

Public Opinion Survey on Climate Change





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Preamble

The Mint and DIU Analytics Private Limited have recently released a survey on Citizen Perception of Climate Change, a first of its kind public opinion poll undertaken in India. Public opinion on climate change is the aggregate of attitudes or beliefs held by the resident population concerning issues relating to “anthropogenic climate change, perceptions of climate change risks, concern about its seriousness, and thoughts on what, if anything, should be done to address it.” This follows the 2012 study by Yale University Climate Change Communication titled “Climate Change in the Indian Mind”.

This citizen perception survey investigated a wide range of issues, including, inter alia, the following:

1. Public perception of key global and domestic issues and whether climate change features within the public discourse
2. Acceptance of whether India’s climate is changing for the worse and degree of concern over this change for the welfare of the present as well as future generations.
3. Sustainable practices adopted in everyday life.
4. Understanding of what activities negatively impact environmental sustainability.
5. Familiarity with the terms climate change and global warming, source of awareness, and understanding causality.
6. How do Indians perceive climate change - reality vs hoax, present vs future, reversibility vs futility, accountability vs responsibility?
7. Opinion of who bears the responsibility for affirmative action on climate change.

This survey was carried out telephonically using Sambodhi Panel’s platform and covered a total of 10779 adult respondents. The achieved urban sample coverage was 6700 (1814 from tier 1 cities, 2287 from tier 2 cities, and 2599 from tier 3 and smaller towns. The achieved rural sample was 4079 adult respondents. The survey covered a total of 23 states and the two Union Territories of Delhi NCT and Chandigarh. It was ensured that we get adequate coverage from each of the six zones of the country. The distribution was as follows:

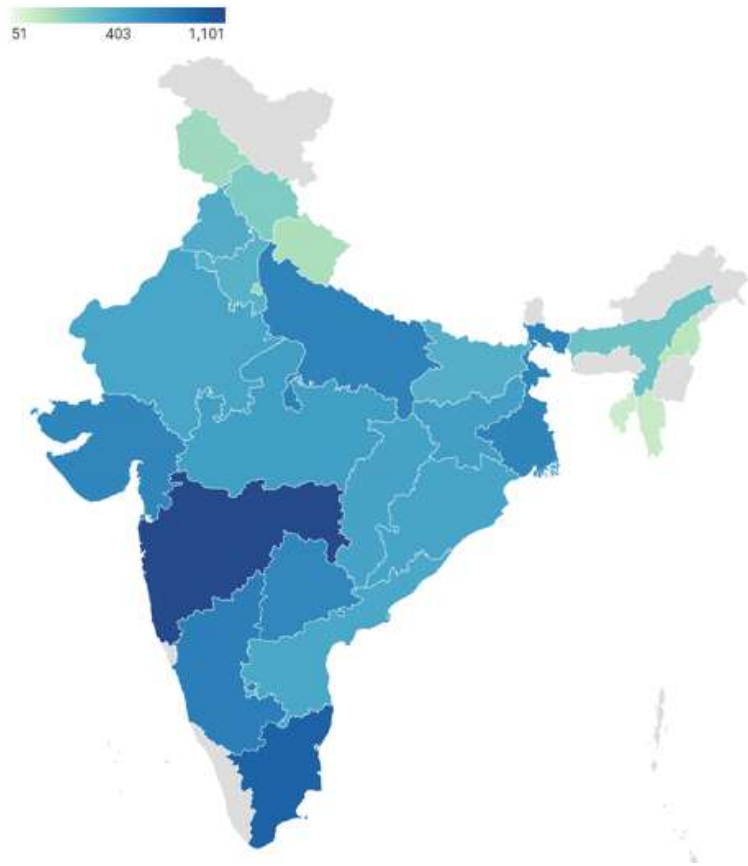




Table 1: Distribution of sampled states

Zone	State/UT
North	Delhi (NCT), Haryana, Himachal Pradesh, Punjab, Uttarakhand, Chandigarh (UT), Jammu and Kashmir
Centre	Chhattisgarh, Madhya Pradesh, Uttar Pradesh
East	Bihar, Jharkhand, Odisha, West Bengal
Northeast	Assam, Nagaland, Mizoram
West	Gujarat, Maharashtra, Rajasthan
South	Andhra Pradesh, Karnataka, Tamil Nadu, Telangana

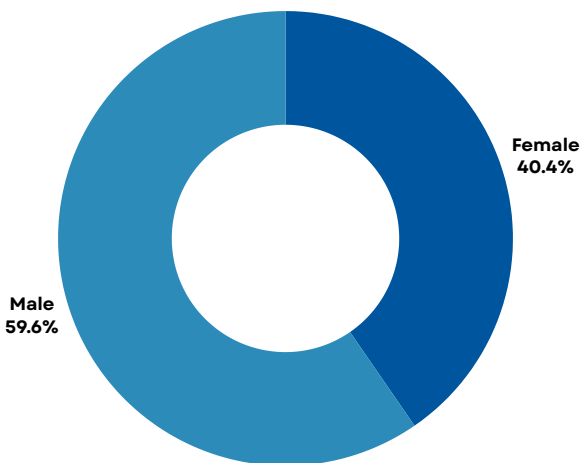
Figure 1: Sample distribution across states



2.0 Respondent Profile

In urban areas, the proportion of samples that were male was 59.4% while 40.6% were female. In rural areas, 60% were male and 40%, female.

Figure 2: Gender of Respondents



Three quarters of the sample were aged between 18 and 45 years. As far as education was concerned, a relatively low proportion of the respondents were illiterate or with some schooling at the primary level (12%). Most were educated between primary and secondary (40%). 28% had graduate degrees or even higher. This may not be an accurate representation of the literacy scenario in India, but such is the nature of the panel used to conduct this telephonic survey. It may be mentioned that telephone ownership among the illiterate and the economically marginalized (or access to the same) is likely to be lesser than other categories and hence, they have a lower representation in the panel.

Figure 3: Respondents' education level

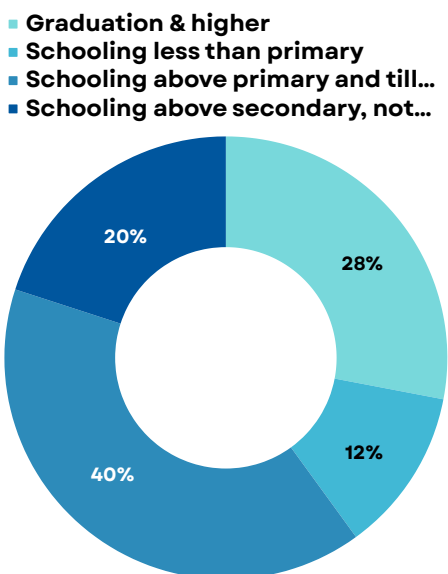
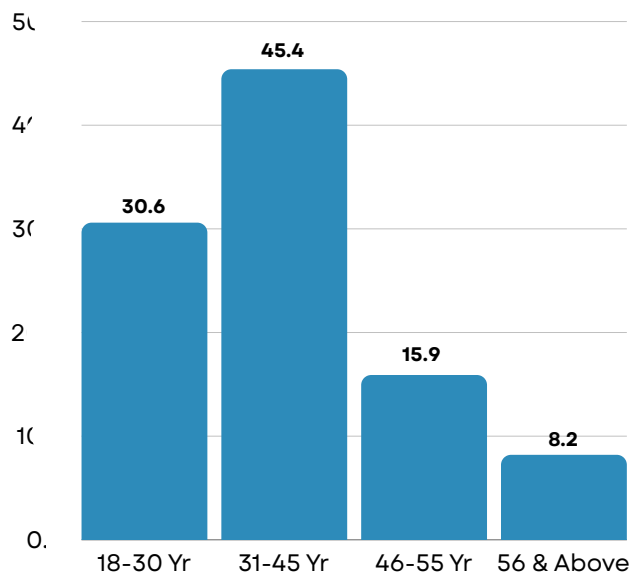


Figure 4: Age distribution of respondents



3.0 Climate change in the public discourse

3.1 Do the Indian public even consider climate change as a major issue that the country faces now?

The ability of the public to understand scientific issues is essential for them to evaluate potential risk & policy alternatives adequately. Usually, the public is portrayed as a passive participant of complex policy issues. They are seen as recipients of messages from the media or elite opinion leaders. Recent studies have proved that the public is much more active in this process than the literature recognizes and that through public discourse, they are helping to shape the policy process.





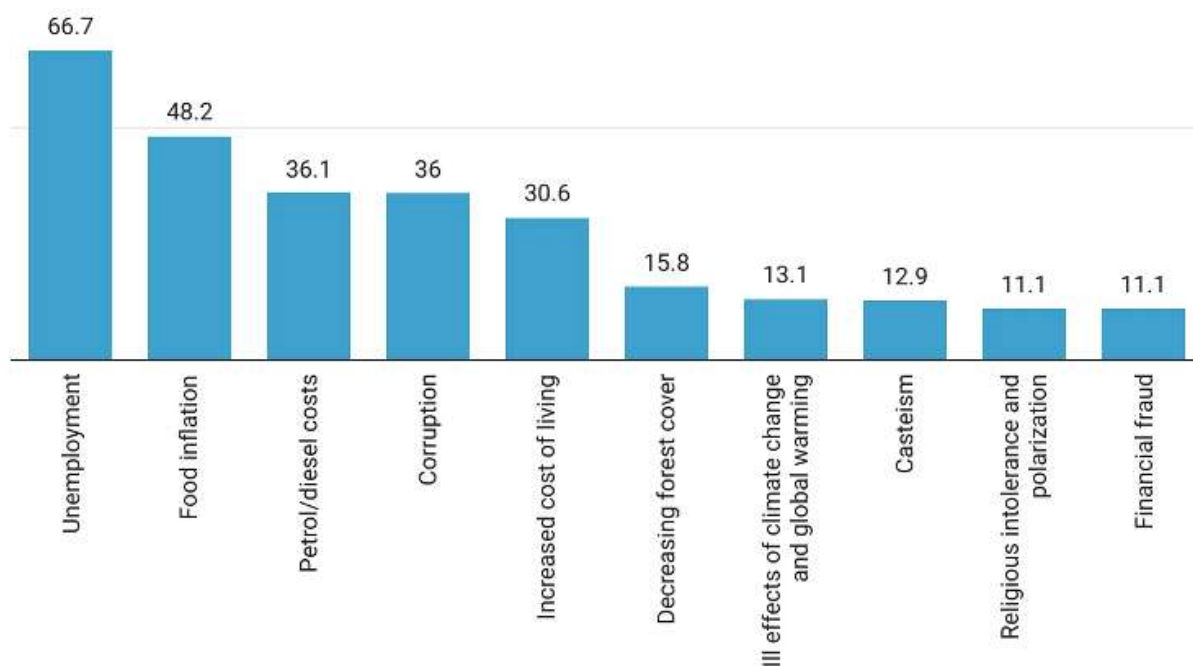
The media is often blamed for the perceived polarization of the public and it is argued that this could result in alternative constructions of reality. While it appears that the media is increasingly ideological in an effort to gain greater market share, it is also true that if the public chooses to not expose themselves to the media, how else will they learn about the political and social issues that face the country? How do they develop opinions on these issues?

The question arises then, are members of the public actually discussing policy issues with others in their social networks and having influence on, or being influenced by, those interactions? Given the latest survey available, in India there are about 470.1 million active social media users (log in at least once in a month) in 2022, we believe that on important policy issues like climate change, members of the public are very likely to be sharing information and discussing risks and preferences with one another. And, if this is so, then citizens may not be just passive recipients of information and knowledge flows from media and other elite sources, but may actually be working together to frame issues, problems, risks and solutions.

The current survey found that most Indians do not consider climate change as a major issue that the country faces now. For them, what is of greater concerns are matters of unemployment, food inflation, cost of fuel, corruption, and increasing cost of living. The twin issues of global warming or extreme weather events resulting from it does not seem to be a major concern area for most Indians.

Now this could either be a conscious outcome with people genuinely taking a considered stance that climate change is not a clear and present danger for India, or it could be that there is not enough noise being created in social media that's talks about climate change impact in India and the urgency of climate action. We do know that social media has significant coverage of climate change repercussions at a global scale but perhaps what is lacking is a more contextualised coverage that focuses on the sub-continent and not just glacial ice melting in the poles.

Figure 5: Top 10 concerns that India faces at present (in % of Indians)



The trend was very similar across urban and rural India. When it came to India and the issues that this country is facing, the five clear concerns as perceived across urban and rural India are as follows:

1. Unemployment
2. Food inflation
3. Cost of fuel
4. Corruption
5. Increasing cost of living

Table 2: Perceptions regarding the top challenges India is facing at the moment (in %)

	Urban	Rural
Unemployment	72	64
Food inflation	54	45
Fuel prices	47	30
Corruption	45	31
Increased cost of living	34	29

Base = 10,779 adults

The only population segment that seems to acknowledge the fact that climate change is a clear and present danger for India are those who are graduates or higher, where one in every five expressed concerns with the same.

Table 3: Profile of the population who are concerned with the effects changes in India's climatic conditions over time (in %)

	Schooling less than primary	Schooling till secondary	Schooling above secondary but not graduation	Graduation and higher
Ill effects of climate change and global warming	6.5	12.4	13.2	19.4
Extreme weather conditions in part of the country	6.0	9.5	11.4	10

Base: 10,779 adults

3.2 Acceptance of whether India's climate has changed over the past 2 decades

It is a fact that temperatures in India have risen by 0.7 °C (1.3 °F) between 1901 and 2018, thereby changing the climate in India. In May 2022 severe heatwave was recorded in Pakistan and India. The temperature reached 51°C. Climate change makes such heatwaves 100 times more likely. In the past few years, India has witnessed a decrease in monsoon rains, rise in extreme temperature and erratic rainfall events, droughts, and sea levels rising and also an increase in the intensity of severe cyclones along with other changes in the monsoon system.

The survey respondents were further asked to opine whether they believed India's climate/weather patterns or conditions changed over the past 10-20 years. Majority of Indian do believe that such is the case. In fact, over 45% in urban India and nearly 38% in rural India think that the climate has changed quite a bit over the last two decades, while 56% acknowledge that it has changed but not very drastically.

Table 4: Extent to which Indians believe the India's climate has significantly changed over the last 10-20 years (%)

	Urban Total	Rural Total	All India
Yes, it has changed quite a bit	45.8	37.6	40.5
Yes, it has somewhat changed	50.5	56.4	54.3
Not Really	3.8	6	5.2

Base: 10,779 adults



Table 5: Extent to which conviction regarding India’s climate having significantly change over the past 10-20 years is influenced by education

	Schooling less than primary	Schooling till secondary	Schooling above secondary but not graduation	Graduation and higher
Yes, it has changed quite a bit	39.0	38.7	38.8	52.8
Yes, it has somewhat changed	50.4	56.6	56.7	45.2
Not Really	10.6	4.7	4.5	2.0

Base: 10,779 adults

It is clear from the above table that appreciation of climate change and conviction that it has already being felt in India does have a clear correlation with education. Unfortunately, this appreciation is most prominent among the highly educated gentry.

3.3 Impact of climate change in India

Ever-expanding summers, shortening of winters, mosquitoes in December in Delhi, dengue outbreaks in Himachal Pradesh, floods in Rajasthan and short spells of high-intensity rains like the one that hit Chennai towards the end of last – these are telltale signs of changing weather.

Abdul Rehman Bhat is an apple grower in Kashmir’s Shopian district. But, thanks to climate change, the last four ‘Chilla-i-Kalaan’ (apple harvesting seasons) have been nothing short of a nightmare for him. A sharp fluctuation in temperature across the valley resulted in unseasonal snowfall or early summers, leading to heavy damage to apple orchards.

“The apple crop has become vulnerable to diseases due to changing weather patterns,” he says. “There was a heat wave in February and March of 2023, causing the mustard to bloom at an unusual time. Then Kashmir was hit with excessive hailstorms and erratic rain. Temperatures in May became chilly, unexpectedly, while February and March were warm.

The current survey looked at which events prompted the public to conclude that India’s climatic conditions have changed over the past 10-20 years. Prolonged heat waves, excessive rainfall events, including flash floods in the mountains destroying life and property, repeated draughts in parts of the country, spreading of water and air borne diseases, etc. were the more common events that came to be cited.

Table 6: Top 10 events that prompted people to believe the climate is changing (%)

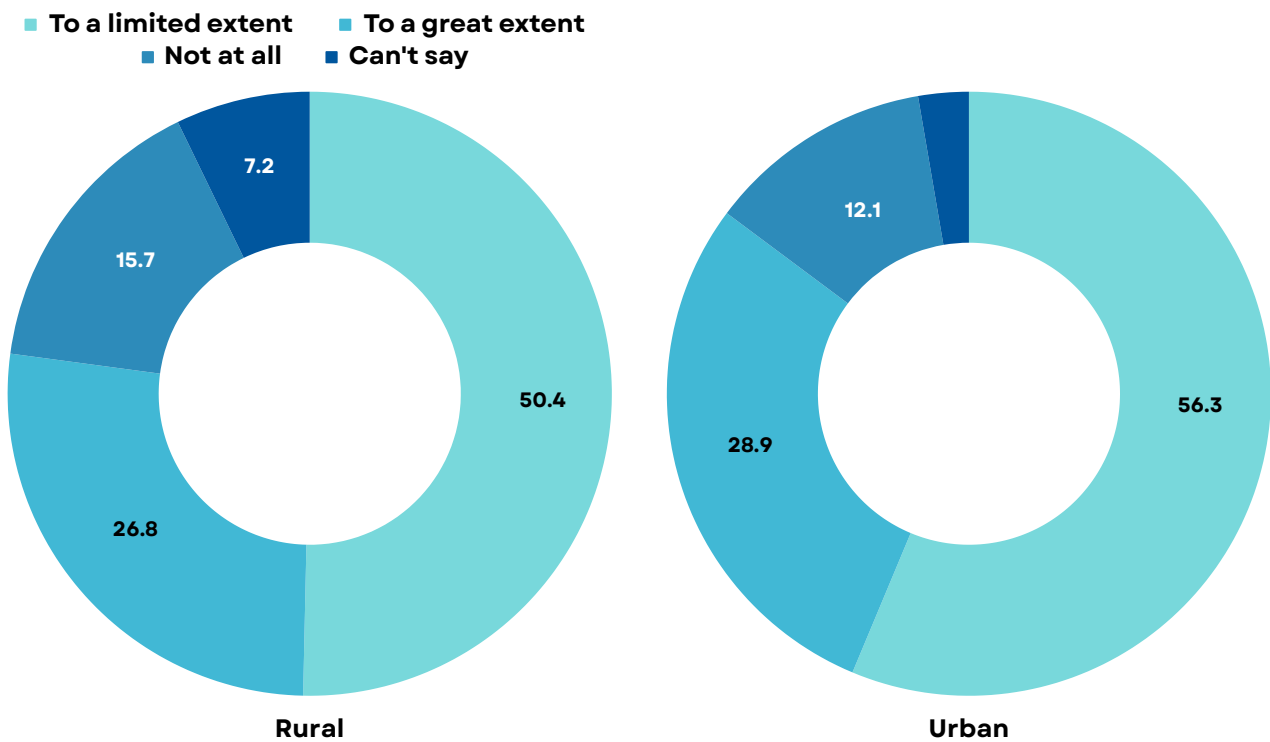
	Urban	Rural
Heat waves & prolonged summers	48.1	46.3
Excessive rainfall events	46.1	43.0
Spreading of air & water borne diseases	37.1	32.5
Repeated droughts	33.3	31.8
Deteriorating air quality	27.2	23.9
Crop failure	26.9	30.8
Flooding in cities & other low lying areas	23.9	21.6
Drinking water shortage	22.8	21.2
Food shortage	20.9	19.7
Monsoon failure in parts of the country that used to get adequate rain	18.9	19.4
Destruction of life and property due to excessive rainfall and flash floods	25.0	22.3
Groundwater depletion	14.3	13.2

Base = 10,282 adults who believe India's climate is changing

3.4 Impact of a changing climate in the lives and livelihoods of ordinary people

Respondents who had mentioned that they believed India's climate has changed over the last two decades were further asked as to what extent have these changes in the climate adversely affected their own life and livelihood. At a personal level, little over two-thirds of the survey participants could report that they were yet to feel any significant impact of climate change in their lives.

Figure 6: Are people feeling the impact of climate change in their lives?



Base = 10,282 adults who believe India's climate is changing



4.0 Familiarity with the term climate change and global warming

Research into media coverage of climate change has demonstrated the significant role of the media in determining climate policy formation. The media has considerable bearing on public opinion, and the way in which issues are reported, or framed, establishes a particular discourse.

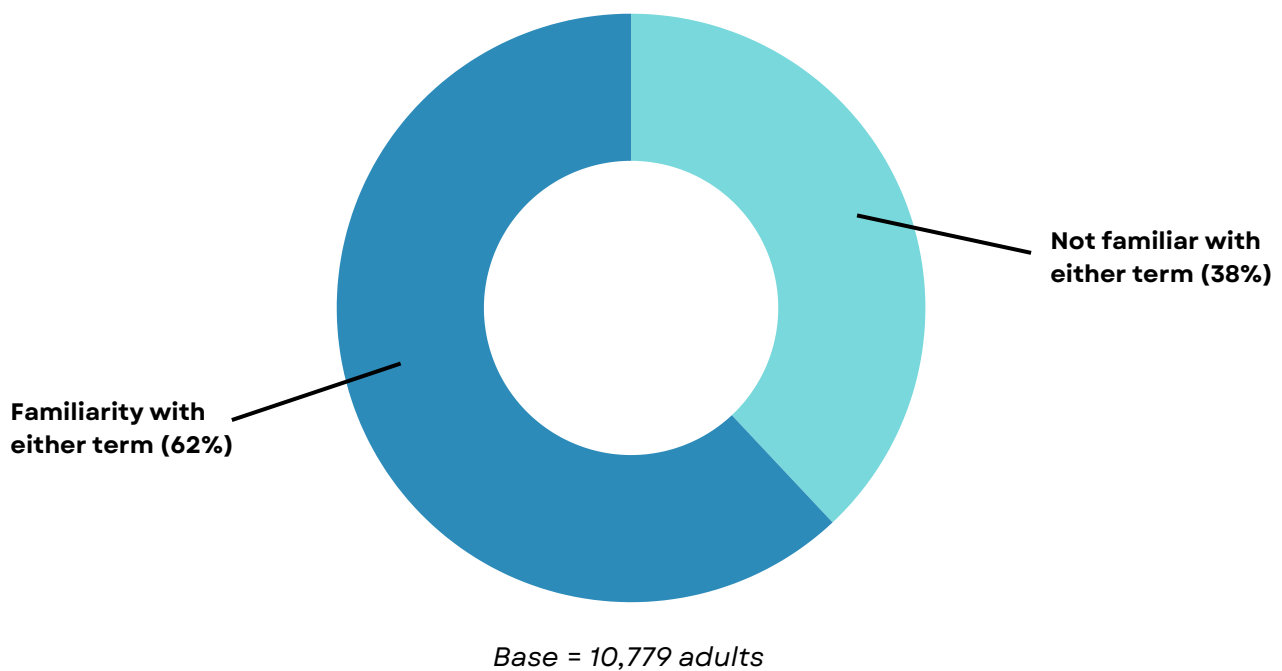


4.1 Exposure to the terminology

While everyone is able to express an opinion on whether they believed India's climatic conditions have been changing over the past two decades based on their own perception of things, the survey also looked at the level of exposure people have to the term climate change and global warming. This is especially important given that it occupies a significant space in the social media as well as mainstream media, especially following any calamitous weather event.

The survey revealed that 62% of Indian adults were familiar with the term climate change or global warming, while about a third had no exposure. Please be advised that in the earlier section we looked at whether people are in acknowledgement that India's climate has changed over the past two decades whereas here, we are simply trying to ascertain exposure to the key words climate change and global warming.

Figure 7: Familiarity with the term climate change or global warming



4.2 Determinants of exposure

Location of residence is certainly a major determinant with exposure of urban residents to the terminologies being much more than their rural counterparts. Even within urban, residents of Tier 1 cities are far more familiar with the term(s) than those from the smaller towns. The difference between male and female respondents was less significant.

Table 7: Place of residence and gender vs familiarity with the term climate change and global warming (in %)

	Urban Tier 1	Urban Tier 2	Urban Tier 3	Urban Total	Rural Total	Male	Female
Familiar with either term	84.1	74.3	65.2	74.1	55.1	69.8	62.7

Base = 10,779 adults

Table 8: Education and age vs familiarity with the term climate change and global warming (%)

	Schooling less than primary	Schooling till secondary	Schooling above secondary, not graduation	Graduation and higher	18-35 years	Greater than 35 years
Familiar with either term	28.3	61.0	76.4	85.0	68.7	65.3

Base = 10,779 adults

As the table suggests, at least a formal exposure to the two terminologies are highly influenced by education. Respondents with higher education achievements are far more familiar with the terms (perhaps due to greater exposure during their academic discourse or maybe a far greater and active presence in news-based social media (as against general entertainment). Other studies also indicate a positive correlation with news viewership and readership and educational attainment.

Age, on the other hand, is clearly not a major determinant.

4.3 Source of exposure for those familiar with the term

The survey found that while 61.7% of adult Indians were aware of the term climate change or global warming, around 77% came across the same from watching television and 46% through social media exposure. This exposure matters because nearly one in every two persons exposed to the terms sought out information on climate change, wanting to know more, and for a similar number actually engage in climate change conversations at home, in office, and among peers. Thus, initial exposure through media is likely to be catalytic towards mainstreaming this debate.

Table 9: Television and social media are very important sources for people to get exposure to the climate change debate

	All India %
Television news channels	77.0
Radio programs	22.2
Social Media	46.2
Academic journals/books	5.6
Newspaper/print media	36.3
Conversation with family/friends/peers/colleagues	47.4
Read about it in school	20.6

Base: 7,212 respondents who are aware of the term climate change.

As expected, a respondent with higher level degrees, because of their greater exposure to news channels on TV, higher social media exposure, greater propensity to read a newspaper, and received a more rounded education at school makes them more likely to be far more aware of the two terms than those with limited education.

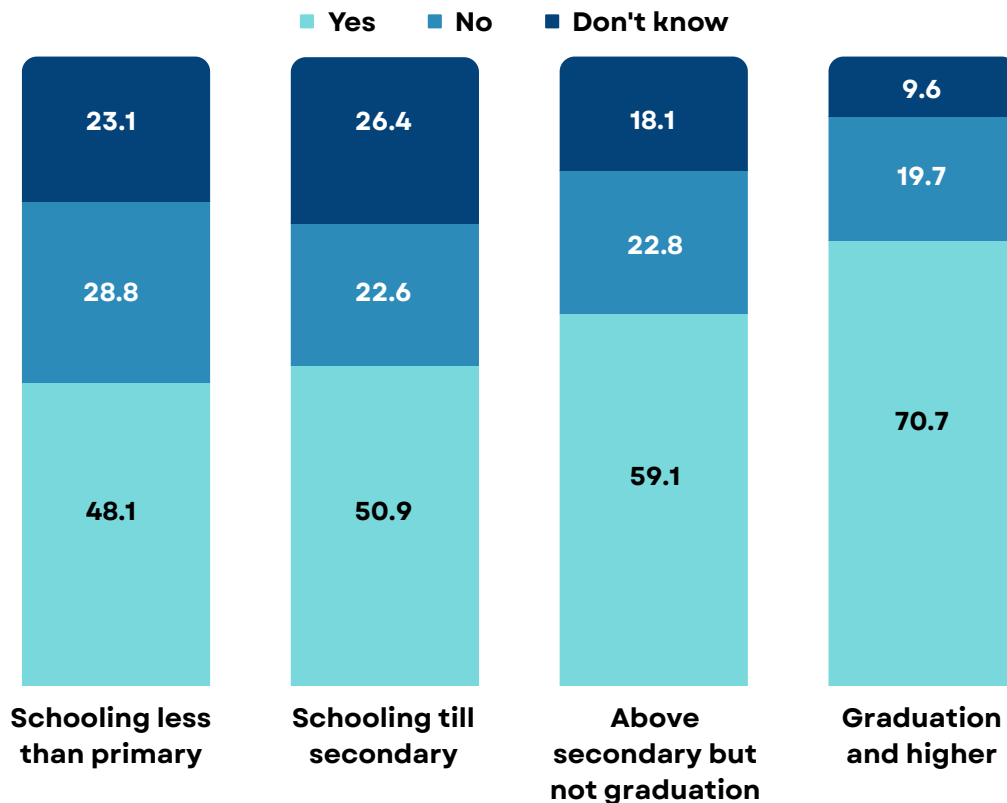
It is one thing to be exposed to the term climate change or global warming (or both) through the news across print and electronic media (including social media) but it is quite another when people actually seek out information on climate change, wanting to know more. The survey specifically asked those who had come across the terms global warming or climate change whether they had ever specifically sought out information on the same on their own. At the overall sample level, 43% had reported that they did.

4.4 Are the two terms interrelated?

Although people exposed to the term climate change or global warming tend to use these terms interchangeably, global warming is just one aspect of climate change. “Global warming” refers to the rise in global temperatures due mainly to the increasing concentrations of greenhouse gases in the atmosphere.

As per NASA, “Global warming” refers to the long-term warming of the planet. Global temperature shows a well-documented rise since the early 20th century and most notably since the late 1970s. Worldwide since 1880, the average surface temperature has risen about 1°C (about 2°F), relative to the mid-20th century baseline (of 1951-1980). This is on top of about an additional 0.15°C of warming from between 1750 and 1880. “Climate change” encompasses global warming but refers to the broader range of changes that are happening to our planet. These include rising sea levels; shrinking mountain glaciers; accelerating ice melt in Greenland, Antarctica, and the Arctic; and shifts in flower/plant blooming times. These are all consequences of warming, which is caused mainly by people burning fossil fuels and putting out heat-trapping gases into the air.

Figure 8: Whether exposed individuals believe that the two phenomena are interrelated (%)



Base: 7,212 respondents who are aware of the term climate change.

Overall, 63.4% of the survey participants believed that the two terms are interrelated. As expected, this awareness was highest among those with the highest education attainment and lowest among those with less than 5 years of formal education.

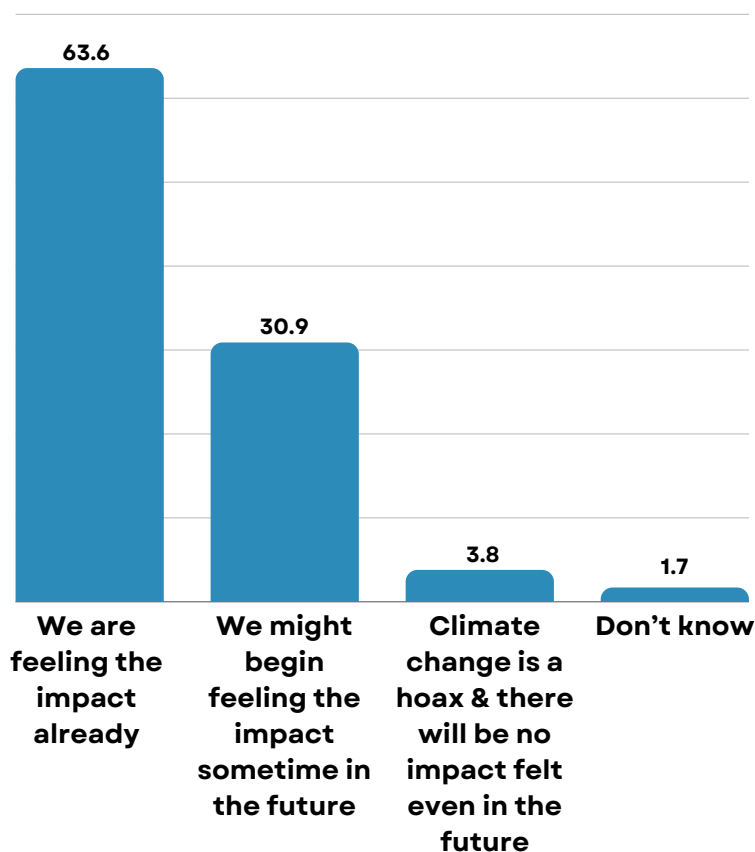
5.0 Public Perceptions of Climate Change

5.1 Most Indians reject the notion that climate change is a hoax

The coastline of the Netherlands is slowly being washed away because of the wind, sea currents and rising sea-levels due to global warming. Despite all the scientific evidence, there are many non-believers and sceptics - in politics, industry, and the general population.

This new pan-India survey reveals that most of India believes that climate change is real. While nearly 2 out of 3 adult Indians who are familiar with the term climate change accept that we are already feeling the impact of a changing climate, a little less than one in three believe that this is likely to happen sometime in the future.

Figure 9: Perception of adult Indians familiar with the term climate change or global warming regarding the impact of climate change (in %)

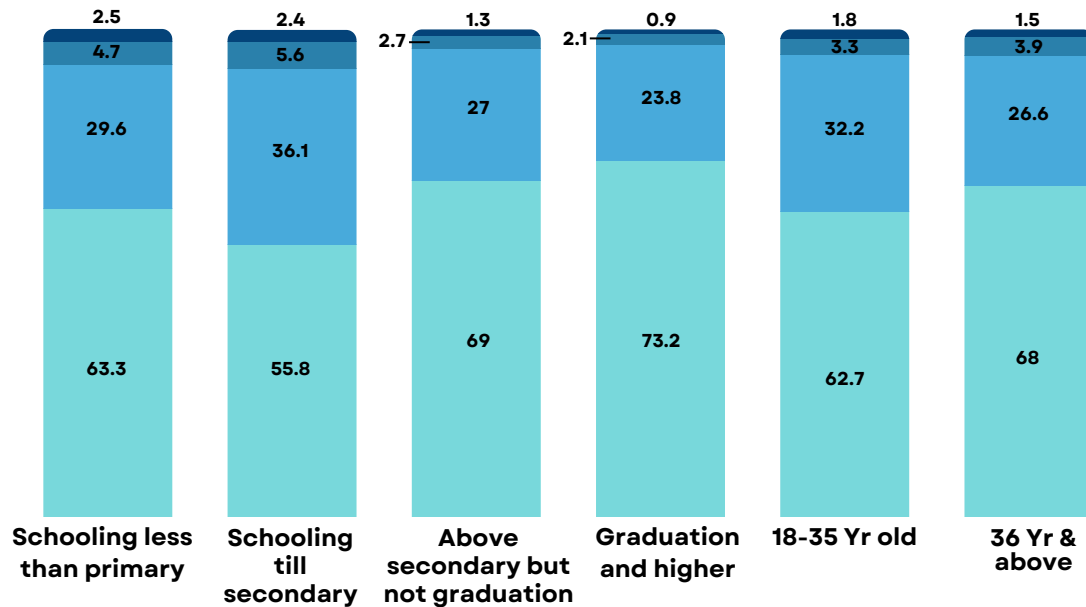


Base: 7,212 respondents who are aware of the term climate change.

Two out of three people felt that the impact of climate change is being felt already. A negligible proportion thought that it was a hoax. The urban rural differential was nominal.

Figure 10: Whether education and age are key influencers

- Feeling the impact already
- Might begin feeling the impact sometime in the future
- Climate change is a hoax & there will be no impact felt even in the future
- Don't know



Base: 7,212 respondents who are aware of the term climate change.

Education does not seem to be a major determinant as it was in case of acknowledging climate change. As with education, age also does not seem to be a key differentiator with younger and older respondents both reporting that they believed climate change is a present-day phenomenon. The difference (around 6 percentage points) can be attributed to the fact that some of the younger age group might not have been alive long enough to feel a concrete difference, something which adults who have been around longer, would be.

This set of perception-based statements were asked to only those respondents who had heard of either term climate change or global warming.

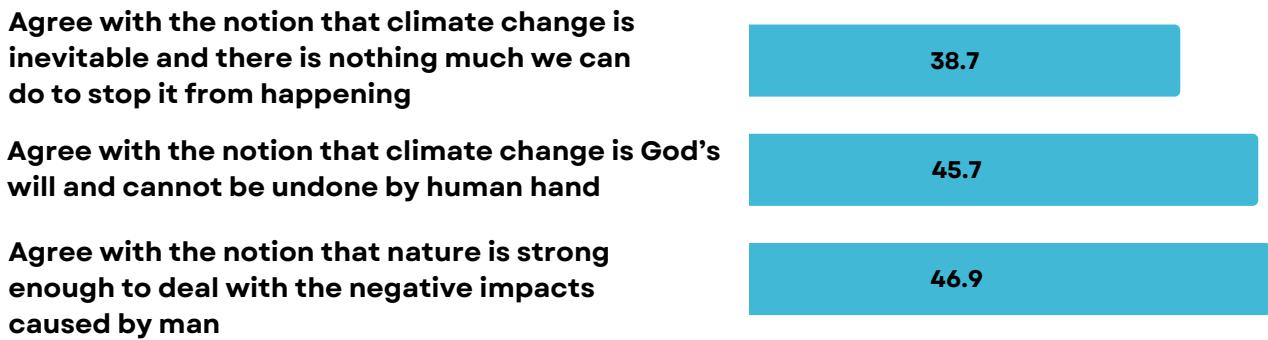


5.2 Public opinion on the inevitability of climate change and the role of human hand in mitigation efforts

Contrary to the mountain of evidence that is available that supports the climate change agenda, there still exists a significant number of ‘nay sayers’, even in India. A group among them, who may acknowledge the climate is changing, refuses to accept the doctrine that human intervention is integral towards slowing, if not reversing, this phenomenon. The current survey found that 46% of adult Indians believed that climate change is inevitable, and there is nothing much we can do to stop it from happening. Similarly, nearly four out of ten Indians believed that any change in climate is God’s Will and cannot be undone by human hand, and 47% feel that nature is strong enough to deal with the negative impacts caused by man.

Even though opinion seems to be split evenly within the population, if the policy discourse is to foster a feeling of collective and affirmative action among the citizenry, this finding should be an area of serious concern to the government because there is a fairly large segment of the population who remain skeptical.

Figure 11: Public opinion on the inevitability of climate change and whether mitigative action is an exercise in futility



Base: 7,212 respondents who are aware of the term climate change.

Table 10: Agreement vs disagreement with the notion that climate change is inevitable, and there is nothing much we can do to stop it from happening – by location of residence (in %)

	Urban	Rural
Totally disagree	10.7	9.0
Mostly disagree	23.6	28.0
Neither agree nor disagree	16.0	16.7
Mostly agree	32.1	33.3
Totally agree	16.1	11.0
Can’t say/ Don’t know	1.5	2.0

Base: 7,212 respondents who are aware of the term climate change.

48% in urban areas and 44% in rural areas then to agree with this statement. On the other hand, 34% in urban areas and 37% in rural areas tend to disagree. If the policy discourse is to foster a feeling of collection and affirmative action among the citizenry, this finding should be an area of serious concern.

Table 11: Agreement vs disagreement with the notion that climate change is inevitable, and there is nothing much we can do to stop it from happening – by education (in %)

	Schooling less than primary	Schooling till secondary	Schooling above secondary but not graduation	Graduation and higher
Totally disagree	5.2	7.3	10.1	14.7
Mostly disagree	14.5	23.6	23.7	29.6
Neither agree nor disagree	23.8	17.9	16.1	13.5
Mostly agree	38.1	35.6	33.5	27.9
Totally agree	15.3	13.7	14.1	13.5
Can't say/ Don't know	3.0	1.9	2.4	0.7

Base: 7,212 respondents who are aware of the term climate change.

As before, rejection of this notion was higher with education. However, the very fact that 40% of those who have completed graduation tend to accept the inevitability of climate change is an area of concern.

Table 12: Agreement vs disagreement with the notion that any change in climate is God's will and cannot be undone by man – by location of residence (in %)

	Urban	Rural
Totally disagree	14.4	15.4
Mostly disagree	24.9	25.8
Neither agree nor disagree	16.2	16.0
Mostly agree	22.2	19.9
Totally agree	19.2	17.4
Can't say/ Don't know	3.1	5.5

41% in urban areas and 37% in rural areas then to agree with this statement. On the other hand, 38% in urban areas and 41% in rural areas tend to disagree. Even though opinion seems to be split evenly, if the policy discourse is to foster a feeling of collective and affirmative action among the citizenry, this finding should be an area of serious concern because there is a fairly large segment of the population who tend to believe that climate change is God's will and therefore, cannot be undone.

Base: 7,212 respondents who are aware of the term climate change.



Table 13: Agreement vs disagreement with the notion that any change in climate is God’s will and cannot be undone by man – by education (in %)

	Schooling less than primary	Schooling till secondary	Schooling above secondary but not graduation	Graduation and higher
Totally disagree	8.2	11.1	17.8	17.2
Mostly disagree	18.4	22.8	24.9	28.7
Neither agree nor disagree	18.9	17.3	14.8	15.4
Mostly agree	27.4	23.2	18.6	20.8
Totally agree	24.1	21.7	18.3	14.9
Can’t say/ Don’t know	3.0	3.9	5.5	2.8

Base: 7,212 respondents who are aware of the term climate change.

As before, rejection of this notion was higher with education. However, the very fact that 35% of those who have completed graduation tend to accept that climate change is God’s will is an area of concern. Similarly, over 50% of those with limited schooling also endorse this notion and this will be a serious impediment towards designing a mass campaign.

Table 14: Agreement vs disagreement with the notion that nature is strong enough to deal with the negative impacts caused by man – by location of residence (in %)

48% in urban areas and 47% in rural areas then to agree with this statement. On the other hand, 29% in urban areas and 28% in rural areas tend to disagree. This is a discouraging fact that majority of Indians erroneously believe that nature has the power to reset itself against the ills caused by man.

	Urban	Rural
Totally disagree	8.8	5.8
Mostly disagree	20.3	22.3
Neither agree nor disagree	17.5	18.1
Mostly agree	25.9	27.5
Totally agree	21.9	18.9
Can’t say/ Don’t know	5.6	7.4

Base: 7,212 respondents who are aware of the term climate change.

Table 15: Agreement vs disagreement with the notion that nature is strong enough to deal with the negative impacts caused by man – by education (in %)

	Schooling less than primary	Schooling till secondary	Schooling above secondary but not graduation	Graduation and higher
Totally disagree	3.3	5.2	9.8	10.1
Mostly disagree	15.9	18.4	21.0	24.1
Neither agree nor disagree	19.7	20.7	15.9	15.5
Mostly agree	27.7	28.4	23.2	26.2
Totally agree	24.1	21.5	22.7	18.8
Can't say/ Don't know	9.3	5.7	7.4	5.3

Base: 7,212 respondents who are aware of the term climate change.

As before, rejection of this notion was higher with education. However, the very fact that 45% of those who have completed graduation tend to accept that nature will reset itself is an area of concern and will be a serious impediment towards designing a mass campaign.

5.3 Public stand on the inevitability of environmental damage in pursuance of economic growth

The United Nations' Sustainable Development Goals are significant for defining a dual agenda where development targets for people and planet sit alongside each other in a unifying framework. 4 The real question is, how the quest for economic development changes in a world gripped by a changing climate. One school of thought is that if climate change results in more frequent and intense shocks, sustained episodes of fast economic growth will become harder to pull off. The result will be fewer poor countries succeeding in converging on rich country income levels. This calls for a much-needed change in perspective on growth and poverty reduction on the one side versus environmental protection and climate action on the other as decades of environmental destruction have made countries extremely vulnerable to shocks.

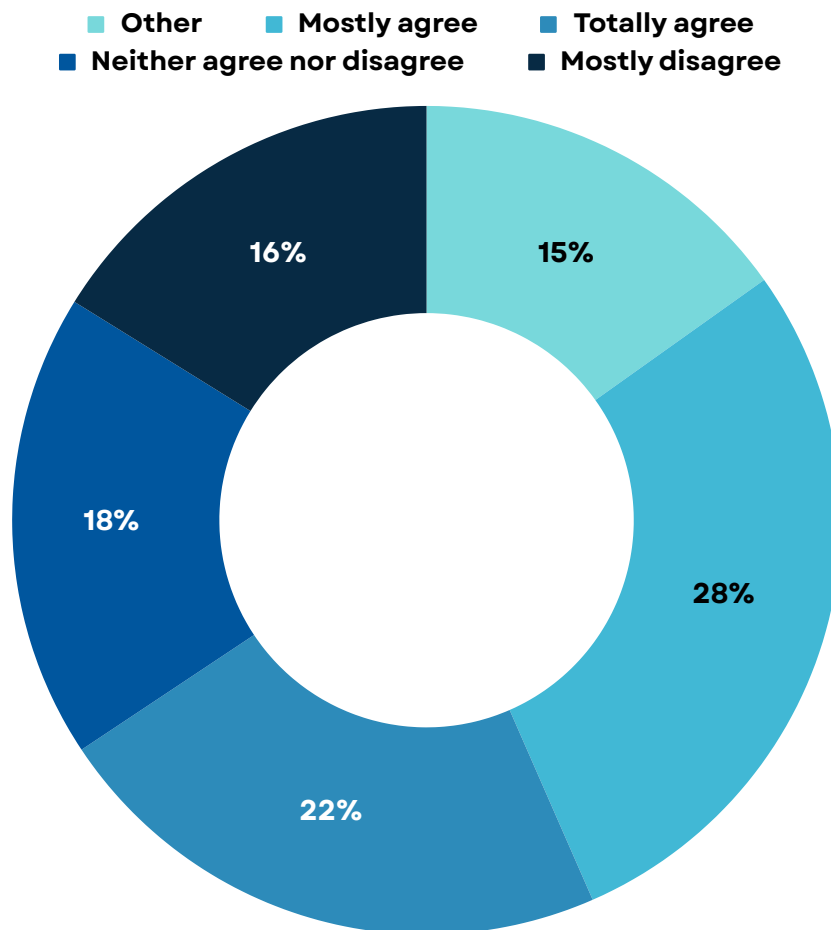
The fact of the matter is, developing countries will be the most severely affected by accelerating climate change and, even excluding China from the calculation, are likely to emit more than half the annual global total of greenhouse gas (GHG) emissions as early as 2030. Developing countries remain concerned that embarking on an energy transition will impede their overall economic growth and hard-won progress in tackling food security, education, health, and other elements of sustainable development. The political economy of transition to a low-carbon economy can be daunting. Vested interests in coal and fossil-fuel industries can be strong and geographic imbalances between winners and losers complicate the politics of change.



This global debate is intrinsic to India's development aspirations as well. Will continued economic growth bring ever greater harm to earth's environment or do increase in income and wealth sow the seeds for reduction in ecological problem? Or are we putting the cart before the horse.

In this context this survey sought public opinion on whether Indians believed that to grow the economy, some damage to the environment is inevitable. One in two Indians tend to agree with this statement. There is no right or wrong answer in this particular case as historically, and across countries, this has been the reality. Rejection of this notion was higher with education but even among education categories, there are more people who accept this notion than reject it.

Figure 12: Agreement vs disagreement with the notion that to grow the economy, some damage to the environment is inevitable

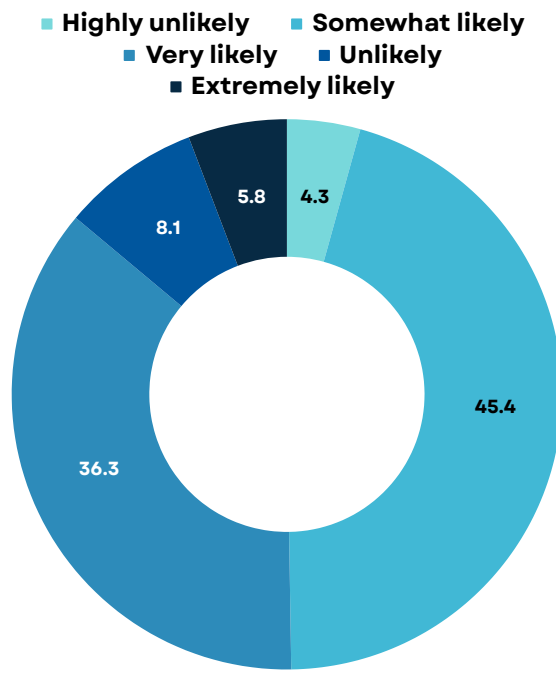


Base: 7,212 respondents who are aware of the term climate change.

5.4 Opinions divided among Indians whether unrestricted climate change can adversely impact the well-being of future generations

The survey further enquired as to whether Indians they believed changes in the climate will adversely impact the personal health and safety of the future generation if nothing is done about it now. The survey data suggests that majority of Indians feel that India’s climate has changed over the past two decades (more than a third believe it has changed quite a bit). However, the responses also suggest that Indians don’t necessarily feel that there is a need to present the panic button immediately.

Figure 13: Public opinion on the likelihood that changes in the climate can adversely impact the personal health and safety of the future generation if nothing is done about it now



Base = 10,779 adults

Table 16: Whether education shapes opinions regarding whether changes in the climate will adversely impact the personal health and safety of the future generation if nothing is done about it

	Schooling less than primary	Schooling till secondary	Schooling above secondary but not graduation	Graduation and higher
Unlikely	19.0	15.2	12.1	7.8
Somewhat likely	46.1	47.1	44.1	40.6
Likely	34.9	37.7	43.8	51.6

Base = 10,779 adults



An appreciation of the gravity of the problem that climate change can cause to the future generations is better appreciated by the educated, with respondents with higher education qualifications expressing greater concern than those who with limited schooling.

5.5 Degree of concern people have on the issue of climate change

The final piece under this section looks at the degree of concern people have on the issue of climate change. About 38% of urban residents and 31% of rural residents were significantly concerned about the way India’s climate has been changing. The level of education does not seem to be a major determinant in this case even though it is a fact that nearly 40% of the most educated segment in the sample expressed concern over the fact that the climate is changing as against 33% among those with limited schooling.

Table 17: Level of concern that Indians have with the fact that the climate is changing for the worse

	Schooling less than primary	Schooling till secondary	Schooling above secondary, not graduation	Graduation and higher	Urban	Rural
Not at all concerned	6.8	6.5	7.5	2.9	6.0	5.2
Not concerned	18.6	12.5	9.8	9.5	10.3	14.5
Somewhat concerned	39.6	47.4	49.0	47.1	45.8	48.2
Very concerned	28.1	28.8	29.8	34.9	32.5	27.7
Extremely concerned	6.9	4.7	3.8	5.6	5.4	4.4

Base = 10,779 adults

6.0 Are Indian lifestyles conducive to sustainable living?

6.1 Proportion of Indians having adopted different sustainable lifestyle options

By 2050, the world's population may reach a whopping 10 billion and with more people comes more demand for food, fashion, travel, housing, and related aspirations. In a world already stretched thin for resources and under the threat of global biodiversity loss and climate change, our lifestyles decisions are putting the planet at risk. For this reason, Sustainable living and lifestyles for the first time appear in the Sustainable Development Goals (4 Education and 12.8 Responsible Consumption).

Irrespective of whether they have heard of the terminologies, the survey tries to investigate to what extent an average Indian adult had adopted sustainable practices in their daily lives. The survey has also tried to decipher whether the extent of adoption of different practices is determined by the respondents' demographic characteristics.





Table 18: Proportion of Indians who have adopted different sustainable lifestyle options in their daily lives

	Urban	Rural
Walk/Cycle to the market to buy monthly groceries	70.4	73.7
Use public transport to go to work	65.8	57.4
Sort waste at home	59.5	39.4
Use energy-efficient (CFL or LED) lightbulbs	83.9	76.2
Pay attention to water consumption by reducing water wastage	91.0	89.6
Grow fruits/vegetables in your kitchen garden	24.4	52.7
Do not use plastic bags	46.2	50.7
Donate clothes to charity	43.2	16.6
Carry my own bag when I go to the market to buy vegetables	89.6	88.7
Convert organic waste generated at home into compost	20.5	40.9
Part/all of the electricity I consume at home is generated using solar panels	15.6	7.9

Base = 10,779 adults

6.2 Key determinants of adoption of sustainable lifestyles

In the following analysis, we looked at the average number of sustainable practices adopted by the survey population in their personal lives against a range of dependent variables and found that there are three conditions that act as significant determinants to adoption, viz.

1. Whether or not Indians are aware of the term climate change and/or global warming
2. Whether Indians believe India's climate/weather pattern has significantly changed over time
3. Whether climate change has adversely affected their lives and livelihood

By running a two sample t-test with equal variances, we found that if we consider the mean number of practices adopted by individuals, then there is a clear statistical difference between:

- Those who are aware of the term(s) climate change and/or global warming as against those who are not
- Those who believe India's climate has significantly changed over the past 2 decades as against those who did not
- Those who believe climate change has adversely affected their lives as against those who believe otherwise

Table 19: What are the key determinants of adoption?

	Mean number of sustainable practices adopted (out of 11)	Significance
Whether aware of the term climate change and/or global warming		
Yes	6.5	Difference is significant at 1% level
No	5.7	
Whether they believe India's climate/weather pattern has significantly changed over time		
Yes	6.3	Difference is significant at 1% level
No	5.5	
Whether climate change has adversely affected their lives and livelihood		
Yes	6.4	Difference is significant at 1% level
No	6.0	

Base = 10,779 adults for first two questions. For the last question Base = 10,282 respondents who feel climate has changed

7.0 Understanding of what activities negatively impact sustainability

Humans impact the physical environment in many ways: overpopulation, pollution, burning fossil fuels, and deforestation. Changes like these have triggered climate change, soil erosion, poor air quality, and undrinkable water. Climate change, driven primarily by human activities, is one of the most critical environmental challenges of our time. The burning of fossil fuels, deforestation, industrial emissions, and other human activities release greenhouse gasses into the atmosphere, leading to a warming planet.





Deforestation stands as one of the most concerning human activities impacting the environment. The consequences of deforestation are far-reaching. Biodiversity loss is among the most pressing issues, as many species lose their natural habitats, pushing them closer to extinction. Additionally, forests play a crucial role in carbon sequestration, and their destruction contributes significantly to greenhouse gas emissions, further exacerbating climate change.

Our insatiable appetite for fossil fuels, such as coal, oil, and natural gas, drives much of our energy production. However, the combustion of these non-renewable resources releases copious amounts of greenhouse gases into the atmosphere, creating a thickening blanket around the Earth, trapping heat, and leading to global warming. The consequences are stark, with rising sea levels, more frequent extreme weather events, and disruptions to ecosystems and agriculture.

The rapid rise of industrialization has undoubtedly fueled economic growth and technological advancements. However, it has also given rise to a significant environmental concern – air pollution. Industrial activities emit a wide array of harmful pollutants, including particulate matter, nitrogen oxides, sulfur dioxide, and volatile organic compounds. These pollutants not only compromise air quality but also contribute to the formation of smog and acid rain. The consequences of air pollution are severe, affecting both human health and the environment. Respiratory problems, cardiovascular diseases, and other health issues are becoming more prevalent in areas with high pollution levels. Additionally, acid rain can damage soil, water bodies, and vegetation, causing long-term ecological damage.

Modern agriculture has undoubtedly enabled us to feed a growing global population, but it has also taken a toll on our precious soil. Intensive farming practices, such as heavy pesticide and fertilizer use, monoculture, and overgrazing, have led to soil degradation. Soil erosion, a direct consequence of unsustainable agricultural practices, results in the loss of fertile topsoil. Moreover, excessive use of chemical fertilizers and pesticides leads to water pollution. These chemicals leach into rivers, lakes, and groundwater, causing harmful effects on aquatic life and posing risks to human health.



Water pollution, a dire consequence of human activities, poses a significant threat to our planet's aquatic ecosystems and human health. From industrial discharges to agricultural runoff and improper waste disposal, various sources contribute to contaminating our water bodies. Contaminated water poses severe health risks to humans who rely on it for drinking, cooking, and bathing.

Overfishing, driven by the increasing demand for seafood, poses a grave threat to marine biodiversity and the delicate balance of marine ecosystems. As fishing practices become more efficient and industrialized, many fish populations face depletion, pushing them to the brink of collapse.

The modern world's consumer-driven lifestyle has led to an alarming surge in waste generation, creating a pressing environmental challenge. From plastic packaging to electronic waste, the improper disposal of waste poses significant risks to our planet. Waste that ends up in landfills generates greenhouse gases, contributing to climate change. Improperly managed waste can also leach harmful substances into the soil and contaminate water sources, further impacting biodiversity and human health.

The rapid expansion of cities and urban areas has reshaped landscapes and posed significant challenges for the environment. Urbanization leads to habitat fragmentation, as natural habitats are fragmented and isolated by roads, buildings, and infrastructure. As urban areas grow, wildlife is displaced from their natural habitats, leading to biodiversity loss and potential conflicts between humans and animals. In a world driven by consumerism, the relentless pursuit of goods takes a toll on the Earth's finite resources. The ever-increasing demand for products like electronics, clothing, and food puts immense pressure on natural resources and ecosystems.

The extraction of non-renewable resources, such as fossil fuels and minerals, depletes these valuable assets, leading to environmental degradation and irreversible damage to ecosystems. Additionally, excessive consumption contributes to waste generation, pollution, and greenhouse gas emissions. The current survey also explored perception of Indians regarding what activities negatively impacts the environment. From a set of nine different option (or human interventions), the survey participants were asked to indicate which activities they felt result in high negative impact, moderate negative impact, and relatively low impact on the environment.

Table 20: Perception of what activities negatively impacts the environment the most

	High impact	Moderate impact	Low impact	Don't know
Industrial pollution, both being released in the air as well as water	59.3	26.8	10.5	3.4
Rampant construction activities	31.8	38.9	21.7	7.7
Exponential growth of vehicles on the streets	59.6	28.1	9.9	2.5
Increasing demand for more and more electricity	29.8	36.0	25.6	8.6
Burning of fossil fuels to meet growing energy demand	35.6	29.5	16.2	18.7
Burning of agricultural stubble	28.2	29.0	35.5	7.3
Livestock breeding	9.9	15.0	51.0	24.1
Deforestation	70.7	18.2	9.1	1.9
Poor waste management	42.7	32.2	20.6	4.6

Base = 10,779 adults

As the data suggests, deforestation, industrial pollution, and vehicular pollution tops the list of activities that people believe are the most responsible for environmental degradation in India. One on four people did not know that livestock breeding had any link with the environment and among those who could venture an opinion, most thought that this had low impact.



Table 21: Education as a determinant of perception of what activities highly impacts the environment

	Schooling less than primary	Schooling till secondary	Schooling above secondary but not graduation	Graduation and higher
Industrial pollution, both being released in the air as well as water	45.3	53.5	63.0	71.0
Rampant construction activities	20.8	29.9	33.0	38.2
Exponential growth of vehicles on the streets	43.0	56.1	66.7	66.5
Increasing demand for more and more electricity	17.7	28.2	36.8	32.1
Burning of fossil fuels to meet growing energy demand	20.8	35.1	45.5	51.9
Burning of agricultural stubble	17.6	26.6	29.9	33.8
Livestock breeding	3.8	8.5	15.6	18.2
Deforestation	57.9	66.0	77.1	78.5
Poor waste management	29.7	40.0	46.3	49.5

Base = 10,779 adults

Once again, we see that highly educated individuals are far more aware of the different activities that negatively impact our environment than those with lower levels of education. However, the top three issues cited remain the same across categories.

8.0 Public perception regarding accountability

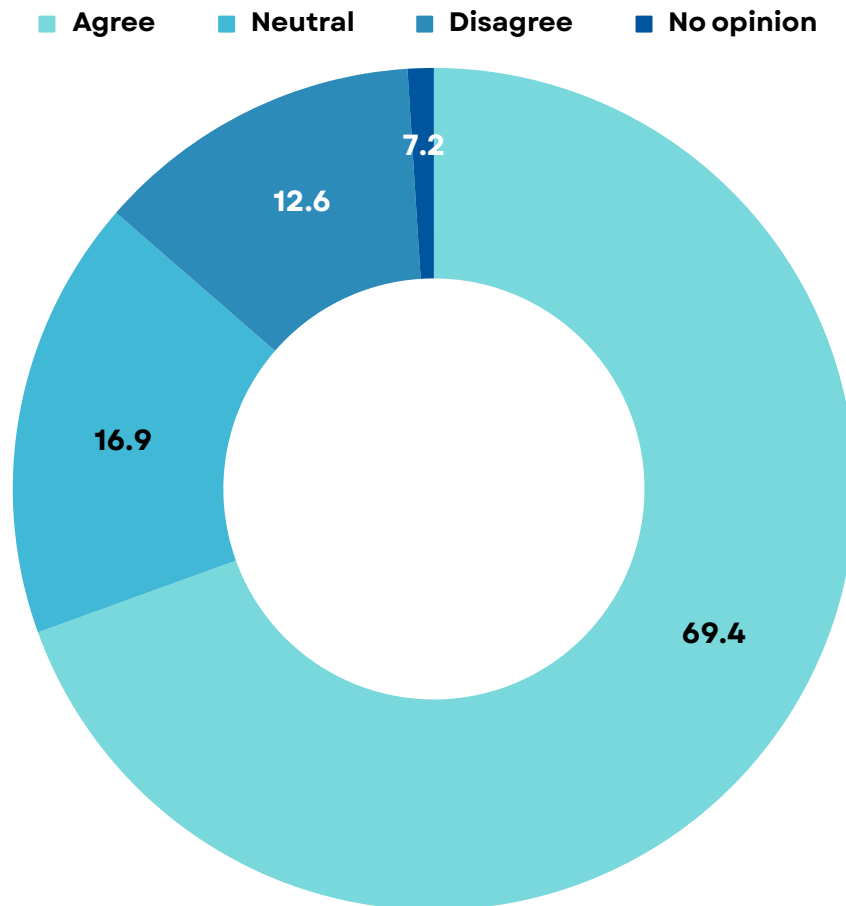
Under this section, we explore public opinion on who they feel needs to be held accountable and who bears the responsibility for affirmative action on climate change. The different constructs that were tested include acceptance that it is irresponsible human behaviour which is responsible climate change, the responsibility of the developed nations for exacerbating the situation in pursuit of rapid industrialisation, what should be India's role and stance, and that role can be plaid by common citizens.





8.1 Is irresponsible human action the primary cause of climate change?

Figure 14: Extent of agreement or disagreement with the notion that irresponsible human actions primarily cause climate change (in %)



Base: 7,212 respondents who are aware of the term climate change.

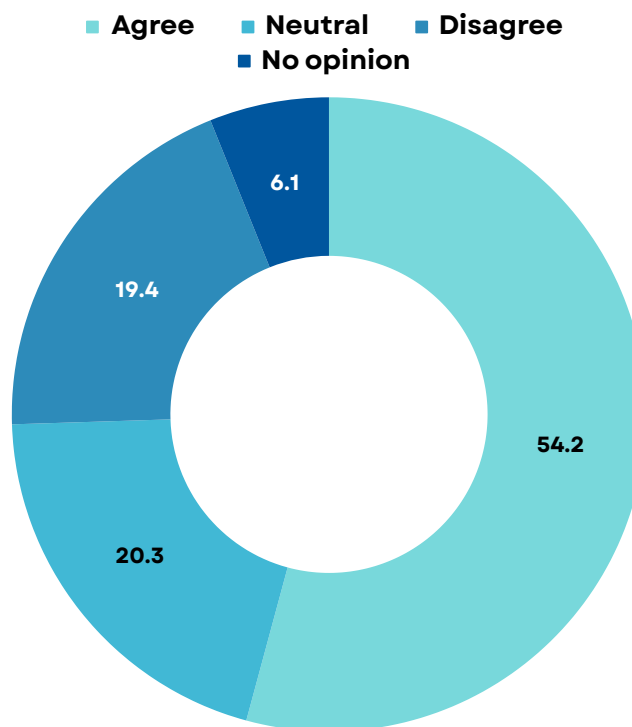
Close to 70% of the respondents across urban and rural India have expressed their agreement with this notion, i.e. collective consciousness in India seems to have accepted that climate change phenomena is made. This is a positive sign and should be the central theme around which any campaign is built. The acceptance of the human hand in causing climate change is a notion that is more acceptable to the highly literate (68%) as against those with schooling less than primary (62%). But overall, all education categories display an openness to this notion.

8.2 The developed nations should bear the responsibility of addressing climate change

“Wealthy countries are disproportionately responsible for the climate crisis, and they have the double responsibility to both cut emissions at home and to support developing countries with the costs of replanting crops and rebuilding homes after storms, and moving from dirty energy forms to cleaner, lower carbon ones”.

The survey checked the pulse of the Indian public regarding this sentiment. All participants who were aware of the term climate change or global warming were asked whether they believed developed nations of the west have caused the problem, so they are the ones that need to take care of it.

Figure 15: Extent of agreement or disagreement with the notion that developed nations of the west have caused the problem, so they are the ones that need to take care of it



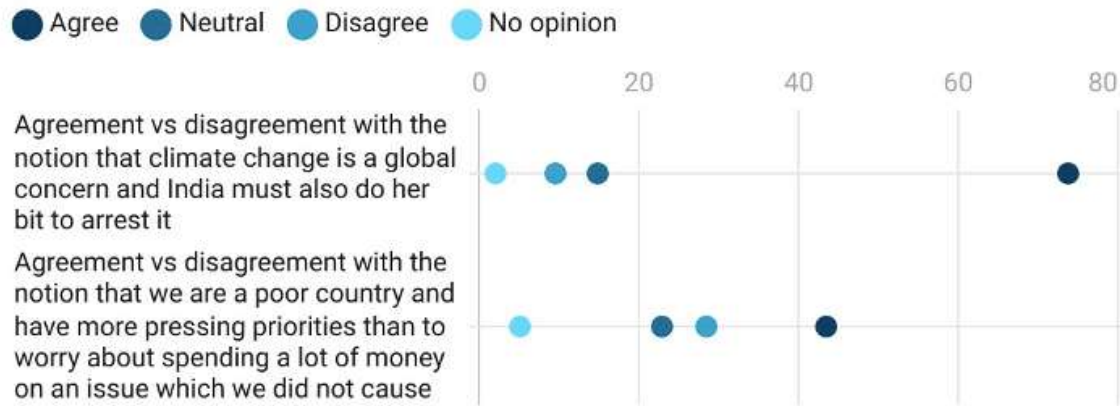
Base: 7,212 respondents who are aware of the term climate change.

Close to 54% of the respondents have expressed their agreement with this notion. It may be noted that this is not an endorsement of the fact that as Indians we do nothing. This is simply a statement on what an average Indian think is the responsible party and who should bear the bulk of the burden to take affirmative action. It may be noted that less than 20% actually disagreed with this notion, further strengthening the prevalent sentiment held by Indians that disproportionate responsibility should lie with the nations that have polluted the environment more than other countries over the last millennia.

There does not seem to be a significant difference in acknowledgement of this notion among the different education categories except for the fact that gradually, higher the level of education the more likely is a person to reject the notion.

8.3 Public opinion on the role India should be expected to play towards climate action

Figure 16: Extent of agreement or disagreement with the notions pertaining to the role that Government of India should be playing when it comes to climate action (in %)



Base: 7,212 respondents who are aware of the term climate change.

Recent scientific study estimates that India is responsible for 0.08 degrees Celsius of warming from the 1850s through 2021. India’s emissions of carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) from 1851-2021 have resulted in 0.04°C, 0.03°C and 0.006°C of global warming over pre-industrial levels, respectively. Overall, the country ranks fifth among the top 10 contributors to warming, the research published in Scientific Data found.

Since 2005, India climbed to the fifth spot from the 10th. China, too, rose to the second position after overtaking Russia. India is growing so rapidly that its energy demand is effectively insatiable. India contributes 7% of the emissions that cause global warming today, a percentage that will expand alongside its economy. This growth will help determine whether—and by how far—the world blows past the goal of keeping global temperatures from rising more than the Paris Agreement target of 1.5°C. Equally important, India’s approach is being watched elsewhere. If it can use low-carbon development to bring prosperity to its 1.4 billion people, others will follow. Failure could lead to a retrenchment into fossil fuels across the Global South

In this context, the high percentage of people agreeing to the notion that the world’s concern is also India’s concern and we as a nation are also responsible for taking affirmative action is a positive sign. Agreement is high across all education categories with 66% with a few years of schooling also endorsing this notion. Naturally, over 80% of the graduates were positive towards this thought.

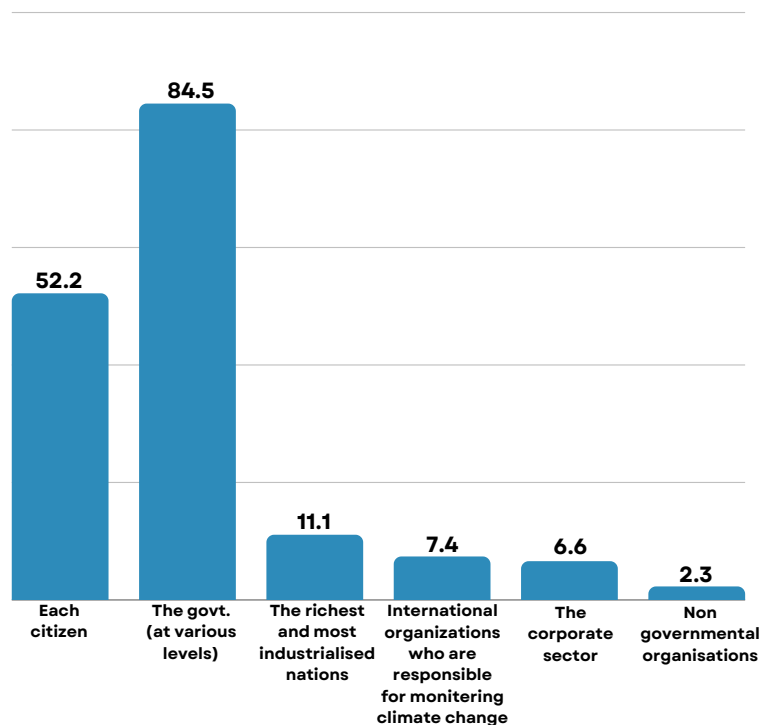
On the other hand, the fact that over 40% of Indians endorse the thought that we are a poor country and have more pressing priorities than to worry about spending a lot of money on an issue which we did not cause does not hold water given that we are the fifth largest economy in the world and a significant contributor to global warming.

8.4 Public opinion on who bears the responsibility towards protecting the environment and mitigating effects of climate change

Nations struck a historic deal on Wednesday at the COP28 climate summit in Dubai to transition the global economy away from fossil fuels. The headline agreement in the COP28 pact was a provision that calls for “transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner ... so as to achieve net zero by 2050 in keeping with the science.”

For this to happen, national governments will have to enact appropriate policies and recalibrate their own development pathways to adopt a more climate friendly approach. But at the same time, this will also require a paradigm shift in the way individual citizens think and act in their daily lives, moving from a pure consumption-centric to a more sustainable living model. The question is, are Indians willing to take on this responsibility? The survey reveals that many in India believe that the onus on affirmative action lies with individual citizens.

Figure 17: Most Indians willing to play a role towards tackling climate challenge (in %)



Base: 7,212 respondents who are aware of the term climate change.

Respondents across all sections believed that the first and foremost responsibility of protecting the environment falls with the union, regional, and local governments, but this is followed by citizens themselves. Central and state governments are seen as the key responsible parties. A higher share of respondents sees the central government as the most responsible than state government. More rural respondents see government as the primary responsible party than urban ones.



About the Development Intelligence Unit (DIU)

The Development Intelligence Unit (DIU) brings data and expert analysis to the intersection of opportunity and deprivation in rural India. The DIU supports stakeholders who navigate the increasingly opaque, complex, and uncertain world of data to analyse social and economic developments, forecast trends, and better understand development programmes and practices. Doing so provides actionable insight to improve the efficacy and effectiveness of development initiatives.

The DIU platform is a clearinghouse of rural information presented in a user-friendly format, addressing the needs of diverse stakeholders in public, private, and civil society. It brings rural India into focus and furthers the field of rural analytics for understanding, positioning, and informing stakeholders and decision-makers.

DIU specialises in evidence-based insights that will create an impact for governments and non-profits. It has the expertise to develop data-driven solutions to public policy challenges based on robust evidence, expert insights, and data analysis. It is providing data, research, and tools to amplify issues in order to help rural India gain a voice, spark deeper conversation and help shape the future of India.



About Mint

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