

Role of Man in Global Warming

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Abstract— The purpose of this technical paper is to highlight the role that man plays in causing Global warming. It is very essential to realise that global warming is mainly caused because of natural factors which are more or less inevitable. Global Warming which today without a doubt is a topic of pandemic concern is also a topic which people have very less "actual" idea about. Various scientists and esteemed professors have been misguiding people over the years and have been causing an international swindle. This paper is an attempted eye-opener. The paper will be highlighting some of the major flaws in the theory of global warming (caused by human activities); common beliefs and myths will be cleared not by objectionable opinions but on the basis of scientific research.

Index Terms— CO₂, Environment, Global Temperatures, Global Warming, Melting of Glaciers, Misconceptions, Solar Activity

1 INTRODUCTION

Global warming is undeniably not only considered to be an interesting topic but also one of the first things that may come to the mind of a person concerned with the natural environment.

The meaning, definition, effects, causes etc. of global warming have been addressed innumerable times. However, most of the times humans are blamed for it without giving any thought to the extent to which humans are responsible.

Over the years various loop holes have been discovered in the theory of artificial (human caused) global warming and thanks to the brave efforts of scientists, certain astounding facts and undeniable evidences are beginning to bubble up.

2 GENERAL CONCEPT

It is certain that increased greenhouse gas emissions from the burning of fossil fuels and from change in land use lead to a warming of climate, and it is very likely that these Greenhouse gases are the dominant cause of the global warming that has been taking place rapidly over the past few decades.

Different greenhouse gases have very different specific heat capacity. Whilst the extent of climate change is often expressed in a single figure – global temperature – the effects of climate change (such as temperature, precipitation and the frequency of extreme weather events) will vary greatly from place to place.

2.1 What is Climate Change?

Climate change (here) generally refers to a long-term change

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(usually an increase) in global temperatures.

2.2 What are the causes?

Scientists learnt that there are several greenhouse gases responsible for warming, and humans emit them in a variety of ways. Most come from the combustion of fossil fuels in cars, factories and electricity production. The gas responsible for the most warming is carbon dioxide, also called CO₂. Other contributors include methane released from landfills and agriculture (especially from the digestive systems of grazing animals), nitrous oxide from fertilizers, gases used for refrigeration and industrial processes, and the loss of forests that would otherwise store CO₂.

3 MYTHS VS FACTS

3.1 Effect of Solar Activity

1) **Myth:** Emission of Greenhouse gases is generally considered to be the chief reason for Global Warming. It is believed that Greenhouse gases like CO₂, CH₄ etc. which are present in the atmosphere trap the reflected heat from the Earth's surface. This trapped heat hence results in the increase in temperature. The same phenomenon at the Global level is called Global Warming.

2) **Fact:** The myth sounds very convincing and makes sense however it is something that various scientific efforts do not comply with. Global warming has no direct link with the increase in CO₂ emissions as shown by Fig: 1. Greenhouse gases like CO₂ are held responsible; however, we fail to realize that water vapour is the largest Greenhouse gas (in terms of quantity).

The major cause of Global warming as per scientific research is Solar Activity as shown in Fig: 2. The Sun and basically every star has periods of alternating high and low solar activity. As Sun is the source of heat energy for the Earth, it is obvious that an increase in solar activity would give rise to increase in temperatures.

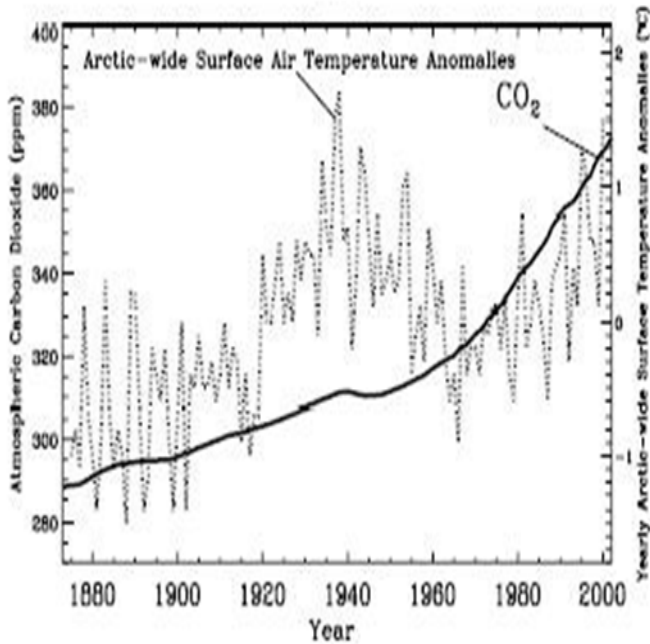


Fig. 1. Arctic Basin wide air temperatures (Polyokov) with annual average CO₂ (Soon 2005) showing no direct link between CO₂ and Global Temperature.

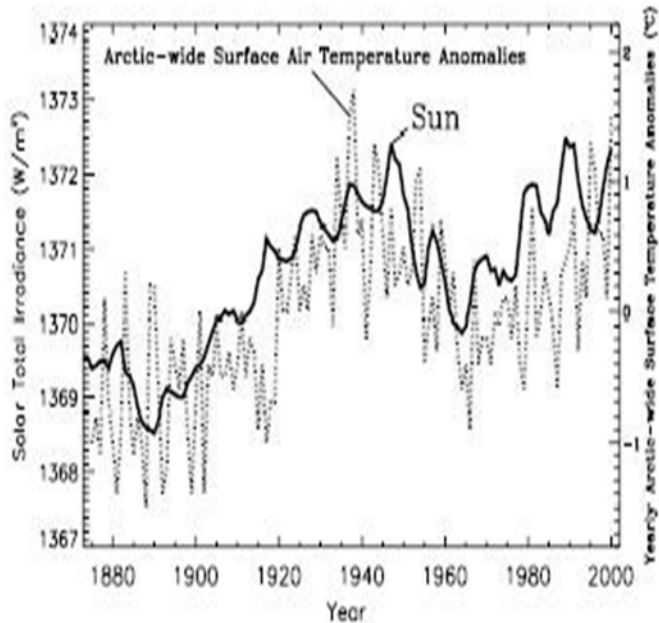


Fig. 2. Hoyt Schatten Total Solar Irradiance (TSI) with annual average CO₂ (Soon 2005) showing resemblance of Global Temperature with fluctuating Solar Activity.

One must also remember that a period of high activity is followed by a period of low activity which is clearly evident from Fig. 3. It is due to this reason that the Global temperatures were high, followed by the Ice Age and once again a gradual increase in temperatures, a fact which has been proven through Ice Excavations conducted in the Arctic region.

Industrialization is considered to be the major reason for the

emission of Greenhouse Gases. It is a known fact that industrialization rapidly increased during the Second World War. It is understood by logic that the temperatures should have increased in this period; however, statistics prove that the Global temperatures actually fell instead of increasing (seen in Fig. 4)

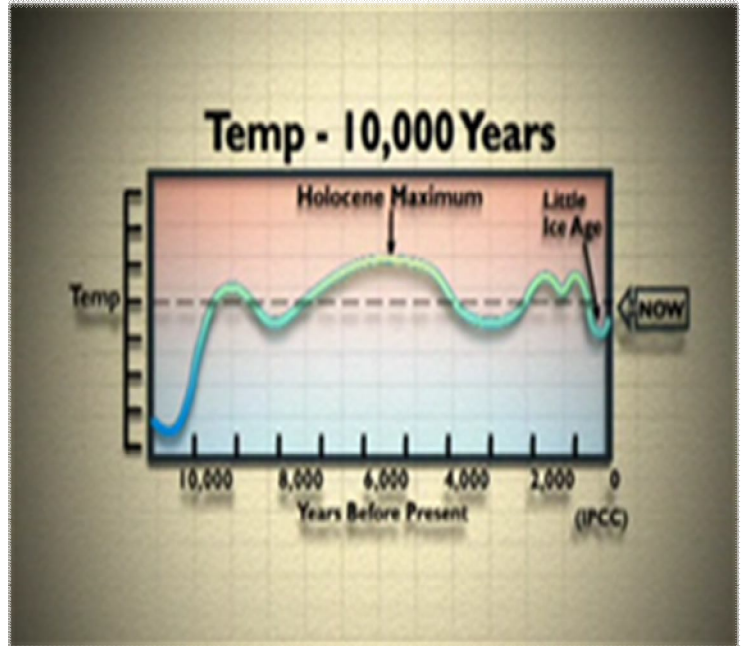


Fig. 3. Graph shows the variation of temperature occurring in the past 10,000 years indicating current temperature to be below average.

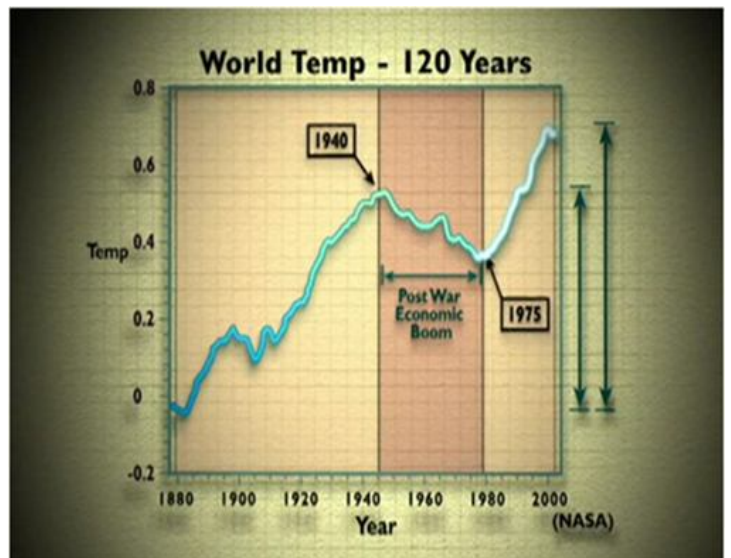


Fig. 4. Graph shows the fall in Global Temperature during the peak of industrialisation (pollution).

These evidences prove that Global Warming primarily occurs because of a gradual change in Solar Activity (which is completely natural) and the emission of CO₂ or any other

greenhouse gas has a small effect on global temperature.

3.2 Effect of Clouds

1) **Myth:** Almost always the entire blame for Global warming is put on the emission of Greenhouse gases. Greenhouse gases trap heat and hence lead to increase in temperatures. The idea is that an increase in carbon dioxide in Earth's atmosphere is what leads to an increase in Earth's temperature.

2) **Fact:** Professor Zbigniew Jaworowski, Chairman of the Scientific Council of the Central Laboratory for Radiological Protection in Warsaw, Poland published his research that found that a change in Earth's temperature would have more to do with cloud cover and water vapour than carbon dioxide concentration in the atmosphere [1]. He points out that "cloudiness and water vapour are nearly a hundred times more influential on global temperature variations than all the rest of the greenhouse gases combined." He suggests for example, that "if it were possible to double the global CO₂ concentration, the effect could be equivalent to just 1% increase in cloudiness".



Fig. 5. Dense clouds (water vapour) act as heat absorbers.

3.3 Species Extinction

1) **Myth:** Many scientists believe how global warming will not have the worst impact on animals that live in Polar Regions but on the ones that live in tropics. Many tropical animal species are at great jeopardy of going extinct even with the temperature rise of just a degree or two simply because these species are familiar to live in an environment within a very small temperature range, and any temperature increase above this range is likely to cause their extinction as they will not have enough time to adapt.

2) **Fact:** Countless discoveries over the past year reminded us that, despite centuries of research, the planet still has plenty of surprise species in store. Taxonomic classification of species follows a particular pattern, assessment of which helps us to predict the total number of species as ~8.7 million (± 1.3 mil-

lion SE) species globally, of which ~2.2 million (± 0.18 million SE) are marine. Results suggest that some 86% of the species on Earth, and 91% in the ocean, still await description [2].

Fig 6 proves that the number of species is rapidly increasing [3] contradicting the general perception that they are decreasing. Although variation in temperature leads to extinction of various different species, theory of natural selection must not be forgotten. Extinct species are replaced by organisms that are more adaptable to the changing environment.

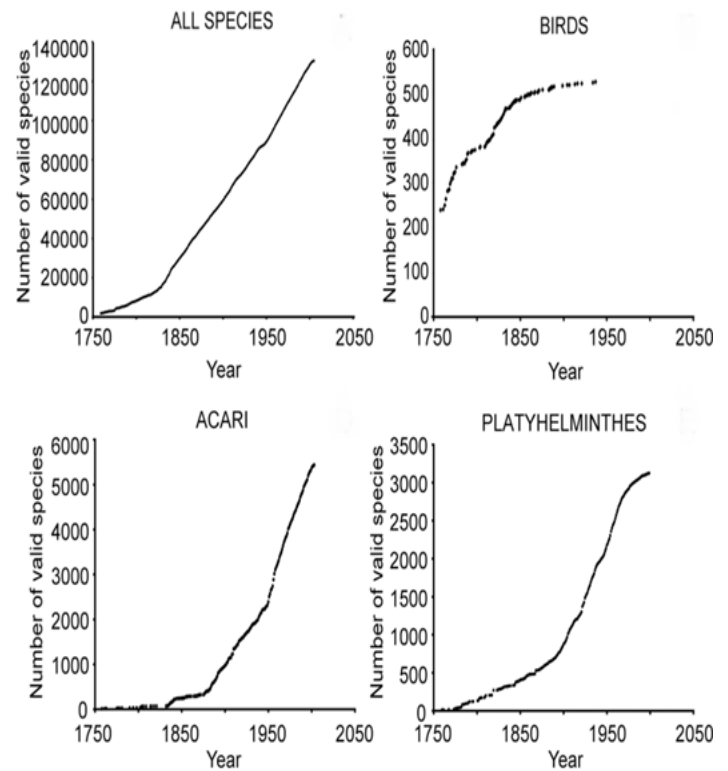


Fig. 6. Graph shows an increase in the number of species in all cases.

3.4 Polar Drift and Melting of Glaciers

The outer surface of the Earth is divided into tectonic plates, which formed in the early days of Earth's creation. These plates move, allowing molten rock known as magma to rise up and fill in the gaps between the plates. Tectonic plates continuously move. While no ice exists deep down where this activity occurs, the melting of ice on the planet's surface can affect the plates beneath. These glaciers are made to move because of their own weight and the extent of movement is further intensified due to the movement of the Tectonic Plates beneath the glaciers.

1) **Myth:** It is said that Global Warming leads to the melting of glaciers present in the polar caps. Various statements have been made about the melting of Arctic glaciers along with evidence backing it up.

2) **Fact:** However, what one fails to realise is that if "Global" warming means temperature increment globally then how can

we explain the fact that the Glaciers in the Antarctic region i.e. South Pole are rapidly expanding.

In an interview with The Mail, Dr. Murari Lal the scientist behind the bogus claim in a Nobel Prize-winning UN report that Himalayan glaciers will have melted by 2035 admitted it was included purely to put political pressure on world leaders [4].

The July 2012 Southern Hemisphere sea ice extent was 16.7 million square km (6.4 million square miles), 2.21 per cent above average and the 9th largest (26th smallest) July sea ice extent in the 1979-2012 period of record. Antarctic sea ice extent during July has increased at an average rate of 0.9 per cent per decade, with substantial inter-annual variability [5].

According to NASA researchers, for several days during early July, nearly the entire Greenland ice sheet experienced a brief period of surface melting. The melting was associated with a strong high pressure system bringing warmer-than-average conditions to Greenland. However, ice core data indicates that such an event occurs about once every 150 years.

This suggests that the melting of Arctic ice is caused largely because of natural phenomena rather than human activities.

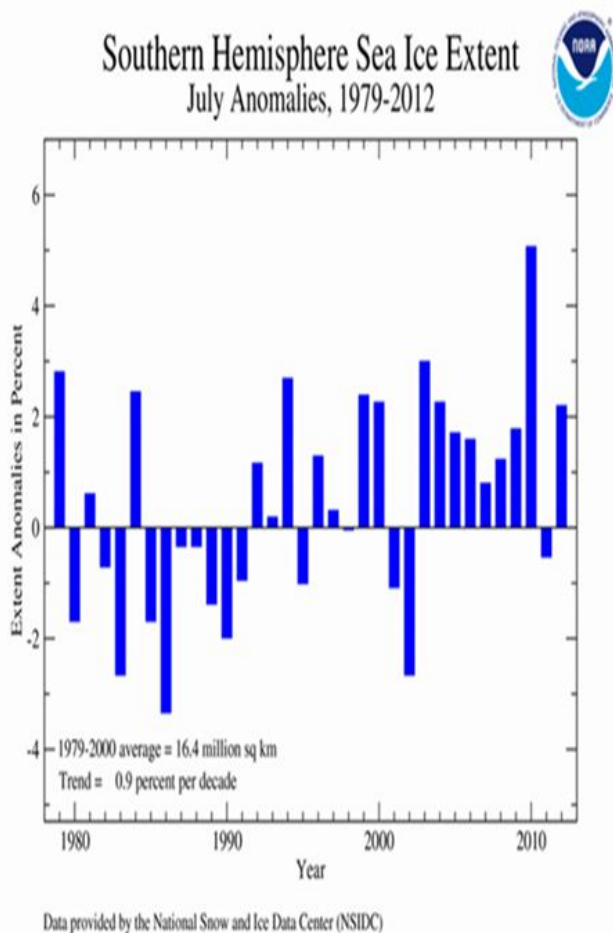


Fig. 8. Increase of more than 2% in the ice extent of Antarctic Region

4 REASONS FOR MISCONCEPTION

There are various reasons behind the developing and the spreading of incorrect concept of Global Warming.

4.1 Funding

Federal funding for climate change increased from \$2.4 billion in 1993 to \$5.1 billion in 2004 (116 per cent), as reported by OMB (Office of Management and Budget), or from \$3.3 billion to \$5.1 billion (55 per cent) after adjusting for inflation.[6] During the past thirteen years the United States, through the U.S. Global Change Research Program (USGCRP), has made the world's largest scientific investment in the areas of climate change and global change research -- a total investment of almost \$20 billion.[7]

Research funding largely depends on the topic of the research. The more interesting the topic, the lesser the work does a scientist need to do in rationalizing as to why the research needs to be funded.

Global warming has always been an interesting topic, as even a common man who does not understand the technicalities of the topic can feel himself/herself to be a part of the environment and hence a part of the effects of Global warming. Media persons have largely capitalized by the idea of inscribing fear in the minds of people mainly belonging to uneducated sector of society who have insufficient knowledge of the concept. There has hence been increased funding for the purpose of research on global warming as it provides even more economic returns.

4.2 U.S. Dominance over Africa

In recent years, analysts and U.S. policymakers have noted Africa's growing strategic importance to U.S. interests [8]. Among those interests is the increasing importance of Africa's natural resources, particularly energy resources.

There has always been instability and social unrest in Africa because of various issues like civil wars, criminal activities, terrorism, piracy etc. Instability heightens human suffering and retards economic development, which may in turn threaten U.S. economic interests.

Africa's exports of crude oil to the United States are now roughly equal to those of the Middle East, further emphasizing the continent's strategic importance. "The US is trying to kill the African dream and the African dream is to develop" commented James Shikwati, economist and author.

On February 6, 2007, the Bush Administration announced the creation of a new unified combatant command, U.S. Africa Command or AFRICOM, to promote U.S. national security objectives in Africa and its surrounding waters. It is claimed by Shikwati that US is intentionally disallowing the fossil fuel rich African states to use their resources (in the name of environmental pollution) and solve their energy crises. This would result in their dependence on the US, who would then get a chance to extract the African resources

4.3 Political Governance of Margaret Thatcher

Margaret Thatcher is a British politician, the longest-serving (1979-1990) Prime Minister of the United Kingdom of the 20th century, and the only woman ever to have held the post.

A Soviet journalist nicknamed her the "Iron Lady", which became associated with her uncompromising politics and leadership style. As Prime Minister, she implemented Conservative policies that have come to be known as Thatcherism.

Two things happened to change the main-stream view about climate change. Firstly, the decline in the global temperature came to a halt in 1975 and the temperature began to rise. Secondly, politicians became concerned about the security of the supply of fossil fuels. In the United Kingdom in 1984, the coal miners went on strike. The Conservative Party, led by Margaret Thatcher, had reason to be concerned about this because strikes by the miners in 1972 and 1974 had led to the downfall of the Conservative government of the time. Concerns also persisted about the security of the supply of oil, because of the 1973 oil embargo by the Arab oil-producing countries. The government wanted to promote the use of nuclear power, though this was being hampered by the fear of nuclear accidents and radioactive pollution. The government was thus keen to highlight possible problems with the use of fossil fuels. They were aware of Bolin's climate change theory and offered research funding to gain support for the theory. The Meteorological Office set up a climate modelling unit, which provided the basis for an international committee called the Intergovernmental Panel on Climate Change (IPCC). The IPCC went on to produce a report in which they claimed that man-made production of carbon dioxide was causing the global temperature to rise.

The report put forth by IPCC however, is inaccurate as previously proved by Fig. 1.

4.4 Inaccuracy in Calculation

It is an accepted fact the Global temperatures are rising. Various newspaper headlines and news reports frequently remind people of the threatening effects of rise in temperatures and the melting of glaciers, rising sea levels etc. which is associated with it.

While it is true that the Global temperatures are expected to rise due to an increase in Solar Activity, the extent to which the temperatures would rise is nothing but over exaggerated. This is because of certain errors in estimating temperatures as two essential factors are neglected.

1) **Neglecting Absorption Phenomenon:** Professor Patrick Michaels, a senior fellow in environmental studies at the Cato Institute had earlier discovered the flaws in the report put forth by U.S. National Assessment on global warming. [9] Condemning the climate models, he said "All implied effects, including the large temperature rise, are therefore based upon a multiple scientific failure."

Basically, most temperature estimations are largely based on recording the emissions of Greenhouse gases; however the absorption of the same is neglected.

Oceans cover about 71% of the Earth's surface. Oceanic water has the property of absorbing heat energy. Neglecting this fact leads to wrong estimations. Plants also have the ability to absorb carbon dioxide. Forest cover hence largely decreases the effect of Greenhouse gases.

2) **Neglecting Thermodynamic Factors:** Thermodynamically, the Earth is an open system. It means that Earth allows the exchange of energy with its surrounding. It has been scientifically observed that as the altitude increases the temperature decreases. [10] Keeping both of these facts in mind, we can come to the conclusion that heat energy from a region of higher temperatures should move to a region of low temperatures. Most temperature estimations are done by strongly emphasizing on emissions while neglecting thermodynamic factors and loss of heat to the outer space. It is due to this reason that most temperature estimations predict the temperatures to rise way more than the actual values.

Although the fact cannot be denied that global temperatures are rising, but the extent to which they would rise is over exaggerated in various news reports. Fig 9 suggests that in the past 50 years, which is believed to be a period with maximum increase in global temperatures, displayed a rise of a mere 0.6°C.

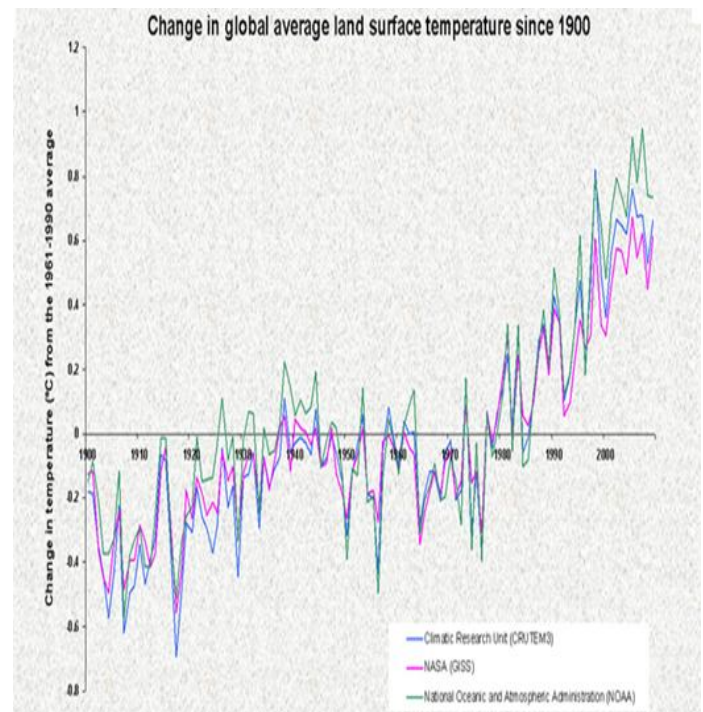


Fig. 9. Temperature variation over 110 years.

5 REVISED CONCEPT

- The phenomenon of heating of the Earth and consequent rise in Global temperatures is called as Global Warming.
- The chief cause for Global warming is solar activity which leads to gradual increase as well as decrease in Global temperatures alternatively over large intervals of time.
- Global Warming is not caused because of the Greenhouse effect, although greenhouse gases have a localized effect on temperatures.

- Global warming is not the main reason behind melting of glaciers. Glaciers melt mainly because of polar drift of tectonic plates.

6 RECOMMENDATIONS

Although this paper suggests that Global Warming is caused mainly because of natural phenomena, it does not mean that man is absolutely innocent hence it is requested that the paper is not misinterpreted.

The concept in no way discourages any eco-friendly acts. It in fact encourages an increased research on the topic. It encourages the development of green technology so as to reduce the emission of greenhouse gases because even though they have a very mild effect on international temperatures, they do have a localized effect.

The paper highlights the need for a detailed thermodynamic consideration of the planet Earth and its atmosphere.

7 CONCLUSION

The paper conclusively proves that although climate change is an actual issue human activities have a minor role to play in it. Global warming or climate change is a natural phenomenon and hence solar activity can only be held as the responsible agent but can't be blamed for it, as the fluctuation in solar activity is part of its life cycle.

It is expected that the concept of global warming has become more clear through the revised theory now that the myths and errors in the former theory have been discussed.

It is fair enough to conclude that global warming remains one of the many over-hyped topics which actually requires more emphasis towards the solution rather than the prevention. The media and scientists should not try to sell their fictitious (although interesting) stories which may result in unnecessary panic among people and also to an unjust research funds distribution.

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