

Global Warming: Impending Disaster or a Hoax

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ABSTRACT

Despite the consensual findings by the scientific community on global climate change threatening dire consequences, there remains a yawning gap between its recommendations and the actions of the public and policy makers. However, in spite of warnings, not much human activity or alarm is in sight to counter the predicted calamity. Why are there no long-term, comprehensive, and legally binding policy commitments in sight at the national and international level? Will the differences and gaps in communication between the two opposing sides lead to extinction of human race and convert the globe into a mass grave for humanity?

This study seeks examine the way the public treats and perceives the threatened environmental disaster due to global warming and other players involved. It identifies those factors' impact on the public support to global climate change policies or behavioral changes to reduce greenhouse gas emissions.

It is however, encouraging that positive views about environmental laws and regulations are getting more common among adults with more education. In US, roughly three-quarters of those with a college degree or more (74 per cent) say stricter environmental laws are worth the cost, compared with 59 per cent of those without a college degree (Pew Research Centre, 22 January 2019). Among the US ruling party's moderates and liberals (who make up about a third of all Republicans and supporters), 60 per cent say stricter environmental laws are worth the cost.

Key words: Environment Greenhouse Effect, Carbon Emissions, Hoax Global warming Paris Agreement Marine, Snow Melting.

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Background and Introduction

The Khumbu Glacier near Mount Everest in Nepal is one of the longest in the world. A report, the Hindu Kush Himalaya Assessment (released on 4 February 2019)¹, warns if global warming and greenhouse gas emissions continue at their current rates, rising temperatures in the Himalayas will melt minimum one-third of the region's glaciers by the end of the century. The study that was put together over five years by 210 authors, includes input from more than 350 researchers and policymakers from 22 countries, reveals the Himalayas could heat up by 4.4 degrees Celsius by century's end that will spark radical disruptions to food and water supplies, and mass population displacement (Bhadra Sharma: NYT: February 2019)².

Glaciers in the Hindu Kush Himalayan Region, which spans over 2,000 miles of Asia, provide water resources to around a quarter of the world's population. "This is a climate crisis you have not heard of," said Philippus Wester, a lead author of the report³. "Impacts on people in the region, already one of the world's most fragile and hazard-prone mountain regions, will range from worsened air pollution to an increase in extreme weather events."

In October 2018, a United Nations' scientific panel on climate change had warned that the continuing greenhouse gas emissions would warm up the atmosphere by as much as 1.5 degrees Celsius above pre-industrial levels by 2040⁴. Avoiding further damage from this rise would require transforming the world economy at a speed and scale that has "no documented historic precedent," the panel report stated.

Meanwhile NASA scientists have also revealed (Wednesday, 6 February 2019)⁵ that the Earth's average surface temperature in 2018 was the fourth highest in nearly 140 years of record-keeping and a continuation of an unmistakable warming trend, reports the New York Times.

The quickly rising temperatures over the past two decades cap a much longer warming trend documented by researchers and correspond with the scientific consensus that climate change is caused by human activity, according to the report (Kai Schultz, 2019)⁶. "We're no longer talking about a situation where global warming is something in the future," said Gavin A. Schmidt, director of the Goddard Institute for Space Studies (NASA)⁷. "It's here. It's now." Scientists have linked climate change to destructive hurricanes like Michael and Florence in 2018, and have found links to such phenomena as the polar vortex, which recently delivered bone-chilling blasts to the American Mid-west and North-east. They have also linked the rapid warming to the heat waves in Australia and extended droughts to coastal flooding in the United States, in disappearing Arctic ice and shrinking glaciers.

Scientists have warned that global warming will put pressure on the world's food supplies in coming decades. A report (Kendra Pierre-Louis, 28 February 2019, NYT) says, fish populations are declining as oceans warm, putting a key source of food and income at risk for millions of people around the world. As the oceans have warmed, some regions have been particularly hard-hit. In the northeast Atlantic Ocean and the Sea of Japan, fish populations declined by as much as 35 per cent over the period of the study.

Environment analystss John Schwartz and NadjaPopovich say the Earth's temperature in 2018 was more than one degree Celsius above the average temperature of the late 19th century, when humans started pumping large amounts of carbon dioxide into the atmosphere⁸. The sudden rise in temperatures and its clear correlation with increasing levels of greenhouse gases like carbon dioxide and methane produced by human activity can now be ignored only at the world's risk. Scientists foresee the worst consequences of climate change due to global temperatures in case they rise by more than two degrees Celsius compared with pre-industrial levels.

The global community agreed in the Paris Climate Agreement (2017) to recognize climate change as man-made and to work together on a common response⁹. The decision was based on scientific advice, with 97 per cent of climate researchers agreeing that the current period of global warming has been caused by human activity.

"There is no way to mitigate climate change without getting rid of coal," said Drew Shindell, a climate scientist at Duke University and an author of the report¹⁰.

The science on the environmental issue seems to be settled. But is everyone convinced about the warning? The report says that heavy taxes or prices on carbon dioxide emissions are the need of the day. But such a move would be almost politically impossible in the United States, the world's largest economy and second-largest greenhouse gas emitter next to China. Lawmakers around the world, including in China, the European Union and California, have enacted carbon pricing programs. The most prominent climate sceptic in the world is American President Donald Trump, who tweeted that climate change is an invention of the Chinese designed to harm the American economy. Many attributed to the Alternative for Germany (AfD) party which, in their election program, accepted that climate change is occurring but denied that humanity is influencing its development.

The globally-recognized scientific body for climate research is the Inter-governmental Panel on Climate Change (IPCC) that produces climate change reports for the United Nations¹¹. But the credibility of this organization has been attacked. In 2009, errors appeared in one

IPCC report. It was immediately seized upon by critics of the IPCC. President Trump, who has mocked the science of human-caused climate change, has vowed to increase the burning of coal and said he intends to withdraw from the Paris agreement. And in Brazil, the newly elected President, the world's seventh-largest emitter of greenhouse gas, voters appeared on track to elect a new president, Jair Bolsonaro, said he also planned to withdraw from the accord.

The World Coal Association disputed that stopping global warming calls for an end of coal use. In a statement, Katie Warrick, its interim chief executive, noted that forecasts from the International Energy Agency, a global analysis organization, "continue to see a role for coal in the foreseeable future ¹²." She said her organization intends to campaign for governments to invest in carbon capture technology. Such technology, which is currently too expensive for commercial use, could allow coal to continue to be widely used.

According to climatologist Hans von Storch, Professor (Meteorological Institute of the University of Hamburg), and Director (Institute for Coastal Research at the Helmholtz Research Centre in Geesthacht, Germany): "We have no reliable empirical evidence about this; but we have done informal polls ¹³. It turns out that quite a few people who see themselves as sceptics are motivated by the rejection of political decisions made in response to climate change being man-made".

Dean Burnett a prominent environmentalist calls climate change a myth. According to Burnett, evidence for "global warming" does not stand up ¹⁴. "You ever leave an ice cube in your drink last longer than five minutes? It melts, and yet we're meant to believe these "ice caps" lasted millions of years". About the supposed food crisis, Burnett denies it is due to climate change. He views it "a price-fixing conspiracy by the global bakery mega-corporation where 78 per cent of all food in the country is sold by Greggs". About the feared mass extinctions, the dissenter put it on nature. "Dinosaurs went extinct millions of years before we humans ever appeared, are we supposed to take the blame for that too?"

According to Bradley Jones from Pew Research Center (9 February 2019), US Republicans and Democrats have long held differing views about policy solutions ¹⁵. Two-thirds of Democrats and Democratic leaners identify global climate change as a top priority, while just 21 per cent of Republicans and Republican leaners say the same.

Problem Statement and Objective

Obviously, despite the consensus findings on global climate change presented by the scientific community, there remains a yawning gap between its recommendations and the

actions of the public and policy makers. Why in spite of warnings, not much human activity or alarm is in sight to counter the predicted calamity; has the media failed to successfully communicate the urgency of the situation; why are there no long-term, comprehensive, and legally binding policy commitments in sight at the national and international level? Will the differences and gaps in communication between the two opposing sides lead to extinction of human race and convert the globe into a mass grave for humanity and human existence?

This study examines the way the public treats and perceives these environmental threats and other perceptual factors. It identifies those perception factors' impact on the public support to global climate change policies or behavioral changes to reduce greenhouse gas emissions and improve urban will.

Significance of Research

Offering insight into climate change and risk communication, this work should interest students and scholars of environment studies, politics, urban planning, and media and cultural studies.

Data for Study

The Washington Times in 2017 had sought views of various people about the controversy surrounding issue of environment protection. The opinions received were diverse ¹⁶. Matej Zagorc (30 November 2017) felt climate change has been going on since the planet was formed ¹⁷. "They even found traces of a forest in Antarctica", she said sounding complacent. Tarquin Farquhar (2 December 2017) held: "Humans are not yet immortal and thus it is impossible to confirm the assertions propounded by the theory of 'global warming'. However – the concept of 'Pascal's Wager' could be used to support the theory of global warming". Tony Goodchild (28 July 2018) sounded pragmatic and refused to go into the merits of the problem: "Why gamble with denying global warming when the ramifications of doing so are cataclysmic. Indeed, there are so many environmental and energy benefits associated with countering perceived global warming threats that to do otherwise is illogical" ¹⁸. Tony was also critical of the critics: "They think the idea of it being manmade is a hoax due to the lack of actual evidence. They (deniers) are willfully deaf to the evidence because they know that the implications would mean radical changes to their way of life", he added. <https://www.sciencebuddies.org/science-fair-projects/science-fair/steps-of-the-scientific-method>

Marko Martinović (30 November 2017) said: "There was always climate change since there was climate. Question is how much humans are influencing our climate and why so many

scientific predictions were dead wrong. There is also political aspect to it, and politics now is forcing itself on science”¹⁹.

Karolina (1 December 2017) said: “The climate has been changing since Earth has existed. Iceland was settled because it was warmer at the time. And ancient Greece used to have a tropical climate. We know that already. What annoys people is the insistence that 1. all of this change is because of human activity; 2. that it has to be reversed; 3. that normal people have to pay for it when it is mostly big companies that pollute the atmosphere”²⁰.

Many opinions focused that there are many coastal places threatened by flooding, but “isn’t that something normal that the water erodes the soil and advances on cities? Why have such heavy buildings been built on land reclaimed from the sea?”

Some dismissed the ‘problem’ as political maneuvering. “A very recent example was the deadly flooding in Athens about a week ago. Athens has seen illegal building outside of town plan and in the paths of creeks and brooks, deforestation, etc. since antiquity and everybody in Greece knows this. This is what has been causing the flooding since always. But the BBC reported it as a sign of climate change... There is proper brainwashing that is going on with regard to this issue”.

Hans Von Storch(5 December 2017) was cautious: “climate has always changed, it is changing now and thus the present change. But it is special – the issue is the speed of change²¹. The present change, across the past several decades, is faster than what you would expect from natural (and internal dynamics) causes”.

Sherrie Heckendorn(12 December 2017)sounded serious: “Anyone with a brain can read and research and thus that human activity has sped up the natural progression of climate change”²².Franz Moisi(14 January 2018) attributed the problem to politics and re-settlements: “In the US there is a big tradition of manipulating the public opinion with huge campaigns financed by political groups and or companies. When the temperature rises more than 2°C and therefore the rainforest burn down, the ice shields disappear (which causes less sunlight reflection) and the methane hydrate and permafrost thaw, the temperature will rise additionally 2 to 7°C. That causes whole agriculture systems to fail, water will be more scarce, cities like New York City or Shanghai and countries like the Netherlands and Bangladesh will just drown in the sea and billions of people will have to migrate somewhere else. So either we manage to do something now or the “costs” will be 1000 times higher in 100 years. That’s all the problem is”²³.

Analysis:

A thoughtful analysis of the views put forward by the supporters and dissenters of the global warming theory shows that the supporters of the global warming have based their facts on scientific data and certain human activity that is pushing the temperature further. It is also clear that the temperature of the earth is rising and its effects are also visible. It is also clear that the rise in temperature is due to higher carbon emissions in atmosphere and reducing them would help in lowering the heat. The critics of the theory contend that environment has always been changing and dismiss the catastrophic fall out as a myth. Their complaisance looks motivated largely by the inconvenience they might suffer due to changes suggested in their life style and also damage to their business interests. Some may liken the scenario to frequent mindless shootings and untimely deaths with US Presidents. It may also be observed that critics of the warming theory are largely the supporters of big powerful business lobby in the country.

Critics of the global warming theory point to lack of evidence in the theory. Dave W. (8 October 2018) commented: “We have a lot of evidence. Look at the sky in China, you can barely see blue. The sky is covered in smoke there which is not good for Earth and for the people who live there. Have you seen our oceans? They are already 15% filled with plastic. By 2075, there will be more plastic than fish in the oceans. Is that not enough proof for you?”
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According to Dave, one way to control the disastrous results is Carbon Fee and Dividend (CFD). This concept would place costs for pollution on the products that create those costs. “It’s market-based, revenue-neutral, and economically sound for our country and the world”, he said.

In face of scientists’ warning let us have a look at the present ecological conditions across the world. All over, glacier volumes are projected to decline up to 90 percent this century from decreased snowfall, increased snowline elevations and longer melt seasons.

Access to water is also a concern. Kai Schultz reported from New Delhi (February 2019)²⁵ that last spring, shortages were so severe in the Indian city of Shimla, in the Himalayas, that some residents asked tourists to stop visiting so that they would have enough water for themselves. A government report released last year found that India was experiencing the worst water crisis in its history. About half of India’s population, around 600 million people, faced extreme water scarcities, the report found. By 2030, the country’s demand for water is likely to be twice the available supply.

In neighboring Nepal, rising temperatures have already uprooted people. Snow cover is shrinking in mountain villages, and rain patterns are less predictable. Bhadra Sharma from Kathmandu, Nepal reports fertile land once used for growing vegetables has become barren²⁶. “Water sources have dried up,” the report said. Quoting PasangTsheringGurung, a farmer from the village of Samjong, which is about 13,000 feet above level: “We will be landless refugees. How can we survive in the Himalayas without water?”²⁷

Around South Asia, the impact of climate change has already intensified. Brutal heat waves are becoming unbearable, making people sicker and poorer, and diminishing the living standards of 800 million people (NYT: ‘Climate Crisis’ May Melt Most Himalayan Glaciers by 2100; 5 February 2019; Page 11)²⁷.

According to NadjaPopovich (February 2019), global warming is melting glaciers in Greenland and Antarctica, but for millions of people, ice is vanishing closer home as lakes lose their winter cover²⁹. In a study published January 2019 in the journal Nature Climate Change, scientists for the first time quantified the effects of rising temperatures on ice cover across 1.4 million lakes in the Northern Hemisphere³⁰. They found that, from Wisconsin to Japan, thousands of lakes that used to freeze reliably every winter already see some years without ice, and that “an extensive loss of lake ice will occur within the next generation.”

The vanishing ice will affect cold-water eco-systems and be felt by millions of people who live near northern lakes, the study said.

“Ice cover acts as a temperature reset for a lake every winter,” says Catherine O’Reilly, an associate professor of Geology at Illinois State University and a co-author of the study. Without winter ice, lakes begin warming earlier in the year. Certain fish — like walleye, salmon and trout — depend on cool, oxygen-rich waters and do not fare well in warm conditions. Ice roads across lakes and rivers also provide wintertime lifelines for many remote areas, including Native American communities in northern Canada.

With temperatures hitting record lows in the mid-west last week, John Magnuson, an aquatic ecologist at the University of Wisconsin, Madison, and a co-author on the Nature study, warned it is important to understand that the loss of lake ice won’t happen all at once but in phases³¹.

SominiSengupta (India’s Climate Casualty Didn’t Have to Be: NYT: 4 August 2018: Page A10) recalled her childhood delta city Kolkata, India where the Ganges pours into the sea³². Somini laments that a city with lots of water now faces intense and more frequent storms, cyclones, river tides and floods. The heat index peaked at 45 degrees Celsius, or 113 degrees

Fahrenheit. Jayanta Basu, an environmental journalist recalled: “Kolkata once had natural defenses: the mighty Ganges to the west, wetlands to the east, all emptying into the mangrove-rich delta region known as the Sundarbans and out to the Bay of Bengal³³. The city’s lakes and creeks could swallow the rains. The rapid extraction of groundwater is causing the landscape to sink. The water of the Bay of Bengal is rising faster than the global average. The city is no stranger to flooding”.

According to the Organization for Economic Cooperation and Development, if the current trajectory of greenhouse gas emissions continues, by 2070 Kolkata is projected to have more people exposed to coastal flooding than any city in the world. Joyashree Roy, a Jadavpur University economist who studies the impact of climate change, said: “Climate models are showing temperature related extremes and rainfall extremes, which we are seeing is already happening”.

Not only the lands but human activity now threatens even marine life with extinction. The seismic air guns probably produce the loudest noise that humans use regularly underwater, and it is about to become far louder in the Atlantic. As part of the Trump administration’s plans to allow offshore drilling for gas and oil exploration, the ban on offshore drilling has been lifted, companies can be granted access to explore regions along the Gulf of Mexico and the Pacific.

Douglas Nowacek, a professor of marine conservation technology at Duke University quotes some scientists that the noises from air guns, ship sonar and general tanker traffic can cause the gradual or even outright death of sea creatures, from the giants to the tiniest — whales, dolphins, fish, squid, octopuses and even plankton³⁶. Other effects include impairing animals’ hearing, brain hemorrhaging and the drowning out of communication sounds important for survival, experts say. Experts fear it is fundamentally disrupting the marine eco-system, diminishing populations of some species as the noise levels disturb feeding, reproduction and social behavior.

A 2017 study, for example, found that a loud blast, softer than the sound of a seismic air gun, killed nearly two-thirds of the zooplankton in three-quarters of a mile on either side³⁷. “Researchers saw a complete absence of life around the air gun,” said Michael Jasny, director of marine mammal protection for the Natural Resources Defense Council, one of several environmental groups suing the federal government in an effort to stop the seismic surveys.

In a landmark study, when ship traffic greatly decreased after the events of Sept. 11, 2001, researchers noted a significant drop in stress hormones in the feces of right whales in the Bay of Fundy in Canada, the first evidence that ship noise can cause chronic stress in whales.

Other studies show that beaked whales are extremely sensitive to noise, and in frantic efforts to escape seismic air guns or navy sonar they have been forced to change their dive patterns to the surface. Some have died from decompression sickness.

According to Alana Paterson (Alarm Underwater; NYT, 22 January 2019; Page D1), loud noises can also affect behavior and even eco-systems by altering where species go ³⁸. In 2008 in Canada's Baffin Bay, seismic testing delayed the southward migration of narwhals — the whales with the long spiral tusk — until it was too late and they became trapped in sea ice. More than 1,000 died.

Ocean noise can also have economic repercussions. Research in Norway shows that commercial fishermen return to the dock with 40 to 80 percent fewer fish when exploration is underway nearby ³⁹.

According to new research published February 2019 in journal Science, the amount of seafood that humans could sustainably harvest from a wide range of species shrank by 4.1 percent from 1930 to 2010, a casualty of human-caused climate change. Chris Free, the lead author of the study published in [the journal Science](#) says: "The ecosystems in East Asia have seen some of the largest decline in fisheries productivity. And that region is home to some of the largest growing human populations and populations that are highly dependent on seafood." Now a postdoctoral researcher at the University of California, Santa Barbara, Dr. Free began the research while a Ph.D. student at Rutgers University.

Conclusion

Politically it may be expedient to overshoot the target and later take steps to get back or below the threshold. But will it be actually feasible to reverse global temperatures once they beat a point? In the meantime, people lose their homes, crops wither, people starve, species die, and the environment is trashed. People from affected communities and perhaps entire nations become environmental refugees. All this because there is too much money to be made now and acknowledging the science means higher taxes and major shifts in industry.

This latest report should be Code Red for the global community. The climate catastrophe is now upon us and denial and ignorance are just death wishes. We need to move quickly to a carbonless energy system consisting of geothermal, hydroelectric, nuclear, solar and wind power. Our own survival depends on it.

Jim Robbins (NYT, 22 January 2019) sees some silver lining in positive views of environmental laws and regulations are getting more common among adults with more education. In US, roughly three-quarters of those with a college degree or more (74 per cent) say stricter environmental laws are worth the cost, compared with 59 per cent of those without a college degree (Pew Research Centre, 22 January 2019). Among the US ruling party's moderates and liberals (who make up about a third of all Republicans and GOP leaners), 60 per cent say stricter environmental laws are worth the cost.

An AFP report by Kendra Pierre-Louis (28 January 2019) says even Mr. Trump, who has repeatedly denied the science of climate change, has recognized the threats where some of his properties are involved⁴⁰. His golf resort in Ireland intends to build two sea walls and cited the risks of global warming in one of its applications for the construction. John Gramlich says, before his presidency, he called climate change a hoax and claimed the idea was perpetuated by the Chinese. In 2018, he sounds different: "I don't think there's a hoax. I do think there's probably a difference. But I don't know that it's man-made." The United States government and hundreds of scientific organizations agree that human activities are primarily responsible for global warming (Brad Plumer: AP, 14 February 2019)⁴¹.

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Research

[NASA Goddard Institute for Space Studies](#) – Global change research

[NOAA State of the Climate Report](#) – U.S. and global monthly state of the climate reports

[Climate Change at the National Academies](#) – repository for reports

[Met Office: Climate Guide](#) – UK National Weather Service

Educational

[Climate Science Special Report](#) United States 2017

[Global Carbon Dioxide Circulation](#) (NASA; 13 December 2016)

Climate change tutorial by Prof. [Myles Allen](#) (Oxford), March 2018: Parts [1](#), [2](#), [3](#), [4](#), [5](#) (45 min. total); [background & slide deck](#)

[Experts Discuss Recent Heat Waves and Atmospheric Changes](#) (July 2018)

Kendra Pierre-Louis

Feb. 28, 2019 Kendra Pierre-Louis is a reporter on the climate team. Before joining The Times in 2017, she covered science and the environment for Popular Science. @kendrawrites Chris Free, the lead author of the study, which appears in the journal Science.

Now a postdoctoral researcher at the University of California, Santa Barbara, Dr. Free began the research while a Ph.D. student at Rutgers University.

Malin L. Pinsky, an associate professor in the School of Environmental and Biological Sciences at Rutgers University and a co-author of the new study. What on Earth Is Going

Dr. Pinsky said.

Trevor Branch, an associate professor at the University of Washington’s School of Aquatic and Fishery Sciences.”

The researchers used a data set of 235 fish populations located in 38 ecological regions around the globe. The detailed data told them not only where the fish were but also how they reacted to environmental effects like changing water temperatures.

A separate study, published Wednesday in the journal Science Advances, found that limiting warming to 2.7 degrees Fahrenheit, or 1.5 degrees Celsius, above preindustrial levels — a goal of the Paris climate agreement — could result in billions of dollars in extra revenue for fisheries globally. Much of that would be in the developing world, where many people rely on fish for protein.

- 1) A report, the Hindu Kush Himalaya Assessment (released on 4 February 2019)
- 2) Bhadra Sharma: NYT: February 2019).
- 3) Philippus Wester, a lead author of the report.
- 4) In October 2018, a United Nations' scientific panel report on climate change.
- 5) Meanwhile NASA scientists have also revealed (Wednesday, 6 February 2019), reports the New York Times.
- 6) Kai Schultz, 2019
- 7) Gavin A. Schmidt, director of the Goddard Institute for Space Studies (NASA).
- 8) Environmentalists John Schwartz and Nadja Popovich.
- 9) The Paris Climate Agreement (2017) to recognize climate change as man-made and to work together on a common response.
- 10) Drew Shindell, a climate scientist at Duke University and an author of the report.
- 11) The globally-recognized scientific body for climate research is the Inter-governmental Panel on Climate Change (IPCC),
- 12) Katie Warrick President The World Coal Association
- 13) According to climatologist Hans von Storch, Professor (Meteorological Institute of the University of Hamburg), and Director (Institute for Coastal Research at the Helmholtz Research Centre in Geesthacht, Germany):
- 14) Dean Burnett a prominent environmentalist calls climate change a myth.
- 15) Bradley Jones from Pew Research Center (9 February 2019)
- 16) The Washington Times in 2017 had sought views of various people about the controversy surrounding issue of environment protection.
- 17) The opinions received were diverse. Matej Zaggy Zagorc (30 November 2017) felt climate change has been going on since the planet was formed
- 18) Tony Goodchild (28 July 2018) <https://www.sciencebuddies.org/science-fair-projects/science-fair/steps-of-the-scientific-method>
- 19) Marko Martinović (30 November 2017)

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- 21) Hans Von Storch (5 December 2017)
- 22) Sherrie Heckendorn (12 December 2017) sounded serious: “Anyone with a brain can read and research and thus that human activity has sped up the natural progression of climate change”
- 23) Franz Moisi(14 January 2018)
- 24) Dave W.(8 October 2018)
- 25) Kai Schultz reported from New Delhi (February 2019) A government report released last year found that India was experiencing the worst water crisis in its history.
- 26) Bhadra Sharma from Kathmandu, Nepal.
- 27) TsheringGurung, a farmer from the village of Samjong, Around South Asia, the impact of climate change has already intensified.
- 28) (NYT:‘Climate Crisis’ May Melt Most Himalayan Glaciers by 2100; 5 February 2019; Page 11).
- 29) According to NadjaPopovich (February 2019),
- 30) In a study published January 2019 in the journal Nature Climate Change, scientists
- 31) John Magnuson, an aquatic ecologist at the University of Wisconsin, Madison, and a co-author on the Nature study.
- 32) SominiSengupta (India’s Climate Casualty Didn’t Have to Be: NYT: 4 August 2018: Page A10)
- 33) JayantaBasu, an environmental journalist
- 34)According to the Organization for Economic Cooperation and Development, if the current trajectory of greenhouse gas emissions continues, by 2070 Kolkata is projected to have more people exposed to coastal flooding than any city in the world.
- 35)Joyashree Roy, a Jadavpur University economist
- 36)Douglas Nowacek, a professor of marine conservation technology at Duke University
- 37)A 2017 study, Michael Jasny, director of marine mammal protection for the Natural Resources Defense Council, one of several environmental groups suing the federal government in an effort to stop the seismic surveys. In a landmark study
- 38)Alana Paterson (Alarm Underwater; NYT, 22 January 2019; Page D1),
- 39)Research in Norway Jim Robbins (NYT, 22 January 2019) (Pew Research Centre, 22 January 2019).
- 40)An AFP report by Kendra Pierre-Louis (28 January 2019) says even Mr. Trump,

41) (Brad Plumer: AP, 14 February 2019).

42)BY JOHN GRAMLICH AND KAT DEVLIN Brad Plumer, Lisa Friedman and Hiroko Tabuchi contributed reporting.PrakashMathema/Agence France-