A Down To Earth ANNUAL

STATE OF INDIA'S ENVIRONMENT 2020 IN FIGURES

- MIGRATION
- AGRICULTURE AND LAND
- FOREST AND WILDLIFE
- CLIMATE CHANGE
- WATER AND RIVERS
- WASTE
- AIR POLLUTION
- LIVESTOCKS
- HOUSING
- EMPLOYMENT
- ENERGY

FOCUS

State of the states: Rankings on SDGs, Forests, Wastelands, Livestock, Groundwater Development, Employment

Covid-19: Economy, Jobloss, Food Security, Poverty, Displacement

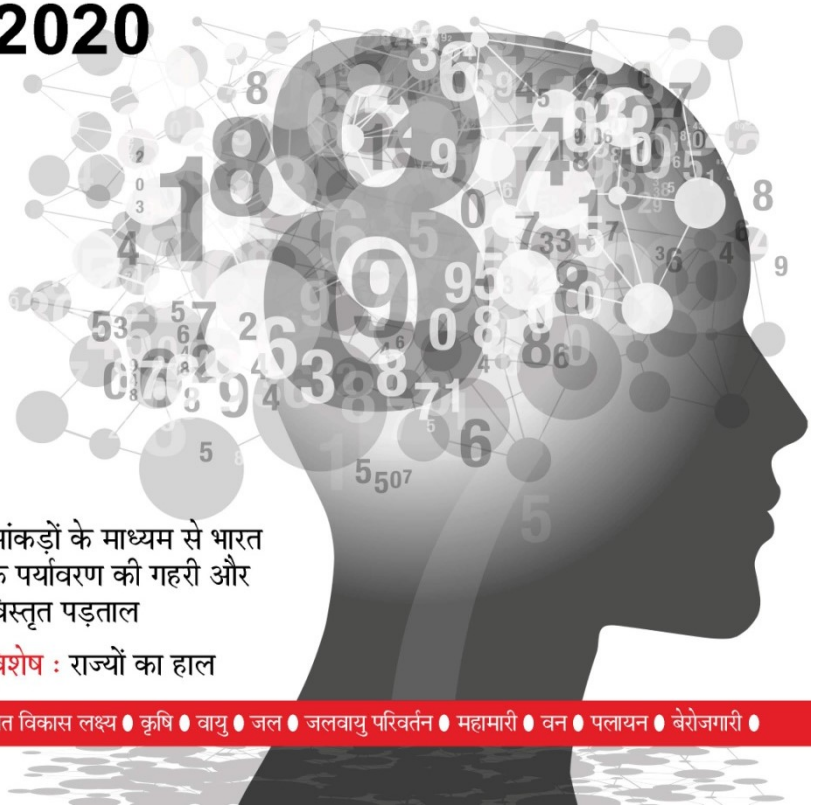
जून 2020

विश्व पर्यावरण दिवस 2020 विशेषांक

डाउन टू अर्थ

पर्यावरण और विकास की राजनीति... हर महीने ₹50

पर्यावरण की दशा-दिशा 2020



आंकड़ों के माध्यम से भारत के पर्यावरण की गहरी और विस्तृत पड़ताल

विशेष : राज्यों का हाल

सतत विकास लक्ष्य ● कृषि ● वायु ● जल ● जलवायु परिवर्तन ● महामारी ● वन ● पलायन ● बेरोजगारी ●

State of our environment: through the eyes of numbers

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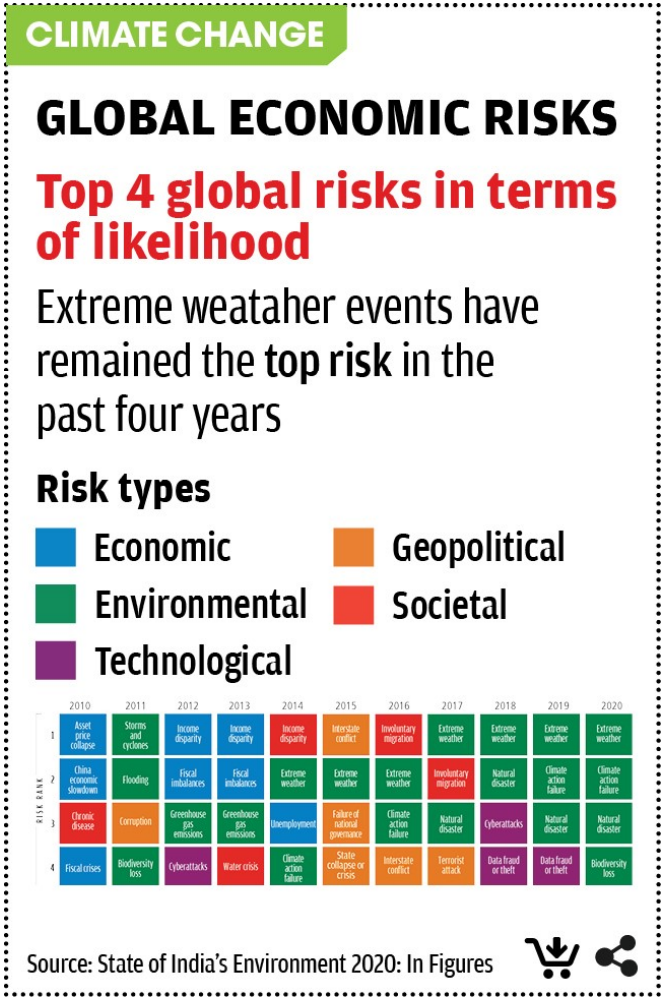
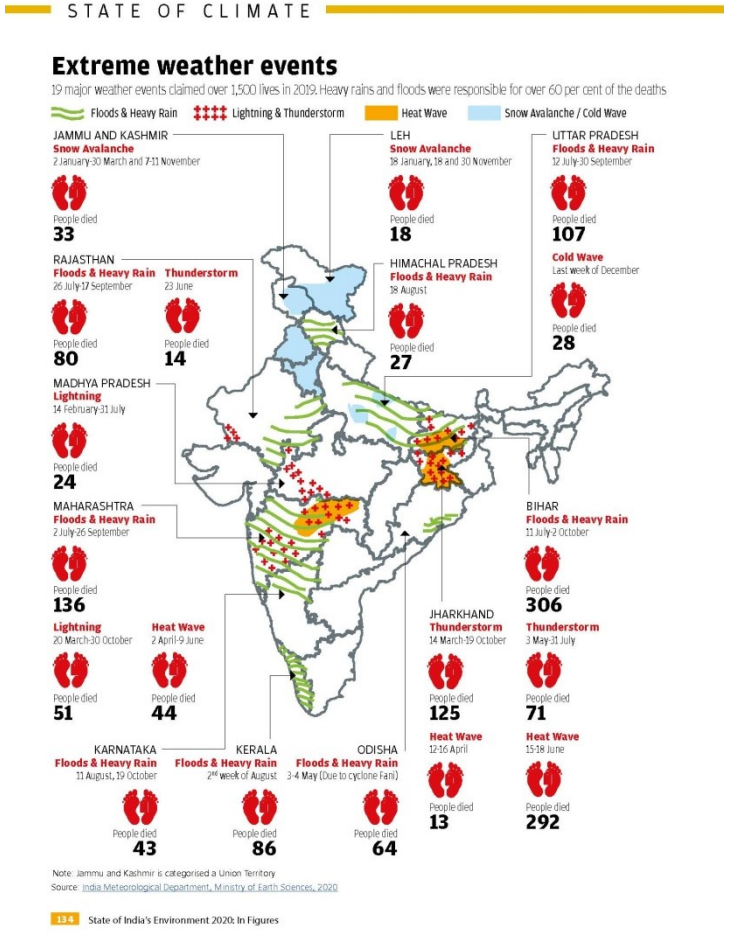
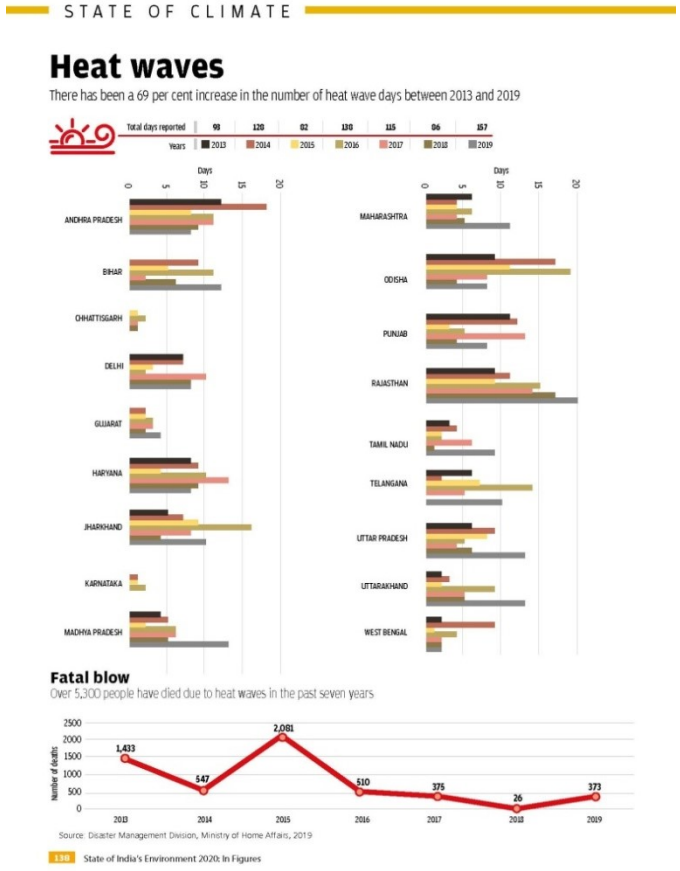
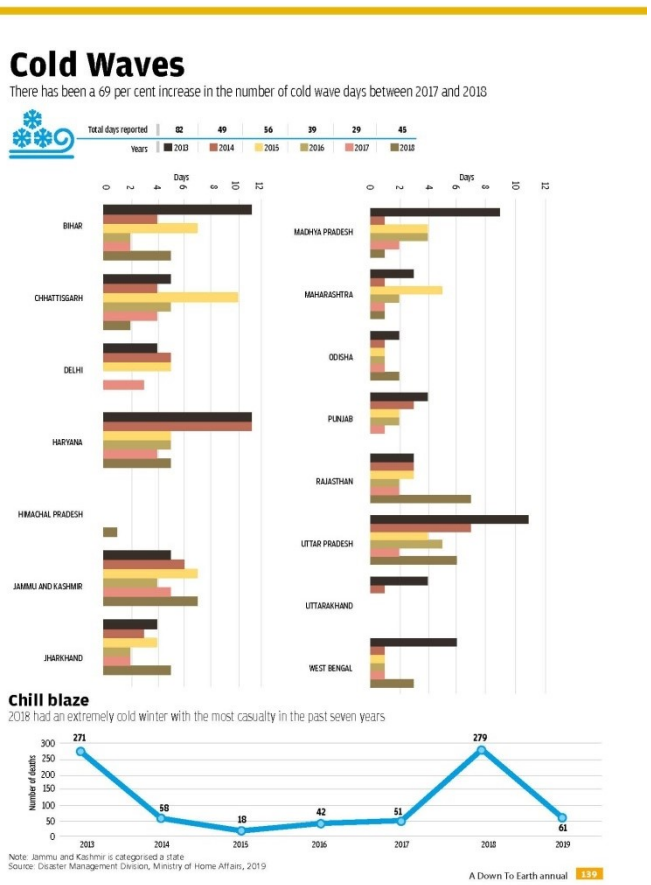


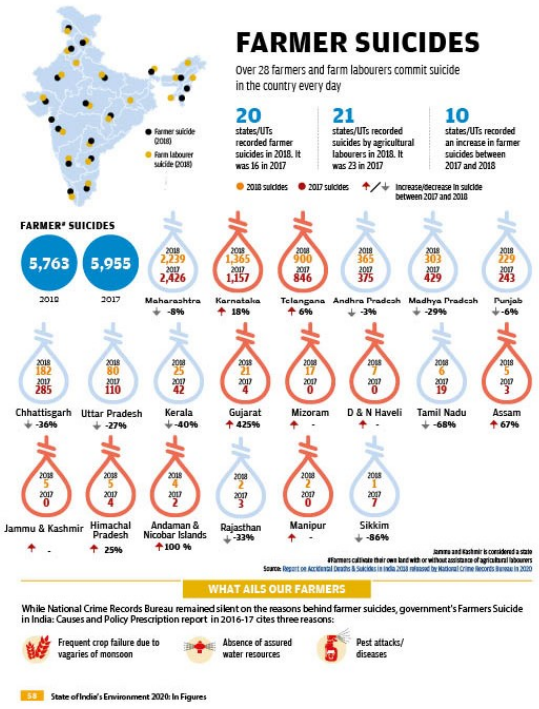


2. Extremes and variations in heat and cold increasing





3. Huge impact on the lives of people: not just climate but bad development



FARMER SUICIDES

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

20 states/UTs recorded farmer suicides in 2018. It was 16 in 2017

21 states/UTs recorded suicides by agricultural labourers in 2018. It was 23 in 2017

10 states/UTs recorded an increase in farmer suicides between 2017 and 2018

2018 suicides · 2017 suicides · Increase/decrease in suicide between 2017 and 2018

FARMER* SUICIDES

2018: 5,763 · 2017: 5,955

Maharashtra 2,239 / 2,426 -8% · Karnataka 1,365 / 1,157 18% · Telangana 900 / 846 6% · Andhra Pradesh 303 / 375 -3% · Madhya Pradesh 303 / 429 -29% · Punjab 229 / 243 -6%

Chhattisgarh 182 / 285 -36% · Uttar Pradesh 80 / 110 -27% · Kerala 25 / 42 -40% · Gujarat 21 / 4 425% · Mizoram 17 / 0 - · D & N Haveli 7 / 0 - · Tamil Nadu 6 / 19 -68% · Assam 5 / 3 67%

Jammu & Kashmir 5 / 0 - · Himachal Pradesh 5 / 4 25% · Andaman & Nicobar Islands 4 / 2 100 % · Rajasthan 2 / 3 -33% · Manipur 2 / 0 - · Sikkim 1 / 7 -86%

Jammu and Kashmir is considered a state

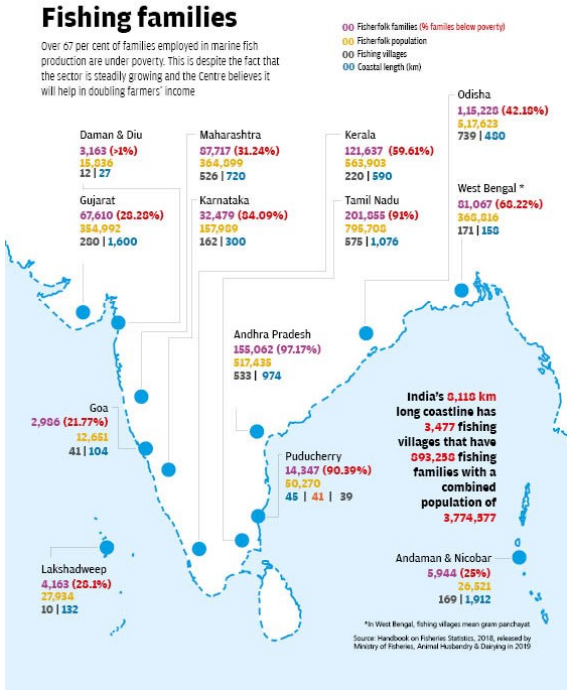
*Farmers cultivate their own land with or without assistance of agricultural labourers

Source: Report on Accidental Deaths & Suicides in India 2018 released by National Crime Records Bureau in 2020

WHAT AILS OUR FARMERS

While National Crime Records Bureau remained 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



Fishing families

Over 67 per cent of families employed in marine fish production are under poverty. This is despite the fact that the sector is steadily growing and the Centre believes it will help in doubling farmers' income

00 Fisherfolk families (% families below poverty)
00 Fisherfolk population
00 Fishing villages
00 Coastal length (km)

Daman & Diu: 3,163 (-1%) · 15,536 · 12 | 27

Maharashtra: 07,717 (31.24%) · 364,099 · 526 | 720

Gujarat: 67,610 (28.28%) · 354,992 · 280 | 1,600

Karnataka: 32,479 (84.09%) · 157,989 · 162 | 300

Goa: 2,986 (21.77%) · 12,651 · 41 | 104

Kerala: 121,637 (59.61%) · 563,903 · 220 | 590

Tamil Nadu: 201,855 (91%) · 796,700 · 575 | 1,076

Andhra Pradesh: 155,062 (97.17%) · 517,435 · 533 | 974

Puducherry: 14,347 (90.39%) · 50,270 · 45 | 41 | 39

Odisha: 1,15,220 (42.10%) · 5,17,623 · 739 | 450

West Bengal *: 51,067 (60.22%) · 360,816 · 171 | 150

Lakshadweep: 4,163 (26.1%) · 27,934 · 10 | 132

Andaman & Nicobar: 5,944 (25%) · 26,521 · 169 | 1,912

India's 8,118 km long coastline has 3,477 fishing villages that have 893,250 fishing families with a combined population of 3,774,577

*In West Bengal, fishing villages mean gram panchayat

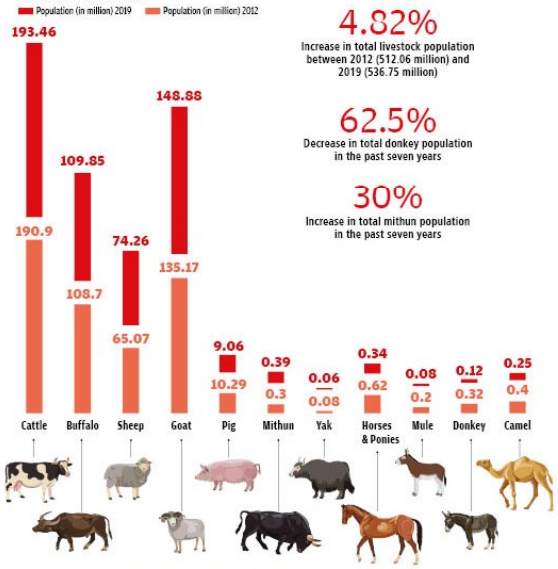
Source: Handbook on Fisheries Statistics, 2018, released by Ministry of Fisheries, Animal Husbandry & Dairying in 2019

Livestock population

Six of the 12 major livestock species recorded a population decline in the past seven years. At the same time, population of indigenous cattle has declined due to the growing popularity of exotic varieties. In another development, stray cattle population in rural areas is going

MAJOR LIVESTOCK SPECIES

Population (in million) 2019 · Population (in million) 2012



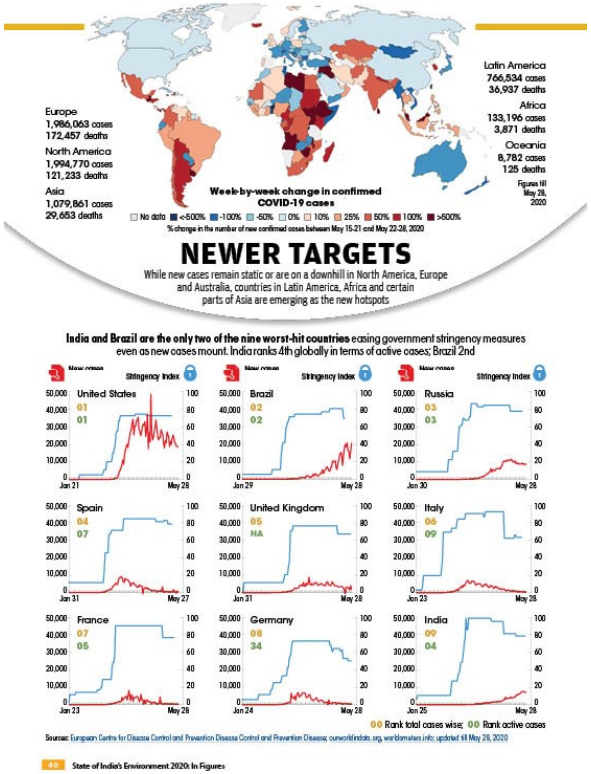
4.82% Increase in total livestock population between 2012 (512.06 million) and 2019 (536.75 million)

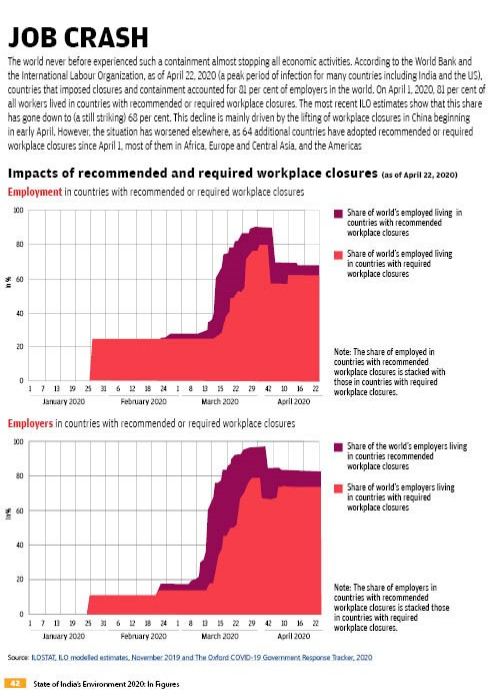
62.5% Decrease in total donkey population in the past seven years

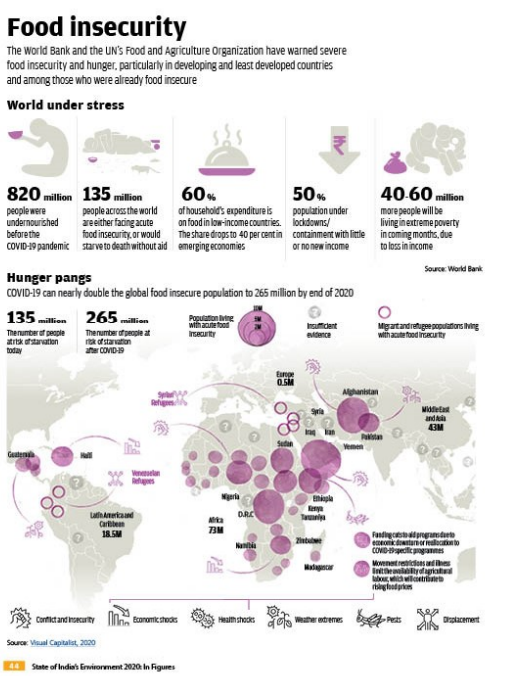
30% Increase in total mithun population in the past seven years

Source: 19th and 20th Livestock Census, Ministry of Fisheries, Animal Husbandry and Dairying, 2019

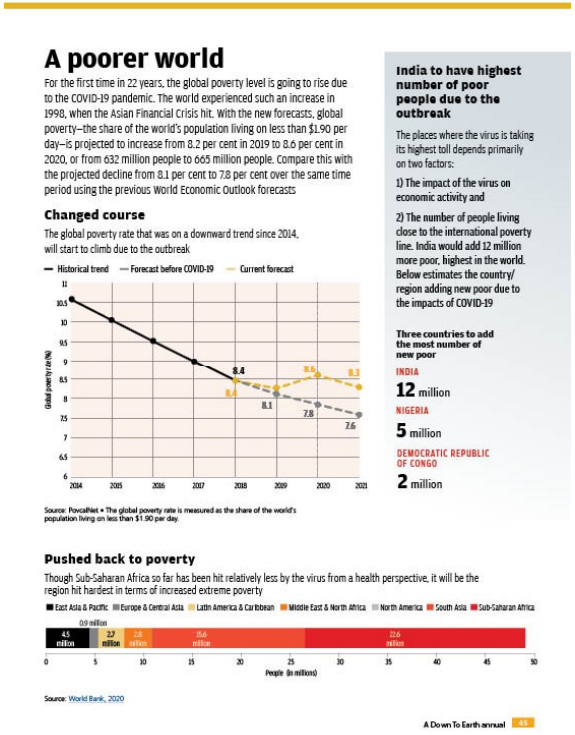
4. Now add toll from COVID: health and livelihoods







5. Face of migrant: desperate to leave and desperate to return



A poorer world

For the first time in 22 years, the global poverty level is going to rise due to the COVID-19 pandemic. The world experienced such an increase in 1998, when the Asian Financial Crisis hit. With the new forecasts, global poverty—the share of the world's population living on less than $1.90 per day—is projected to increase from 8.2 per cent in 2019 to 8.6 per cent in 2020, or from 632 million people to 665 million people. Compare this with the projected decline from 8.1 per cent to 7.8 per cent over the same time period using the previous World Economic Outlook forecasts

Changed course

The global poverty rate that was on a downward trend since 2014, will start to climb due to the outbreak

Historical trend — Forecast before COVID-19 — Current forecast

Global poverty rate (%)

11 10.5 10 9.5 9 8.5 8 7.5 7 6.5 6

2014 2015 2016 2017 2018 2019 2020 2021

8.4 8.2 8.1 8.6 8.3 7.8 7.6

Source: PovcalNet • The global poverty rate is measured as the share of the world's population living on less than $1.90 per day.

Pushed back to poverty

Though Sub-Saharan Africa so far has been hit relatively less by the virus from a health perspective, it will be the region hit hardest in terms of increased extreme poverty

East Asia & Pacific — Europe & Central Asia — Latin America & Caribbean — Middle East & North Africa — North America — South Asia — Sub-Saharan Africa

0.9 million

4.5 million | 2.7 million | 2.8 million | 15.6 million | 22.6 million

0 5 10 15 20 25 30 35 40 45 50

People (in millions)

Source: World Bank, 2020

India to have highest number of poor people due to the outbreak

The places where the virus is taking its highest toll depends primarily on two factors:

1) The impact of the virus on economic activity and

2) The number of people living close to the international poverty line. India would add 12 million more poor, highest in the world. Below estimates the country/region adding new poor due to the impacts of COVID-19

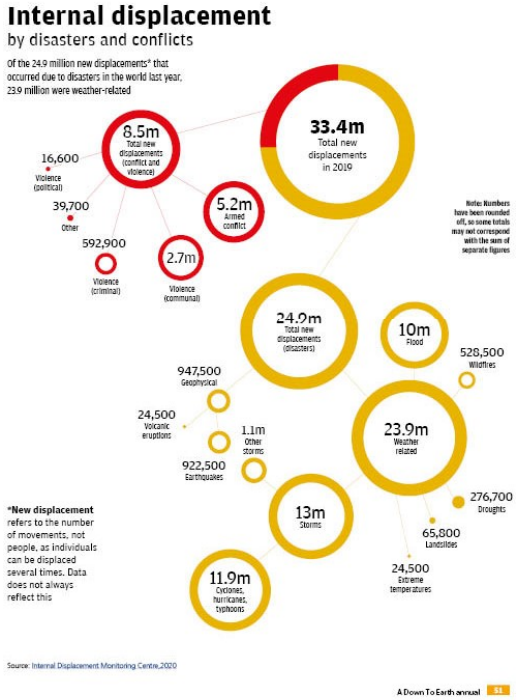
Three countries to add the most number of new poor

INDIA
12 million

NIGERIA
5 million

DEMOCRATIC REPUBLIC OF CONGO
2 million

A Down To Earth annual 45



Internal displacement

by disasters and conflicts

Of the 24.9 million new displacements* that occurred due to disasters in the world last year, 23.9 million were weather-related

8.5m Total new displacements (conflict and violence)
16,600 Violence (political)
39,700 Other
592,900 Violence (criminal)
2.7m Violence (communal)
5.2m Armed conflict
33.4m Total new displacements in 2019
24.9m Total new displacements (disasters)
10m Flood
528,500 Wildfires
947,500 Geophysical
24,500 Volcanic eruptions
1.1m Other storms
922,500 Earthquakes
23.9m Weather related
13m Storms
276,700 Droughts
65,800 Landslides
24,500 Extreme temperatures
11.9m Cyclones, hurricanes, typhoons

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

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

Source: Internal Displacement Monitoring Centre,2020

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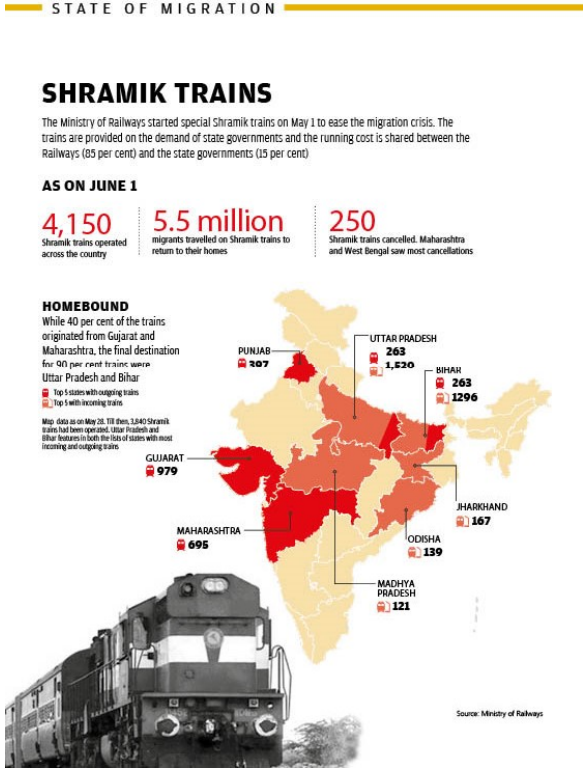


STATE OF MIGRATION

SHRAMIK TRAINS

The Ministry of Railways started special Shramik trains on May 1 to ease the migration crisis. The trains are provided on the demand of state governments and the running cost is shared between the Railways (85 per cent) and the state governments (15 per cent)

AS ON JUNE 1

4,150 Shramik trains operated across the country

5.5 million migrants travelled on Shramik trains to return to their homes

250 Shramik trains cancelled. Maharashtra and West Bengal saw most cancellations

HOMEBOUND

While 40 per cent of the trains originated from Gujarat and Maharashtra, the final destination for 90 per cent trains were Uttar Pradesh and Bihar

Top 5 states with outgoing trains
Top 5 with incoming trains

Map data as on May 28. Till then, 3,840 Shramik trains had been operated. Uttar Pradesh and Bihar features in both the lists of states with most incoming and outgoing trains

PUNJAB 207
UTTAR PRADESH 263 1,520
BIHAR 263 1296
GUJARAT 979
JHARKHAND 167
MAHARASHTRA 695
ODISHA 139
MADHYA PRADESH 121

Source: Ministry of Railways

6. We need to build new futures/directions for growth

STATE OF ECONOMY

Performance of MGNREGA

28 out of 32 states and Union Territories have recorded an increase in job demand this May compared to last year, due to the sudden spike in the number of people returning to rural India during the pandemic. The scheme, however, has been struggling in most states in the recent years, leading to delayed wages along with payments that are lower than the notified rates. State governments have also failed to provide the mandatory 100-day employment to most households enrolled under the scheme

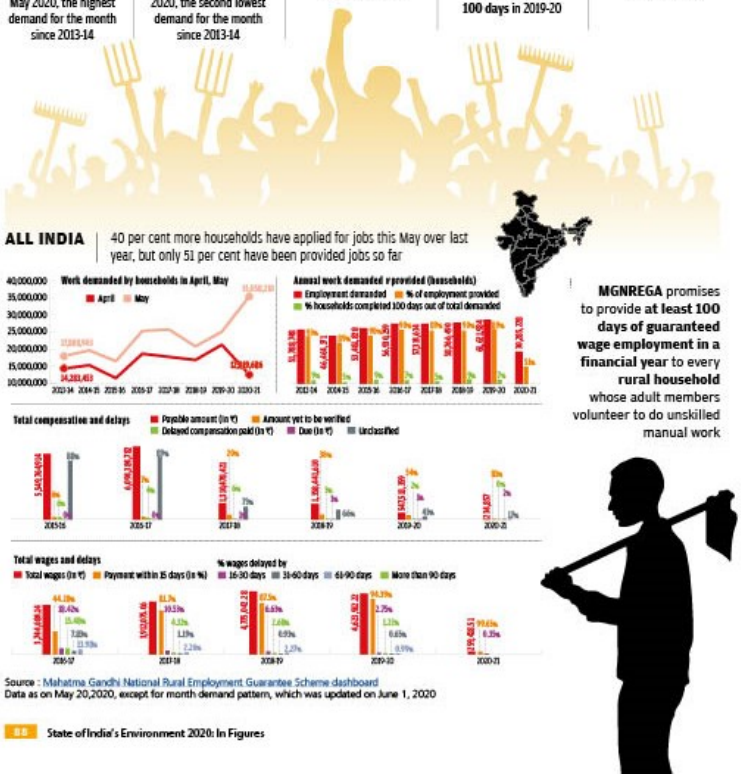
35.06 million people demanded work under the scheme in May 2020, the highest demand for the month since 2013-14

12.82 million people demanded work under the scheme in April 2020, the second lowest demand for the month since 2013-14

20 out of 32 states and UTs paid less than the notified wages in 2019-20

7% households that demanded work were employed for the mandatory 100 days in 2019-20

5.6% of the wages were delayed in 2019-20. This is equivalent to ₹2,591.78 crore



Source : Mahatma Gandhi National Rural Employment Guarantee Scheme dashboard
Data as on May 20,2020, except for month demand pattern, which was updated on June 1, 2020

State of India's Environment 2020: In Figures

7. But can’t if our natural resources are under threat and governance is down

River Basins

India is currently facing water stressed* situation and is moving towards the water scarcity* situation since the gap between water demand and water supply is gradually widening, highlighting the dire need to manage water resources for a sustainable future

Estimated population (million)
Estimated per capita average annual water availability (m³)

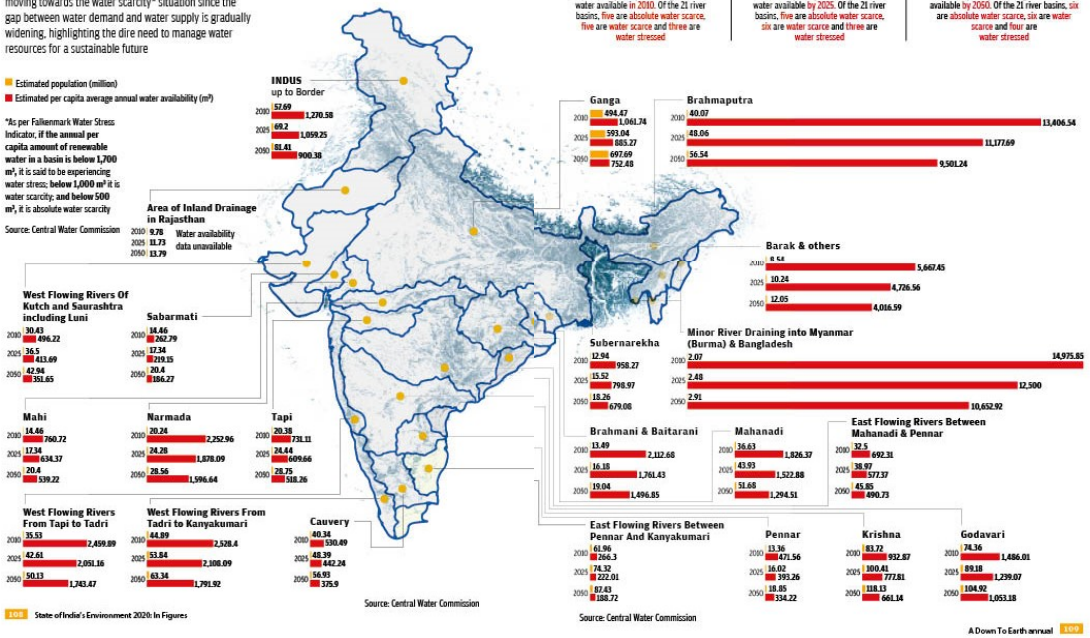
*As per Falkenmark Water Stress Indicator, if the annual per capita amount of renewable water in a basin is below 1,700 m³, it is said to be experiencing water stress; below 1,000 m³ it is water scarcity; and below 500 m³, it is absolute water scarcity

Source: Central Water Commission

1,608.26 m³
Estimated per capita average annual water available in 2010. Of the 21 river basins, five are absolute water scarce, five are water scarce and three are water stressed

1340.94 m³
Estimated per capita average annual water available by 2025. Of the 21 river basins, five are absolute water scarce, six are water scarce and three are water stressed

1139.82 m³
Estimated per capita average annual water available by 2050. Of the 21 river basins, six are absolute water scarce, six are water scarce and four are water stressed



Source: Central Water Commission

Source: Central Water Commission

GROUNDWATER AVAILABILITY

India's dependency on its groundwater is steadily increasing. In 2017, it used 63 per cent of the net available annual groundwater, up from 58 per cent in 2004. The highest dependency can be seen in four north Indian states—Punjab, Rajasthan, Haryana and Delhi—where the annual groundwater consumption is more than the annual groundwater recharge

IN 2017

89% Share of irrigation in total water extracted

10% Share of domestic use in total water extracted

1% Share of industries in total water extracted

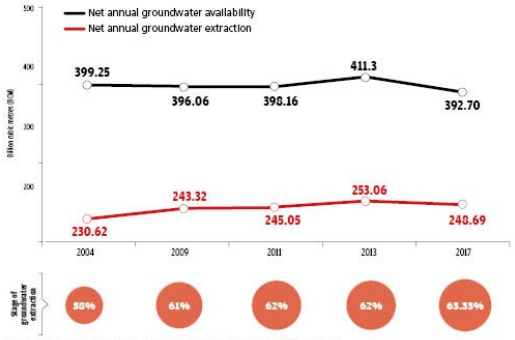
IN 2013

90% Share of irrigation in total water extracted

10% Share of domestic use and industries in total water extracted

SLIGHT SHIFT

Both groundwater availability and its withdrawal decreased between 2013 and 2017



Stage of groundwater extraction = Net annual groundwater extraction/ Net annual groundwater availability

Source: Water and Related Statistics, 2019, Central Ground Water Board

8. Green growth requires protection and sustainable use

STATE OF FORESTS

FOREST COVER

India's total forest cover has registered a 1.5 per cent increase between 2015 and 2019. But the seemingly good news has a caveat. The bulk of the increase has taken place in the open forest category, which includes commercial plantations. This has happened at the cost of moderately dense forest, which is normally the area close to human habitations. At the same time, very dense forests, which absorb maximum carbon dioxide from the atmosphere, occupy just 3 per cent of total forest cover

CATEGORIES

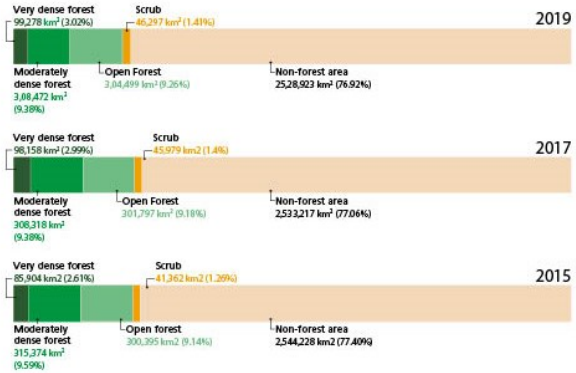
712,249 km² or 21.67 per cent of geographical area is under forests

Very dense forest: All lands with tree canopy density of 70% and above

Moderately dense forest: All lands with tree canopy density of 40% and more but less than 70%

Open forest: All lands with tree canopy density of 10% and more but less than 40%

Scrub: Degraded forest lands with canopy density less than 10%



Source: India State of Forest Report 2019, Ministry of Environment, Forest and Climate Change

THREATENED FAUNA

India has four out of 35 global biodiversity hotspots of the world: the Western Ghats (part of the Western Ghats-Sri Lanka global hotspot), the Nicobar Islands (part of the Sundaland hotspot), parts of Assam and Meghalaya in the North-eastern region (Indo-Burma hotspot), and the Eastern Himalaya comprising North-eastern Himalayas of India, Bhutan and Nepal

889

The number of rare and threatened vertebrates and invertebrates in the country

9 million km²

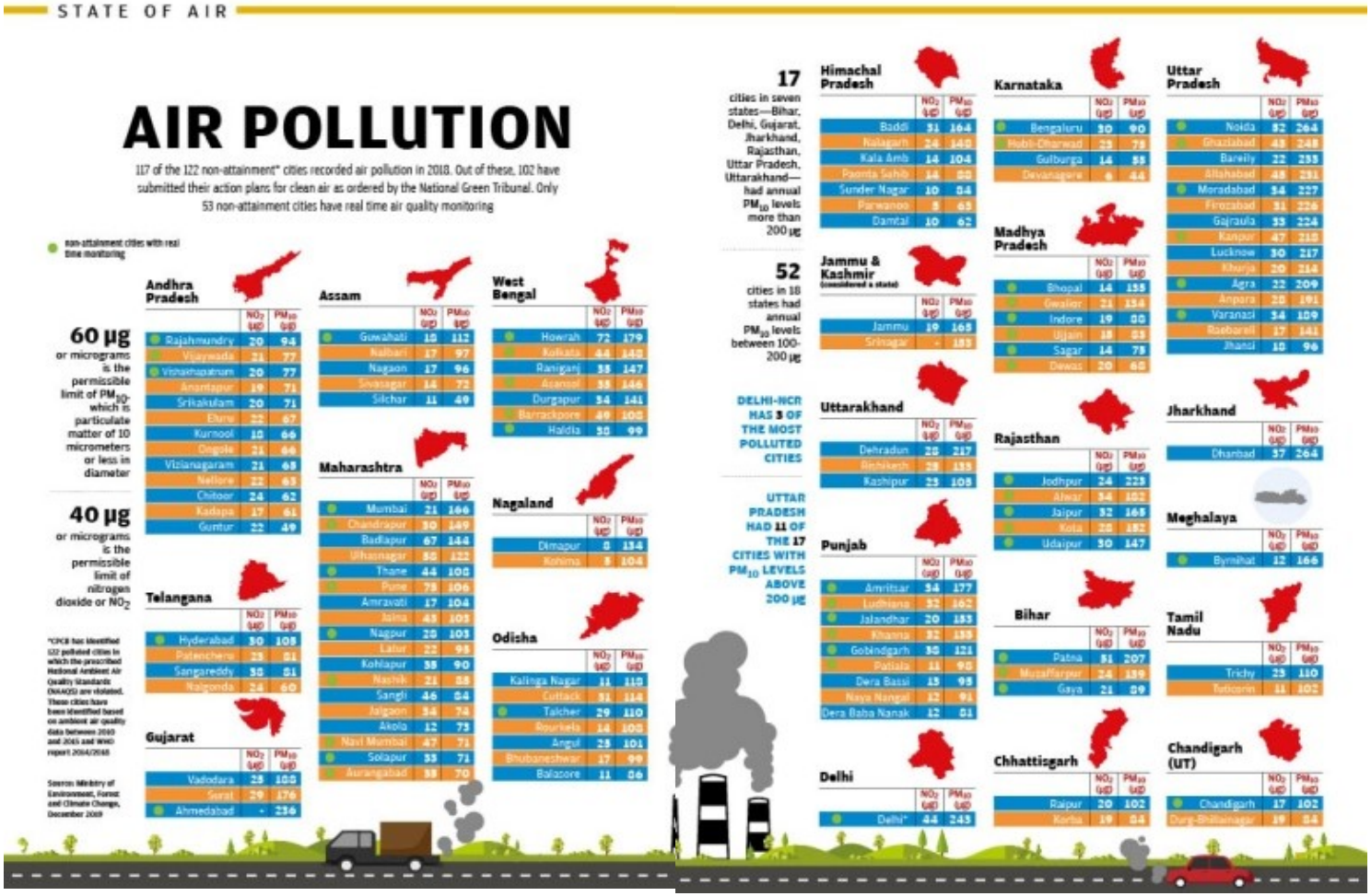
Total conservation areas in India. This is equivalent to 27 per cent of the geographical area of the country

Faunal Groups	Number of Species: Total	Number of Species: Endemism	Percentage Endemism
Protozoans	3,525	640	18.2
Invertebrates (including insects, spiders, ticks, mites, earthworms, crabs, worms, and others) — Threatened species 135	90,986	26,782	29.43
Chordates, Cephalochordates, Urochordates	6,656	1,115	16.75
Fish | 305 threatened species — Critically Endangered 28 | Endangered 86 | Vulnerable 46 | Near Threatened 28	3,364	482	14.32
Amphibia | 87 threatened species — Critically Endangered 20 | Endangered 33 | Vulnerable 22 | Near Threatened 12	414	287	69.32
Reptilia | 68 threatened species — Critically Endangered 7 | Endangered 18 | Vulnerable 29 | Near Threatened 14	584	220	37.7
Birds | 173 threatened species — Critically Endangered 17 | Endangered 21 | Vulnerable 53 | Near Threatened 82	1,340	81	6.04
Mammals | 121 threatened species — Critically Endangered 10 | Endangered 46 | Vulnerable 46 | Near Threatened 28	427	45	10.53

India has 10 biogeographic zones: Himalayas, Deccan Peninsula, Western Ghats, Gangetic Plains, Deserts, Semi-arid, Coasts, North-east, Islands, Trans-Himalaya

Source: IUCN, December 10, 2019 and Zoological Survey of India and India's National Biodiversity Action Plan, 2019

9. Green growth not possible when health is compromised: Pollution: Air



10. Water: link to health and livelihood

GROUNDWATER CONTAMINATION

Punjab, West Bengal, Uttar Pradesh, Tamil Nadu, Haryana, Chhattisgarh and Telangana have districts with all the eight common contaminants

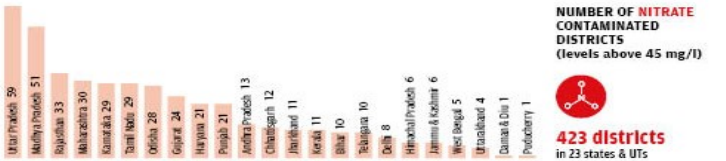
Common contaminants and their health impacts

- **FLOURIDE** — Brittle bones/ teeth, joint impairment and possible damage to the thyroid gland
- **NITRATE** — Methemoglobinemia, where blood is unable to give enough oxygen to the body
- **ARSENIC** — Skin cancer, lungs, bladder and kidney
- **IRON** — Hemochromatosis, which can lead to liver, heart and pancreatic damage, as well as diabetes
- **SALINITY** — Raises blood pressure and hypertension
- **LEAD** — Slows brain development and nervous system
- **CADMIUM** — Liver injury, convulsions, shock and renal failure
- **CHROMIUM** — Carcinogen, stomach ulcers, kidney and liver damage

District-wise spread of the eight common contaminants

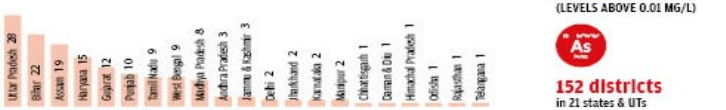
NUMBER OF FLOURIDE CONTAMINATED DISTRICTS (LEVELS ABOVE 1.5 MG/L)

370 districts in 23 states & UTs



NUMBER OF NITRATE CONTAMINATED DISTRICTS (levels above 45 mg/l)

423 districts in 23 states & UTs

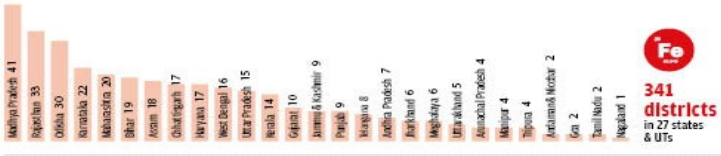


NUMBER OF ARSENIC CONTAMINATED DISTRICTS (LEVELS ABOVE 0.01 MG/L)

152 districts in 21 states & UTs

Source: Ministry of Jal Shakti, updated till February 2020

NUMBER OF IRON CONTAMINATED DISTRICTS (LEVELS ABOVE 1 MG/L)



341 districts in 27 states & UTs

NUMBER OF DISTRICTS WITH SALINE GROUNDWATER (EC ABOVE 3000 MICRO MHOS/ CM)

EC : Electrical Conductivity; Micro mho: a unit of electrical conductance equal to 1/1,000,000 of a mho, which is the reciprocal of the resistance in ohms

249 districts in 18 states & UTs

NUMBER OF LEAD-CONTAMINATED DISTRICTS (LEVELS ABOVE 0.01 MG/L)

92 districts in 14 states & UTs

NUMBER OF CADMIUM-CONTAMINATED DISTRICTS (LEVELS ABOVE 0.003 MG/L)

24 districts in 9 states & UTs

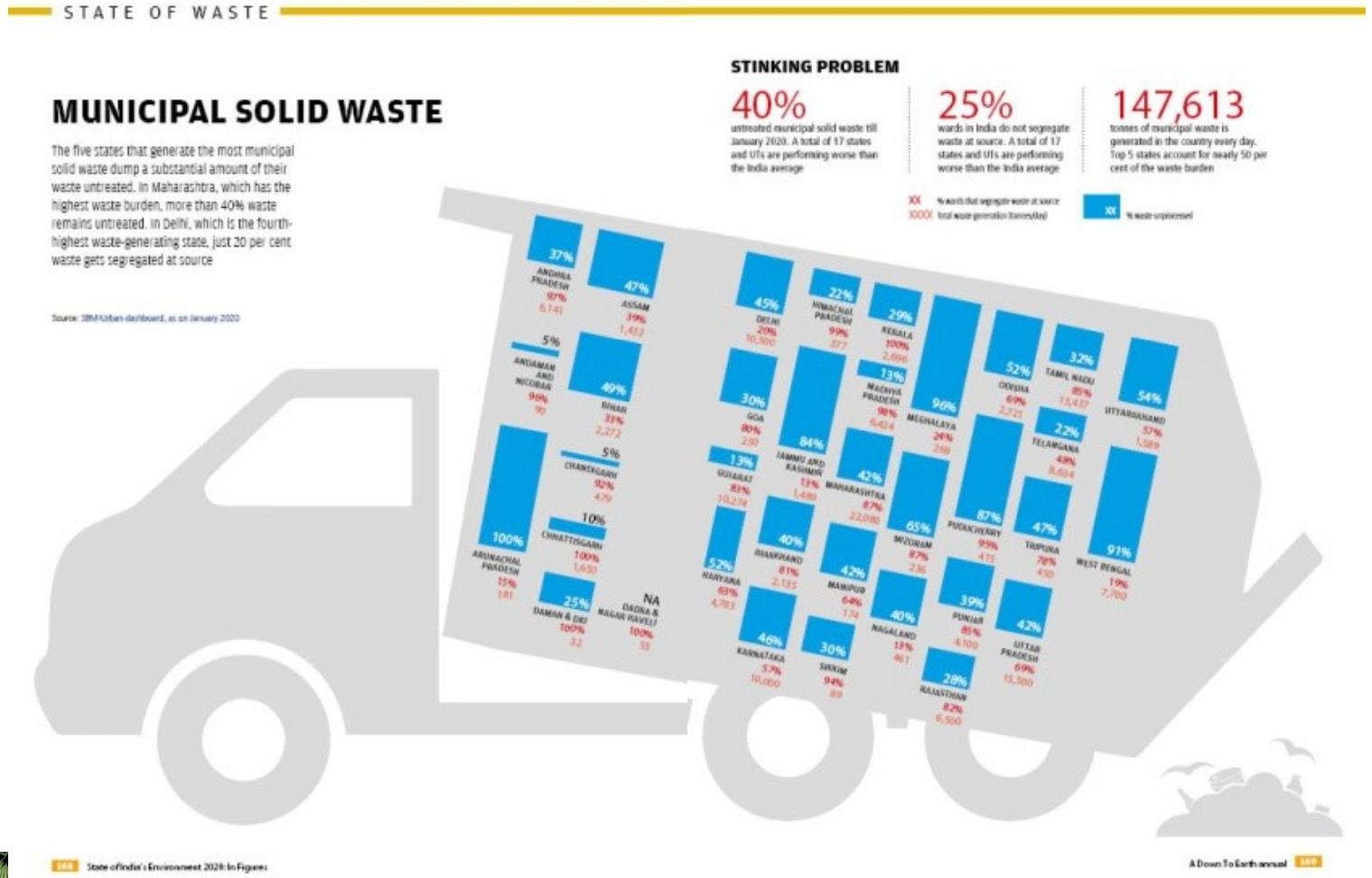
NUMBER OF CHROMIUM-CONTAMINATED DISTRICTS (LEVELS ABOVE 0.05 MG/L)

29 districts in 10 states & UTs

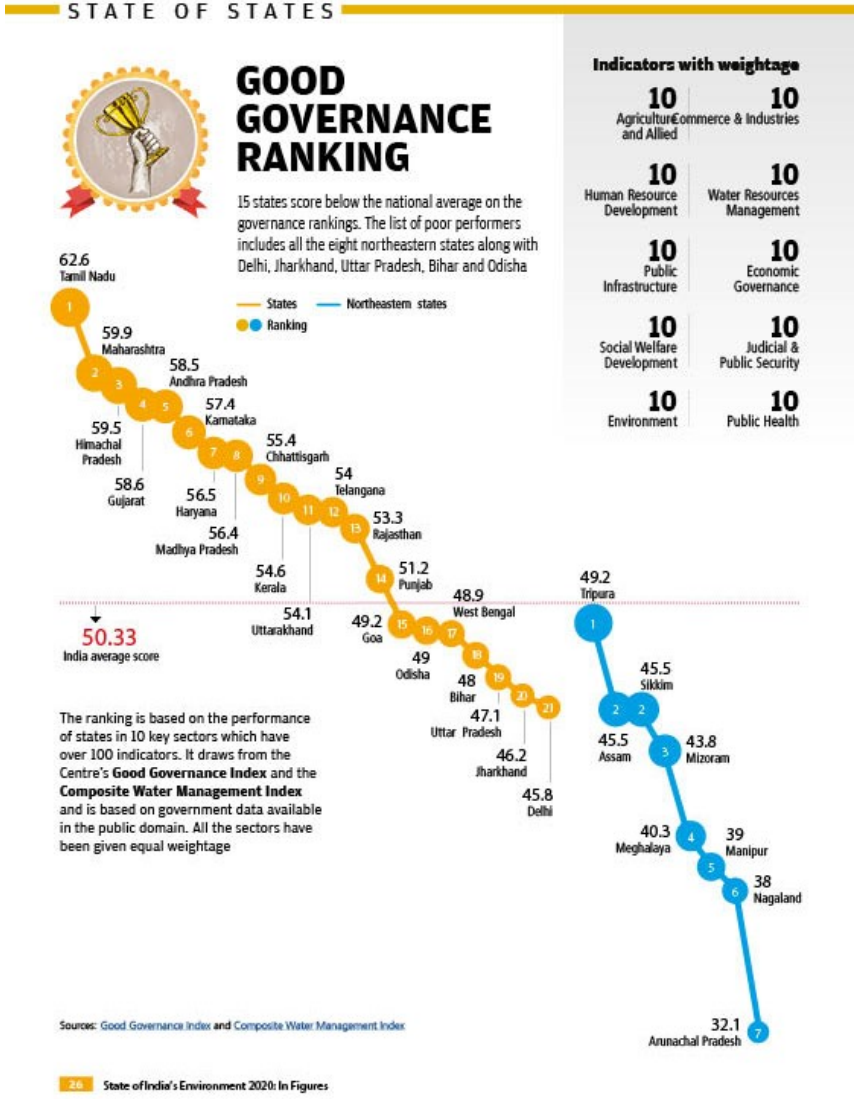
Note: Jammu & Kashmir is categorised as a Union Territory

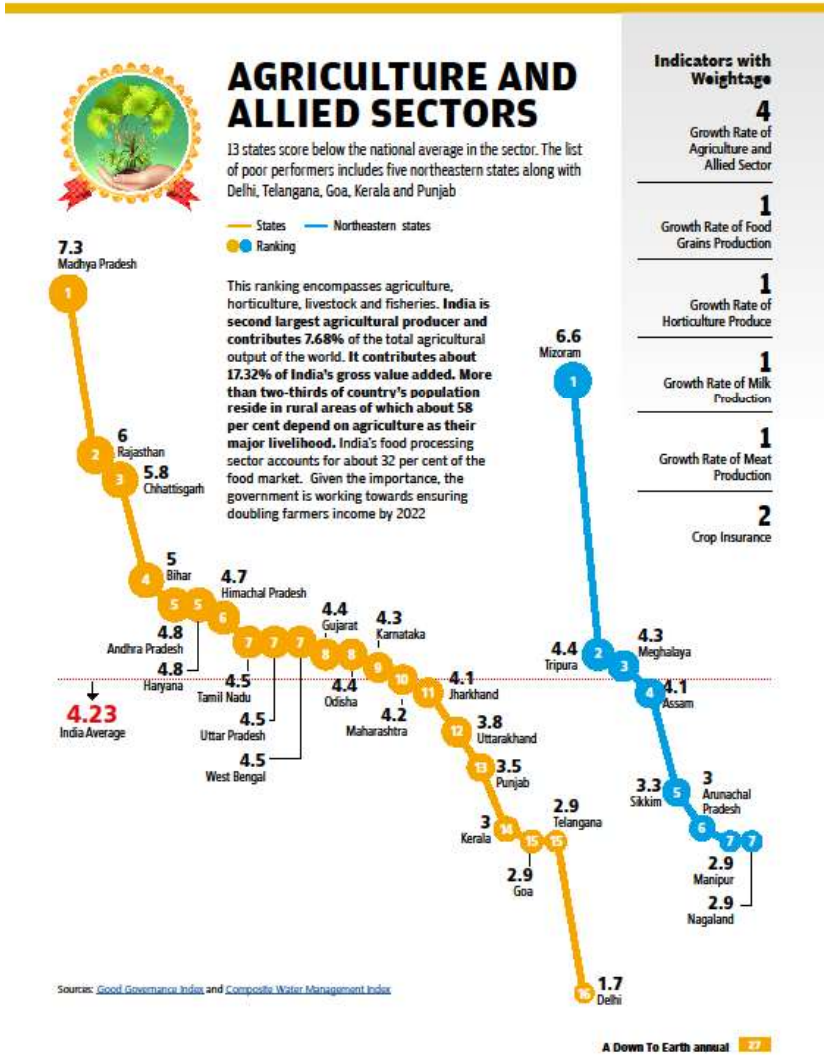
Source: Ministry of Jal Shakti, updated till February 2020

11. Municipal solid waste: adds also to health burden

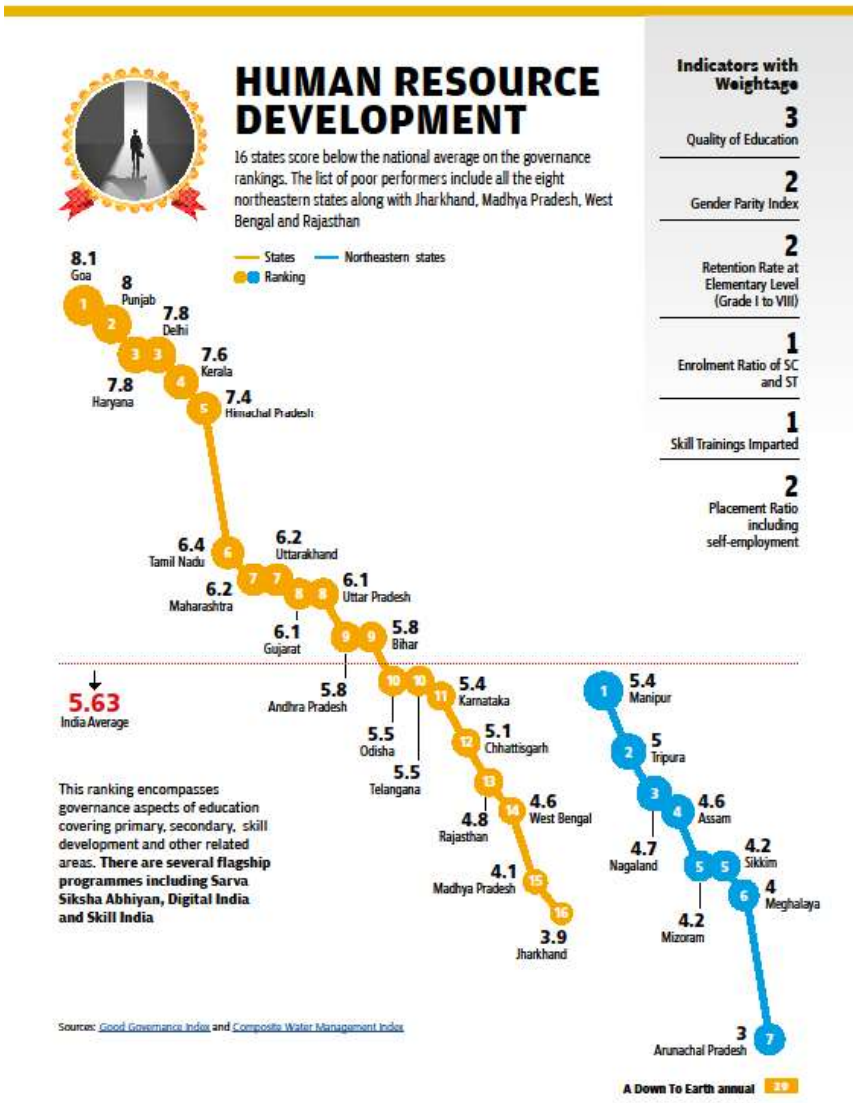


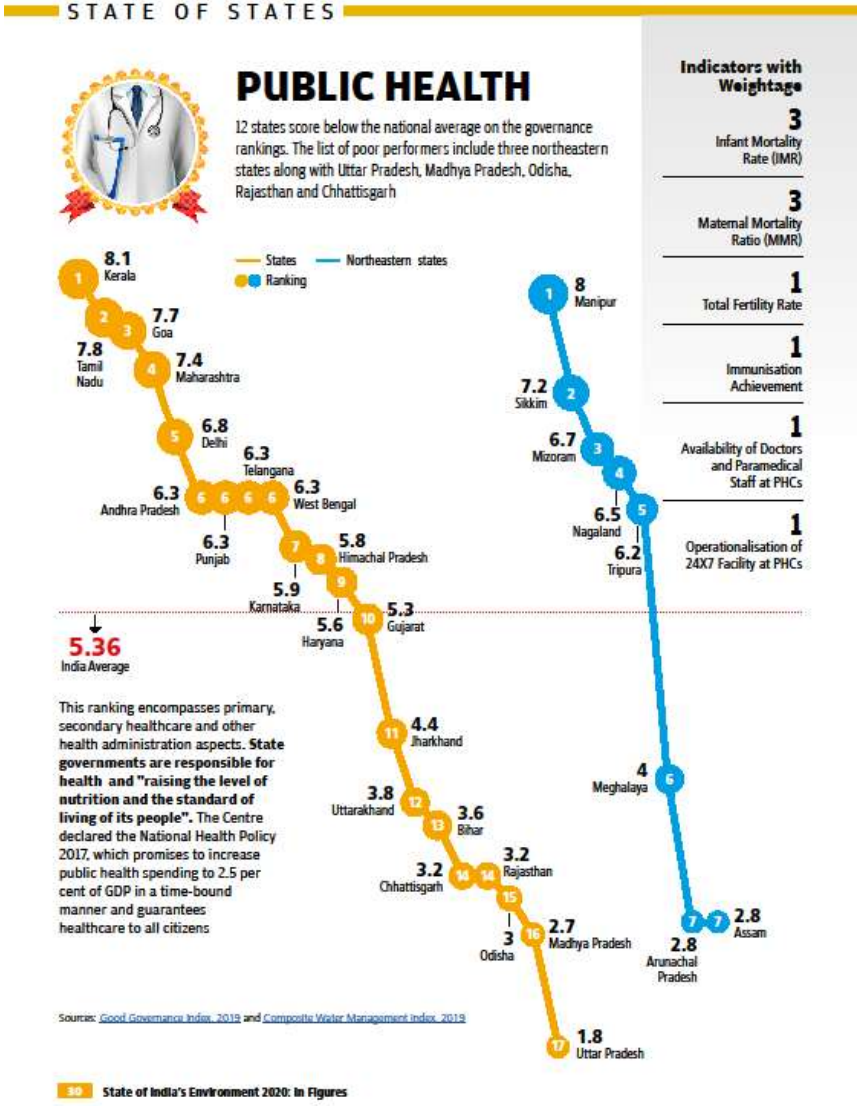
12. Multiple crisis require governance



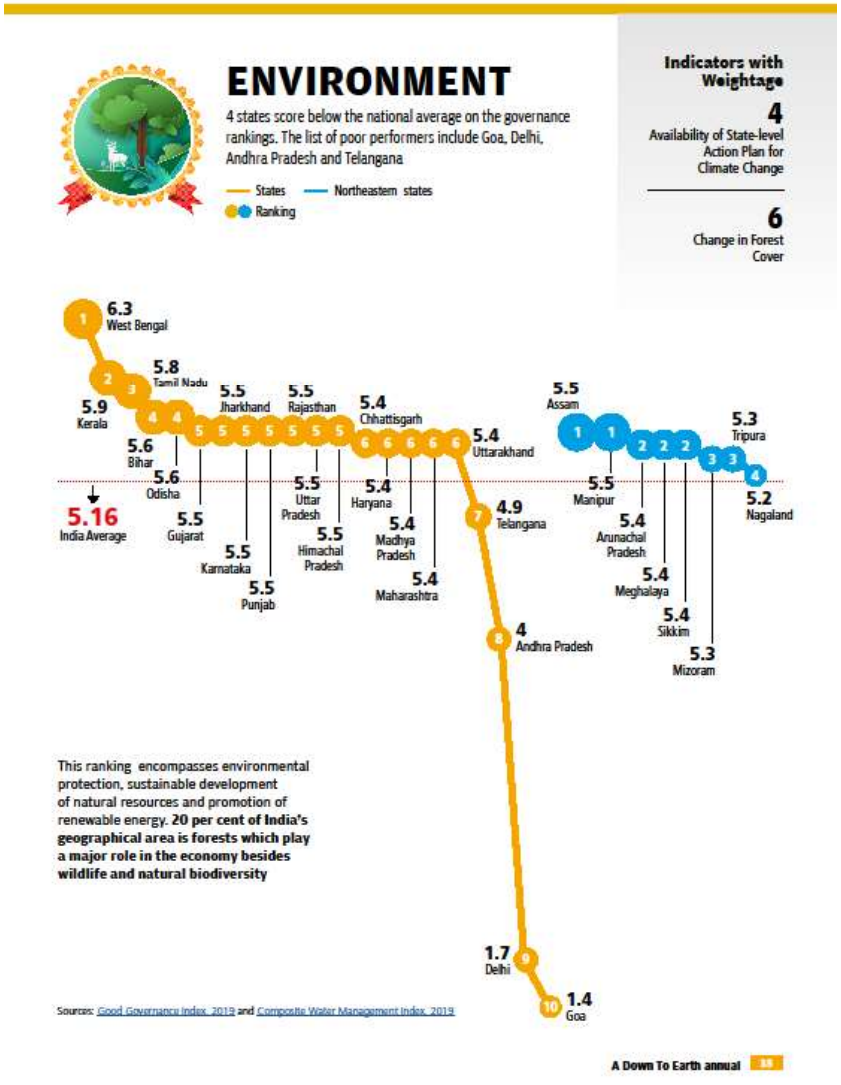


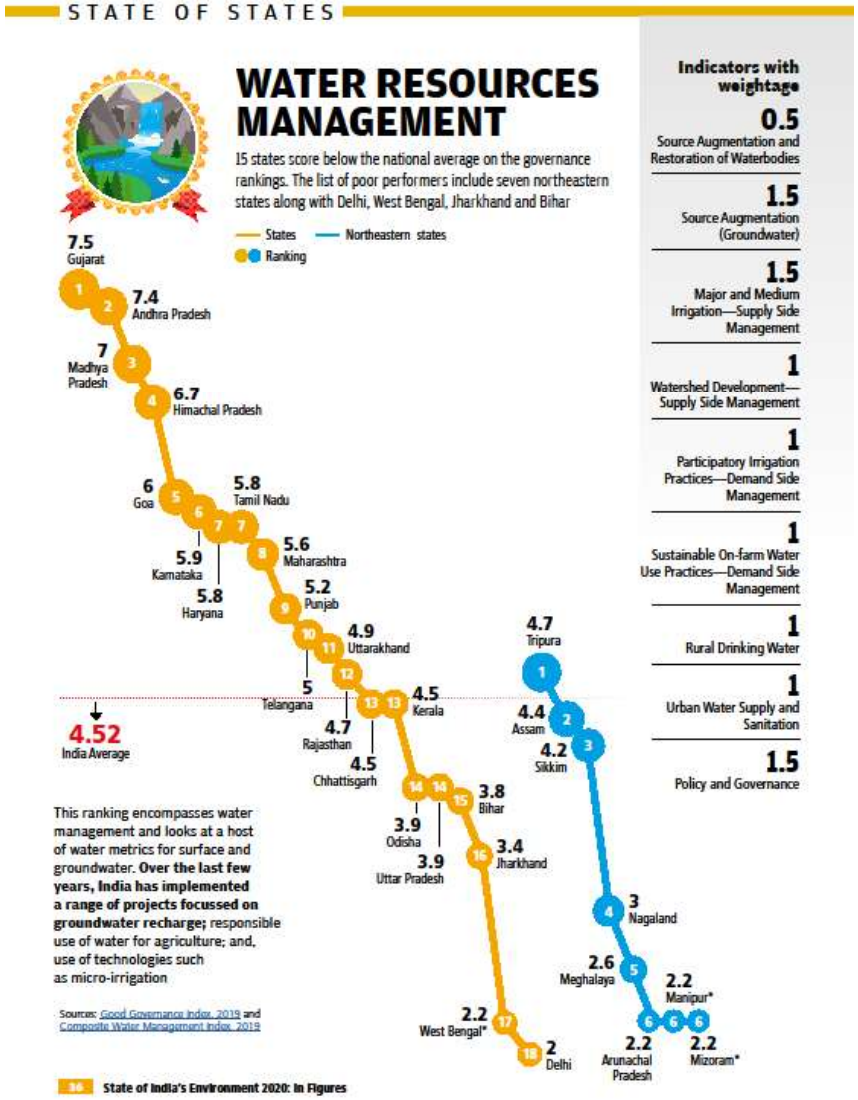
13. Multiple crisis require governance





14. Multiple crisis require governance



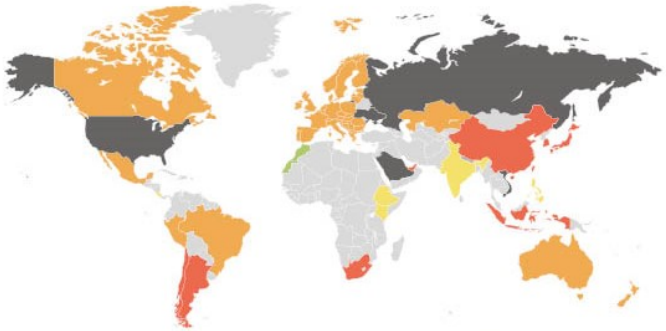


So, lets fix this:
India's commitment more and shows our desire to lead/ opportunity exists

STATE OF CLIMATE

Climate commitments

Current nationally determined commitments (NDCs) by nations the world over will leave the world 2.8°C (3.5-2.3 °C) warmer by 2100. Their national policies are even less ambitious and can push the temperature by 3°C (4.1-2.3°C)



CRITICALLY INSUFFICIENT

Commitments with this rating fall well outside the fair share range and are not at all consistent with holding warming to below 2°C let alone with the Paris Agreement's stronger 1.5°C limit.

If all government targets were in this range, warming would exceed 4°C.

RUSSIAN FEDERATION | SAUDI ARABIA | TURKEY | USA | UKRAINE | VIETNAM

HIGHLY INSUFFICIENT

Commitments with this rating fall outside the fair share range and are not at all consistent with holding warming to below 2°C let alone with the Paris Agreement's stronger 1.5°C limit.

If all government targets were in this range, warming would reach between 3°C and 4°C.

ARGENTINA | CHILE | CHINA | INDONESIA | JAPAN | SINGAPORE | SOUTH AFRICA | SOUTH KOREA | UAE

INSUFFICIENT

Commitments with this rating are in the least stringent part of their fair share range and not consistent with holding warming below 2°C let alone with the Paris Agreement's stronger 1.5°C limit.

If all government targets were in this range, warming would reach over 2°C and up to 3°C.

AUSTRALIA | BRAZIL | CANADA | EU | KAZAKHSTAN | MEXICO | NEW ZEALAND | NORWAY | PERU | SWITZERLAND

2 °C COMPATIBLE

Commitments with this rating are consistent with the 2009 Copenhagen 2°C goal and, therefore, fall within the country's fair share range, but are not fully consistent with the Paris Agreement.

If all government targets were in this range, warming could be held below, but not well below, 2°C and still be too high to be consistent with the Paris Agreement 1.5°C limit.

BHUTAN | COSTA RICA | ETHIOPIA | INDIA | KENYA | PHILIPPINES

1.5 °C PARIS AGREEMENT COMPATIBLE

This rating indicates that a government's efforts are in the most stringent part of its fair share ranges it is consistent with the Paris Agreement's 1.5°C limit.

MOROCCO | THE GAMBIA

Source: Climate Action Tracker, updated till March 2020

STATE OF BIODIVERSITY AND WILDLIFE

Eco-tourism

There has been a 97 per cent increase in nature-based tourists in India between 2008-09 and 2014-15, which has increased the value of service* per km² by 3.7 times

00 Value of Service per km² (in ₹) % share of nature-based tourists as share of total tourists

Note: States have been arranged as per 2014-15 Value of Service per km². Source: Envistats 2019