

**State of the environment and
the status of the environment
regulators in India**

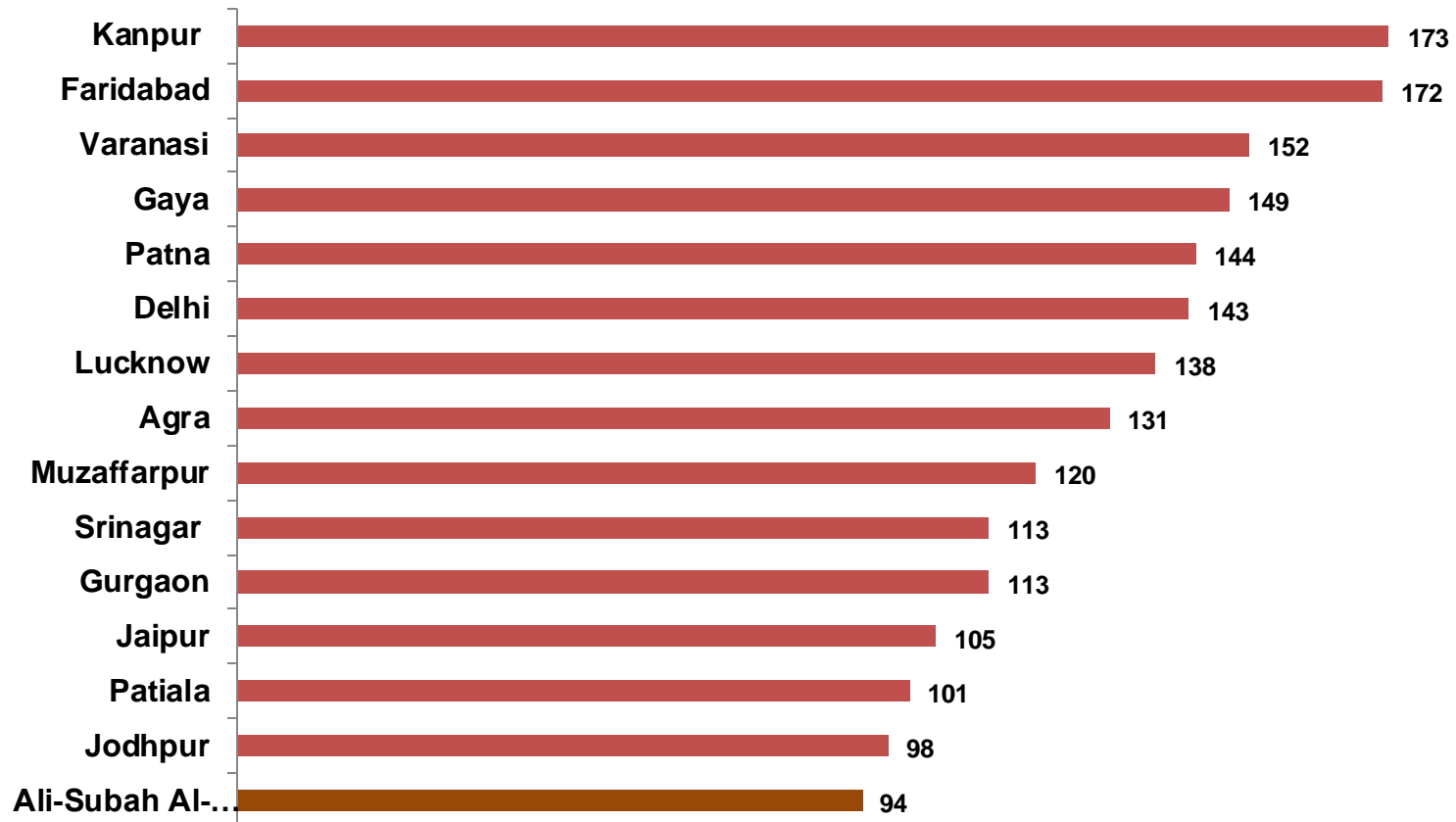
Matrix for the economy

- GDP grew from \$36 billion in 1950-51 to \$2.6 trillion in 2016-17
- Industrial share in GDP gone up from 11.7 per cent in 1950 to 24.2 per cent in 2013-14
- Vehicular stock have increased from 75 millions in 2004 to 210 millions in 2015

Matrix for environment

- Environmental pollution is a runaway problem in India impinging on people's health and socio-economic well-being.
- The pollution burden of our air and water bodies has worsened over the past years. The approach for waste management still is in a nascent stage.
- The laws and regulations pertaining to environmental pollution, and the institutions, have failed to keep pace with the rapidly growing environmental challenges.
- An end-of pipe regulation and the failing capacity of the regulatory agencies to implement them is the main problem

Air pollution



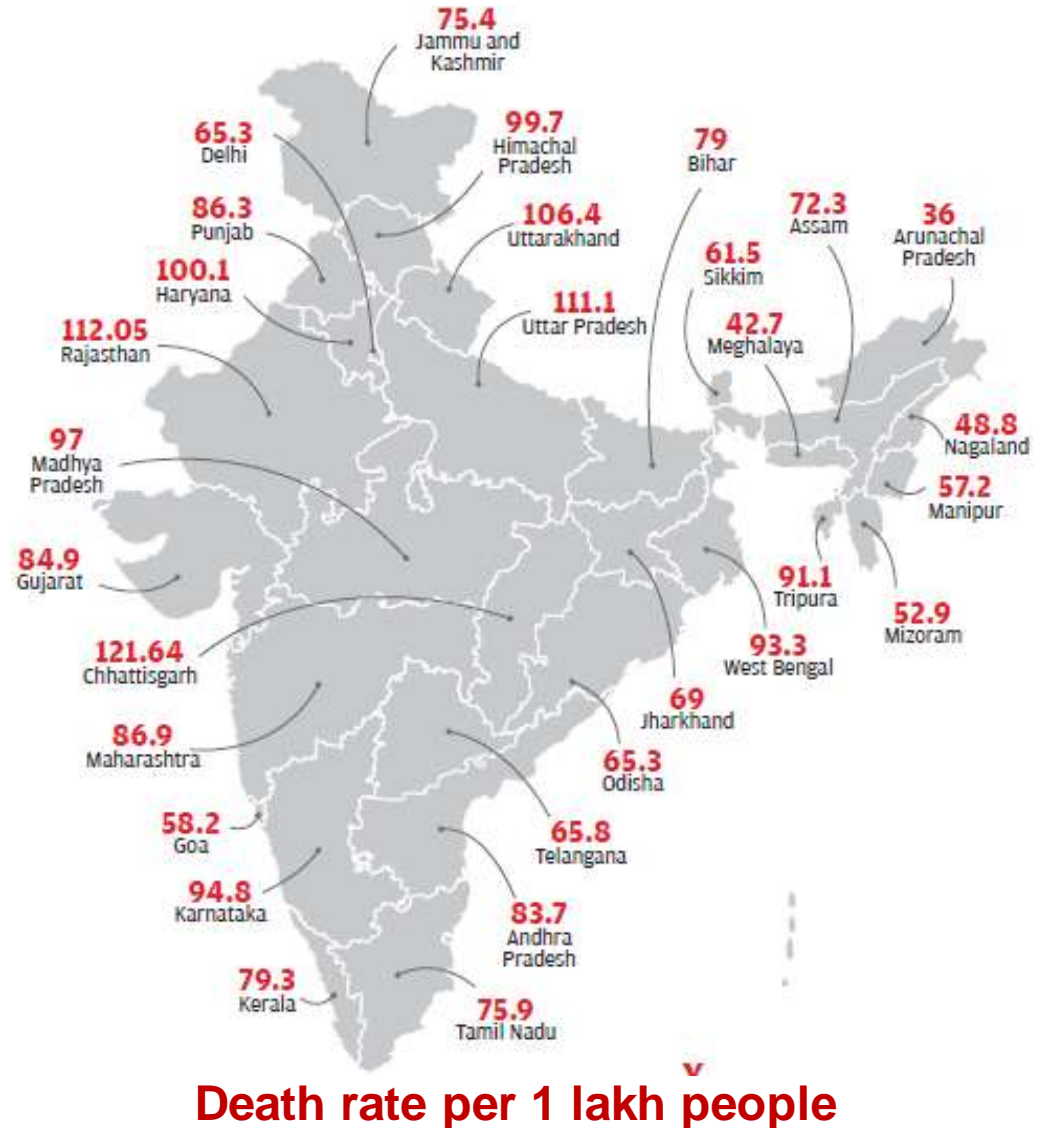
Of the top 15 cities with worst PM 2.5 level, **14 are from India**
(WHO, 2018)

Air pollution

- Data provided by CPCB under the Nation Air Quality Monitoring Program (NAMP) shows that, out of the 312 cities/towns covered by the NAMP, **102 are placed under non-attainment** status with respect to ambient air quality standards.
- The number of cities with PM10 levels in critical category has increased from 56% in 2007 to 79% in 2017.
- Similarly, the number of cities with nitrogen dioxide levels exceeding the annual average standards has increased from 13% in 2007 to 23% in 2017.

Air pollution

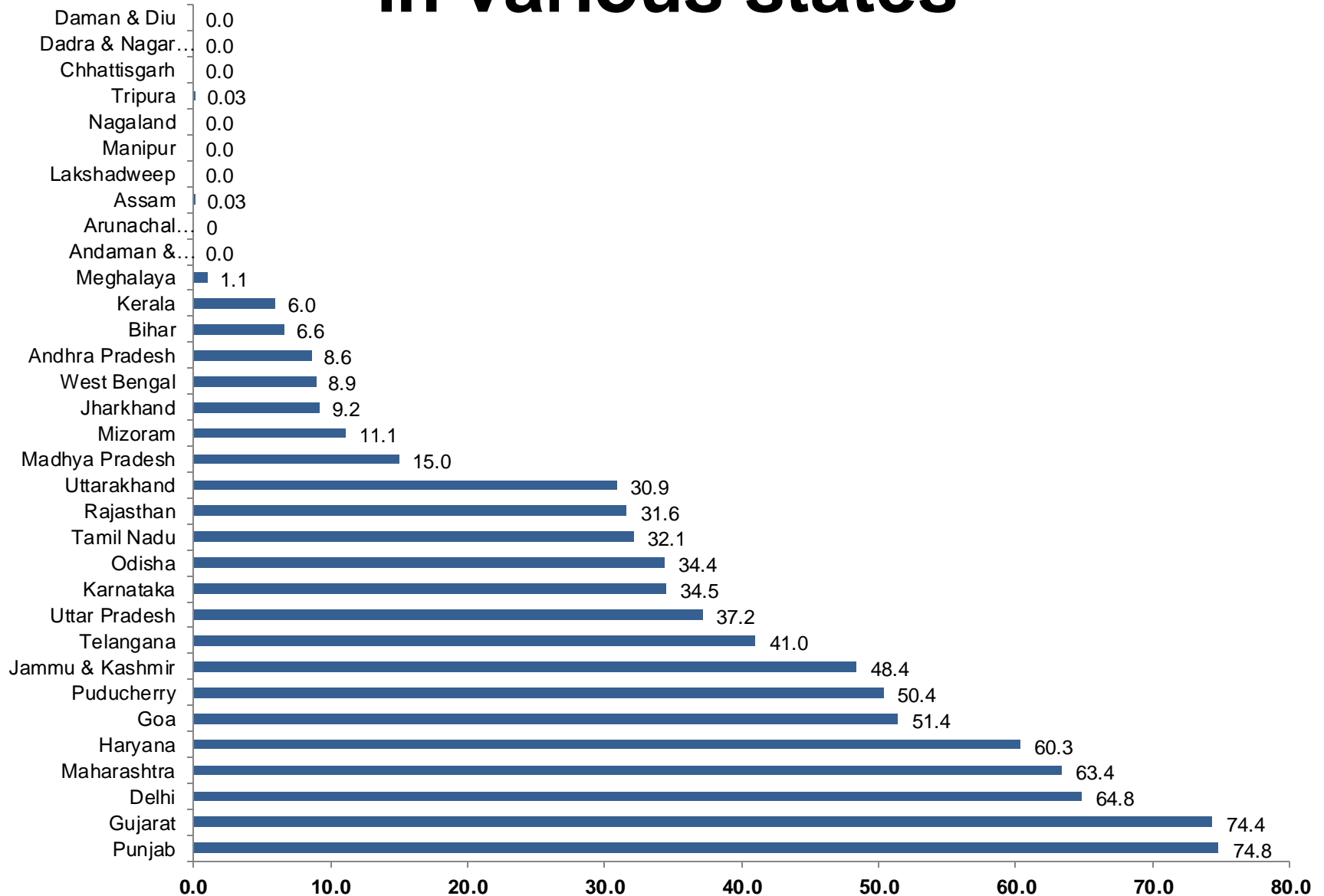
- India has the highest premature deaths among under-5 children due to toxic air (*WHO, 2018*).
- In 2017, **nearly 12.5%** of total deaths in India can be attributed to air pollution (outdoor plus indoor).
- Death rate per 1 lakh people attributable to air pollution is 89.9 (*Global Burden of Disease Study, 2017*)



Sewage management

- Sewage management capacity grossly low as compared to sewage generation. Sewage generation in urban areas is about 61,948 mld; installed treatment capacity so far is only for 23,277 mld. Therefore, the **installed treatment capacity can potentially treat only 38% of the sewage generated.**
- However, as per CPCB estimates, actual capacity utilization of STPs is only about 72.2%. **Thus, only 27 % of the sewage generated will be effectively treated.**
- Also, all STPs that have been installed are not functional. As per CPCB estimates, **about 64% of the total number of STPs in place are operational.**

Percentage of urban sewage treated in various states



River pollution

- River pollution increasing by the day.
- In 2018, Central Pollution Control Board (CPCB) identified a total of **351 polluted river stretches** in various states and union territories. **This is an increase from 302 stretches identified 3 years back.**
- 45 stretches have been identified as critically polluted that have BOD levels >30 mg/l.
- The top 10 states which have the most polluted river stretches include Maharashtra (53), Assam (44), Madhya Pradesh (22), Kerala (21), Gujarat (20), Odisha (19), West Bengal (17), Karnataka (17), Uttar Pradesh (12), Goa (11).

Ground water pollution

- Groundwater accounts for more than 80% of drinking water supply and is polluted in most of India's 640 districts.
- Some of the major and most toxic ground water pollutants include-flouride, nitrate, iron, arsenic, heavy metals (particularly lead, cadmium and chromium) and uranium.

Contaminant	No. of affected states	No. of affected districts
Fluoride	20	276
Nitrate	20	387
Arsenic	10	86
Iron	24	297
Heavy metals	15	113
Uranium*	14	61

*Source: Central Groundwater Board ;*Study by Duke University, US, 2018*

Safe potable water a major challenge

- About 2 lakh people in India die every year due to inadequate access to safe water. This still leaves out the high proportion of people who suffer from ailments such as diarrhea and dysentery.
- Only about **50% of the rural population has access to 'safely managed water'** (*NITI Aayog, 2018; Composite Water Management Index*).



Drinking water situation in rural Keonjhar district, Odisha; CSE 2017

Municipal solid waste

- Solid waste generation has **increased nearly 3 fold** over the last 2 decades in urban India.
- MSW in India comprises of almost **50 % biodegradable waste**. recyclables (paper/plastic/glass/metals) constitute about 17%; and remaining 33% inerts and fine earth etc.
- Despite biodegradable and recyclable wastes constituting about 65-70% of the MSW waste-stream (also inerts include high percentage C&D waste that can be recycled), the **waste management approach is still largely cradle to grave**; about **50% of the waste generated ends in landfill**.

Municipal solid waste

TOTAL WASTE GENERATED BY INDIA

62 MILLION TONNES

WASTE COLLECTED

43 MILLION TONNES

WASTE NOT COLLECTED

19 MILLION TONNES

TREATED

11.9 MILLION
TONNES

DUMPED IN LANDFILL

31 MILLION TONNES

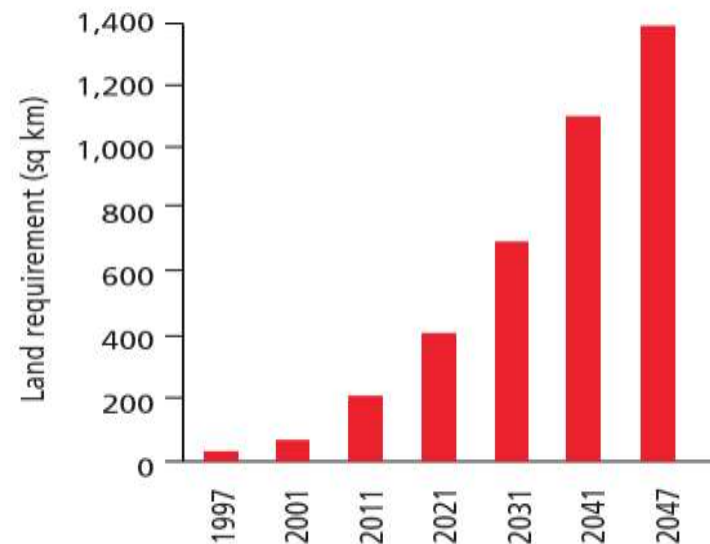
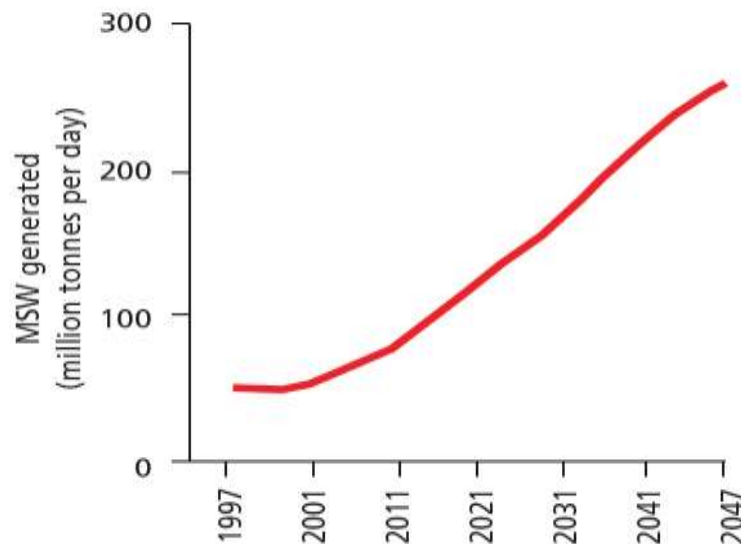
Estimates as of 2014-15

Municipal solid waste

- With increasing population and waste generation, India will run out of land to create landfills and dump waste. By 2047, India will potentially need the land area combining its 3 metro cities- Hyderabad, Chennai and Mumbai to accommodate waste going to landfills.

SOLID WASTE GENERATION AND LANDFILL REQUIREMENTS

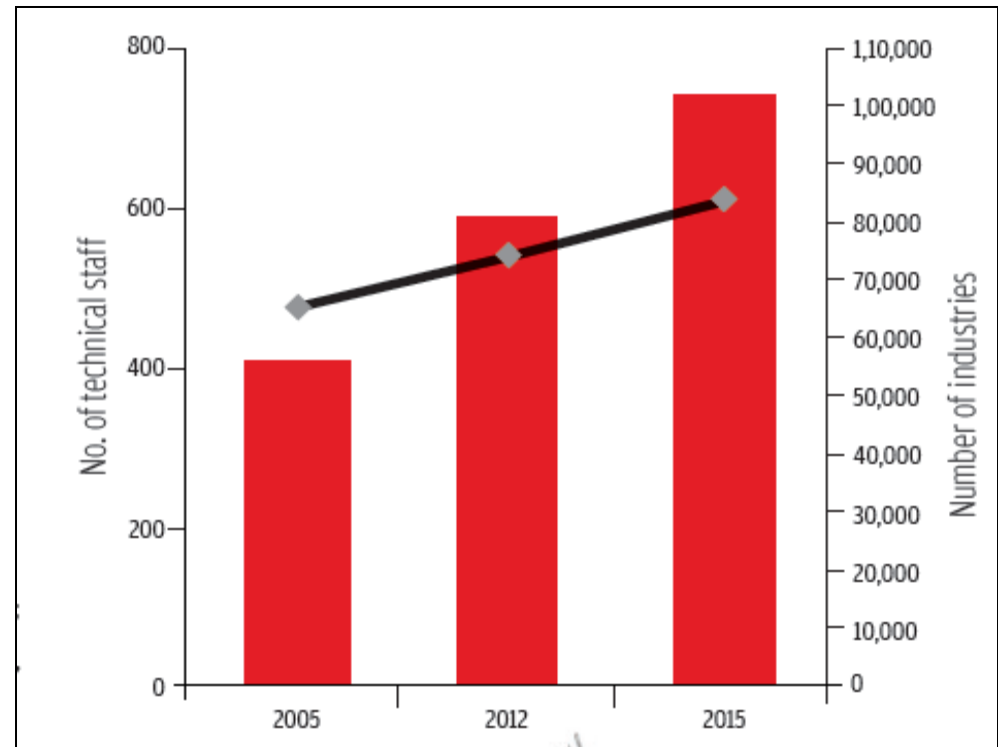
There has been an exponential increase in the volume of MSW and, therefore, the area of land needed to dispose it



Status of the State Pollution Control Boards

Manpower crunch

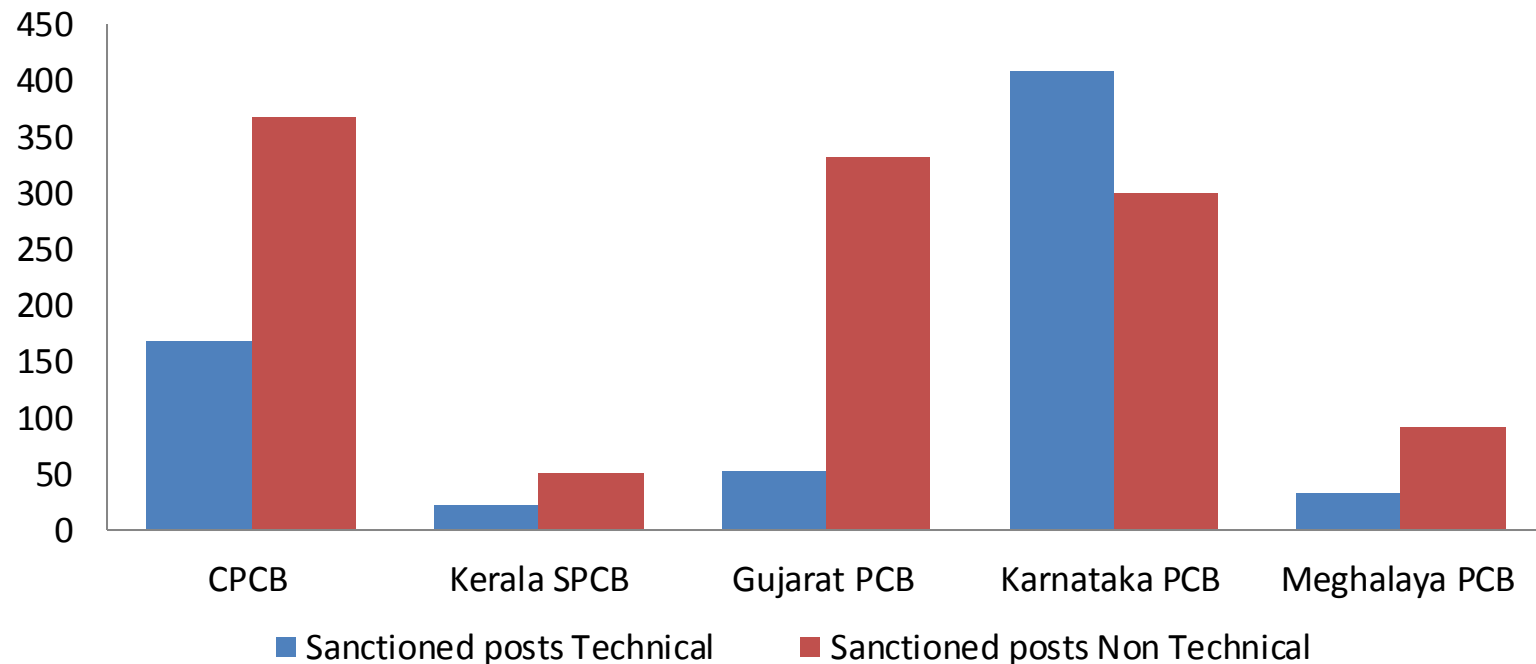
- Number of industries to be regulated has grown significantly
- Number of legislation has also grown significantly
- But the number of technical staff remains very low



Source: CSE, estimates based on data provided by state pollution control boards;
Note: data is for four states - Maharashtra, Karnataka, Odisha and Gujarat

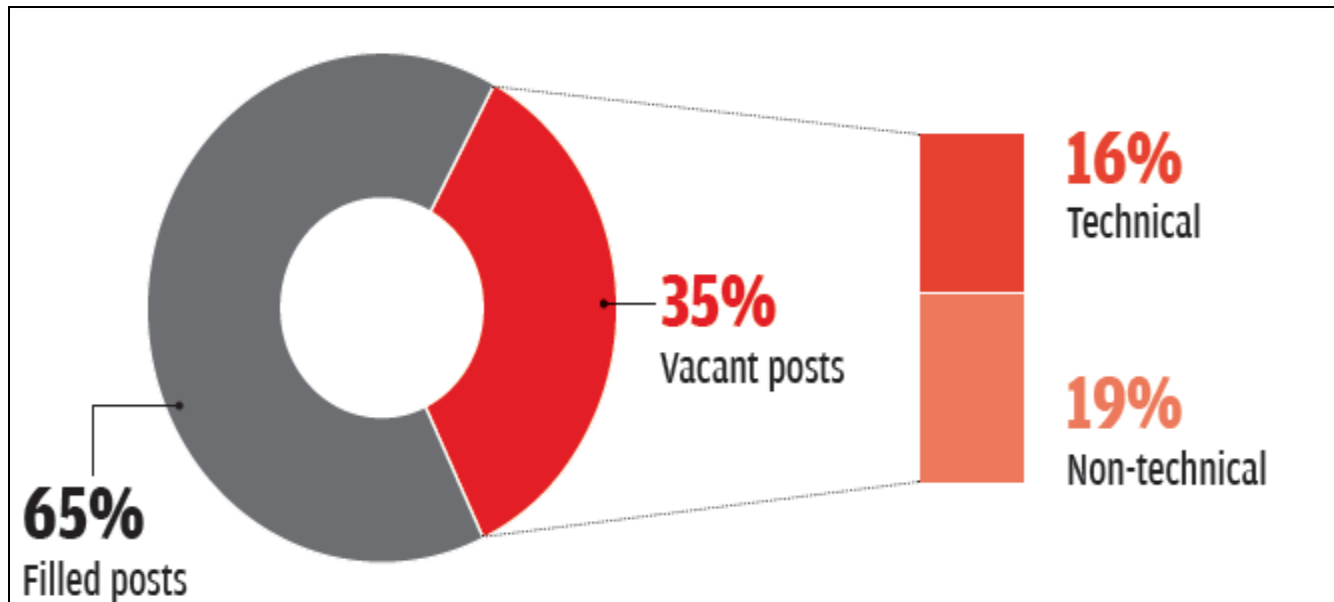
Manpower crunch

- Not only less manpower, the state boards also do **not** have right kind of manpower
- Most boards dominated by **administrative staff**



Manpower crunch

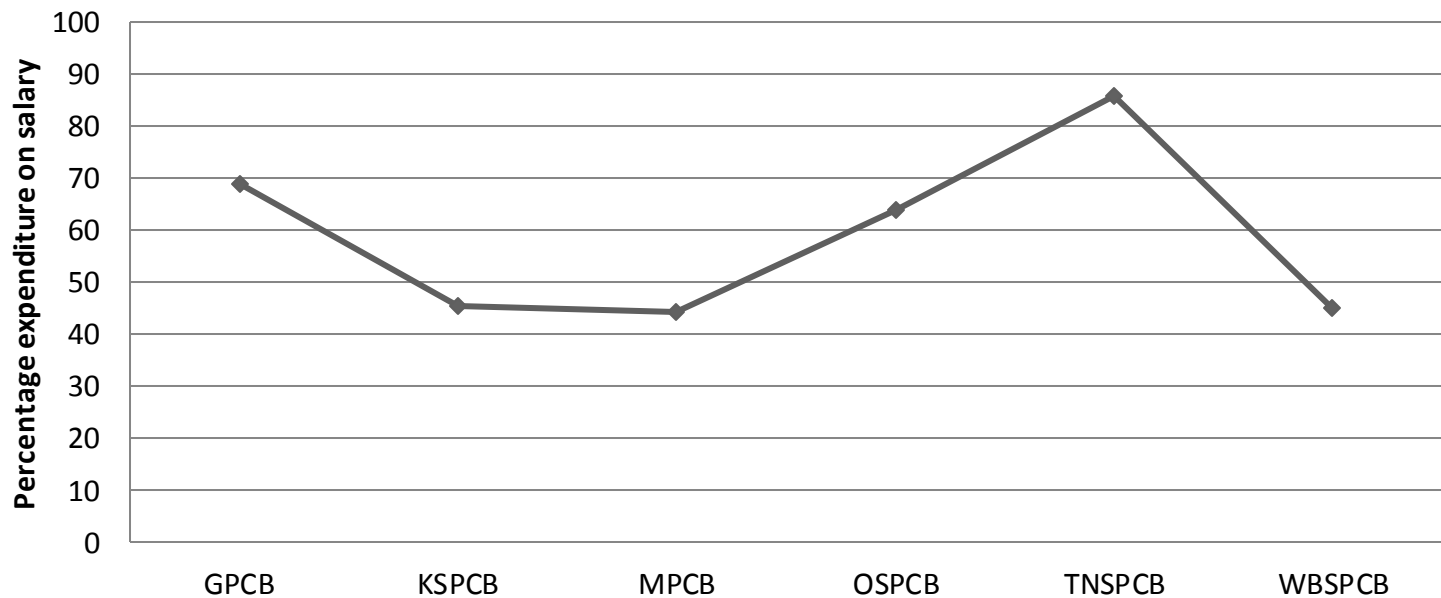
Most state boards have high percentage of vacant posts



Source: CSE, based on data provided by state pollution control boards; Note: data is for six states - Maharashtra, Karnataka, Odisha, West Bengal, Tamil Nadu and Gujarat

Financial resources

- Most SPCBs have no financial constraint.
- Many of the boards do not even spend 60 per cent of their resources and thus have surpluses
- **Major expenditure is on salary:** Very less on monitoring of Industries or capital investment



Performance indicators: Karnataka State Pollution Control Board

Performance parameters	2014-15
Income (Rs in lakh)	9571
Expenditure (Rs in lakh)	4335
Expenditure as percentage of income	45.3 per cent
Expenditure per industry (Rs)	9860
Percentage increase in technical staff as compared to in 2010 – 11	12
Percentage increase in number of industries (compared to 2010 – 11) operating Red and Orange category industries	62
Workload (industries per technical staff)	249
Avg. human-days spent by technical staff per industry	0.83
Average inspection per industry per year	0.53

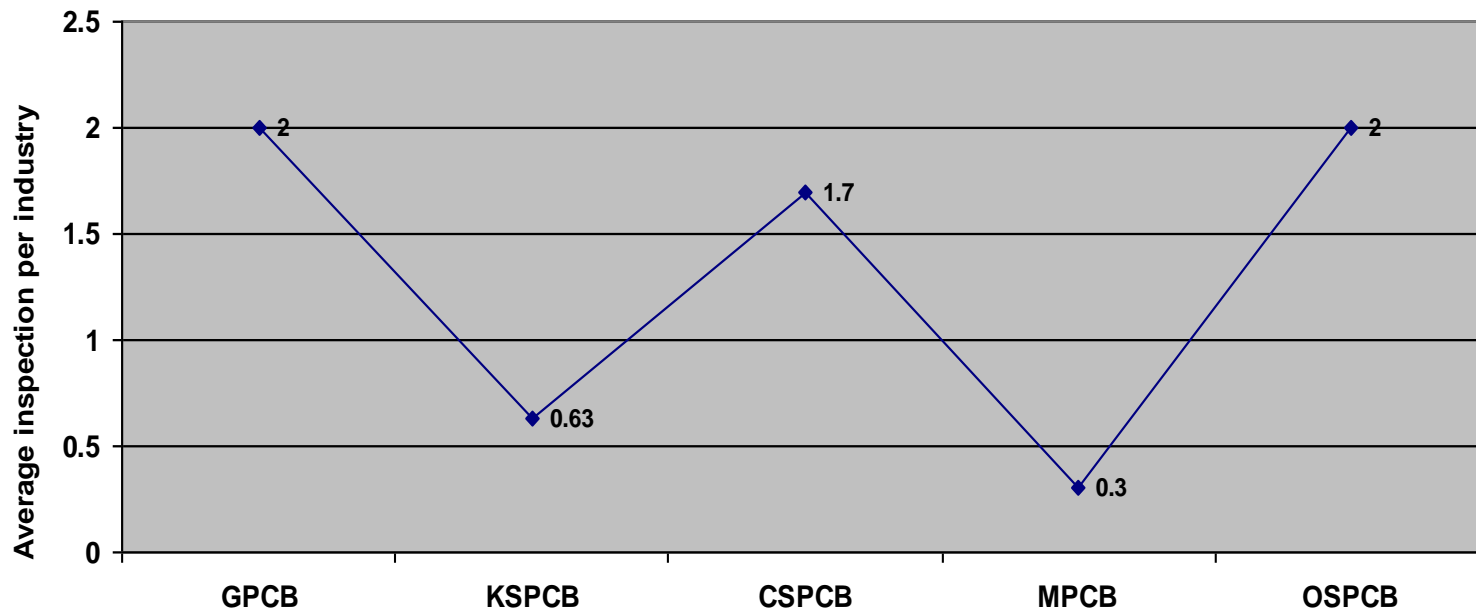
Report Card: Consent

Consent to establish

- Most companies that apply for consent to establish are **cleared**
- Dismally **low rejection** rates
 - KSPCB rejected 1.4 per cent application

Inspection

- **POOR** track record - average number of inspections per industry remains very small
- Maharashtra and Karnataka PCB did not even inspect all industries in a year



Monitoring

- Better track record in monitoring wastewater as compared to hazardous waste or stack monitoring
- Sample analyzed per year: Very less
- During last five year
 - Karnataka: Number of wastewater sample collected always less than number of water polluting units
 - Gujarat, Maharashtra and Karnataka: Monitored stack emissions of only 0.55, 0.03 and 0.13 per air polluting industry respectively

Enforcement

- Very few cases are filed by SPCBs
- Also boards do not have **sufficient** legal staff
 - CSPCB had no legal staff
 - Karnataka PCB has 6 legal officials
 - Gujarat PCB has only 3 legal officials

Matrix for environment

- Need for a composite matrix to judge the state of toxification of our environment.
- Need for a composite index to judge the state of environmental governance