

Climate Change for Christians

Impacts / Responses



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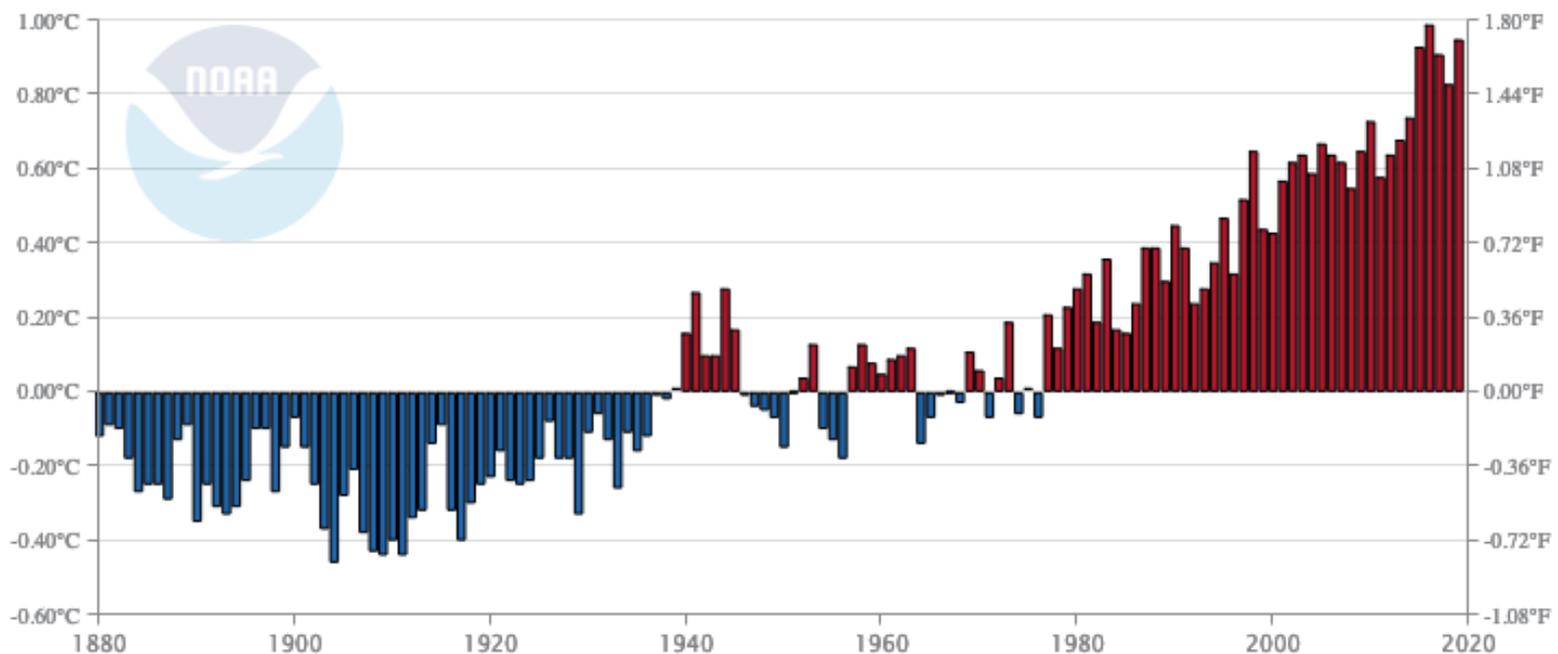
What Does The Science Say?

1. Climate Change is Happening
2. Human Activity is the Cause of Current Warming
3. The Consequences of Climate Change are Bad and Will Become Worse
4. It Is Possible to Achieve Zero Emissions While Reducing Poverty

1. It's happening: some points for reflection

- The basic physics and chemistry underlying our understanding of global heating climate change are secure and settled science. Scientists have been able to demonstrate the heat-trapping properties of carbon dioxide and other greenhouse gases since the 1850s. Atmospheric concentrations of carbon dioxide have risen from around 270 parts per million around 1750 (before the industrial revolution) to 410 ppm today. These extra greenhouse gases in the atmosphere have heated the average global temperature of the entire planet by more than 1°C above the pre-industrial average. More global heating & climate disruption is inevitable if we do not reduce global emissions rapidly.
- February 2020 marked the 422nd consecutive month in which the average monthly global temperature was higher than the 20th Century average temperature. Nobody under the age of 34 has ever experienced a single month where the average global temperature was colder than the 20th Century average – we are already experiencing a severely disrupted climate. ([National Centers of Environmental Information monthly climate assessments](#))
- Children about to enter primary school now have lived through the five hottest years ever recorded (2016, 2019, 2015, 2017, 2018) ([National Oceanic and Atmospheric Administration Global Climate Report](#)). Nine of the ten hottest years have come since 2005, with 1998 being tenth hottest.

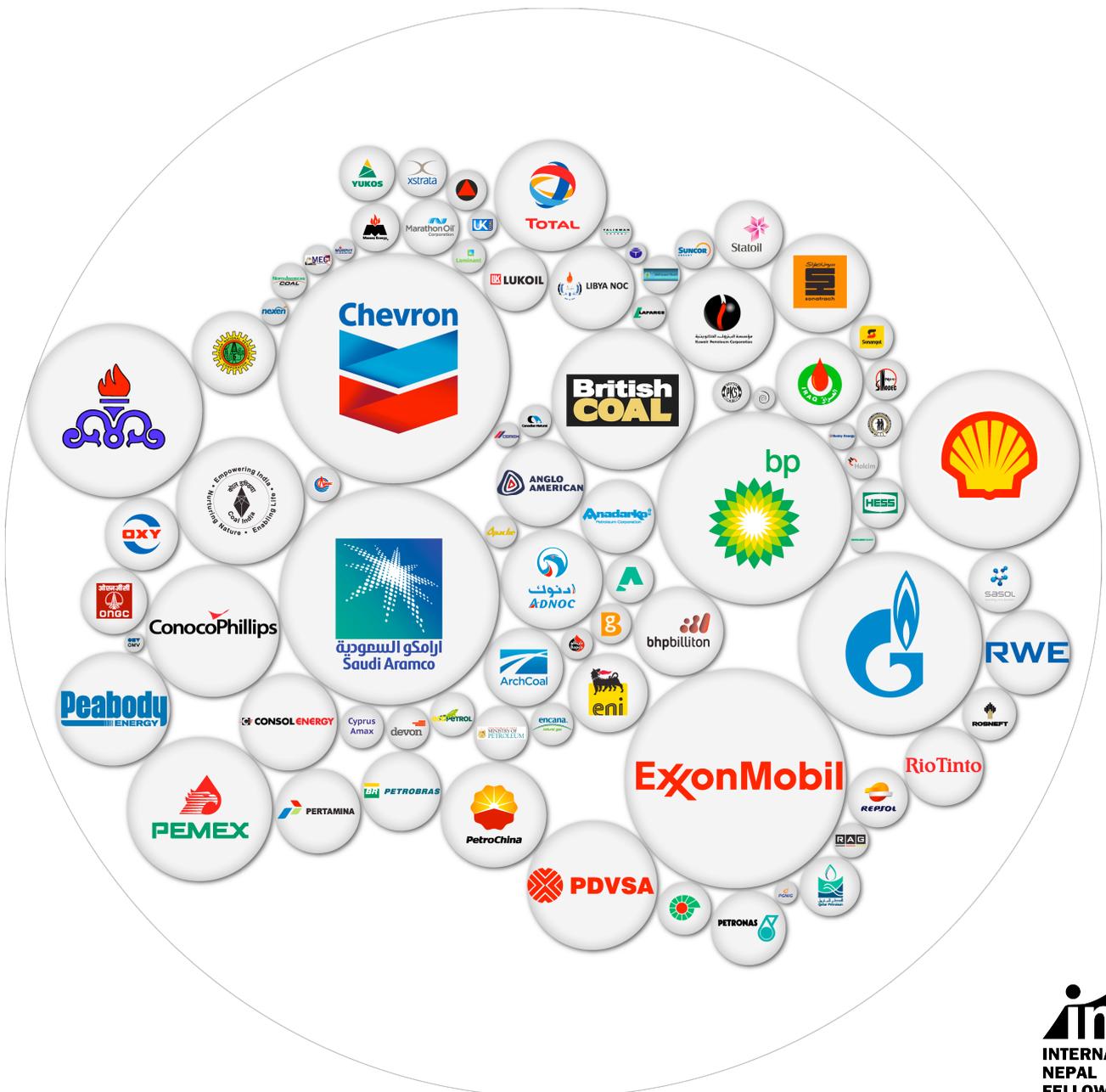
Global Land and Ocean Annual Temperature Anomalies 1880–2020



Years cooler than the 20th Century average are shown in blue, years hotter than the 20th Century average are shown in red.

2. Human Activity is the Cause: some points for reflection

- Greenhouse gases from human activity – burning coal, oil and gas for electricity and to power transport, along with deforestation and land-use change driven by industrial-scale agriculture – are the dominant drivers of global heating and climate change that we are experiencing now.
- Other forces have an influence on Earth's climate (and have been the main driver of significant changes in the past) such as cycles in Earth's orbit of the Sun, or volcanic and solar activity. However, current observations indicate that these factors are having either no effect or are contributing to a slight cooling which is being outweighed by human-caused greenhouse gas emissions.
- The fossil fuel industry and its products are the largest source of human-caused greenhouse gases in the world – responsible for over 70% of all human-caused greenhouse gases in 2015. (The remainder come from manufacturing, emissions-intensive farming, deforestation, and waste emissions from landfill, mining and other activities).
- 100 currently-active fossil fuel companies (plus 8 companies no longer active) are responsible for 62% of industrial greenhouse gas emissions since the industrial revolution (CDP Carbon Majors Report 2017)
- Fossil fuel companies and their products have released more emissions just in the last 28 years than in the 237 years prior to 1988.



3. It's Bad: some points for reflection

- The level of greenhouse gases in the atmosphere is now greater, and the Earth heating faster, than human beings have ever experienced. Our greenhouse gas emissions are adding heat energy to the atmosphere and oceans at the rate of four Hiroshima atomic-bombs per second.
- The world has been heated now by more than 1°C above pre-industrial average global temperatures, and we are supercharging the climate system, leading to more extreme weather and climate-related disasters:
 - Heatwaves, combined with long periods of drought, contributed to bushfires of unprecedented size and ferocity throughout 2019 and into 2020. These fires occurred in Australia (where more than 18 million hectares were burned), Siberia and the Arctic, including in many places where fires are historically extremely rare or even unheard of. These fires caused significant loss of life (human and animal) and devastation of forest ecosystems. WMO Statement on the State of the Global Climate in 2019
 - The likelihood and severity of the most severe cyclones has increased globally. Typhoon Haiyan, which hit the Philippines in 2013 and killed over 6,000 people, was the strongest cyclone on record to make landfall anywhere in the world, and Cyclone Winston which struck Fiji and the Solomon Islands in 2016 was the strongest cyclone on record to make landfall in the Southern Hemisphere. Tropical Cyclone Idai, which struck East Africa in March 2019 displaced around 180,000 people and completely destroyed around 780,000 hectares of crops in Malawi, Mozambique and Zimbabwe – damaging precarious food security in those nations. The likelihood and severity of the most destructive cyclones will continue to increase as sea temperature rises.
 - After a decade of global progress against hunger, the number of people experiencing hunger worldwide has begun to increase over the last three years. 820 million people now experience ongoing hunger. The UN's Food and Agriculture Organisation notes "Climate change and increasing climate variability and extremes are affecting agricultural productivity, food production and natural resources, with impacts on food systems and rural livelihoods" – State of Food Security and Nutrition in the World 2019



4. We Can Get To Zero (Emissions & Poverty): some points for reflection

- Current policies and pledges by the world's governments would lead to a likely 3°C of warming above pre-industrial levels. At this level, major disruptive effects would be expected – more people experiencing water shortages and food insecurity, large numbers of people displaced by sea level rise and climate-related disasters, increases in pest and disease activity, longer and more intense heatwaves and droughts, damage and loss to forests and wildlife, large direct and indirect human health impacts of climate change. Globally, greenhouse gas emissions continue to increase. So the task of getting to zero emissions is urgent.
- Globally, more renewable energy capacity has been installed than new fossil fuel and nuclear capacity combined, for four years running. Renewable energy now makes up more than one-third of global installed power capacity. (Renewables 2019 Global Status Report)
- Major investors and insurers continue to reduce or remove their support for fossil fuels – particularly coal. In 2019, the world's largest investment company, Blackrock (with over \$7 trillion funds managed), announced that it would dump all of its thermal coal investments. Seventeen of the world's biggest insurers (controlling nearly 50% of the reinsurance market and 10% of the primary insurance market) have announced coal exit policies and refuse to insure new mines and power plants, with the industry leaders even ending coverage for existing coal projects. (Although governments continue to subsidise fossil fuels to the tune of \$300 billion annually).
- If left unchecked, global heating and climate disruption will reverse much progress against global poverty and is projected to drive hundreds of millions of people into extreme poverty and vulnerability over the course of the century. However, the Overseas Development Institute's Zero Poverty, Zero Emissions report highlights that many actions could reduce poverty and emissions at the same time:
 - Climate-smart agriculture practices increase agricultural productivity and income and also reduce risk for poor farmers.
 - Increased public transport reduces health-related costs from air and expands employment opportunities.
 - Low-emissions waste management would reduce the harmful health impacts of poor sanitation.
 - Reduced subsidies for fossil fuels and fertilise can increase the income of those in extreme poverty due to better-targeted technical support and cash transfers.
 - Distributed renewable energy is cheaper than fossil fuel alternatives and can reduce the negative health impacts of indoor pollution.



What Does The Bible Say?

(A Brief Theological Reflection for a Disrupted Climate)

God is the gracious Creator of a good creation

Creation is an act of grace. God does not create from any need or lack in God's own being. Rather, God creates a beautiful, abundant and intricate world that is other than Himself purely as a gracious act of love. God sustains and upholds creation continuously again purely as an act of grace and love ("For in Him we live and move and have our being" – Acts 17:28).

The world God created is good and God delights in it (Genesis 1). We are reminded regularly in the Psalms that all of creation and every creature – from birds and animals and sea creatures to forest, oceans, mountains and galaxies – sing forth praise to their Creator simply in their creaturely existence (for example, Psalm 148). In creating all beings, God intends that all creatures should be blessed and to live and flourish – to have "the breath of life" and "every green plant for food" (Genesis 1:30) – in the wonderfully hospitable creation God has ordered.

Human beings are created in the image of God

When human beings are described as being "in the image of God" this is not so much about what makes us human but is really about humanity's unique role in being God's royal representatives in creation. Just as a statue erected by a king in the Ancient Near East would bear the image of the king and symbolise his reign, so human beings are in "the image of God" and represent His gracious reign in the world. This is clear from Genesis 1:26–28, where humans are given dominion (under God's authority) over all other creatures and mandated to "fill the earth" and "subdue" it. We are given "power to share in God's rule or administration of the earth's resources and creatures."

We are given responsibility to steward, tend and care for creation

Human beings are given a mandate to put land and soil to productive use ("to till and keep" the garden of Eden – Genesis 2:15). This is a mandate for care and concern, not for exploitation and abuse. Those who bear God's image are created to represent God in character – which is one of steadfast love, justice and righteousness (Jeremiah 9:24). We only need to look to Jesus, the one who is truly the image of the invisible God (Colossians 1:15) to be clear on this point. Jim Ball in his wonderful book, [Global Warming and the Risen Lord](#), reminds us that:

Jesus does not grasp; he gives. He does not mark off and exclude; he opens up and brings together. He does not hoard; he shares. He does not dominate; he serves.

So creation – which includes us – belongs to Christ not so much as a sense of ownership, but as a sense of relationship. Simply put, all of creation belongs to Christ as a child belongs to her mother.

God has created a world with limits. To exceed or abuse them brings consequences

God has given us a world in which there are limits, which are there for our good and for the thriving of all creatures. Genesis 2 tells the story of disobedience which disrupts humanity's right relationship with God and the way it scars our relationships with each other and with creation. Genesis 2 shows us that at the root of this break of relationship, and of much sin, is human unwillingness to live within God-given limits and also shows us the harm that ensues when we refuse to live in obedience.

We can clearly see today that there are limits to how much pollution the soil and oceans can absorb before the effects of pollution (such as plastics, fertiliser run-off, topsoil loss) harm, and even kill, plants, animals and people. We see also that there are limits to how much coal, oil and gas we can dig up and burn before the extra heating caused by their emissions leads to grave harm to our global neighbours and to God's creation. Leviticus 26:14–20 and Romans 8:22–23 remind us that the effects of sin, and the consequences of disobedience, can be experienced in environmental disruption and damage which leads to the suffering of human beings and other creatures.

God has established authorities and powers to serve the common good

All rulers, governments and authorities are instituted by God and exist under His supreme authority, as Romans 13:1 reminds us. They are called to protect and promote what is good and right and to restrain and punish what is wrong (Romans 13:3–4). More than this, all authorities and powers are called by God to reflect the heart and character of God by protecting the rights of the poor, the vulnerable and the marginalised:

Give justice to the weak and the orphan;
maintain the right of the lowly and the destitute.
Rescue the weak and the needy;
deliver them from the hand of the wicked. (Psalm 82:3–4)

This also applies to what we today would call civil society and businesses. The Bible condemns the rampant accumulation of property and wealth that dispossesses the poor (Isaiah 5:8) or the “wicked scales and dishonest weights” of merchants who put profits ahead of people (Micah 6:11).

God judges those with authority and power when they fail to care for the vulnerable poor and for creation

The prophets of the Old Testament spoke against two great evils which plagued God’s people and lured them away from true worship and obedience – idolatry and injustice. In the causes and responses to climate change, we see both of these evils at work. Powerful business, political and media interests have served their own greed (which the Bible declares is idolatry, Colossians 3:5) rather than serving the common good and protecting the rights of the poor and vulnerable – as God calls all with power to do.

Despite their own research conclusively demonstrating for decades that climate change would cause significant harm to creation and suffering to people, companies such as Exxon Mobil and other fossil fuel corporations have funded media campaigns to misinform, confuse and deceive the public about climate change and have lobbied government around the world to delay or derail action to curb the use of fossil fuels (and hence reduce their profits). In this way, they have become the “destroyers of the Earth” whom God condemns and has promised to destroy Revelation 11:8).

To love our neighbour we must respond to climate change

Christians are always and everywhere called to “love our neighbour”, especially the most vulnerable people and communities. In a disrupted climate, it is the poorest people – who have done least to cause the problem – who are being hit first and worst. So too, future generations, who cannot speak for themselves now, will suffer significant risks and harms which they have in no way contributed to. Christians must follow Jesus as He stands with the poor and vulnerable in the face of current and coming harms. Like Paul, we must be eager to remember and respond to the poor (Galatians 2:10). We are called to care for all in distress regardless of their faith, though we should note that many of the most vulnerable communities – in the Pacific Islands or in sub-Saharan Africa or in Latin America are our brothers and sisters (Galatians 6:10).

Responding to climate change and caring for our global neighbours is not a matter of earning favour with God, or imposing a new set of legalistic requirements. Rather, helping communities adapt to the impacts of climate change is how Christians respond with Christ-like generosity in the face of massive suffering and distress. We glorify God in the practical outworking of our faith in God’s grace by “sharing with them and with all others” (1 Corinthians 9:11–15).

This is our “Esther” moment

Loving our neighbours in a disrupted climate will mean that we must help vulnerable communities as they adapt and respond to climate change risks and impacts. But we can't merely respond to the effects of the problem, we also have to address the causes, by reducing our emissions and challenging, encouraging and pressuring our elected representatives to take stronger action to avert even worse damage. Paul reminds us that “love does no harm to a neighbour” (Romans 13:10), so we must work not only to help people *manage unavoidable climate change* but also we must work tirelessly to *avoid unmanageable climate change*.

The book of Esther describes a time where God's people faced a genocidal plot that would have led to the extermination of the Jewish people across the Persian Empire. When Mordecai makes Queen Esther aware of this plot and asks her to intervene with King Ahasuerus, she initially tries to avoid taking action. She describes the difficulty and danger involved in speaking up to the King and notes that she could be put to death for even approaching him without being called. Mordecai notes that Esther will find herself in the same situation as all other Jews in the Empire and urges her that, rather than waiting for some hoped for or prayed for help from another source, perhaps she is the source of help needed at this moment: “Perhaps you have come to royal dignity for just such a time as this” (Esther 4:14). Esther stands up – as an act of courage and civil disobedience – to speak to the King and is able to save her people. Esther is prepared even to break the law, and risk punishment, to protect her people and save lives.

The same could be said of Christians in the face of climate change – which is causing and will cause massive harm to human beings and massive harm to God's good creation. Perhaps God has raised us to royal dignity for just such a time as this. Christians should respond, as Esther did, by confronting authorities who act with ignorance, indifference or injustice and to restrain malicious forces planning and causing massive harm. We must be prepared to do this courageously even if it risks our reputation, and perhaps even worse. The shape of this confrontation will vary according to our context. In some places we may be able to lobby and encourage our elected representatives. In other places, we may need to become involved in larger social movements for change. Whatever we do must be non-violent, and must always be gracious and truthful.

God promises to renew creation

God's promise for the future is not for a disembodied existence in heaven, but rather that He will reconcile all things in creation to Himself (Colossians 1:15) and renew all of creation, creating “a new heavens and a new earth” (Revelation 21:1–5). Tom Wright, *New Tasks For A Renewed Church*, says,

The earth will not be thrown away, jettisoned from the divine plan like so much trash. It will be filled with the glory of God, as the waters cover the sea. The fields will rejoice, and the trees will clap their hands. Our task in the meantime is to live in the light of that belief and that hope, and so to work out ways of glorifying the creator by bringing his healing love to the creation.

By acting together as the church, alongside all people of good will, to combat climate change, we creatively and actively play our part in protecting vulnerable people from harm, stewarding and nurturing God's good creation, standing against forces that harm people and God's Creation. At the same time, we also bear witness to God's promise and the hope that we have in His faithfulness.

Some Common Questions & Concerns

God is sovereign and humans can't control the climate.

God, in His sovereignty, gave authority to human beings to fill the Earth and have dominion over creation. God has given us the authority and capacity to steward, influence, and even dominate the whole of the Earth and exercise dominion over all creatures. Sadly, due to sin, when 7 billion people – as well as some of the most wealthy and powerful corporations in the history of the world – set about fulfilling that mandate, we often do it in ways that dishonour God the Creator, and bring great harm to ourselves and God's creation.

God won't let things get too bad.

It can be difficult and even confronting to imagine experiencing significant hardship or even disaster. These thoughts can also pose profound challenges to our faith in a good and faithful God. However, trusting in God's goodness and faithfulness does not require us to imagine or pretend that nothing bad will ever happen to us, or even that nothing bad could ever happen to nations or to the world. At the same moment that Paul affirms that "nothing can separate us from the love of Christ", he lists many terrible, even catastrophic, dangers and harms which can befall not only individuals but even whole nations and civilisations: "hardship, distress, persecution, famine, nakedness, danger, sword..." (Romans 8:31–38).

The Bible also contains many warnings about people who relied on empty words, for example that the presence of God's temple would protect them from invasion and violence or that despite signs of war and impending catastrophe that God would ensure peace. In short, they believed that God would not let things get too bad. The prophet Jeremiah warned about the false prophets who were calling, "Peace, peace" when there was no peace, or those who comforted themselves that they were safe because they had the "temple of the Lord" (Jeremiah 7:4). God warned his people then, that judgement and danger would come, even if people imagined that God would not let it get too bad.

The Christian response to increased suffering is not to shrug our shoulders and hope that we don't suffer ourselves. We of course must pray that God will heal the hurting, save the vulnerable, and convict the powerful. But a truly Christ-like response to climate change will exhibit the same courage and grace shown by Esther – who stood against the genocidal plans of Haman at risk to her own life – or of the early Christians who risked their own lives to care for their neighbours in the plague-struck Roman Empire.

Where people are suffering the effects of climate change, Christians will be there at the front-line – supporting communities and helping the hurting. We will support Australians face more frequent and severe bushfires, Pacific Islanders whose fresh water and land are being submerged beneath rising seas, Nepalis whose food security is collapsing with changes to monsoon rains, and others.

God has said, "As long as the earth endures, seedtime and harvest, cold and heat, summer and winter, and night, shall not cease."

Climate change isn't going to end the seasons, or day and night, or destroy the physical planet. But God does not promise that people through their own actions can't contribute to the greater likelihood and severity of massive and widespread droughts, or more intense typhoons and hurricanes, or sea level rise from the rapid melting of glaciers. In fact, the Bible says people will reap the consequences of sin and disobedience – where, sadly, the poor and vulnerable may also suffer from the sins of others.

Climate change and global warming are new-age religions in disguise.

Actually, caring for God's creation, protecting the lives and livelihoods of our global neighbours, and standing up to the wealthy and powerful who want to hold back a concerted response to tackle climate change sounds very much like what all Christians should be doing. Because Christians worship the Creator, we care for creation. Because our God loves the poor, we care for our vulnerable neighbours also. Because there is no authority except from God and because "the Earth is the Lord's and all that is in it" we are prepared to challenge governments, businesses and individuals who are harming creation and our global neighbours.

Something as small / insignificant as CO2 can't change the climate.

And something as small as a cigarette could not possibly give you cancer either, right?

Developed nations like Australia need to continue to use and export coal and gas. Otherwise, they'll lose out to countries like China & India.

Economically speaking, the world is already turning away from fossil fuels and towards renewable energy sources that are already cheaper to build and run in many parts of the world. China and India are also choosing to close coal-fired power plants, to commission fewer new ones than previously planned, and to restrict the import of coal from countries like Australia. This transition needs to become even faster, but it is already clear that investments in fossil fuels are risky.

Morally speaking, the global economy used to be powered by slaves – human beings bought, sold and traded across the Atlantic Ocean. Not anymore. Many slave-owners, traders and business-people at the time argued that the slave trade needed to continue to avoid economic losses, or because if they didn't trade slaves, others would, or because it was good for the slaves and the societies they were stolen from (all arguments you hear people making about fossil fuels). The slave trade didn't end because the slave traders ran out of people to enslave. It ended because people understood it was doing massive harm, and people power shifted the power of businesses and politicians who profited off that suffering, so that it was no longer acceptable. We need to do the same with fossil fuels and the harm they are causing.

[We can't know what will happen in the future, so we should address more urgent issues now.](#)

Acting to tackle climate change means investing in a world that is more just and sustainable for all. Where energy is not in the hands of a few powerful and wealthy companies, but of ordinary people. In which new jobs and businesses are created to provide clean energy and transport. Action to tackle climate change will save millions of people from disease or premature death because of coal pollution. It will keep water for drinking and land for farming uncontaminated by fracking. It means protecting the forests that clean our air and water and are home to abundant plant varieties and wildlife. No longer will our oceans and coasts suffer massive oil spills which destroy fisheries and eco-tourism. It will be a world in which we all become less wasteful and more conscious of what we consume. In which people become more connected with God's creation. Imagine wasting all our effort now to build a future like that.

[Without coal and oil, developing countries won't have sufficient energy to lift people out of poverty](#)

New wind and solar power installations are already cheaper than new coal power installations and since 2014, global investors have poured more money every single year into new renewable energy investments than into fossil fuels. The beauty of this energy revolution is that developing countries won't have to go down the same dirty power path that developed countries did.

[The climate has changed before, so it'll change again.](#)

That should make you even more concerned. Massive shifts in the Earth's climate between ice ages and swampy periods with seas 20 metres higher than today tells us the climate can be radically disrupted. The fact that humans are driving increases in greenhouse gases and hotter temperatures at a faster rate than ever in recorded history is a massive concern. It's like we're driving along a cliff edge, pressing down harder on the accelerator instead of jamming on the brakes.

[First they called it the greenhouse effect, then global warming, then climate change, now it's extreme weather.](#)

The greenhouse effect is the simple, observable fact that greenhouse gases (primarily carbon dioxide) in the atmosphere ensures that the Earth's average temperature is around 14°C – suitable for life. Without these gases in the atmosphere, the Earth's average temperature would be an inhospitable -19°C – too cold for life to exist.

Global warming (or global heating) is the simple, observable fact that when greenhouse gases increase in the atmosphere, the world heats up in response.

Climate change is the simple, observable fact that this increased heat energy in the Earth's climate system (atmosphere and oceans) leads to a range of related and complex changes – including ocean heating and acidification, changes and disruption to global and local climate patterns, and so on.

Extreme weather is the simple, observable fact that one of the manifestations of climate change is more extreme weather events, such as more intense or severe droughts and heatwaves, or more intense rainfall and storms because a warmer atmosphere holds more water, or even (perhaps counter-intuitively) longer and more severe snowfall in some places because atmospheric circulation patterns that would normally shift these weather systems are being stalled and disrupted by global heating.

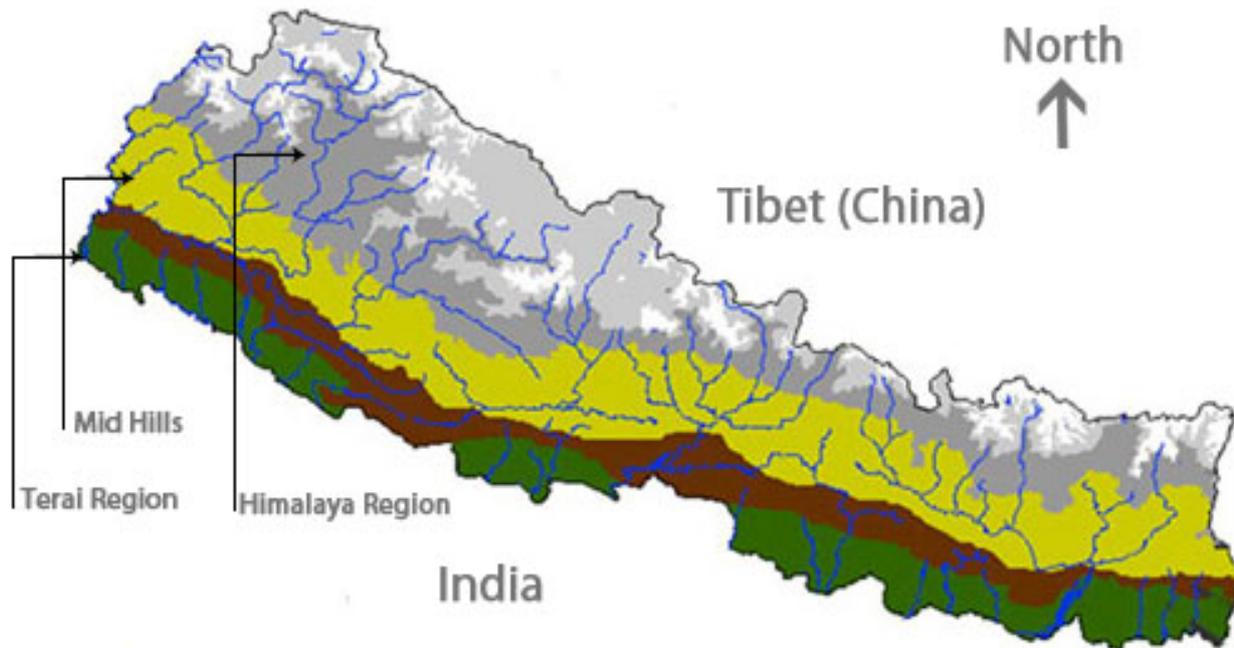
[The power of fossil fuels contributed enormously to the economic growth the West has experienced.](#)

True. We've been on a 150-year binge to dig up and burn as much coal, oil and gas as we could and for a long time it seemed that there couldn't be anything wrong with that. Like the first glass of wine, fossil fuels seemed like a gift given by God to "gladden the human heart" (Ps 104:15). We're now consuming to excess, and our binge is doing harm to ourselves and making us a danger to others. We can either take the doctors' advice and quit fossil fuels or we are going to have to face the severe health consequences.

[But the wind doesn't blow all the time and the sun doesn't shine at night.](#)

One word. Batteries. Also hydrogen.

Climate Impacts In Nepal



Introduction

Nepal is one of the most vulnerable countries in the world to the impacts of climate change. It ranked fourth in the world for the impacts of extreme weather events, according to the [Global Climate Risk Index 2019](#). A large proportion (around three-quarters) of the population are dependent on agriculture and on the annual Monsoon rains for their livelihoods and food security.

In addition, with high and persistent levels of poverty, limited infrastructure, low levels of awareness of climate change related issues and the very complex geography of the country, Nepal faces significant limitations in its capacity to respond to impacts of climate change. Nepal's rich biodiversity and the health and flourishing of Nepal's glaciers, forests, jungles, rivers, animals, birds, and plants are also being impacted by climate change.

Nepal has experienced a consistent and continuous heating trend of around 0.04–0.06°C per year, with increases more pronounced at higher altitudes and in winter. Nepal's own contribution to climate change is negligible – being responsible as a nation for just 0.02% of global annual emissions.

Climate model projects indicate significant increases in temperature along with more intense rainfall events.

Major Impacts

- Ice Loss / Glacier Retreat
- Increased disaster exposure
- Increased water insecurity
- Damage to crop productivity and food production
- Increased exposure to pests and disease



Main Rongbuk Glacier and north face of Mount Everest as photographed from Tibet – in 1921 by George Mallory and 2007 by David Breashears. The glacier shows an average vertical loss of ice of around 110 metres. Glacier photos from the “Rivers of Ice” exhibition: <http://more.glacierworks.org/>

Glacier Retreat

Nepal is home to the world’s highest mountains. Its peaks are the source of rivers that are relied upon by hundreds of millions of people across Nepal, Bangladesh and India for freshwater.

Nepal’s glaciers are melting rapidly. Total glacial ice declined by 29% from 1977 to 2010 – a loss of 129km³ of ice.

A recent study examining 650 glaciers in the Himalayas found that between 1975 and 2000, an average of 4 billion tonnes of ice was being lost each year. It also found that from 2000 until 2016, the glaciers have been melting roughly twice as fast – losing about 8 billion tonnes of ice each year.

But between 2000 and 2016, the glaciers melted approximately twice as fast - losing about 8 billion tonnes of ice each year on average.





Disaster Risk

Nepal already experiences a high level of exposure to and impact from natural disasters. Nepal's geography, geological position, and the impact of climate change are the primary causes of disasters. Rapid and unplanned urbanisation, widespread poverty, environmental degradation, and inadequate understanding of disaster risk management further intensify disaster risks in Nepal ([Nepal Disaster Report 2019](#)).

The steep hills and valleys of Nepal and the still growing Himalayan mountain range, coupled with heavy monsoon rainfall patterns lead to a variety of geological and hydro-meteorological hazards, such as floods and landslides. While monsoon flooding is a regular event in Nepal, climate change has increased the incidence of high-rainfall events, leading to higher risk. The July-August 2019 floods and landslides caused the deaths of more than 100 people and displaced at least 12,000 households.

Increasing temperature increased the likelihood, incidence and severity of drought and heatwaves – which have a direct impact on human health, and also a significant secondary impact through damaging or destroying crops and livestock and negatively affecting food security.

Temperature increases in the mountainous areas of Nepal have contributed to the formation and rapid growth of glacial lakes – as ice melts and is cordoned by the moraine rock. This has led to increased risk of glacial lake outburst floods. Studies by the [International Centre for Integrated Mountain Development \(ICIMOD\)](#) and its partners have identified 42 rapidly growing lakes in the Koshi Basin alone that have grown by more than 35 percent in the past three decades.

Human Health

Climate change is expected to increase morbidity and mortality associated with communicable diseases. Increased flooding and the resulting contamination of water supplies will lead to an increase in the occurrence of diseases like typhoid, diarrhea, kala-azar, malaria, cholera, dengue fever, encephalitis, and jaundice. The area in which vector- and water-borne diseases are endemic is expected to expand.



Water Availability

Documented evidence shows that the incidence of high-intensity precipitation is increasing and that the timing and duration of rainfall is changing – leading to greater uncertainty for farmers. The likely effects of the rise in temperature on rainfall patterns is difficult to assess, although projections indicate a continued trend towards more intense rainfall events ([Climate Change Scenarios for Nepal 2019](#)).

Water sources situated at high elevations are more sensitive to reduced rainfall than sources at low elevation because less water is retained in the high groundwater systems. Springs at high elevations are drying early and the annual period of flow of rain-fed streams and rivulets has grown shorter in recent years. The frost line also has shifted up. Less snowfall and earlier snowmelt also significantly impacts water availability in the mountains and high hills.

Variability in rainfall patterns and timing is also increasing the incidence of drought, which affects forests, pasture and rain-fed agriculture. The prolonged droughts which have occurred annually since 2005 have forced farmers in Eastern Nepal to turn way from cereals and embrace horticulture. Some farmers were even forced to abandon farming altogether.

When water sources in the immediate vicinity of a household dry up, villages must travel to distant sources for drinking water and the number of disputes rises. People have to make do with whatever water is available, regardless of its quality and the health implications ([Climate Resilient Planning](#)).

Food Security

Nepal's food security is extremely vulnerable to climate impacts. Most of Nepal's districts in the hill and mountain areas continue to experience a food production deficit – contributing to vulnerability and also community disruption as people regularly migrate for income-earning activities elsewhere.

Increased drought and uncertain rainfall patterns lead to soil moisture depletion and to less water being available for irrigation as springs dry out sooner at high elevations. More intense rainfall – which is already being experienced and is projected to increase – will also lead to increased soil erosion and land degradation. Warmer temperatures and changes to ecological zones will also influence the activity and

range of weeds, diseases and pests. The overall impact will be a decline in the quantity and quality of some crops and other produce. This will have flow-on impacts on human health, forced migration, and on the infrastructure, financial and social capital needed to build resilience.

What We Can do

Support organisations (like INF) that help communities build resilience

Pray for, and give financially to organisations that work with communities who are being affected by climate change. Many of the world's poorest people are finding that climate change is making hard lives harder. They need our support to adapt to the impacts of climate change and build resilience. www.inf.org/donate

Have climate conversations

Talk regularly with your family, friends, workmates, church family and others about climate change. Try to identify actions you can take together to reduce emissions, plan and adapt to the local impacts of climate change, support affected and vulnerable communities, or influence social and political change.

Make sustainable choices in your home and community

Identify ways that you, your family, your church and your community could reduce your own emissions. Use public transport wherever it is available. Eat less meat. Rethink your choices / refuse single use plastics / reduce consumption / reuse everything possible / refurbish old stuff / repair before replacing / repurpose / recycle as a last resort. Move any savings or investments out of banks and funds that support fossil fuels. Use renewable energy sources for your electricity. Write to companies whose products you use to urge them to reduce emissions and be more sustainable.

Talk to your elected representatives

Our elected representatives need to hear from us regularly to urge them to respond to the current climate crisis with the urgency it requires. Email is quick and easy, but don't underestimate the power of a hand-written letter or a face-to-face meeting. Remember that there is something that all governments at every level need to be involved in – local, state and national.

Join social and public movements to create change

There are many opportunities to join public campaigns, events and actions that help to demonstrate that the public want stronger and more urgent action to tackle climate change. Join a local School Strikes for Climate action, or organise your own community action. In places where public actions aren't possible or where participation might be risky, add your voice or support to online action.



Further Reading

Reports

Climate Resilient Planning (Government of Nepal 2011)

Smoke and Fumes: The Legal and Evidentiary Basis for Holding Big Oil Accountable for the Climate Crisis (Center for International Environmental Law – Nov 2017)

What Lies Beneath: The Understatement of Existential Climate Risk (Spratt & Dunlop – 2018)

Websites

<https://www.breakthroughonline.org.au/>

www.skepticalscience.com

www.climatecouncil.org.au

<https://bze.org.au>

Video resources

Global Weirding with Katharine Hayhoe

Books

A Climate For Change – Hayhoe & Farley

Global Warming and the Risen Lord – Jim Ball

A Climate of Justice – Mick Pope

Merchants of Doubt – Naomi Oreskes

Don't Even Think About It – George Marshall

The Uninhabitable Earth: Life After Warming – David Wallace-Wells

Common Sense for the 21st Century – Roger Hallam