-0.630)
- Relatively Low Vulnerable (0.502-0.565)

### Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator



# MANIPUR

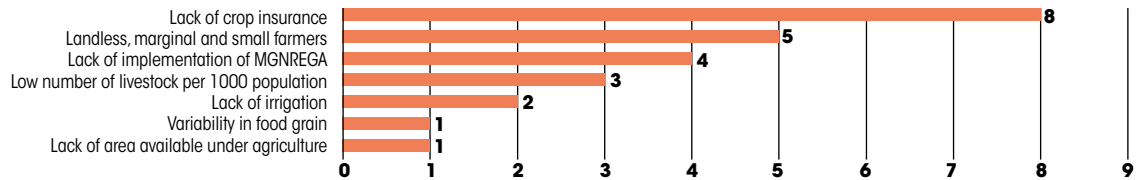
While smaller land holdings are unavoidable in hilly areas, crop insurance and better implementation of MGNREGA would definitely act as safety nets from the state

## Vulnerability Index

- Relatively High Vulnerable (0.62-0.75)
- Relatively Moderate Vulnerable (0.50-0.62)
- Relatively Low Vulnerable (0.37-0.50)

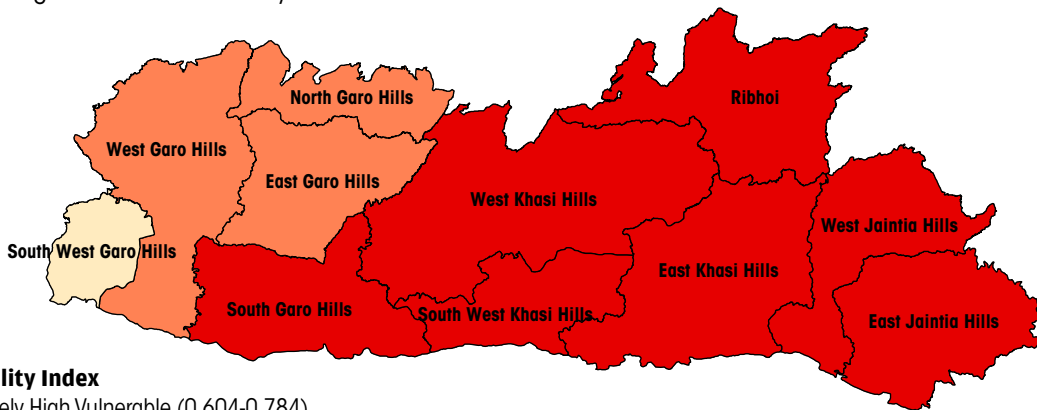
## Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator



# MEGHALAYA

Five indicators contribute to 50 per cent of the state's agricultural vulnerability

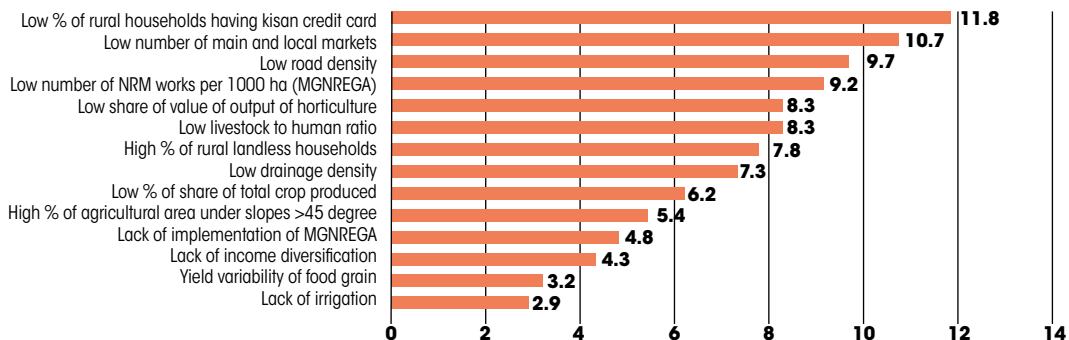


## Vulnerability Index

- Relatively High Vulnerable (0.604-0.784)
- Relatively Moderate Vulnerable (0.425-0.603)
- Relatively Low Vulnerable (0.245-0.424)

## Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator

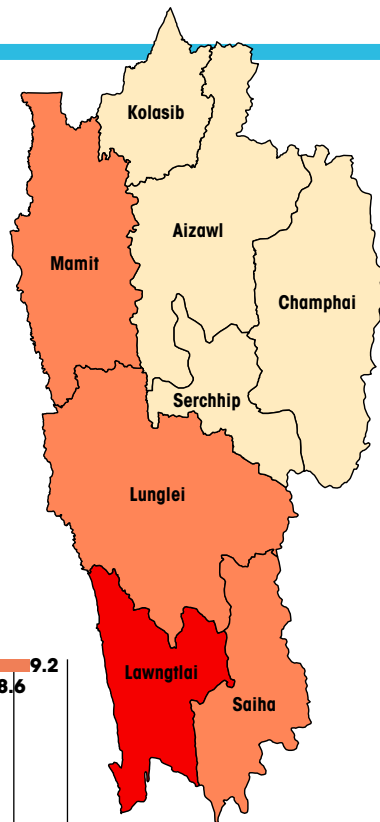


# MIZORAM

There is a wide variation in the vulnerability levels of the districts. While Lawngtlai has a vulnerability score of 0.66, Kolasib has 0.29

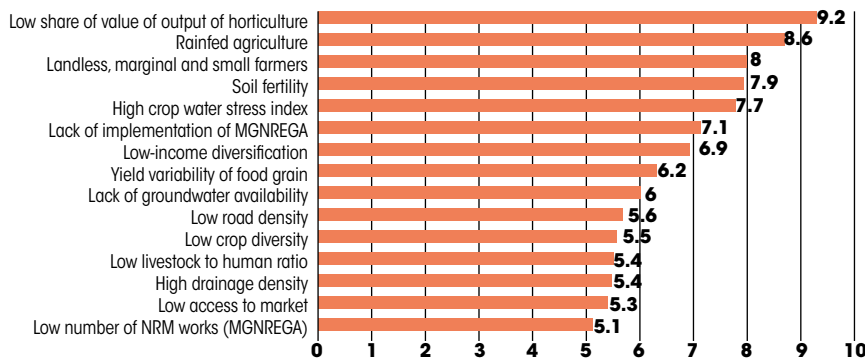
### Vulnerability Index

- Relatively High Vulnerable (0.644-0.783)
- Relatively Moderate Vulnerable (0.505-0.643)
- Relatively Low Vulnerable (0.286-0.504)



### Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator

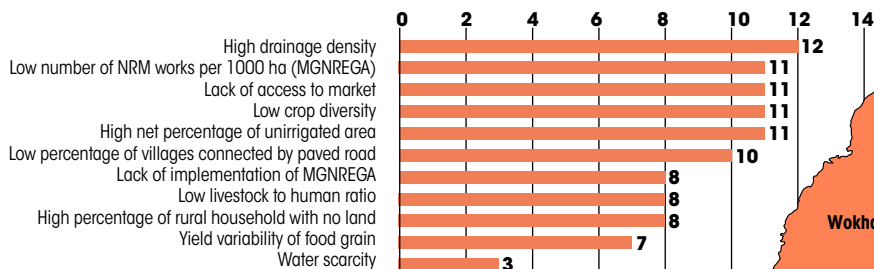


# NAGALAND

There is a wide variation in the vulnerability levels of the districts. While Kohima has a vulnerability score of 0.737, Dimapur has 0.36

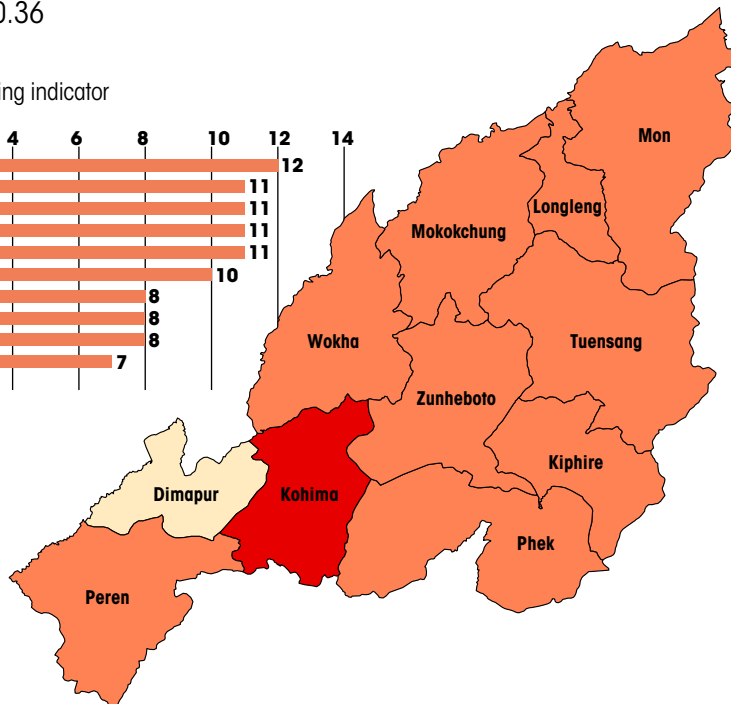
### Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator



### Vulnerability Index

- Relatively High Vulnerable (0.611-0.737)
- Relatively Moderate Vulnerable (0.610-0.486)
- Relatively Low Vulnerable (0.360-0.485)



# ODISHA

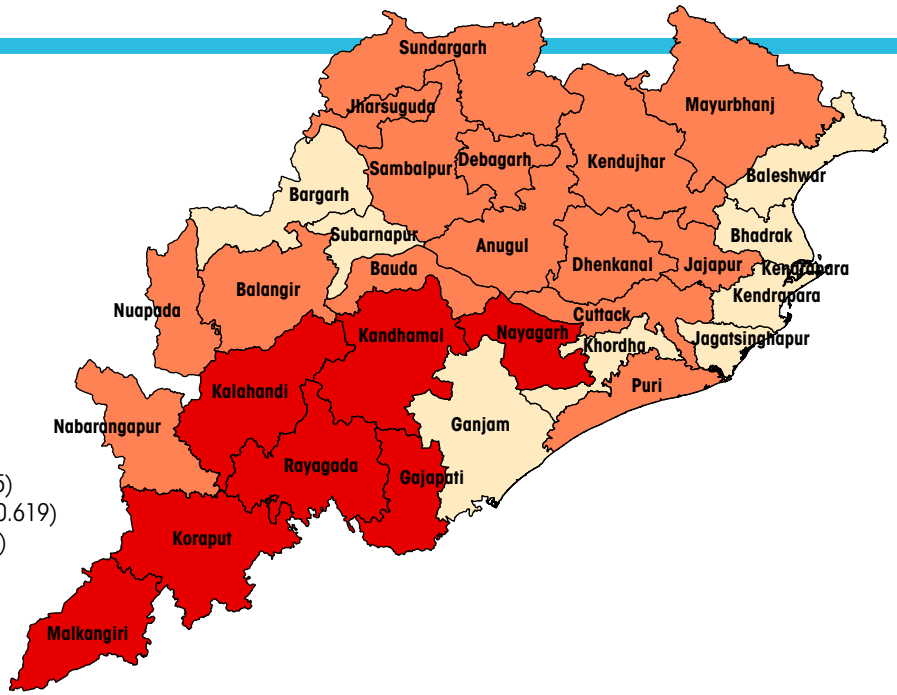
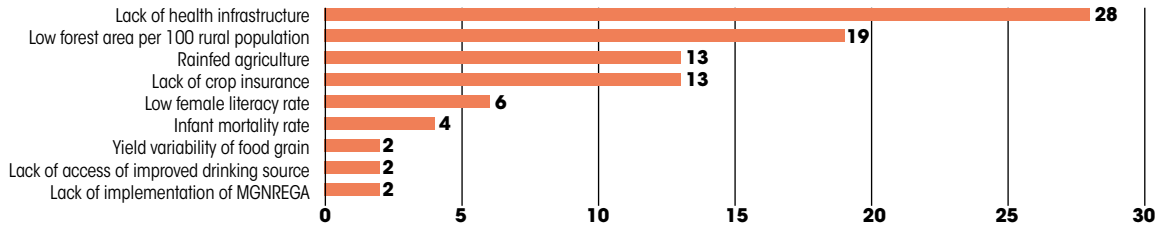
Poor health infrastructure and safety net pose the greatest challenges to the state

## Vulnerability Index

- Relatively High Vulnerable (0.620-0.735)
- Relatively Moderate Vulnerable (0.504-0.619)
- Relatively Low Vulnerable (0.389-0.503)

## Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator

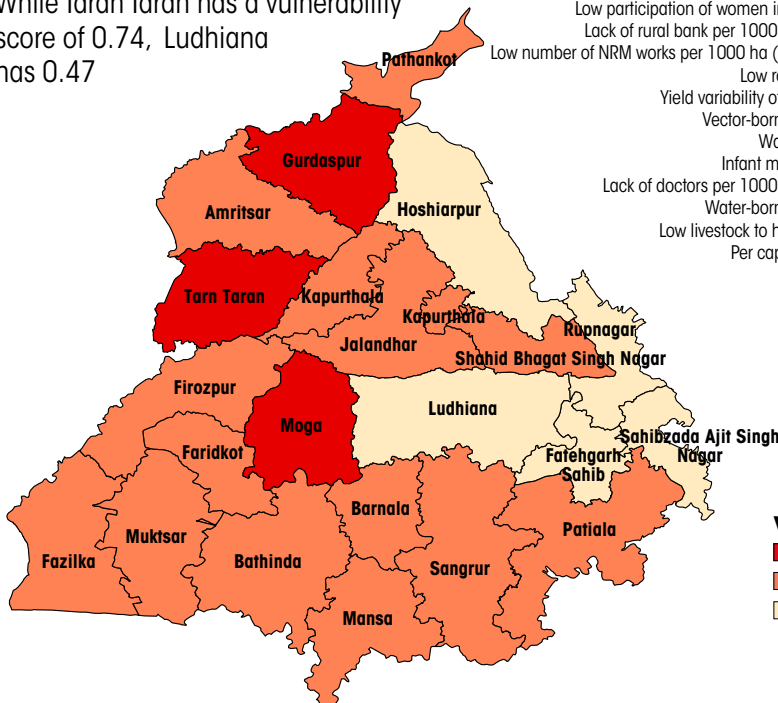
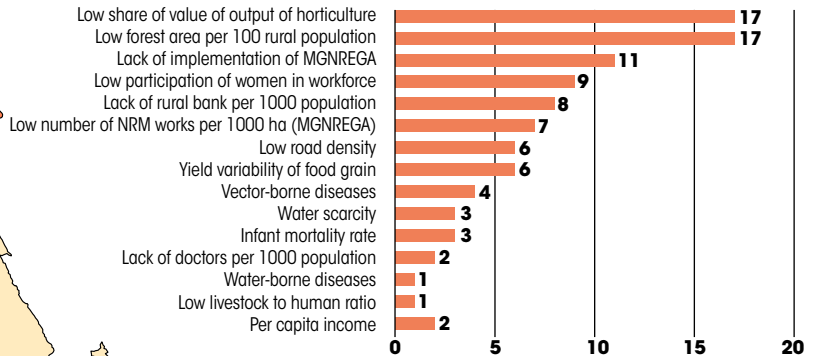


# PUNJAB

There is a reasonably wide variation in the vulnerability levels of the districts. While Taran Taran has a vulnerability score of 0.74, Ludhiana has 0.47

## Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator

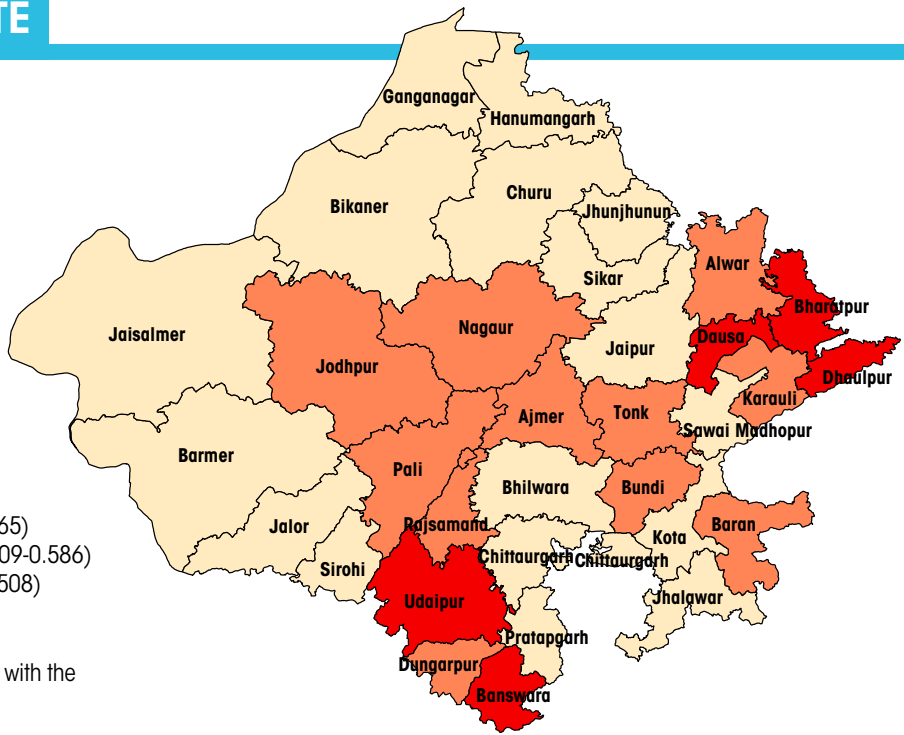


## Vulnerability Index

- Relatively High Vulnerable (0.649-0.739)
- Relatively Moderate Vulnerable (0.558-0.648)
- Relatively Low Vulnerable (0.468-0.557)

# RAJASTHAN

Better management and availability of water at farms and household levels can reduce the state's climate vulnerability

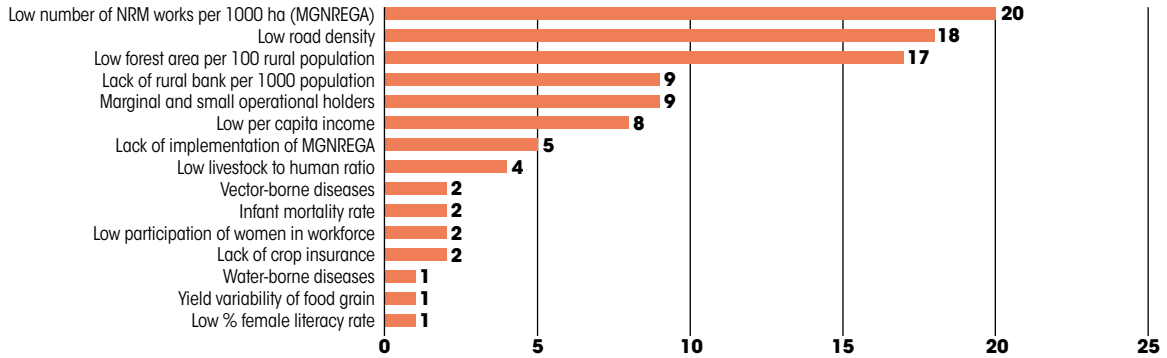


### Vulnerability Index

- Relatively High Vulnerable (0.587-665)
- Relatively Moderate Vulnerable (0.509-0.586)
- Relatively Low Vulnerable (0.432-0.508)

### Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator



# SIKKIM

Poor health infrastructure and small land holdings pose are the biggest challenges for the state

### Vulnerability Index

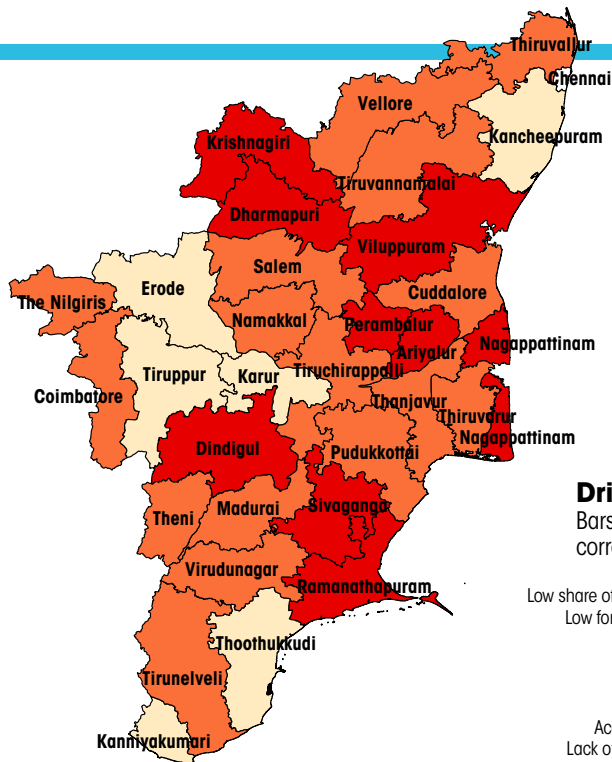
- Relatively High Vulnerable (0.6-0.7)
- Relatively Moderate Vulnerable (0.5-0.6)
- Relatively Low Vulnerable (0.4-0.5)

### Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator







# TAMIL NADU

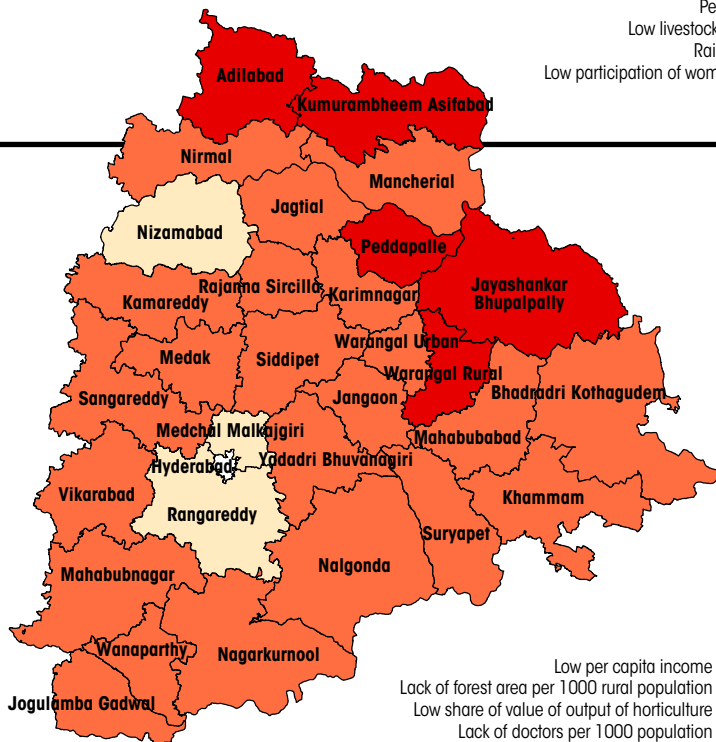
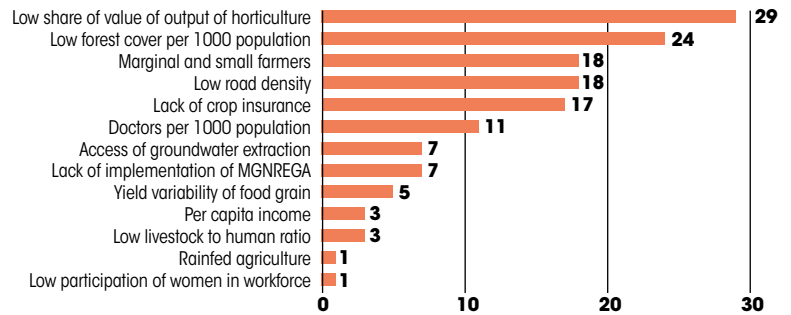
Farm sector remains highly vulnerable in the state. Chennai has been excluded from the analysis because of its urban nature

### Vulnerability Index

- Chennai City
- Relatively High Vulnerable (0.625-0.724)
- Relatively Moderate Vulnerable (0.526-0.624)
- Relatively Low Vulnerable (0.427-0.525)

### Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator



# TELANGANA

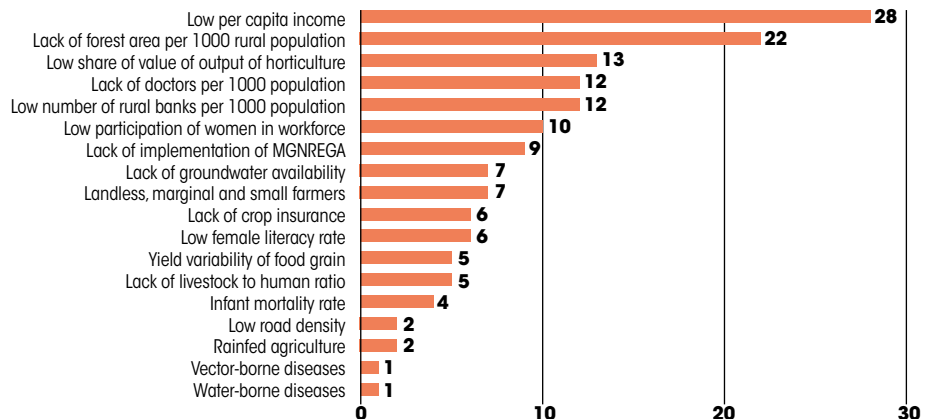
Poor infrastructure and household income are the major challenges

### Vulnerability Index

- Hyderabad (city)
- Relatively High Vulnerable (0.594-0.688)
- Relatively Moderate Vulnerable (0.500-0.593)
- Relatively Low Vulnerable (0.406-0.499)

### Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator



# TRIPURA

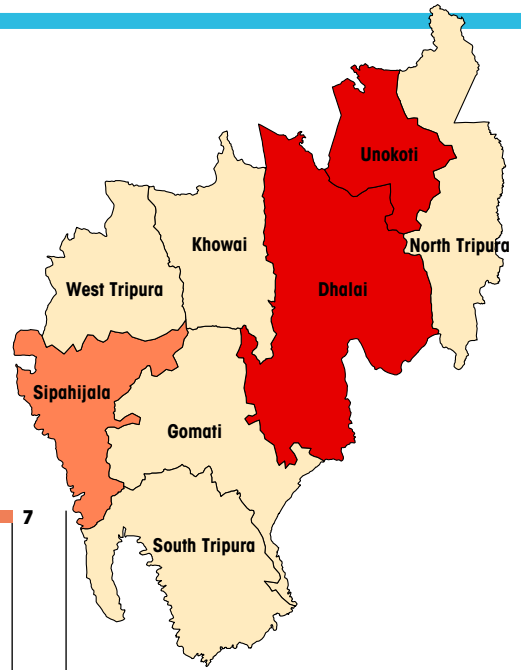
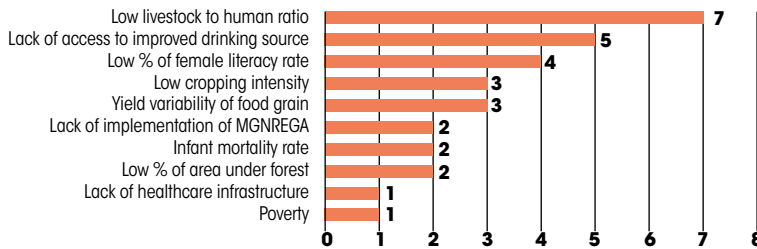
Limited livestock and drinking water sources are the main challenges in the state

### Vulnerability Index

- Relatively High Vulnerable (0.649-0.760)
- Relatively Moderate Vulnerable (0.537-0.648)
- Relatively Low Vulnerable (0.426-0.536)

### Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator

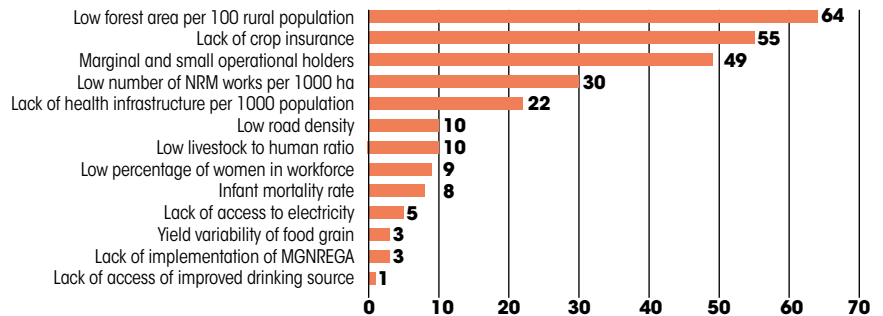


# UTTAR PRADESH

Most districts in the state fall within a small range and are almost equally vulnerable

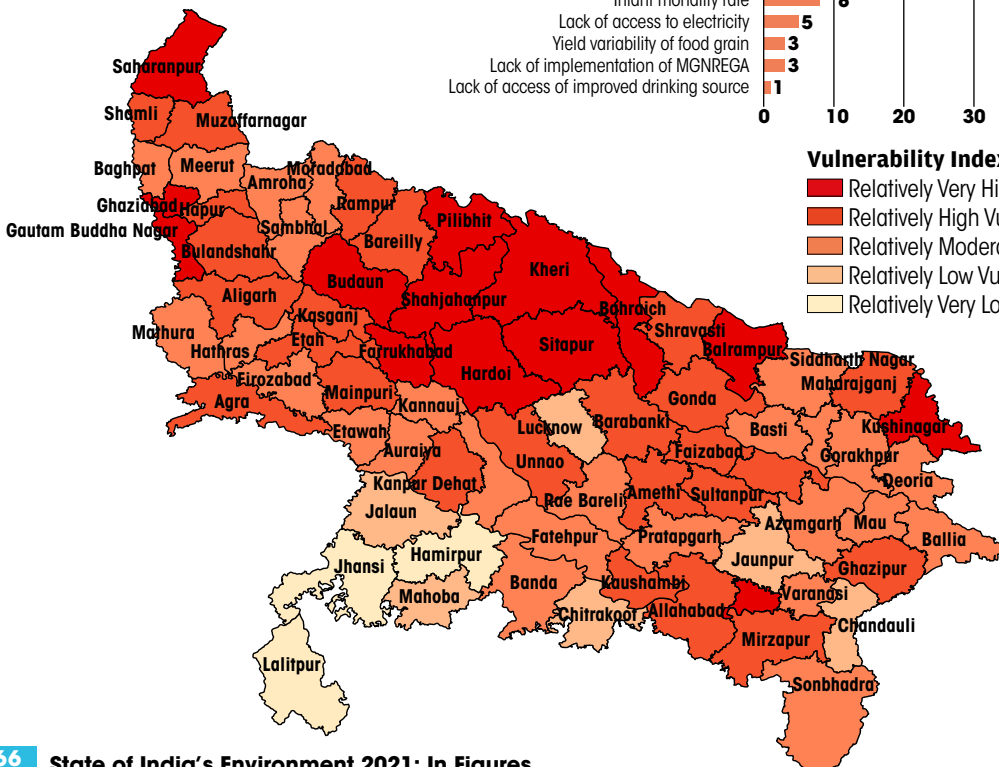
### Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator



### Vulnerability Index

- Relatively Very High Vulnerable (0.636-0.694)
- Relatively High Vulnerable (0.577-0.635)
- Relatively Moderate Vulnerable (0.519-0.576)
- Relatively Low Vulnerable (0.461-0.518)
- Relatively Very Low Vulnerable (0.403-0.460)



# UTTARAKHAND

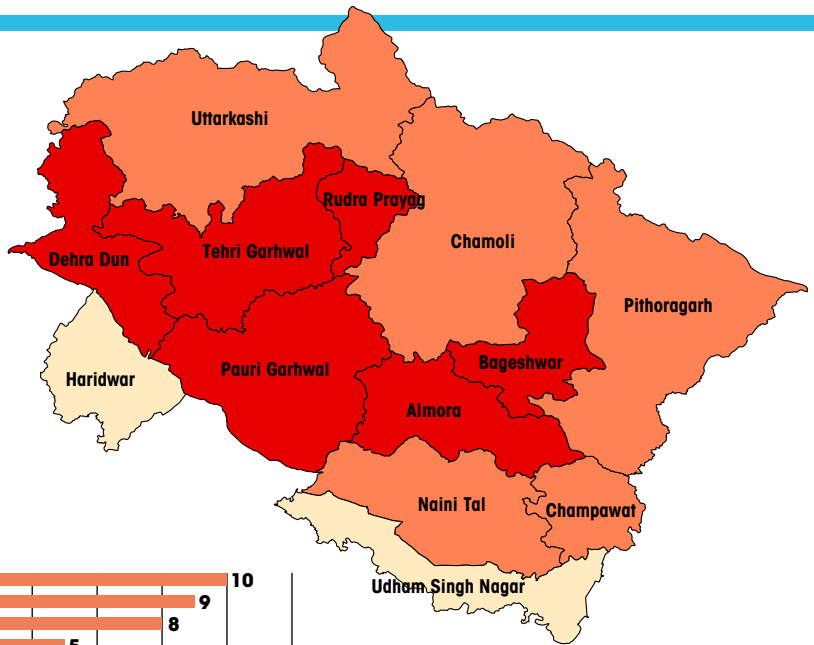
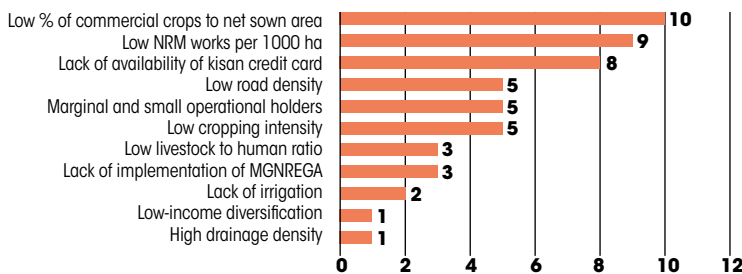
There is a wide variation in the vulnerability levels of the districts. While Garhwal has a vulnerability score of 0.7, Kolasib has 0.34

## Vulnerability Index

- Relatively High Vulnerable (0.590-0.716)
- Relatively Moderate Vulnerable (0.465-0.589)
- Relatively Low Vulnerable (0.340-0.464)

## Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator



# WEST BENGAL

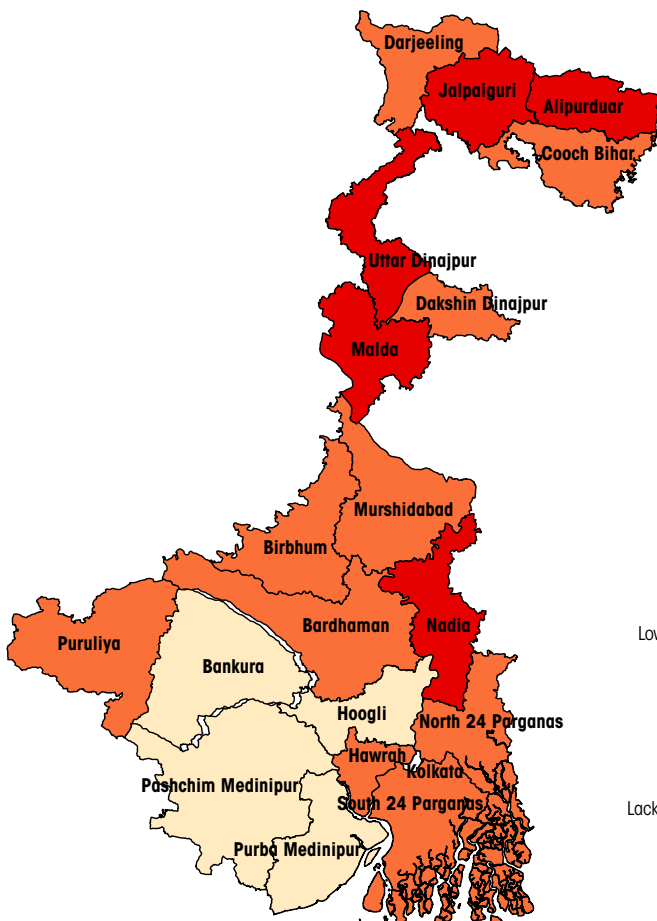
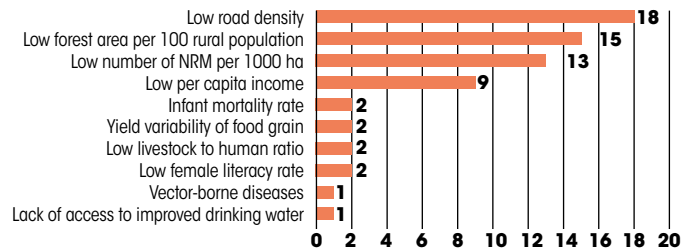
Most districts in the state fall within a small range and are almost equally vulnerable. All of them require attention in terms of adaptation

## Vulnerability Index

- Kolkata City
- Relatively High Vulnerable (0.588-0.690)
- Relatively Moderate Vulnerable (0.486-0.587)
- Relatively Low Vulnerable (0.384-0.485)

## Drivers of vulnerability

Bars suggest the number of districts with the corresponding indicator



# Internal displacement

by **conflicts** and **disasters**

76 per cent of internal displacements globally in 2020 were triggered by climate disasters

## 40.5m

Total new displacements in 2020

(conflict and violence)

### 9.8m

(disasters)

### 30.7m

#### CONFLICT AND VIOLENCE

#### DISASTERS

**137,000**  
Violence (criminal)

**208,000**  
Violence (Political)

**694,000**  
Violence (Communal)

**1.2m**  
Other

**7.5m**  
Armed Conflict

**655,000**  
Geophysical

**30m**  
Weather related

**137,000**  
Earthquakes

**518,000**  
Volcanic eruptions

**32,000**  
Droughts

**46,000**  
Extreme temperatures

**102,000**  
Landslides

**1.2m**  
Wildfires

**14m**  
Floods

**14.6m**  
Storms

**13.6m**  
Cyclones, hurricanes, typhoons

**988,000**  
Other storms

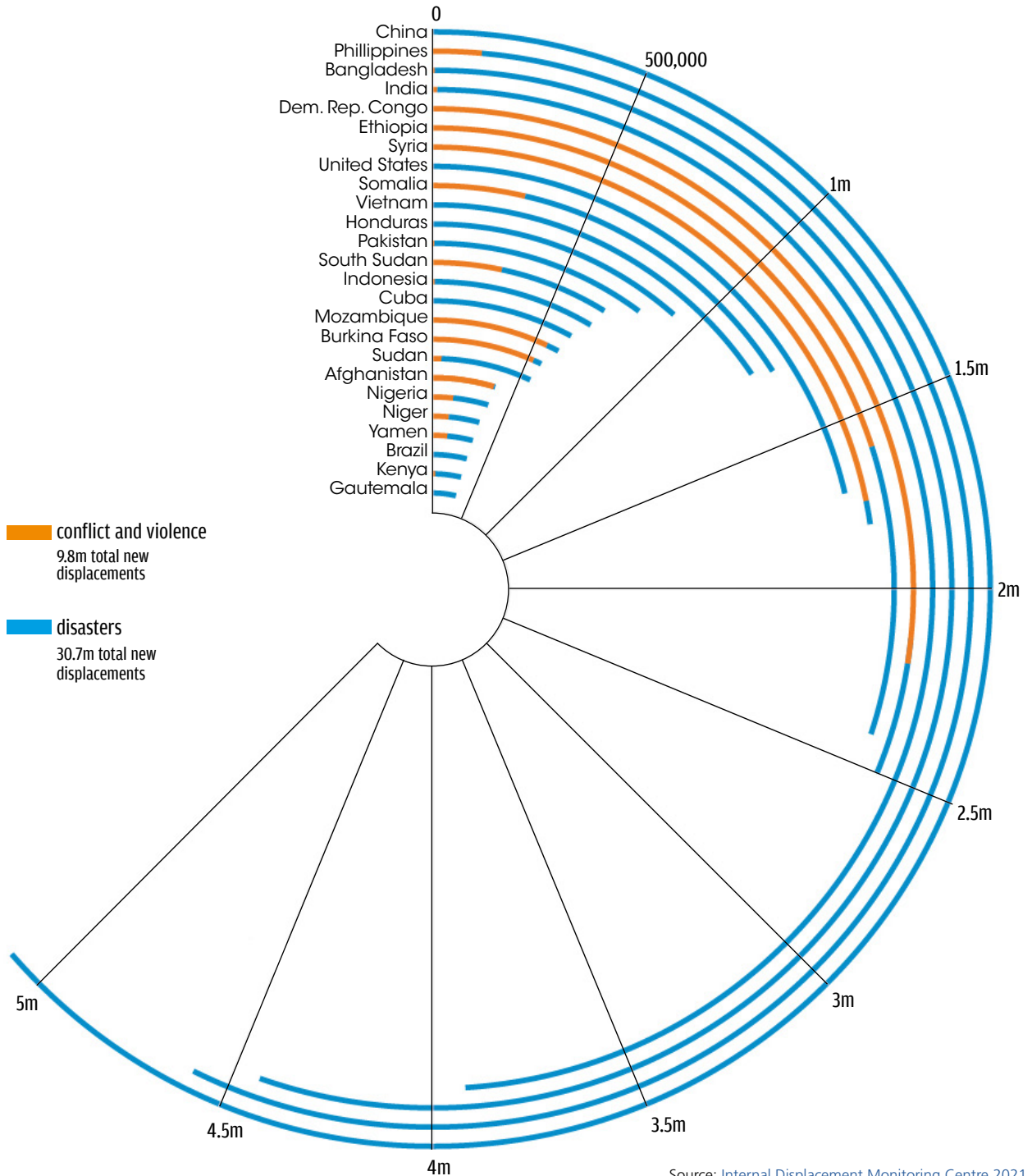
\*New displacement refers to the number of movements, not people, as individuals can be displaced several times. Data does not always reflect this

Note: Numbers have been rounded off, so some totals may not correspond with the sum of separate figures

Source: [Internal Displacement Monitoring Centre, 2021](https://www.internal-displacement.org/)

# India was the fourth worst-hit country in the world

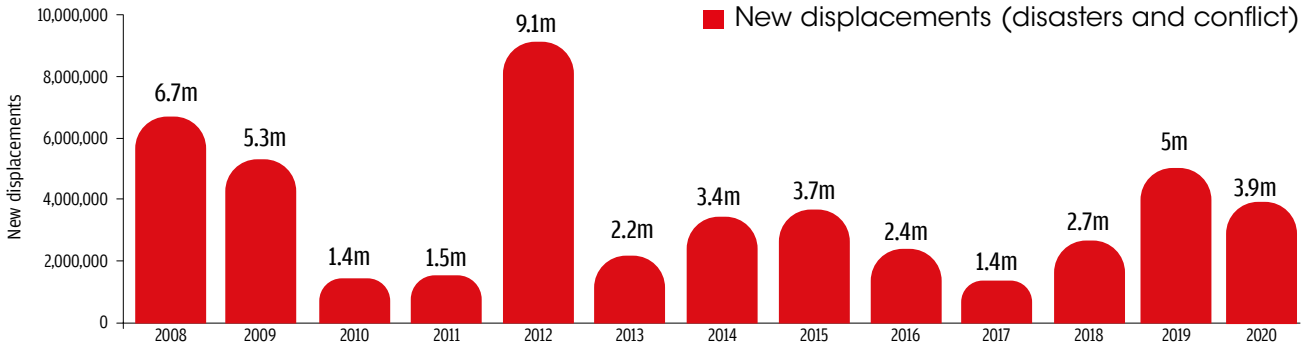
Most disaster displacements were the result of tropical storms and floods in East Asia and the Pacific and South Asia. China, the Philippines and Bangladesh each recorded more than four million new displacements, many of them pre-emptive evacuations



Source: [Internal Displacement Monitoring Centre, 2021](https://www.internal-displacement.org/)

## Disastrous for India

An average of around 3.73 million people a year were displaced between 2008 and 2020, the majority by flooding during the monsoon. India is also prone to other sudden and slow-onset hazards including earthquakes, tsunamis, cyclones, storm surges and droughts



### 5 disasters that led to internal displacements in India in 2020



JANUARY 6

**Avalanches and landslides**  
Kashmir  
**103**



JANUARY 13-15

**Flood**  
Tamil Nadu  
**843**



FEBRUARY 7

**Glacial lake outburst**  
Uttarakhand  
**226**



NOV 25-29

**Cyclone Nivar**  
Puducherry  
**272,306**



DECEMBER 2-5

**Cyclone Burevi**  
Kerala, Tamil Nadu and others  
**72,957**

### India is projected to see 2.3 million internal displacements every year due to disasters in the future

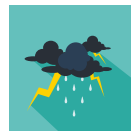
The triggers for future displacements in India and their projected annual numbers



**81,720**  
Earthquake



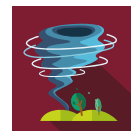
**1,938,484**  
Flood



**36,713**  
Storm surge



**3,667**  
Tsunami

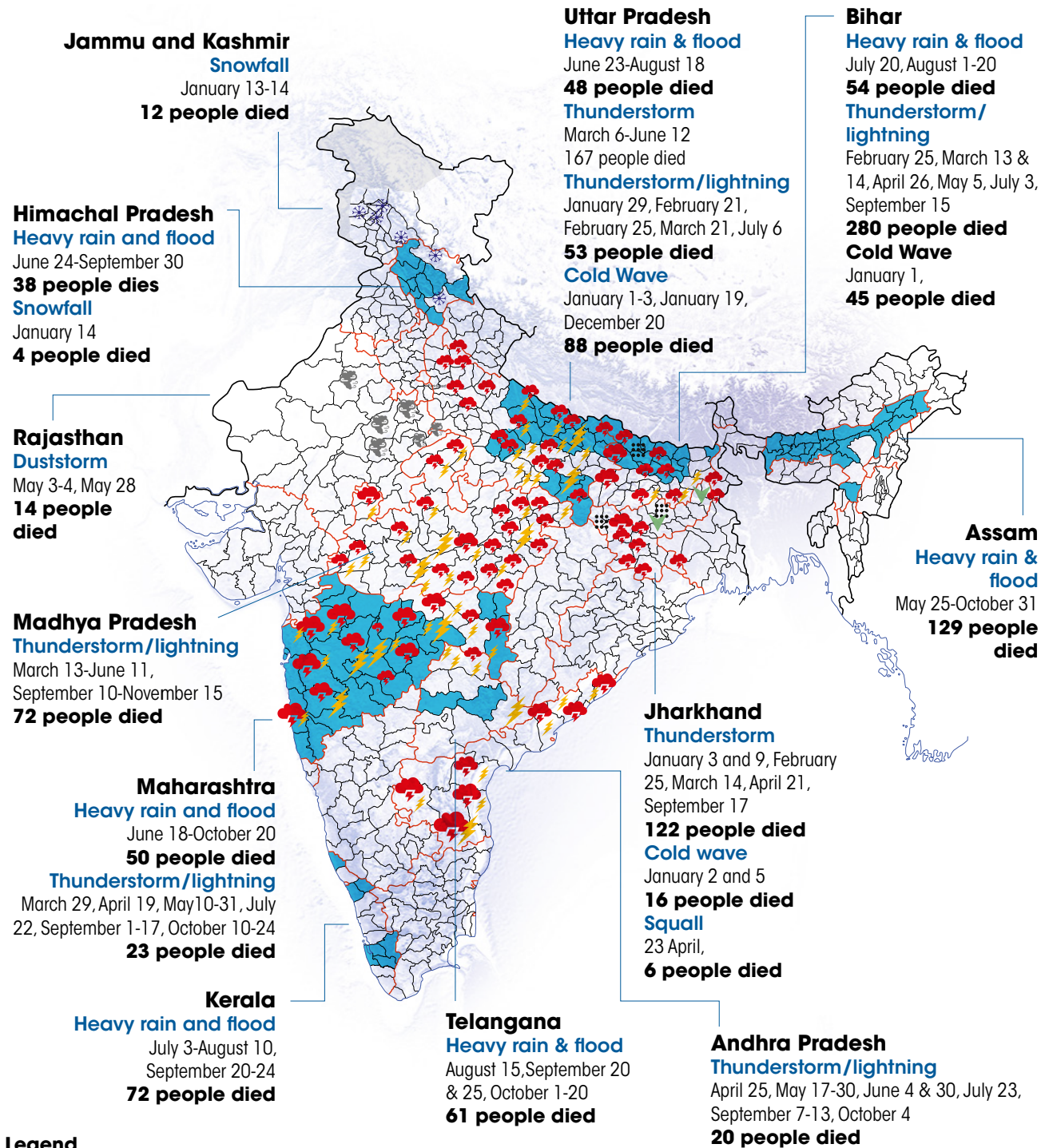


**240,415**  
Cyclonic wind

Source: [Internal Displacement Monitoring Centre, 2021](#)

# SIGNIFICANT WEATHER EVENTS IN 2020

21 major weather events claimed over 1,374 lives in 2020. Heavy rains, floods and thunderstorms were responsible for over 51 per cent of the deaths; Lightening was responsible for 33 per cent of the deaths



## Legend

- Heavy rainfall and Floods
- Cold wave
- ❄ Snowfall
- ▼ Squall
- ⚡ Thunderstorm/Lightening
- ☁ Duststorm
- ☁ Thunderstorm

Source: [India Meteorological Department, Ministry of Earth Sciences, 2020](#)

# STORM BREWING

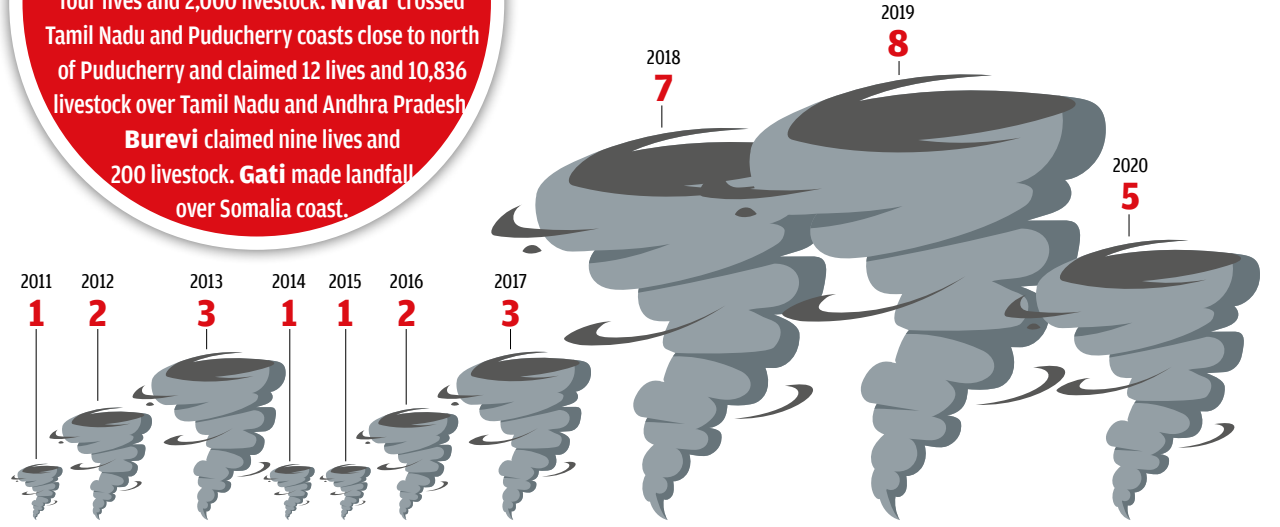
Last decade saw the highest number of cyclonic storms over north Indian Ocean since 1970s. Most of the storms took place in October-December

Since 1971, India has recorded 38 cyclonic storms in November, followed by 15 in May

|           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total     |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
| 1971-1980 | 0   | 0   | 0   | 0   | 3   | 0   | 2   | 2   | 5   | 3   | 11  | 2   | <b>28</b> |
| 1981-1990 | 0   | 0   | 0   | 0   | 3   | 1   | 1   | 1   | 5   | 9   | 3   | 2   | <b>25</b> |
| 1991-2000 | 0   | 0   | 0   | 0   | 1   | 5   | 0   | 0   | 0   | 5   | 11  | 1   | <b>23</b> |
| 2001-2010 | 1   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 1   | 3   | 7   | 3   | <b>18</b> |
| 2011-2020 | 1   | 0   | 0   | 2   | 5   | 2   | 1   | 0   | 2   | 9   | 6   | 5   | <b>33</b> |

Source: India Meteorological Department, Ministry of Earth Sciences

Of the five cyclonic storms in 2020, **Amphan** crossed West Bengal coast over Sundarbans on May 20. It claimed 90 lives and about 4,000 livestock. **Nisarg** crossed Maharashtra coast on June 3. It claimed four lives and 2,000 livestock. **Nivar** crossed Tamil Nadu and Puducherry coasts close to north of Puducherry and claimed 12 lives and 10,836 livestock over Tamil Nadu and Andhra Pradesh. **Burevi** claimed nine lives and 200 livestock. **Gati** made landfall over Somalia coast.



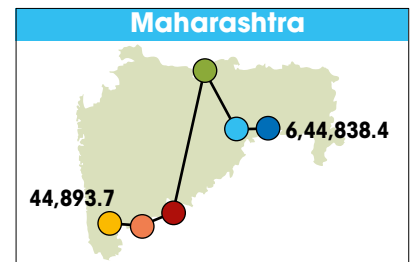
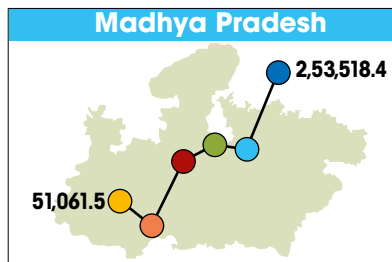
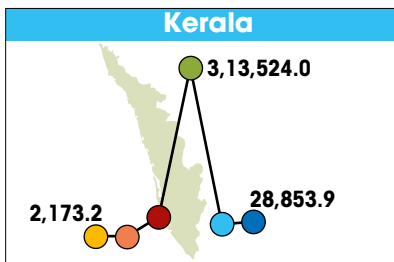
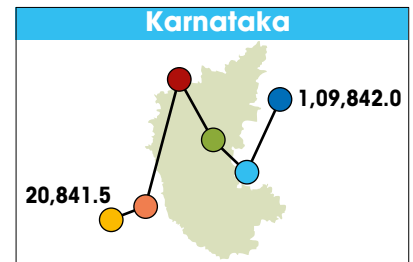
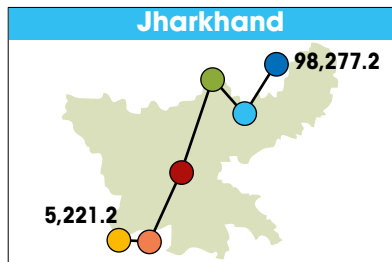
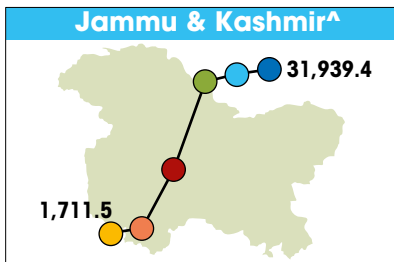
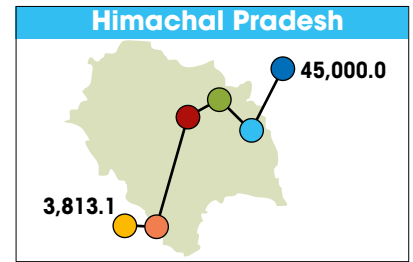
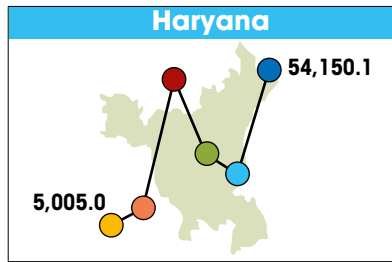
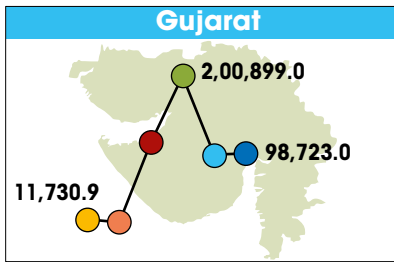
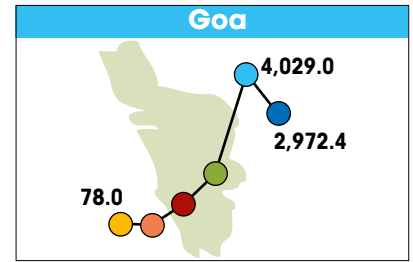
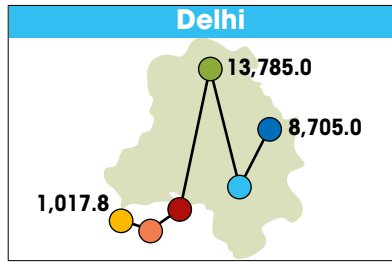
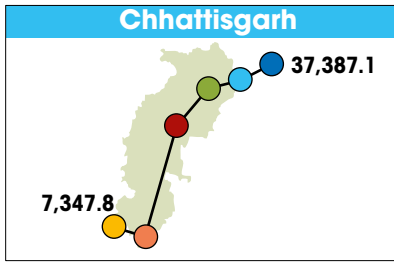
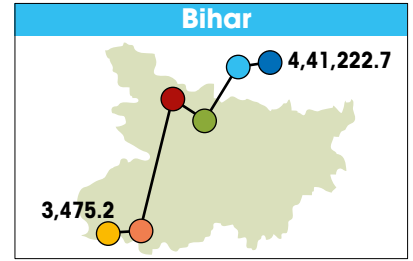
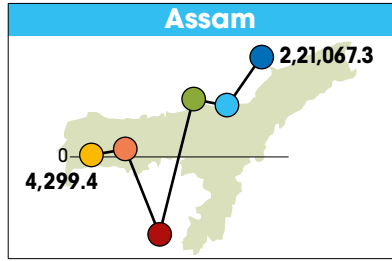
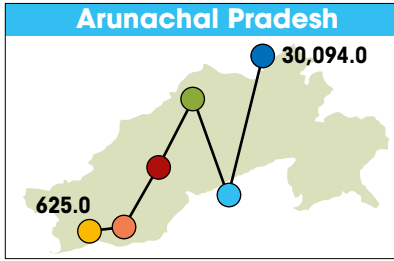
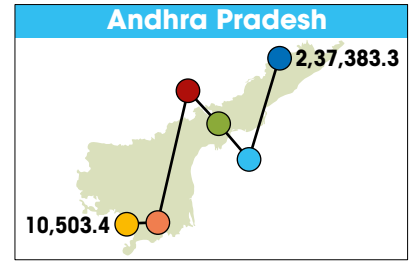


# GOVERNMENT SPENDING ON NATURAL CALAMITIES

Odisha, Rajasthan and two other states/UTs have reduced their spendings on natural calamities

(ALL FIGURES IN ₹ LAKH)

● 2015-16 (Accounts) ● 2016-17 (Accounts) ● 2018-19 (Revised Estimates) ● 2018-19 (Revised Estimates) ● 2019-20 (Budget Estimates) ● 2020-21 (Budget Estimates)

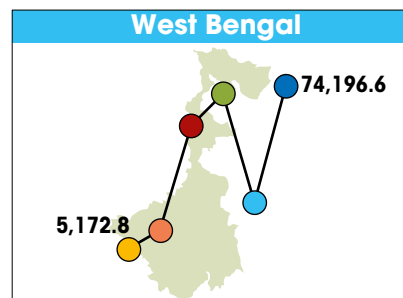
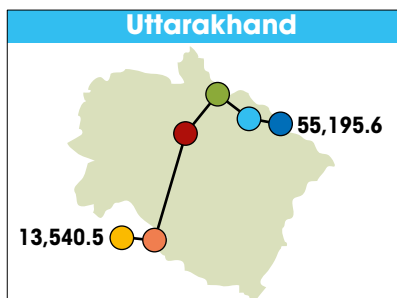
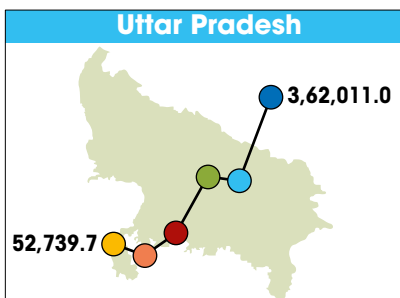
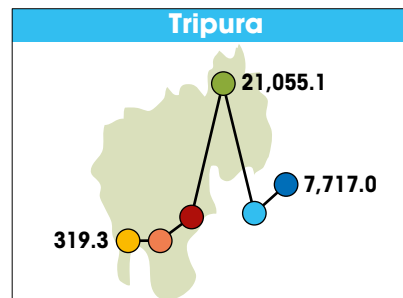
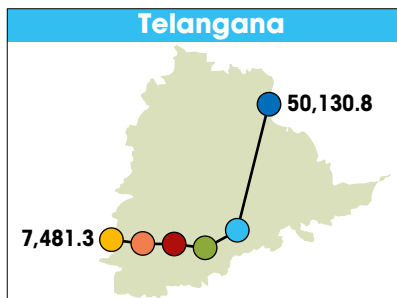
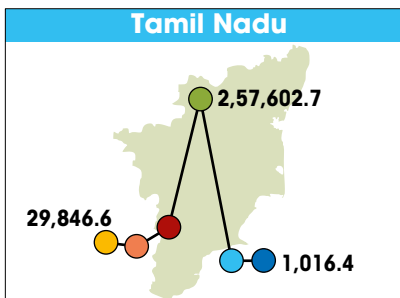
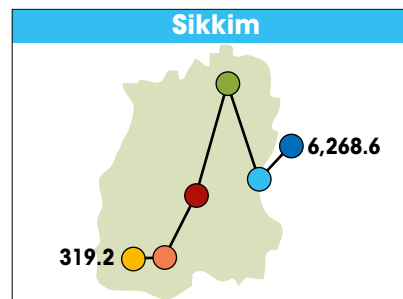
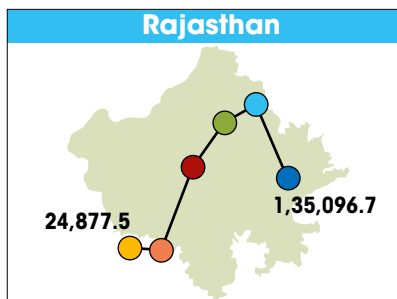
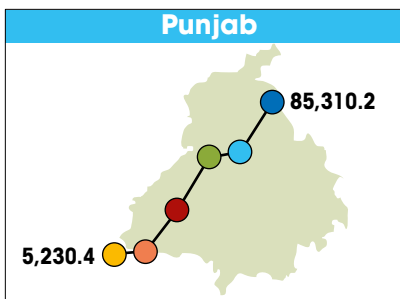
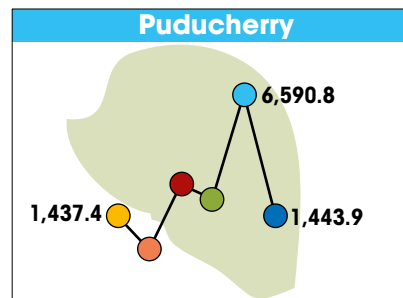
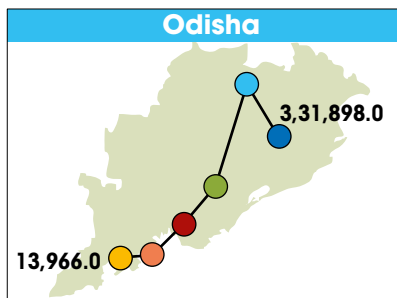
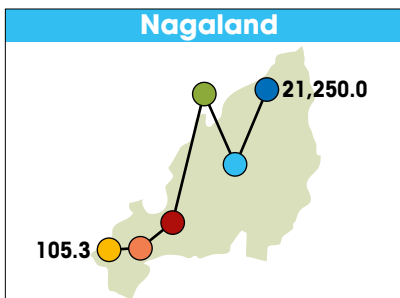
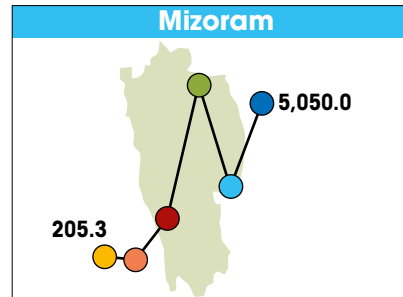
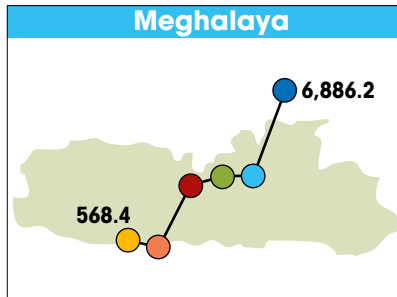
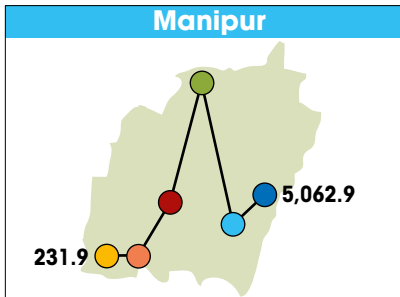


<sup>^</sup> :Unified data for Jammu and Kashmir & Ladakh; Source : State Finances: A Study of Budgets, RBI

# STATE OF CLIMATE

(ALL FIGURES IN LAKH)

● 2015-16 (Accounts) ● 2016-17 (Accounts) ● 2018-19 (Revised Estimates)  
 ● 2018-19 (Revised Estimates) ● 2019-20 (Budget Estimates) ● 2020-21 (Budget Estimates)



Source : State Finances: A Study of Budgets, RBI

## RESOURCES

### IN NEWS

#### [UN calls for swift zero carbon recovery action at climate summit](#)

There is a 40% chance of annual average global temperature temporarily reaching 1.5 degrees Celsius in at least one of the next five years, cautions a WMO report

#### [Climate change could be behind Uttarakhand cloudbursts](#)

March, April and May were warmer than normal over Uttarakhand, which could have contributed to the cloudbursts

#### [The world was in high fever in 2020](#)

The State of the Global Climate 2020 lists the major global warming milestones

#### [Climate change may make Indian monsoons more volatile, wet years ahead: Study](#)

The study warned that the shift may entail grave consequences for India's economy, food systems and people's well-being

#### [North East India might witness another dry monsoon: Skymet Weather](#)

This would be the region's 20th dry monsoon in the last 21 years if the prediction holds true

#### [Climate change hurts: Will Gourmet gur continue to thrive in Bengal's Jaynagar](#)

Destruction of date palm trees during cyclone Amphan and warming weather have resulted in

a huge decline in production of West Bengal's trademark nolengur

#### [Climate change is real: Six months on, Uttarakhand forests still ablaze](#)

Forest fires that began in Uttarakhand on October 15 last year are still burning due to less rainfall and rising temperatures

#### [Climate change in North East: Arunachal's Seijosa shows connect between shifting patterns, declining biodiversity](#)

Loss in forest cover, change in rainfall patterns, human interventions may together set in motion irreversible patterns

### REPORTS/PUBLICATIONS

#### [Climate vulnerability assessment for adaptation planning in India using a common framework| Ministry of Science and Technology| April 2021](#)

This assessment report has identified Jharkhand, Mizoram, Orissa, Chhattisgarh, Assam, Bihar, Arunachal Pradesh, and West Bengal as states highly vulnerable to climate change.

#### [Statement on climate of India during 2020| India Meteorological Department| January 2021](#)

This annual statement on the state of climate shows the impact of climate on India and includes weather events

## RESOURCES

[Preparing India for extreme climate events: mapping hotspots and response mechanisms| Council on Energy, Environment and Water| December 2020](#)

75% of India's districts are hotspots of extreme climate events finds Council on Energy, Environment and Water (CEEW) in this new report

[Assessment of Climate Change over the Indian Region| Ministry of Earth Sciences| June 2020](#)

The average temperature in the country is projected to rise by 4.4 degrees Celsius and the intensity of heat waves increase by three to four times by the end of the century warns this report

[State and trends of carbon pricing 2021| The World Bank| May 2021](#)

This report provides an up-to-date overview of existing and emerging carbon pricing instruments around the world, including international, national and subnational initiatives.

[State of the Global Climate 2020| World Meteorological Organization \(WMO\)| April 2021](#)

Irrespective of the widespread surmise that the pandemic-induced lockdowns and shutdowns would lead to less emissions thus reduced impact on the climate, this report reveals that the global climate crisis worsened.

[Global Climate Risk Index 2021| Germanwatch| January 2021](#)

This index analyses to what extent countries and regions have been affected by impacts of weather-related loss events (storms, floods, heat waves etc)

[Emissions Gap Report 2020| UNEP| December 2020](#)

A green pandemic recovery could cut up to 25 per cent off predicted 2030 greenhouse gas emissions finds this report

# State of Energy

---

## Renewables

With just 55 per cent of the target met, India is nowhere close to installing 175 GW of renewable capacity by 2022



## Solar parks

India has a target of setting up at least 50 solar parks by 2021-22. So far, it has not operationalised even one of them



## Roof-top solar

The gap between the target and the installed capacity is widening every year

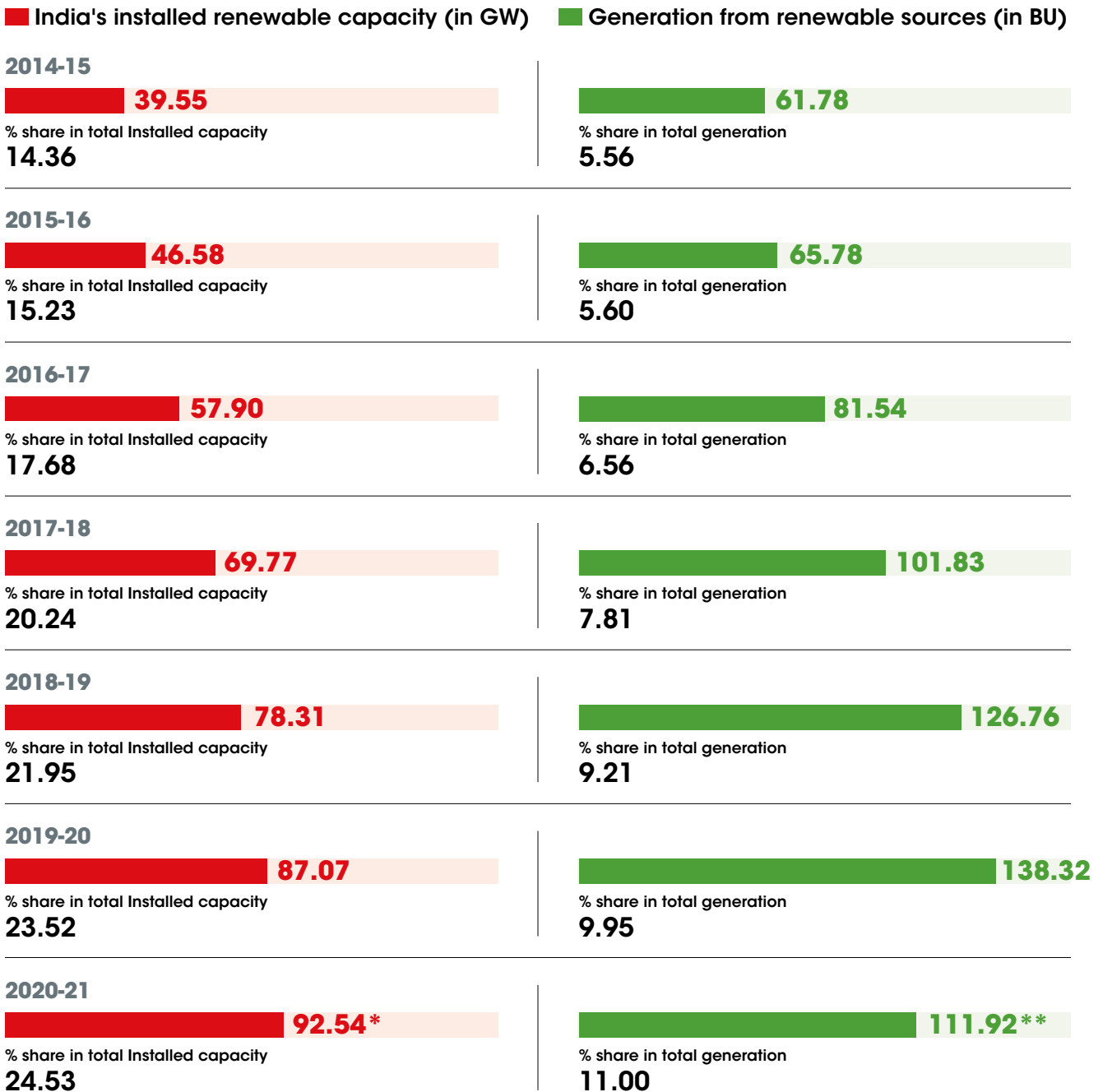


## Access to energy

Most Indian states fail to deliver on their promise of supplying 24x7 electricity to its households. The gap is wider in rural areas

# RENEWABLES

In the past six years, India has met almost 55 per cent of its ambitious target of installing 175 GW of renewable capacity by 2022. With one year remaining, the country is unlikely to meet the target.



\*Up to Jan 2021; \*\* Up to Dec 2020

Source: [17th Parliamentary Standing Committee on Energy \(2020-21\)](#); As on Feb 2021

# DRAINED ENERGY

India is lagging in both solar and wind energy, which account for over 90 per cent of its 2022 target



| Target figures are in MW | Solar Power |                 | Wind Power  |                 | Small hydroprojects |                 | Biomass Power |                 |
|--------------------------|-------------|-----------------|-------------|-----------------|---------------------|-----------------|---------------|-----------------|
|                          | 2022 target | Target achieved | 2022 target | Target achieved | 2022 target         | Target achieved | 2022 target   | Target achieved |
| India                    | 99,533      | 39%             | 60,000      | 65%             | 5,000               | 96%             | 10,000        | 103%            |
| A&N Islands              | 27          | 108%            |             |                 |                     |                 |               |                 |
| Andhra Pradesh           | 9,834       | 41%             | 8,100       | 51%             |                     |                 | 543           | 93%             |
| Arunachal Pradesh        | 39          | 14%             |             |                 | 500                 | 26%             |               |                 |
| Assam                    | 663         | 6%              |             |                 | 25                  | 136%            |               |                 |
| Bihar                    | 2,493       | 6%              |             |                 | 25                  | 283%            | 244           | 51%             |
| Chandigarh               | 153         | 30%             |             |                 |                     |                 |               |                 |
| Chhattisgarh             | 1,783       | 14%             |             |                 | 25                  | 304%            |               |                 |
| Dadra & Nagar Haveli     | 449         | 1%              |             |                 |                     |                 |               |                 |
| Daman & Diu              | 199         | 20%             |             |                 |                     |                 |               |                 |
| Delhi                    | 2,762       | 7%              |             |                 |                     |                 |               |                 |
| Goa                      | 358         | 2%              |             |                 |                     |                 |               |                 |
| Gujarat                  | 8,020       | 51%             | 8,800       | 94%             | 25                  | 316%            | 288           | 27%             |
| Haryana                  | 4,142       | 10%             |             |                 | 25                  | 294%            | 209           | 101%            |
| Himachal Pradesh         | 776         | 6%              |             |                 | 1,500               | 62%             |               |                 |
| Jammu and Kashmir        | 1,155       | 2%              |             |                 | 150                 | 124%            |               |                 |
| Jharkhand                | 1,995       | 2%              |             |                 | 10                  | 41%             |               |                 |
| Karnataka                | 5,697       | 129%            | 6,200       | 79%             | 1,500               | 85%             | 1,420         | 133%            |
| Kerala                   | 1,870       | 14%             |             |                 | 100                 | 230%            |               |                 |
| Lakshadweep              | 4           | 19%             |             |                 |                     |                 |               |                 |
| Madhya Pradesh           | 5,675       | 43%             | 6,200       | 41%             | 25                  | 399%            | 118           | 104%            |
| Maharashtra              | 11,926      | 19%             | 7,600       | 66%             | 50                  | 759%            | 2,469         | 105%            |
| Manipur                  | 105         | 6%              |             |                 |                     |                 |               |                 |
| Meghalaya                | 161         | 0               |             |                 | 50                  | 65%             |               |                 |
| Mizoram                  | 720         | 2%              |             |                 | 25                  | 146%            |               |                 |
| Nagaland                 | 61          | 2%              |             |                 | 15                  | 204%            |               |                 |
| Odisha                   | 2,377       | 17%             |             |                 |                     |                 |               |                 |
| Others                   |             |                 | 600         | 1%              |                     |                 | 120           | 0%              |
| Puducherry               | 246         | 4%              |             |                 |                     |                 |               |                 |
| Punjab                   | 4,772       | 20%             |             |                 | 50                  | 347%            | 244           | 198%            |
| Rajasthan                | 5,762       | 95%             | 8,600       | 50%             |                     |                 |               |                 |
| Sikkim                   | 36          | 0%              |             |                 | 50                  | 104%            |               |                 |
| Tamil Nadu               | 8,884       | 50%             | 11,900      | 79%             | 75                  | 164%            | 649           | 157%            |
| Telangana                |             |                 | 2,000       | 6%              |                     |                 |               |                 |
| Tripura                  | 105         | 9%              |             |                 |                     |                 |               |                 |
| Uttar Pradesh            | 10,697      | 16%             |             |                 | 25                  | 196%            | 3,499         | 61%             |
| Uttarakhand              | 900         | 39%             |             |                 | 700                 | 31%             | 197           | 66%             |
| West Bengal              | 5,336       | 3%              |             |                 | 50                  | 197%            |               |                 |

Source: [17th Parliamentary Standing Committee on Energy \(2020-21\)](#); As on Feb 2021

# SOLAR PARKS

It has been almost seven years since India launched its solar parks project. The country is yet to operationalise its first plant. It has so far approved 39 projects (see map) and eight of them are at different stages of construction

### What is a solar park

It is a land developed with all necessary infrastructure and clearances for setting up of solar projects. The capacity of the solar parks is generally 500 MW and above. However, smaller parks (up to 20 MW) are also considered in states or UTs where there is shortage of non-agricultural land.

### What is India's target

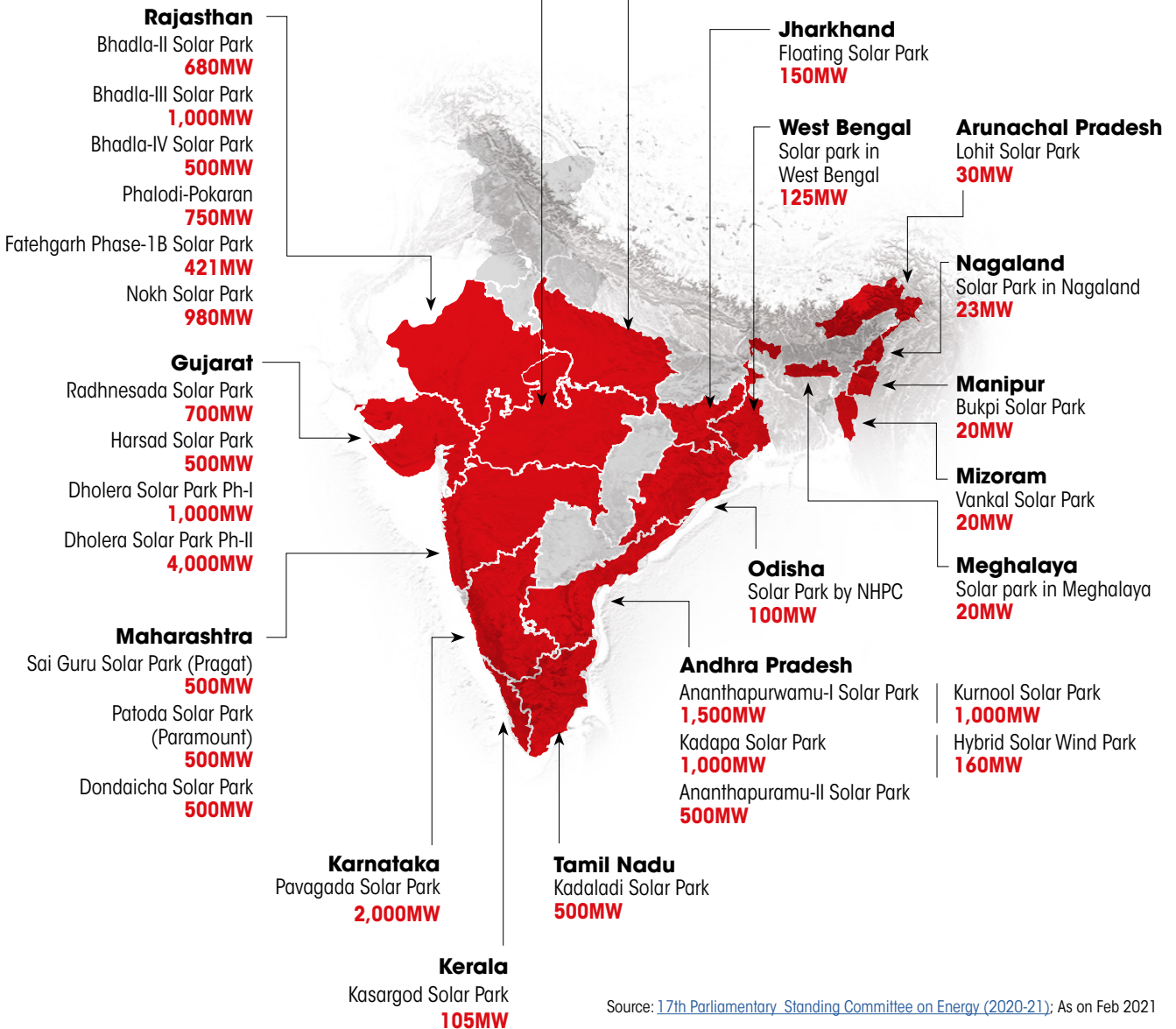
The Scheme for Development of Solar Parks and Ultra Mega Solar Power Projects was rolled out on December 2014 with aggregate capacity 20,000 MW. Further, the capacity was enhanced to 40,000 MW on March 21, 2017 to set up at least 50 solar parks by 2021-22. The total Central Grants for the scheme is ₹8,100 crore

### Madhya Pradesh

- Neemuch-Mandsaur Solar Park **750MW**
- Shajapur Solar Park **450MW**
- Agar Solar Park **550MW**
- Morena (Chambal) Solar Park **250MW**

### Uttar Pradesh

- Solar Park in UP **440MW**
- UP Jalaun Solar Park **50MW**
- UP Kanpur Dehat Solar Park **50MW**
- UP Kanpur Nagar Solar Park **30MW**



Source: 17th Parliamentary Standing Committee on Energy (2020-21); As on Feb 2021

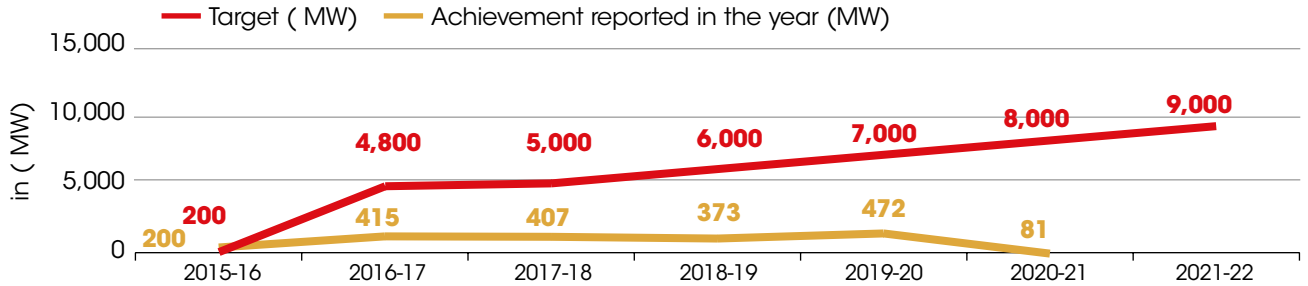


# ROOFTOP SOLAR

Since 2015-16, the Centre has never been able to cross the figure of 500 MW installed solar rooftop capacity in any year even though the target has progressively been increased

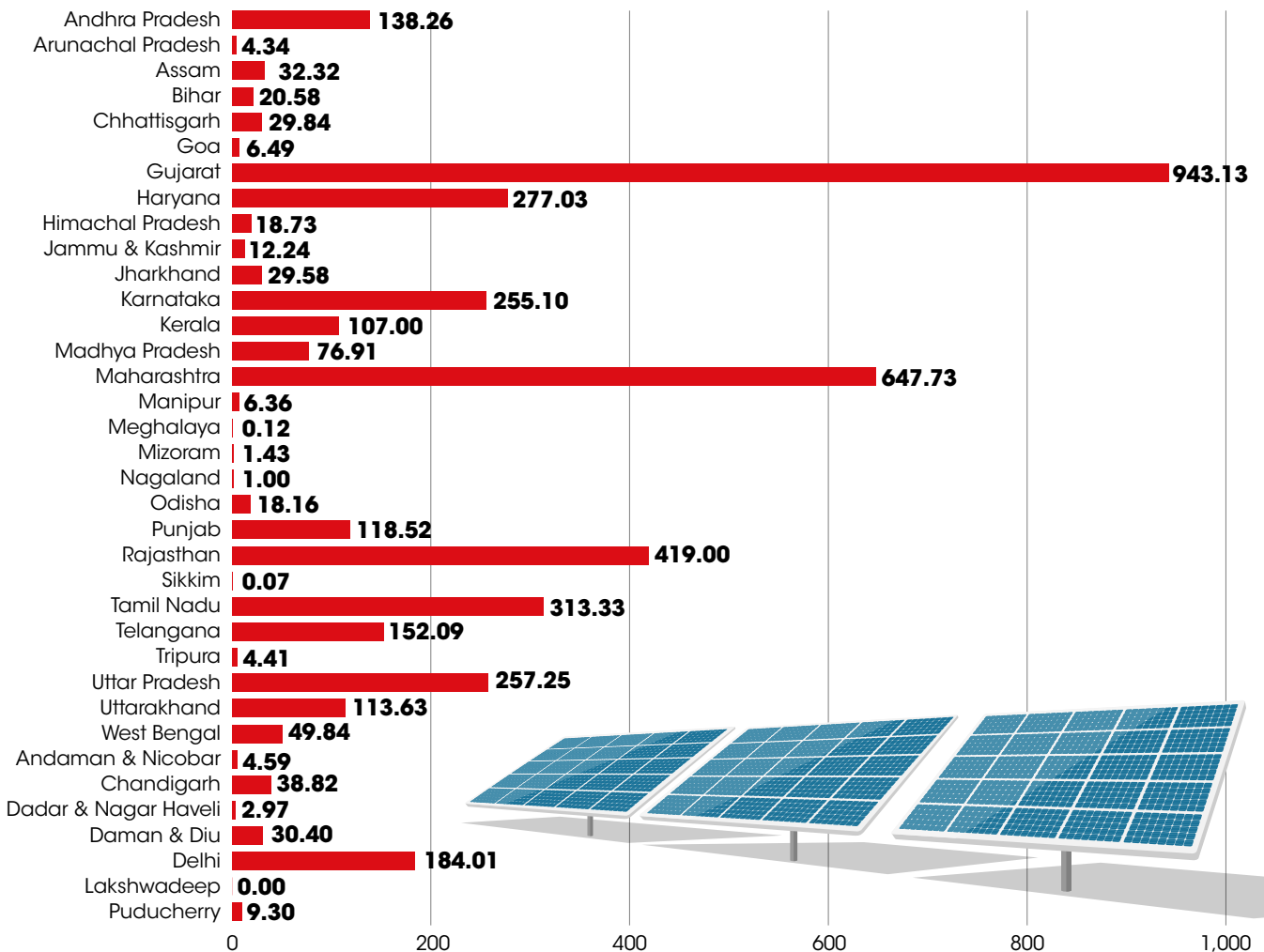
## LITTLE TO SHOW

The gap between the target and the achieved has only widened over the years



## ROOFTOP TROUBLES

India has so far installed 4,324 MW of solar rooftop capacity. Its target is to increase the capacity to 40,000 MW by 2022



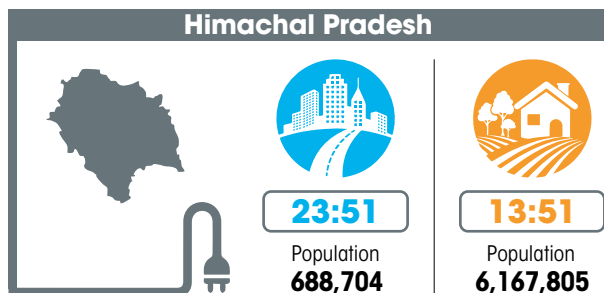
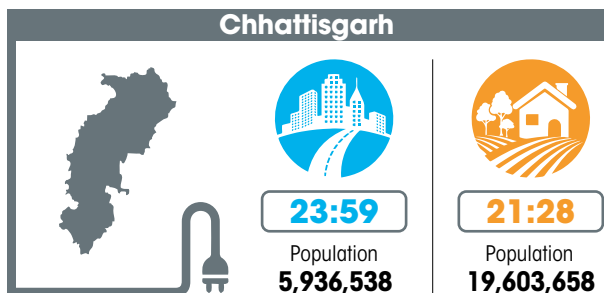
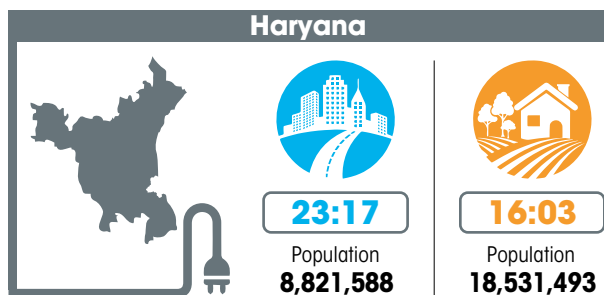
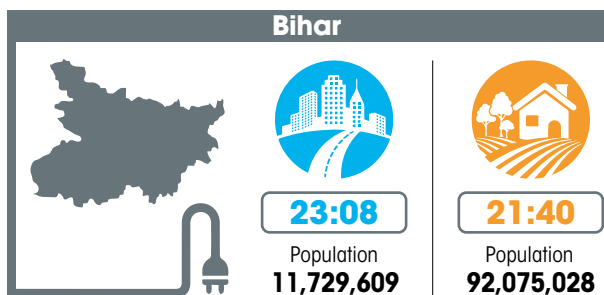
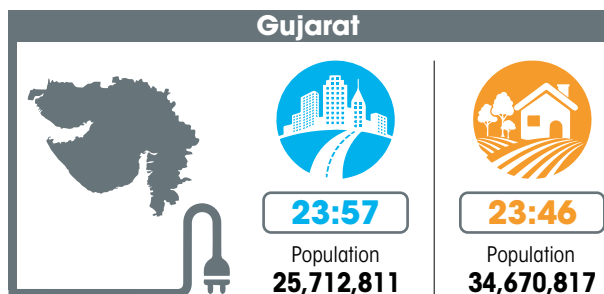
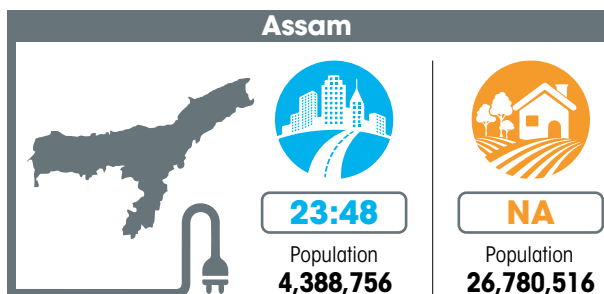
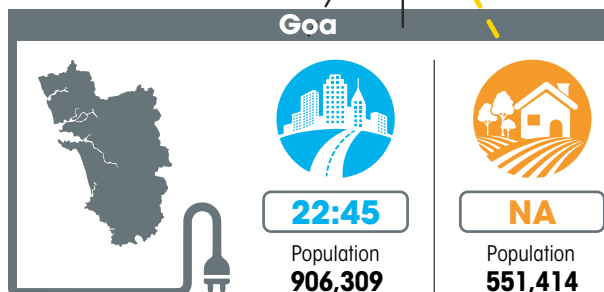
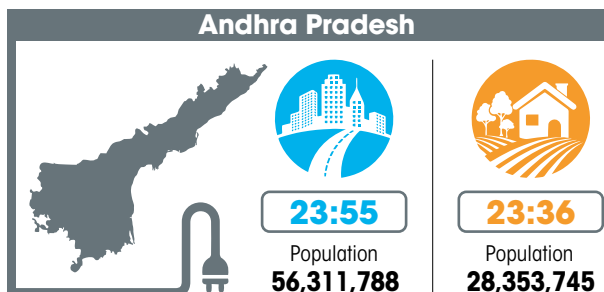
Source: [Ministry of New and Renewable Energy](https://www.pwsc.gov.in/), Updated till February 28, 2021

## ACCESS TO ENERGY

All states and Union Territories (UTs) signed MoUs with the Centre to ensure 24x7 power supply starting April 1, 2019. Two years later, the promise remains unfulfilled, particularly in rural India

**HH:MM**  
Urban average hours of supply in a day

**HH:MM**  
Rural average hours of supply in a day



Source: Union Ministry of Power; Updated till March 25, 2021



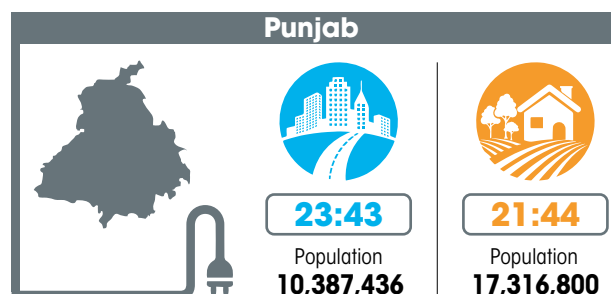
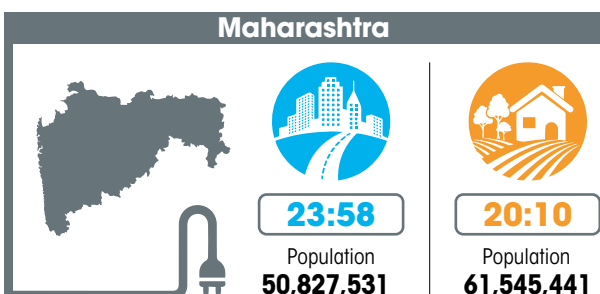
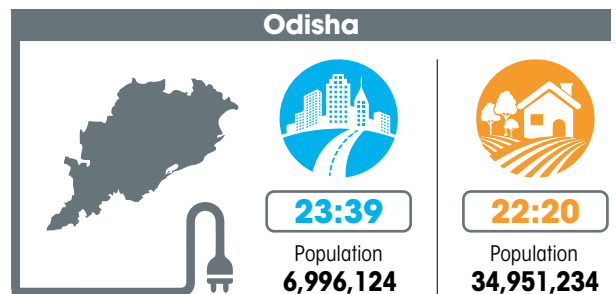
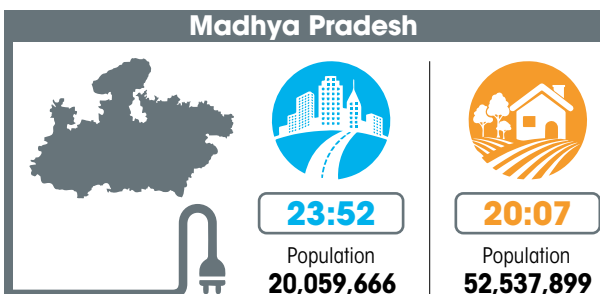
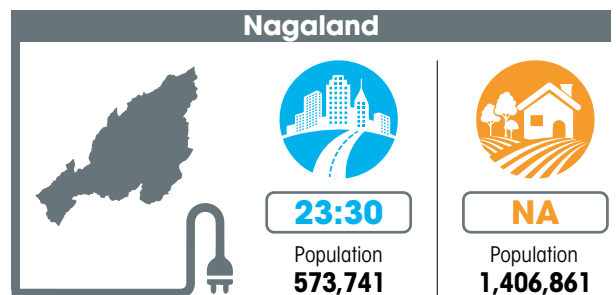
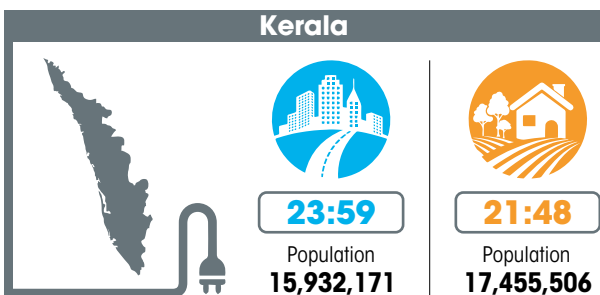
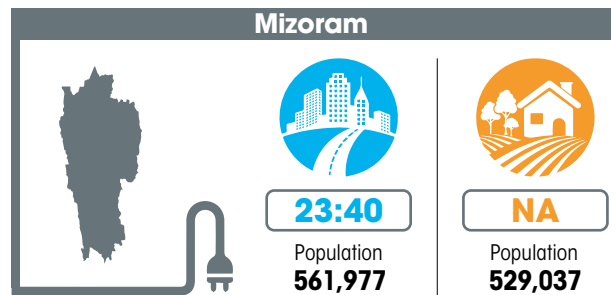
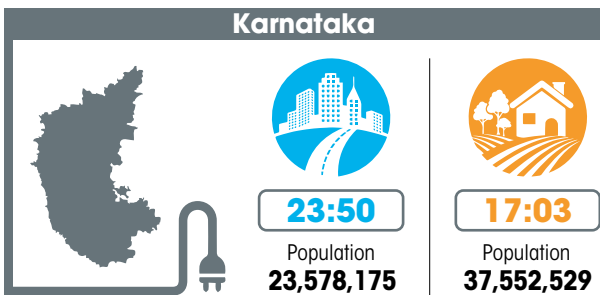
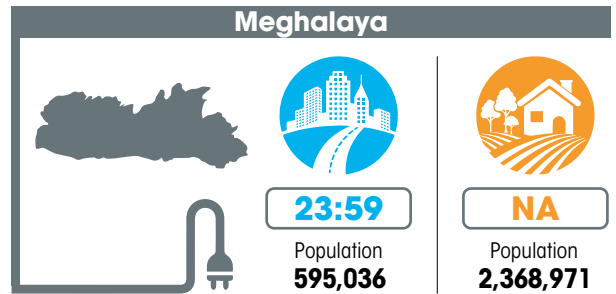
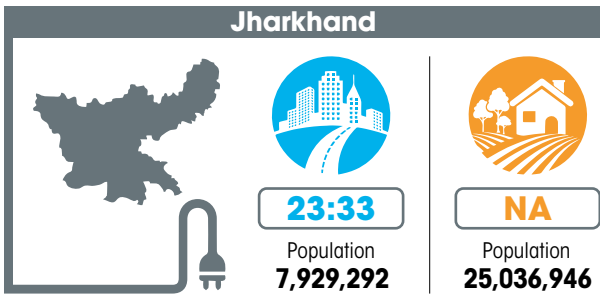
HH:MM

Urban average hours of supply in a day



HH:MM

Rural average hours of supply in a day





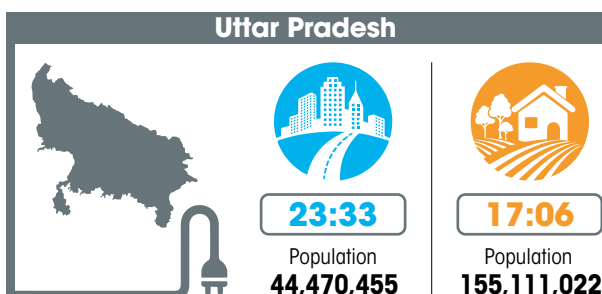
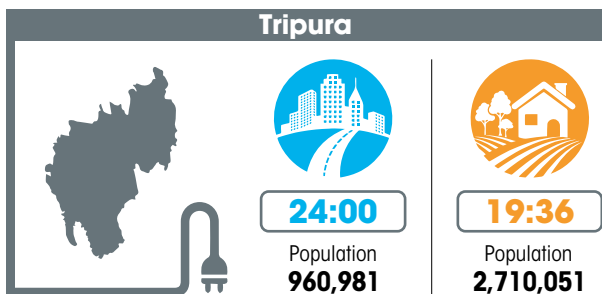
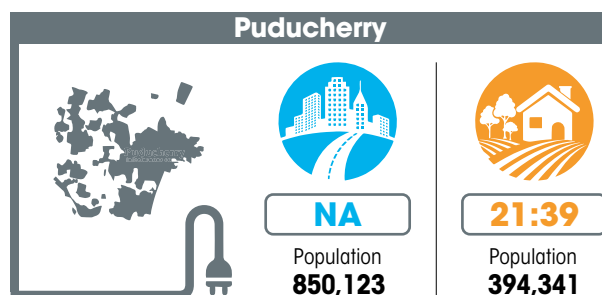
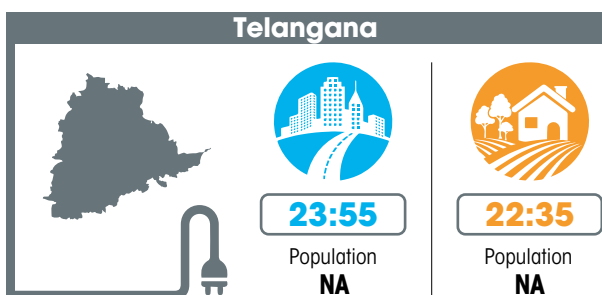
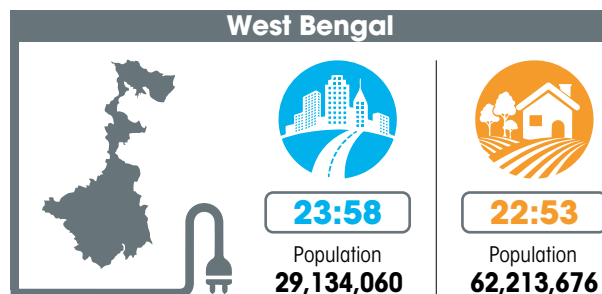
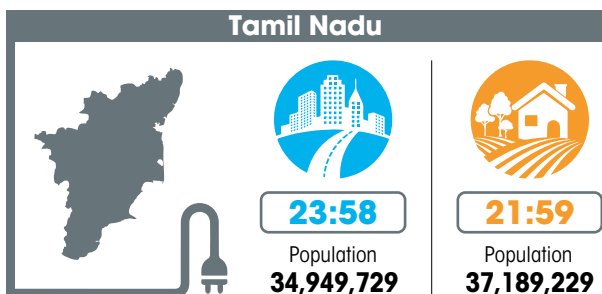
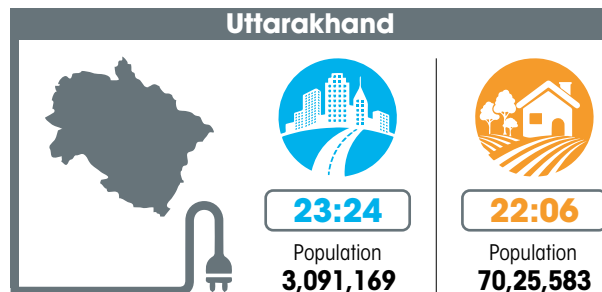
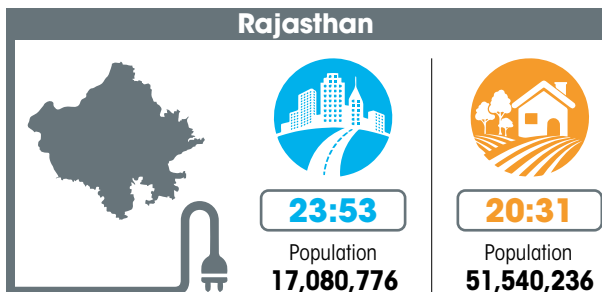
**HH:MM**

Urban average hours of supply in a day



**HH:MM**

Rural average hours of supply in a day



Source: Union Ministry of Power; Updated till March 25, 2021; Census

## RESOURCES

### IN NEWS

#### [Renewable energy in India: Capacity addition halved in 2020 | May 12, 2021](#)

The sector may get a boost following proposed reforms worth 40 billion dollars to improve health of discoms

#### [Distributed renewable energy: How to make it work for India | May 11, 2021](#)

DRE projects have greater scalability and offer substantive co-benefits; they need a more favourable regulatory and policy environment

#### [Union Budget 2021-22: India to launch Hydrogen Energy Mission | February 1, 2021](#)

With the announcement, India has joined the race for producing the next big energy source

#### [Clean push: Why compressed biogas has an edge over CNG | January 20, 2021](#)

CBG can replace CNG as a transport and industrial fuel, while dissuading farmers from setting fire to paddy stubble

#### [India can push up renewable energy the most after COVID-19: IEA | November 12, 2020](#)

The agency expects India to double its green energy capacity addition next year from 2020 levels

#### [India to lead global energy demand over next decade: New report | October 13, 2020](#)

Renewables will meet 80 per cent of global electricity demand growth over next decade with hydropower remaining largest renewable source

and solar being main source of growth, followed by onshore and offshore wind

#### [Countries move away from coal even as India moves towards it | July 6, 2020](#)

Germany, Japan, Spain and the US have all decided to move to renewable energy

### REPORTS/PUBLICATIONS

#### [Rebooting renewable energy certificates for a balanced energy transition in India| Council on Energy, Environment and Water \(CEEW\)| May 2021](#)

This study provides a comprehensive overview of India's Renewable Energy Certificate (REC) mechanism and outlines key trends in its evolution since 2010

#### [The future of distributed renewable energy in India| Climate Policy Initiative| May 2021](#)

This report outlines the benefits and market potential of India's DRE sector, examines the current policy and institutional landscape

#### [Seventeenth report on action plan for achievement of 175 Gigawatt \(GW\) renewable energy target: Standing Committee on Energy \(2020-21\)| Lok Sabha Secretariat | March 2021](#)

This is a report on Action Plan for achievement of 175 Gigawatt (GW) Renewable Energy Target' relating to the Ministry of New and Renewable Energy

## RESOURCES

[State of the decentralized renewable energy sector in India 2019/20 | CLEAN | November 2020](#)

The report presents an overview of the developments in the DRE sector for the financial year

[Renewable energy market update: outlook for 2021 and 2022 | International Energy Agency \(IEA\) | May 2021](#)

This report forecasts new global renewable power capacity additions for 2021 and 2022

[Renewable capacity statistics 2021 | International Renewable Energy Agency \(IRENA\) | April 2021](#)

The report presents renewable power generation capacity statistics for the past decade (2011-2020)

[Renewables in Cities 2021 Global Status Report | REN21 Secretariat | March 2021](#)

The 2021 edition of REN21's Renewables in Cities Global Status Report, the only stocktaking of cities: energy transition efforts worldwide, shows that one billion people live in cities with a renewable energy target or policy

# State of Biodiversity

---

## **Ecosystem services**

14 states/UTs registered a drop in the carbon retention services of their forests between 2015-16 and 2017-18



## **Forest fires**

Odisha, Madhya Pradesh, Chhattisgarh, Uttarakhand and 12 other states have seen a significant rise in alerts this year



## **Threatened species**

12 per cent of India's 1,212 animal species in the IUCN red list are endangered

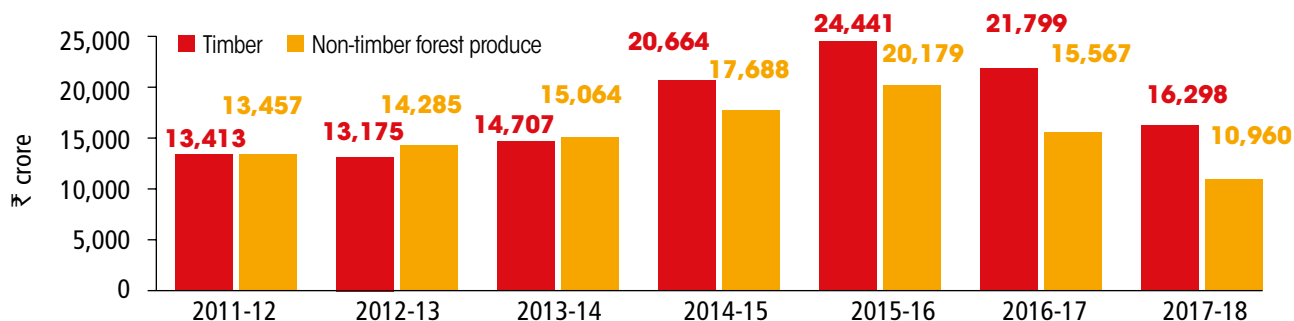


## **Biodiversity hotspots**

India has lost 90 per cent of the area under its four biodiversity hotspots

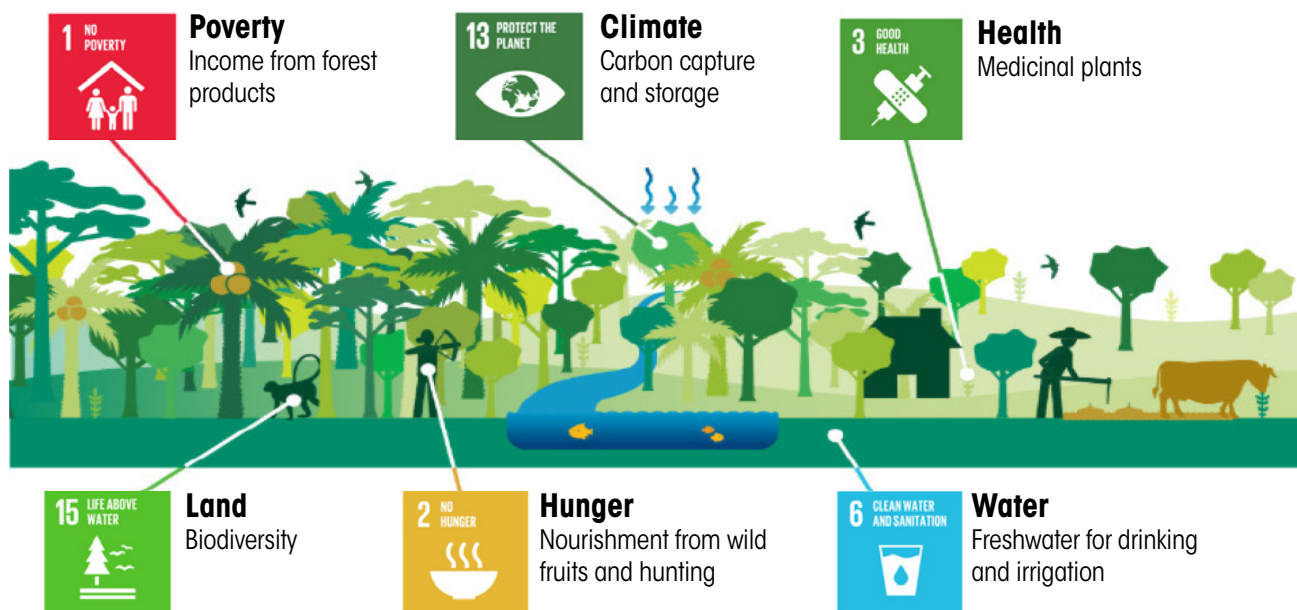
# ECOSYSTEM SERVICES

Timber and non-timber forest produce services in Indian forests are on a downward trend, suggesting overexploitation of the resources



## What are forest ecosystem services?

Forests, like all other ecosystems, bring direct or indirect economic, materialistic, physiological, psychological, emotional or social advantages to the human population. In fact, targets under six Sustainable Development Goals are related to forestry activities



## How they are measured

Forest ecosystem services broadly include three components:

**Timber provisioning service**-Defined as the contribution of ecosystem assets (forest, other wooded areas) to the production of timber by forestry.

**Non-timber forest produce (NTFP) provisioning service**-Defined as a provisioning service for products other than timber that are produced in forests. NTFPs include plants used for food, beverages, forage, fuel, medicine, fibres and biochemicals; animals, birds and fish for food, fur and feathers; as well as their products such as honey, lac and silk.

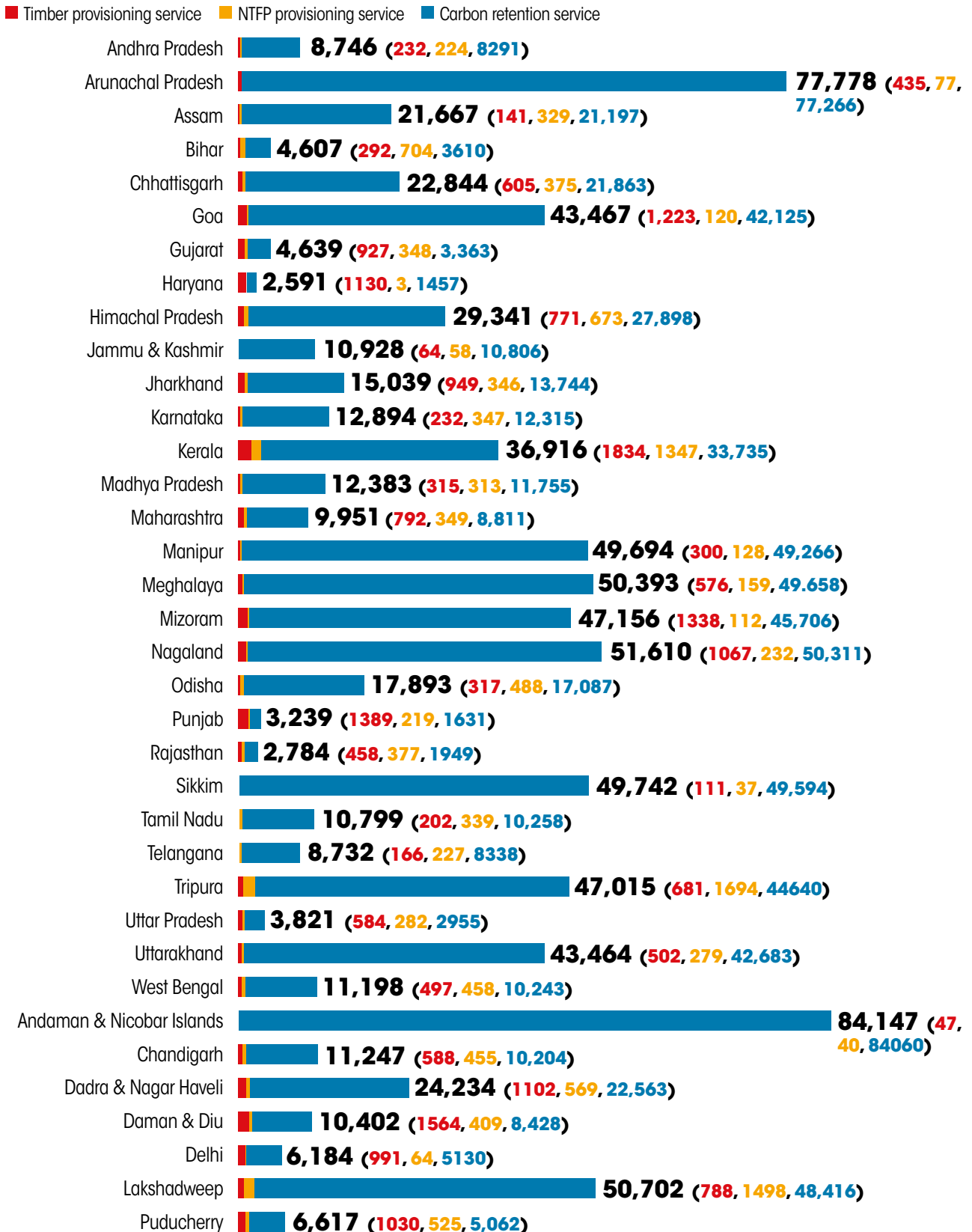
**Carbon retention service**-Defined as estimates of annual service flow derived from the carbon stocks using a suitable rate of return (to create an annuity).

Source: [EnviStats India 2020](#), Ministry of Statistics and Programme Implementation



# Northeast, Andaman forests have highest economic value

Economic value (in ₹ per hectare) from forest ecosystem services during 2017-18

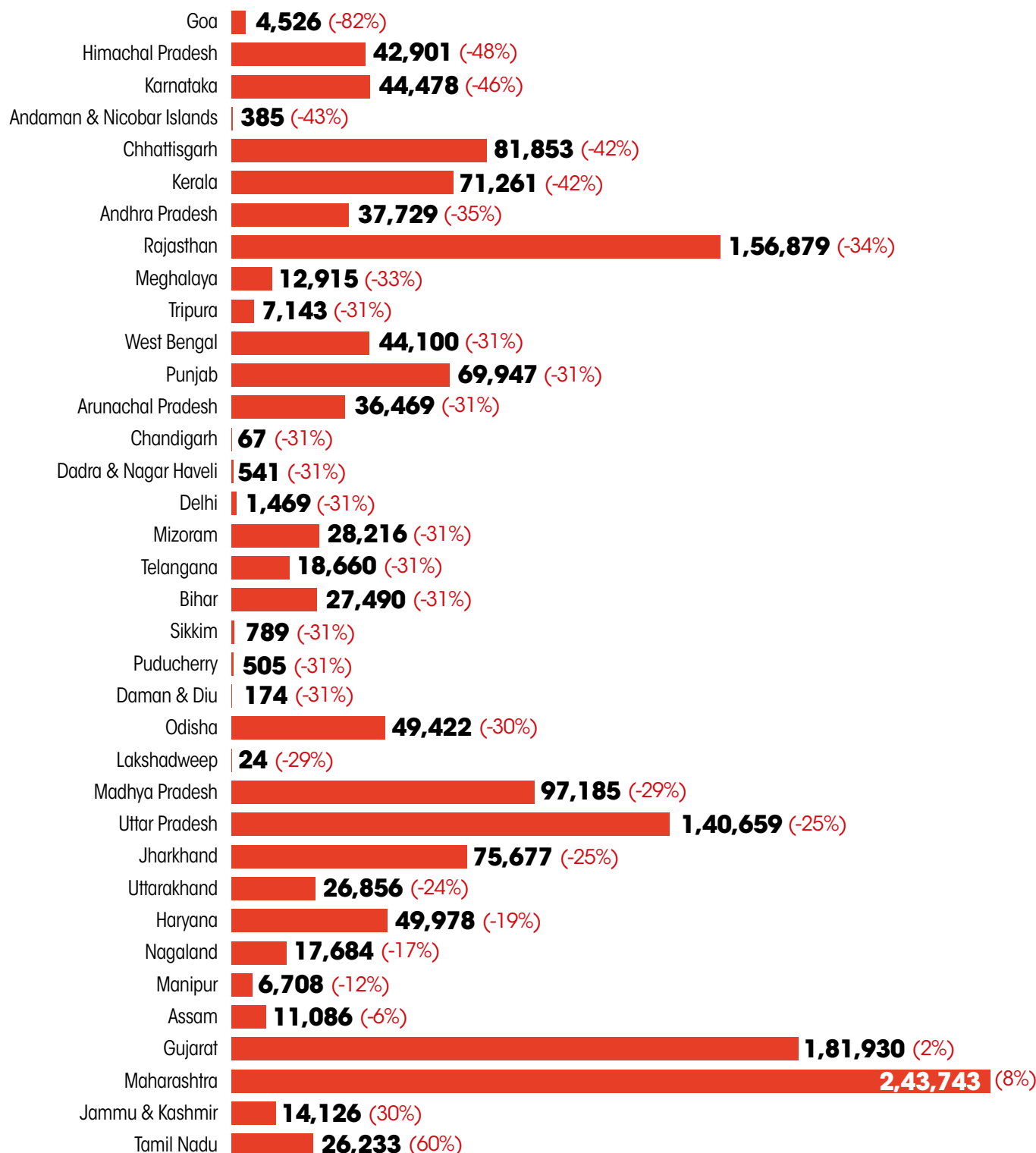


## 32 states/UTs see a drop in value of timber ecosystem

Tamil Nadu, Jammu and Kashmir, Gujarat and Maharashtra have registered a growth

■ Value of timber provisioning services in 2017-18 in ₹ lakh

( ) % change between 2016-17 and 2017-18

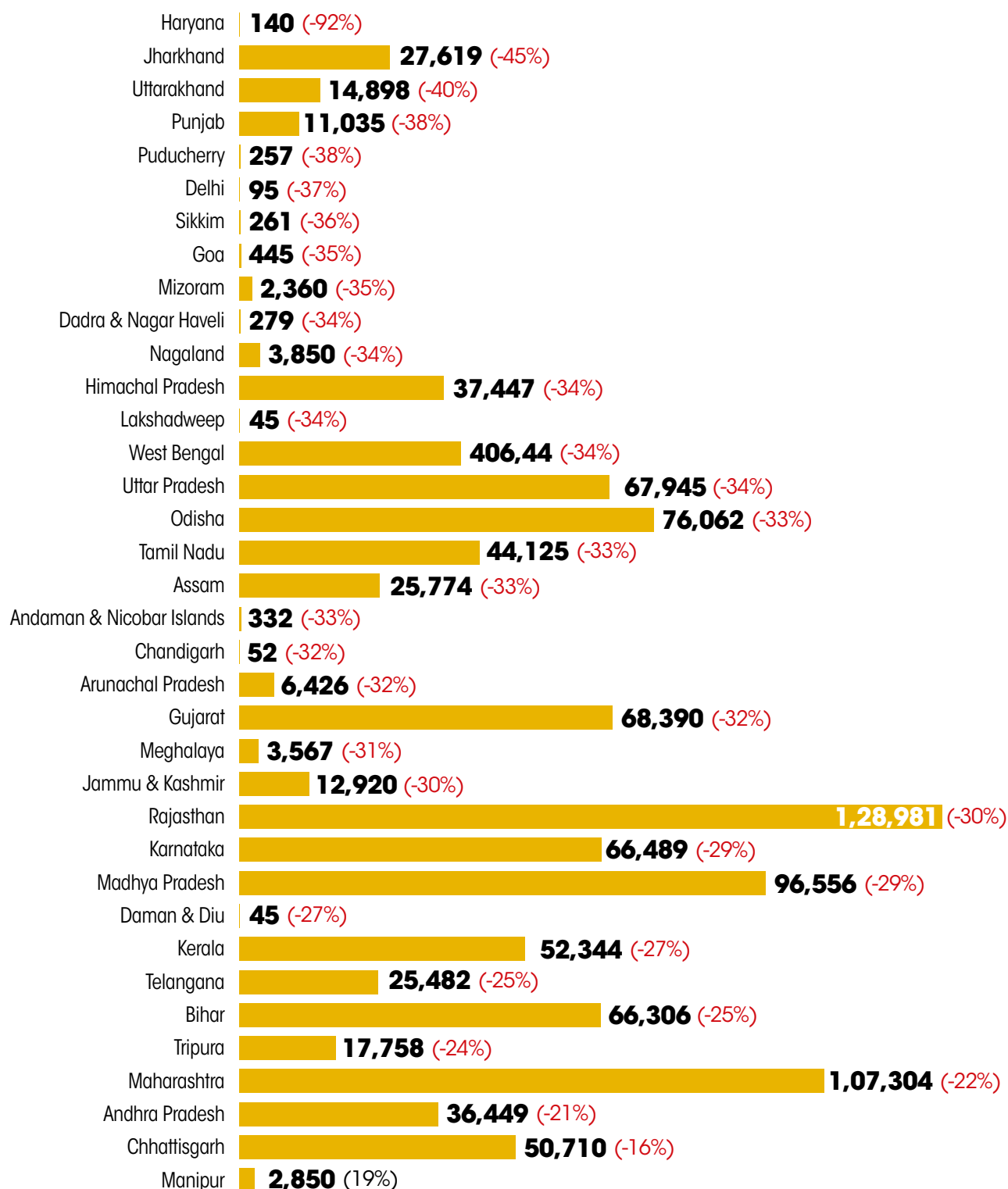


Source: [EnviStats India 2020](#), Ministry of Statistics and Programme Implementation

## All states/UTs except Manipur see a drop in NTFP value

25 of them have registered a drop of 30 per cent or more

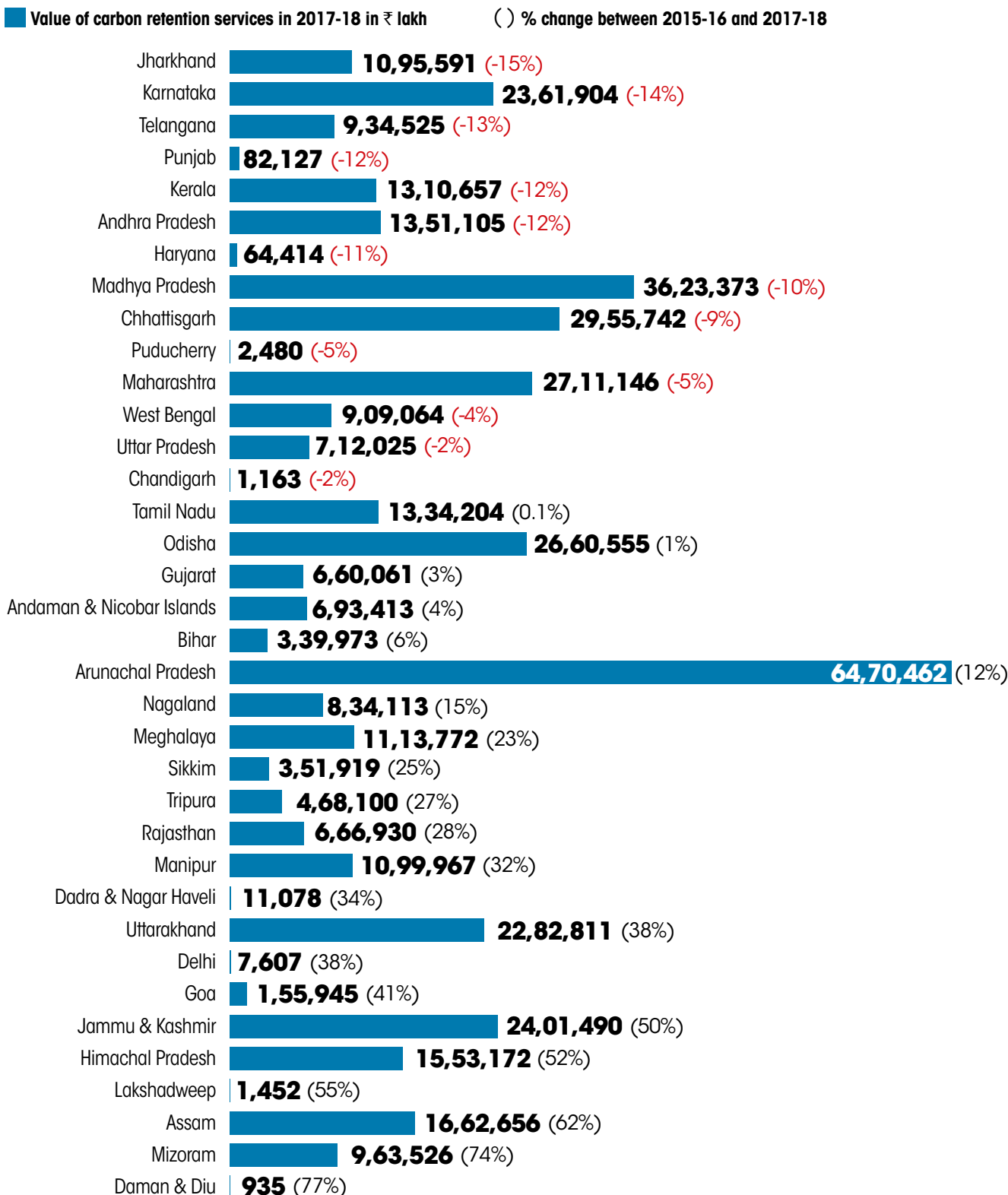
■ Value of NTFP provisioning services in 2017-18 in ₹ lakh    ( ) % change between 2016-17 and 2017-18



Source: [EnviStats India 2020](#), Ministry of Statistics and Programme Implementation

## 14 states/UTs see a drop in carbon retention services

Most populous states/UTs have registered a dip in the two years

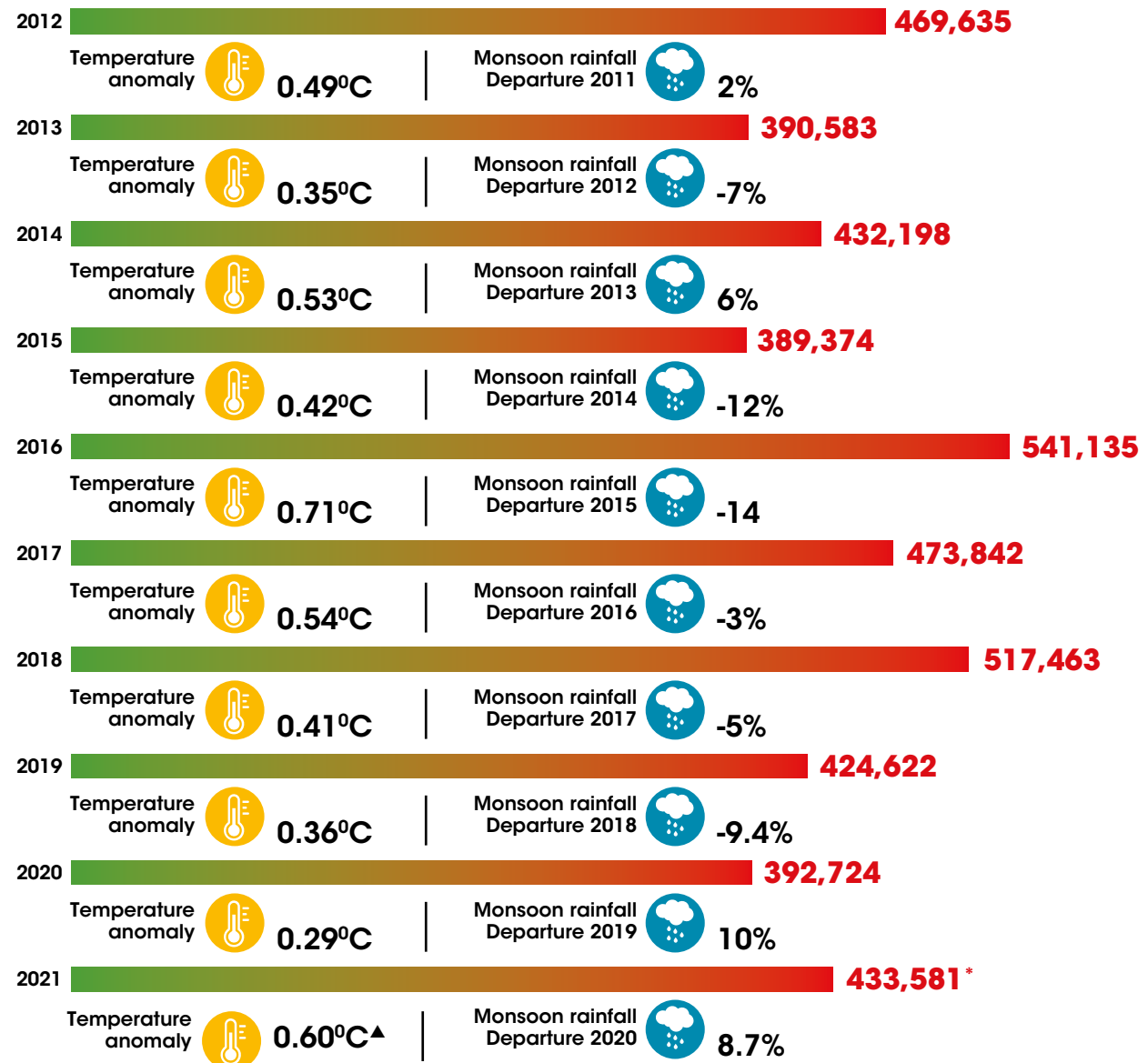


Source: [EnviStats India 2020](#), Ministry of Statistics and Programme Implementation

# FOREST FIRES

India has seen a drastic rise in forest fires since the start of 2021. As of May 1, the number of fire alerts recorded by the Visible Infrared Imaging Radiometer Suite (VIIRS) is 433,581. This is quite a jump, even though the official forest fire season of the country is from February to June. Forest fires are influenced by temperature and rainfall in the preceding monsoon. The year 2016, the hottest on record when India's annual temperature rose 0.71°C over the annual average of 25°C, saw 541,135 forest fires—the most in a decade. Rainfall during the 2015 monsoon was 765.8 mm, 14 per cent less than the normal 880 mm, as per the India Meteorological Department. In 2021, too, India sees unusually warm weather along with 8.7 per cent surplus rainfall last monsoon that leaves adequate humidity for fires to spread

## No. of forest fire alerts



Note: \* as on May 1, 2021; ▲Average of monthly temperature anomaly from January to April 2021, as released by IMD  
Forest fires data considered from 2012 onwards as that is when India began using VIIRS for forest fire alerts

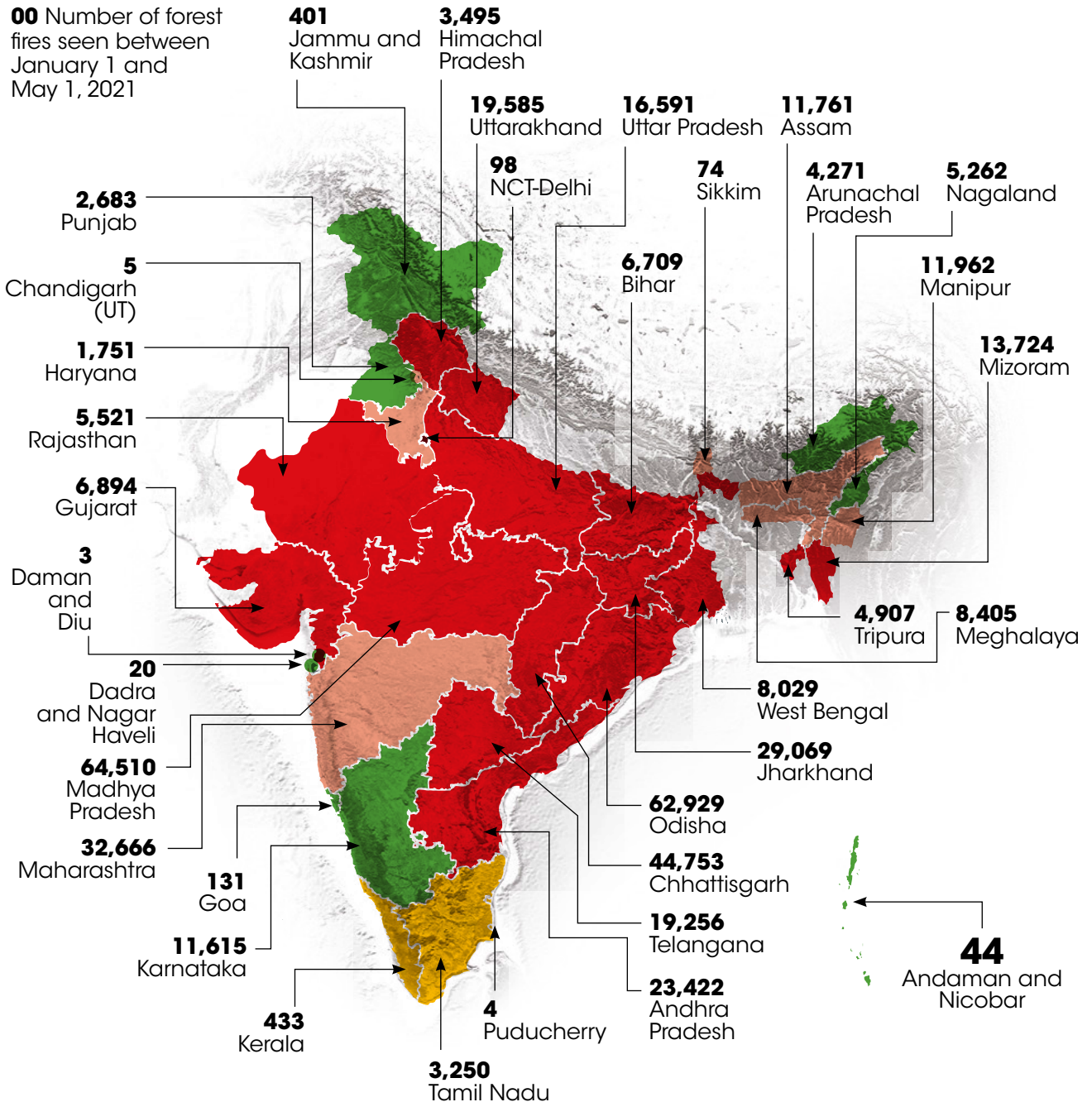
Source: [Global Forest Watch using VIIRS alerts](#); [Statement on Climate of India during 2020](#), IMD; [EnviStats India 2020](#), Ministry of Statistics and Programme Implementation

# SKewed DISTRIBUTION

The number of forest fire alerts varies across different regions. Sixteen states have seen a significant rise in alerts, including Odisha, Madhya Pradesh, Chhattisgarh and Uttarakhand. However, the southern states of Tamil Nadu and Kerala saw fewer alerts than usual

■ Unusually high ■ High ■ Normal ■ Low

00 Number of forest fires seen between January 1 and May 1, 2021



Source: [Global Forest Watch using VIIRS alerts](#)

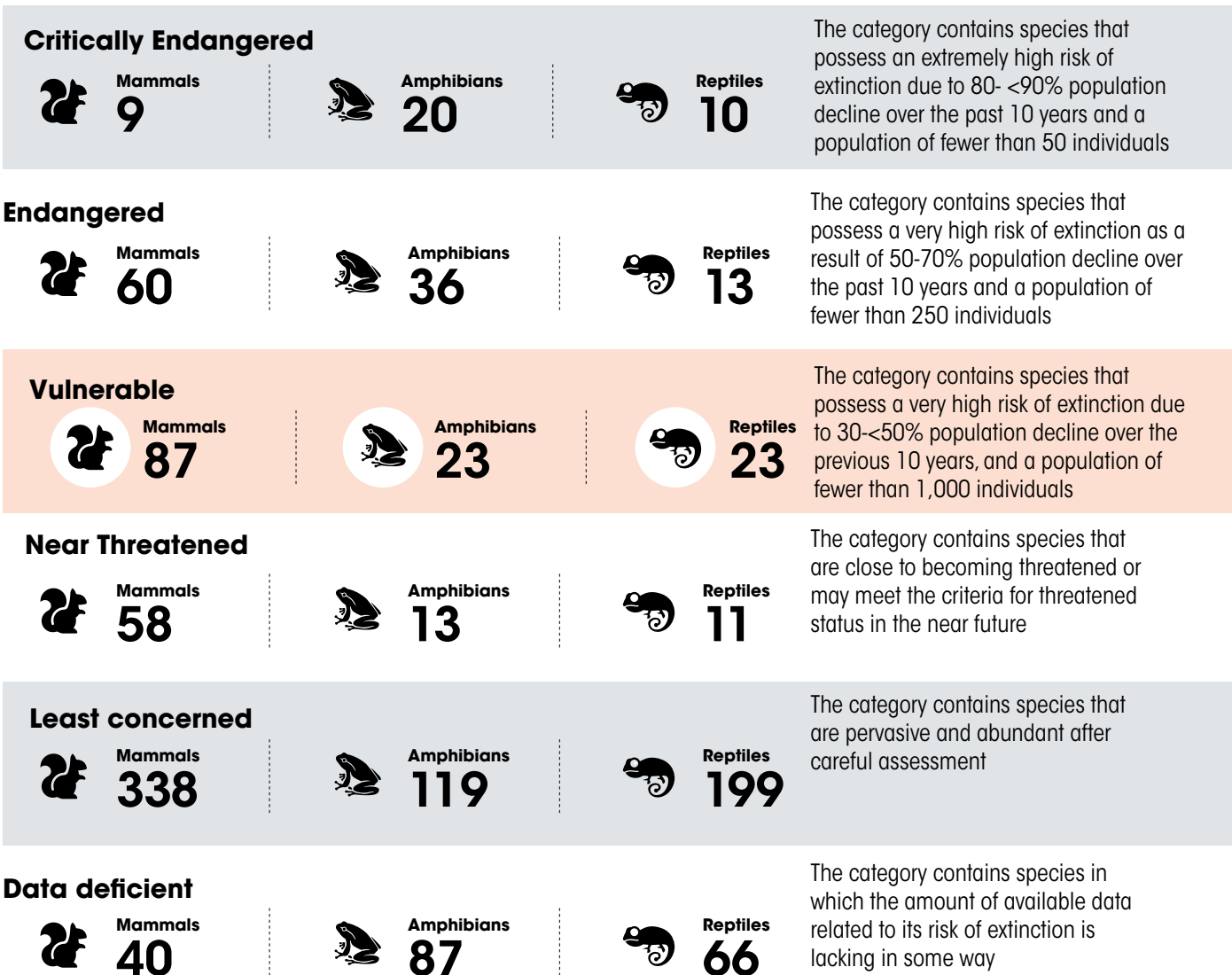
# THREATENED SPECIES

India, a mega-diverse country with only 2.4 per cent of the world's land area, accounts for 7-8 per cent of all recorded species, including over 45,000 species of plants and 91,000 species of animals. The IUCN Red List monitors 1,212 animal species in India and over 12 per cent of them are endangered

OF THE 148 ENDANGERED SPECIES IN INDIA:

**69** are mammals | **56** are amphibians | **23** are reptiles

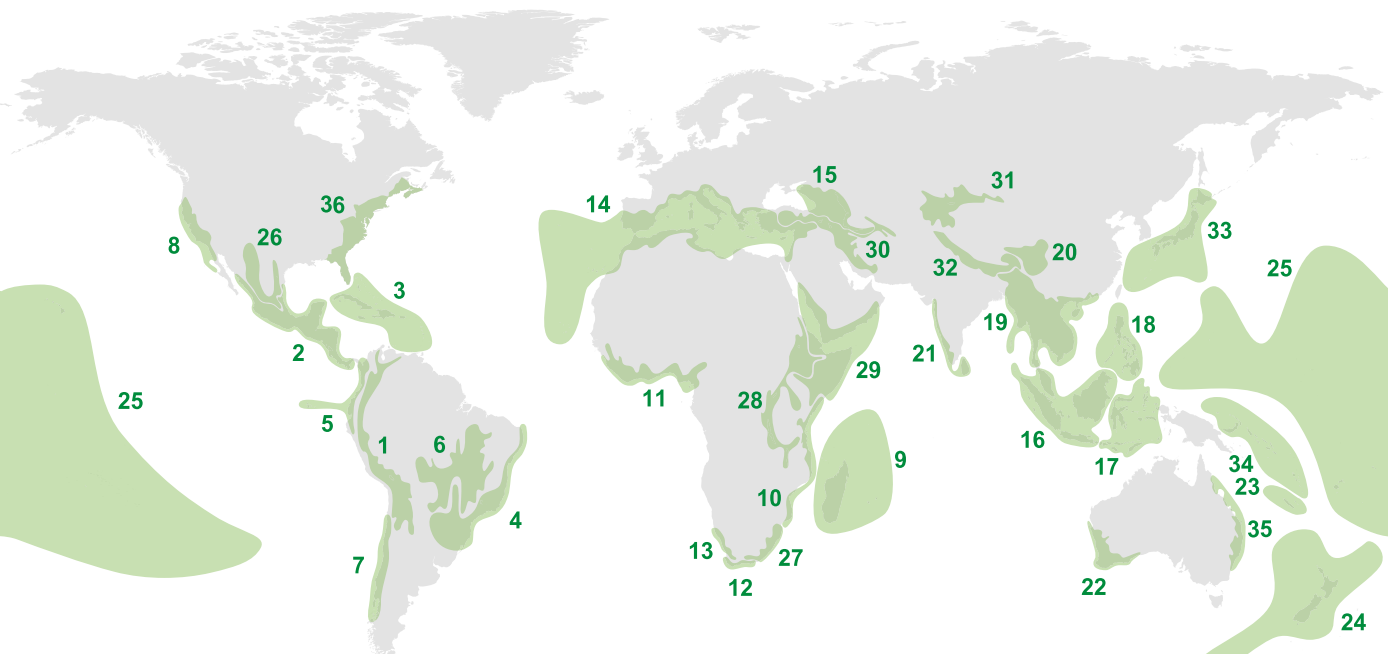
**The IUCN Red List of Threatened Species** is the world's most comprehensive inventory of the global conservation status of plant and animal species and contains almost 134,400 species. It uses a set of criteria to evaluate the extinction risk of thousands of species and subspecies. These criteria are relevant to all species and all regions of the world. More than 82 per cent of these (>111,000 species) have spatial data



Source: [IUCN Spatial Database](#); As on August 30, 2021

# SHRINKING HOTSPOTS

The four biodiversity hotspots in India have been reduced to less than 10 per cent of their original extent



## THE 36 BIODIVERSITY HOTSPOTS

1. The Tropical Andes 2. Mesoamerica 3. The Caribbean Islands 4. The Atlantic Forest 5. Tumbes-Chocó-Magdalena 6. The Cerrado 7. Chilean Winter Rainfall-Valdivian Forests 8. The California Floristic Province 9. Madagascar and the Indian Ocean Islands 10. The Coastal Forests of Eastern Africa 11. The Guinean Forests of West Africa 12. The Cape Floristic Region 13. The Succulent Karoo 14. The Mediterranean Basin 15. The Caucasus 16. Sundaland 17. Wallacea 18. The Philippines 19. Indo-Burma 20. The Mountains of Southwest China 21. Western Ghats and Sri Lanka 22. Southwest Australia 23. New Caledonia 24. New Zealand 25. Polynesia and Micronesia 26. The Madrean Pine-Oak Woodlands 27. Maputaland-Pondoland-Albany 28. The Eastern Afromontane 29. The Horn of Africa 30. The Irano-Anatolian 31. The Mountains of Central Asia 32. Eastern Himalaya 33. Japan 34. East Melanesian Islands 35. The Forests of East Australia 36. North American Coastal Plain

## Limited protection

While two of the hotspots are completely notified as protected areas, two others are only partially protected

|  | Western Ghats | Sundaland | Indo-Burma Region | The Himalaya |
|--|---------------|-----------|-------------------|--------------|
| Hotspot Original extent (km <sup>2</sup> )         | 189,611       | 1,501,063 | 2,373,057         | 741,706      |
| Hotspot vegetation remaining (km <sup>2</sup> )    | 43,611        | 100,571   | 118,653           | 185,427      |
| Extinct species                                    | 20            | 4         | 1                 | 0            |
| Human population density (people/km <sup>2</sup> ) | 261           | 153       | 134               | 123          |
| Area protected (km <sup>2</sup> )                  | 26,130        | 179,723   | 235,758           | 112,578      |

Source: [Ecosystem Accounts for India](#), Union Ministry of Statistics and Programme Implementation



## RESOURCES

### IN NEWS

#### [Planting trees to protect tiger habitat in Maharashtra](#)

A safe forest corridor was critical for the facilitation of tiger dispersal between Kanha and Pench Tiger Reserves, the organisation said

#### [Odisha saw spike in king cobra sightings in human habitations since October 2019](#)

Forest fires, human activity in their natural habitats and lack of prey could be possible reasons for straying

#### [Marine pollution, coastal development: Coral reefs need to be saved](#)

Coral reefs face mounting threats: 10% of them have degraded across the globe, another 30% may disappear within next 20 years

#### [Over 15,000 hectares under illegal prawn enclosures: Chilika Development Authority](#)

Rampant unlawful prawn culture is destroying the ecology of the lake, say environmentalists

#### [Tribal ministry panels draft fresh guidelines for community forest, habitat rights](#)

Gram Sabhas may get more power in managing community forest, habitat

#### [As Jaisalmer villagers fight for sacred grove, a larger question looms](#)

Allocation of village land for the development of solar and wind parks at the cost of pasture land is detrimental for villages

#### [Afforestation: How we planted 8,000 trees and almost killed ourselves](#)

For decades, humans have prioritised development over environment and the consequences have been

devastating

#### [Uttarakhand opens biodiversity park in Haldwani to encourage conservation](#)

The state's rich botanical heritage is facing threats from climate change, degrading landscapes, habitat loss and development activities

#### [NGT wants underground power lines, bird diverters at Great Indian Bustard habitat](#)

Tribunal also wants assessment of biodiversity impact of solar projects

#### [Report flags violations in creation of India's first critical wildlife habitats](#)

CWH notification was first initiated in 54 of Maharashtra's 55 protected areas, where rights of forest dwellers can be recognised under Forest Rights Act, 2006

#### [India bats for safekeeping elephant habitats, but is it ready itself?](#)

India proposes putting Asian / Indian elephants in Appendix I of CMS CoP 13 in Gandhinagar

### REPORTS/PUBLICATIONS

#### [Status of leopards in India, 2018| National Tiger Conservation Authority| December 2020](#)

India had 7,910 leopards as per the estimates of 2014 which increased to 12,852 in the 2018 estimates says the report

#### [Indian wildlife amidst the COVID-19 crisis: An analysis of status of poaching and illegal wildlife trade| TRAFFIC | June 2020](#)

This analysis finds a significant increase in reported poaching of wild animals in India during the lockdown

## RESOURCES

### [Building biodiversity: the natural resource management approach| UNEP| May 2021](#)

The report features four principles to turn biodiversity loss into biodiversity value through Natural Resource Management

### [Protected Planet Report 2020: Tracking progress towards global targets for protected and conserved areas| UNEP| May 2021](#)

This biennial landmark publications assesses the state of protected and conserved areas around the world

### [The Global Biodiversity Outlook 5 \(GBO-5\)| Secretariat of the Convention on Biological](#)

### [Diversity| September 2020](#)

This report is a final report card on progress against the 20 global biodiversity targets agreed in 2010 with a 2020 deadline, and offers lessons learned and best practices for getting on track

### [Critical Wildlife Habitat: What is it, how should it be implemented, and how is it being pushed through? | Ashoka Trust for Research in Ecology and the Environment | September 2020](#)

This report seeks to clarify in simple language the core legal provisions relating to CWH, their interpretation, and the processes that would be necessary for their proper implementation on the ground

# State of Water

---

## **River quality**

During the 2020 lockdown, the water quality in Ganga and four other rivers worsened



## **Melting glaciers**

There are 39 glaciers that have seen a significant increase in area and are highly disaster-prone

# RIVER QUALITY

Contrary to the general belief, the water quality of India's 19 major rivers did not improve significantly during the COVID-19 lockdown. While Ganga and four other rivers became dirtier, the water quality in another seven rivers remained unchanged.

% of monitoring locations fit for outdoor bathing

**XX** Pre lockdown (March 2020)

**XX** Lockdown (April 2020)

## 4

rivers showed 100 per cent compliance with the primary water quality criteria for outdoor bathing during pre-lockdown and lockdown period.

**Baitarni, Mahanadi, Narmada and Pennar**

## 7

rivers showed improvement in water quality during lockdown

**Brahmani, Brahmaputra, Cauvery, Godavari, Krishna, Tapi and Yamuna**

## 5

rivers showed deterioration in water quality levels during lockdown

**Beas, Chambal, Ganga, Sutlej and Swarnarekha**

Source: Assessment of Impact of Lockdown on Water Quality of Major Rivers, Central Pollution Control Board

Ghaggar  
0 / 0

Yamuna  
42.8 / 66.7

Chambal  
75 / 46.15

Sabarmati  
55.55 / 55.55

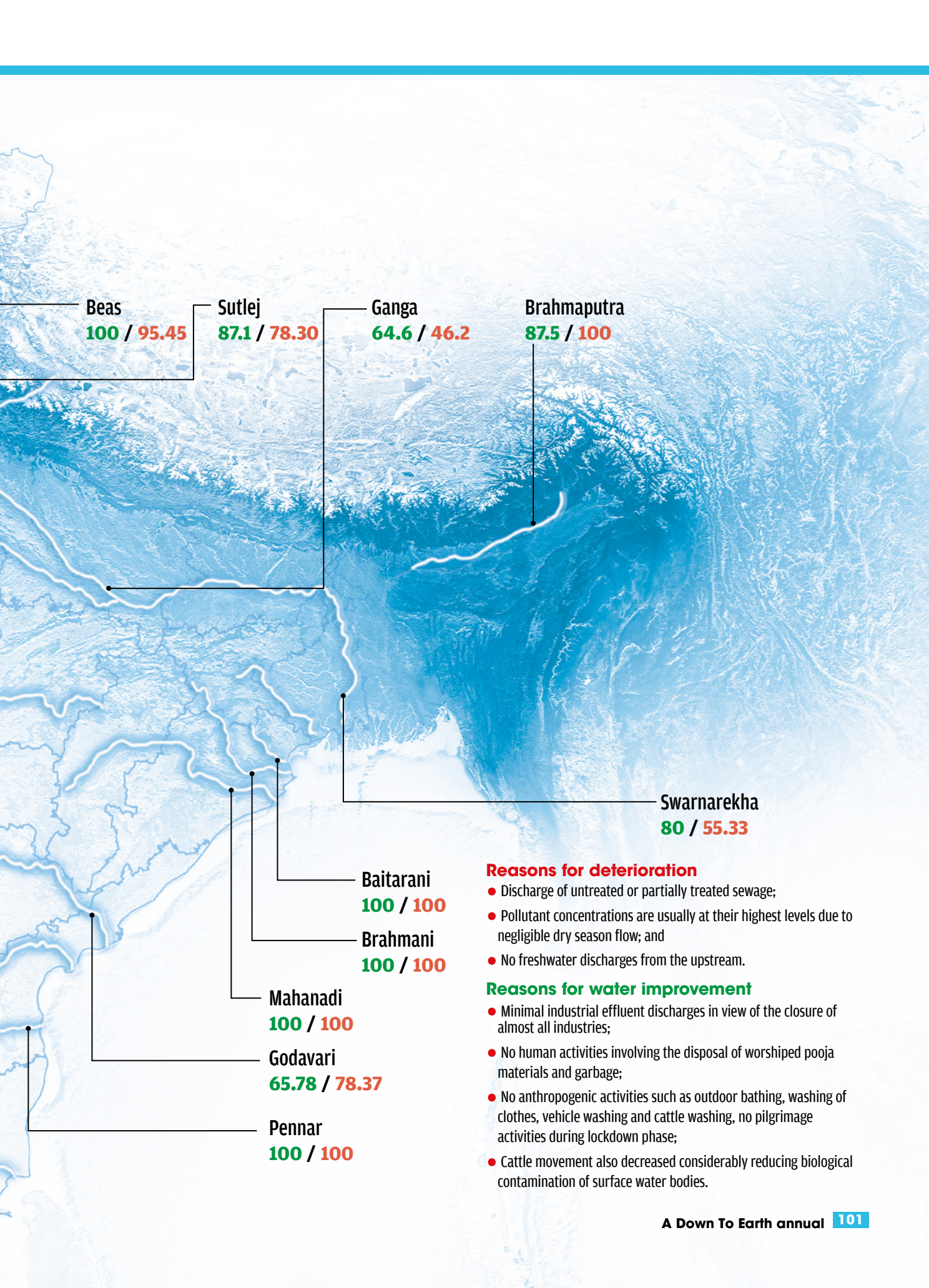
Mahi  
92.85 / 92.85

Narmada  
100 / 100

Tapi  
77.8 / 87.50

Krishna  
84.61 / 94.44

Cauvery  
90.47 / 96.96



Beas  
100 / 95.45

Sutlej  
87.1 / 78.30

Ganga  
64.6 / 46.2

Brahmaputra  
87.5 / 100

Swarnarekha  
80 / 55.33

Baitarani  
100 / 100

Brahmani  
100 / 100

Mahanadi  
100 / 100

Godavari  
65.78 / 78.37

Pennar  
100 / 100

**Reasons for deterioration**

- Discharge of untreated or partially treated sewage;
- Pollutant concentrations are usually at their highest levels due to negligible dry season flow; and
- No freshwater discharges from the upstream.

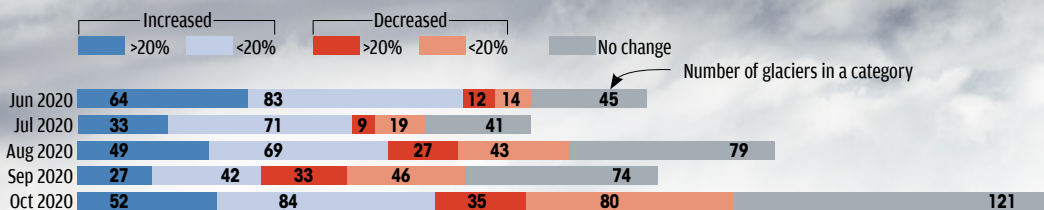
**Reasons for water improvement**

- Minimal industrial effluent discharges in view of the closure of almost all industries;
- No human activities involving the disposal of worshiped pooja materials and garbage;
- No anthropogenic activities such as outdoor bathing, washing of clothes, vehicle washing and cattle washing, no pilgrimage activities during lockdown phase;
- Cattle movement also decreased considerably reducing biological contamination of surface water bodies.

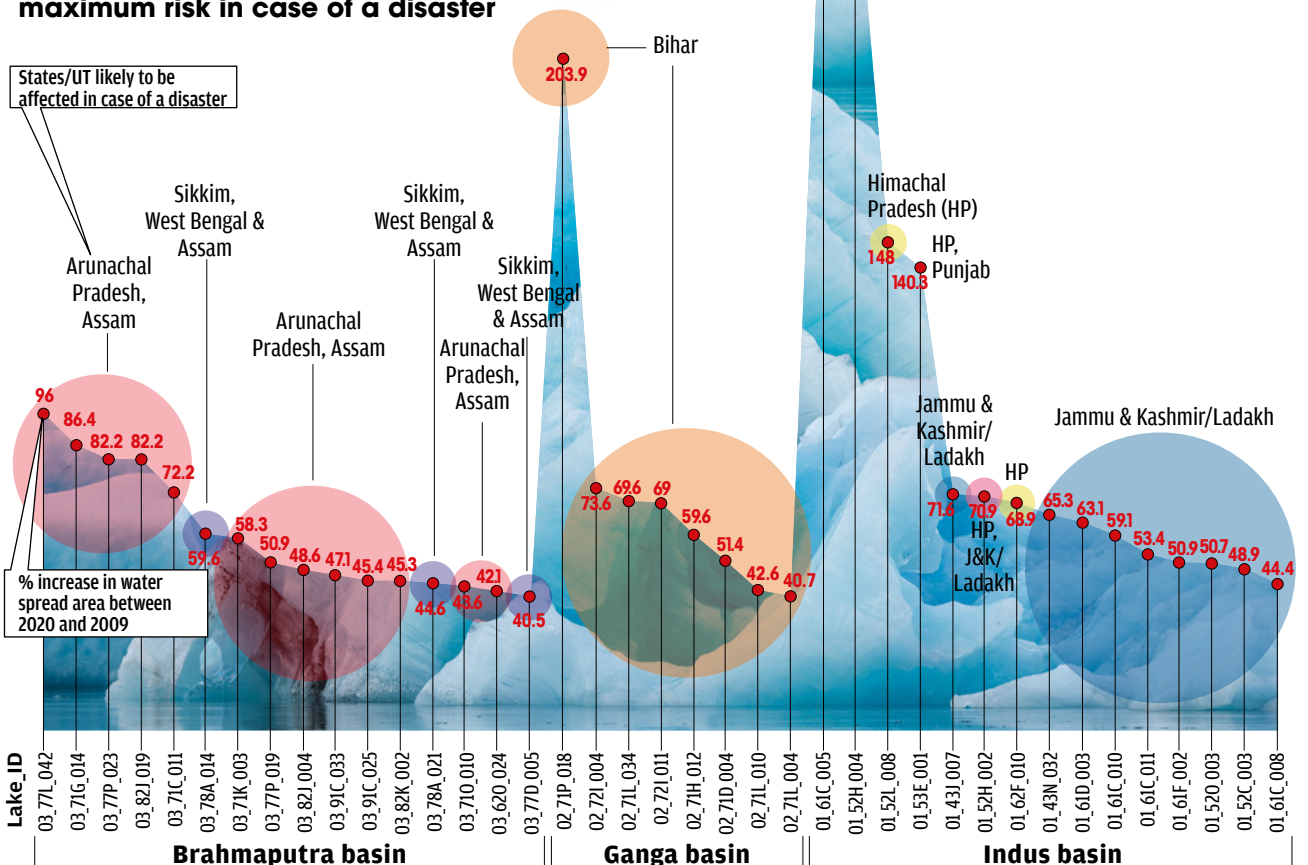
## MELTING GLACIERS

India has 39 glaciers and water bodies that have recorded more than 40 per cent increase in water levels since 2009. They need to be monitored closely to avoid any disasters

**In October 2020, 136 glaciers showed an increase\* in area by 20 per cent**



**Assam (16 glaciers), Arunachal Pradesh (13) and Jammu and Kashmir/Ladakh (10) face the maximum risk in case of a disaster**



Source: Monitoring of Glacial Lakes & Water Bodies in the Himalayan Region of Indian River Basins for the Year 2020 (June to October), Central Pollution Control Board

## RESOURCES

### IN NEWS

#### [Asia-Pacific may achieve just 10% targets of sustainable development goals: UN report | March 16, 2021](#)

Out of 104 measurable targets of the SDGs, the region is on track to reach only nine by 2030, according to the report titled Asia and the Pacific SDG Progress Report, 2021 by UN Economic and Social Commission for Asia and the Pacific

#### [Textile units in Rajasthan's Bhitu Industrial Area continue to pollute groundwater, Luni river: NGT panel](#)

The area's common effluent treatment plant was unfit to treat the effluents from the bleaching units

#### [West Bengal elections: Activists try to push river conservation into agenda](#)

Condition of several rivers in the state critical, puts livelihoods of thousands at risk, flagged environmentalists

#### [River revived: MGNREGA bring Palakkad women to water conservation forefront](#)

India's largest group of women well diggers and a unique river conservation movement

#### [Jammu's youth are trying to save river Tawi but they need support](#)

Tawi, a major source of drinking water for Jammu residents, has turned into a garbage dump

#### [Chamoli glacier burst: Himalayan blunders compounded](#)

The issue is about carrying capacity of the fragile region, which is even more at risk because of climate change

#### [Chamoli glacier burst: It is time to learn from our mistakes](#)

The cumulative effect of hydropower projects has

turned out to be more environmentally damaging than sustainable, given the current policy of the Uttarakhand govt

#### [Glacier breaks in Chamoli, experts blame low snowfall](#)

Use of concrete instead of traditional wood and masonry in the Himalayas is creating a heat-island effect, warming the range, they added

#### [Angry river: How Jadhwal in Assam's Dhemaji is changing livelihoods](#)

The Jadhwal flooded, not once or twice, but several times in 2020. Flood plains were damaged, houses washed away. A solution, however, seems afar

#### [SahibiNadi: How a river was killed](#)

While the death of the Sahibi illustrates the general apathy towards rivers, the same is applicable to every river in India flowing in urban areas

#### [Learning from past mistakes: It's time to save urban rivers](#)

Poorly designed, costly interventions need to be avoided to save river ecology

#### [Watery grave: How garbage, encroachments contaminated Guwahati's only river](#)

Natural and artificial drains in the city get clogged during heavy rains and spill on to the roads

#### [River pollution, conservation: UP's fishing community bears brunt](#)

Regulations of industrial, municipal inflow in Ganga, at the centre of pollution mitigation policies, have dissociated rivers from riverine communities

#### [Untreated effluents released in Mumbai rivers, industries flout norms: Report](#)

The Ulhas and its tributary Waldhuni are among 53 of the most polluted rivers in Maharashtra

## RESOURCES

[COVID-19 lockdown was a breather for Rajasthan's lakes, rivers: Report](#)

Low human intervention, stalled tourism helped improve quality of water bodies in the state

## REPORTS/PUBLICATIONS

[Water resources at a glance 2021| Central Water Commission \(CWC\)| January 2021](#)

This report is a comprehensive source for all data and information on surface water, groundwater and all related aspects

[Ground Water Year Book India 2019-20| Central Ground Water Board| January 2021](#)

This report provides State/UT-wise data on ground water in the country and includes an analysis on the frequency distribution of water levels during different periods and seasonal, annual and decadal fluctuations in water level

[Abstract on water sector-2020| Central Water Commission | December 2020](#)

This report provide a general picture of water resources at the national level

[Reallocating water for India's growth: sectoral withdrawals, water-efficient agriculture, and institutional mechanisms| Council on Energy, Environment and Water| December 2020](#)

This study quantifies the magnitude of water that could be reallocated from irrigation to other sectors in India without compromising agricultural output

[Compendium on sedimentation of reservoirs in India 2020| Central Water Commission \(CWC\)| November 2020](#)

This updated compendium contains data on 369 reservoirs as provided by the project authorities including data of 36 reservoirs survey sing Hydrographic survey and 120 Reservoirs surveyed using Remote Sensing Technique by CWC

[Masterplan for artificial recharge to groundwater in India 2020| Central Ground Water Board| October 2020](#)

The revised master plan for artificial recharge to groundwater has been made for the whole country at the level of district/Block

[World Water Development Report 2021: valuing water| UN Water| March 2021](#)

This report assesses the current status of and challenges to the valuation of water across different sectors and perspectives, and identifies ways in which valuation can be promoted as a tool to help improve its management and achieve global sustainable development

[Turn the tide: the state of the world's water 2021| WaterAid| March 2021](#)

This report shows how people are losing access to clean water as longer droughts dry up springs, seawater infiltrates groundwater supplies and landslides take out water pumps.

[Asian water development outlook 2020: advancing water security across Asia and the Pacific| Asian Development Bank | December 2020](#)

The Asian Water Development Outlook (AWDO) assesses national water security across the Asia and the Pacific, with a focus on five key dimensions: rural, economic, urban, environmental, and water-related disaster.



# State of Cities

---

## **Ease of living**

India has seven cities with an ease of living index above 60. Of these only three are state capitals



## **Untreated sewage**

72 per cent of India's sewage gets dumped untreated. Ten states/UTs do not treat their sewage at all

## LIVABLE CITIES

Capital cities are usually among the most developed in the state. Yet only three state capitals feature in the top 10 list of most livable cities. This suggests our cities are developing in an unsustainable manner

### What is the Ease of Living Index 2020

This is the second edition of the index that was launched in 2018. The current index has seen a significant change over the last index, most noticeable of it is the inclusion of citizen's feedback to understand the livability of Indian cities. The report was released along with the Municipal Performance Index

### What defines a livable city

The index is structured according to **four pillars that represent the broad conceptual elements** that define ease of living in a city:



#### Quality of life

**Weightage: 35%**

Covers education, health, housing and shelter, WASH and solid waste management, safety and security, mobility, recreation

**Best capital city:** Panaji

**Worst capital city:** Srinagar



#### Economic ability

**Weightage: 15%**

Covers level of economic development and economic opportunities

**Best capital city:** Bengaluru

**Worst capital city:** Kohima



#### Sustainability

**Weightage: 20%**

Covers environment, green spaces and buildings, energy consumption, city resilience

**Best capital city:** Shimla

**Worst capital city:** Imphal



#### Citizen perception survey

**Weightage: 30%**

Used to assess the role of administrators

**Best capital city:** Bhubaneswar






**Worst capital city:** Delhi

Source: [The Ease of Living Index 2020](#) by Ministry of Housing and Urban Affairs

# CAPITAL PROBLEMS

Residents of most state capitals have a better perception about their cities than what exists in reality. Almost all the cities fare badly in economic ability suggesting poor growth opportunities

■ 0-30 ■ 31-60 ■ 61-100






| Capital cities     |  Ease of living index |  Quality of Life (out of 100) |  Economic Ability (out of 100) |  Sustainability (out of 100) |  Citizen Perception Survey (out of 100) |
|--------------------|--|--|---|---|--|
| Bengaluru          | 66.7   | 55.67  | 78.82   | 59.97   | 78   |
| Chennai            | 62.61  | 60.84  | 34.16   | 57.05   | 82.6   |
| Shimla             | 60.9   | 53.05  | 23.39   | 69.16   | 83.3   |
| Bhubaneswar        | 59.85  | 51.79  | 11.57   | 57.77   | 94.8   |
| Mumbai             | 58.23  | 51.12  | 32.12   | 60.74   | 77.9   |
| Delhi              | 57.56  | 51.22  | 50.73   | 56.02   | 69.4   |
| Bhopal             | 56.26  | 57.92  | 14.01   | 51.68   | 78.5   |
| Raipur             | 56.26  | 54.74  | 11.73   | 63.77   | 75.3   |
| Gandhinagar        | 56.25  | 55.02  | 15.12   | 51.99   | 81.1   |
| Jaipur             | 55.8   | 47.66  | 10.49   | 57.07   | 87.1   |
| Hyderabad          | 55.4   | 51.28  | 30.05   | 58.69   | 70.7   |
| Agartala           | 55.2   | 47.87  | 3.17  | 60.25   | 86.4   |
| Lucknow            | 55.15  | 51.3   | 10.05   | 54.81   | 82.4   |
| Puducherry         | 54.78  | 52.53  | 8.01  | 50.71   | 83.5   |
| Panaji             | 54.44  | 62.42  | 8.9   | 48.15   | 72.1   |
| Chandigarh         | 54.4   | 54.42  | 9.9   | 60.13   | 72.8   |
| Thiruvananthapuram | 53.93  | 54.74  | 7.92  | 57.52   | 73.6   |
| Patna              | 53.26  | 47.02  | 24.61   | 49.32   | 77.5   |
| Dehradun           | 52.41  | 49.81  | 6.65  | 56.93   | 75.3   |
| Shillong           | 51.65  | 43.54  | 4.74  | 56.53   | 81.3   |
| Kavaratti          | 51.58  | 50.63  | 3.27  | 53.58   | 75.5   |
| Gangtok            | 51.18  | 52.14  | 16.36   | 40.5  | 74.6   |
| Port Blair         | 51.13  | 55.14  | 5.09  | 47.77   | 71.7   |
| Ranchi             | 50.31  | 51.86  | 6.88  | 49.59   | 70.7   |
| Kohima             | 49.87  | 50.06  | 0.55  | 46.87   | 76.3   |
| Imphal             | 49.64  | 45.01  | 1.14  | 38.38   | 86.8   |
| Itanagar           | 48.96  | 51.19  | 1.39  | 40.95   | 75.5   |
| Aizawl             | 48.16  | 41.03  | 8.41  | 44.51   | 78.8   |
| Srinagar           | 42.95  | 26.06  | 3.09  | 57.61   | 72.8   |

The index did not include four capital cities—Dispur, Daman, Amaravati and Kolkata—and ranked Greater Mumbai instead of Mumbai  
Source: [The Ease of Living Index 2020](#) by Ministry of Housing and Urban Affairs

## GOVERNANCE ISSUES

The performance of municipal bodies in embracing technology—digital governance, literacy and access— across state capitals has remained low

■ 0-30 ■ 31-60 ■ 61-100

| Capital cities     | Overall |  |  |  |  |  |
|--------------------|---------|---|---|---|---|---|
|                    |         | Services  | Finance   | Technology  | Urban planning  | Governance  |
| Bhopal             | 59.04   | 61.5  | 62.45   | 39.12   | 67.9  | 60.24   |
| Raipur             | 54.98   | 55.72   | 63.52   | 51.24   | 47.34   | 53.87   |
| Mumbai             | 54.36   | 56.95   | 44.02   | 34.67   | 71.49   | 62.74   |
| Delhi              | 52.92   | 63.37   | 65.27   | 33.47   | 36.23   | 51.97   |
| Gandhinagar        | 51.59   | 64.2  | 47.5  | 32.38   | 50.53   | 51.98   |
| Patna              | 49.25   | 53.69   | 54.64   | 20.42   | 60.74   | 50.22   |
| Hyderabad          | 49.08   | 46.96   | 59.81   | 33.63   | 45.84   | 55.56   |
| Chennai            | 48.74   | 59.39   | 66  | 29.97   | 26.01   | 46.63   |
| Jaipur             | 48.58   | 58.88   | 49.69   | 24.48   | 55.7  | 44.76   |
| Chandigarh         | 47.71   | 60.69   | 48.68   | 32.77   | 26.77   | 54.19   |
| Bengaluru          | 45.02   | 56  | 47.61   | 26.21   | 30.41   | 30.41   |
| Lucknow            | 44.76   | 48.39   | 58.59   | 23.84   | 58.27   | 31.02   |
| Shimla             | 43.71   | 59.35   | 50.65   | 21.91   | 20.69   | 46.94   |
| Bhubaneswar        | 43.38   | 43.18   | 55.52   | 37.92   | 52.76   | 28.62   |
| Panaji             | 42.22   | 58.94   | 51.89   | 19.63   | 19.6  | 41.36   |
| Ranchi             | 41.76   | 42.94   | 56.08   | 29.07   | 33.05   | 41.72   |
| Thiruvananthapuram | 40.61   | 48.84   | 56.04   | 16.81   | 31.81   | 37.3  |
| Dehradun           | 36.74   | 38.92   | 48.58   | 6.79  | 53.73   | 31.32   |
| Port Blair         | 36.26   | 51.62   | 33.13   | 15.29   | 42.39   | 27.49   |
| Agartala           | 34.88   | 39.15   | 49.96   | 10.87   | 6.71  | 52.51   |
| Aizawl             | 34.52   | 32.82   | 51.91   | 11.09   | 25.8  | 43.79   |
| Gangtok            | 26.29   | 31.01   | 35.43   | 3.53  | 15.59   | 35.17   |
| Itanagar           | 26.28   | 36.86   | 27.34   | 16.29   | 23.86   | 18.63   |
| Srinagar           | 25.93   | 27.02   | 33.45   | 9.02  | 37.4  | 20.83   |
| Kohima             | 24.38   | 24.51   | 37.02   | 18.74   | 0   | 34.08   |
| Imphal             | 22.3    | 37.61   | 22.25   | 15.11   | 1.77  | 20.16   |
| Shillong           | 12.17   | 21.44   | 21.6  | 7.7   | 1.77  | 0   |

The index did not include four capital cities—Dispur, Daman, Amaravati and Kolkata—and ranked Greater Mumbai instead of Mumbai  
Source: [The Ease of Living Index 2020](#) by Ministry of Housing and Urban Affairs

# SEWAGE OVERLOAD

Only 28 per cent of India's sewage gets treated. This is because the current installed capacity is only 44 per cent of what the cities generate and even these plants remain underutilised

Between 2014-15 and 2020-21

**17%**

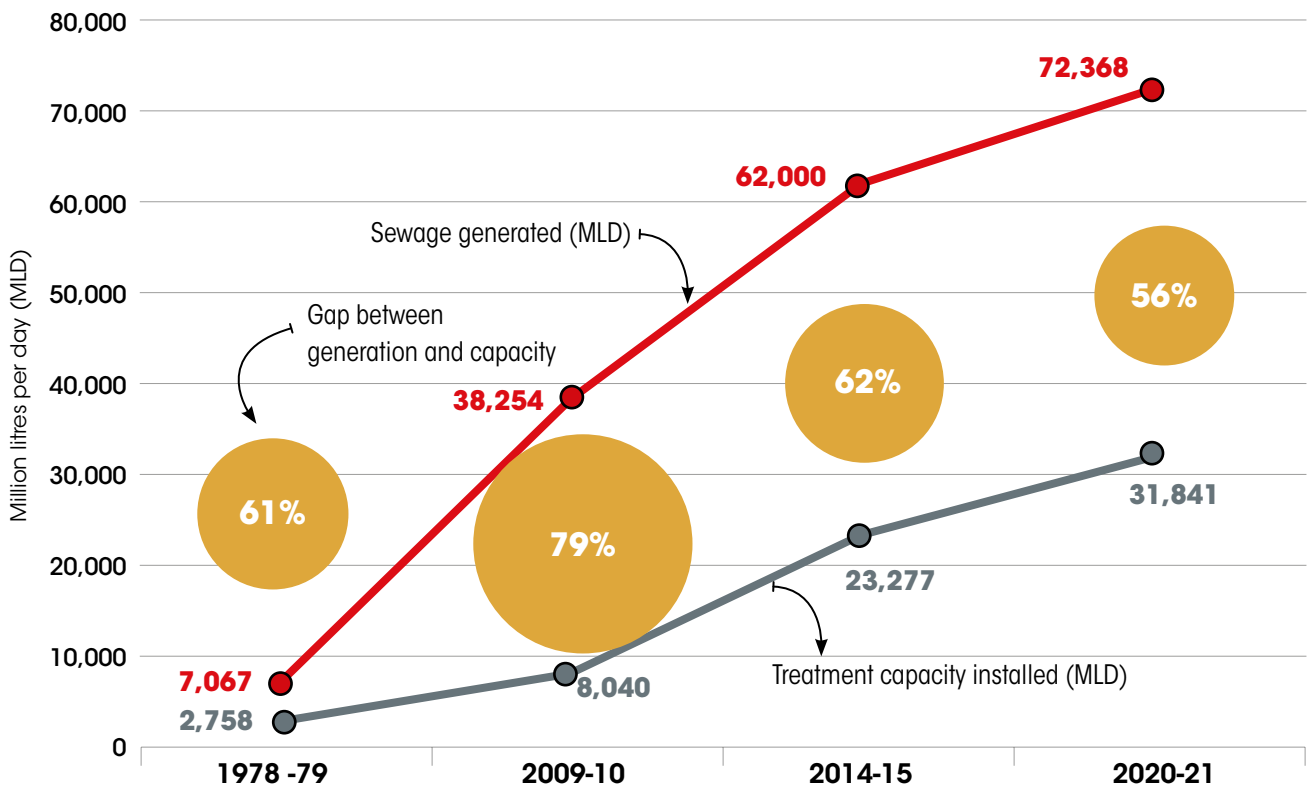
increase in India's sewage generation

**37%**

increase in the installed treatment capacity

**72%**

of sewage generated in 2020-21 was dumped untreated

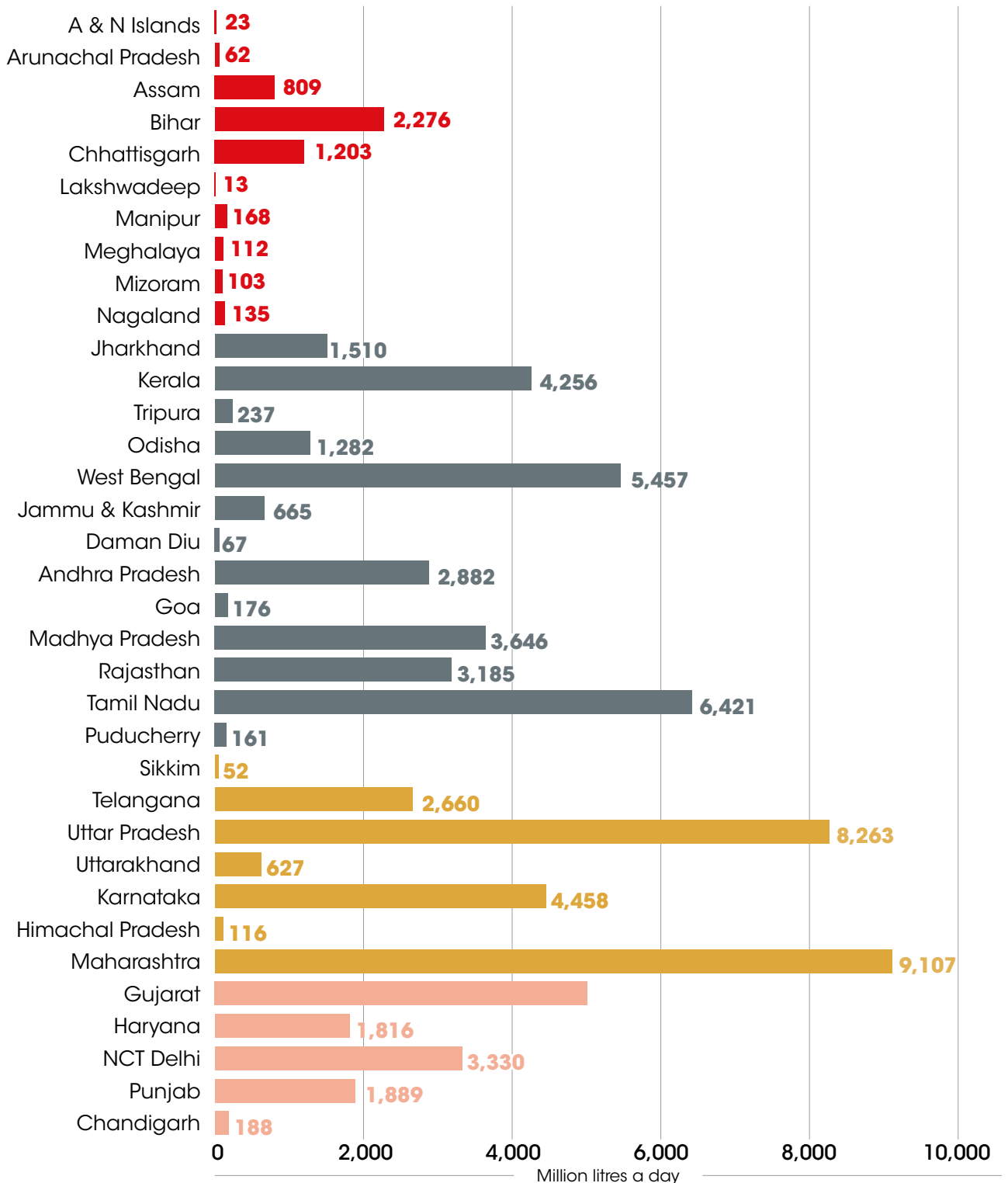


Source: [National Inventory of Sewage Treatment Plants March 2021](#), released by the Central Pollution Control Board

# RAISING A STINK

Ten states/UTs do not treat their sewage at all. Another 13 treat less than 20 per cent of their daily sewage. Seven treat less than 50 per cent of their waste. The remaining five treat more than 50 per cent

00 Daily sewage generated in MLD 00 Treatment capacity (as % of sewage generated) 00 % of daily sewage that gets treated  
**States/UTs that** ■ do not treat its sewage ■ treat less than 20% ■ treat less than 50% ■ treat more than 50%



## RESOURCES

### IN NEWS

#### [City water plans: How to get more data smart](#)

Designing tools and resources to help decision makers gather and analyse data cost-effectively may allow cities to generate sound water plans

#### [Eight of 10 most polluted cities this winter from UP: CSE](#)

The smaller and upcoming cities were the pollution hotspots

#### [WWF identifies 100 cities, including 30 in India, facing "severe water risk" by 2050](#)

These cities would have to build resilience if they were to manage such scarcity, the nonprofit said

#### [What COVID-19 can mean for SDG-11, sustainable cities and communities in India](#)

As urban vulnerabilities are amplified by the COVID-19 pandemic, the idea of sustainable cities in Sustainable Development Goals needs to be revisited and put in action

#### [Two sides of the same coin: Shrinking water bodies and urban floods](#)

Water bodies have become even more critical in current times when cities are facing the challenge of rapid, unplanned urbanisation

#### [Delhi rain, waterlogging puts the spotlight on urban flooding](#)

Urban flooding has become increasingly frequent in India's major cities

#### [Smart cities: Testing ground for sensor-based instruments](#)

Smart cities are much-needed platforms for on-field use and evaluation of sensor-based technology

#### [Why rapid urbanisation in peri-urban areas is a concern for Chandigarh](#)

Kharar, an urban settlement in Chandigarh, is witness to fast-track development in the past few years

### REPORTS/PUBLICATIONS

#### [Ease of Living Index 2020 | Ministry of Housing and Urban Affairs | March 2021](#)

This is a ranking of the cities with a population of more than a million, and cities with less than a million people

#### [National inventory of sewage treatment plants| CPCB| March 2021](#)

This report provides data on the quantum of sewage generated, treatment capacity, sewage actually treated and treatment capacity complying to discharge norms in various States/Union Territories

#### [Extreme heat events in India's cities: A framework for adaptive action plans | Observer Research Foundation | January 2021](#)

This paper argues that the global rise in average temperatures and the resultant increase in the frequency and intensity of heatwaves are among the most severe consequences of climate change

## RESOURCES

[Technology and data governance in cities: Indian cities at the forefront of the fight against COVID-19](#) | World Economic Forum | December 2020

This report presents the ways in which significant investments made in implementing smart solutions have enabled data-driven cities to provide robust responses to the COVID-19 pandemic

[Cities on the route to 2030: Building a zero emissions, resilient planet for all](#) | Carbon Disclosure Project | May 2021

This report shows how 2020 marked ten years of cities reporting the climate and environmental data through the CDP-ICLEI Unified Reporting System.

[Creating livable Asian cities](#)

This book explores how Asia's fast-growing cities can fulfil their potential as engines of economic prosperity and provide a livable environment for all citizens.

[World cities report 2020: the value of sustainable urbanization](#) | UNHABITAT | October 2020

This report shows that the intrinsic value of sustainable urbanization can and should be harnessed for the wellbeing of all

[Sanitation, wastewater management and sustainability: from waste disposal to resource recovery](#) | Stockholm Environment Institute | December 2020

The second edition of Sanitation, Wastewater Management and Sustainability: From Waste Disposal to Resource Recovery aims to bring about change by showing how improved sanitation and wastewater management can benefit both humans and the environment



# State of Waste

---

## **Biomedical waste**

In 2019, India treated 88 per cent of its biomedical waste, down from 92.8 per cent in 2017



## **COVID-19 waste**

There has been a 46 per cent increase in COVID-19 biomedical waste between April and May 2021

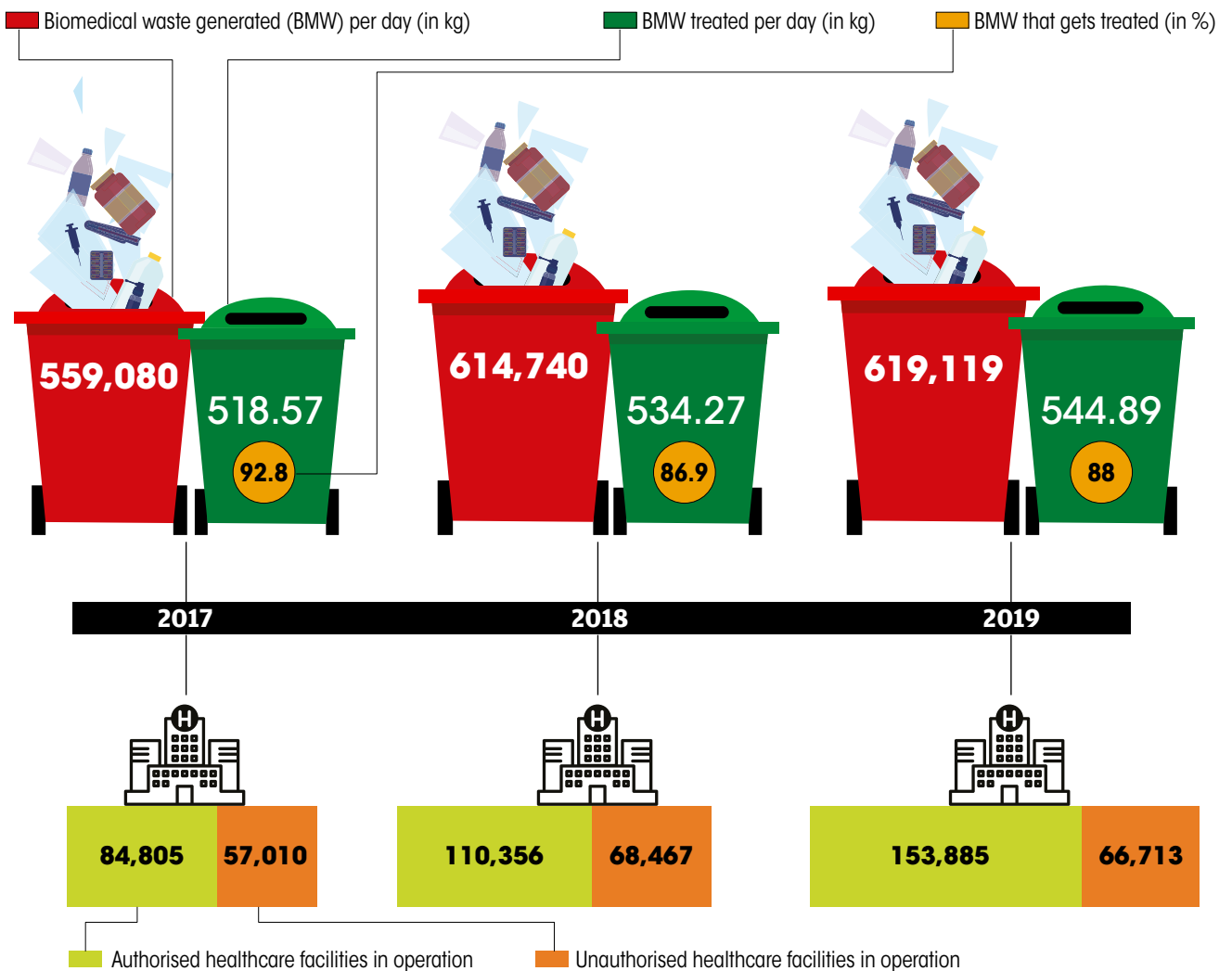


## **Hazardous waste**

India has added almost 2,400 more hazardous units in just two years

# BIOMEDICAL WASTE

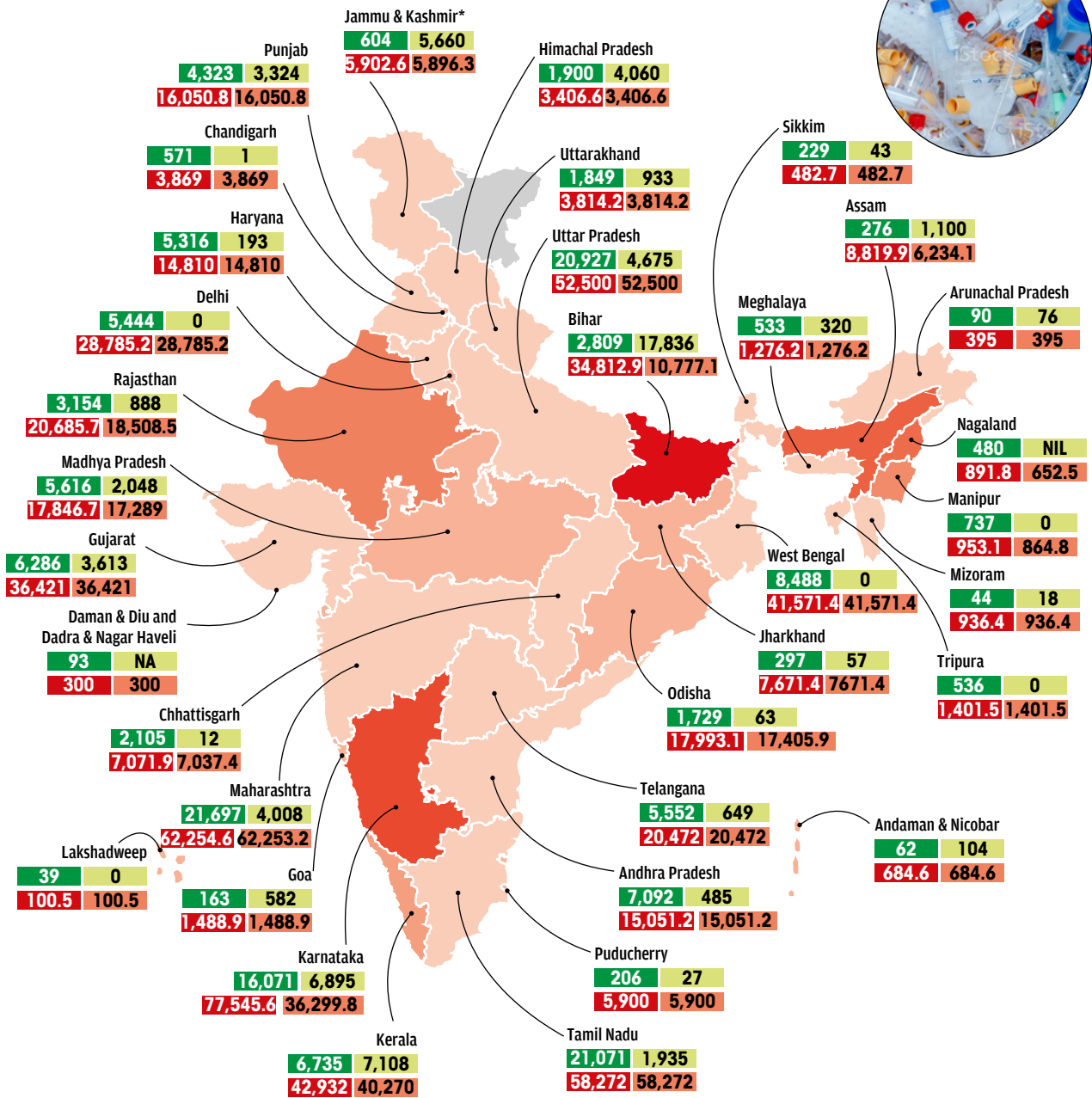
India still disposes 12 per cent of its hospital waste without any treatment. Bihar and Karnataka fare the worst



## 28 states/UTs have unauthorised healthcare facilities

- Authorised healthcare facilities
- Unauthorised healthcare facilities
- Total biomedical waste generated (kg/day)
- Total biomedical waste treated and disposed (kg/day)

**WHAT IS BIOMEDICAL WASTE**  
 It includes cultures, stocks of infectious agents, associated biologicals, human blood and blood products, contaminated sharps, amputated body parts and isolation waste. **Although it is a small proportion of the total waste generated (around 1 per cent), it needs special handling due to its highly toxic contents that can pose a severe threat to human health**



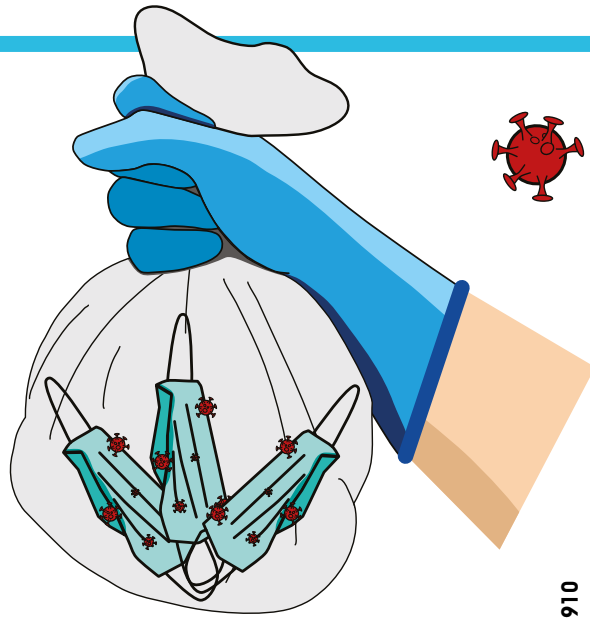
Share of biomedical waste treated in a state



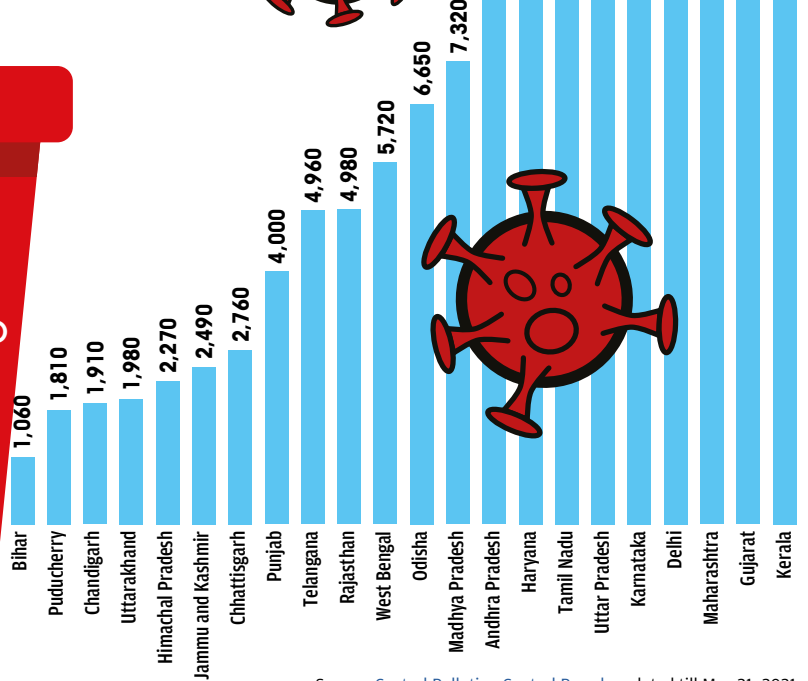
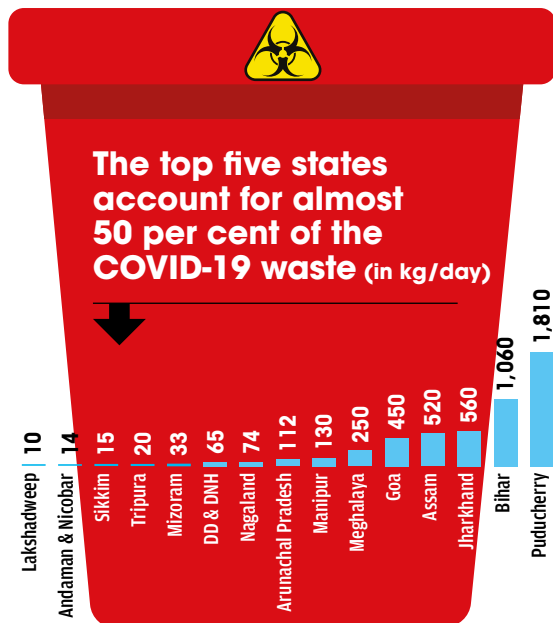
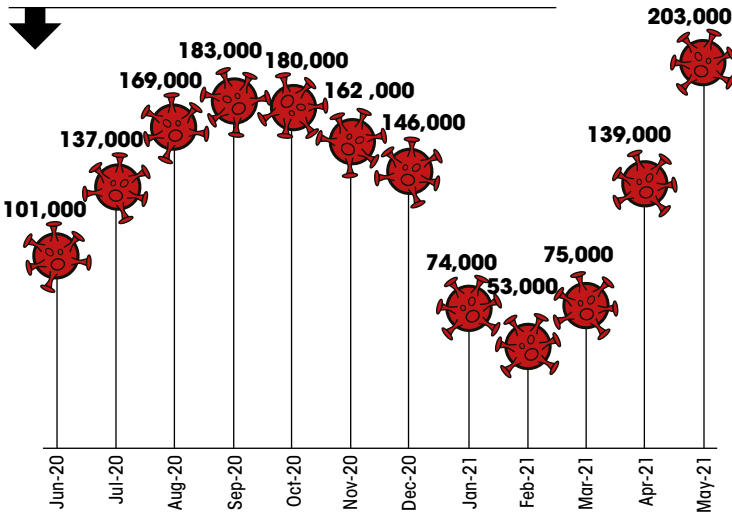
Source: [Annual Report Information on Bio-medical Waste Management Scenario in the Country for the Year 2019](#) (As submitted by SPCBs/PCCs and DGAFMS), Updated till March 12, 2021

# COVID-19 BIOMEDICAL WASTE

Hospitals dealing with COVID-19 patients produced 203,000 kg of biomedical waste per day in May. This is roughly 33 per cent of India's non-COVID biomedical waste



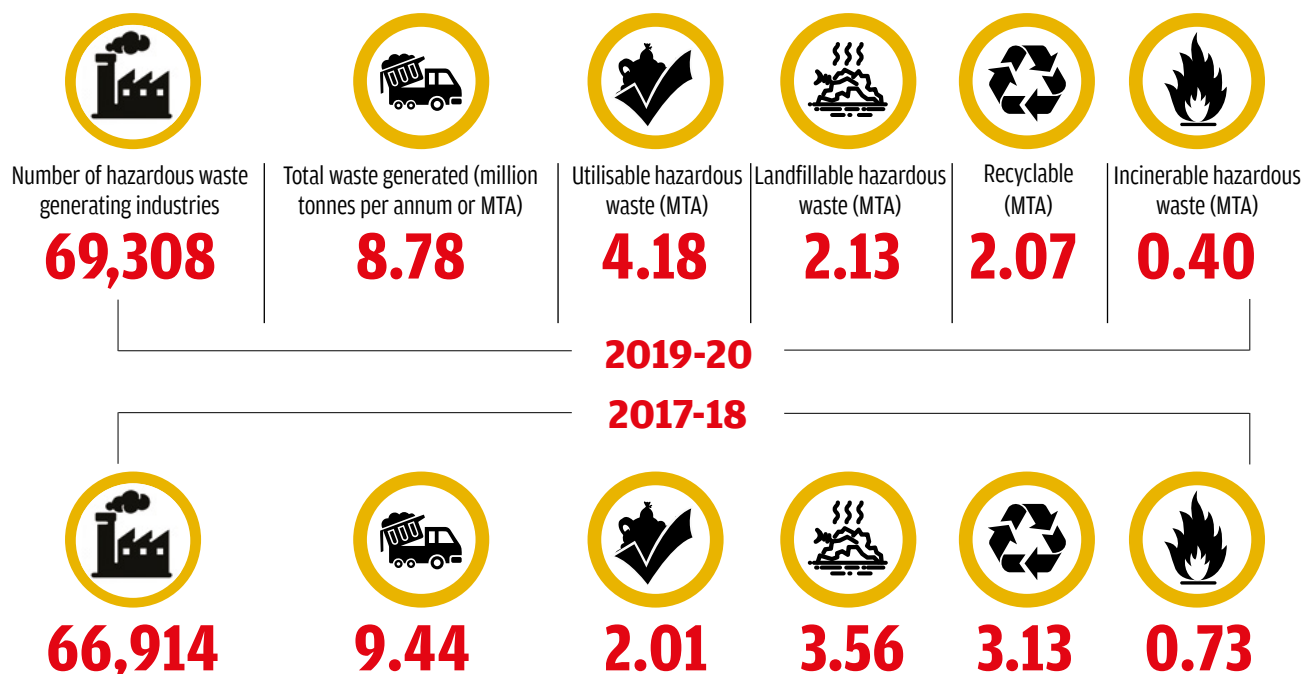
## Average monthly COVID-19 biomedical waste (in kg per day)



Source: [Central Pollution Control Board](https://www.cpcb.gov.in/), updated till May 21, 2021

# HAZARDOUS WASTE

While the number of hazardous industries have gone up between 2017-18 and 2019-20, the total waste generation has gone down by almost 7 per cent



**What is hazardous waste:** Any waste that can cause harm to human health or environment, whether alone or in contact with other wastes or substances. India's first regulation on handling and management of hazardous wastes was enacted in 1989 under the Environment (Protection) Act, 1986 in which roles of hazardous waste generators and various agencies were laid down. These rules have been amended in 2003, 2008 and 2016

**India imported 0.4 million tonnes and exported 0.01 million tonnes of hazardous waste in 2019-20**



Quantity Imported (Tonnes)









Quantity Exported (Tonnes)

| State                                | Quantity Imported (Tonnes) | Quantity Exported (Tonnes) |
|--------------------------------------|----------------------------|----------------------------|
| Andhra Pradesh                       | 56,175                     | -                          |
| Assam                                | -                          | 495                        |
| Bihar                                | 932                        | -                          |
| Chandigarh                           | 602                        | -                          |
| Dadra Nagar Haveli and Daman and Diu | 21,391                     | -                          |
| Himachal Pradesh                     | 214                        | -                          |
| Jammu and Kashmir                    | 8,160                      | -                          |
| Madhya Pradesh                       | 5,455                      | 11,348                     |
| Maharashtra                          | 13,166                     | -                          |
| Punjab                               | 3,322                      | -                          |
| Rajasthan                            | 32,492                     | -                          |
| Tamil Nadu                           | 61,822                     | -                          |
| Uttar Pradesh                        | 2,20,492                   | -                          |
| West Bengal                          | -                          | -                          |

Source: [National Inventory on Generation and Management of Hazardous and Other Wastes \(2019-20\)](#); Central Pollution Control Board, released on January 2021

## Focused problem

Almost 50 per cent of the hazardous units are in five states. They generate 65 per cent of the total waste

| FIGURES ARE IN<br>TONNES PER<br>ANNUM |  |  |  |  |  |  |
|---------------------------------------|---|---|---|--|---|---|
|                                       | Number of hazardous wastes generating units                                       | Hazardous waste dumped in landfills   | Hazardous waste incinerated   | Hazardous waste recycled   | Hazardous waste utilisable  | Total waste generated   |
| Gujarat                               | 19,662  | 982,979   | 155,218   | 553,507  | 793,612   | 2,485,317   |
| Maharashtra                           | 7,257   | 312,532   | 58,314  | 338,002  | 290,718   | 999,566   |
| Haryana                               | 4,845   | 20,649  | 20,765  | 130,546  | 28,646  | 200,606   |
| Uttarakhand                           | 4,340   | 3,559   | 5,071   | 11,166   | 2,021   | 21,818  |
| Tamil Nadu                            | 3,961   | 77,331  | 24,692  | 120,438  | 742,351   | 964,811   |
| Punjab                                | 3,263   | 34,279  | 3,473   | 47,462   | 36,953  | 1,22,167  |
| Telangana                             | 3,024   | 109,943   | 2,085   | 94,132   | 110,931   | 317,091   |
| Madhya Pradesh                        | 2,863   | 43,005  | 14,673  | 37,147   | 137,374   | 232,199   |
| Andhra Pradesh                        | 2,648   | 158,364   | 4,287   | 116,246  | 342,054   | 620,952   |
| Uttar Pradesh                         | 2,597   | 59,456  | 75,554  | 74,335   | 152,769   | 362,114   |
| Himachal Pradesh                      | 2,436   | 22,331  | 300   | 777  | 4,316   | 27,725  |
| Rajasthan                             | 2,094   | 179,760   | 1,929   | 81,423   | 324,442   | 587,554   |
| Delhi                                 | 1,912   | 2,187   | 131   | 366  | -   | 2,683   |
| Goa                                   | 1,628   | 76  | 12,015  | 3,599  | 12,879  | 28,569  |
| Kerala                                | 1,616   | 27,126  | 35  | 283,881  | -   | 311,042   |
| Chandigarh                            | 1,363   | 208   | 48  | 1,868  | -   | 2,125   |
| West Bengal                           | 809   | 33,578  | 11,166  | 40,613   | 46,056  | 131,412   |
| Jharkhand                             | 566   | 8,680   | 1,696   | 15,975   | 383,409   | 409,761   |
| Chhattisgarh                          | 413   | 2,413   | 364   | 85,009   | 84,652  | 172,438   |
| Dadra Nagar Haveli; Daman & Diu       | 410   | 1,470   | 2,307   | 853  | -   | 4,631   |
| Manipur                               | 374   | -   | -   | -  | -   | -   |
| Odisha                                | 360   | 47,543  | 321   | 14,311   | 617,685   | 679,860   |
| Jammu and Kashmir                     | 238   | 107   | 386   | 347  | 372   | 1,213   |
| Assam                                 | 183   | 1,669   | 27  | 10,740   | 39,957  | 52,394  |
| Bihar                                 | 166   | 181   | 275   | 6,204  | 970   | 7,630   |
| Puducherry                            | 131   | 3,583   | 250   | 2,515  | 28,558  | 34,907  |
| Sikkim                                | 49  | -   | 1,722   | -  | -   | 1,722   |
| Mizoram                               | 40  | 1   | -   | 19   | -   | 20  |
| Nagaland                              | 38  | -   | -   | 29   | -   | 29  |
| Meghalaya                             | 19  | 1   | -   | 275  | -   | 276   |
| Andaman and Nicobar Islands           | 3   | -   | -   | 60   | -   | 60  |

Source: Central Pollution Control Board, 2021

### IN NEWS

[Asia-Pacific may achieve just 10% targets of sustainable development goals: UN report | March 16, 2021](#)

Out of 104 measurable targets of the SDGs, the region is on track to reach only nine by 2030, according to the report titled Asia and the Pacific SDG Progress Report, 2021 by UN Economic and Social Commission for Asia and the Pacific

[Recommendations on solid waste management: How govt action falls short | May 20, 2021](#)

The standing committee on urban development made 37 recommendations, 14 of which were accepted by the Union government

[Why Guwahati is a good bet for a zero-waste challenge | May 18, 2021](#)

Only a fraction of waste generated in Guwahati is recycled; the remaining ends up at dumpsites or is littered around

[How flushing down COVID-19 waste can pose a serious threat | May 13, 2021](#)

Some studies have shown presence of SARS-CoV-2 in wastewater

[Draft plastic waste rules: Why multi-layered plastic needs to be phased out | May 13, 2021](#)

12 years since plastic waste rules, 2011, restricting the use of MLPs is off the charts

[Patiala village uses unique method to treat wastewater | April 7, 2021](#)

The wastewater treatment plant in Dhingi village uses the Sechewal method to use treated wastewater for irrigation and prevent further

pollution of groundwater

[Closure of community bin area in Delhi deals blow to waste pickers | March 31, 2021](#)

The informal waste recyclers in Connaught Place also segregated the waste collected. They extracted recyclables from waste and sold it

[New method for efficient removal of heavy metals from water | March 16, 2021](#)

Heavy metal pollution of water is a serious concern for India

[Supreme Court okays Agra waste-energy plant; will that make the city cleaner | March 1, 2021](#)

The city administration is looking forward to the technology, but with limited understanding of it; the recycling infrastructure remains severely underutilised

[Kolkata sewer deaths: Do not improve sewerage and water supply at the cost of sanitation workers | February 27, 2021](#)

4 lives lost puts many on the dock including local officials as well as state government

[Panchayats to spend ₹1.42 lakh crore on water and sanitation | February 2, 2021](#)

Spend 60% grant on water and sanitation: 15th Finance Commission recommends to rural local bodies

[Swachh Survekshan 2020: Indore is the cleanest city 4th time in a row | August 20, 2020](#)

Surat in Gujarat and Navi Mumbai in Maharashtra ranked second and third among the cleanest cities with more than a million population

## RESOURCES

[Cities journey beyond ODF: India moves to sustainable sanitation for all | August 3, 2020](#)

Indian cities are currently plagued by multiple challenges to water, sanitation and hygiene. At present, 163 million people do not have access to safe drinking water

## REPORTS/PUBLICATIONS

[Action taken by the Government on the recommendations contained in the twenty fifth report \(\(Sixteenth Lok Sabha\) of the Standing Committee on Urban Development on the subject: Solid Waste Management including Hazardous Waste, Medical Waste and E-Waste | Lok Sabha | March 2021](#)

This report deals with the action taken by the Government on recommendations contained in their Twenty Fifth Report (Sixteenth Lok Sabha) on the subject, Solid Waste Management including Hazardous waste, Medical waste and E-waste of the Ministry of Housing and Urban Affairs which was presented to Lok Sabha on 12th February, 2019

[Order of the National Green Tribunal regarding compliance of Bio-medical Waste Management Rules, 2016 | NGT | January 2021](#)

This report noted huge gaps in compliance with biomedical waste rules. In some states, compliance ranged from 17% to 38% only

[Affidavit by MoEF&CC on the scientific disposal of bio-medical waste arising out of COVID-19 | NGT | January 2021](#)

High Level Task Team has been constituted by Central Pollution Control Board to review the COVID19 waste management across the country comprising representative from the following ministries says this report

[CPCB report on hazardous waste management, India | NGT | January 2021](#)

This is a 296-page Action Taken Report by the CPCB on contaminated sites

[Report on waste management by health care facilities in Amritsar, Punjab | NGT | November 2020](#)

The report presented to the NGT contained information on the compliance status of health care facilities in district Amritsar, Punjab

[Response by the Conservation Action Trust on ship breaking yards in Alang | NGT | November 2020](#)

This is a report against the expansion of ship breaking yards in Alang by adding more area of the inter-tidal zone for the purpose of breaking old ships on the beach



# State of Air

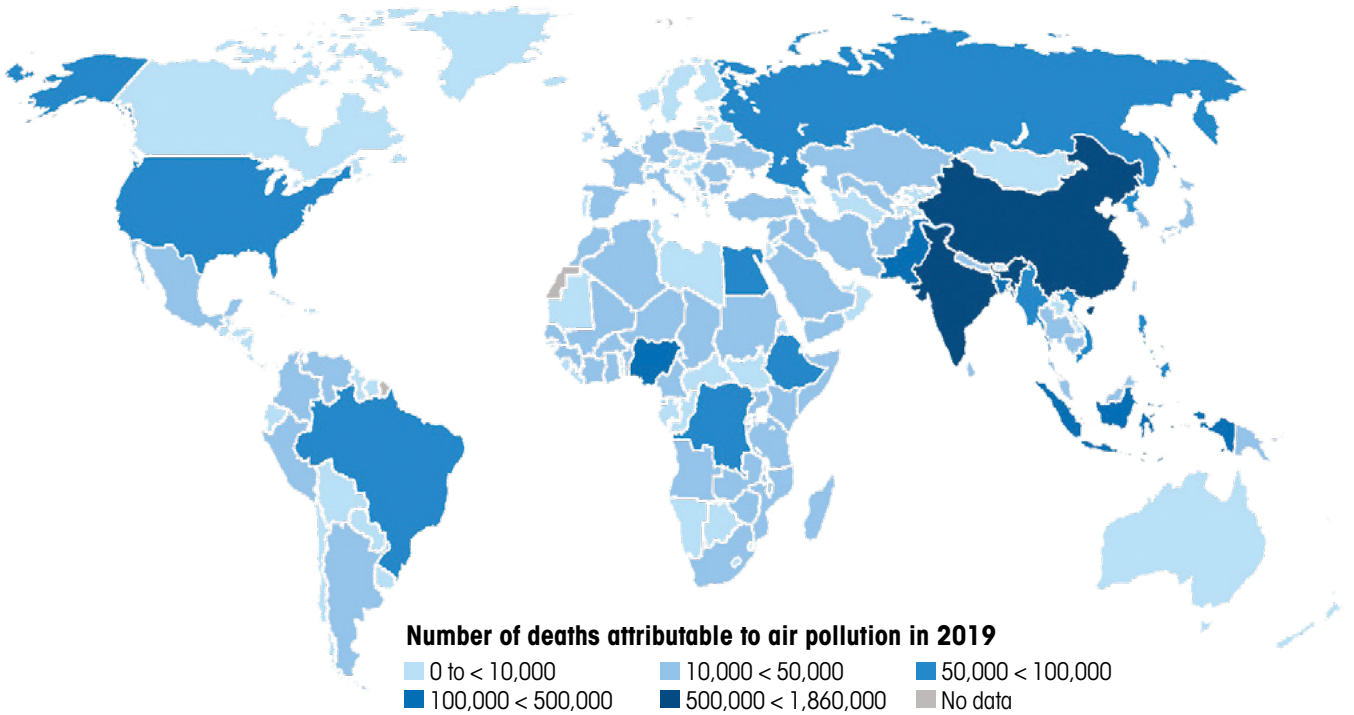
---

## **Deaths attributable to bad air**

Air pollution killed 1.67 million Indians in 2019,  
accounting for 18 per cent of the total deaths  
in the country

# DEATHS DUE TO POLLUTION

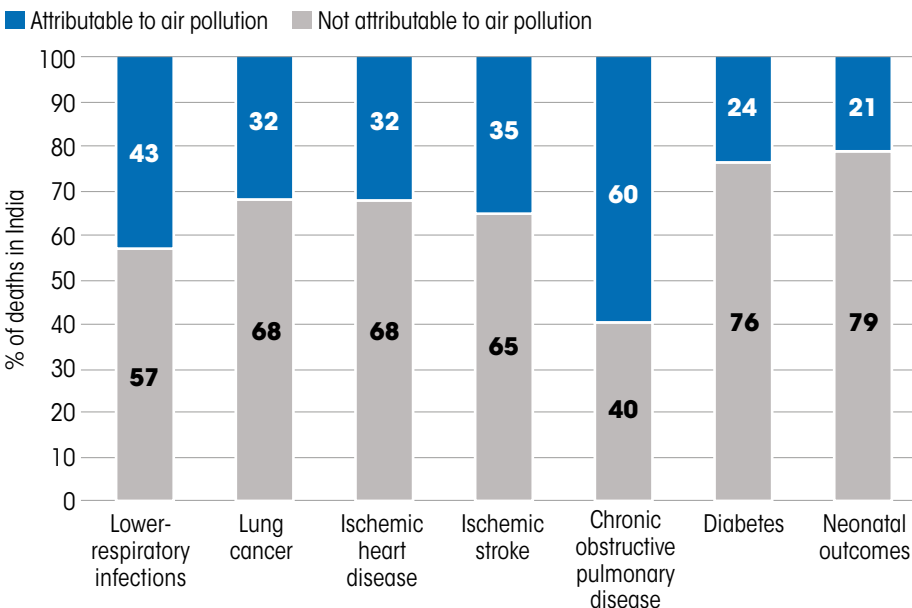
India accounted for one out of every four deaths due to air pollution in 2019. Poor air quality was the fourth leading risk factor for early death worldwide in 2019, surpassed only by high blood pressure, tobacco use, and poor diet



## Lion's share

Long-term exposures to air pollution contribute to increased risk of illness and death from a multitude of diseases

### % share of deaths in India



In 2019

**6.67 million**

people died due to air pollution in the world

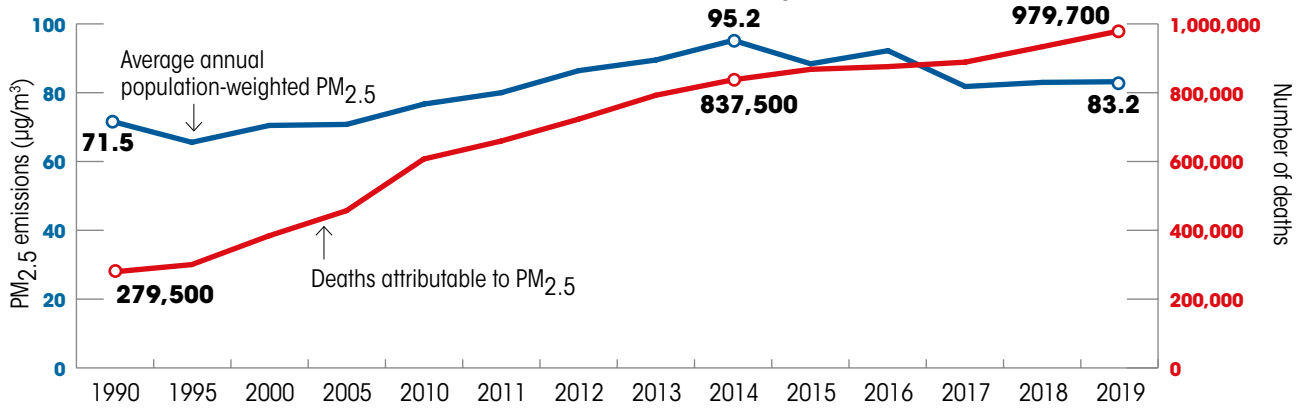
**1.67 million**

of the air pollution-induced deaths were in India, surpassed only by China (1.85 million deaths)

Source: State of Global Air 2020

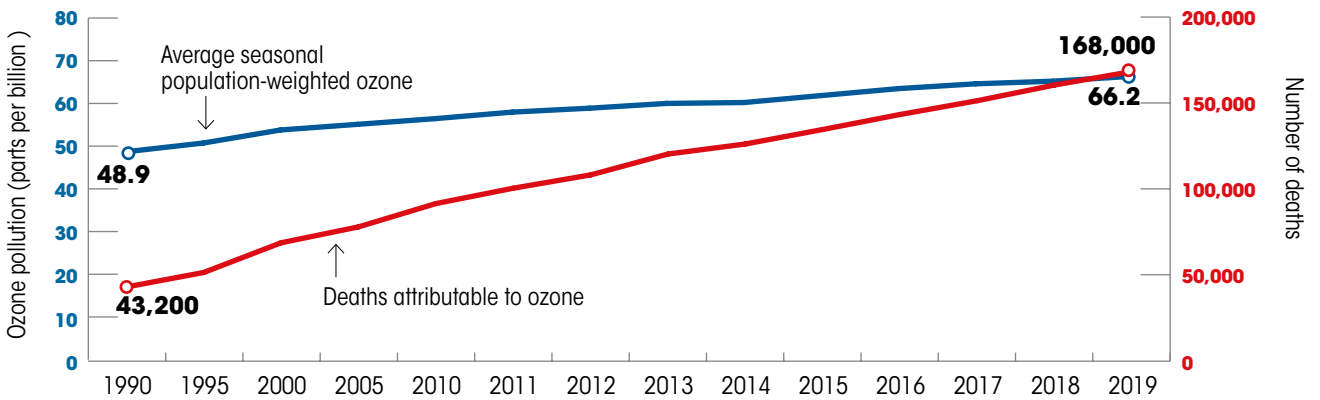
## PM<sub>2.5</sub> burden

Over the past two decades, deaths attributable to ambient PM<sub>2.5</sub> in India has **increased by 2.5 times**



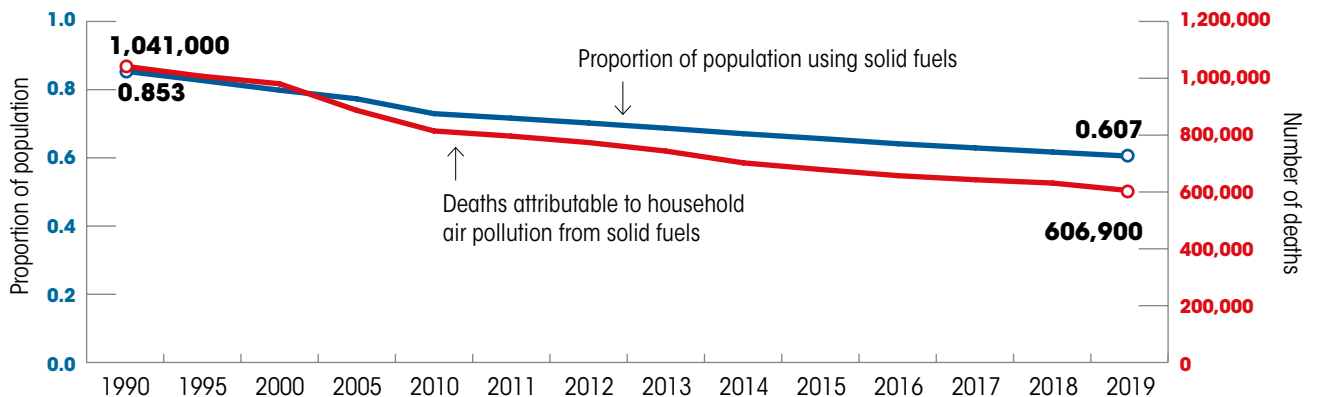
## Ozone burden

Over the past two decades, deaths attributable to ozone in India has **increased by 2.9 times**



## Household air pollution

Over the past two decades, India's household air population deaths has **decreased by over 40 per cent**

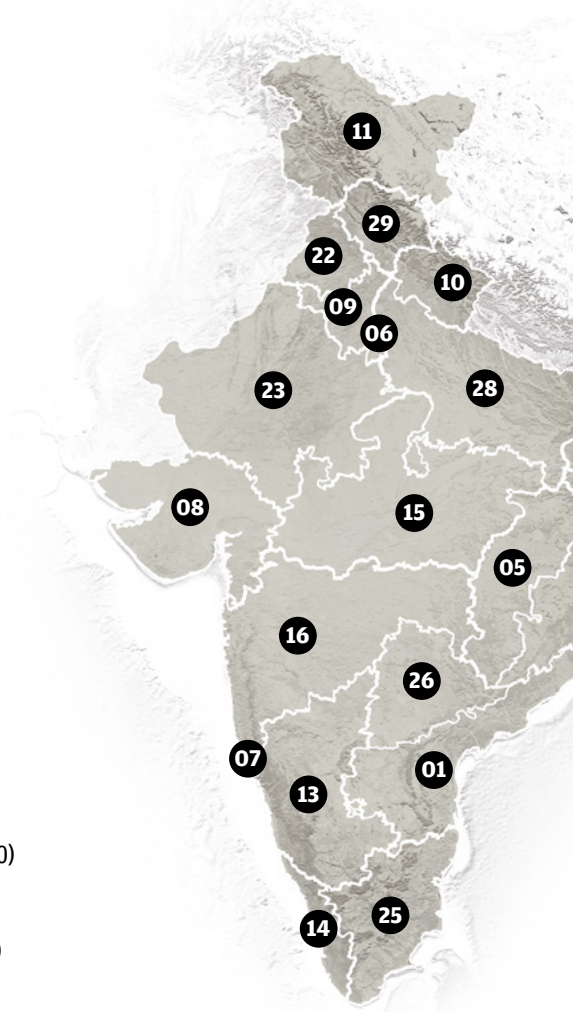


Source: State of Global Air 2020, Health Effects Institute

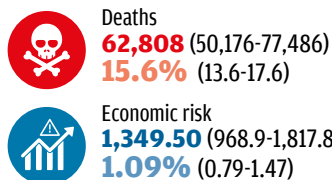
# BREATHING BAD

Just five states—Uttar Pradesh, Maharashtra, Bihar, West Bengal and Rajasthan—account for half of the deaths due to air pollution in 2019. The economic cost was US \$36,803 million, which is equivalent to 1.36 per cent of India's GDP

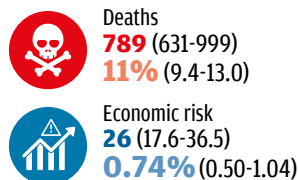
- 00** Number of deaths attributable to air pollution (range)
- 00** % share of deaths attributable to air pollution to total deaths in 2019 (range)
- 00** Economic loss attributable to Air pollution in US\$, millions (range)
- 00** Economic loss as % of state GDP (range)
- ▲** Increase over 2017



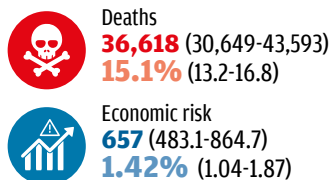
## 01. Andhra Pradesh



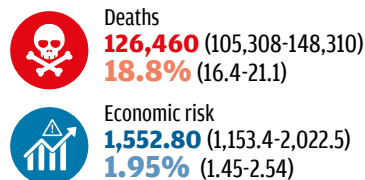
## 02. Arunachal Pradesh



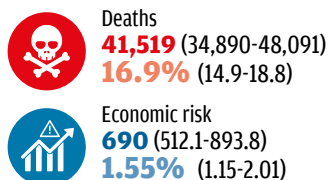
## 03. Assam



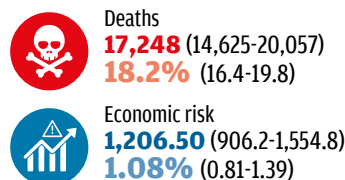
## 04. Bihar



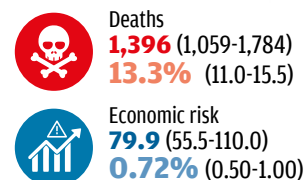
## 05. Chhattisgarh



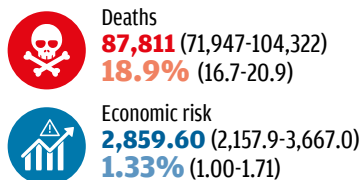
## 06. Delhi



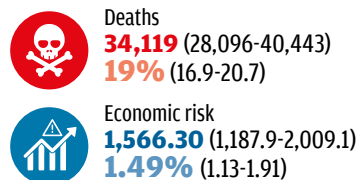
## 07. Goa



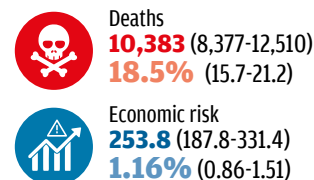
## 08. Gujarat



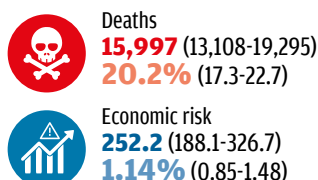
## 09. Haryana



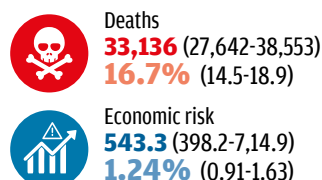
## 10. Himachal Pradesh



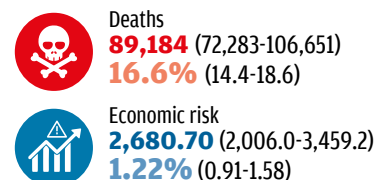
## 11. J&K and Ladakh



## 12. Jharkhand



## 13. Karnataka



#### 14. Kerala



Deaths  
**36,392** (29,015-44,371)  
**14.3%** (12.2-16.3)



Economic risk  
**1,090.50** (808.0-1,420.7)  
**0.98%** (0.72-1.27)

#### 15. Madhya Pradesh



Deaths  
**112,009** (92,397-131,581)  
**18.7%** (16.2-20.8)



Economic risk  
**1,970.50** (1,479.8-2,541.8)  
**1.7%** (1.28-2.20)

#### 16. Maharashtra



Deaths  
**139,118** (113,462-166,562)  
**16.7%** (14.9-18.5)



Economic risk  
**3,975.40** (3,003.6-5,079.6)  
**1.06%** (0.80-1.35)

#### 17. Manipur



Deaths  
**2,758** (2,187-3,388)  
**13.9%** (12.0-15.8)



Economic risk  
**40.5** (28.8-54.7)  
**1.08%** (0.77-1.46)

#### 18. Meghalaya



Deaths  
**1,874** (1,504-2,321)  
**11.7%** (10.0-14.2)



Economic risk  
**39.2** (27.0-54.7)  
**0.8%** (0.55-1.11)

#### 19. Mizoram



Deaths  
**770** (584-949)  
**11.3%** (9.4-13.3)



Economic risk  
**22.4** (15.3-31.3)  
**0.7%** (0.48-0.98)

#### 20. Nagaland



Deaths  
**1,281** (1,016-1,566)  
**12.6%** (11.0-14.2)



Economic risk  
**33.6** (23.0-46.9)  
**0.86%** (0.59-1.20)

#### 21. Odisha



Deaths  
**43,409** (33,936-55,732)  
**12.7%** (10.9-15.6)



Economic risk  
**806.6** (573.6-1,088.1)  
**1.14%** (0.81-1.53)

#### 22. Punjab



Deaths  
**41,090** (33,548-48,366)  
**18.8%** (17.2-20.5)



Economic risk  
**1,148.90** (862.2-1,474.4)  
**1.52%** (1.14-1.96)

#### 23. Rajasthan



Deaths  
**113,361** (89,003-135,976)  
**21.2%** (17.2-24.0)



Economic risk  
**2,294.30** (1,673.8-2,996.2)  
**1.7%** (1.24-2.22)

#### 24. Sikkim



Deaths  
**488** (386-607)  
**14.4%** (12.2-16.7)



Economic risk  
**25.5** (18.0-34.7)  
**0.67%** (0.47-0.91)

#### 25. Tamil Nadu



Deaths  
**84,587** (68,951-102,758)  
**13.8%** (12.2-15.6)



Economic risk  
**2,529.10** (1,856.6-3,310.4)  
**1.06%** (0.78-1.39)

#### 26. Telangana



Deaths  
**35,364** (27,587-45,295)  
**15.5%** (13.7-17.3)



Economic risk  
**1,115.90** (792.7-1,508.2)  
**0.91%** (0.64-1.22)

#### 27. Tripura



Deaths  
**4,925** (3,944-6,028)  
**19%** (16.5-21.3)



Economic risk  
**91.1** (66.1-121)  
**1.26%** (0.92-1.68)

#### 28. Uttar Pradesh



Deaths  
**349,926** (286,430-411,973)  
**19.5%** (16.7-21.8)



Economic risk  
**5,130.30** (3,816.0-6,616.1)  
**2.15%** (1.60-2.77)

#### 29. Uttarakhand



Deaths  
**16,989** (13,858-20,537)  
**18.6%** (16.2-20.8)



Economic risk  
**526.6** (392.8-682.7)  
**1.5%** (1.12-1.94)

#### 30. West Bengal



Deaths  
**122,833** (100,633-143,817)  
**20.8%** (18.3-22.8)



Economic risk  
**2,125.30** (1,622.8-2,676.8)  
**1.26%** (0.96-1.59)

#### Other small Union Territories



Deaths  
**2,688** (2,160-3,358)  
**13.3%** (12.0-14.8)



Economic risk  
**120.3** (85.5-163.7)  
**0.79%** (0.56-1.07)

Source: [Health and Economic Impact of Air Pollution in the States of India: the Global Burden of Disease Study 2019](#), Union Health and Family Welfare, published in Lancet in December 2020

## RESOURCES

## IN NEWS

[Asia-Pacific may achieve just 10% targets of sustainable development goals: UN report | March 16, 2021](#)

Out of 104 measurable targets of the SDGs, the region is on track to reach only nine by 2030, according to the report titled Asia and the Pacific SDG Progress Report, 2021 by UN Economic and Social Commission for Asia and the Pacific

[Delhi's air quality and number games](#)

India needs to codify methodologies for processing air quality data to reduce confusion and build confidence in air pollution control measures

[Gadkari announces vehicle scrappage policy](#)

Says will reduce pollution and boost automobile industry

[Parliamentary panel underlines lack of quality data on air pollution in smaller cities](#)

Panel suggested prioritising funds to install systems for monitoring air quality in smaller cities and towns

[Pollution less severe this winter in Delhi; smog episodes fewer, shorter: CSE](#)

There were wide variations in the overall air quality in adjacent areas within the city, pointing at local pollution

[Invisible particles do matter for the air we breathe, finds studies](#)

Ultrafine particles having almost negligible weight, surface area do have an effect on haze formation, visibility and air pollution, the studies found

[Coal burning responsible for heavy air pollution in India: IEACCC study](#)

Implementing emission norms, running clean coal power need of the hour, the study says

[Deadline extension for coal power plants will harm air pollution fight: CSE](#)

Calls for bringing in an effective incentive penalty-based system

[Air pollution a problem in south India as well: CSE analysis](#)

The region cannot depend solely on warmer winters and sea breeze to escape pollution

[Clean cooking fuel, urban mobility find place in Union Budget 2021-22](#)

₹18,000 crore to support public bus transport services; experts believe move could bring down pollution

[Toxic air hits the crib; especially in India](#)

India records highest increase in air pollution related deaths and infant mortality

## REPORTS/PUBLICATIONS

[Report on ambient noise levels & ambient air quality during Deepawali festival 2020| CPCB| May 2021](#)

This report provides the status of air & noise pollution levels in environment caused by burning of crackers.

[Impact of COVID-19 led lockdown on Air Pollution Levels in Bengaluru| Centre for Research on Energy and Clean Air \(CREA\)| June 2020](#)

Air pollution in Bengaluru dropped by 28% during the Indian megacity's coronavirus lockdown says this report

[World Air Quality Report 2020| IQAir| March 2021](#)

Twenty-two of the world's 30 most polluted cities are in India, with Delhi being ranked as the most polluted capital city globally, says this report

# State of Industries

---

## **Grossly polluting industries**


India has 2,976 grossly polluting industries, which is 8 per cent more than the units in 2019

# Grossly polluting industries

India has reduced its non-compliant industries from 275 in 2019 to 129 in 2021. Uttar Pradesh alone accounts for over 30 per cent of the non-compliant set-ups

Number of grossly polluting industries in **2019** and **2021**

**00** Number of industries operational in 2021

 % of non-complaint industries

## Between 2019 and 2021

**8%**

increase in grossly polluting industries. The country had 2,744 set-ups in 2019 and 2,967 set-ups in 2021

**35%**

increase in such units in Uttar Pradesh

**12%**

increase in such units in West Bengal

## WHAT IS A GROSSLY POLLUTING INDUSTRY:

Any industry which discharges wastewater more than 100 kilolitres a day and/or 429 hazardous chemicals used by the industry as specified under the Manufacture, Storage and Import of Hazardous Chemical Rules of 1989 under Environment (Protection) Act, 1986. The list includes acetone, ammonia and asbestos

Source: Union Ministry of Jal Shakti; February 11, 2021



Punjab

5 | 5 | 5



Haryana

660 | 627 | 600



Rajasthan

1 | 1 | 1

Gujarat

191 | 22 | 18

Madhya Pradesh

2 | 2 | 2

Maharashtra

4 | 4 | 3




Kerala

29 | 29 | 28

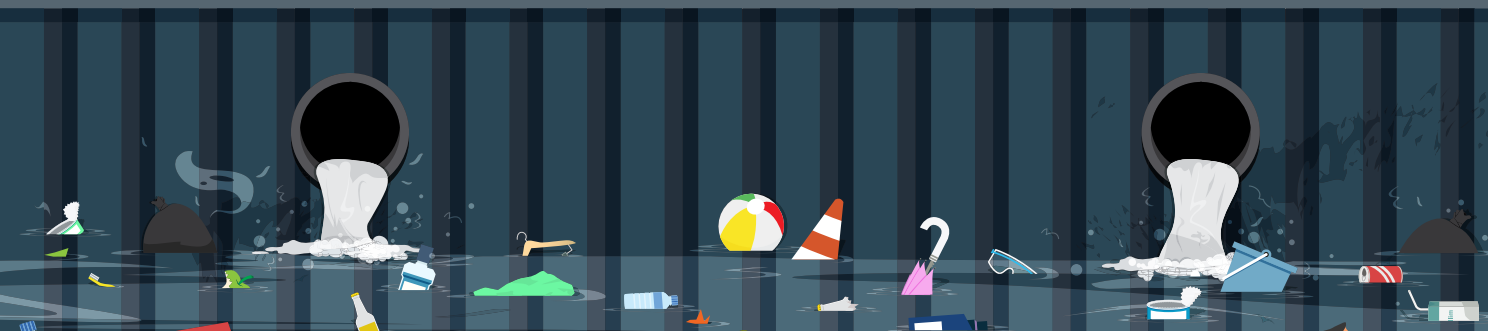
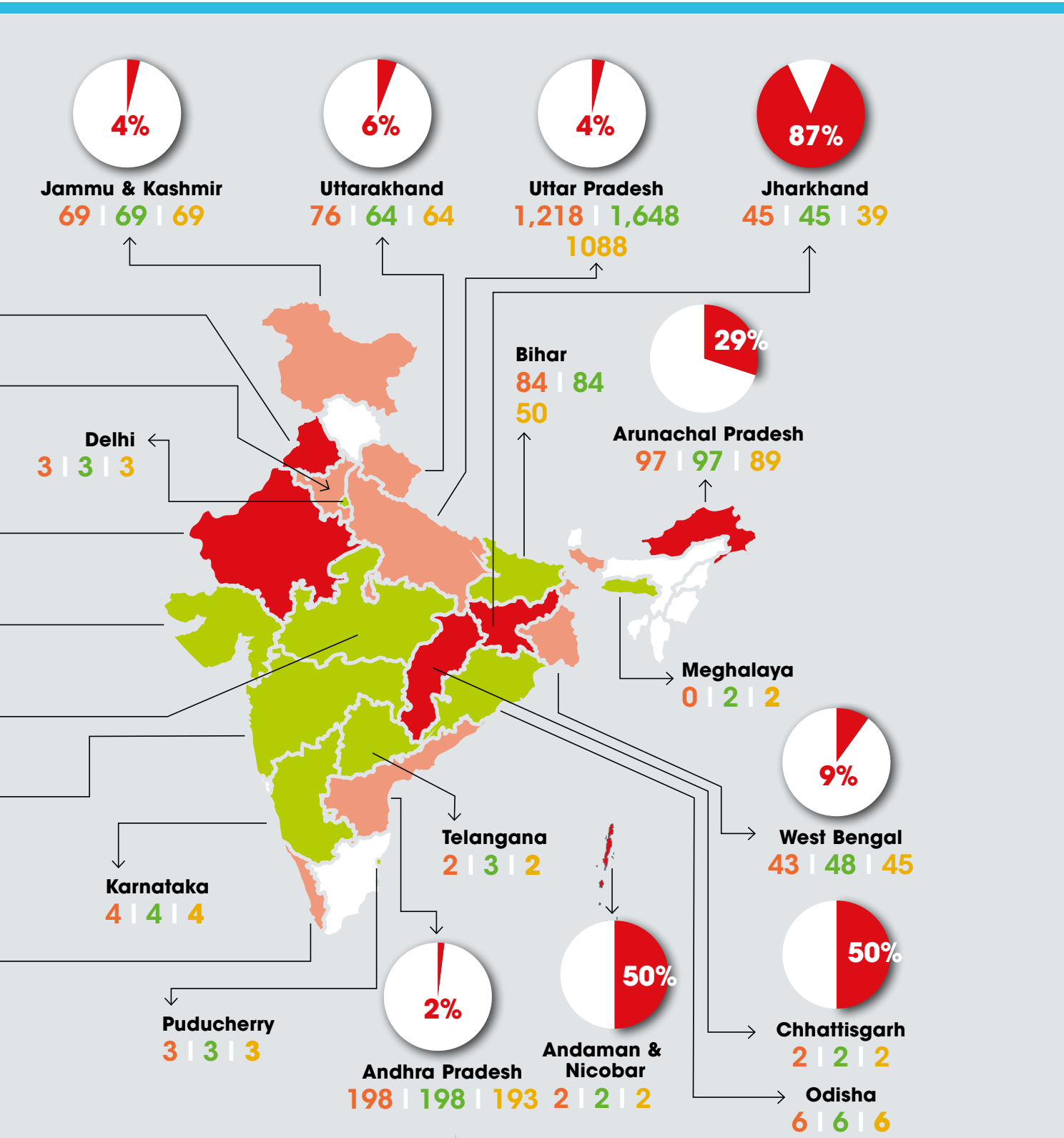
% of compliant grossly polluting industries

 100%  99-80%

 Less than 80%







## RESOURCES

### IN NEWS

#### [The curious case of Covaxin royalties](#)

ICMR's contradictions and obfuscation on ownership of the vaccine's intellectual property is not helping in the fight against COVID-19

#### [The Ganga gets highly polluted after Kannauj in Uttar Pradesh: Report](#)

The quality of Ganga water in the stretch from Kannauj to Prayagraj was categorised as being extremely deficient in dissolved oxygen

#### [Why better policies are needed for sewage water use in thermal power plants](#)

Thermal power plants within 50 km of STPs are required to use treated sewage; but there has not been any positive move on ground

#### [River pollution, conservation: UP's fishing community bears brunt](#)

Regulations of industrial, municipal inflow in Ganga, at the centre of pollution mitigation policies, have dissociated rivers from riverine communities

#### [State of India's environment: Quality of air, water, land worsened in India's industrial clusters](#)

Tarapur in Maharashtra emerged the most polluted cluster between 2009 and 2018

#### [Groundwater quality deteriorating in Tamil Nadu's industrial areas: CSE | March 2021](#)

The most serious pollution threat to groundwater was from calcium, chloride and iron, associated with sewage and pollution from tannery waste

### REPORTS/PUBLICATIONS

#### [National inventory of sewage treatment plants| CPCB | March 2021](#)

This report analyses the quantum of sewage generated, treatment capacity, sewage actually treated and treatment capacity complying to discharge norms in various States/Union Territories

#### [Water pollution in India: Twenty-Sixth Report \(Seventeenth Lok Sabha\) - Public Accounts Committee \(2020-21\)| Lok Sabha Secretariat| February 2021](#)

This report deals with the Action Taken by the Government on the Observations and Recommendations of the Committee contained in their Eighth Report (16th Lok Sabha) on "Water Pollution in India"

#### [Water quality monitoring of rivers: the nationwide lockdown| Central Water Commission| January 2021](#)

The report attempts to provide the water quality scenario of Indian rivers during the lockdown period

#### [Assessment of impact of lockdown on water quality of major rivers| CPCB| September 2020](#)

The quality of water in seven of the 19 rivers monitored by State Pollution Control Boards (SPCBs) improved during the lockdown period

# State of Health

---

## **National Family Health Survey**

In the past five years, India has made progress in certain key indicators but has slipped in several others



## **Cancer registry**

While cases have increased in all the 28 cancer registries in India, mortality has gone up in 13

# Poor vitals

The latest National Family Health Survey shows an improvement in child mortality and access to electricity over the past five years. But a complete overhaul is needed to address hunger, malnutrition and rising healthcare expense

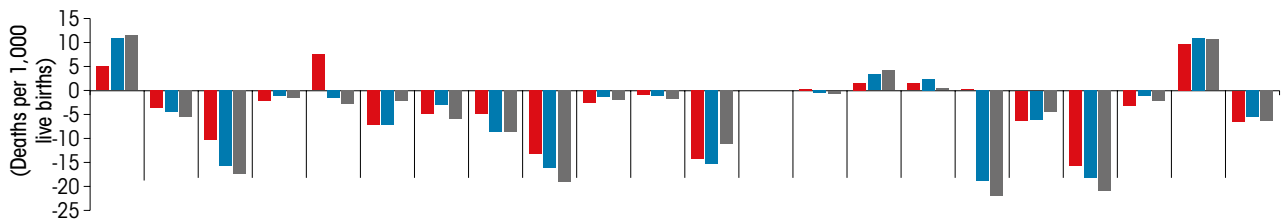
## THE GOOD



**14 states/UTs** have recorded a reduction in **child and infant mortality rates**

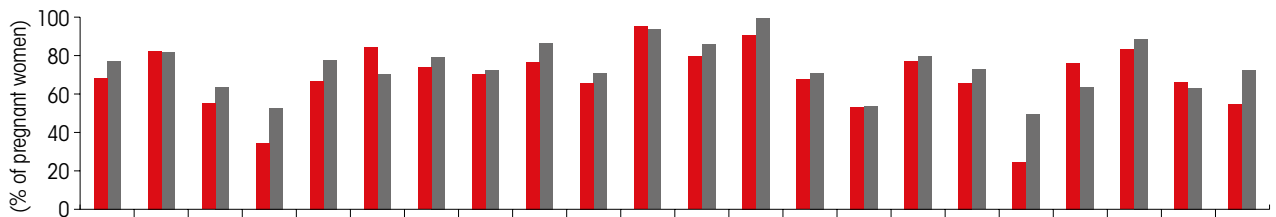
Change between 2015-16\* and 2019-20 in

■ neonatal mortality rate ■ infant mortality rate ■ under-five mortality rate



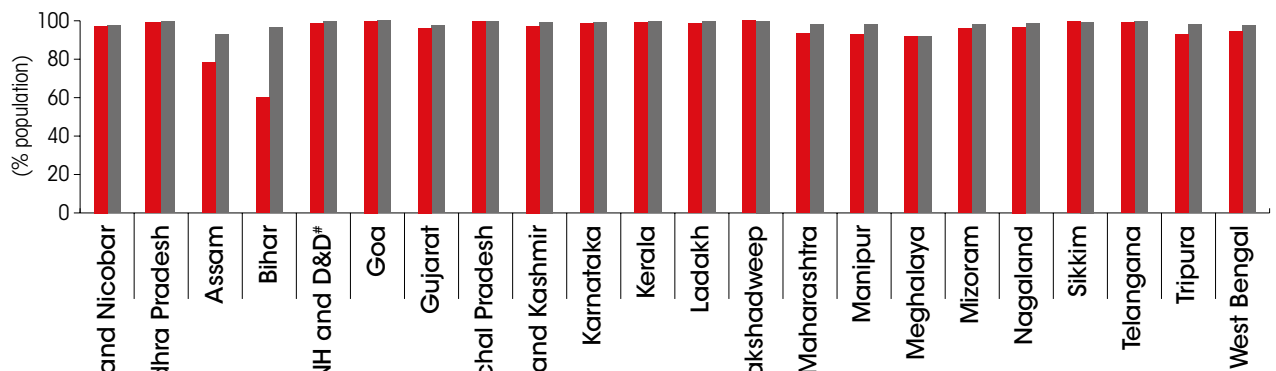
**17 states/UTs** have recorded an increase in the share of expectant mothers who undertook **antenatal check-ups in the first trimester**

■ 2015-16 ■ 2019-20



**18 states/UTs** have seen an increase in population living in households with electricity access

■ 2015-16 ■ 2019-20



\*The latest round of National Family Health Survey (NFHS) 5 was conducted in 2019-20. The numbers are compared with the previous round, NFHS 4 of 2015-16.

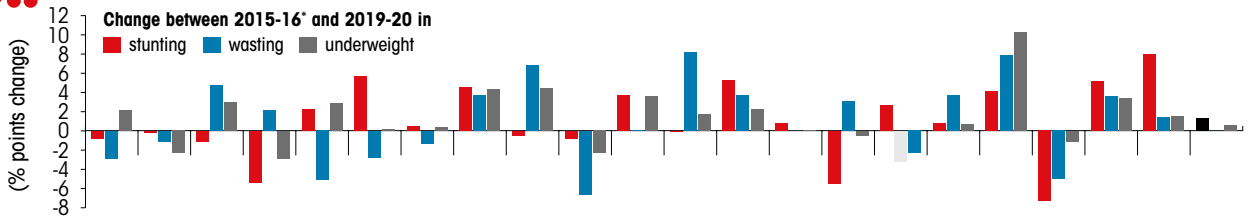
\* Dadra & Nagar Haveli and Daman & Diu

Source: [Phase 1 of the National Family Health Survey 5](#), Union Ministry of Health and Family Welfare. It covered 22 states/UTs

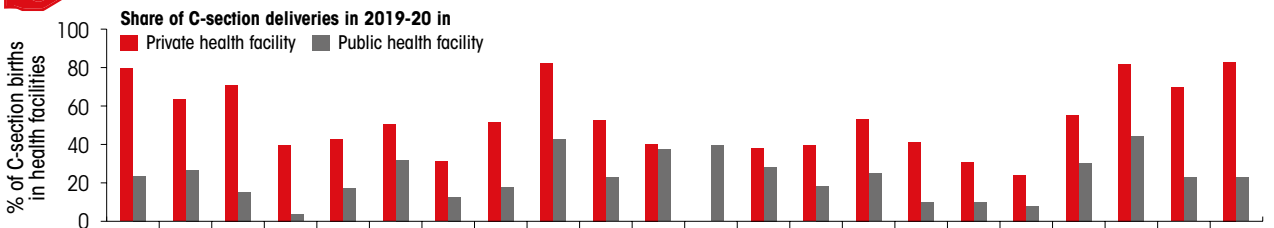
## THE BAD



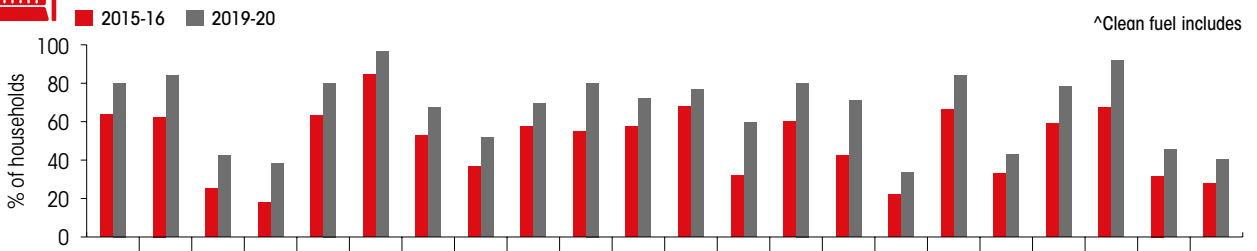
### 19 states/UTs have recorded a surge in at least one of the three malnutrition indicators



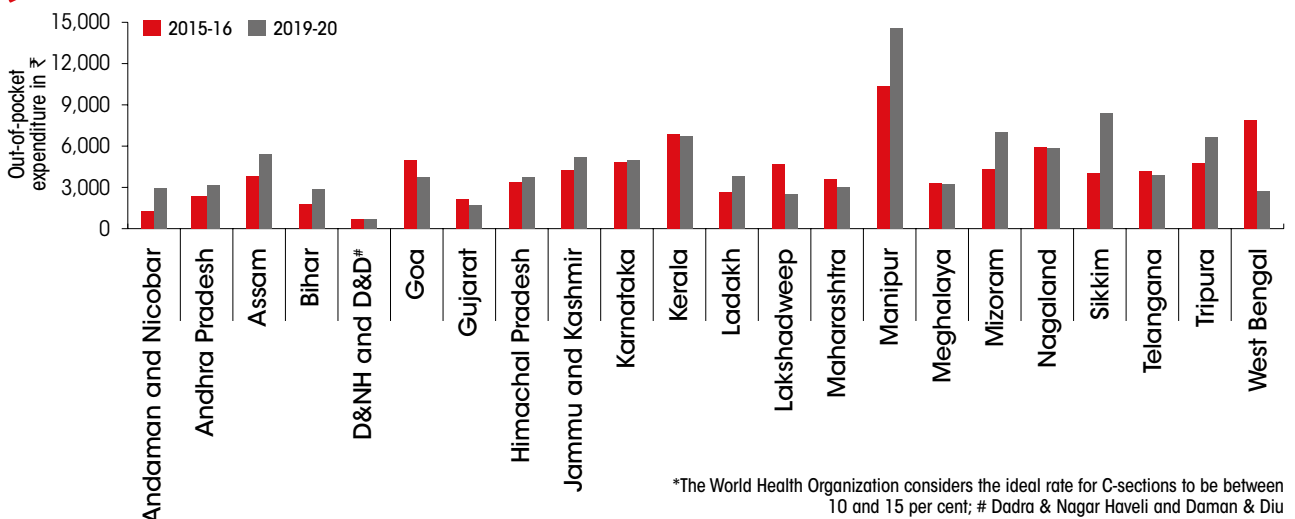
### All private and most public health facilities in the 22 states/UTs studied report a higher incidence of C-section deliveries than the safe levels\*



### 18 states/UTs have less than 80% households using clean fuel, which includes electricity, LPG/natural gas and biogas, for cooking



### 12 states/UTs have seen a surge in out-of-pocket expenditure per delivery in a public health facility

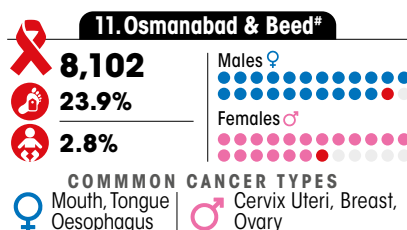
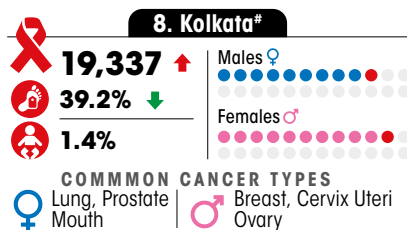
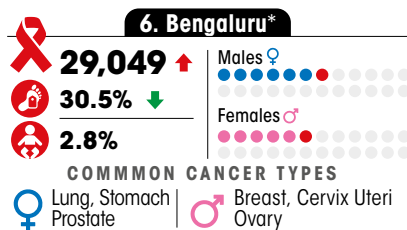
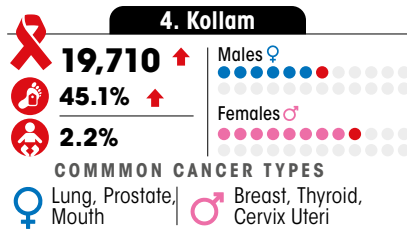
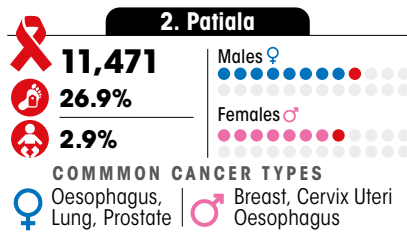
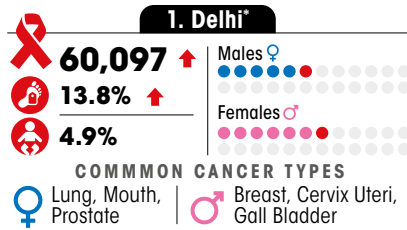


\*The World Health Organization considers the ideal rate for C-sections to be between 10 and 15 per cent; # Dadra & Nagar Haveli and Daman & Diu

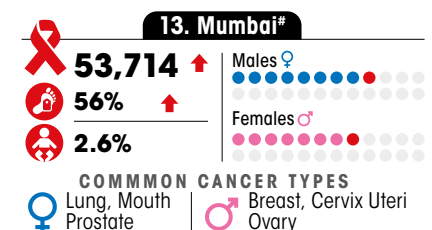
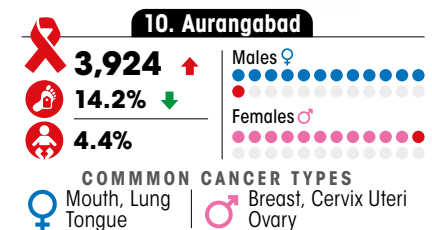
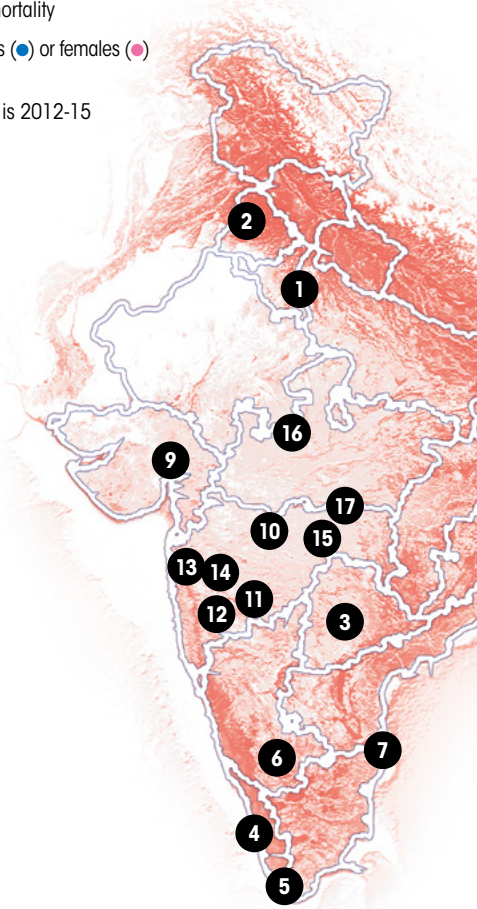
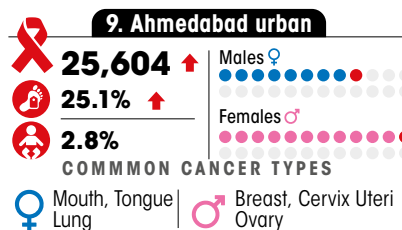
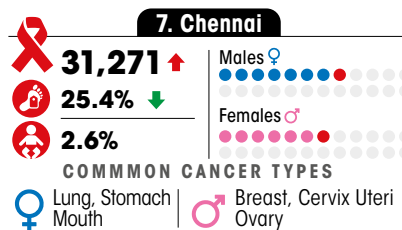
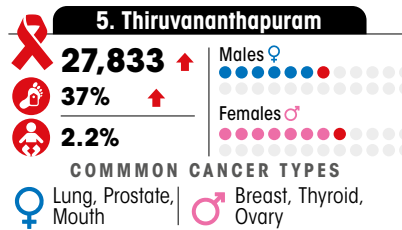
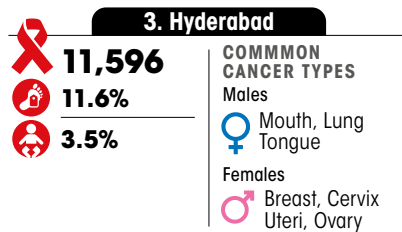
Source: [Phase 1 of the National Family Health Survey 5](#), Union Ministry of Health and Family Welfare. It covered 22 states/UTs

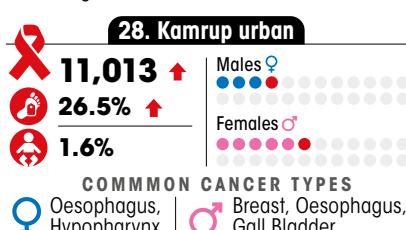
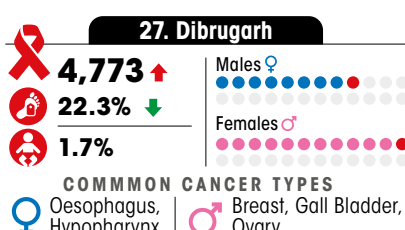
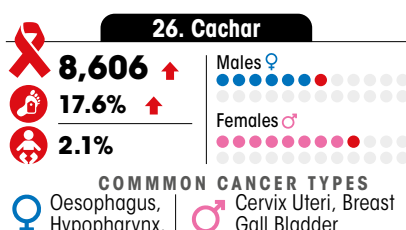
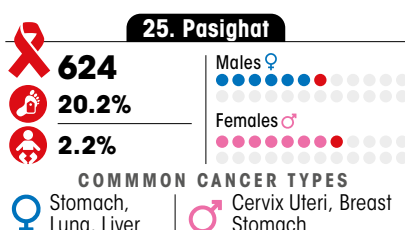
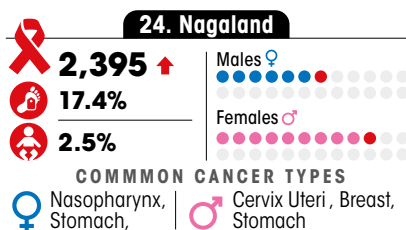
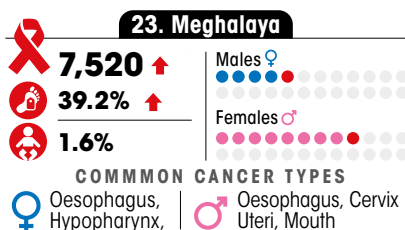
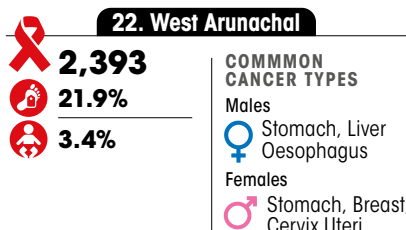
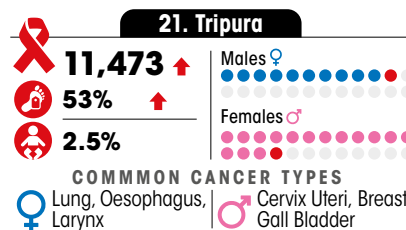
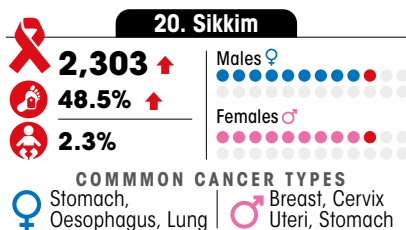
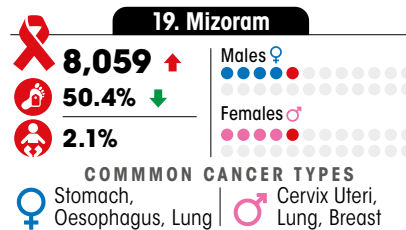
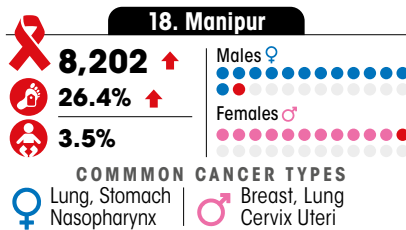
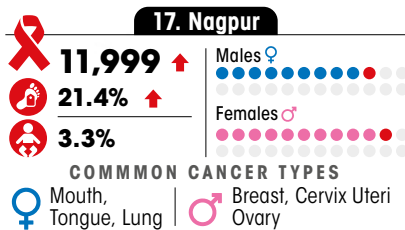
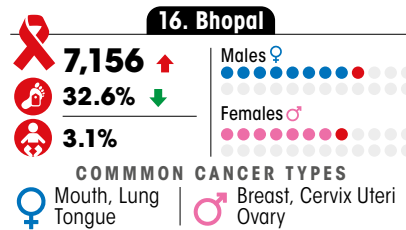
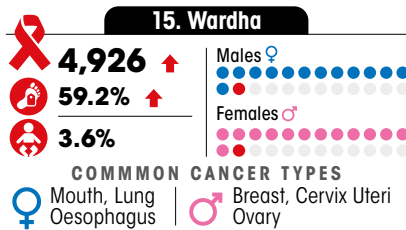
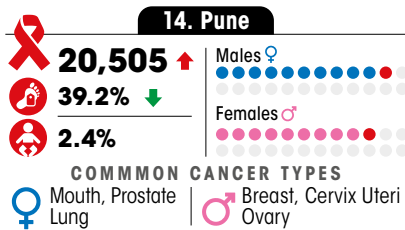
# CANCER REGISTRY

While cases have increased in all the **28 cancer registries in India**, mortality has gone up in **13**. People of northeastern states are most vulnerable to the disease



**Legends**  
 Cancer patients (2012-16) ↑ ↓ Increase/ decrease from 2009-11  
 Childhood cancer cases (red icon) % of cancer mortality (red icon)  
 Cancer risk defined as one (●) in every x number of males (●) or females (●)  
 \*Data period for Delhi and Bengaluru is 2012-14  
 #Data period for Kolkata, Mumbai, Osmanabad & Beed is 2012-15  
 India currently has 28 cancer registries





Source: [National Cancer Registry Programme Report 2020](#), released in August 2020, Indian Council of Medical Research

## UNLUCKY 13

These cancer types will record 163,428 more cases in 2020 than previous projections

|                      | Cancer cases projected for 2020 |                      |
|----------------------|---------------------------------|----------------------|
|                      | Projected in 1992-2010          | Projected in 2011-16 |
| Hypopharynx          | 16,196                          | 20,414               |
| Oesophagus           | 36,058                          | 52,828               |
| Stomach              | 40,419                          | 50,143               |
| Liver                | 35,003                          | 37,410               |
| Pancreas             | 10,628*                         | 20,018               |
| Larynx               | 29,012                          | 30,462               |
| Lung                 | 98,126                          | 98,278               |
| Breast               | 119,782                         | 210,801              |
| Kidney               | 13,091*                         | 17,884               |
| Brain, NS            | 26,251                          | 32,729               |
| Thyroid              | 22,808                          | 34,665               |
| Non-Hodgkin lymphoma | 38,408                          | 41,607               |
| Lymphoid Leukemia    | 19,607                          | 21,578               |

\* data only for males

## RESOURCES

## IN NEWS

[Asia-Pacific may achieve just 10% targets of sustainable development goals: UN report | March 16, 2021](#)

Out of 104 measurable targets of the SDGs, the region is on track to reach only nine by 2030, according to the report titled Asia and the Pacific SDG Progress Report, 2021 by UN Economic and Social Commission for Asia and the Pacific

[Is India's healthcare future ready? What does Economic Survey 2020-21 point at | January 2021](#)

Failure of the existing healthcare system suggests that there is a need to rethink health policy

[Accelerate efforts to end malaria: World Health Assembly adopts new resolution](#)

7.6 million deaths, 1.5 billion cases averted since 2000, but global gains levelled off in recent years, flags WHO

[Acute malnutrition worsened among children: NFHS-5](#)

Stunting among children below five did not improve at all; child obesity increased across several states

[Diarrhoea in children under 5 more prevalent in rural India: NFHS-5](#)

Bihar reported the highest prevalence of the disease

[Use of contraceptives in Bihar doubles in 5 years: NFHS-5](#)

Female sterilisation was the most common method of contraception in the state

[Scientists identify vulnerabilities in over 700 cancer cells that could fuel new treatments](#)

The new medicines could even treat types of cancers that are resistant to available therapies

[Cancer among elderly women more prevalent than among men: LASI report](#)

Himachal Pradesh, at 2.2%, showed the highest self-reported prevalence of cancer in adults aged 45 and above

## REPORTS/PUBLICATIONS

[National Health Profile 2020| Central Bureau of Health Intelligence \(CBHI\) | May 2021](#)

This report provides comprehensive information related to health sector

[Vision 2035: Public Health Surveillance in India| NITI Aayog| December 2020](#)

The report suggests mainstreaming of surveillance by making individual electronic health records the basis for surveillance

[National Family Health Survey \(NFHS-5\) 2019-20: Key Indicators for 22 States/UTs from Phase-1| Ministry of Health and Family Welfare| December 2020](#)

The survey report presents statistical data on key health indicators for 22 States/UTs

[Achieving nutritional security in India: Vision 2030| ICRIER| December 2020](#)

The report uses the Global Indicators Framework for SDGs to ensure that the ultimate goal of ending all forms of malnutrition and nutritional security is achieved by 2030

[Tuberculosis control measures in Urban India: strengthening delivery of comprehensive primary health services | Asian Development Bank| December 2020](#)

This paper analyses the magnitude of tuberculosis (TB) transmission and the quality of interventions in India's urban areas and migrant populations

[World Health Statistics 2021: Monitoring Health for the SDGs | WHO| May 2021](#)

This report presents the latest data on more than 50 health-related Sustainable Development Goal and "triple billion" target indicators



# State of Employment

---

## Unemployment

Urban unemployment rate shot to 14.7 per cent in May 2021 on the back of the COVID-19



## MGNREGA

Jammu & Kashmir, Bihar, West Bengal and Uttar Pradesh see the maximum payment delays in the flagship rural employment scheme

# UNEMPLOYMENT

The initial impact of the second wave of COVID-19 can be seen in May unemployment rates, which are the highest since June last year

**3.93**

percentage point increase in unemployment between April and May 2021

**45.6%**

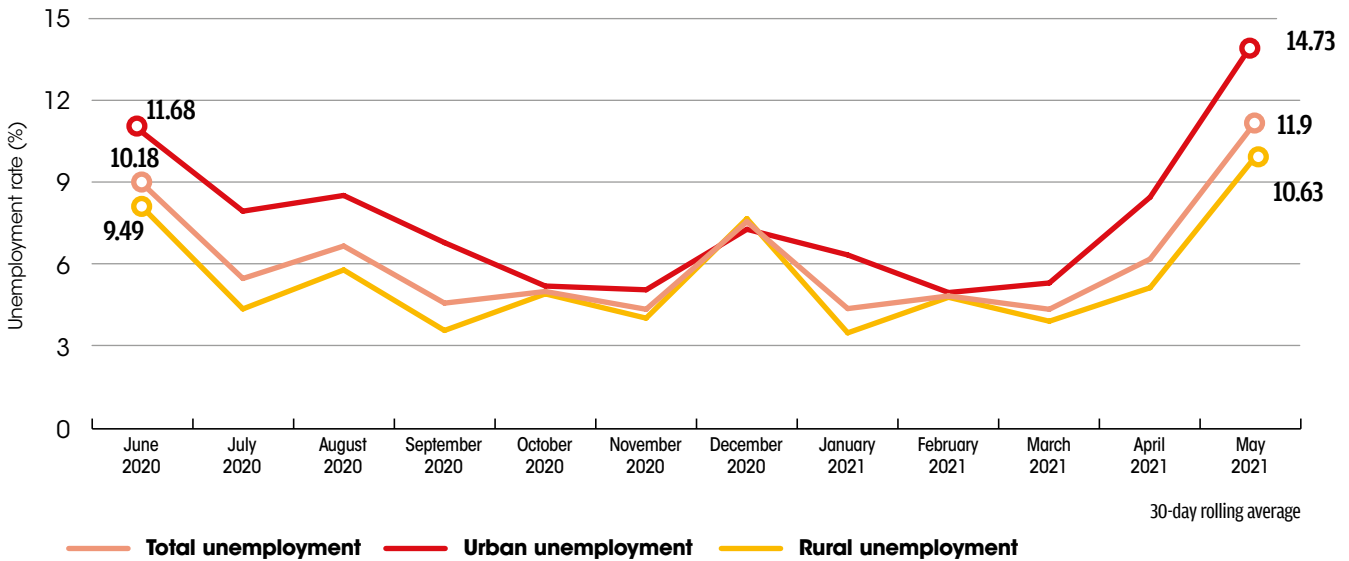
unemployment rate in Delhi in May 2021

**29.1%**

unemployment rate in Haryana in May 2021

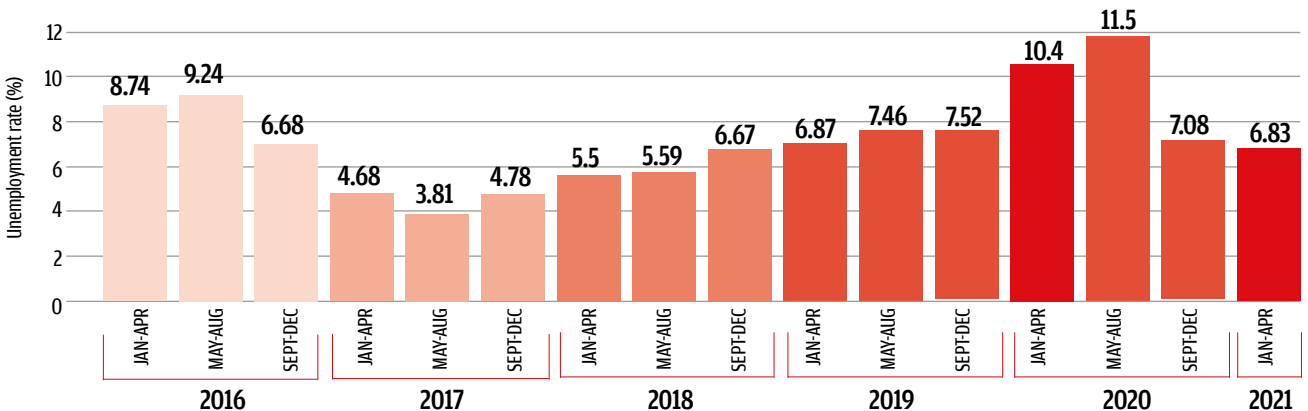
## Repeat act

The unemployment rate has again started an upward march in May



## Still high

India continues to have high unemployment rate and this is **expected to shoot up in the next quarter**



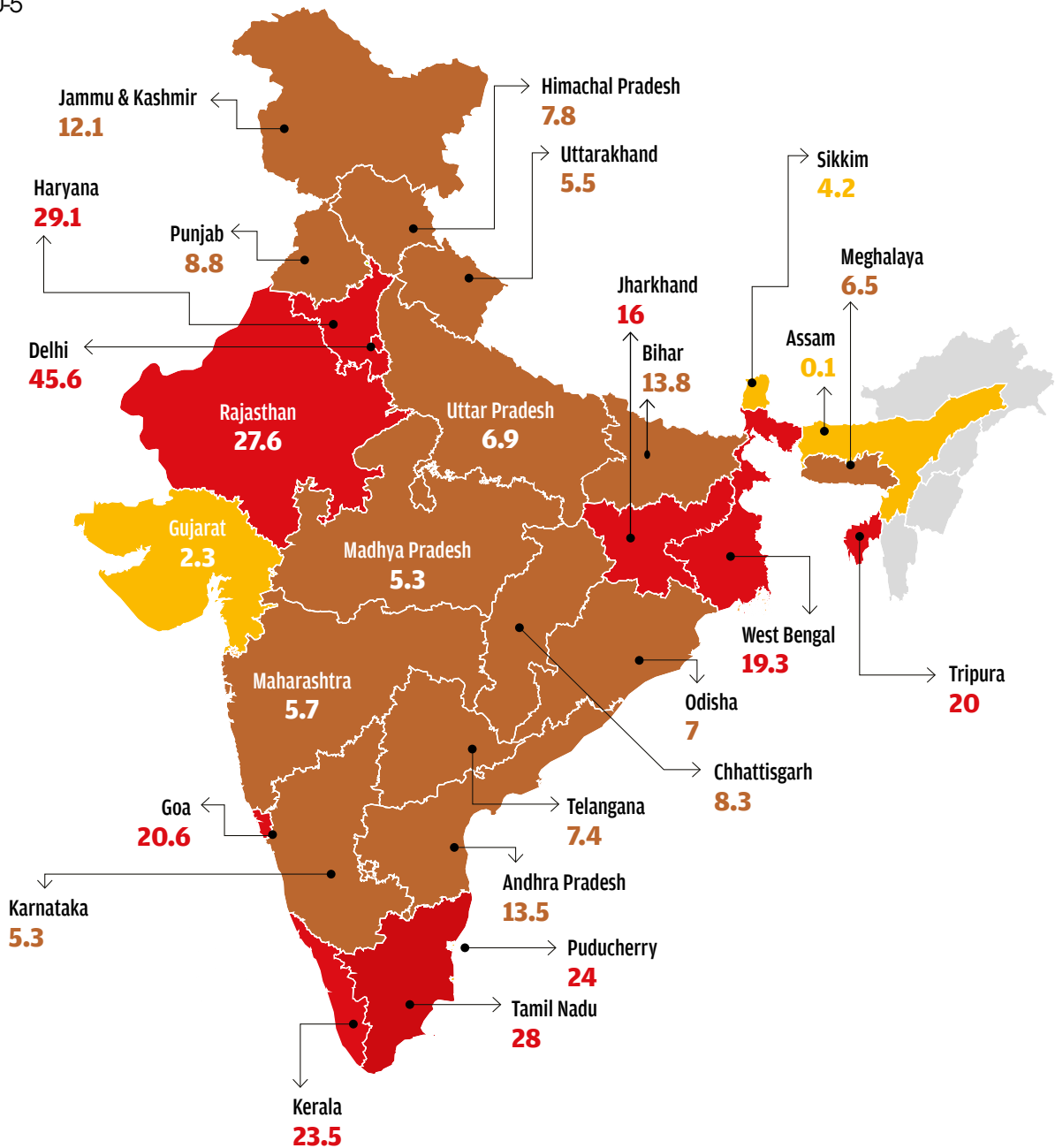
Source: CMIE, updated till May 31, 2021

## Job crunch

Ten states have an unemployment rate **more than 15 per cent**

### Unemployment rate (%)

- >15
- >5 to 15
- 0-5



Source: [CMIE](#), updated till May 31, 2021

# MOUNTING DELAYS

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) saw an unprecedented peak in demand after the national lockdown last year. Payment delays, though, continue to mar the Centre's flagship employment programme for rural India

**IN 2020-21**

**56%**  
of the payment delays were reported in just five states

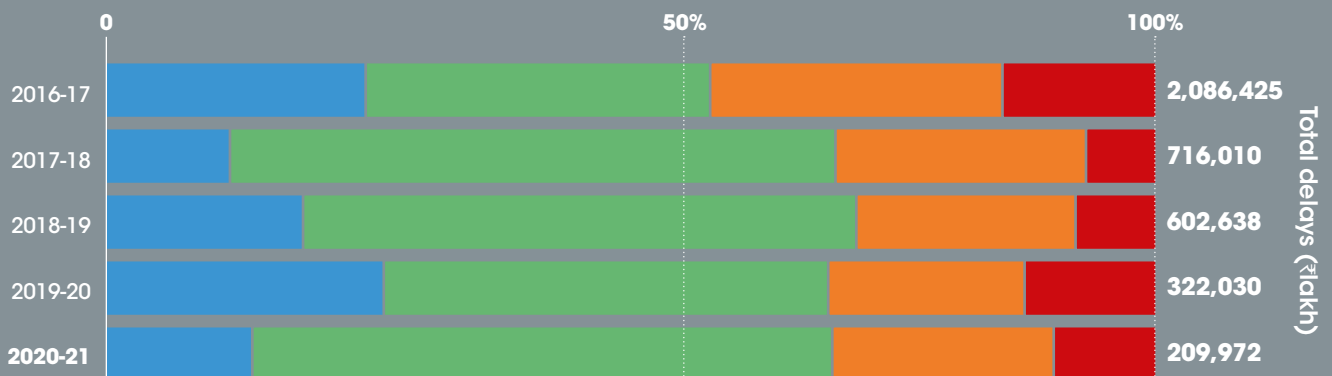
**13.4%**  
of the payments in Jammu and Kashmir were delayed, followed by Bihar (12.1 per cent) and West Bengal (11.8 per cent)

**59%**  
of the late payments in Manipur were delayed by more than 90 days. The national average is 14 per cent

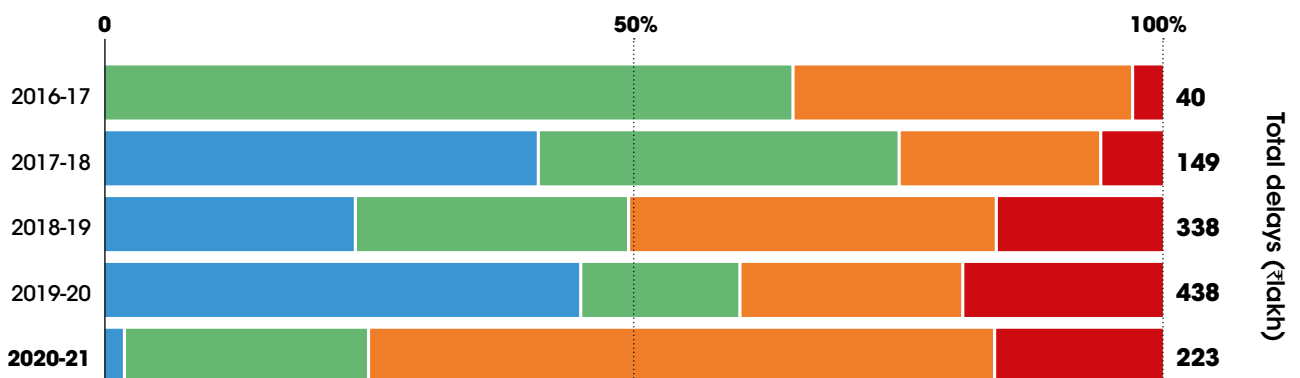
**PAYMENTS DELAYED BY**

More than 90 days    16-30 days    31-60 days    61-90 days

**INDIA**



**ANDAMAN AND NICOBAR**

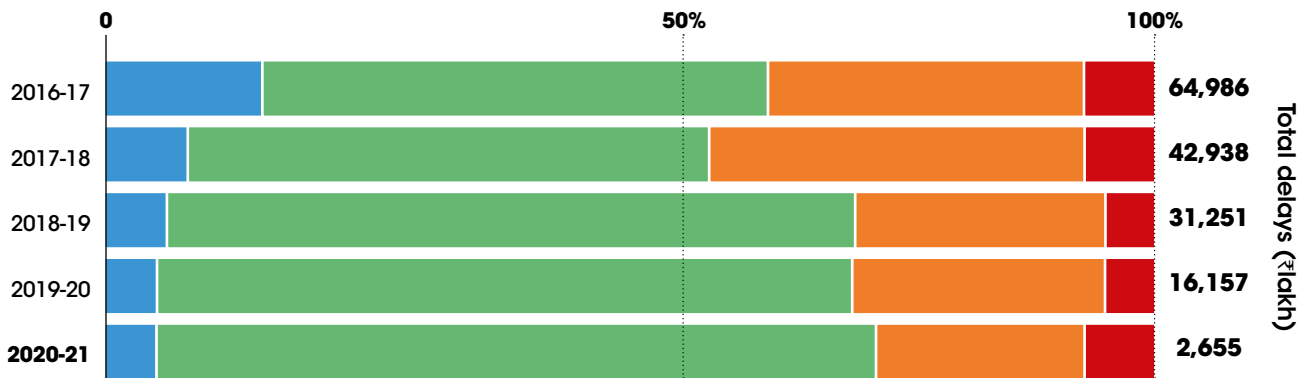


Source: [MGNREGA dashboard](#), updated till April 20, 2021; Total delays rounded to nearest integer

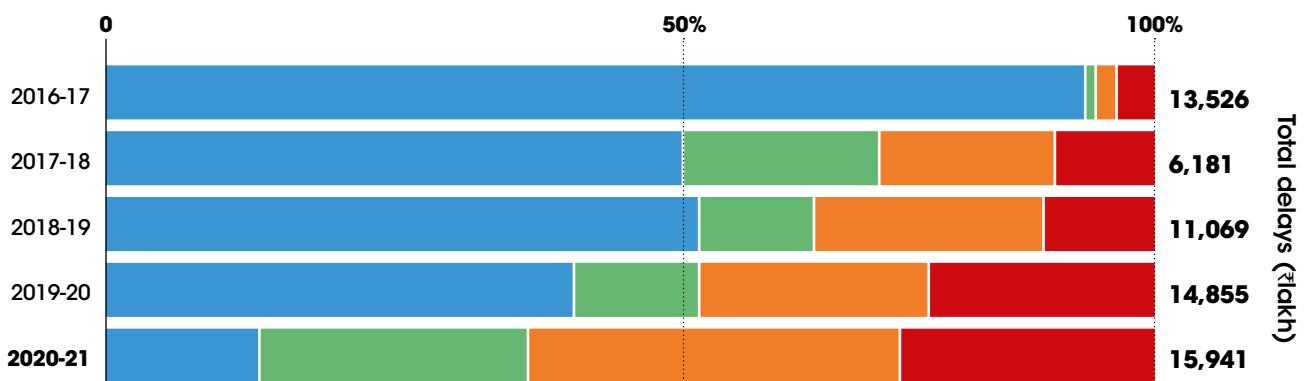
**PAYMENTS DELAYED BY**

More than 90 days 16-30 days 31-60 days 61-90 days

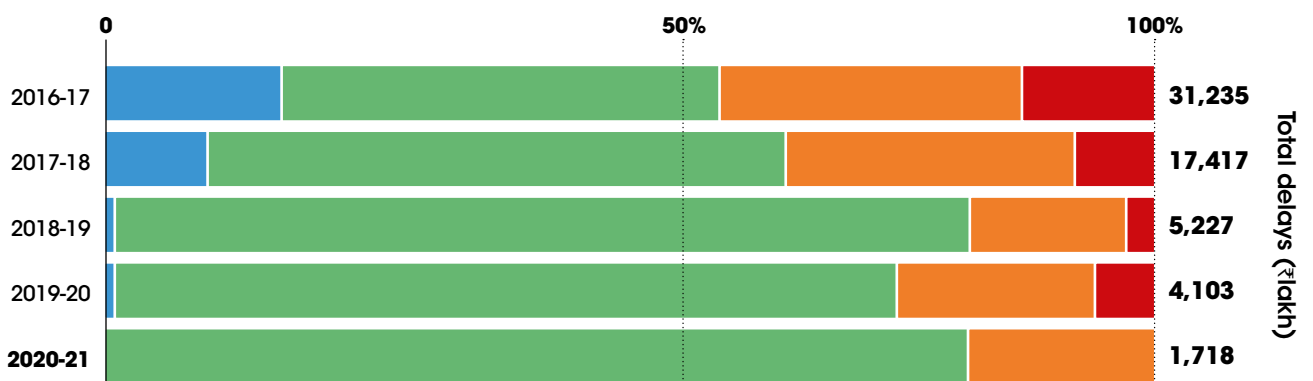
**ANDHRA PRADESH**



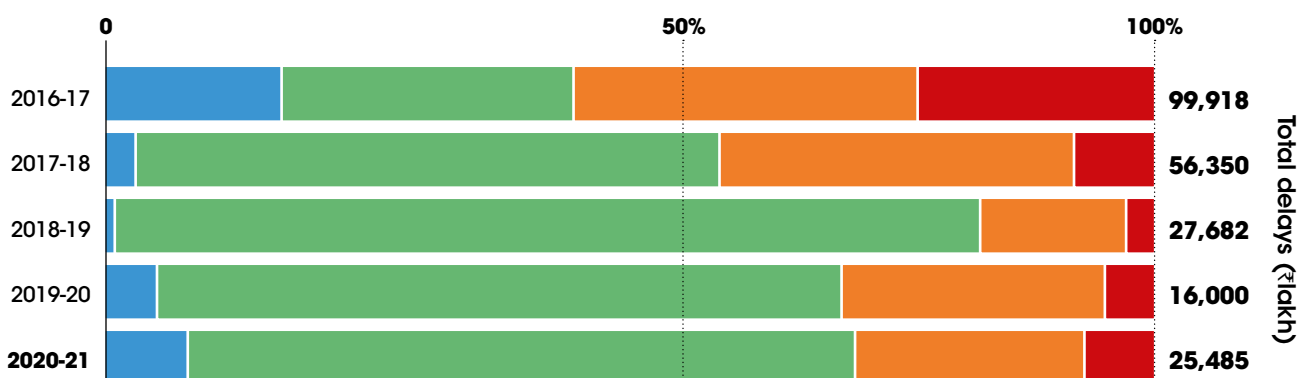
**ARUNACHAL PRADESH**



**ASSAM**



**BIHAR**



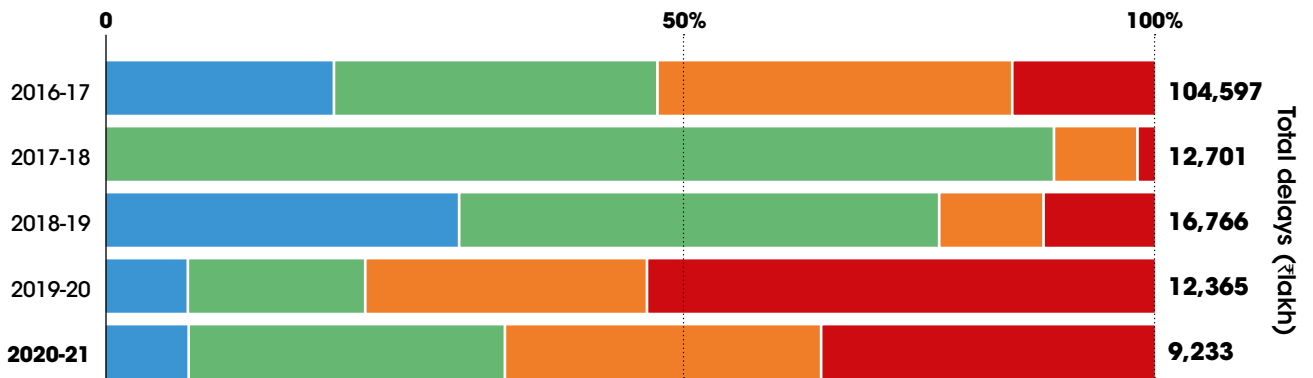
Source: [MGNREGA dashboard](#), updated till April 20, 2021; Total delays rounded to nearest integer

# STATE OF EMPLOYMENT

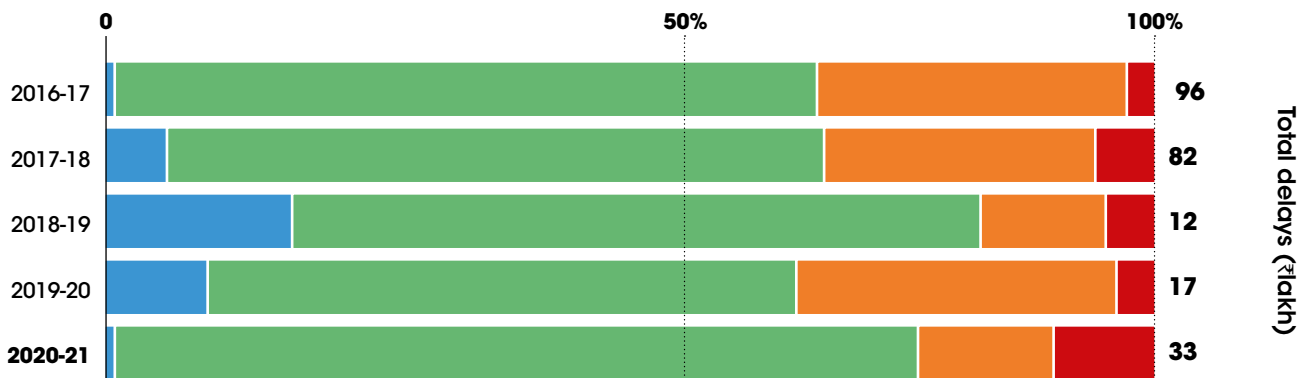
## PAYMENTS DELAYED BY

More than 90 days    16-30 days    31-60 days    61-90 days

### CHHATTISGARH



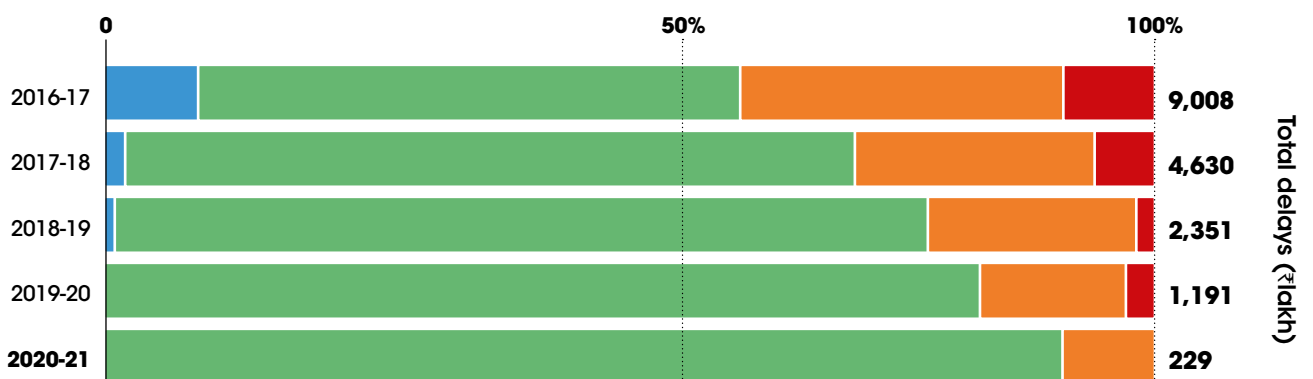
### GOA



### GUJARAT



### HARYANA

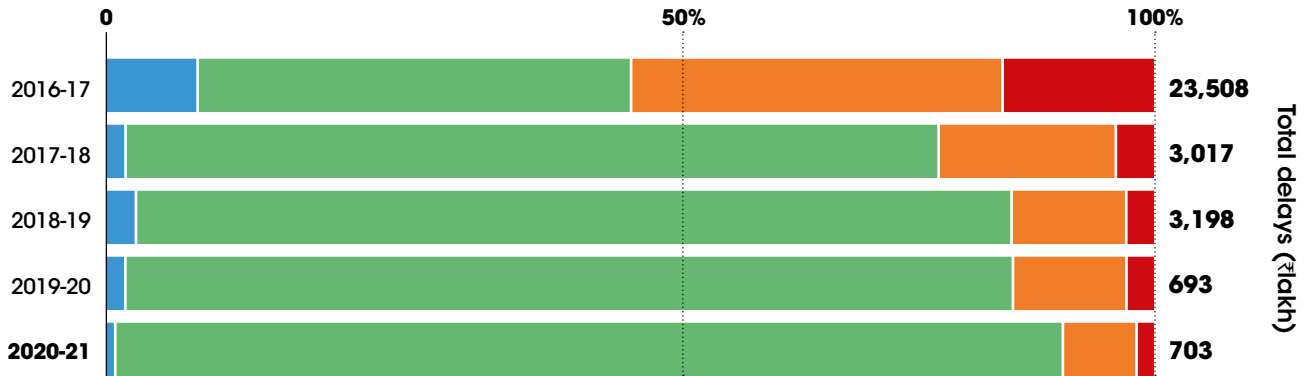


Source: [MGNREGA dashboard](#), updated till April 20, 2021; Total delays rounded to nearest integer

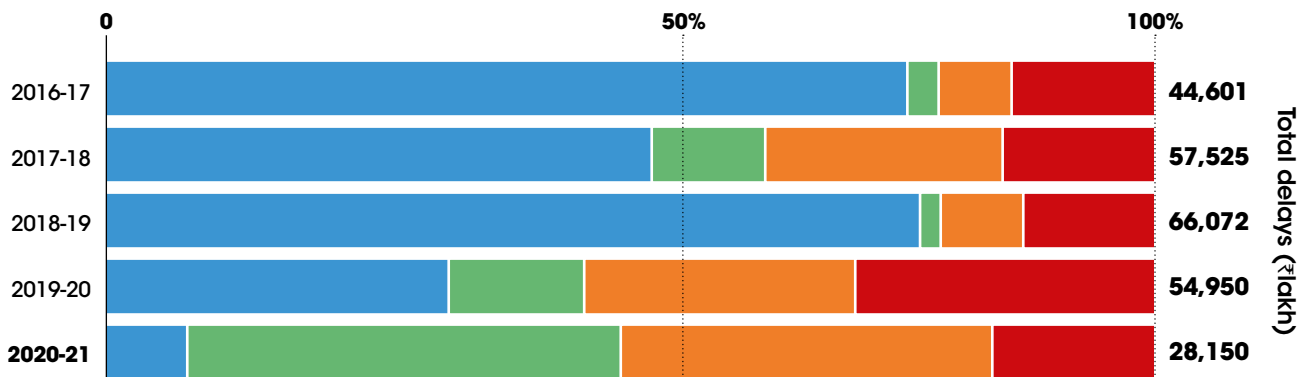
**PAYMENTS DELAYED BY**

More than 90 days 16-30 days 31-60 days 61-90 days

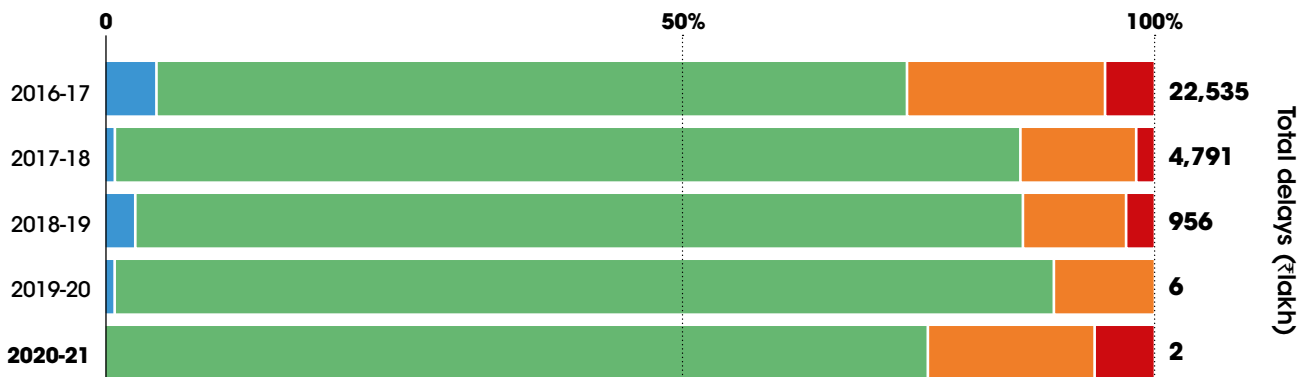
**HIMACHAL PRADESH**



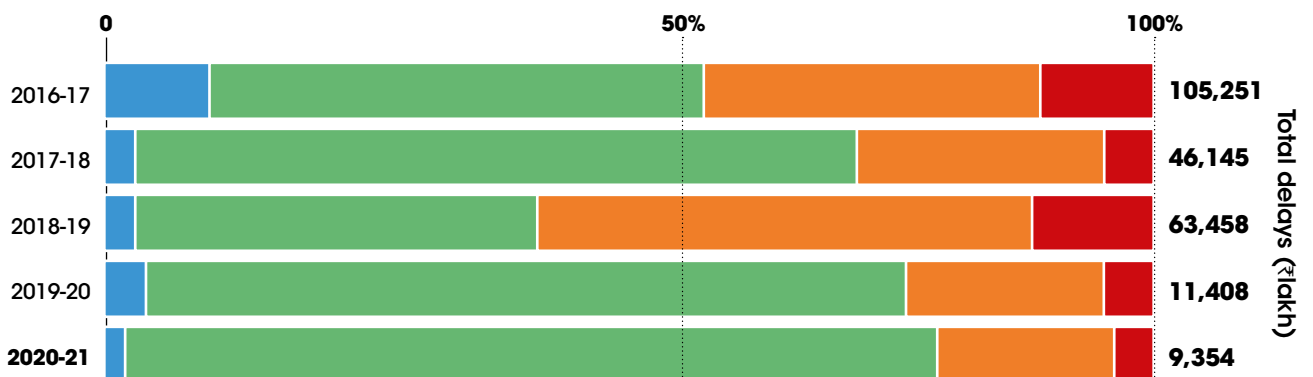
**JAMMU AND KASHMIR**



**JHARKHAND**



**KARNATAKA**



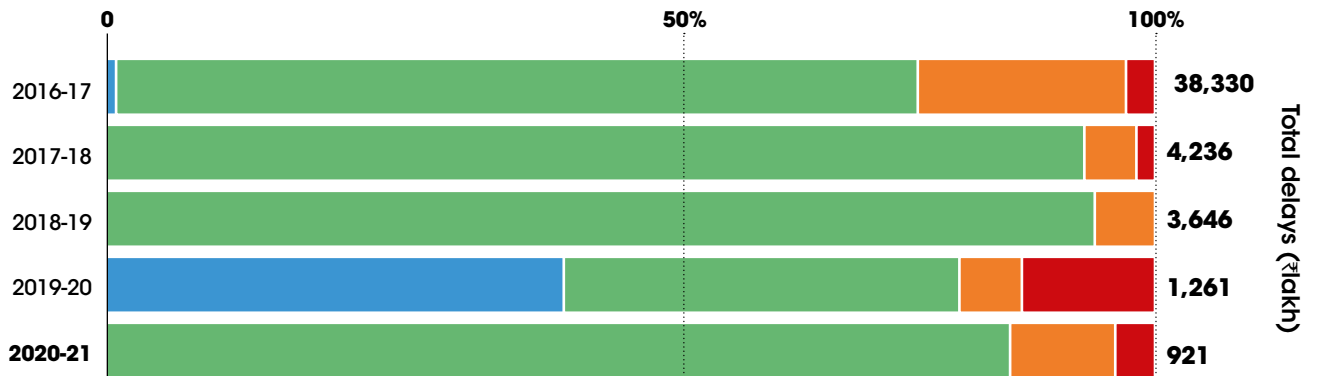
Source: [MGNREGA dashboard, updated till April 20, 2021](#); Total delays rounded to nearest integer

# STATE OF EMPLOYMENT

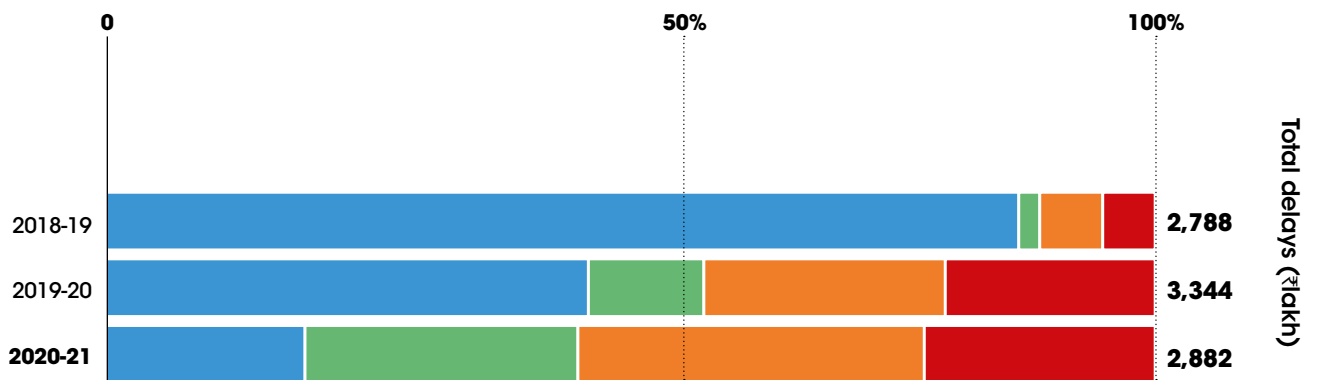
## PAYMENTS DELAYED BY

More than 90 days    16-30 days    31-60 days    61-90 days

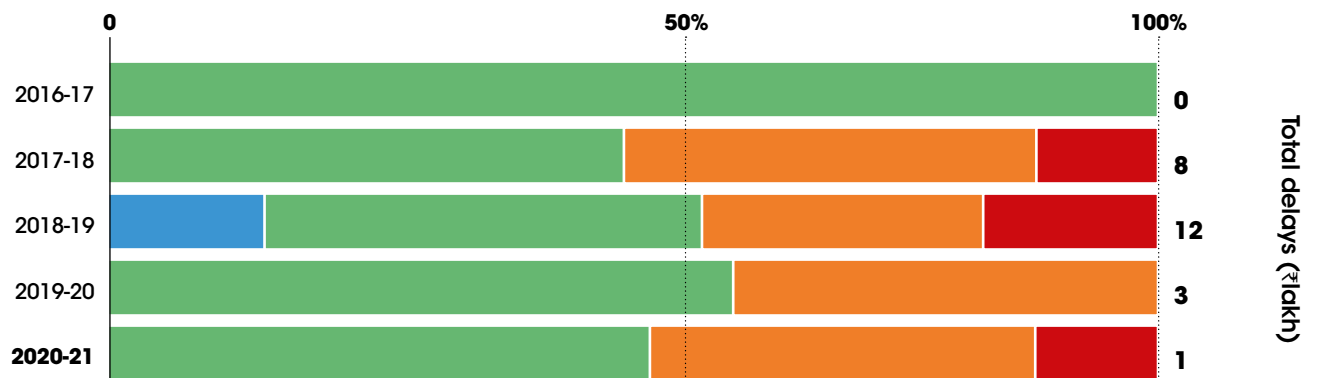
### KERALA



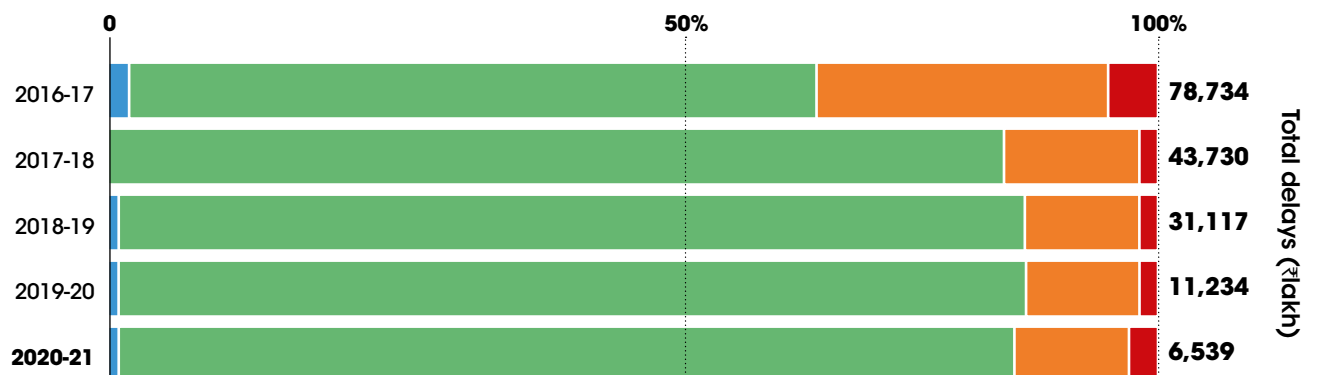
### LADAKH



### LAKSHADWEEP



### MADHYA PRADESH



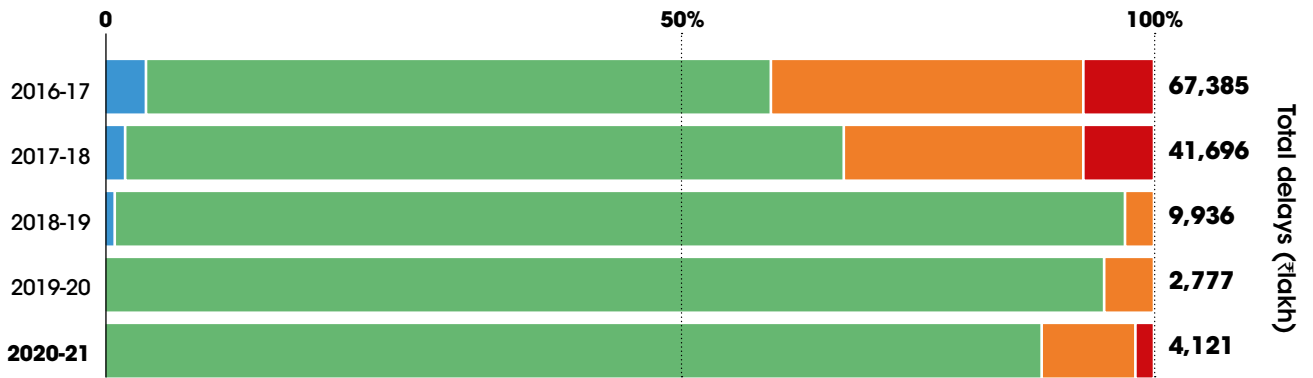
Source: [MGNREGA dashboard](#), updated till April 20, 2021; Total delays rounded to nearest integer



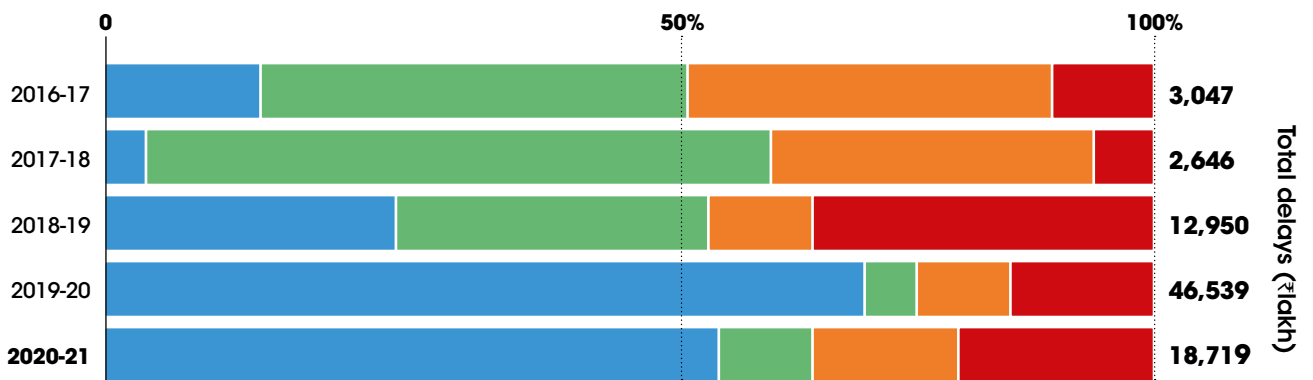
**PAYMENTS DELAYED BY**

More than 90 days    16-30 days    31-60 days    61-90 days

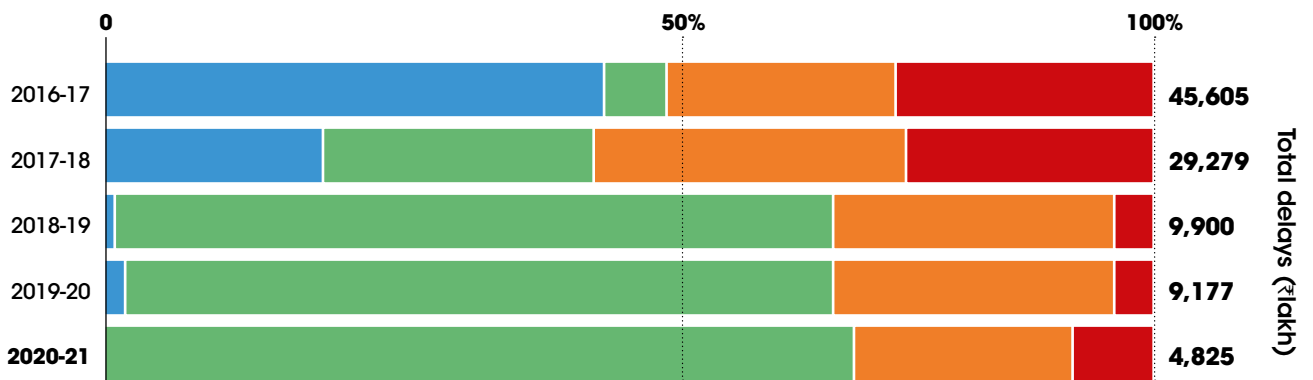
**MAHARASHTRA**



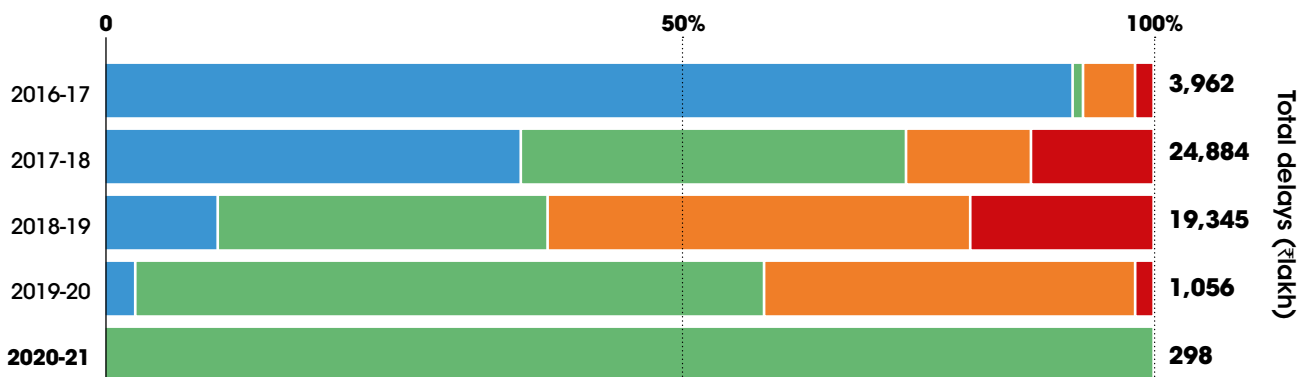
**MANIPUR**



**MEGHALAYA**



**MIZORAM**



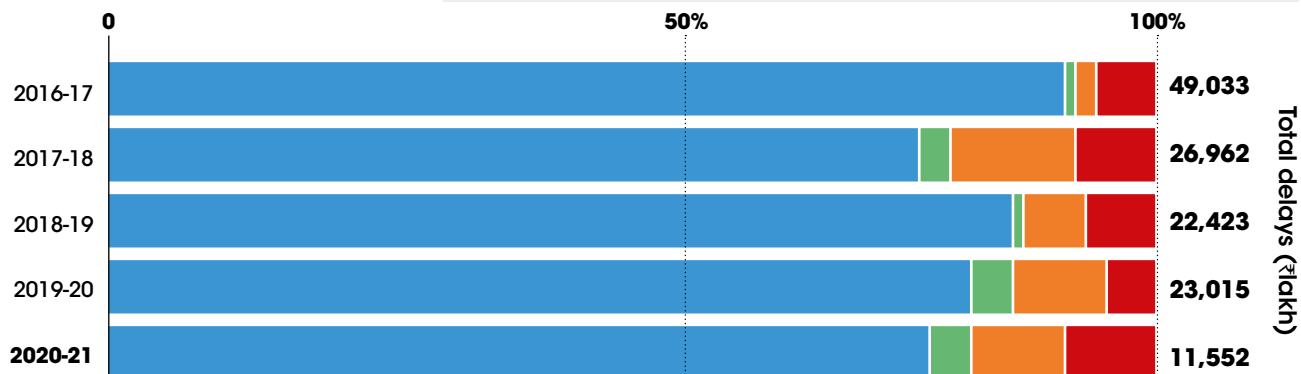
Source: MGNREGA dashboard, updated till April 20, 2021; Total delays rounded to nearest integer

# STATE OF EMPLOYMENT

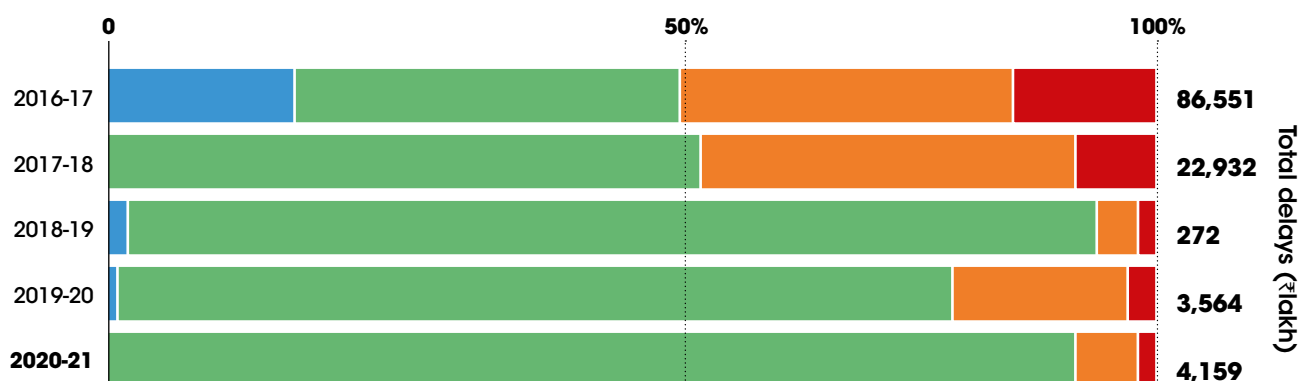
## PAYMENTS DELAYED BY

More than 90 days    16-30 days    31-60 days    61-90 days

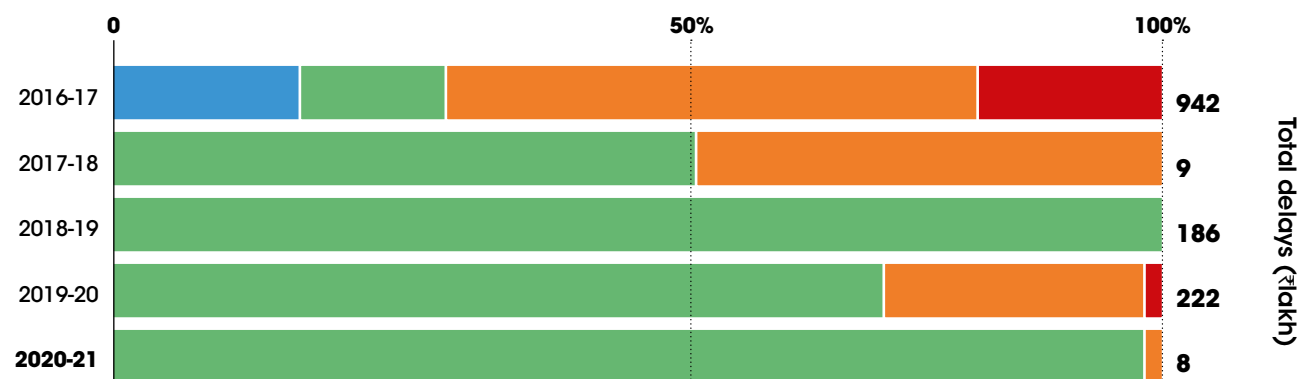
### NAGALAND



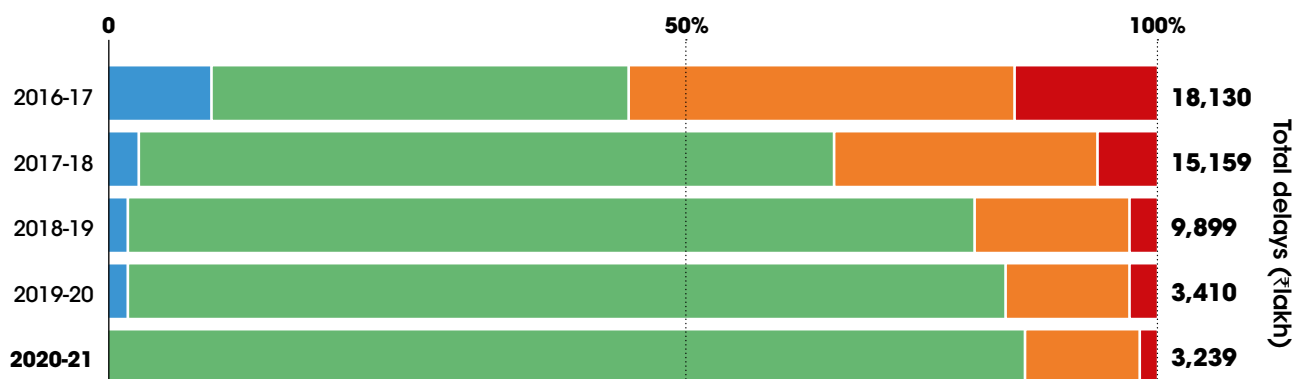
### ODISHA



### PUDUCHERRY



### PUNJAB

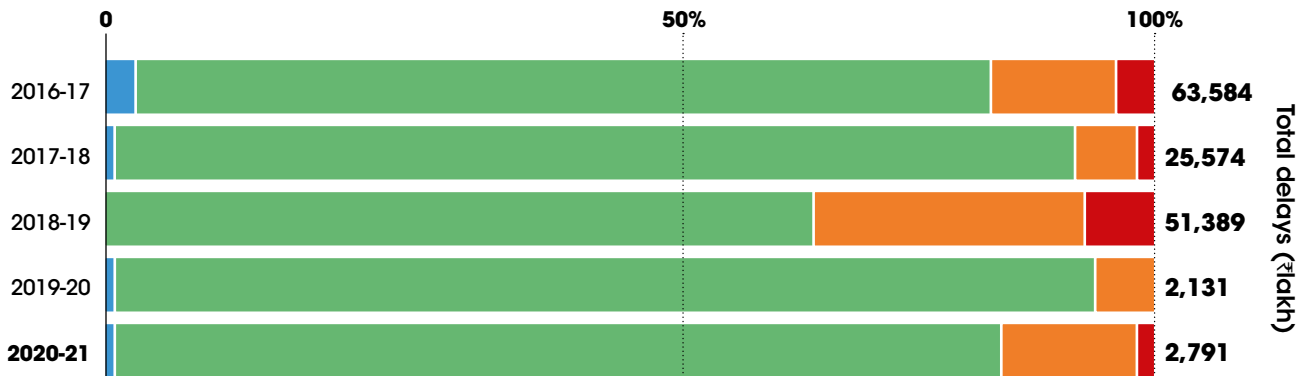


Source: [MGNREGA dashboard](#), updated till April 20, 2021; Total delays rounded to nearest integer

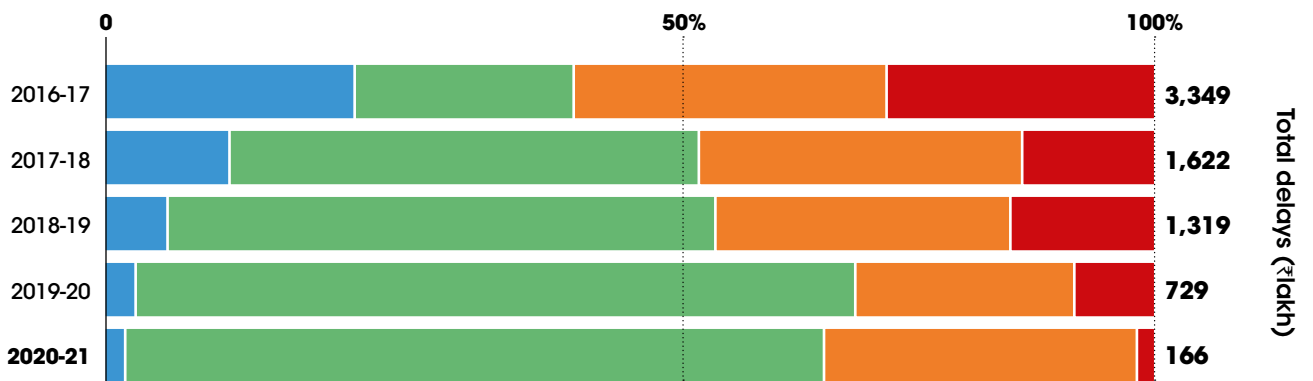
**PAYMENTS DELAYED BY**

More than 90 days 16-30 days 31-60 days 61-90 days

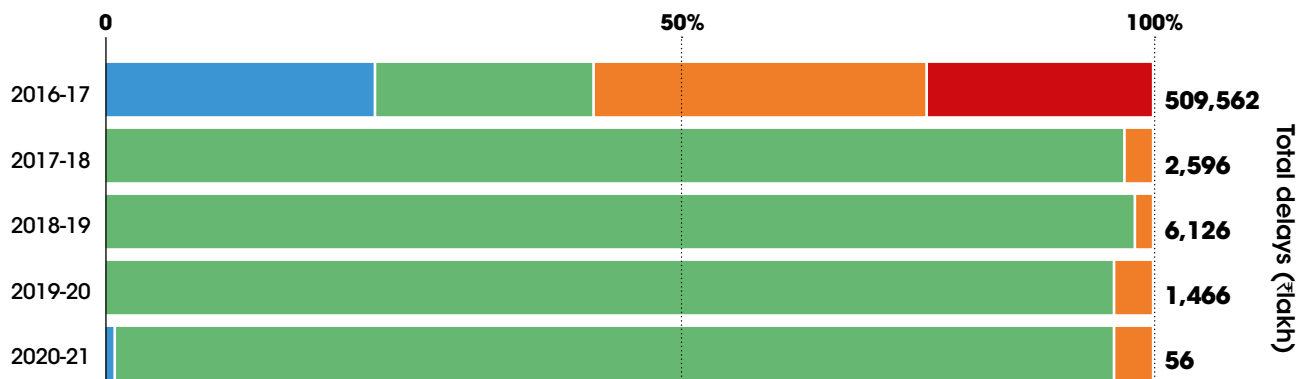
**RAJASTHAN**



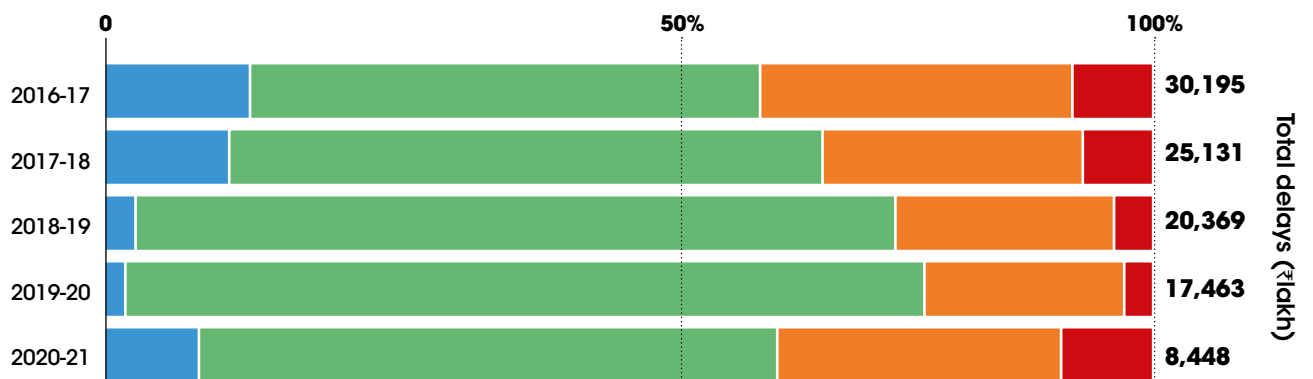
**SIKKIM**



**TAMIL NADU**



**TELANGANA**



Source: [MGNREGA dashboard](#), updated till April 20, 2021; Total delays rounded to nearest integer

# STATE OF EMPLOYMENT

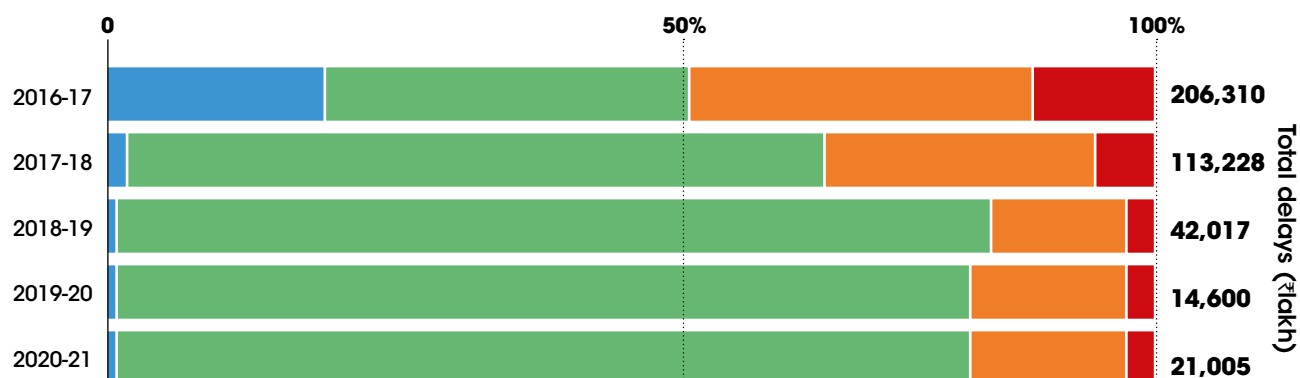
## PAYMENTS DELAYED BY

More than 90 days    16-30 days    31-60 days    61-90 days

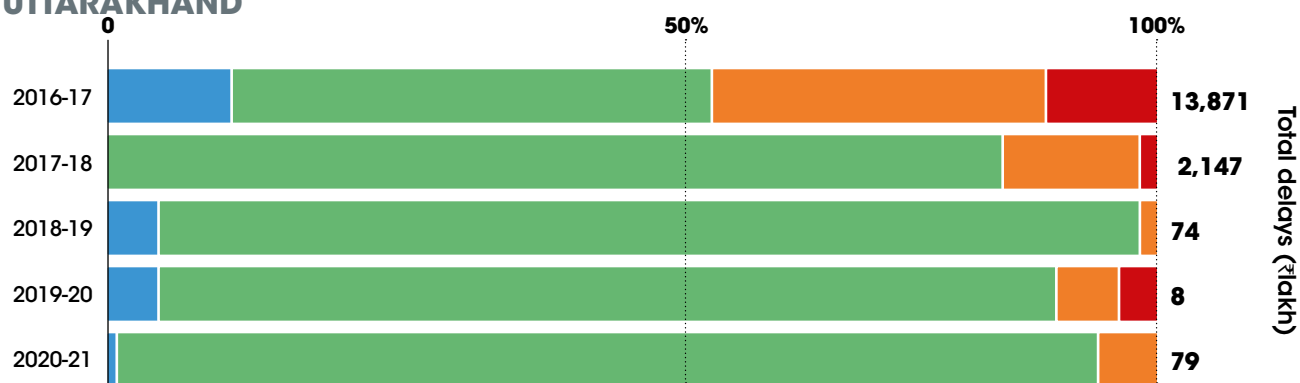
### TRIPURA



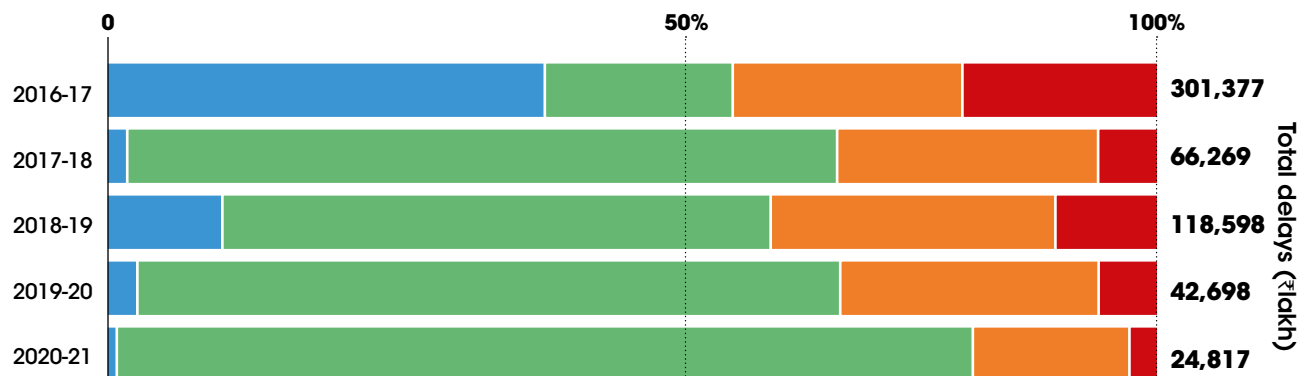
### UTTAR PRADESH



### UTTARAKHAND



### WEST BENGAL



## RESOURCES

### IN NEWS

#### [Asia-Pacific may achieve just 10% targets of sustainable development goals: UN report | March 16, 2021](#)

Out of 104 measurable targets of the SDGs, the region is on track to reach only nine by 2030, according to the report titled Asia and the Pacific SDG Progress Report, 2021 by UN Economic and Social Commission for Asia and the Pacific

#### [Strengthen NREGA to compensate for rural losses due to COVID-19](#)

India is already paying a heavy price due to the government's unpreparedness to deal with the health crisis

#### [Will MGNREGA help again? '1,387 crore pending in wages](#)

Migrant workers are returning to their home states again as COVID-19 pandemic lashes out brutally at several urban centres

#### [Orchard in nowhere: How MGNREGA has helped in greening up Sabarkantha villages](#)

The district in arid northern Gujarat has taken up orchard cultivations

#### [India's second COVID-19 wave could put its economic recovery at risk: ADB](#)

Leading financial institution Asian Development Bank warns that while Asia-Pacific is recovering, the surge in India could halt any progress made

#### [The orphans of the Fourth Revolution](#)

With an estimated 85 million jobs to be lost to automation by 2025, the development divide is set to deepen

#### [Structural pitfalls of MGNREGA](#)

It's time to remove inherent flaws of the guaranteed wage programme MGNREGA that limit its poverty alleviation potential

#### [Post COVID-19, ILO calls for national-level policy on those working from home](#)

There is an urgency to adopt global labour standards and improve national-level labour registries for home-based workers, organisation says in its new report

#### [COVID-19, economic stagnancy and dignity of work](#)

Bondage in Indian cities is far from gainful employment with dignity. The urban fear is many informal workers may have reverse migrated and will not come back

#### [COVID-19: Link between migrants, development goals becomes more clear](#)

The novel coronavirus disease (COVID-19) pandemic effects the unorganised work force the most: Research work, policy measures needed to quantify their socio-economic loss

#### [COVID-19: What about women in informal sector?](#)

From weavers in Manipur to domestic helps in metropolitan cities, the COVID-19 pandemic has brought uncertainty to women workers' lives

#### [COVID-19: Self-sufficient neighbourhoods are needed to make cities resilient](#)

The need is to recognise what a neighbourhood requires and ensure that the planning makes everyday needs available and accessible to them

#### [COVID-19: Tribal handicraft worth '100 cr unsold](#)

Tribal Cooperative Marketing Development Federation of India to intervene, buy unsold items

#### [Budget 2020-21: Will MGNREGA become an overarching rural development scheme](#)

The upcoming budget will see many schemes being brought under the rural employment programme; a direct cash transfer may be declared to top this up

## RESOURCES

### REPORTS/PUBLICATIONS

#### [National Health Profile 2020| Central Bureau of Health Intelligence \(CBHI\) | May 2021](#)

This report provides comprehensive information related to health sector

#### [Vision 2035: Public Health Surveillance in India| NITI Aayog| December 2020](#)

The report suggests mainstreaming of surveillance by making individual electronic health records the basis for surveillance

#### [National Family Health Survey \(NFHS-5\) 2019-20: Key Indicators for 22 States/UTs from Phase-1| Ministry of Health and Family Welfare| December 2020](#)

The survey report presents statistical data on key health indicators for 22 States/UTs

#### [Achieving nutritional security in India: Vision 2030| ICRIER| December 2020](#)

The report uses the Global Indicators Framework for SDGs to ensure that the ultimate goal of ending

all forms of malnutrition and nutritional security is achieved by 2030

#### [Tuberculosis control measures in Urban India: strengthening delivery of comprehensive primary health services | Asian Development Bank| December 2020](#)

This paper analyses the magnitude of tuberculosis (TB) transmission and the quality of interventions in India's urban areas and migrant populations

#### [World Health Statistics 2021: Monitoring Health for the SDGs | WHO| May 2021](#)

This report presents the latest data on more than 50 health-related Sustainable Development Goal and "triple billion" target indicators



DTE/ CSE data centre was born out of the belief that processing data and information is the new way to communicate today. The centre endeavours to churn out compelling data stories that are credible and easy to comprehend. This is critical as today data is overflowing and information is available from so many sources and so fast that sometimes we end up not making any sense of the happenings.

Down To Earth is one of the most credible instruments of public journalism in India, which has been decoding the politics of development, environment and health for the past 28 years. Numerous readers across the world rely on DTE for a comprehensive view from the South on the most critical issues of human survival.

Centre for Science and Environment is a global think tank from the South for research and advocacy on inclusive green growth



**Down To Earth**  
SCIENCE AND ENVIRONMENT FORTNIGHTLY

