

International Day of Clean Air for Blue Sky

The United Nations at the 74th Session of the General assembly decided to celebrate the observance 7th September as the International Day of Clean Air for Blue Sky every year. Hence, in order to commemorate the very first 'International Day of Clean Air for Blue Sky', a panel discussion was organized by the School of Environmental Sciences, JNU-ENVIS Resource Partner and the Young Holistic (YoHo) group, SES, Jawaharlal Nehru University, New Delhi on 7th September 2020.

The panel included very eminent national and International researchers such as **Prof. A Jayaraman**, Ex-Director NARL, ISRO, **Dr. J S Sharma**, Ex-Head Environment, ONGC Member EAC II, MoEFCC, **Prof. Krishan Kumar**, SES, JNU, **Dr. Saumya Singh**, The University of Texas, Austin, USA, **Prof. U.C. Kulshrestha**, Dean SES & JNU ENVIS Coordinator and **Dr. Usha Mina**, Associate Professor JNU & Co-coordinator JNU ENVIS. The Young Holistic leader YoHo **Ms. Ankita Katoch** represented the student group while **Ms. Swati Singh**, Programme Officer ENVIS, SES executed the management of the programme.

Professor Umesh Kulshrestha, moderated the panel discussion. It was attended by more than 100 participants, through Google-Meet and Facebook Live platforms. The participants included university students, researchers, faculty members and common citizens from different parts of the country.

INTERNATIONAL DAY OF CLEAN AIR FOR BLUE SKIES

Webinar Date: 7 Sept, 2020
Time: 11.30 am - 1 pm

Panelists



Prof A Jayaraman
Ex-Director NARL, ISRO



Dr. J S Sharma
Ex- Head
Environment, ONGC
Member EAC II, MoEFCC



Prof. Krishan Kumar
SES, JNU



Dr. Saumya Singh
The University of Texas,
Austin, USA



Prof U.C. Kulshrestha
ENVIS Coordinator
SES/JNU, (Dean)



Dr. Usha Mina
ENVIS Co-coordinator
SES, JNU



Ms. Ankita Katoch
YoHo Lead,
SES, JNU



Ms. Swati Singh
Programme Officer
ENVIS, SES, JNU

Registration Link:

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Organized by:



JNU ENVIS Resource Partner on Geodiversity & Impact on Environment
School of Environmental Sciences, Jawaharlal Nehru University, New Delhi
Ministry of Environment, Forest & Climate Change, Govt. of India



International Day of Clean Air for Blue Sky	
Webinar on Date: September 07, 2020	
Timing: 11:30 AM-01:00 PM	
Panelists	Time
Welcome Address by Prof. Umesh Kulshrestha Coordinator ENVIS and Dean,SES JNU	11:30 AM-11:40 AM
Prof.A Jayaraman Ex-Director, NARL, ISRO	11:40 AM-11:50 AM
Dr. J S Sharma Ex-Head Environment, ONGC Member EAC 11, MoEFCC	11:50 AM- 12:00 Noon
Prof. Krishan Kumar SES, JNU	12:00 Noon- 12:10 PM
Dr. Saumya Singh The University of Texas, Austin, USA	12:10 PM- 12:20 PM
Dr. Usha Mina ENVIS Co-coordinator, SES, JNU	12:20 PM- 12:30 PM
Ms. Ankita Katoch YOHO Lead, SES, JNU	12:30 PM- 12:40 PM
Concluding Remarks by Prof. Umesh Kulshrestha	12:40 PM- 12:50 PM
Vote of Thanks by Ms. Swati Singh Programme Officer, JNU ENVIS	12:50 PM- 01:00 PM

Fig.1: Poster and Schedule of the Webinar widely circulated on the social media platform.

Prof. Umesh Kulshrestha, Dean & ENVIS Coordinator, SES, JNU - He welcomed all the speakers and the participants. He mentioned about the importance of this day and appreciated the UN consideration for this dedicated day for clean air. He provided a brief introduction of all the eminent panelists and a brief description of activities of YoHo programme and JNU-ENVIS. He then invited the first speaker Prof. A Jayaraman to deliver his talk.



Fig.2: Prof. Umesh Kulshrestha, Dean & ENVIS Coordinator, SES, JNU

Prof. A Jayaraman, Ex, Director NARL, ISRO – He mentioned that the human activities have come to a standstill due to the CoronaVirus pandemic which have impacted the atmospheric composition. He showed a time series map of Aerosol Optical Depth from 2016 to 2020 and pointed out how 2020 showed an anomaly. He said Aerosol can have an organic origin, dust or sea salt. Aerosol has a direct effect on human health, and aerosol characteristics of importance to human health are a). Concentration ($\mu\text{g}/\text{m}^3$) b). Size (μm) and c). Chemical composition. Measurements of aerosols require a number of monitoring stations. Aerosols also play an important role in Climate Studies. Aerosol Optical Depth, Single Scattering Albedo, Angstrom Coefficient, Chemical Composition and size distribution are important aspects for climate change.

He also talked about aerosol radiative forcing highlighting that a huge portion of the radiation is missing, which is actually trapped in the atmosphere. Main pollutant responsible for this is black carbon from agri-residue waste and fossil fuel burning. He further quoted the IPCC special report “.... *We are already seeing the consequences of 1 deg C of global warming, more extreme weather, rising sea levels and diminishing Arctic sea ice, among other changes.....*”. “.....*with about 0.2 deg C warming per decade Global warming may reach 1.5 deg C sooner than expected....*”. Also talked about Climate Change and Indian Monsoon...” difficult to predict how rainfall might change within India” and “Variability of rainfall on shorter time scales” Andy Turner, Royal Meteorological Society. He concluded his talk with a

discussion on steps taken by Govt. of India like the National Action Plan on Climate Change and other national missions.

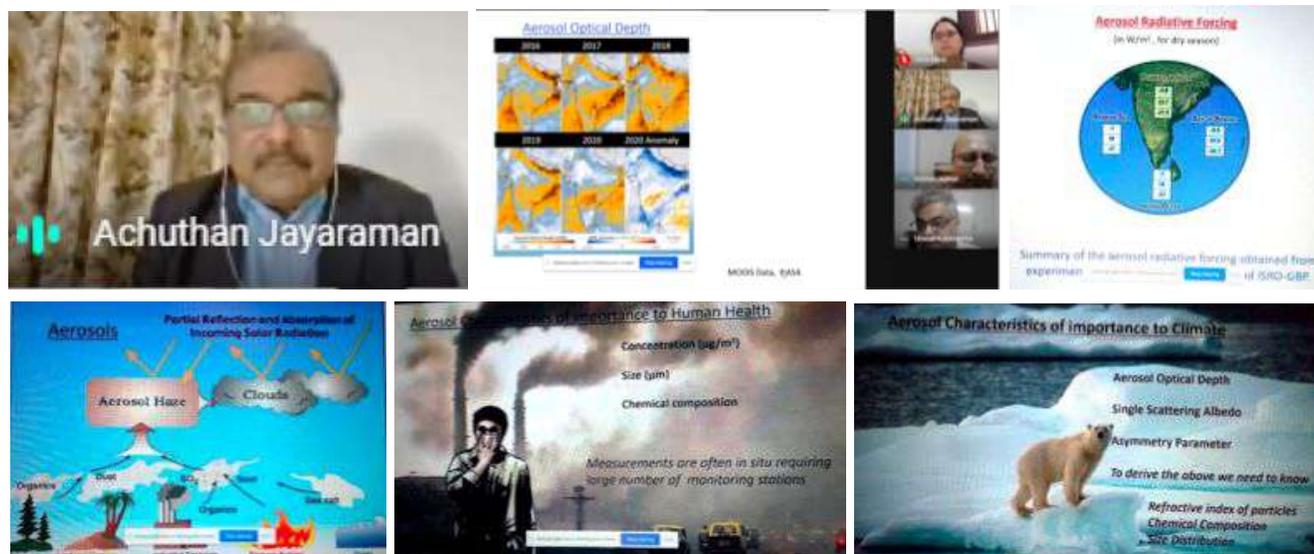


Fig.3: Presentation by Prof. A Jayaraman, Ex, Director NARL, ISRO

Dr. J S Sharma, Ex-Head Environment, ONGC Member EAC II, MoEFCC– He briefed about 74th session of the General Assembly Resolution in 2019 which decided to celebrate 7th September as the International Day of Clean Air for Blue Skies. The observance of this day is facilitated by the UN Environment Programme (UNEP). The importance of the day stresses the importance of and urgent need to raise public awareness at all levels and to promote and facilitate actions to improve air quality. It helps to bring diverse international actors to one platform. Around 7 million premature deaths in the world occur due to air pollution. He also talked about major air pollutants like O₃ at ground level. He mentioned about a category of polluted area demarcation like critically polluted, severely polluted. During the pandemic, we realised the blue sky after a long time. NASA satellite imagery has shown a significant decrease in pollution. It is quite possible to achieve Blue Sky back if we focus on less pollution on an individual level, like cycling, work from home, using less Fossil fuel to name a few.

The Government of India has also taken up many steps like the introduction of Bharat Stage VI vehicles which helped to reduce particulate matter by 50%. Biofuel policy where 20% blending of agro-based biofuels where allowed, also five biofuel plants are expected to be set up in India. E-vehicles are also promoted as an environmentally friendly option. In critically polluted areas, green belts are developed to improve the quality of air. Environment-friendly technologies

promoted in thermal plants and fly ash management. He concluded by saying it is possible to have clean air and blue sky by maintaining clean air, focusing on green recovery. The current crisis has shown the way to balance the environment and development.



Fig.4: Dr. J S Sharma, Ex-Head Environment, ONGC, Member EAC II, MoEF&CC

Prof. Krishan Kumar, SES, JNU – He mentioned that air pollutants have implications on human health and agriculture in Indo-Gangetic plains. Due to air pollution, the mortality rate is very high. The air pollution effect on crop yield has also been established. He mentioned the importance of aerosols and revealed that the aerosols are responsible for changing the colour of the sky. When aerosol particles are present due to scattering effect sky appears whitish or hazy. He discussed his study in the Indian Sub-continent in different seasons and showed AIRS retrieved twelve-year (2003 - 2014) CO climatology map. Eastern, Central and Western IGP. Also shared Monthly Time series of total columnar Co (molecules/cm²) derived from AIRS & MOPITT Jan 2003 - Dec 2014. Monthly Time series (2003 - 2014) of MODIS fire count. The date of comparison of consumption of fuel types, coal consumption in the households of IGP.

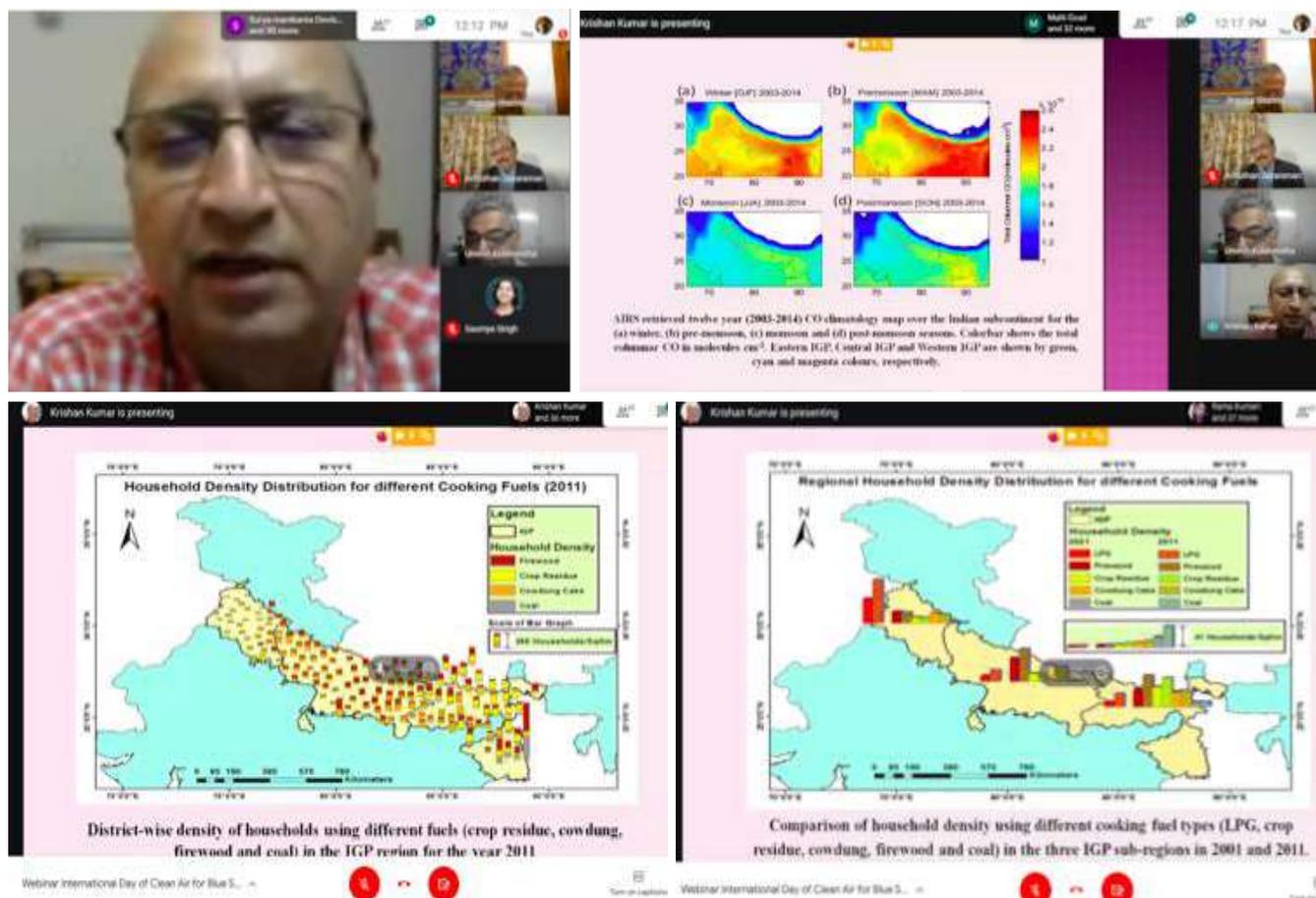


Fig.5: Prof. Krishan Kumar, SES, JNU & His Presentation

Dr. Saumya Singh, The University of Texas, Austin, USA – She discussed that the improved air quality continuing now is due to combination of reduced activity and the monsoon season with heavy rain spells and winds. Reducing air pollution in terms of NO₂, PM_{2.5} and possibilities to keep it nearly this way if not exactly. But the concern is air quality has not improved uniformly during the pandemic and also not all pollutants were reduced during this pandemic like O₃. Holistic and sustainable approach is needed and participation of all stakeholders such as govt, academia/scientists, think, civil societies, citizens is required. Steps required 1) Monitoring and management -more data needed to understand and solve the problem.

She also presented her study - 1) Rural areas are more polluted: village > small City> major City: Rural air quality was not as clean as we think, in fact, it was similar or more to a neighbouring city. 2) Little lockdown benefit in rural areas: compared to the results from cities and villages, we did not observe a clear drop in PM_{2.5} in villages.

To expand the monitoring network we should consider a suite of observation methods such as satellite data, ground-based measurements using, reference-grade instrument or regulatory and low-cost sensor and that can increase the spatial and temporal coverage of the air quality data and ultimately can help to build emission inventories at the regional level.

Reduction at source level is crucial and many more detailed source apportionment studies by having real-time measurements is needed. But these pollutants do not have political boundaries as they can be transported from one region to another so we need to consider that and we have to shift our approach from region/city-centric to air shed centric. An air shed can include all the neighbouring upwind areas from where pollution is being transported from. Looking beyond the PM_{2.5} and NO_x and consider other pollutants too. Therefore, looking into air pollution data in tandem with local emission, meteorology and long-range transport. Citizen science is real and that can help build awareness. Benefits of behavioural changes towards a clean environment.

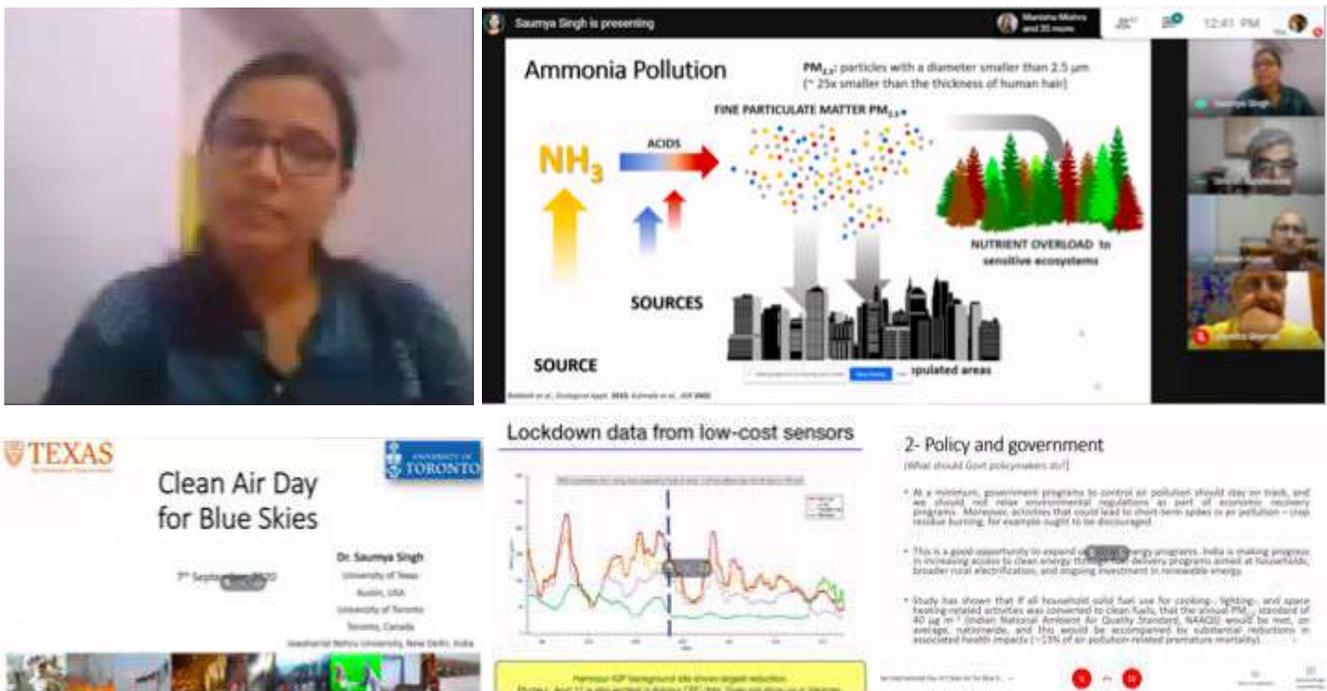


Fig.7: Dr. Saumya Singh, The University of Texas, Austin, USA & her Presentation

Dr. Usha Mina, ENVIS Co-coordinator, SES, JNU – She mentioned that vegetation play an important role in the maintenance of air quality. Vegetation plays an important role as bioindicators and helps in remediation, through phytoremediation. Flora provides habitat for diverse micro-species to thrive and sustain.

She further reiterated that a lot of discussion surrounds the issue of crop residue burning, but we should also focus on the quantum of carbon dioxide absorbed by vegetation. Approximately 35429 million ton of CO₂ is absorbed by trees, this CO₂ sequestration helps in climate change mitigation. Vegetation also helps to prevent soil erosion and conserve the top fertile layer of soil. Vegetation helps to remove major pollutants. It is well established scientifically that vegetation has an important role in cleaning the air. The UN has appreciated the increase in green space net area in India and China. Millions of trees are planted which increase carbon storage, soil erosion is contained and space for recreation is developed. Air Pollution has a direct effect on human health and also on our food security. New and innovative solutions which are plant based, eco friendly and sustainable are suggested, eg. Bio- solar luminance these are solar plants having micro- large which assists in cleaning polluted air along with energy generated. Bionic Chandelier- acts as breathing structure.

She concluded by saying Greening the planet should be done scientifically by taking advice from plant ecologists. Increasing green cover with right plant species i.e., native and low ozone forming potential will make a sustainable green cover.



Fig.8: Dr. Usha Mina, ENVIS Co-coordinator, SES, JNU

Ms. Ankita Katoch, YoHo Gyan Lead, SES, JNU – Young holistic programme is an outreach programme of the school which has around 30 activities. The main objective of the programme is to

involve the student and nurture them for future leadership in society. Time to time creative events are organized by the YoHo leaders. YoHo Ankita Katoch talked about plant health and indoor air pollution. She briefly mentioned the way to protect environment through sustainable approaches by the individual choices on a personal level. She also mentioned about YoHo activities and their importance in all-round development of the students.

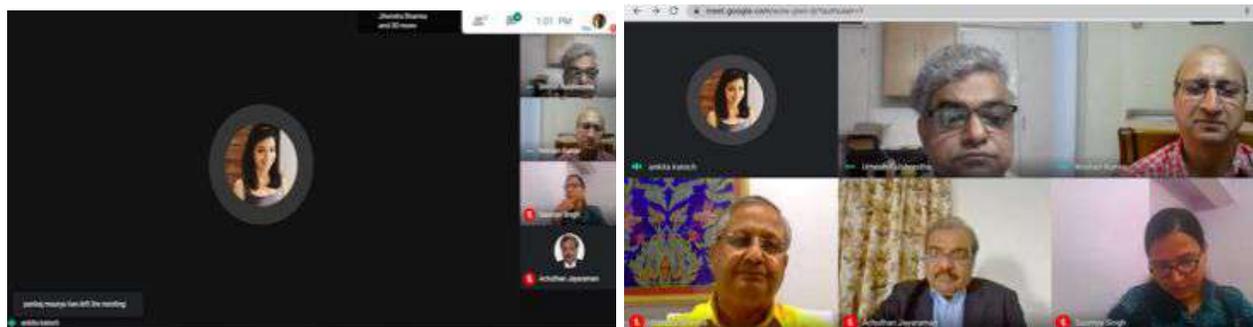


Fig.9: Ms. Ankita Katoch, YoHo Gyan Lead, SES, JNU

Vote of Thanks was extended by **Ms. Swati Singh, Programme Officer, JNU ENVIS** - She thanked all the speakers, participants, students and the faculty for making the event successful.



Fig.9: Ms. Swati Singh, Programme Officer, JNU ENVIS

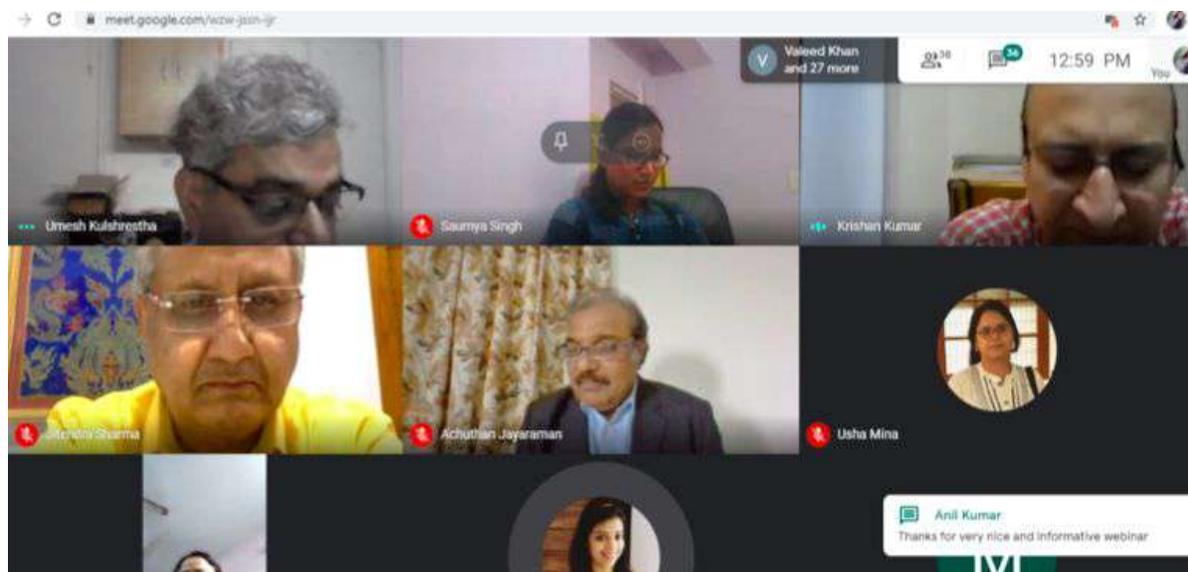


Fig.9: Panelists & Participants of the Panel Discussion

The session came to an end with the distribution of e-certificate to all the participants. Very positive feedback was received from the participants.

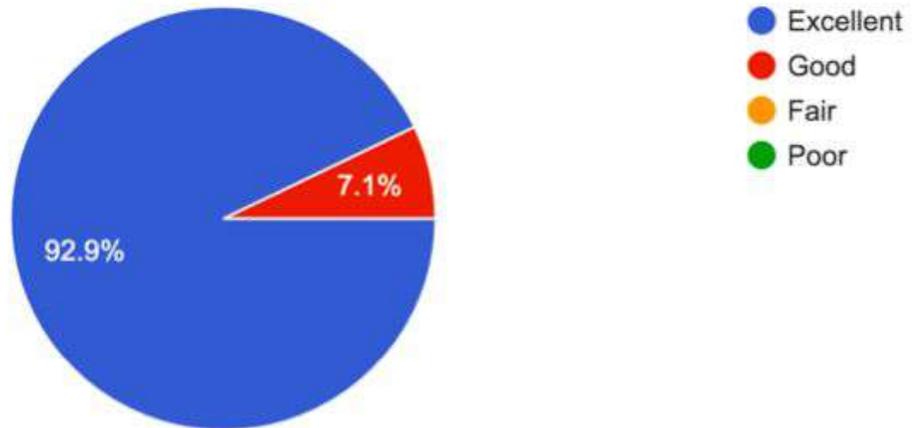
Recommendations:

1. Older monitoring stations need revamping and relocation.
2. Monitoring of VOCs on short term duration is required.
3. Collaborative research required in the field of monsoon studies, rain pattern and rain chemistry.
4. The balance between environment and development needs to be established.
5. Clean cooking fuels should be promoted to reduce air pollutants.
6. Level of allowance of Industries in the critically polluted area should be assessed.
7. Need to redefine the NAAQS standards as well need to include new pollutants parameters such as HCl and Cl₂.
8. There is a need for speciation of particulate matter and accordingly need of inclusion in the NAAQS list.
9. The plantation drive should include native perennial evergreen or deciduous plants having low ozone forming potential.
10. Air quality monitoring stations installed by industries for monitoring air quality in their surroundings should be included in the air quality monitoring network to cover the entire India.
11. Real time Air quality data should be made available to stakeholders

Feedback:

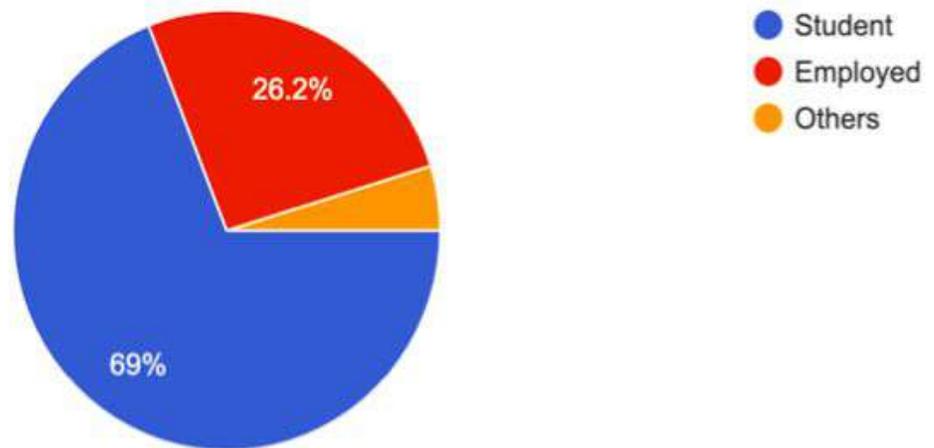
How do you rate the Webinar

42 responses



Occupation

42 responses



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Feedback Form International Day of Clean Air for Blue Sky (Responses)

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Any other Feedback		
G	H	
1	How do you r	Any other Feedback
2	Excellent	
3	Excellent	Nice
4	Excellent	Wonderful Session
5	Excellent	Very nice webinar on current scenario of air pollution
6	Excellent	Overall session is excellent to me.
7	Excellent	Excellent
8	Excellent	Very informative
9	Excellent	
10	Excellent	PPTs are very informative
11	Excellent	Terrific for participating in such a scientific family
12	Excellent	The session of webinar is very relevant to change in climate and change in air quality in region to region. I thanks to organizing committee for organize the webinar on clean air. Thanks!
13	Excellent	Very Good and Excellent Session and Knowledgable
14	Excellent	Excellent Session
15	Excellent	
16	Excellent	Very informative
17	Excellent	Nice and scientific webinar
18	Excellent	It was very informative.
19	Excellent	
20	Excellent	.
21	Excellent	
22	Excellent	Very nice and enthusiastic webinar on current scenario of air pollution
25	Excellent	very nice webnair thanks a lot.
26	Excellent	Thanks to the organizers and very informative
27	Excellent	All pannelist is excellent describe Thanks
28	Excellent	
29	Excellent	
30	Excellent	Excellent
31	Excellent	
32	Good	Do more
33	Excellent	Good
34	Excellent	Good
35	Excellent	Good
36	Excellent	Do more
37	Excellent	Today session on clean air for blue sky was very informative. In this current situation relevance of environment increases the environmentalist attention more. I thanks to organizer of this webinar. Thanks!
38	Excellent	
39	Good	
40	Excellent	
41	Excellent	Sir, I'm Very thankfuly of you your webnar is such amazing. today I learn many things and clear my all doubt on this topic . And enhance my knowledge and experience. the way of talking and explaining is amazing
