AAETI

Anil Agarwal Environment Training Institute

GSP Seminar for schools on Air Pollution and Health Impact on Children

August 21-22, 2019

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About CSE

CSE: set up in 1980. By Anil Agarwal
Engineer - journalist - environmentalist

An institution to bridge the gap between information and knowledge; between knowledge and public awareness; to influence public policies and practices for sustainable development

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Our work: 200 staff/Based in Delhi

CSE PROGRAMMES

RESEARCH AND ADVOCACY	KNOWLEDGE DISSEMINATION	BUILDING CAPACITY/ EDUCATION/ MONITORING
◆ Clean Air and Sustainable Mobility	◆ Down To Earth	◆ Anil Agarwal Environment Training Institute
◆ Green Building	◆ Portal/ Specialised websites	◆ Environment Education
◆ Water-Waste (capacity building, technical support, demonstration projects)	◆ Publications	◆ Media Resource Centre
◆ Water-Waste (research and advocacy)		◆ Pollution Monitoring Lab
◆ Sustainable Industrialisation		
◆ Climate Change		
◆ Renewable Energy		
◆ Food Safety		

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Building alliances/ Creating capacity

1. Media – to multiply understanding
2. Regulators – to change the practice of delivery and enforcement (setting up regulator training institute)
3. Civil society and young people – to build change-makers (Green Schools Programme & University Programme)

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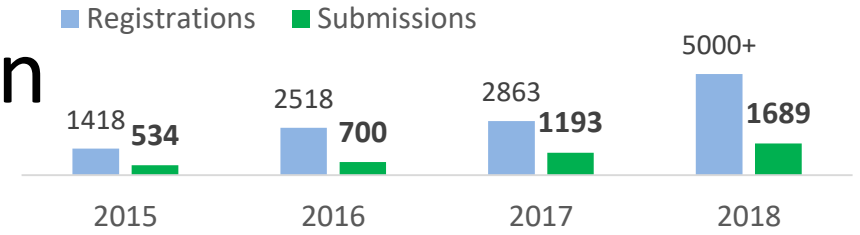
About GSP

GSP Award Video

An assessment of the extent to which an organization is observing practices which minimize harm to the environment

Pan India GSP Participation



Registered Submitted

29
states and 5 UTs participated in the GSP Audit

5000+
schools are part of the GSP Network

67,000
students, teaching and non-teaching staff participated in 2018-19

118
schools were rated green in 2018-19

1. Jammu and Kashmir
2015: 10/5 2017: 36/27
2016: 25/15 2018: 52/30

2. Uttarakhand
2015: 32/11 2017: 63/40
2016: 49/17 2018: 70/44

3. Punjab
2015: 321/122 2017: 304/78
2016: 459/96 2018: 383/118

4. Chandigarh
2015: 10/3 2017: 10/6
2016: 14/4 2018: 10/7

5. Haryana
2015: 29/19 2017: 111/45
2016: 374/42 2018: 301/60

6. Himachal Pradesh
2015: 87/42 2017: 268/135
2016: 75/18 2018: 372/117

7. Delhi
2015: 94/54 2017: 114/48
2016: 120/62 2018: 179/68

8. Rajasthan
2015: 60/24 2017: 147/87
2016: 91/45 2018: 181/77

9. Gujarat
2015: 13/5 2017: 43/18
2016: 30/13 2018: 66/32

10. Dadra and Nagar Haveli
2015: 0/0 2017: 1/0
2016: 1/1 2018: 2/0

11. Madhya Pradesh
2015: 43/19 2017: 116/57
2016: 90/42 2018: 153/95

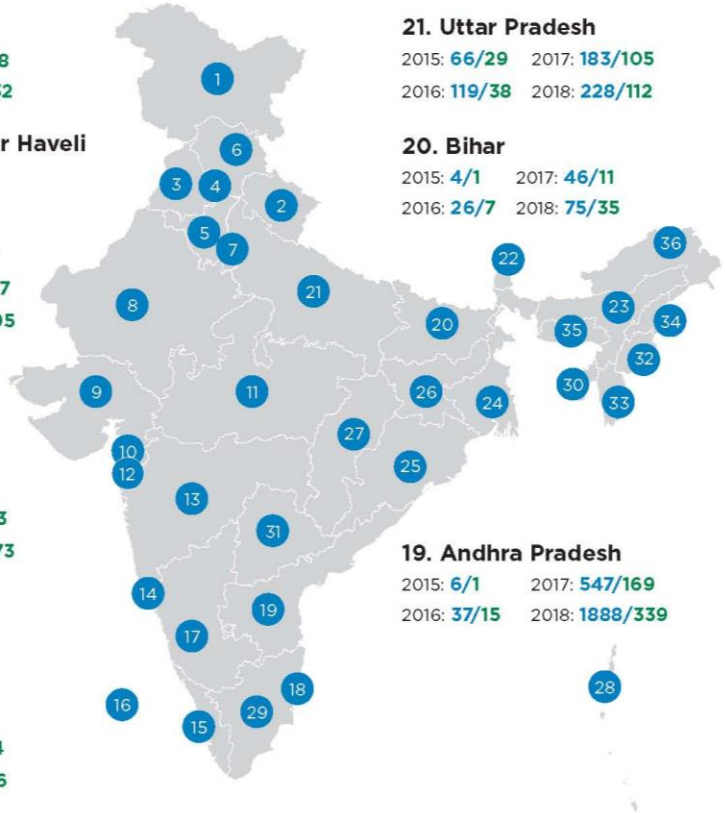
12. Daman and Diu
2018: 1/0

13. Maharashtra
2015: 36/16 2017: 99/53
2016: 80/44 2018: 126/73

14. Goa
2015: 1/0 2017: 10/3
2016: 4/2 2018: 12/7

15. Kerala
2015: 13/5 2017: 61/34
2016: 68/21 2018: 89/46

16. Lakshdweep
2015: 1/0 2017: 0/0
2016: 1/0 2018: 2/1



17. Karnataka
2015: 22/11 2017: 64/42
2016: 52/18 2018: 96/46

18. Puducherry
2015: 0/0 2017: 2/0
2016: 1/0 2018: 7/5

19. Andhra Pradesh
2015: 6/1 2017: 547/169
2016: 37/15 2018: 1888/339

20. Bihar
2015: 4/1 2017: 46/11
2016: 26/7 2018: 75/35

21. Uttar Pradesh
2015: 66/29 2017: 183/105
2016: 119/38 2018: 228/112

22. Sikkim
2015: 149/64 2017: 164/63
2016: 156/77 2018: 183/19

23. Assam
2015: 19/8 2017: 40/17
2016: 34/15 2018: 56/26

24. West Bengal
2015: 7/5 2017: 46/16
2016: 25/8 2018: 89/59

25. Odisha
2015: 310/65 2017: 144/18
2016: 366/35 2018: 169/35

26. Jharkhand
2015: 13/4 2017: 23/8
2016: 24/6 2018: 60/29

27. Chhattisgarh
2015: 6/4 2017: 27/15
2016: 28/13 2018: 36/23

28. Andaman and Nicobar
2017: 2/0 2018: 4/2

29. Tamil Nadu
2015: 10/5 2017: 94/48
2016: 102/14 2018: 254/107

30. Tripura
2015: 4/3 2017: 10/5
2016: 8/5 2018: 12/9

31. Telangana
2015: 12/6 2017: 56/33
2016: 38/18 2018: 129/40

32. Manipur
2015: 4/3 2017: 8/3
2016: 7/3 2018: 10/6

33. Mizoram
2015: 2/0 2017: 6/5
2016: 5/3 2018: 8/7

34. Nagaland
2015: 1/0 2017: 2/0
2016: 1/0 2018: 6/4

35. Meghalaya
2015: 1/0 2017: 5/3
2016: 4/3 2018: 9/6

36. Arunachal Pradesh
2015: 2/0 2017: 8/1
2016: 4/2 2018: 14/5

Graphics: Ritika Bohra/ G

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About GSP

- Recognize schools who have **demonstrated measurable change over the past years and improved** their management of resources
- Green School is about **our practice**
- **Practice that pushes the envelope of change**

We walk the talk,
We are the change !

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GSP Audit 2018 - AIR

- School owned vehicles: 122 schools
- Schools which do not own a vehicle: 1299
- **CNG available in area: 102; only 47 use CNG vehicles**
- Sustainable Motorised Transport used by more than 50 per cent: 702
- Non polluting mode of transport used by more than 50 per cent: 728
- **405 schools burn waste!**

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Non-attainment cities

State	City
Andhra Pradesh	Guntur; Kurnool; Nellore; Vijaywada; Vishakhapatnam
Karnataka	Bengaluru; Devanagere; Gulburga; Hubli-Dharwad
Odisha	Balasore; Bhubaneshwar; Cuttack; Rourkela; Talcher
Tamil Nadu	Tuticorin
Telengana	Hyderabad; Nalgonda; Patencheru
West Bengal	Kolkata
Bihar	Patna; Gaya; Muzaffarpur

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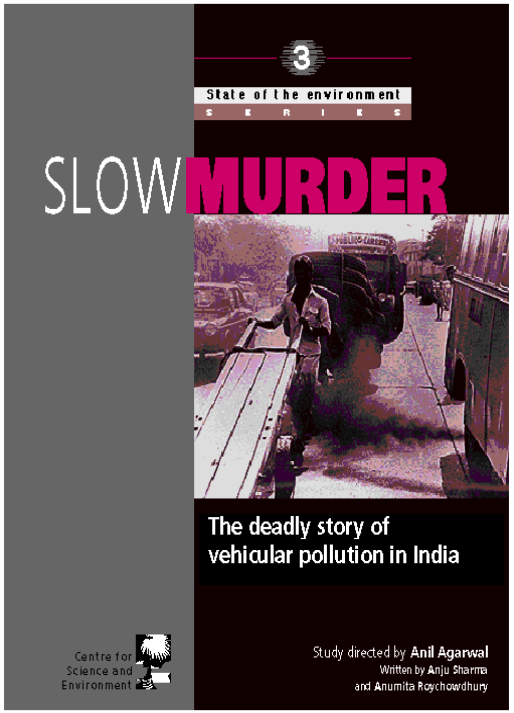
Deadly pollution is the result of a combination of

- Outdated vehicle technology

- Poor fuel quality

- Lack of transportation planning

- Poor maintenance of vehicles



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Supreme Court listens

In 1998, the Court orders

- Government to phase out all diesel buses in Delhi; Convert to CNG;
- All autos in Delhi to move to CNG;
- Advance emission norms by 5 years;
- Advanced enforcement of emissions standards for both petrol and diesel vehicles

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First generation reforms:

Delhi has fought hard to get breathing space

On vehicles

- Introduced low sulphur fuels and petrol with 1 per cent benzene
- Mandated pre-mix petrol to two- and three-wheelers
- Moved from Euro I to Euro IV over the last decade.
- Implemented largest ever CNG based public transport programme
- Phased out 10-15 year old commercial vehicles.
- Strengthened vehicle inspection programme (PUC)
- Efforts made to divert transit heavy traffic
- Set up independent fuel testing laboratories to check fuel adulteration
- Bypasses constructed – EPE

On industry

- Relocated polluting units. Banning polluting fuels
- Tighter controls on power plants. No new power plants on coal.

Air quality monitoring

- Adopted new ambient air quality standards
- Expanded air quality monitoring and reporting

Other sources

- Emissions standards for generator sets
- Ban on open burning of biomass
- Restrictions on power plants

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However…

200,000 new vehicles added in Delhi only each year.
Every city has same problem.
New added. Can't get rid of old
Pollution increases.

Congestion increases.

Year 1978: 401,247 vehicles

Year 2015: 3,869,694 vehicles

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Speed : then and now

10 – 15 km per hour

10 – 15 km per hour

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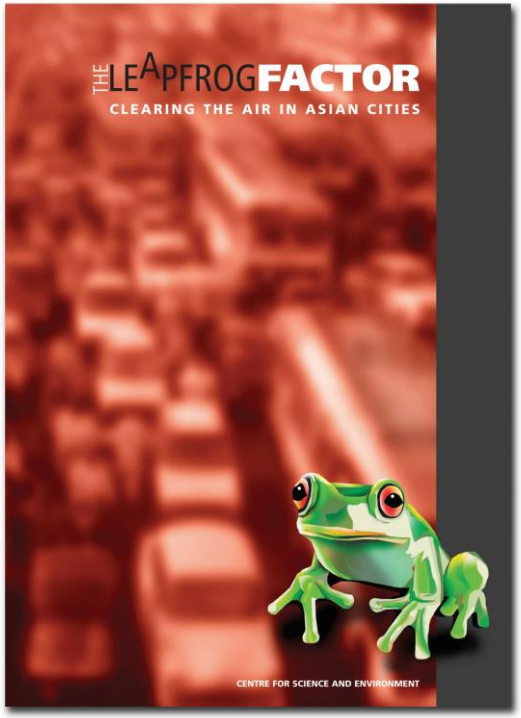
Time for second generation reforms - Reinvent mobility

- Build public transport and restrain cars
- Leapfrog emissions and fuel standards
- Restrict dieselisation of private fleet
- Improve two wheelers emissions
- Expand alternative fuel fleet
- Build public awareness about health impacts of dirty air



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Air Quality Index

- National Air Quality Index is tool that uses numbers to simplify air quality data by classifying pollution levels into 6 categories—good, satisfactory, moderate, poor, very poor and severe—and denotes a color code on the basis of how harmful the pollution in a specific area is.

AQI Category (Range)	PM_{10} 24-hr	$PM_{2.5}$ 24-hr	NO_2 24-hr	O_3 8-hr	CO 8-hr (mg/m^3)
Good (0-50)	0-50	0-30	0-40	0-50	0-1.0
Satisfactory (51-100)	51-100	31-60	41-80	51-100	1.1-2.0
Moderately polluted (101-200)	101-250	61-90	81-180	101-168	2.1- 10
Poor (201-300)	251-350	91-120	181-280	169-208	10-17
Very poor (301-400)	351-430	121-250	281-400	209-748*	17-34
Severe (401-500)	430 +	250+	400+	748+*	34+

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Health statements for AQI categories

AQI	Associated Health Impacts
Good(0–50))	Minimal Impact
Satisfactory (51–100)	May cause minor breathing discomfort to sensitive people
Moderately polluted (101–200)	May cause breathing discomfort to the people with lung disease such as asthma and discomfort to people with heart disease, children and older adults
Poor (201–300)	May cause breathing discomfort to people on prolonged exposure and discomfort to people with heart disease
Very Poor (301–400)	May cause respiratory illness to the people on prolonged exposure. Effect may be more pronounced in people with lung and heart diseases
Severe (401-500)	May cause respiratory effects even on healthy people and serious health impacts on people with lung/heart diseases. The health impacts may be experienced even during light physical activity

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How air pollution affects children?

- https://www.downtoearth.org.in/video/air/how-air-pollution-affects-children--61989

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Thank You