

Climate change as an act of “God” or “Man”: An eschatological account

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Abstract

Climate change has become a source of great concern to humans across the world. This is because of its adverse effects on man and his environment. Some of these effects include droughts, increase in temperature (global warming), flooding and mudflow, diseases, and armed conflicts arising from depleted, contested or shared resources, among others. Eschatologically, these effects have been summed up by Christians as the signs of the end time. Climate change has also been conjured up among Christians as an impending end-time apocalypse. In other words, climate change from a Christian perspective is the sign of the end of the world and the second coming of Jesus Christ (parousia). Consequently, this paper proves with available evidence that the sudden changes noticed in the human environment today are traceable to signs and changes that were outlined in some chapters and verses in the Bible that will mark the end of the world. The research adopted a qualitative approach involving a conceptual content analysis of facts. The result of the study validates the facts that the effects of climate change on the earth's surface such as wars, diseases and disasters and a few other human factors that are rampant presently are biblical, and therefore, ordained by God. This paper thus suggests that in addition to advocating for the reduction in gas flaring, deforestation and other harmful environmental actions, a return to and fear of God will go a long way in helping people to adapt to the effects of climate change.

Keywords: *Climate change, God, Man, Eschatology, Parousia and Earth Surface*

Introduction

The observable effects of climate change are undeniable and have endured over a long period. In recent times, the issues of climate change have become a global phenomenon. The developing countries are accusing the developed countries of being responsible for this adverse condition. Nowadays, the rate at which it spreads has increased exponentially, and therefore, become a source of great concern to humans both in the developed and the developing countries of the world. Similarly, the issues of climate change have become an area of interfaith cooperation (Robra, 2008; Millais, 2006; Bangert, 2021) with religious groups active in the climate justice movement and scientists calling for their cooperation in addressing the issues (Reuter and Kolmes, 2007). For instance, the American conservative evangelical Christian organizations have received widespread media attention for opposing climate change mitigation strategies by attempting to stamp out "green" efforts within their own ranks (Zaleha and Szasz, 2015). This according to Zaleha and Szasz (2015) stems from fears that "stewardship" of God's creation is drifting toward neo-pagan nature worship, and from apocalyptic beliefs about "end times" that make it pointless to worry

about global warming. However, it is generally believed that there is neither a scientific explanation for the ongoing dramatic environmental changes nor simple satisfactory eco-management ways of rising to the challenges of climate change, but there is the need for a deeper understanding of the human and cultural dimensions of this anthropogenic environmental change (Sigurd, 2009). To lay credence to this, Katherine Richardson, a Biologist, opined that while science can only make observations and analyses from the processes of possible unknown environmental changes, social sciences, cultural studies and humanities can explain the impact of such changes on the human socio-cultural sphere. Doing so could widen and deepen people's understanding of climate change as well as making them able to adapt to new environmental conditions for survival (Sigurd, 2009; Mohammed-Kabir and Ridwan, 2019). Some anthropogenic and natural factors are responsible for environmental hazards. These include the burning of fossil fuels, bush burning, deforestation, urbanization etc. These factors have led to armed conflicts, the decline in agricultural productivity, drought, desertification, floods, food and

water resource insecurity, the spread of diseases, and migration, among others

The Christian perspective on climate change predicts a catastrophic end brought about by climate-related phenomena like storms, drought, famine, decreasing resources, and conflicts. For instance, God carried out His will among men and on the earth, according to Judaic doctrine, by means of the flood (huge floods) and fire. The world was affected by the first and most destructive big floods during the time of Noah. The effects of this incident undoubtedly resulted in climatic and environmental changes on the earth's surface. Again, Nimrod's construction of the Tower of Babel (Genesis 11:1–9) and God's unexpected destruction and scattering of it portended another earth structural catastrophe with effects on both the environment and man (Izidor and Igwe, 2022). Similarly, results demonstrate that religious schemes such as domination views, theological fatalism, pessimism, and eschatological/end-time beliefs influenced church leaders' opinions of climate change (Nche, 2020).

The main aim of this research is to prove with available evidence in the Christian Holy Bible that the sudden changes noticed in the human environment today

are traceable to signs and changes that were outlined in some chapters and verses in the Bible which will mark the end of the world. Therefore, climate change from a Christian perspective is much more than the physical changes we are witnessing now. It has some spiritual undertones, which are interpreted by Christians to mean the signs of the end of the world and the second coming of Jesus Christ (parousia) as the judge of the world. Finally, the research also aims to proffer possible solutions to the dangers of climate change.

Literature Review

Climate variability occurs as a result of an imbalance between incoming and outgoing radiation in the atmosphere (Pachauri and Reisinger, 2007). As solar radiation enters the atmosphere, some of it is absorbed by the earth's surface and re-emitted as infrared radiation. This is absorbed by greenhouse gases such as carbon dioxide, methane, and nitrous oxide – all of which result from the combustion of fossil fuels and thus cannot be effectively removed from the atmosphere because of deforestation (Shuman, 2010). Consequently, as the concentrations of greenhouse gases in the atmosphere have reached record levels, global temperatures have risen now at a faster rate than in the past and

they are expected to increase by another 1.8 to 5.8°C by the end of this century. The hydrologic cycle will be altered since warmer air can retain more moisture than cooler air. Some geographic areas will have more rainfall, and some more drought and severe weather events. Because of rising temperatures and changing rainfall patterns, climate change is expected to have a substantial effect on the earth's surface.

Global Action towards Climate Change

The global challenges posed by climate change to humanity show that actions by one country to reduce emissions will do little to slow global warming unless other countries follow suit. To address these threatening challenges, the international community has been exploring effective strategies through various conferences and conventions both at local and international levels.

The cornerstone of this action however was the adoption of the Kyoto Protocol and United Nations Framework Convention on Climate Change (UNFCCC) in Japan in December 1997. These actions were aimed at reducing the emission level of carbon dioxide and other greenhouse gases of the industrialized countries by 5%. (UN Chronicle, 2007). The Protocol, which opened for signature

in March 1998, came into force on 16th February, 2005, seven years after it was negotiated by over 160 nations. However, from 2005 to date, there have been concerted efforts by international organizations to keep pace with the changing climate. This can be seen in the annual activities of the conference of parties (COP) which are aimed at helping countries build capacities in the areas of climate-change adaptation, resilience and reduction in the emission of carbon dioxide.

Causes/Theories of Climate Change

Global climate change has been attributed to lots of natural and man-made actions. These actions are traceable to the six theories of climate change which explain their plausible causes and effects on the earth's surface. These theories which include Human Forcing Theory, Solar Variability Theory, Cloud Formation and Albedo Theory, Ocean Current Theory, Bio-thermostat Theory, Planetary Motion, and Anthropogenic Global Warming (AGW) showed that climate variability is a product of many factors. While anthropogenic activities of man such as the quest for fossil fuels, bush burning, deforestation, urbanization etc have increased the concentration of CO₂ in the atmosphere, its resultant greenhouse effect cannot be solely

attributed to the earth's climate variability. Both natural causes and anthropogenic factors have contributed immensely to this environmental threat. Because of this, policies on the control of climate change should be holistic and made to address the sources of the problem in the most effective way.

Global Effects of Climate Change

The effects of climate change on humanity abound. These effects, according to Inter-Governmental Panel on Climate Change (2007), include but are not limited to conflict, the decline in agricultural productivity, drought, desertification, floods, violence and conflict over food and water resources, the spread of diseases, migration etc (Ajaero, Mozie, Okeke, Okpanachi and Onyishi, 2015).

Famine and Decline in Food Production

The fundamental effects of climate change are being felt in the area of agriculture and food production. In many regions of the world, food production is already adversely affected by rising temperatures, changes in the levels and frequency of precipitation, increased and sustained rates of dry spells, and the destruction of arable land and freshwater resources (FAO, 2015; 2016, Nwosu, Onoyima, Madu and Nwokocha, 2019

Adefisoye and Arum, 2021). As the impacts of climate change on agriculture increase, it has become increasingly difficult for farmers to undertake agricultural activities like cropping, fishing, and animal rearing.

Increase in Diseases and Pest Invasion

Climate change is a threat to the control of pest and disease invasions. The increasing average temperatures, changes in precipitation patterns and water shortages have given room to higher rates of growth and reproduction in insect herbivores (Bale, 2002). Studies have shown that increasing temperatures allow such pests as aphids and moths to multiply in their environment, bringing about their increased dispersal (FAO, 2008, Nwokocha, Anyanwu, Madu and Nwankwo, 2021). For instance, an increase in summer precipitation due to climate change is responsible for the increase and spread of needle blight in British Columbia (Woods, Coates and Hamann, 2005).

Drought and Water Scarcity

Drought is a prolonged period of dry weather caused by a lack of precipitation that results in a serious water shortage for human activity, population, or ecological system (EPA, 2016). By 2099, the world is expected to be on average

between 1.8°C and 4°C hotter than it is now (1PCC, 2013). Large areas are expected to become drier and the proportion of land in constant drought is expected to increase from 2 to 10 percent by 2050 (Farrant, MacDonald and Sriskandarajah, 2006).

Conflict and Wars

Climate change in recent times has become a recipe for armed conflicts in different parts of the world. This situation is triggered off by a systematic environmental change which has reduced access to sources of livelihood, thereby leading to changes in peoples' material comfort with its attendant social conflict. Environmental changes affecting agriculture, water, health, and infrastructure will create new "winners" and "losers." These could either escalate existing social tensions related to the environment and natural resources or create new ones.

Climate Change-induced Migration and Population Displacement

Migration is the movement of people from one geographical region to another for the purpose of taking up permanent or semi-permanent residence. Climate change has been tipped as the greatest single factor to induce migration and population displacement. This, according

to Intergovernmental Panel on Climate Change (IPCC), will include people displaced by shoreline erosion, coastal flooding, and agricultural disruption (Gleick, 2013). Using biblical connotations, this paper intends to validate the facts that the natural changes in the global climate and their widespread effects are biblical, and therefore, ordained by God.

Eschatology and Climate Change

Eschatology is generally referred to as the doctrine of the last things (last days) and entered into Greek and Christian theology and literature to mean the belief and teaching of the end of the earth and man (Szumer, 2020 Ezenagu, Okpoko and Okpoko, 2021). Eschatology is also defined as the part of theology concerned with death, judgement and the final destiny of the soul and humankind. This theological belief is advocated by the Christian church to depict the end of man on the planet earth under the biblical teaching of the second coming of Jesus Christ to judge man, receive those that believe in Him, and destroy the non-believers, thus ending this earth's regime. Christian religion taught about this day as the end of the heavens and the earth and all that is in it (2 Peter 3:10). In the Book of Luke 21:11-25 and Matthew 24:6-7, Jesus Christ spoke exhaustively of

the changes (signs of great perplexities) and cataclysmic observations that would take place in the earth to bring about its end. The sun, moon, stars and cosmos; the seas, oceans and their activities; the beasts, fishes, birds and vegetation (earthly habitations) and indeed man and the earth as foretold in the scriptures above shall pass away. The Book of Revelation Chapter 8:7-12 further states that the earth and the environment, the cosmos and the solar system shall suddenly crash and give way in conformity with Christian eschatology. This event shall bring about the end of the earth and man as earlier prophesied by Christian doctrine (Izidor and Igwe, 2022). For instance, the great floods in the era of Noah, the building of the Tower of Babel by Nimrod and his brethren (Genesis 11:1-9) and its sudden collapse, as well as the use of fire and brimstone to burn down all humans and other lives, including physical structures of the land of Sodom and Gomorrah (Genesis 19:24-25), by the Judaic God were all cases of environmental degradations caused by God with serious climate-change impacts.

The condition of the atmosphere at any time or place is expressed by a combination of several elements which are primarily temperature, precipitation,

humidity and wind among others. The short-term variations of these atmospheric elements on the earth's surface are referred to as "weather", while the long-term variation is referred to as "climate". However, over time there have been sustained changes in the climatic elements of the earth's surface. These changes are triggered by natural external forcings such as changes in solar emission or slow changes in the earth's orbital elements, natural internal processes of the climate system, or anthropogenic forcing leading to the much dreaded environmental catastrophe called "climate change" (Maibach, Perkins, Francis, Myers, Englbom, Yona and Seitters, 2016). Climate change, therefore, reflects the changes in the variability or average state of the atmosphere over time ranging from decades to millions of years (Gillis, 2015). This result in changes in the average weather conditions of the earth's surface, such as a change in the average global temperature, rainfall/precipitation, heat, waves, droughts, floods, and other extreme weather conditions (Asfaw, Coromaldi and Lipper, 2015). This is also accompanied by a rise in the sea level, a strong decline in the Arctic Sea Ice and a warming of the ocean.

Consequently, considering the globalised implications of climate change on the earth's surface, several academic inquiries have been made by scholars in an attempt to understand the phenomenon. To this, Ammassari (2005) in his study found that by 2099, the world is expected to be on average between 1.8°C and 4°C hotter than its present situation. The study also found that large areas would become drier and the proportion of land in constant drought is expected to increase from 2 percent to 10 percent by 2050. Similarly, Stanton, Akerman and Resende (2009), in their studies, found that higher temperatures will cause an upward shift in the zones appropriated to forest species; tree species may have trouble migrating quickly enough to remain in a zone in which they can thrive, causing forests to shrink in size and deteriorate in biodiversity. Trenberth, Fasullo and Shepherd (2015) observed that climate change will increase the incidence of severe storms, flooding and other natural disasters. Landslides and mudflows are among the most devastating of these disasters. Landslides are caused by erosion and changes in subterranean water levels.

Furthermore, while Kolstad and Johansson (2011) opined that exposure to extreme heat can lead to potentially

deadly illnesses such as elevated body temperatures, heat cramps, heat exhaustion, and heat stroke, Shuman (2010) found that waterborne infectious diseases are strongly affected by climate change. During times of drought, water scarcity results in poor sanitation and much of the population can be exposed to potentially contaminated water. For example, there is currently an epidemic of cholera in northern Kenya in the wake of a severe drought. Like drought, excess rainfall and flooding can also contribute to epidemics of waterborne infectious diseases, in this case, due to poor sanitation resulting from runoff from overwhelmed sewage lines or the contamination of water by livestock. (Other studies on climate include (Cattiaux and Cassou, 2013; Matthews, Murphy, Wilby and Harrigan, 2014; Zappa, Hoskins and Shepherd, 2015; Schaller et al. 2016). Nevertheless, current scientific, political and public discussions about how to mitigate and adapt to the impacts of global climate change have gone beyond the dominant propositions for technological and economic-problem solutions; they have also extended to the socio-cultural sphere which could widen and deepen people's understanding as well as making

them able to adapt to new environmental conditions for survival.

In religion, the work of Sigurd (2009) posited that religious processes and belief systems can function as constructive ecologic homeostasis which can be a crucial element of socio-cultural change in an environment facing a dangerous change. Following this assertion, the paper suggested that religious studies and theology are not only significant but also complementary in the study of climate change. Furthermore, Nagle (2008) in his research provided two evangelical ideas that are especially important in addressing climate change. At first, he proposed that laws cannot solve all problems of humanity. As a result, there is a need for the world to begin to examine how jurisprudence can be informed by Christian teachings. Secondly, Nagle (2008) also noted that legal disputes should be conducted with humility and civility, as was put forward by NAB: "we must practice humility and cooperation to achieve modest and attainable goals for the good of society". The study concluded by suggesting that since the issues of climate change provide an opportunity for the American Evangelicals to shape public policy in ways that could contribute to the well-being of the entire world, debates on the

issues should be discussed with the language of civility while avoiding denigrating other groups who may be in the opposing side.

Similarly, Haluza-Delay (2014) in assessing the engagements of various religious groups and traditions with human-induced climate change, found a significant variability in the phenomenon of religion. The result of the study showed that it may be unproductive to talk about "religion" and "climate change"; instead, public discourse should be more specific about particular religions and their perspective to climate change. To lay credence to this, the study opined that the way that North American Buddhists or South Pacific Christians practice their religion amidst changing ecological conditions is different from the way the Bhutanese Buddhists or Canadian Christians put their faith into practice. The caveat to that observation is that particular practices of religions can be recognised globally just as they can be at private and personal levels. They suggested that there is the need to establish how people make sense of climate change, how these meanings circulate across the global religious communities and shape social practice, and how religious institutions being a

major site for collective action react to climate change.

From the foregoing, it can be seen that climate change has unprecedented effects on man and humanity at large. However, academic research from cultural studies and humanities has dwelt mostly on the roles and importance of religion and religious groups in the issues of climate change. The present paper not only seeks to bring to the fore the space of religion in climate change but also to prove that both the physical and social-economic effects of climate change on the earth's surface have some spiritual undertones, which are interpreted by Christians to mean the signs of the end of the world.

Methodology

The overall aim of this paper is to show that climate change and its effects on the earth's surface are ordained by God and are signs of the end time. The study adopted a qualitative approach, which provides insights into opinions and literary evidence of climate change and its biblical undertone. The purpose is to portray an accurate account of events or situations. Thus the data were analysed using conceptual content analysis. This involves communicative materials in published and unpublished books

materials These communicative materials were used to provide inductive reasoning by which concepts and phrases emerged from raw data. This method adopted the use of theme categories which were considered relevant to the research questions. The themes used were stated in Table 1.

Author's 2022

S/N	Themes
1	Conflict and Wars
2	Ecological Disasters
3	Famine and Diseases

Biblical citation and empirical expositions regarding the earth and related literature were also used to support the eschatological connection between climate change and end-time events.

Result

The Bible and Climate Change in Contrast

In this section, an attempt is made to match the evidence in the Bible that appears to be the same as those visible elements which are representatives of climate change in the human world with the second coming of Jesus. The Christian scripture has several of them as given by Jesus Christ and expanded later by his disciples in their writings in the cause of their evangelism. The Book of **Matthew 24:3-7, 1Corinthian 15:51, 2Thessolonian**

4:13-14, 2 Peter 3:3-12, Mark 13:3-8, among others, mentioned these parallels. But of particular interest was the question the disciples of Jesus Christ asked him in Matthew 24:3-7 and Mark 13:3-8, and the account in 2 Peter 3:3ff about what should be the sign of his coming and that of the end of the world.

Conflict and Wars

Climate change in recent times has become a recipe for armed conflicts in different parts of the world. This situation is triggered off by a systematic environmental change which has reduced access to sources of livelihood, thereby leading to changes in peoples' material comfort with its attendant social conflict. Environmental changes affecting agriculture, water, health, and infrastructure will create new "winners" and "losers." These could either escalate the existing social tensions related to the environment and natural resources or create new ones.

Contextually, this consequence of climate change has its eschatological explanation in Mathew 24:6-7, Luke 21:11 and Revelation 11:18. In all these biblical accounts, it was predicted that nations will rise against nations and kingdoms against kingdoms. Revelation 11:18 expatiating on this noted that "The

nations raged, but your wrath came, and the time for the dead to be judged, and for rewarding your servants, the prophets and saints, and those who fear your name, both small and great, and for destroying the destroyers of the earth." As it was succinctly put in Matthew 24:6: "And you hear of wars and rumours of wars, see that you are not alarmed, for this must take place before the end of my age". In this verse, it was placed within the context of eschatology that just before the end of this age, there would be wars and rumours of wars and this can rightly account for the unprecedented numbers of armed conflicts going on in all parts of the earth – Southern and Northern Sudan, Somalia, Syria, Lybia, Palestine etc.

Ecological Disasters, Famine and Diseases

Ecological disasters, famine and diseases are some of the prominent challenges of climate change in recent times. The world, however, is baffled by these and yet it was predicted two thousand years ago in bible prophecy that these events would mark the end of an age. To prove this, Luke 21:11 in its account stated that "there will be great earthquakes and in various places famines and pestilences". The events of the past years have shown with clear evidence the predictions of this prophecy. For instance, there have been

plagues of locusts and mice across some parts of Australia. Earthquakes are common events in parts of Asia and Europe particularly. The United States Geological Survey recorded approximately 16,590 and 31,777 earthquakes between 1990 and the year 2008 respectively. Similarly, Luke 21:25-26 in its account predicted that "there shall be signs in the sun, and in the moon, and in the stars; and upon the earth distress of nations, with perplexity; the sea and the waves roaring". This account has been exemplified by the frequency and magnitude of tsunamis including the roaring of the sea and waves. For instance, the Boxing Day tsunami in South-East Asia in 2004 as well as the tsunamis in Haiti has caused such anxiety amongst island and coastal dwellers that unprecedented efforts have gone into the development of early warning systems.

To buttress this, Apostle Peter in 2 Peter 3: 3-12 said that knowing this first:

"that scoffers will come in the last days, walking according to their own lusts, and saying, where is the promise of his coming? For since the fathers fell asleep, all things continue as they were from the beginning of creation" Apostle Peter in 2 Peter 3: 3-12 also

stated that "for this they will fully forget that by the words of God the heavens were of old, and the earth standing out of the water and in water, by which the world that then existed perished, being flooded with water". "But the heavens and the earth which are now preserved by the same world are preserved for the day of fire until the Day of Judgment and perdition of ungodly men but beloved do not forget this one thing that with the Lord one day is like a thousand years and a thousand years as one day. The Lord is not slack concerning his promise as some count slackness but is long suffering towards us, not willing that any should perish but that all should come to repentance". "But the day of the Lord will come as a thief in the night, in which the heavens will pass away with a great noise, and the elements will end with fervent heat; both the earth and the works that are in it will be burned up".

Corroborating this view, Diara (2011:8-9) opined that:

(1) that the world was created and is preserved to the present day by the word of God and (2) that the world is preserved for fire by which it will be burned up by melting its elements with fervent heat. This heat that will melt away the elements of the world may not be supernaturally evolved; it may be the same heat that is currently causing depletion of the ozone layer, the greenhouse gasses. In the course of time, these gases will accumulate beyond every human management and control thereby leading to the burning down of the world in line with the above scriptural predictions".

Diara argued further that the parousia will be preceded by gradual and long processes of hazardous natural events. Thus the various effects of climate change such as tsunamis, earthquakes, famines, pestilences, over flooding, crop failures etc, which we witness these days in different parts of the world, are but the beginning of sorrows associated with the end of the world. Diara stressed that these disasters may not be unconnected with the fervent heat mentioned by St. Peter in 2 Peter 3:3ff as a sign of the impending destruction of the world. This

fervent heat is beginning to be felt in many parts of the world, especially in Africa, and it has been acknowledged as a major feature of climate change resulting from the depletion of the ozone layer, which is caused by greenhouse gasses. Hence climate change cannot be dissociated from the parousia and universal eschatology.

Recommendations

Based on the foregoing, it is recommended that humans should return to their ancient landmarks. This implies returning to our creator (the Supreme God) in total repentance. Amending our evil ways and beginning to live in peace and love with one another are also advised. This notwithstanding, as we wait for the judgment day, the church should complement the government's efforts in mitigating climate change by way of organizing periodical workshops and seminars aimed at educating members on the best way to use their ecosystem for sustainability. In addition, reduction in gas flaring and greenhouse gases, indiscriminate burning of bush and cutting of trees are seriously advocated.

Conclusion

In conclusion, it was discovered in the course of this work that climate change was caused by man and nature. Both

natural and anthropogenic factors like frequent wars and conflicts that are seen all over the world today between families, groups, were all considered biblical predictions, and therefore, ordained by God. The changes can only be managed

but cannot be completely eradicated. Lastly, no single country is to blame for being responsible for the ugly incidents since it is the act of God.

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