

A DownToEarth 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

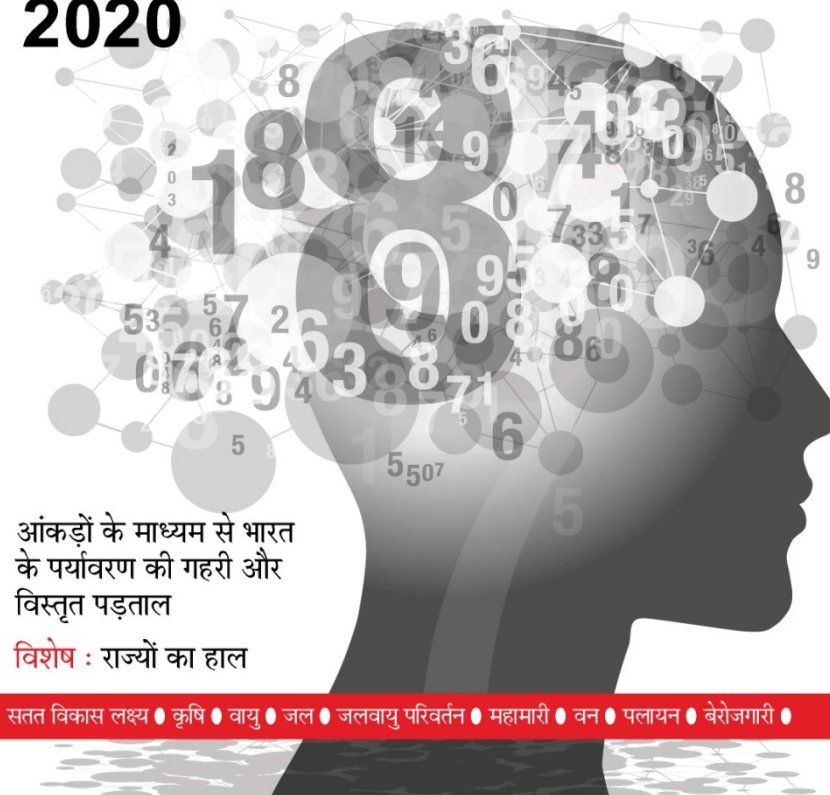


विश्व पर्यावरण दिवस 2020 विशेषांक

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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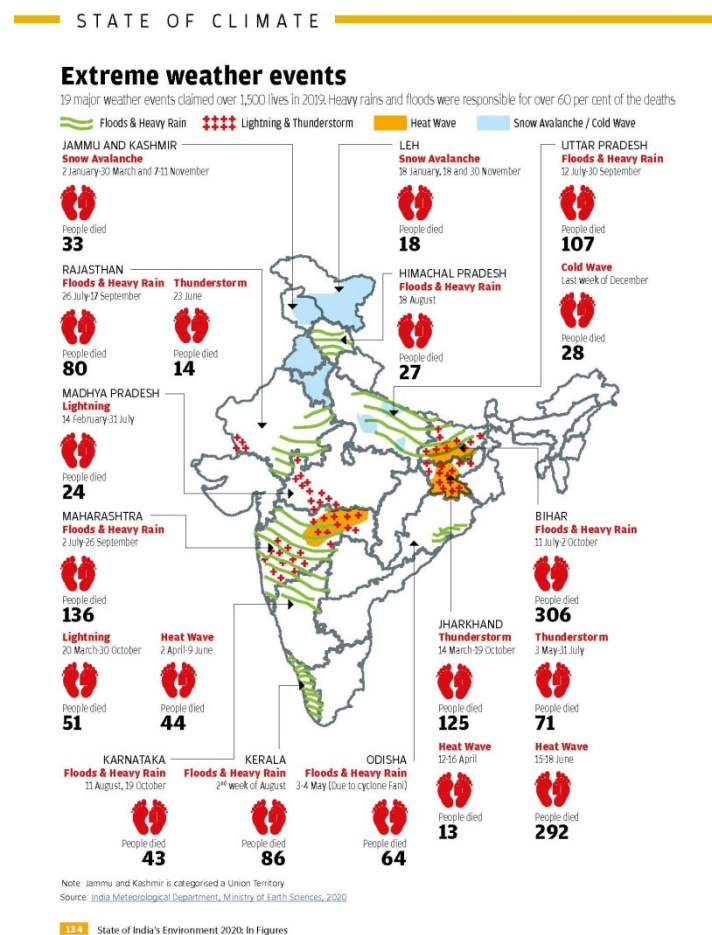
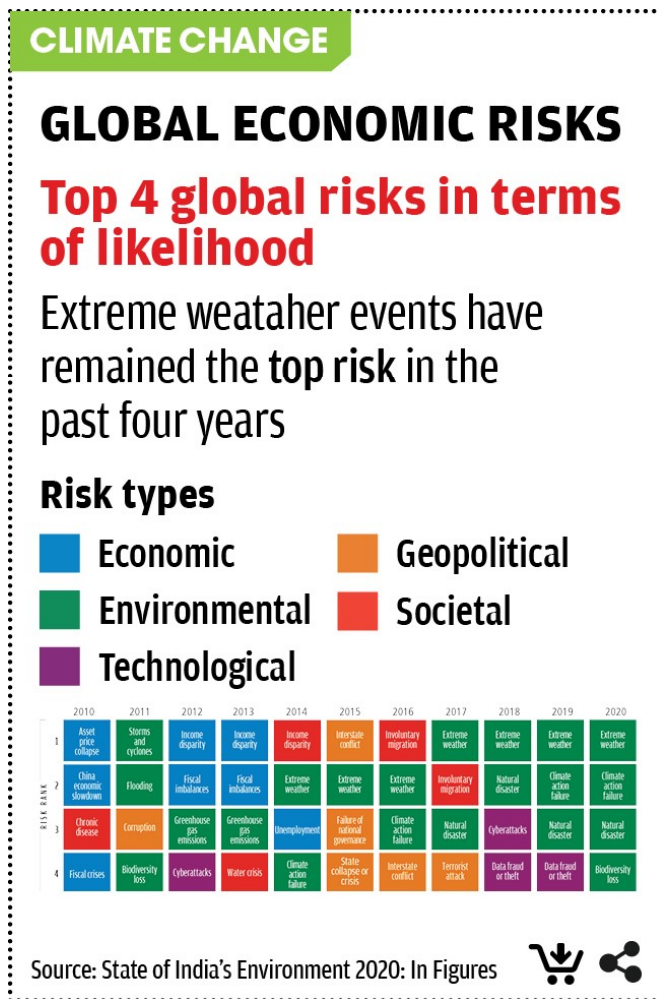
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1. Extreme events are increasing

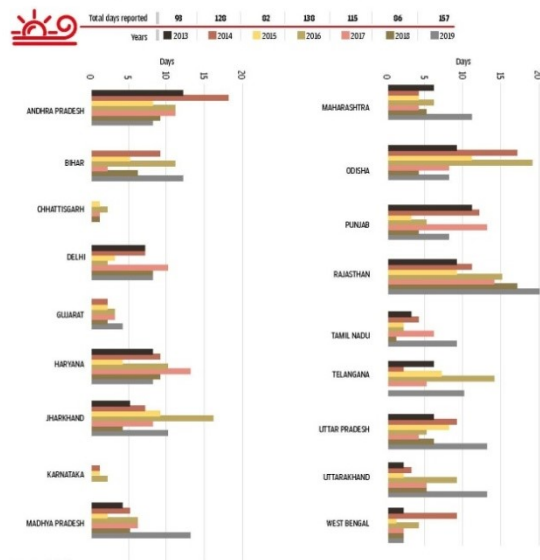


2. Extremes and variations in heat and cold increasing

STATE OF CLIMATE

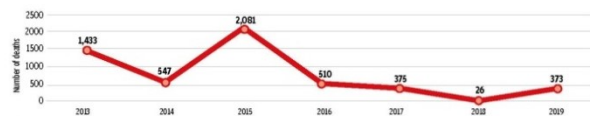
Heat waves

There has been a 69 per cent increase in the number of heat wave days between 2013 and 2019



Fatal blow

Over 5,300 people have died due to heat waves in the past seven years

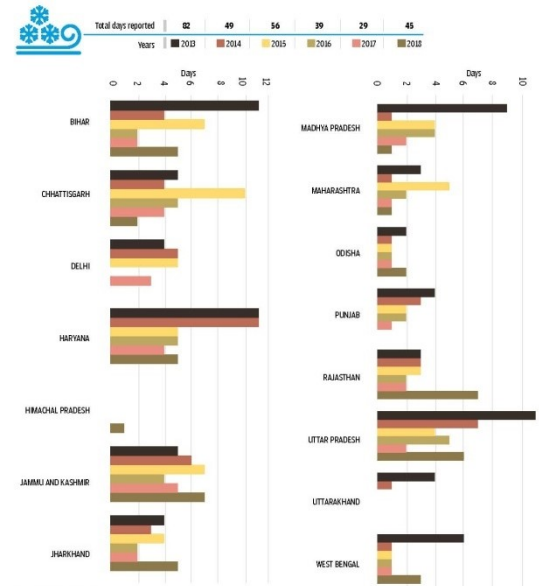


Source: Disaster Management Division, Ministry of Home Affairs, 2019

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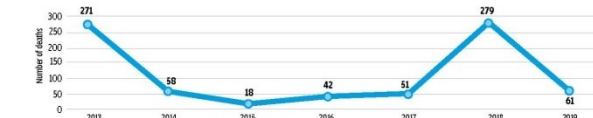
Cold Waves

There has been a 69 per cent increase in the number of cold wave days between 2017 and 2018



Chill blaze

2018 had an extremely cold winter with the most casualty in the past seven years

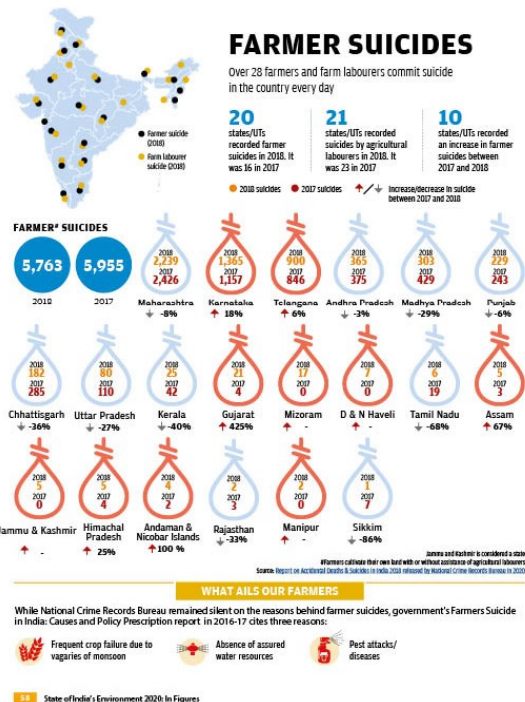


Note: Jammu and Kashmir is categorised as a state
Source: Disaster Management Division, Ministry of Home Affairs, 2019

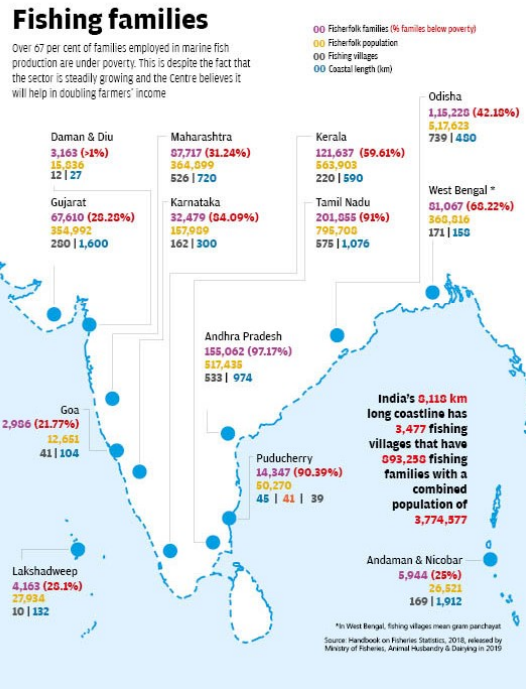
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3. Huge impact on the lives of people: not just climate but bad development

STATE OF AGRICULTURE

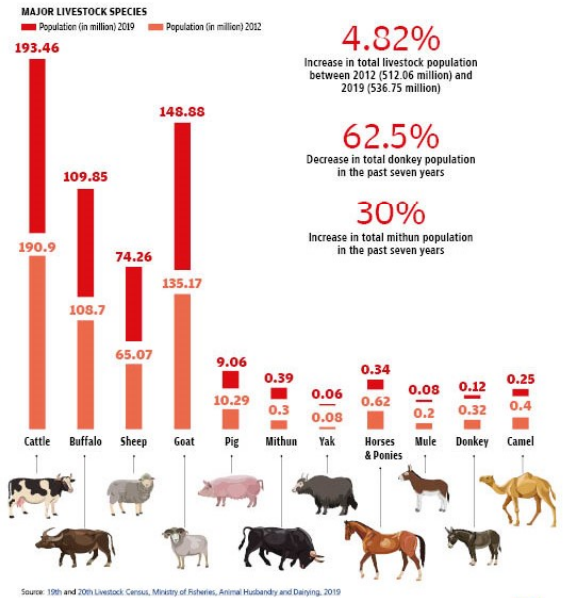


STATE OF AGRICULTURE



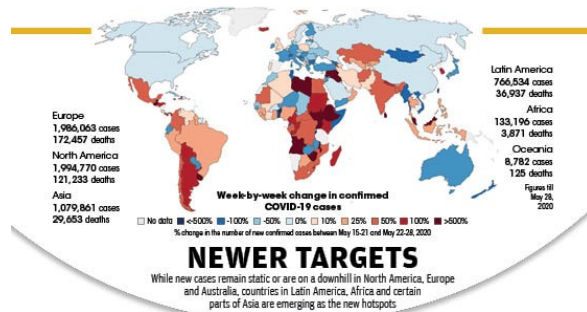
Livestock population

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

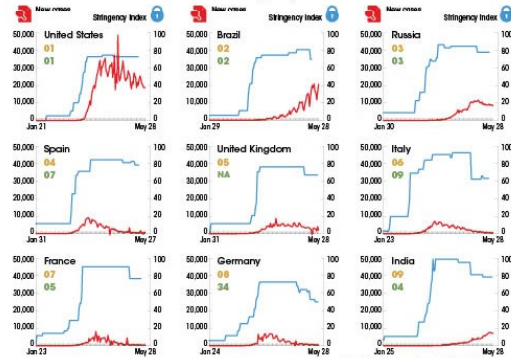


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4. Now add toll from COVID: health and livelihoods



India and Brazil are the only two of the nine worst-hit countries easing government stringency measures even as new cases mount. India ranks 4th globally in terms of active cases; Brazil 2nd



Source: European Centre for Disease Control and Prevention Disease Control and Prevention Diseases, conceptualframework.org, worldbank.org, updated 11 May 2020

State of India's Environment 2020 In Figures

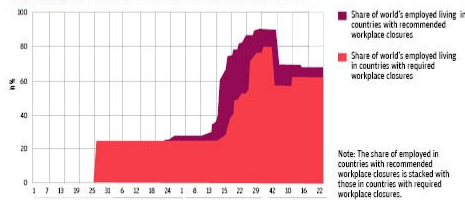
STATE OF PANDEMIC

JOB CRASH

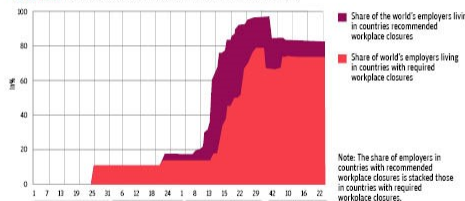
The world never before experienced such a containment almost stopping all economic activities. According to the World Bank and the International Labour Organization, as of April 22, 2020 (a peak period of infection for many countries including India and the US), countries that imposed closures and containment accounted for 81 per cent of employers in the world. On April 1, 2020, 81 per cent of all workers lived in countries with recommended or required workplace closures. The most recent ILO estimates show that this share has gone down to a still striking 68 per cent. This decline is mainly driven by the lifting of workplace closures in China beginning in early April. However, the situation has worsened elsewhere, as 64 additional countries have adopted recommended or required workplace closures since April 1, most of them in Africa, Europe and Central Asia, and the Americas.

Impacts of recommended and required workplace closures (as of April 22, 2020)

Employment in countries with recommended or required workplace closures



Employers in countries with recommended or required workplace closures



Source: ILOSTAT, ILO modelled estimates, November 2019 and The Oxford COVID-19 Government Response Tracker, 2020

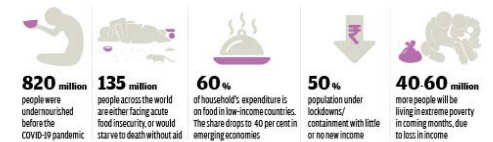
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STATE OF PANDEMIC

Food insecurity

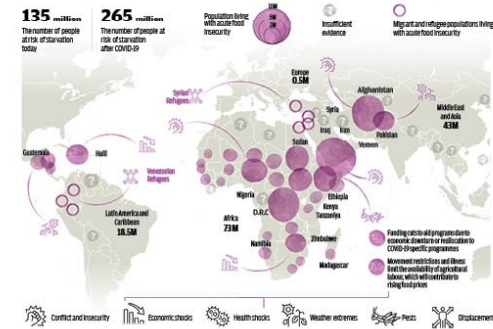
The World Bank and the UN's Food and Agriculture Organization have warned severe food insecurity and hunger, particularly in developing and least developed countries and among those who were already food insecure

World under stress



Hunger pangs

COVID-19 can nearly double the global food insecure population to 265 million by end of 2020



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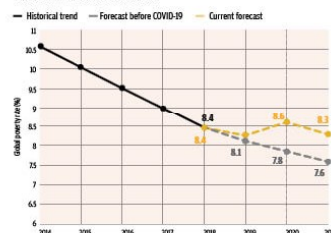
5. Face of migrant: desperate to leave and desperate to return

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 1990, 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

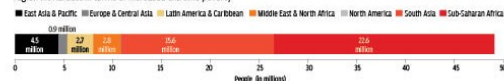
The global poverty rate that was on a downward trend since 2014, will start to climb due to the outbreak.



Source: PwC/Helios • 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.



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.

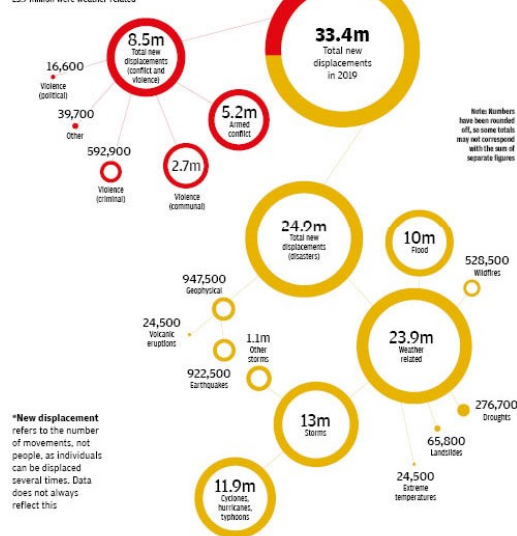
Three countries to add the most number of new poor

Country	New poor (millions)
INDIA	12
NIGERIA	5
DEMOCRATIC REPUBLIC OF CONGO	2

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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.



*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

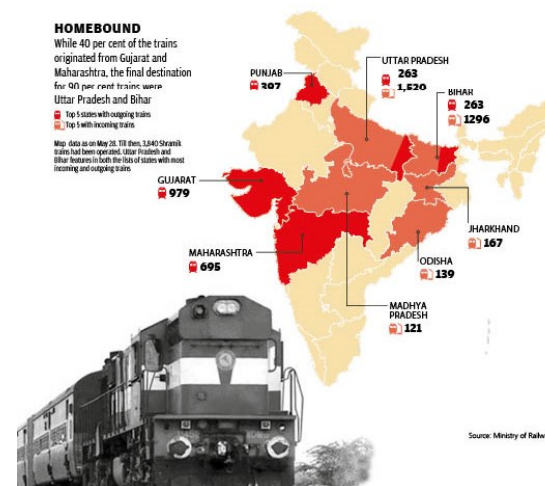
5.5 million migrants travelled on Shramik trains to return to their homes

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.

Map: data as on May 28. Till then, 1,843 Shramik trains had been operated. Uttar Pradesh and Bihar feature in both the list of states with most incoming and outgoing trains.



Source: Ministry of Railways

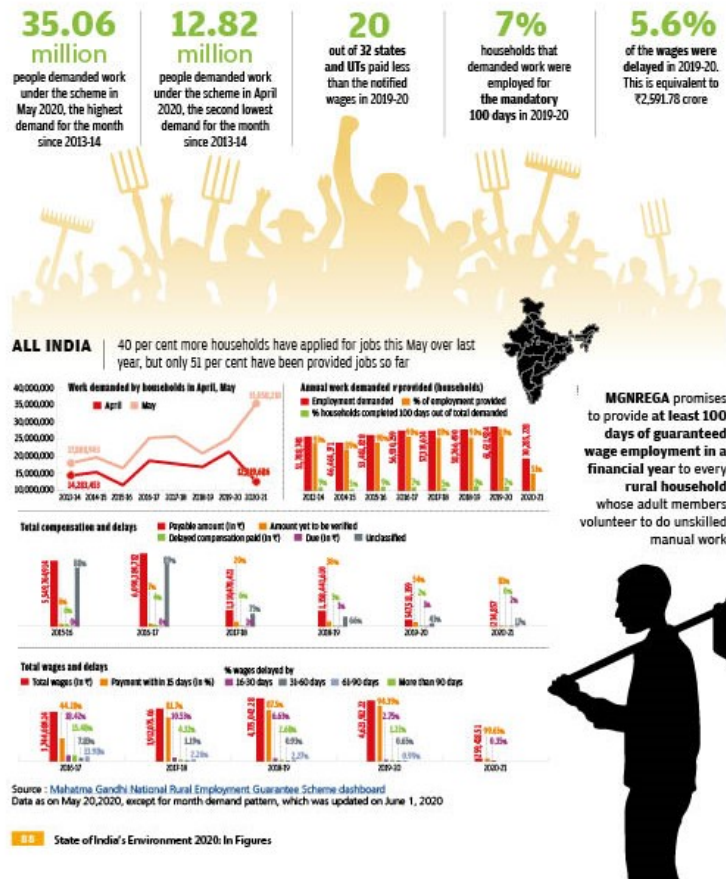


6. We need to build new futures/directions for growth

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



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

STATE OF WATER

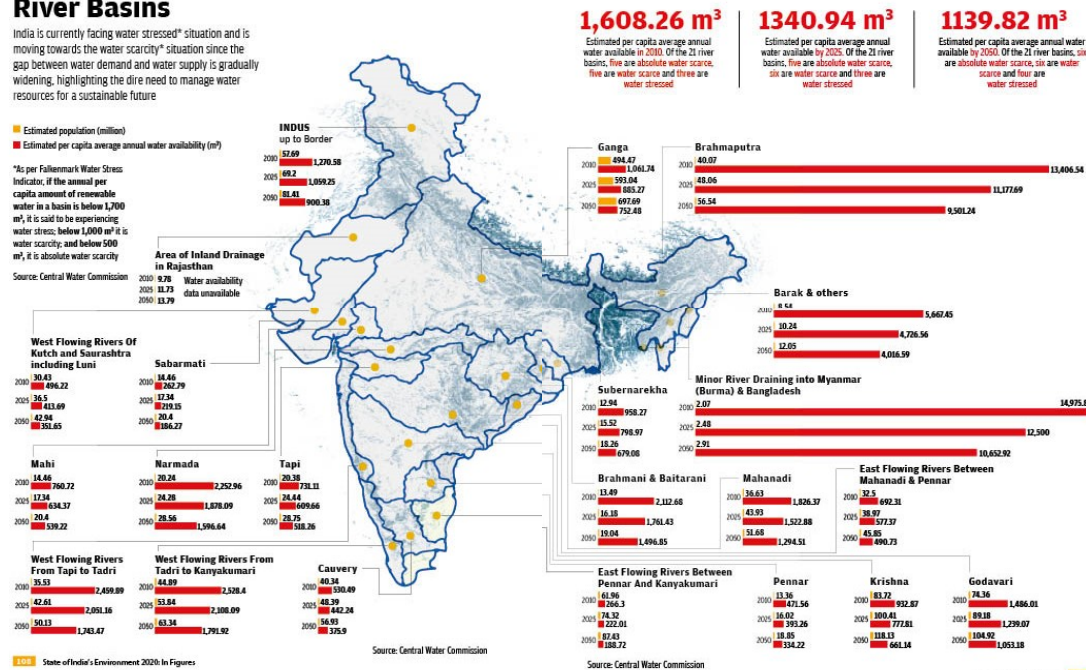
River Basins

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



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STATE OF WATER

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 59 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

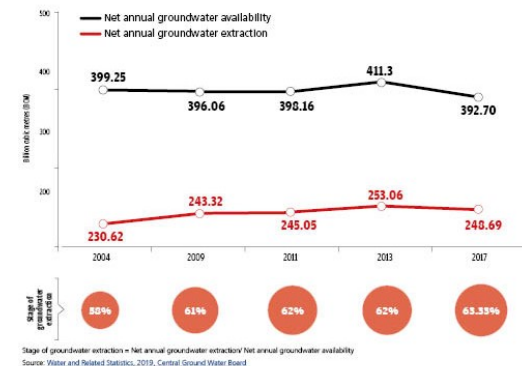
IN 2013

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



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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

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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		Percentage Endemism
	Total	Endemism	
Protozoans	3,525	640	18.2
Invertebrates (including insects, spiders, ticks, mites, earthworms, crabs, worms, and others)	90,986	26,782	29.43
Threatened species 135			
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	

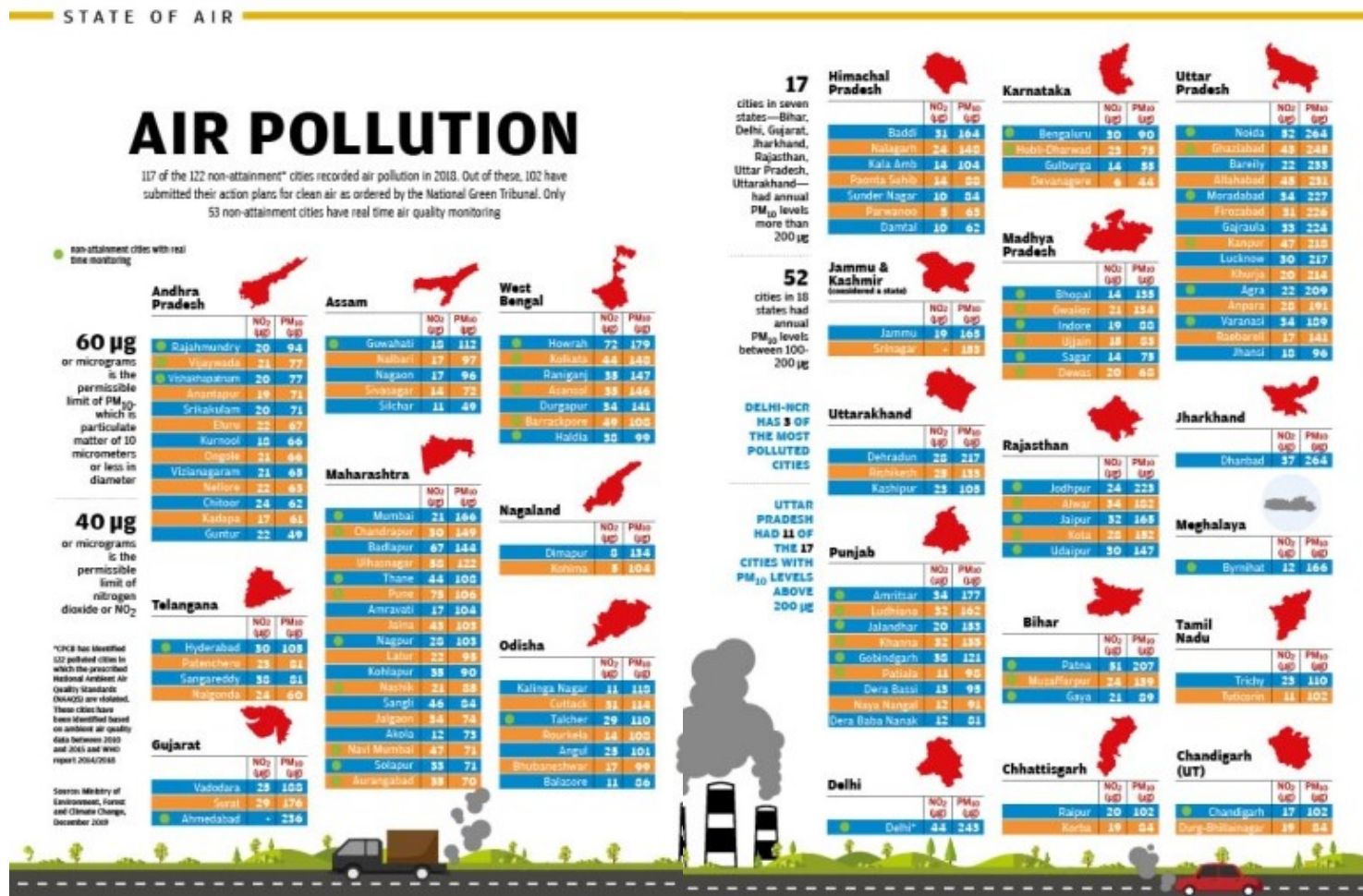
India has 10 biogeographic zones: Himalayas, Deccan Peninsula, Western Ghats, Gangetic Plains, Deserts, Semi-arid, Coasts, North-east, Islands, Trans-Himalaya

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

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



10. Water: link to health and livelihood

STATE OF WATER

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



FLUORIDE
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
Rises blood
pressure and
hypertension



LEAD
Slows brain
development and
nervous system

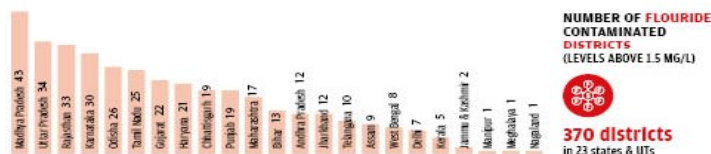


CADMIUM
Liver injury,
convulsions,
shock and
renal failure



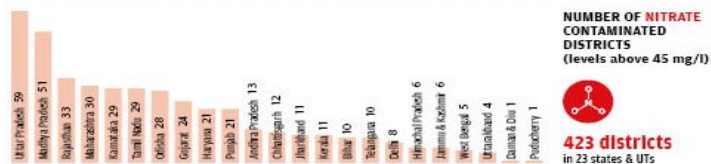
CHROMIUM
Carcinogen,
stomach ulcers,
kidney and liver
damage

District-wise spread of the eight common contaminants



**NUMBER OF FLUORIDE
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

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



Fe
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)



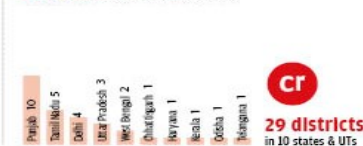
Pb
92 districts
in 14 states & UTs

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



Cd
24 districts
in 9 states & UTs

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



Cr
29 districts
in 10 states & UTs

Note: Jammu & Kashmir is categorised as a Union Territory
Source: Ministry of Jal Shakti, updated till February 2020

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11. Municipal solid waste: adds also to health burden

STATE OF WASTE

MUNICIPAL SOLID WASTE

The five states that generate the most municipal solid waste dump a substantial amount of their waste untreated. In Maharashtra, which has the highest waste burden, more than 40% waste remains untreated. In Delhi, which is the fourth-highest waste-generating state, just 20 per cent waste gets segregated at source.

Source: IBM Urban dashboard, as of January 2020

STINKING PROBLEM

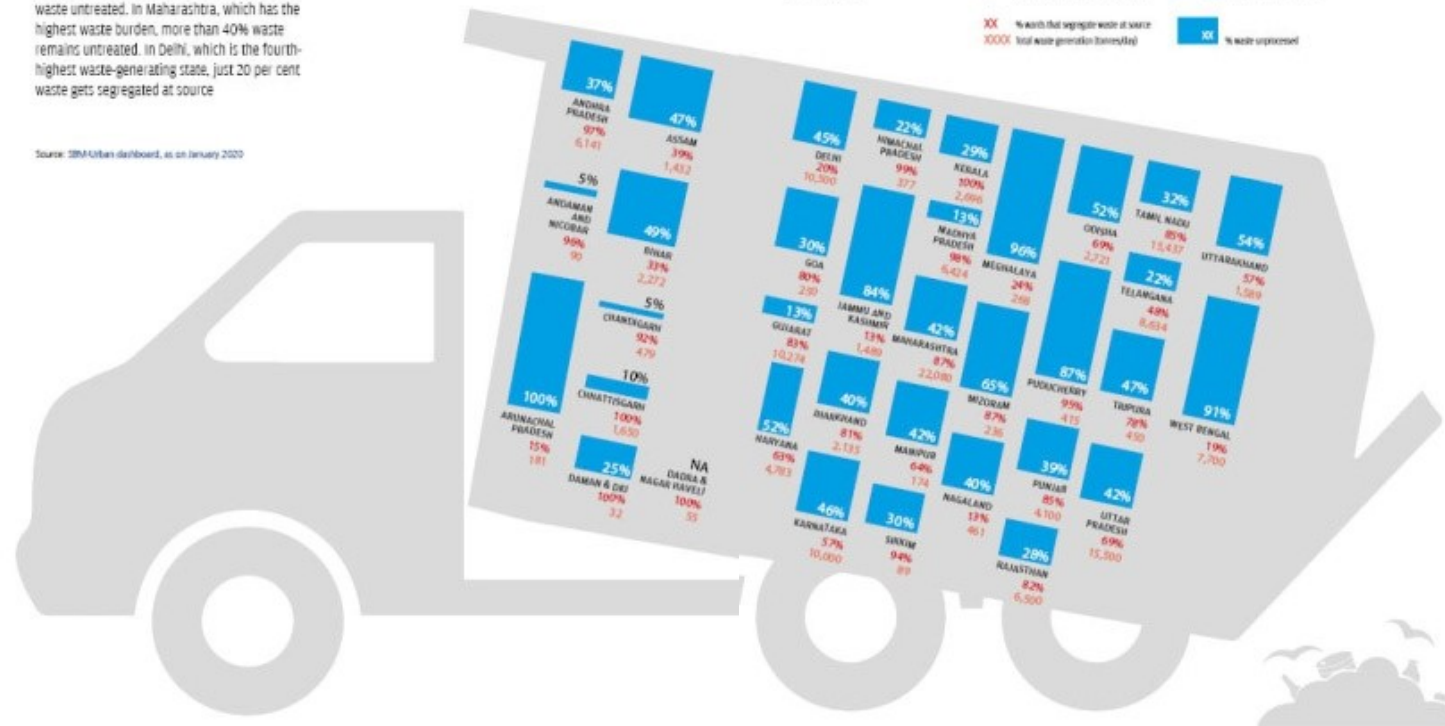
40%
untreated municipal solid waste till
January 2020. A total of 17 states
and UTs are performing worse than
the India average

25%
wards in India do not segregate
waste at source. A total of 17
states and UTs are performing
worse than the India average

147,613
tonnes of municipal waste is
generated in the country every day.
Top 5 states account for nearly 50 per
cent of the waste burden

XXXX Total waste generation (tonnes/day)

XX % waste increase



12. Multiple crisis require governance

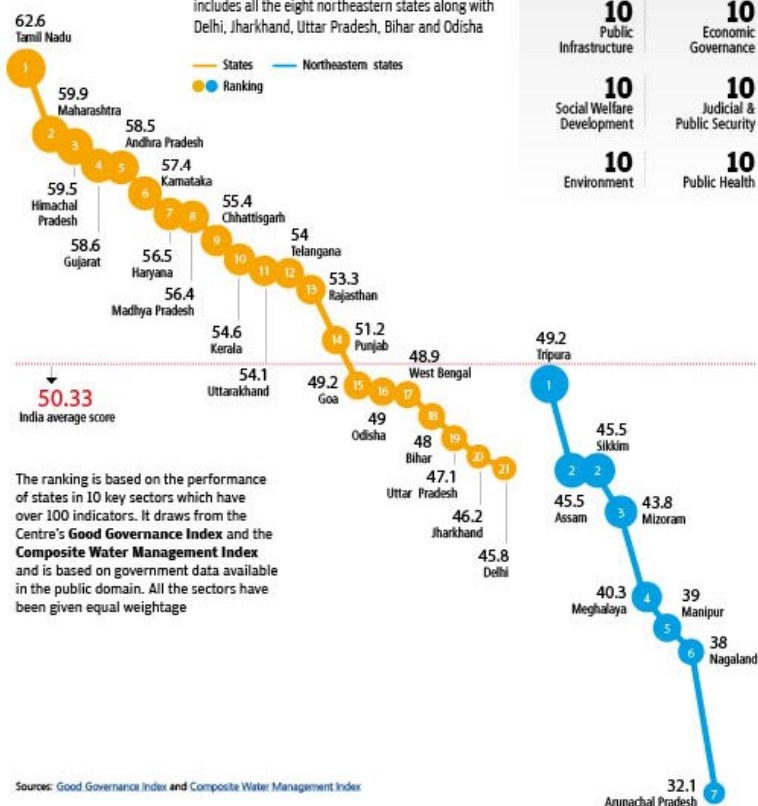
STATE OF STATES



GOOD GOVERNANCE RANKING

15 states score below the national average on the governance rankings. The list of poor performers includes all the eight northeastern states along with Delhi, Jharkhand, Uttar Pradesh, Bihar and Odisha

— States — Northeastern states
● Ranking



The ranking is based on the performance of states in 10 key sectors which have over 100 indicators. It draws from the Centre's Good Governance Index and the Composite Water Management Index and is based on government data available in the public domain. All the sectors have been given equal weightage

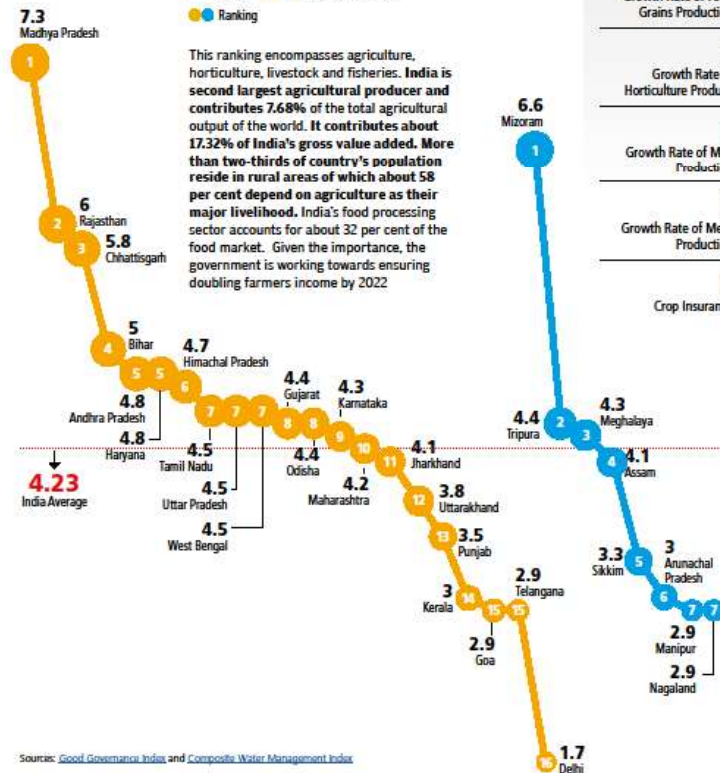
Sources: Good Governance Index and Composite Water Management Index



AGRICULTURE AND ALLIED SECTORS

13 states score below the national average in the sector. The list of poor performers includes five northeastern states along with Delhi, Telangana, Goa, Kerala and Punjab

— States — Northeastern states
● Ranking



Sources: Good Governance Index and Composite Water Management Index

Indicators with Weightage

4
Growth Rate of Agriculture and Allied Sector

1
Growth Rate of Food Grains Production

1
Growth Rate of Horticulture Produce

1
Growth Rate of Milk Production

1
Growth Rate of Meat Production

2
Crop Insurance

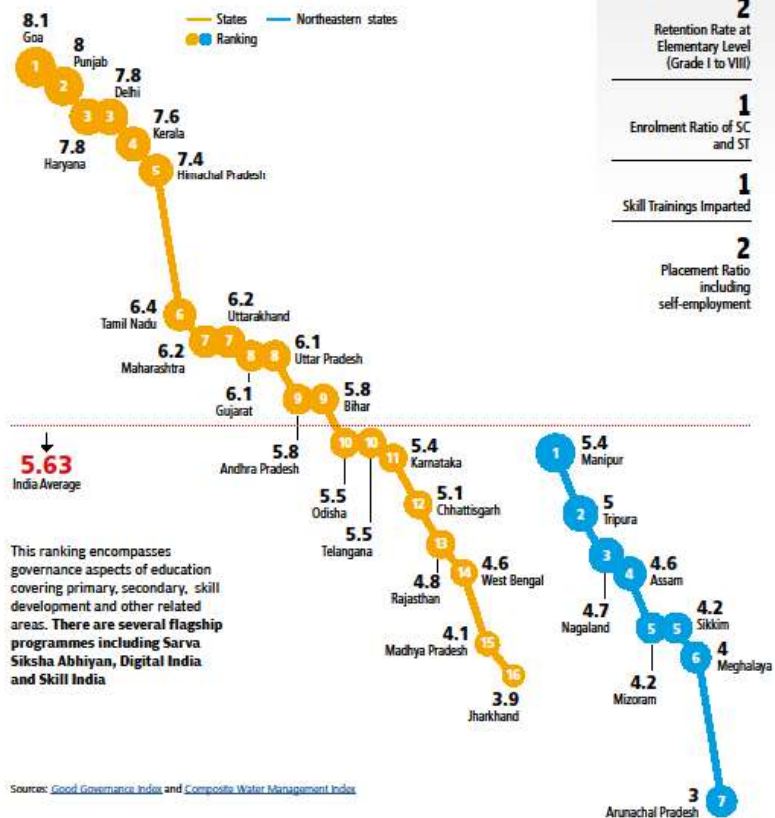


13. Multiple crisis require governance



HUMAN RESOURCE DEVELOPMENT

16 states score below the national average on the governance rankings. The list of poor performers include all the eight northeastern states along with Jharkhand, Madhya Pradesh, West Bengal and Rajasthan



Indicators with Weightage

- 3** Quality of Education
- 2** Gender Parity Index
- 2** Retention Rate at Elementary Level (Grade I to VIII)
- 1** Enrolment Ratio of SC and ST
- 1** Skill Trainings Imparted
- 2** Placement Ratio including self-employment

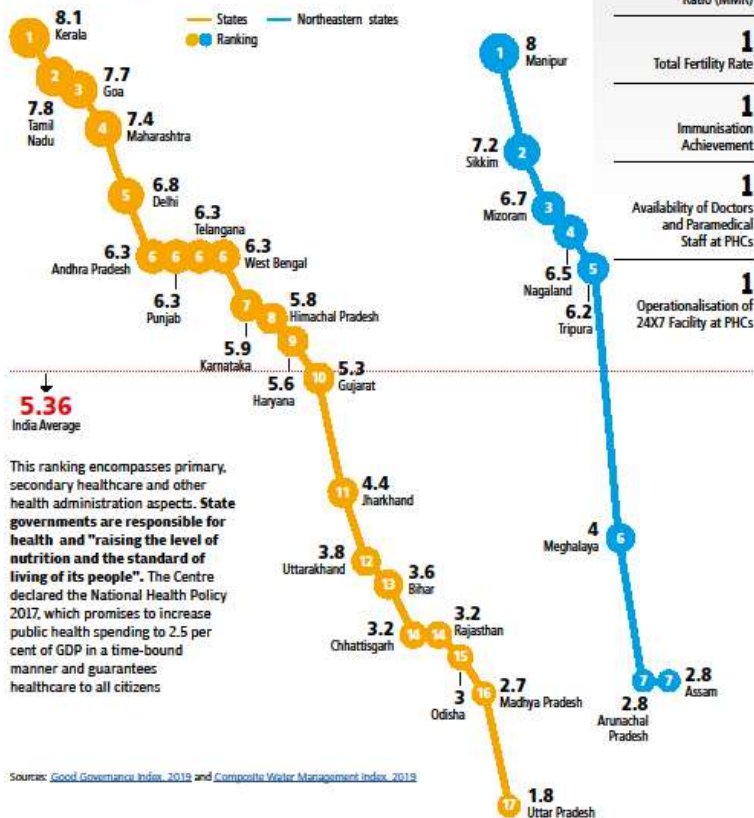
A Down To Earth annual 20

STATE OF STATES



PUBLIC HEALTH

12 states score below the national average on the governance rankings. The list of poor performers include three northeastern states along with Uttar Pradesh, Madhya Pradesh, Odisha, Rajasthan and Chhattisgarh



Indicators with Weightage

- 3** Infant Mortality Rate (IMR)
- 3** Maternal Mortality Ratio (MMR)
- 1** Total Fertility Rate
- 1** Immunisation Achievement
- 1** Availability of Doctors and Paramedical Staff at PHCs
- 1** Operationalisation of 24x7 Facility at PHCs

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14. Multiple crisis require governance



ENVIRONMENT

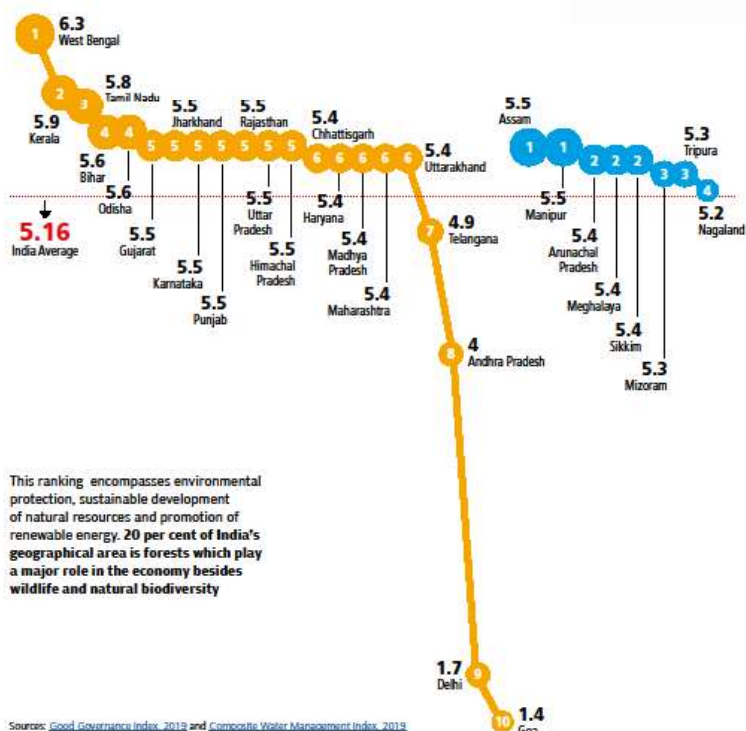
4 states score below the national average on the governance rankings. The list of poor performers include Goa, Delhi, Andhra Pradesh and Telangana

— States — Northeastern states
● Ranking

Indicators with Weightage

4
Availability of State-level Action Plan for Climate Change

6
Change in Forest Cover



This ranking encompasses environmental protection, sustainable development of natural resources and promotion of renewable energy. 20 per cent of India's geographical area is forests which play a major role in the economy besides wildlife and natural biodiversity

Sources: Good Governance Index, 2019 and Composite Water Management Index, 2019

STATE OF STATES



WATER RESOURCES MANAGEMENT

15 states score below the national average on the governance rankings. The list of poor performers include seven northeastern states along with Delhi, West Bengal, Jharkhand and Bihar

— States — Northeastern states
● Ranking

Indicators with weightage

0.5
Source Augmentation and Restoration of Waterbodies

1.5
Source Augmentation (Groundwater)

1.5
Major and Medium Irrigation—Supply Side Management

1
Watershed Development—Supply Side Management

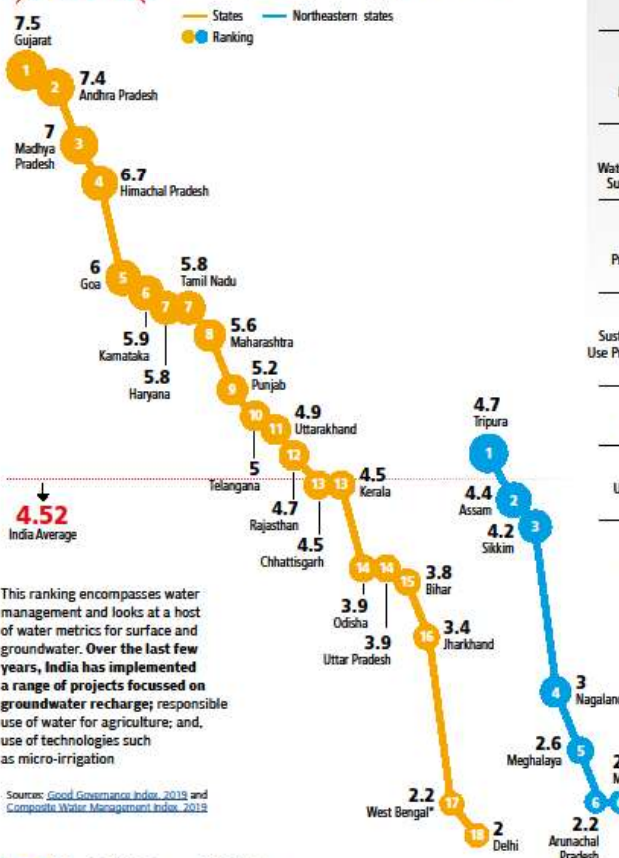
1
Participatory Irrigation Practices—Demand Side Management

1
Sustainable On-farm Water Use Practices—Demand Side Management

1
Rural Drinking Water

1
Urban Water Supply and Sanitation

1.5
Policy and Governance



This ranking encompasses water management and looks at a host of water metrics for surface and groundwater. Over the last few years, India has implemented a range of projects focussed on groundwater recharge; responsible use of water for agriculture; and, use of technologies such as micro-irrigation

Sources: Good Governance Index, 2019 and Composite Water Management Index, 2019



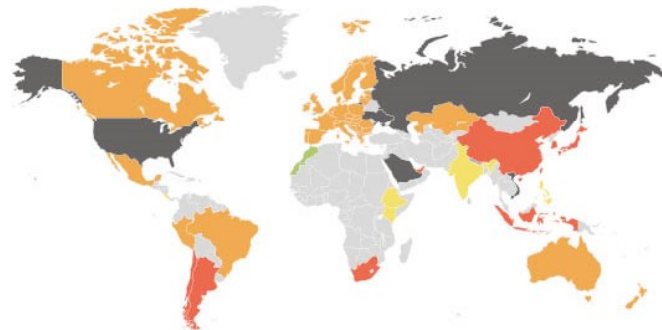
So, lets fix this:

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.

GHUTAN | 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 range. It is consistent with the Paris Agreement's 1.5°C limit.

MOROCCO | THE GAMBIA

Source: Climate Action Tracker, updated 01 March 2020

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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: Envisat 2019

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