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

August 21-22, 2019
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
## CSE PROGRAMMES

<table>
<thead>
<tr>
<th>RESEARCH AND ADVOCACY</th>
<th>KNOWLEDGE DISSEMINATION</th>
<th>BUILDING CAPACITY/EDUCATION/MONITORING</th>
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</thead>
<tbody>
<tr>
<td>✦ Clean Air and Sustainable Mobility</td>
<td>✦ Down To Earth</td>
<td>✦ Anil Agarwal Environment Training Institute</td>
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<tr>
<td>✦ Green Building</td>
<td>✦ Portal/ Specialised websites</td>
<td>✦ Environment Education</td>
</tr>
<tr>
<td>✦ Water-Waste (capacity building, technical support, demonstration projects)</td>
<td>✦ Publications</td>
<td>✦ Media Resource Centre</td>
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<tr>
<td>✦ Water-Waste (research and advocacy)</td>
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<td>✦ Pollution Monitoring Lab</td>
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<tr>
<td>✦ Sustainable Industrialisation</td>
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<td>✦ Climate Change</td>
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<td>✦ Renewable Energy</td>
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<tr>
<td>✦ Food Safety</td>
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</tbody>
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Our work: 200 staff/Based in Delhi
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)
About GSP

An assessment of the extent to which an organization is observing practices which minimize harm to the environment.
Pan India GSP Participation

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. Lakshadweep
    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

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

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

27. Chhattisgarh
    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

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

Graphics: Ritika Bohra/ G"
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!
• 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!
## Non-attainment cities

<table>
<thead>
<tr>
<th>State</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andhra Pradesh</td>
<td>Guntur; Kurnool; Nellore; Vijaywada; Vishakhapatnam</td>
</tr>
<tr>
<td>Karnataka</td>
<td>Bengaluru; Devanagere; Gulburga; Hubli-Dharwad</td>
</tr>
<tr>
<td>Odisha</td>
<td>Balasore; Bhubaneshwar; Cuttack; Rourkela; Talcher</td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>Tuticorin</td>
</tr>
<tr>
<td>Telengana</td>
<td>Hyderabad; Nalgonda; Patencheru</td>
</tr>
<tr>
<td>West Bengal</td>
<td>Kolkata</td>
</tr>
<tr>
<td>Bihar</td>
<td>Patna; Gaya; Muzaffarpur</td>
</tr>
</tbody>
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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
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
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
However...

200,000 new vehicles added in Delhi only each year.
Every city has the 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
Speed: then and now

10 – 15 km per hour

10 – 15 km per hour
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
Air Quality Index

- National Air Quality Index is a 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 based on the harmfulness of the pollution in a specific area.
## Health statements for AQI categories

<table>
<thead>
<tr>
<th>AQI</th>
<th>Associated Health Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Good (0–50)</strong></td>
<td>Minimal Impact</td>
</tr>
<tr>
<td><strong>Satisfactory</strong></td>
<td>May cause minor breathing discomfort to sensitive people</td>
</tr>
<tr>
<td><strong>(51–100)</strong></td>
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</tr>
<tr>
<td><strong>Moderately polluted</strong></td>
<td>May cause breathing discomfort to the people with lung disease such as asthma and discomfort to people with heart disease, children and older adults</td>
</tr>
<tr>
<td><strong>(101–200)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Poor</strong></td>
<td>May cause breathing discomfort to people on prolonged exposure and discomfort to people with heart disease</td>
</tr>
<tr>
<td><strong>(201–300)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Very Poor</strong></td>
<td>May cause respiratory illness to the people on prolonged exposure. Effect may be more pronounced in people with lung and heart diseases</td>
</tr>
<tr>
<td><strong>(301–400)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Severe</strong></td>
<td>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</td>
</tr>
<tr>
<td><strong>(401–500)</strong></td>
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</table>
How air pollution affects children?

Thank You