

## Hazy Perceptions



**Public Understanding of Air Quality  
and its Health Impact in South and  
Southeast Asia, 2015–2018**

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# Executive Summary

Building support for clean air measures requires improved public understanding of air pollution. As an initial step to identify gaps in understanding and find opportunities for improved communication, Vital Strategies conducted a comprehensive audience perception and media scan to examine social media conversations and news coverage of air pollution and health in 11 South and Southeast Asian countries.

The analysis was conducted on 530,000 pieces of content over nearly four years (Jan. 1, 2015 to Oct. 14, 2018) in India, Sri Lanka, Nepal, Philippines, Papua New Guinea, Indonesia, Thailand, Malaysia, Singapore, Mongolia and Pakistan. We performed this analysis to inform policymakers, advocates, academics and others who communicate with journalists and the public about the harms and sources of air pollution, which is a leading risk factor for serious illness and death from heart and lung disease.

Our report describes several key findings:

## **The public has limited understanding of long-term health consequences of poor air quality**

- Air pollution social media posts and news largely mention immediate, short-term events and reactions—people discuss acute symptoms of air pollution, such as breathing issues and itchy eyes, rather than exacerbation of chronic disease from ongoing, repeated exposure, which is the more serious health threat.

## **Health authorities are not among the most influential sources of information**

- Our scan shows that the top media outlets and public influencers on air pollution are diverse—the top three influencers during our period of analysis include a Prime Minister, a photographer and Greenpeace—and they vary from year to year. Notably, leading health and medical authorities are not among the top influencers.

## **Public discourse does not center around the most important drivers of air pollution**

- Less significant sources of air pollution such as vehicular emissions are mentioned more frequently than more significant sources like power plants and waste burning.

## **Solutions tend to focus on personal protection like masks; However, over the four-year period there was some increase in conversation around long-term solutions**

- Discussion is also more commonly about short-term personal protection (e.g., wearing face masks) especially during severe events like the 2015 haze crisis in Southeast Asia, rather than long-term solutions (e.g., bans on trash burning). That said, discussion of long-term solutions, especially cleaner energy sources, did increase over the four-year period and has coincided with public conversation around climate change.

## **Conversation is driven by seasonal variations in air quality, with emotionally appealing content generating the highest level of engagements**

- The frequency of air pollution discussions vary by time of year, increasing greatly from September through December and during times of seasonal severe air pollution episodes, major news or public events related to air pollution. During other months, the volume of social media and news content on air pollution is seen to be very low. This can pose a challenge when engaging the public in supporting effective air pollution control, which requires year-round, sustained measures.
- Social media posts and news articles on air pollution that mention climate change or children's health produce more engagement than content not mentioning these topics.

# Executive Summary

*continued...*

As a result of these and other findings (which are described in the full report), we offer the following recommendations for effective communication to raise awareness of air pollution and promote support for effective clean air measures:

1. Messages and campaigns should address the health harms of increased serious illness and death from chronic disease as a result of long-term exposure to air pollution.
2. Content should seek to educate the public about the limited effectiveness of short-term exposure prevention measures as compared to long-term, sustained emission control measures.
3. Messages and campaigns should highlight the most significant sources of air pollution.
4. Governments should be urged to develop comprehensive policies and enforcement for clean air via year-round, ongoing sustained reductions in important air pollution sources.
5. Stories and campaigns about air pollution harms and solutions should raise awareness of the relationship to climate change; stories and campaigns about climate change should inform about the linkages to air pollution.
6. Stories and campaigns about air pollution and health should include messaging about lasting harm to children's health.
7. Media professionals and organizations should be informed about credible and relevant sources of data on air pollution health effects, sources and solutions.

This scan is an initial step to identify gaps in understanding and opportunities for improved communication. Further studies and programs are needed to bridge the gap between public perception and the reality of air pollution health harms, sources and solutions.

## Introduction

Air pollution is a global health issue that has become a serious problem in recent years. Air pollution causes more than 4 million deaths each year globally. The South and Southeast Asia regions account for around 1.5 million or 37 percent of these deaths. Beyond deaths, air pollution causes disability from lung and heart disease, contributes to diabetes, inhibits physical activity, and negatively influences children's physical and cognitive development. The most at-risk populations are children, the elderly, those with existing health problems, the socially disadvantaged and those living in countries without the resources or policies needed to control the worsening threat of air pollution.

Air pollution is an insidious threat. Even though people are aware of air pollution, there are major gaps in people's understanding of its impacts and sources. A recent study by Clean Air Collective in India showed that 90 percent of Indians interviewed across highly polluted cities have heard of air pollution but lack awareness about its causes and effects.

One contributing factor could be that media coverage of air pollution may not reflect the current evidence and science. For example, a prior study led by Vital Strategies showed that the majority of news stories about air pollution in India during 2014 and 2015 omitted information about the major health conditions and vulnerable populations affected by air pollution. Major sources of air pollution such as power plants, waste burning, etc. were mentioned even less often.

Social media is an increasingly important way for people to access news and share beliefs and perceptions. Depending on the reliability of the information shared, social media can either raise awareness or reinforce misperceptions. Understanding the present state of discourse about air pollution in news and social media is an important step in designing communication strategies for promoting fact-based public awareness about air pollution.

# Objectives

This study was conducted to gain an understanding of public and media discourse on the topic of air pollution. Specifically, we sought to answer:

1. **Who** is most influencing the conversation on air pollution?
2. **What** events have the most impact on the conversation?
3. **How** does public discourse change over time?

The answers to these questions are used to:

- Identify gaps in public understanding of air pollution and its sources, health impacts and solutions, as reflected in social media posts
- Identify gaps in news coverage as potential areas for increased awareness
- Inform strategic communication about air pollution to elevate the factual basis of news and social media discourse to advance clean air policies

# Overview of Approach

## Time Frame

Jan. 1, 2015 to Oct. 14, 2018

## Content Analyzed

In total, 530,000 pieces of content were scanned which is a representative sample of 20 percent of all social media and news articles that included mentions of keywords related to air pollution

## Platforms Covered

Facebook, Twitter, Instagram, YouTube, Blogs, Forums and News

## Countries and Languages

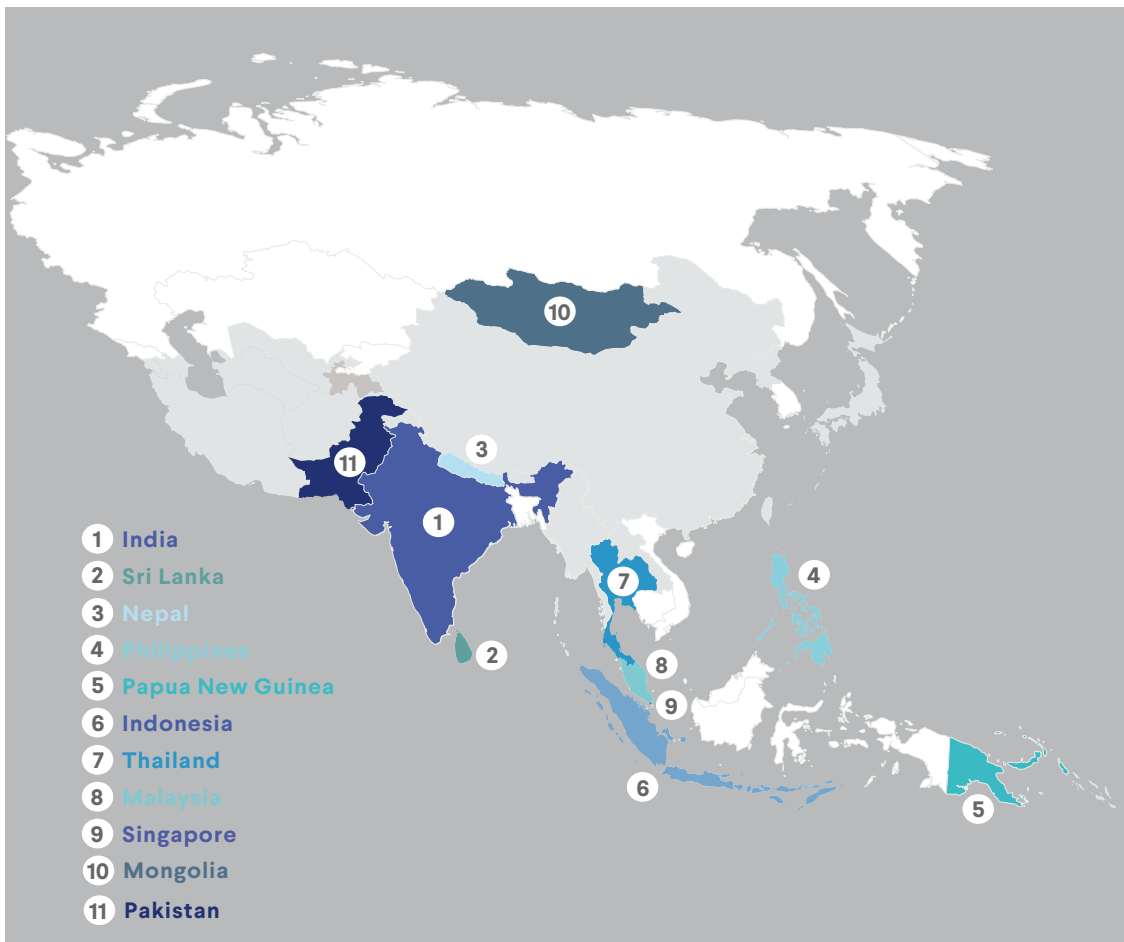


Figure 1 – Countries selected for this report

# Overview of Approach

continued...

## Methodology

20twenty, a comprehensive social intelligence platform designed by Circus Social<sup>(1)</sup>, was used to track, collect, augment and integrate social, online and offline conversations on air pollution and health. The platform was used to extract publicly available social media posts and media articles related to air pollution. The extracted content was categorized into topics and subtopics. For example: air pollution-related keywords (e.g., haze, smog, smoke) and cooking-related keywords (e.g., household cooking, heating) are categorized under perceived sources of air pollution.

Keyword combinations were employed (using Boolean logic) to differentiate topics, solutions and sources, and were translated from English into seven languages: Bahasa Indonesian, Bahasa Melayu, Chinese traditional, Chinese simplified, Thai, Tamil and Hindi. For more information on the search methodology, please contact Vital Strategies at amehta@vitalstrategies.org.

The filtered content was then manually scanned to remove irrelevant content from further analysis. Refer to Table 1 for the list of topics and subtopics.

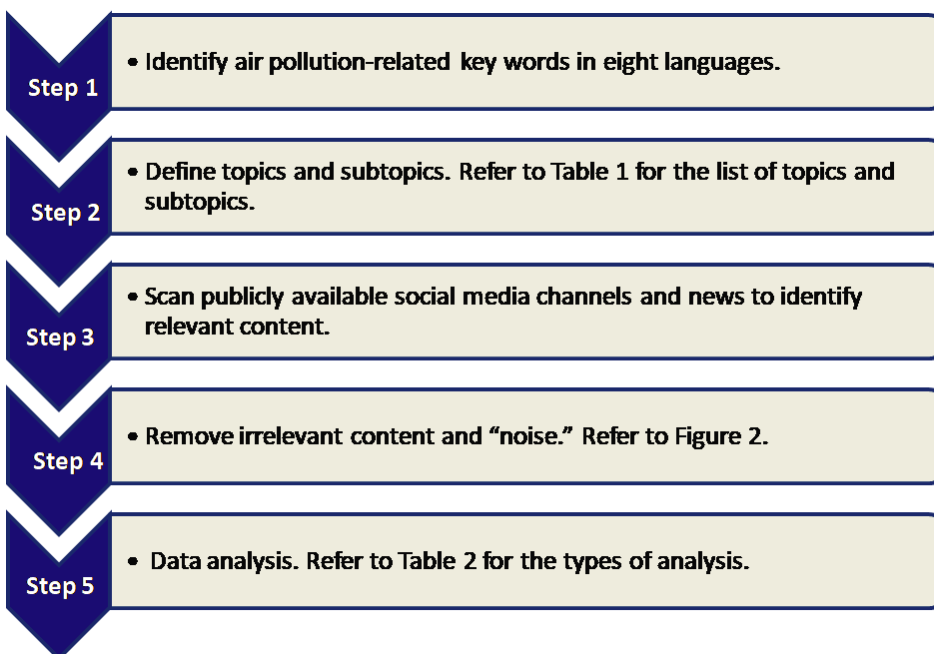


Chart 1 – Step-by-step approach



Figure 2 – Example of “noise” content filtered out during the screening process

(1) <https://circussocial.com/>



# Overview of Approach

*continued...*

## Topics, Subtopics and Keywords

A total of five main topics were configured with 27 corresponding subtopics.

Perceptions	Sources	Health Impacts and Symptoms	Exposure Reduction (Short-Term Measures)	Solutions (Long-Term Measures)
General Discussion on Air Pollution	<ul style="list-style-type: none"> <li>• Cooking</li> <li>• Desert Dust</li> <li>• Natural Wildfires</li> <li>• Volcanic Eruptions</li> <li>• Power Plants</li> <li>• Man-made Forest Fires</li> <li>• Burning of Waste</li> <li>• Vehicle Pollution</li> </ul>	<ul style="list-style-type: none"> <li>• Asthma</li> <li>• Heart Diseases</li> <li>• Lung Diseases</li> <li>• Respiratory Diseases</li> <li>• Eczema</li> <li>• Dry Cough</li> <li>• Itchy Eyes</li> <li>• Breathing Difficulties</li> </ul>	<ul style="list-style-type: none"> <li>• Masks</li> <li>• Air Purifiers</li> <li>• Inhalers</li> <li>• Nebulizers</li> </ul>	<ul style="list-style-type: none"> <li>• Anti-forest Fire Initiatives</li> <li>• Energy Efficient Buildings</li> <li>• Clean Fuels and Technology</li> <li>• Waste Management</li> <li>• Active and Sustainable Transportation</li> <li>• Clean, Efficient Energy</li> </ul>

*Table 1 - List of topics and subtopics*

## Findings and Insights

The final, filtered content was presented in one or more of the types of analysis below.

Conversation Analysis	Share of Voice	Trends and Influencers	Sentiment Analysis
An overview of likes, preferences and dislikes through social media conversations and news articles.	Volume of conversations to show which channel or individual has the largest impact.	A view of organic influencers, promoters and detractors across social media and news channels.	Breakdown of conversations as positive, neutral and negative sentiment towards a topic, over time.

*Table 2 - Types of analysis*

# Structure of the Report

## Findings

- General Perceptions on Air Pollution
- Most Commonly Discussed Sources
- Perceived Health Symptoms and Impacts
- Exposure Reduction and Solutions
- Long-term Solutions Discussed
- Media and Public Influencers on Air Pollution

## Recommendations for Framing Strategic Communication

1. Messages and campaigns should raise awareness on the risk of serious illness and death from chronic disease caused by long-term exposure to air pollution.
2. Messages and campaigns should raise awareness on the limited effectiveness of short-term exposure prevention measures, as compared to long-term sustainable measures.
3. Stories and campaigns about air pollution and health should include messaging about lasting harm to children's health.
4. Climate change is an effective means of engaging people on air pollution.
5. Through campaigns and media stories, governments should be urged to develop comprehensive policies promoting clean air for health.
6. Media should seek and be given access to credible and relevant data on air pollution.

## Findings: General Perceptions on Air Pollution

- In 2015 the haze crisis resulted in extensive attention from people and the media.
- The odd-even number plate rule by the Delhi government (restricting which cars can be on the road on what day) led to a spike in conversations toward the end of 2015 and beginning of 2016. The scheme aimed to cut down on vehicular traffic thereby reducing air pollution.
- In 2016 and 2017, relative to 2015 and 2018, a drop in conversations was seen around air pollution as no peak air pollution episodes were witnessed during this time. However, generic conversations still occurred.
- 2018 saw increased awareness in India with more Indian media writing about air pollution. The year also showed extensive conversations on the smog in Beijing\* and the effect of air pollution during the Asian Games in Jakarta.

The charts in this section show the overall public and media sentiment towards air pollution.

- Negative conversations = complaints and criticisms.
- Positive conversations = discussions on ways to curb or fight air pollution or advising others to stay safe from pollution. For example, posts that advised wearing a mask during the haze crisis.
- Neutral conversations = generic statements on air pollution. For example people sharing images on social media of the view from their window.

Refer to Appendix for sample posts.

\* Even though China was not one of the locations selected for this study, conversations in the selected countries captured mentions of the Beijing smog.

# Findings: General Perceptions on Air Pollution

continued...

2015

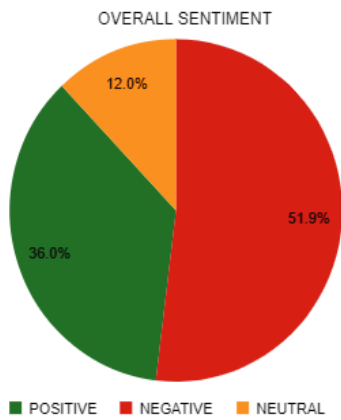


Chart 2

2016

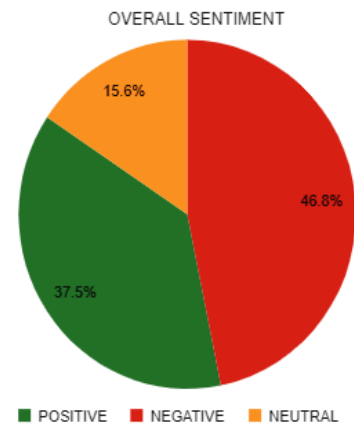


Chart 3

2017

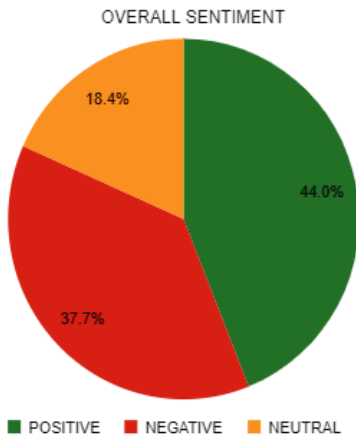


Chart 4

2018

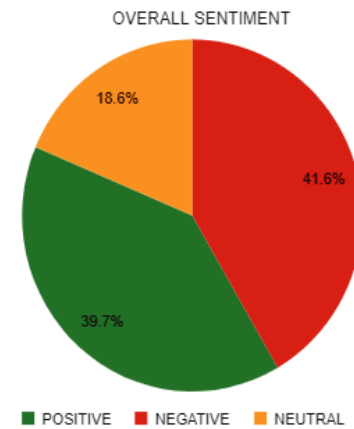


Chart 5

04 Dec 2015

Twitterati mock Delhi government's odd, even number rule for vehicles : FYI, News - India Today googleplus Twitterati mock Delhi government's odd, even number rule for vehicles Delhi government is considering implementing a new rule of running odd and even numbered vehicles on alternate days. To that, Twitterati has come up with some priceless responses. A + A - Picture for representation. Photo: Reuters Not many have turned out to become a...

indiatoday.intoday.in

Sample Post 1

350 South Asia 08 Sep 2018

Today my son joined the #RiseForClimate march with me and many others from my community. Every child like Kunzin deserves a life free of air pollution, a life that is not threatened by rising seas and a land that is not affected by climate change: Phuntsok Yangchen. <https://t.co/y7ys3zPZR3>

433 166

Sample Post 2

AsiaOne 30 Aug 2018

'This is Indonesia': Asian Games race-walker collapses after 50km of heat, smog  
The air quality index in central Jakarta hit 163 on Thursday morning. Indonesia's Hendro said it was a "miracle" to even finish the 50km race walk in Jakarta's brutal pollution, heat and humidity Thursday after he was carried from the fi...

8 2

Sample Post 3

# Findings: Most Commonly Discussed Sources

The following graphs show the five most commonly mentioned sources of air pollution. The first chart provides an overview of all the countries in our analysis, the second chart shows India alone, and the third shows all the countries except India.

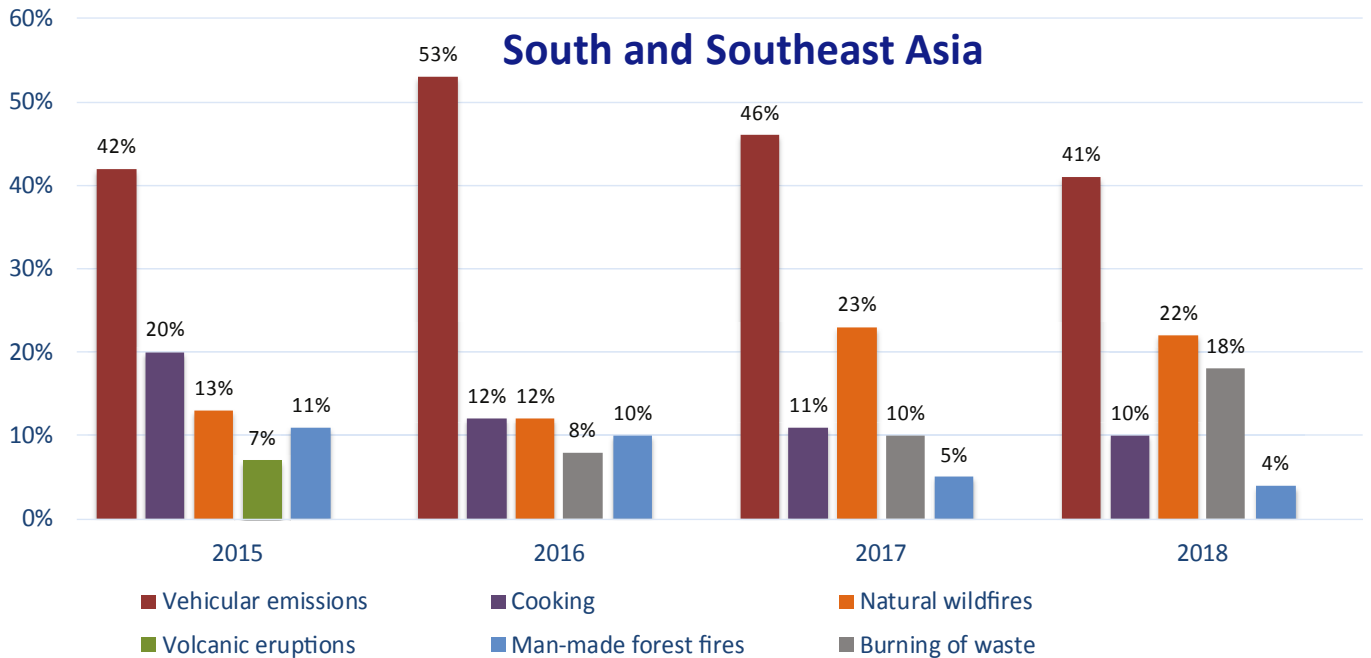


Chart 6 – Air pollution sources including all countries

Locations: India, Indonesia, Malaysia, Singapore, Mongolia, Philippines, Sri Lanka, Papua New Guinea, Thailand, Pakistan and Nepal

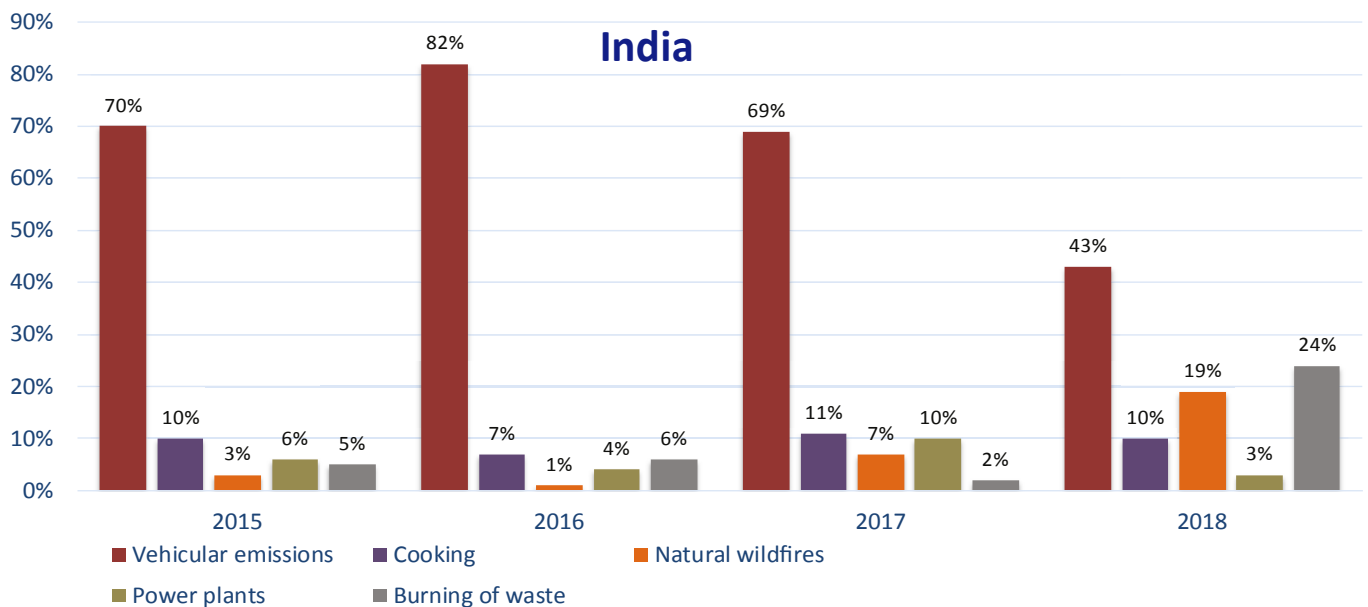
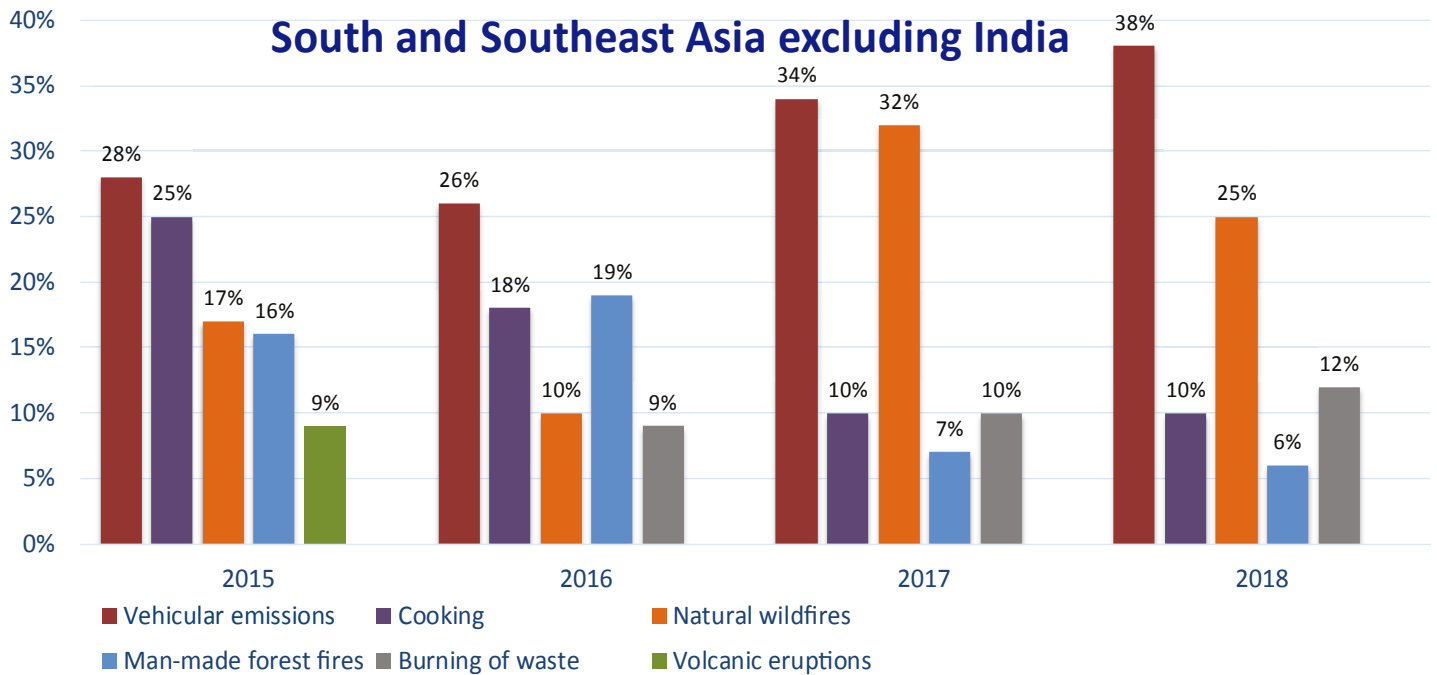


Chart 7 – Air pollution sources in India

Data collected and presented to factor in 5-10% margin of error. As limited historic data was available between 2015 - 2018, in total 530,000 pieces of content were scanned which is a representative sample of 20% of all social media and news articles during the reported time period.

# Findings: Most Commonly Discussed Sources

*continued...*



*Chart 8 – Air pollution sources excluding India*

*Locations: Indonesia, Malaysia, Singapore, Mongolia, Philippines, Sri Lanka, Papua New Guinea, Thailand, Pakistan and Nepal*

- A large number of conversations were about the odd-even number plate rule in India, with vehicle pollution recorded as the number one source. Almost half of all vehicle pollution mentions can be seen emerging from India.
- Even after excluding India, vehicle pollution was still seen as a number one source, followed by cooking and natural wildfires.
- Focus on vehicle emissions is disproportionately high in India as compared to other sources.
- There is a gap between commonly discussed sources and actual sources of air pollution. The bulk of media articles attributed air pollution to vehicular emissions. Although power plants, burning fossil fuels and waste burning are major sources for air pollution in many countries, they do not show up among top sources.
- Even though the 2015 haze was widely reported and affected Singapore, Malaysia and Indonesia, vehicle pollution remained the most discussed source of air pollution that year.

# Findings: Most Commonly Discussed Sources

*continued...*

The charts in this section show the trend and volume of conversations on air pollution between 2015 and 2018, as well as significant events which influenced discussion.

## 2015

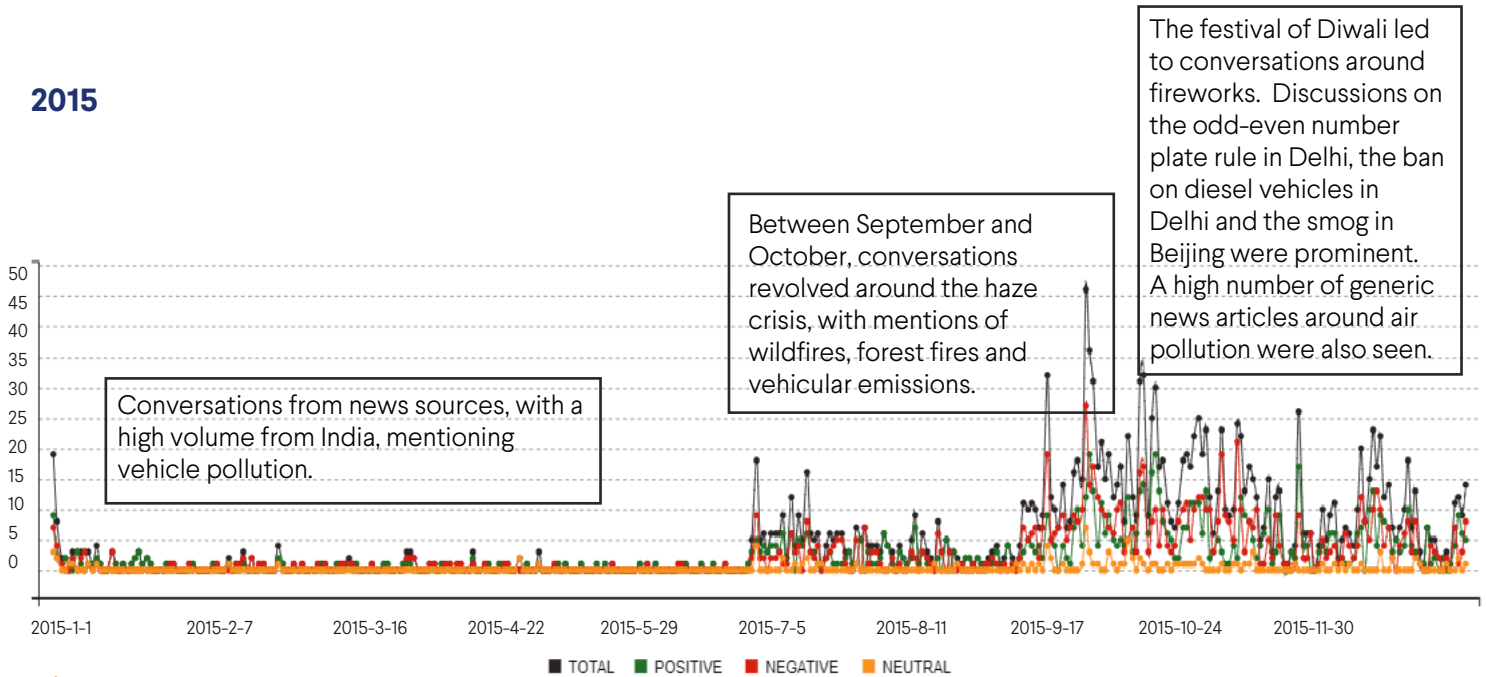


Chart 9

## 2018

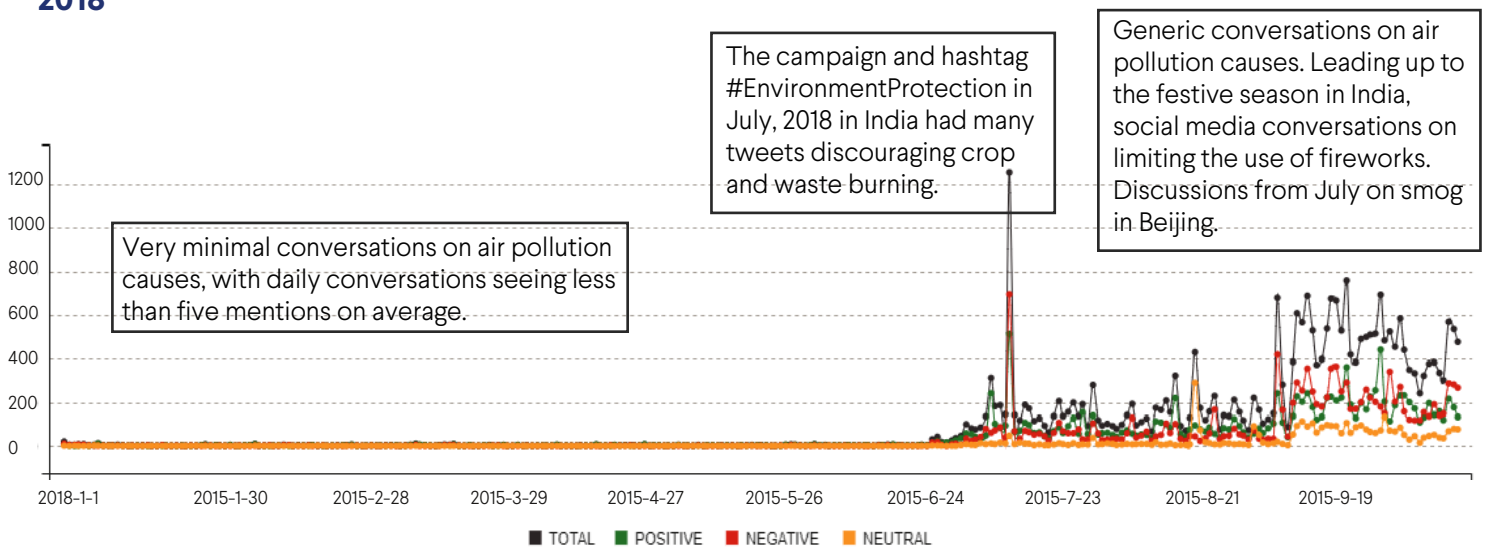


Chart 10

Data collected and presented to factor in 5-10% margin of error. As limited historic data was available between 2015 - 2018, in total 530,000 pieces of content were scanned which is a representative sample of 20% of all social media and news articles during the reported time period.

# Findings: Most Commonly Discussed Sources

*continued...*

- There is strong seasonal variation in the number of air pollution stories each year. From a relatively low volume in the first half of the year, conversations increase in July and August, and further in September through November, as air pollution levels increase in many of the countries represented due to seasonal increases in crop burning, wildfires and festivals.
- Content of end-of-the-year conversations reflected these sources as well as publicly proposed government initiatives.
- From a communication perspective, these seasonal trends should be considered in timing of campaigns. For example, the peak air pollution season, when engagement is high, presents an opportunity to improve awareness of sources. The lull in discussions during the early months of the year could be an opportunity for campaigns that emphasize the need for planning and for proactive, sustained emission reduction measures before the expected severe pollution season returns.

WORCESTER  
12 Oct 2015



Quote: : They should have an effect on the surface fires. It took the SAF 2 weeks to control NE Thailand **wildfires** in Mar 2015, but then at the latter part rain started dropping again in some regions so that could have an effect as well. But this is peatland underground fires for a large part in S Sumatra (I read 60% fo the fires?), hence i am sure...



*Sample Post 4*



cookstoves  
27 Nov 2017



Despite progress of urban India's transition from solid fuel-burning chulas to cleaner, more efficient fuels, levels of ambient air pollution from rural areas are still high. Multiple sources contribute to this increase, yet one often overlooked source is coming from the homes of people living beyond Delhi's city limits. That source is **cooking** and ...

12



*Sample Post 5*

**A** Autocar India  
16 Aug 2018

The plan is to allow older, internal combustion engine **vehicles** to be converted into a hybrid or all-electric **vehicle**, in a bid to slash vehicular pollution. Think it's a good idea?  
<https://t.co/F5AyyjsWzz>

34 13

*Sample Post 6*

Naghmaa A Qaiyum  
08 Oct 2018

Air pollution kills seven million people a year. 2 of the main contributors are lax **vehicle** emissions standards and traditional cooking methods, according to the findings of a recent WHO analysis of air quality data from more than 4,300 cities in 108 countries.  
<https://t.co/aBACQT5m6i>

160

*Sample Post 7*



# Findings: Perceived Health Symptoms and Impacts

- In this report, chronic illnesses include heart and lung diseases; acute symptoms and illnesses include breathing difficulties, respiratory issues, itchy eyes, dry cough, eczema and asthma.
- The majority of conversations mention acute symptoms and illnesses. Chronic illness mentions are far less frequent. This reflects an important gap in awareness of air pollution exacerbation of chronic cardiovascular and lung diseases, which account for the vast majority of deaths from air pollution.

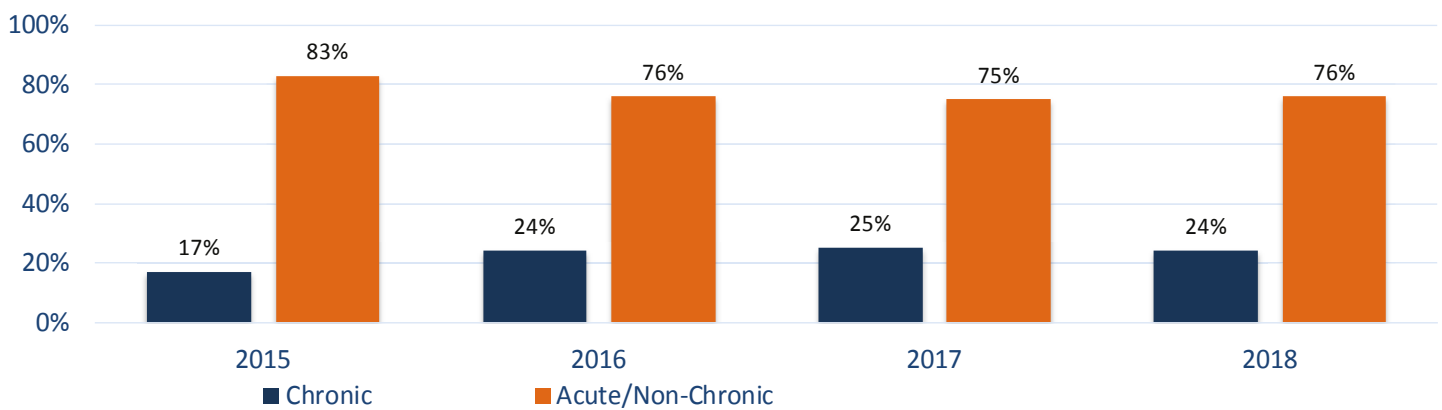


Chart 11 – Conversations on chronic and acute/non chronic illnesses

- Posts that talked about children’s health had higher engagement than other posts made by the same influencer, in terms of likes, comments and shares received. For example, posts related to children’s health and air pollution by Indian actor Dia Mirza received four times the engagement than all other posts by her.
- Some of the widely shared or discussed posts included images of children or were about the haze crisis.
- Communication efforts targeting children’s health may be an effective method to increase awareness.

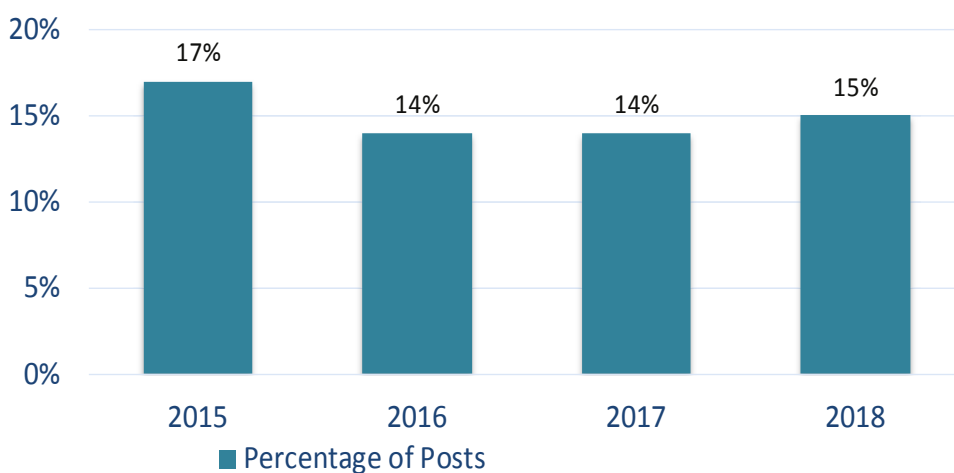


Chart 12 – Percentage of posts on children’s health

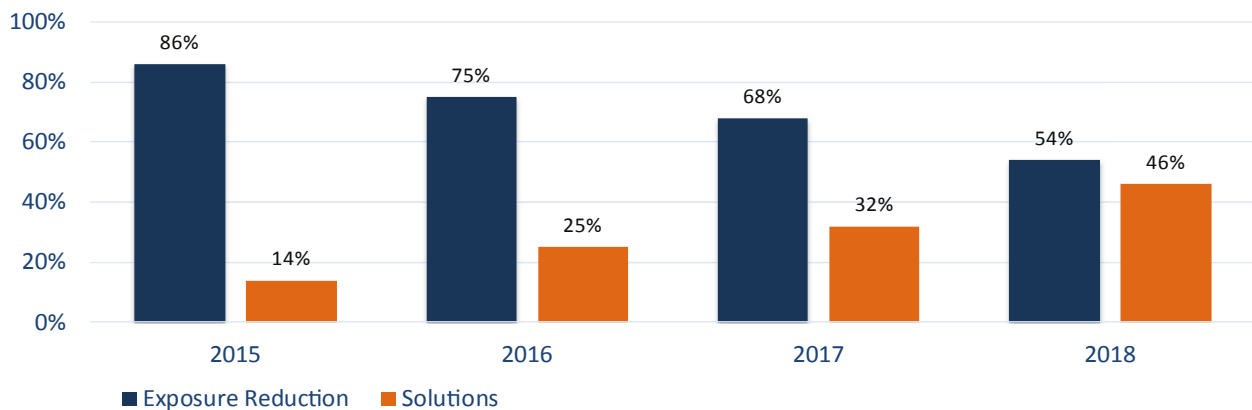


Sample Post 8

Data collected and presented to factor in 5-10% margin of error. As limited historic data was available between 2015 - 2018, in total 530,000 pieces of content were scanned which is a representative sample of 20% of all social media and news articles during the reported time period.

## Findings: Exposure Reduction and Solutions


- “Exposure reduction” refers to immediate, short-term measures such as using a mask or air purifier, while “solutions” refers to long-term, sustainable measures including: waste management to prevent trash burning; clean, efficient energy; and active and sustainable transportation.
- In 2015, more than four times as many conversations mentioned immediate exposure reduction measures such as masks than long-term, sustainable solutions.
- The percentage of mentions for long-term solutions gradually increased from 2016 to 2018, possibly reflecting growing awareness of air pollution’s persistence. Still in 2018, more conversations were about short-term exposure reduction than long-term solutions.
- During peak air pollution episodes, conversations tended to be about personal measures that people could take to reduce their exposure to air pollution. At other times some conversations were about the “power of the crowd” and using collective action for long-term solutions.
- The chart below is a conversation analysis. It shows the percentage of media articles and social media posts from 2015 to 2018 that were about exposure reduction as compared to solutions.






*Chart 13 – Conversations on exposure reduction and solutions*

# Findings: Exposure Reduction and Solutions


continued...

07 Oct 2018 



**Encourage use of N95 masks in public**  
The recent study on the ill effects of air pollution and brain function does not bode well for an increasingly urban environment such as Singapore (Study links air pollution to higher risk of dementia; Sept 20). According to the report, chemicals cast off by tailpipe pollution such as nitrogen dioxide and soot are known to boost the risk of heart di...

Sample Post 9

India Energy News  
05 Jan 2015 

**Top Companies Need to Infuse More Funds into Renewable Energy R&D, Says IPCC Chairperson**  
There is need of treble to quadruple energy output target from the zero-carbon emission sources by 2050 to prevent the world from getting warmer more by about two-degree celsius by 21st century end, he said adding that India has a huge potential in this renewable...


Sample Post 10




**DURING THE HAZE PERIOD**

myblissclinic  
23 Apr 2016 




Things we have to stay alert during haze period: 1. Drink water to remove the toxins absorbed through your lungs and skin. 2. Build up your immunity by eating more healthy foods. 3. Avoid alcohol and caffeine. 4. Stay indoors or always keep the doors and windows shut. 5. Always practice good hygiene. Things we must have during haze period: 1. Re...

 26   

Sample Post 11

adb-blog-team  
22 Sep 2016 

**Can Asian cities return to their cycling roots?**  
Cycling is perhaps the ideal way to travel through a city if you cover distances under 5 kilometers. This is also true for Asian cities such as Metro Manila, which a new law proposal aims to make a bike-friendly space like Amsterdam or Copenhagen. Riding a bicycle offers a lot of benefits. The cardiovascular exercise is healthy, bikes are cost-effec...

blogs.adb.org   

Sample Post 12

## Findings: Long-Term Solutions Discussed

Share of voice was measured to analyze social media and news articles to arrive at the top three most-mentioned solutions to curb air pollution.

- The solutions analyzed were: anti-forest fire initiatives, green buildings, clean and efficient energy, active and sustainable transportation, waste management, and clean fuels and technology.
- Clean energy and fuels was the most quoted solution during the four years with more news articles and social media conversation mentions than other solutions. Clean energy and fuels is associated with keywords such as renewable energy, solar energy and green energy. Active and sustainable transportation was consistently the second most commonly mentioned solution. It often was mentioned in relation to climate change.
- Active and sustainable transportation refers to posts with keywords such as bicycle, pedestrian-friendly, public transport, fuel-efficient vehicles, and electric cars.
- Some important air pollution controls that were not frequently mentioned included preventing intentional fires and wildfires, and better waste management to reduce trash burning. Limitations of the search strategy precluded examination of other solutions, such as clean household fuels and controlling industrial emissions.

# Findings: Long-Term Solutions Discussed

*continued...*

## All countries

2015

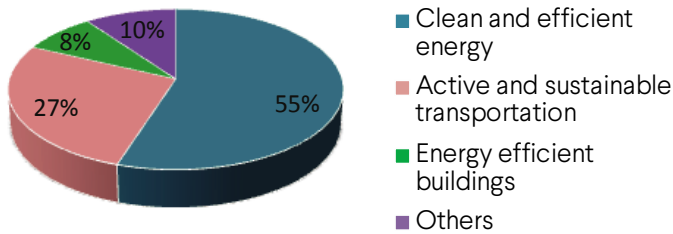


Chart 14

2016

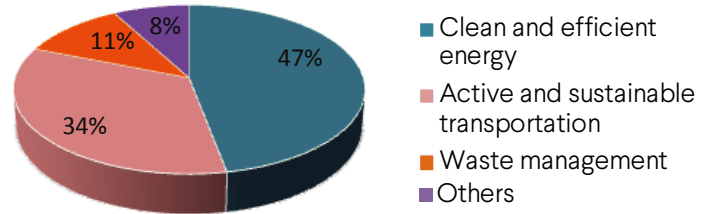


Chart 15

2017

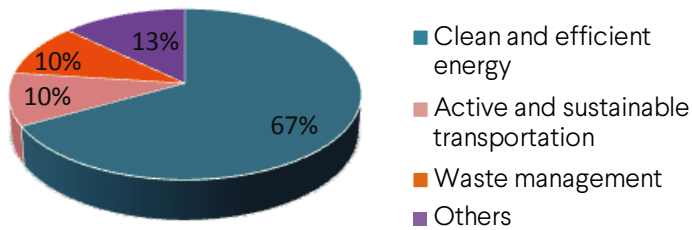


Chart 16

2018

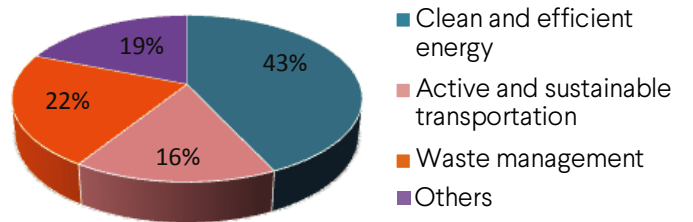


Chart 17

# Findings: Long-Term Solutions Discussed

*continued...*

## India

**2015**

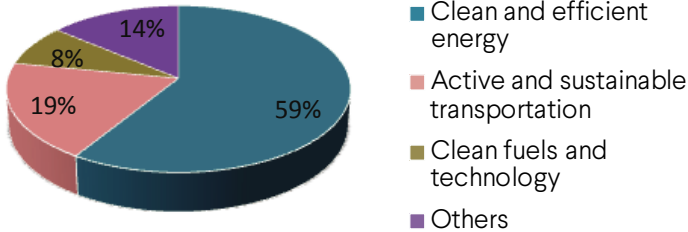


Chart 18

**2016**

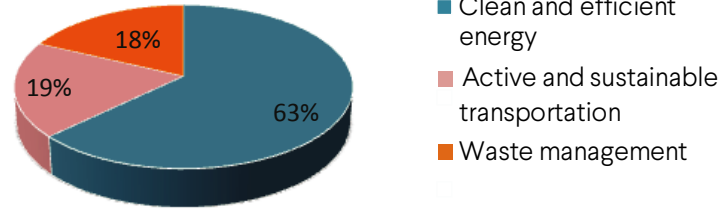


Chart 19

**2017**

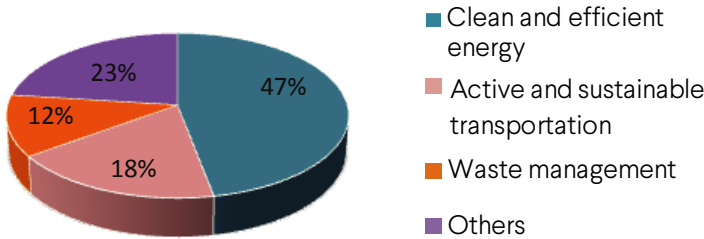


Chart 20

**2018**

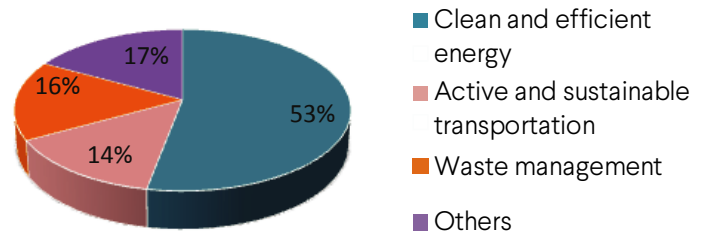


Chart 21

## Findings: Media and Public Influencers on Air Pollution

Based on the news articles and social media posts that had maximum engagement, the top media and public influencers on air pollution are listed below for each year.

Year	Top Media Influencers			Top Individual/Entity Influencers		
2015	Newsr.in (India)	Straits Times Stomp (Singapore)	India Today (India)	Lee Hsien Loong (@leehsienloong) Prime Minister of Singapore (Instagram)	Danar Tri Atmojo (@danartriatmojo) Photographer (Indonesia) (Instagram)	SGAG (@sgagsg) Influencer (Singapore) (Instagram)
2016	Indian Express (India)	The Straits Times (Singapore)	Business Standard (India)	Milton Goh Blog (@miltonkohblog) Parenting Blogger (Singapore) (Instagram)	Bela Koh (@catslavery) Blogger (Singapore) (Instagram)	Greenpeace International (@greenpeace) Nonprofit organization (Instagram)
2017	Indian Express (India)	The Straits Times (Singapore)	The Huffington Post (India)	Clean Malaysia (@cleanmalaysia) (Malaysia) (Facebook)	Greenpeace Malaysia (@greenpeacemalaysia) (Malaysia) (Facebook)	Berita Satu (@beritasatu ) Online News Portal (Indonesia) (Instagram)
2018	Malaysia Sin Chew Daily (Malaysia)	Times Now (India)	Oriental Daily News Malaysia (Malaysia)	Natural Resources Defense Council – NRDC (@nrdc.org) (India) (Facebook)	Kapil Mishra Indian MLA (@kapilmishra_ind) (India) (Twitter)	Arvind Kejriwal Chief Minister of Delhi in India (@arvindkejriwal) (India) (Twitter)

Table 3 – Media and public influencers - all countries

# Findings: Media and Public Influencers on Air Pollution

*continued...*

Year	Top Media Influencers			Top Individual/Entity Influencers		
2015	Straits Times Stomp (Singapore)	The Sun Daily (Malaysia)	The Straits Times (Singapore)	Lee Hsien Loong (@leehsienloong) Prime Minister of Singapore (Instagram)	Danar Tri Atmojo (@danartriatmojo) Photographer (Indonesia) (Instagram)	SGAG (@sgagsg) Influencer (Singapore) (Instagram)
2016	The Straits Times (Singapore)	Channel News Asia (Singapore)	CNA Insider (Singapore)	Milton Goh Blog (@miltonkohblog) Parenting Blogger (Singapore) (Instagram)	Bela Koh (@catslavery) Blogger (Singapore) (Instagram)	Greenpeace International (@greenpeace) Nonprofit organization (Instagram)
2017	The Straits Times (Singapore)	Channel News Asia (Singapore)	ANN Asia News Network (Thailand)	Clean Malaysia (@cleanmalaysia) (Malaysia) (Facebook)	Greenpeace Malaysia (@greenpeacemalaysia) (Malaysia) (Facebook)	Berita Satu (@beritasatu) Online News Portal (Indonesia) (Instagram)
2018	Malaysia Sin Chew Daily (Malaysia)	The Straits Times (Singapore)	Oriental Daily News Malaysia (Malaysia)	@siamesefat (Thailand) (Twitter)	@ZanahRajak (Twitter)	@NuengNo1 (Thailand) (Twitter)


*Table 4 – Media and public influencers excluding India*

- Table 3 and Table 4 provide an overview of all the countries in our analysis, with and without India.
- Top media influencers in Table 3 show Indian media as highly influential, while Table 4, without India, shows Singapore as an influential media player.
- Important influencers are diverse, and include a prime minister, nonprofit organizations and photographers.



# Findings: Media and Public Influencers on Air Pollution

continued...



Apabila saya berada di tempat kejadian bersama mereka, memang sedih untuk melihat kawasan hutan terbakar

**Greenpeace Malaysia**  
10 Nov 2017

**Greenpeace Forest Fire Prevention Team Nur Sakeenah, our Malaysian volunteer went to Ketapang, Indonesia with Greenpeace Forest Fire Prevention Team to put out fires and do investigation. Let's support the team to end haze crisis: <http://bit.ly/ForestNotFires> #StoptheHaze #HutanTanpaApi #ForestNotFires**

49 4 17

Sample Post 13




leehsienloong  
17 Sep 2015

Visited the COMNET @ Teck Ghee Senior Activity Centre yesterday evening to distribute Smart Masks and WeCare PAKcs to elderly residents in light of the #sghaze. Grateful to ST Engineering and NGO Temasek Cares for designing and providing the Smart Masks to our vulnerable elderly. My thanks also to @pafrenz for distributing the WeCare PAKcs, and Fa...

5.7k 30

Sample Post 14



danartriatmojo  
29 Oct 2015

Doctors give treatment to 1 year old girl, Ida Nurjanah using a nebulizer, a drug delivery device used to administer medication in the form of a mist inhaled into the lungs. at dr. Doris Sylvanus hospital in Central Kalimantan, Indonesia. People living near peatlands and forests has been experiencing haze since 18 years ago, it is ironically, has ...

896 34

Sample Post 15



**Clean Malaysia**  
25 Aug 2017

**Slash-and-Burn Agriculture must Stop - Clean Malaysia**

Slash and burn farming is one of the most destructive methods of farming. The fires. The haze. The massive effect on global warming. Governments are fighting to control it in Malaysia, but the road is a hard one. Malaysia has been losing much of its peatlands and their ongoing loss bodes ill for the country's environment. Peat swamps are home to a...

1.7k

Sample Post 16



beritasatu  
24 Feb 2017

Kebakaran terjadi tidak jauh dari area perkebunan kelapa sawit di Kecamatan Tanah Putih Kabupaten Rokan Hilir, Provinsi Riau, Selasa 21 Februari 2017. Satgas Siaga Darurat Kebakaran Lahan dan Hutan Riau menyatakan kebakaran lahan terus mengancam terutama di daerah pesisir timur, yang diduga akibat pembukaan lahan untuk perkebunan kelapa sawit. Upay...

202 4

Sample Post 17



catslavery  
27 Aug 2016

We are definitely not worrisome parents when there is a haze in Singapore. We know we can count on the @Dyson Pure Cool Link Fan that doubles up as an air purifier. We get clean air all the time in the house, keeping baby safe from harmful toxins. Just look at who's the happiest! #slowlife #dysonsg #purecoolink #dyson #technology #convenience #he...

1.7k 7

Sample Post 18

# Findings: Media and Public Influencers on Air Pollution

continued...


08 Jul 2015 

**Autonomous cars help reduce cost and pollution:**  
 Study : News, News - India Today  
 Autonomous cars help reduce cost and pollution:  
 Study IANS July 7, 2015 | UPDATED 10:21 IST If  
 driver-less taxis roaming our cities become a reality,  
 they would not only help cut our expenses but would  
 also greatly reduce emissions of greenhouse gases,  
 say researchers, including one of an Indian-origin.  
 The per-mile greenhouse gas emissions of an...





indiatoday.intoday.in   

Sample Post 19

Indian Express  
 11 Jan 2017 

**Air pollution causes 12 lakh deaths in India annually; Delhi most polluted: Greenpeace**  
 The assessment of air pollution levels for Delhi highlighted that PM10 concentrations are 268 µg/m<sup>3</sup> for year 2015, which were at 4.5 times higher than the NAAQS (National Ambient Air Quality Standards) annual limit set by CPCB and about 13 times the annual ...

Sample Post 20

The Straits Times  
 06 Jan 2016 

**Reduce air pollution to protect people's health:**  
 China Daily  
 Sitting in one of China's most heavily polluted regions, it is difficult for Beijing to regain clean air against the main sources of pollution-vehicles, coal burning, industrial pollution and dust from construction sites.



 

Sample Post 21

18 Apr 2016 

**Delhi's Odd-Even plan: Second time unlucky?**  
 In its continuing effort to cut pollution in Delhi, the local government has introduced the second round of the Odd-Even scheme, where odd numbered cars (non-CNG, non-taxi) run on odd numbered days, and even numbered cars on even numbered days. This will apply between 8am and 8pm every day from the 15th of April to the end of the month. However, ...



www.business-standard.com   

Sample Post 22

# Recommendations for Framing Strategic Communication

## Recommendation 1: Messages and campaigns should raise awareness of the risk of serious illness and death from chronic disease caused by long-term exposure to air pollution.

### Findings

- Concerns about acute symptoms from short-term exposure to air pollution predominate in discourse, but effects of illness and death from chronic illness are most important for the global burden of disease.
- Closing this concern gap through fact-based communication and news coverage is important to elevate clean air as a health priority and to drive demand for long-term improvements in air quality.



Sample Post 23

# Recommendations for Framing Strategic Communication

*continued...*

## Recommendation 2: Raise awareness on the limited effectiveness of short-term exposure prevention measures, as compared to long-term sustainable measures.

### Findings

- Public and media discourse on short-term solutions are higher than that on sustainable solutions.
- Between 2015 and 2018, more than 50 percent (refer to Chart 13) of all conversations are about personal protective measures rather than on long-term solutions to improve air quality.
- Heightened awareness periods, for example towards the end of the year (refer to Chart 9 and Chart 10), can be used as an opportunity to build support to influence policy.



*Sample Post 24*

# Recommendations for Framing Strategic Communication

*continued...*

## Recommendation 3: Stories and campaigns about air pollution and health should include messaging about lasting harm to children's health.

### Findings

- Posts that mention children's health are shared more widely and have higher engagement levels than others, in terms of likes, comments and shares (refer to sample posts 25 to 30).
- Children's health resonates with audiences on an emotional level. Concerns about air pollution could be increased by raising awareness of the lifelong consequences of air pollution on children's future physical and economic health.



# Recommendations for Framing Strategic Communication

*continued...*

**Dia Mirza** @deespeak · Oct 10

Positive change is possible when it is born of empathy. 'Feel' the need for change, 'seek' the change, 'speak' the change - be the change. Honour to be a part of the #DemocracyWall! Thank you @ShekharGupta @ThePrintIndia @Rohini\_Swamy @vitvellore #MeToo #Equality #HumanRights

21 52 616

**Dia Mirza** @deespeak

Follow

This is the air we are breathing. This is the air that us making us sick. Our children, our parents, our friends, our families, you and me. @PMOIndia @narendramodi @Dev\_Fadnavis @CMOMaharashtra #MyRightToBreathe #BreatheLife #AirPollution

3:12 PM - 14 Oct 2018

696 491 2.0K

Sample Post 25

Sample Post 26

**danartriatojo** • Follow  
Syamsudin Noor International Airport

danartriatojo Banjarmasin from above. Day 1 with @pantaugambut #kalimantan naynadine Ahhh berangkat lagi!!! I wish!

danartriatojo @naynadine iya nay.. gabus goreng sambal sereh lagi hahaha orindadeviana Soto banjar 😊 iwak haruan iwak gabus

amalachim Enjoy!

kenopeer Love your account, really inspiring 🌟😊

247 likes

OCTOBER 19, 2017

**danartriatojo**  
04 Nov 2015

Portraits of a young boy with his mother and his little sister at dr. Doris Sylvanus State hospital, Palangkaraya, Central Kalimantan. With his mother, he accompany his little sister to get treatments for her respiratory infection caused by choking haze which has been happening for three months. So many **children** in early age are seen suffering for ...

524 2

Sample Post 27

Sample Post 28

# Recommendations for Framing Strategic Communication

*continued...*

**Richard Barrow in Thailand** 🇹🇭 🇬🇧 @RichardBarrow · 21h  
The Thian Heng parade in Mae Sariang this evening. The Ok Wa festival marks the end of the Buddhist Lent #Thailand

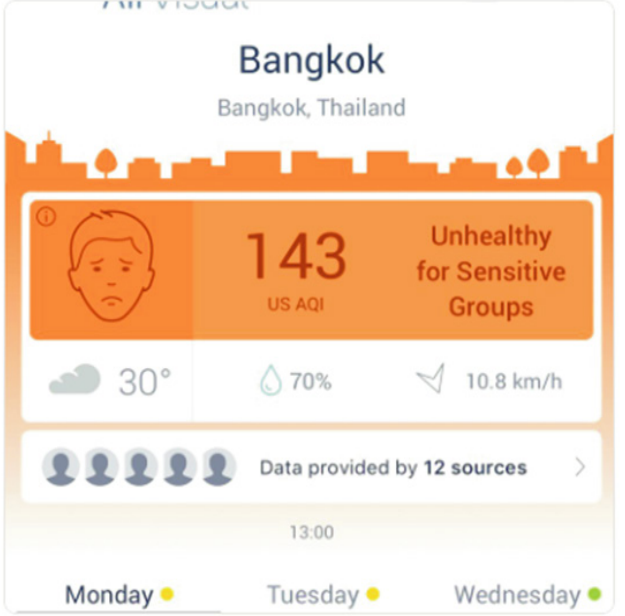


🗨️ 4 🍷 22 📧

*Sample Post 29*

**Richard Barrow in Thailand** 🇹🇭 🇬🇧 @RichardBarrow Follow

Air quality in #Bangkok is bad today. People in sensitive groups, like elderly, children and people with asthma shouldn't exercise outside.



**Bangkok**  
Bangkok, Thailand

**143**  
US AQI  
Unhealthy for Sensitive Groups

30° 70% 10.8 km/h

Data provided by 12 sources

13:00

Monday ● Tuesday ● Wednesday ●

11:27 PM - 9 Sep 2018

77 Retweets 59 Likes

*Sample Post 30*

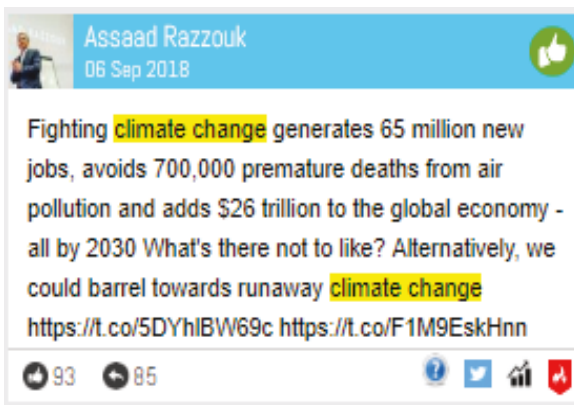
# Recommendations for Framing Strategic Communication

*continued...*

## Recommendation 4: Climate change is an effective means of engaging people on air pollution.

### Findings

- People are increasingly talking about climate change and linking it to air pollution in their conversations. 10 percent of all conversations about air pollution include mentions of climate change, global warming and clean energy.
- With policy and public discourse about climate change impacts growing, there is an opportunity to increase awareness of the shared causes and solutions for climate change and air pollution.



*Sample Post 31*



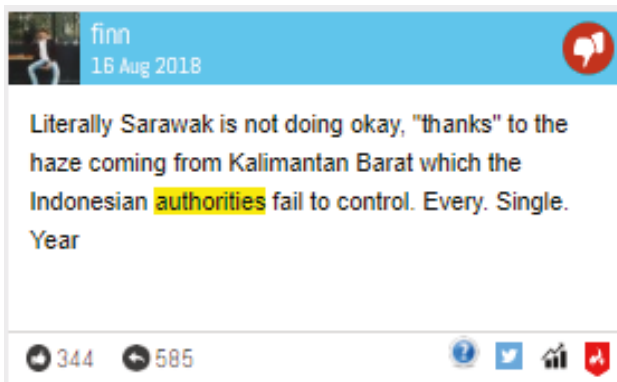
# Recommendations for Framing Strategic Communication

*continued...*

## Recommendation 5: Through campaigns and media stories, governments should be urged to develop comprehensive policies promoting clean air for health.

### Findings

- Government policy on environmental issues is often created in response to demand from civil society and industry.
- Strategic communication must be used to enable government action to control the most important sources of air pollution, including building robust government capacity for monitoring, enforcement and data sharing to demonstrate progress.
- Only 8 percent of all conversations across social media and news portals mention the government's role in improving air quality while discussing air pollution policies and demand for change.
- Communication should refer to known, feasible solutions for common, important sources of air pollution.



Sample Post 32



Sample Post 33

# Recommendations for Framing Strategic Communication

*continued...*

## Recommendation 6: Media should seek and be given access to credible and relevant data on air pollution.

### Findings

- Over time, media articles consistently focus on vehicular emissions as the main source of air pollution. Between 2015 and 2018, 40 percent to 70 percent (refer to Charts 6–8) of all conversations by the general public also mention vehicular emissions.
- In addition, clean and efficient energy shows up as the top solution for air pollution as there are high volumes of media articles mentioning climate change in relation to air pollution.
- In reality, sources of air pollution vary by country, region and city, and media reports should reference the best available data on sources and their impacts.



## Conclusion

There is a clear disconnect between public understanding of air pollution and reality. While people are aware of the problem, there is a need to elevate concern about the impacts of air pollution on human health as well as the environment.

It is crucial to raise awareness on the actual and most significant sources of air pollution and solutions in order to close the gap between public perception and reality. Better understanding and informed discussions will help evolve conversations from providing only real-time updates to providing accurate, relevant information that equips citizens to assert their role in the improvement of air quality.

# Appendix

Distinction among positive, negative and neutral conversations:



- Positive: Conversations that are optimistic and motivating, and include affirmative action to be taken (sample post 34)



- Negative: Conversations that attack, detract and/or complain (sample post 35)



- Neutral: Conversations that ask questions and are generic and standard in nature (sample post 36)

nsguru  
05 Jul 2015

Satellite photos show China rapidly adding solar panels in Gobi desert to Meet New UN Climate Pledge

NASA satellite photos show, on the left, how much land in China's Gobi Desert was covered by solar panels on October 15, 2012 and, on the right, how much was covered by them on May 22, 2015. The covered surface tripled in less than three years NASA satellites show part of China's plan to meet its ambitious new UN pledge to cut carbon emissions: sol...

Sample Post 34

IANs  
28 Dec 2015

Need to clean Delhi air to stop irreversible damage to heart

Moneylife » Need to clean Delhi air to stop irreversible damage to heart 44708 Need to clean Delhi air to stop irreversible damage to heart 0 Comments, Be the first to comment + COMMENT

IANs | 28/12/2015 02:11 PM | Delhi today is grappling with hazardous air pollution as choking fumes from the burgeoning vehicle population and the smog that engulfe...

www.moneylife.in

Sample Post 35

newsr.in  
18 Dec 2015

Could US pollution regulations help smog-enshrouded China?

The EPA administrator suggests China mimic new US policies to reduce air pollution . »

newsr.in

Sample Post 36



Vital Strategies is a global health organization that believes every person should be protected by a strong public health system. Our team combines evidence-based strategies with innovation to help develop and implement sound public health policies, manage programs efficiently, strengthen data systems, conduct research, and design strategic communication campaigns for policy and behavior change.

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