

Resource Guide on Climate Change

FOR RELIGIOUS COMMUNITIES

For more information: info@rfp.org

ACKNOWLEDGEMENTS

Dear Esteemed Colleague:

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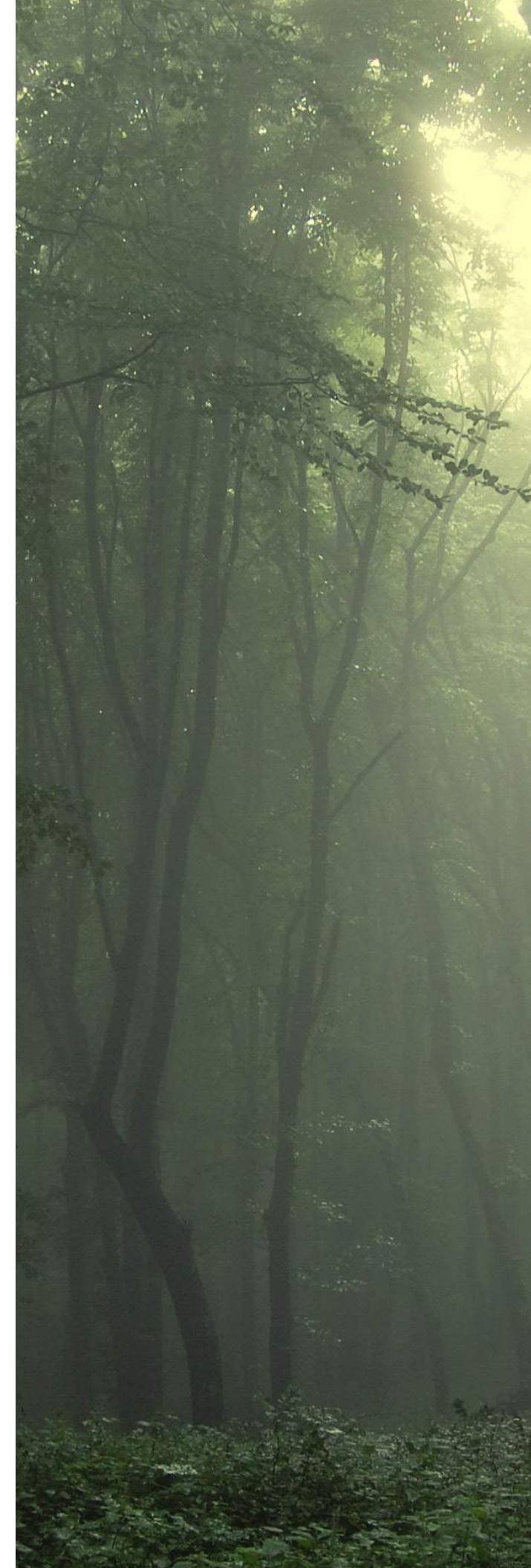
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Sincerely yours in Faith,



Dr. William F. Vendley
Secretary General, *Religions for Peace*



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Religions for Peace

Religions for Peace is the largest international coalition bringing together representatives of the world's religious communities who are dedicated to achieving peace. It is a non-sectarian, non-political international organization that is accredited to the United Nations. *Religions for Peace* has national and regional affiliates in 90 countries and Women of Faith and Interfaith Youth Networks at the global, regional, and national levels. It takes an inter-religious approach to mobilizing the tremendous potential of religious communities, emphasizing how collaboration and coordination among faith groups enhances their overall impact and ability to contribute to peace and development.

Religions for Peace
777 United Nations Plaza
New York, NY 10017
United States of America
Website: www.rfp.org



Foreword

The need to protect each other and our sacred earth unites all of our world's religions and each of their followers based on their common beliefs that we must love our neighbor as ourself and abide by the injunction "thou shalt not kill."

These sacred and holy principles compel us to protect the earth's elements of air, water, and soil from harm and provide us with a platform to protect our environment and therefore all of our world's peoples.

Human beings are nature, yet we have become disconnected from nature, with ruinous consequences. The developed countries in particular have pushed full speed ahead with a blinkered pursuit of technological progress, without heed for its impact on the health of the planet or the rhythms of nature.

As the world's religions teach us, when we degrade the natural environment and its web of life, we are degrading all humans. Only when we have healthy air, healthy water, and healthy soil will we have a healthy planet and healthy human beings. I know this firsthand from my home in Kentucky, a magnificent state in the heartland of the United States. Over the years, Kentucky has become one of the unhealthiest states in the nation because of reckless and relentless pollution of our sacred air, water, and soil—largely driven by ill-advised industrial, mining, and unbalanced agricultural practices. This sinful, unhealthy behavior is destroying Kentucky's natural and human world at a rate that is unsustainable and immoral.

The biological world of species adapting to environments and interacting in interdependent relationships within the intricate cycle of life represents a miraculous triumph of balance and order. This ensuing harmony transcends our natural understanding and impels us toward an encounter with the sacred. The magnificent web of life unites the natural with the supernatural and invites a response of wonder, gratitude, and love.

This deep insight of union and interconnectedness must energize us to take immediate action to restore our world's elements—the keys to all health. Climate change is the gravest threat to the health of our planet and all of our people in the 21st century. Climate change upsets the order, balance, and harmony of the natural world, and it disrupts the lives of billions of people throughout, especially the poor.

I am therefore delighted to commend this resource guide on climate change issued by Religions for Peace. Our religions have the allegiance of billions of people, representing 80 percent of the world's population. Multi-religious

cooperation has proven time and again that it can lay the groundwork for true peace and human flourishing. We saw this in 2015, when religious leaders from the different traditions all spoke out—individually and collectively—to push for a robust agreement to stop the destruction of our sacred air, sacred water, and sacred soil. And now, religious believers are called upon to make sure political, economic, and scientific leaders follow through on their commitments. I am confident that this guide will be able to inspire such much-needed action.

Religious leaders and all of their faithful are called upon to create a movement to promote health in all policies across the globe—a movement that will unite our many faiths acting as one heart and united in common action for the health of all!

My prayer is that this guide will inspire each of us to understand that we are a vital part of the needed solutions—that we will learn from this guide that we are each holding the keys to the actions that can and will restore our wounded earth back to health!



Christina Lee Brown

Founder, Institute for Healthy Air, Water and Soil

Founder, Center for Interfaith Relations

International Trustee, *Religions for Peace*



Executive Summary

This resource guide on climate change is intended for the use of religious communities from all faiths and from all corners of the world. It is divided into three chapters.

Chapter 1 provides a succinct overview of the causes and consequences of climate change, laying out the basics of the science in accessible terms. It shows that the burning of fossil fuels—coal, oil, and gas—since the onset of the industrial revolution has brought us to a perilous state of affairs. It has led to the highest concentration of carbon dioxide in the atmosphere in 3 million years. Global temperatures have already risen by 1 degree Celsius since the industrial revolution, and—if we carry on with “business as usual”—we could see temperature increases of 4-6 degrees Celsius by the end of the century.

This degree of warming would prove catastrophic for human flourishing and human civilization. We can already see the effects of climate change play out in the world’s driest regions. Looking ahead, we would expect to witness ever more severe droughts, flooding, forest fires, heat waves, and storms. The implications would be especially severe for the world’s poorest and most vulnerable people—the very people who are least responsible for climate change. Climate change is poised to be the greatest threat to public health in the 21st century. It is likely to lead to ever-greater population migrations, political instability, and societal breakdown.

The impact of humanity on the climate over so short a period has been so profound that many claim we are passing out of the Holocene—the 10,000-year period of temperate and stable climatic conditions that spawned civilization—into the Anthropocene, a new geological epoch in which human activity is a major influence on the earth’s systems, with unknown and uncertain implications for the future. In tandem, we are witnessing the sixth great extinction in the earth’s history—the first five were caused by natural events, but the sixth is being caused by human activity. All being told, human behavior is undercutting the conditions for human flourishing.

Chapter 2 segues from the realm of science to the realm of morality. It argues that for the world’s diverse religious traditions, caring for the earth is a religious obligation—and from this obligation arises a moral imperative to combat the perilous consequences of climate change. The chapter summarizes what seven major religious and spiritual traditions teach about care for the environment—Judaism, Christianity, Islam, Buddhism, Hinduism, Sikhism, and Indigenous Religion.

From these traditions, it then sketches out a multi-religious case in three interlocking dimensions:

- First, the use of high-carbon forms of energy threatens to uproot the intricate web of life that supports the possibility of human existence. It follows that we are morally obliged to advance sustainable development in harmony with nature.
- Second, climate change has a disproportionate effect on the world’s poorest and most vulnerable people. This fails to honor the inherent human dignity of all people. And since the intricate web of life on which all human life depends is part of the common good, it is morally unacceptable for the few to abuse and destroy it.

- Third, there is a direct relationship between “capacity” and moral obligation. Diverse religious and moral traditions agree that the greater the capacity to address a grave threat, the greater the responsibility to do so. We have the capacity to overcome climate change—and this capacity is greatest among the world’s wealthiest nations.

Chapter 3 turns to solutions, and asks what role religious believers and religious communities can play. It provides a brief history of international efforts to curb the emission of greenhouse gases—from the Rio Earth Summit of 1992 to the Paris Agreement of 2015. In Paris, the nations of the world committed to taking action to limit the global temperature increase to 2 degrees Celsius over preindustrial levels (or 1.5 degrees if possible). The backbone of the agreement is that countries commit to peaking global emissions as soon as possible, with the goal of reaching net-zero greenhouse gas emissions in the second half of the century. Yet when the Paris Agreement was signed, collective commitments were not enough to keep within the 2-degree limit. But it is intended to be a dynamic process. Every five years, countries are required to come back with updated climate plans, and implementation will also be assessed every five years. The developed countries also committed to helping the developing countries.

The ultimate success of the Paris Agreement depends on countries’ commitment to “deep decarbonization.” This has three key strands. The first strand is improving energy efficiency. The second strand of decarbonization involves making electricity carbon-free. And the third strand involves switching from the direct use of fossil fuels for energy to electricity that is generated by clean sources. Decarbonization is feasible from a technological and financial perspective. What matters is political will, and the translation of this will into concrete action—to ratchet up the ambition, as required by the Paris Agreement. This leads to a moral imperative, and—as we have seen—the moral case for caring for our earth is deeply rooted in the world’s religious traditions.

Recognizing that the solutions to climate change are both personal and institutional, we can identify four specific ways in which religious believers can contribute to making Paris a success:

- **Personal choices:** Religious traditions emphasize the interior disposition to do what is right through the cultivation of virtues—in this case, ecologically sensitive virtues. This is conducive to cultural renewal and the development of ecologically sensitive social norms.
- **Religious community action:** Given their role as schools of virtue, religious communities can be in the vanguard of ecological education. They can serve as positive role models by “greening” their own properties and structures.
- **Economic action:** Since all religious traditions affirm that every economic decision constitutes a moral decision, religious believers can foster a greater sense of social responsibility in consuming and investing—including by financial divestment from fossil fuels.
- **Political action:** By participating in the public square, religious believers can influence the quality of public life and the public debate—especially since the cultivation of virtue also has a strong public, or civic, dimension. This calls for political advocacy by religious leaders and believers. *Religions for Peace’s global Faiths for Earth campaign*, designed to influence the Paris Agreement, is an example of this approach.



Climate change is one of the defining challenges of the modern world, and it has become a major moral imperative for the world's religious communities.

It affects every religious believer on the planet.

Chapter 1: Understanding the Causes and Consequences of Climate Change

Climate change is one of the defining challenges of the modern world, and it has become a major moral imperative for the world's religious communities. It affects every religious believer on the planet. But since most moral frameworks view reflection and discernment as necessary first steps before any firm commitment to action, it is important to be familiar with the issues raised by a warming planet. Accordingly, this first section will lay out the causes and consequences of climate change.

CLIMATE CHANGE IN GEOLOGICAL TIME

The earth we call home is 4.5 billion years old. The scale of this time period is almost impossible for us to fathom. We know that over its long history, our planet has been in a constant state of flux. It has cycled through immense gyrations of climate, driven by an array of complex and interconnected factors. There have been very hot periods and very cold periods. Some scientists believe that the earth once went through a “snowball” phase, covered entirely in ice. A hundred million year ago, dinosaurs wandered across a balmy Antarctica! Yet these kinds of climate changes are discernable only in geological time—across millions or even hundreds of millions of years.

What lay behind these enormous changes? Scientists have isolated numerous causal factors and feedback mechanisms. Over the very long term, shifting tectonic plates and volcanoes drove the climate. Over the past 2.5 million years, a fairly short period in geological history, the earth has cycled in and out of ice ages—the glaciers advance and the glaciers retreat. The ebb and flow of glaciers is due to slight changes in the earth’s orbit around the sun—these “wobbles” change the amount of sunlight reaching earth and hence can change the climate. Up until about 800,000 years ago, the cycles seemed to occur every 41,000 years, with fairly equal glacial and interglacial periods. After this period, the cycles averaged 100,000 years and became more asymmetric—the ice built up after 80,000 years, followed by rapid deglaciation and an interglacial period lasting about 10,000 years.¹

We are now living in a period called the Holocene, which is an interglacial period following the waning of the great ice sheets at the end of the last ice age. This period has lasted about 10,000 years. It gave rise to the “long summer” of human civilization, producing ideal conditions for human flourishing. Even within the Holocene, climatic shifts have occurred, usually from the interaction between the ocean and the atmosphere. But these have typically been contained and localized. The most recent example of this is the so-called “medieval warm period” and ensuing “little ice age”—these climate events seem to have been restricted to northern Europe and northeastern America. Overall, we can say the Holocene is a remarkable period of climatic stability in the earth’s history, and these are the climatic conditions in which humanity can flourish.

¹ See Maslin (2014).

MODERN ANTHROPOGENIC CLIMATE CHANGE

So while the climate is always in flux, large changes have played out over vast expanses of time. But this is no longer true. Today, the planet is warming rapidly at an unprecedented pace, and there is nothing natural about it. Today, we are in grave danger of exiting the safety and security of the Holocene. And the culprit is human activity.

To understand this dynamic, we need to understand the link between the concentrations of greenhouse gases in the atmosphere and global temperatures.² Scientists can measure the concentration of carbon dioxide—the main greenhouse gas in the atmosphere—over the past 800,000 years. We measure this concentration as “parts per million,” or the number of molecules of carbon dioxide for every million molecules in the atmosphere. Over this period, the amount of carbon dioxide in the atmosphere has cycled up and down, between about 150 and 280 parts per million. These fluctuations are perfectly normal and reflect the changes in the earth’s orbit that drive the glacial and interglacial periods. There is a feedback process—when the earth warms, carbon dioxide is released from the ocean to the atmosphere, which in turn warms the earth even more.

Scientists have shown a clear link between this concentration of carbon dioxide in the atmosphere and global temperatures. When the concentration was high, the planet was warm, and when the concentration was low, the planet was cold. Concentration and temperature move together. This finding is not new. Back in 1896, the Swedish scientist Svante Arrhenius accurately calculated the effects on temperature from a doubling of carbon dioxide—long before the era of advanced computer modeling!

The science says that greenhouse gases in the atmosphere warm the earth. The major greenhouse gases include carbon dioxide, methane, and nitrous oxide. Greenhouse gases make our earth hospitable. They provide a comfortable security blanket for humanity to flourish. Without them, the earth would be a vastly colder and more alien place, much like the moon. With them, the average temperature on earth is 18 degrees Celsius; without them, it would be -14 degrees Celsius, far too low to support life as we know it.

Yet while humanity flourishes in this garden, its activity is increasing the greenhouse gases in the atmosphere, which in turn is pushing up the temperature beyond the comfort zone. The security blanket is becoming too heavy, and it is now smothering the planet.

Here is the problem: since the onset of the industrial revolution in the 18th century, the massive burning of fossil fuel—coal, oil, and gas—has released enormous amounts of greenhouse gases into the atmosphere. Nearly all of this warming effect is coming from three greenhouse gases—carbon dioxide, methane, and nitrous oxide. Carbon dioxide alone accounts for more than three-quarters of the total. And carbon dioxide stays in the atmosphere for centuries. Through the burning of fossil fuels, the world is emitting about 35 billion tons of carbon dioxide each year. When we add all the other greenhouse gases, we get the equivalent of 55 billion tons of carbon dioxide. Of the carbon dioxide component, almost half stays in the atmosphere. The rest is absorbed by the forests, soils, and oceans. The part that stays in the atmosphere raises the

² See Sachs (2015a) for a detailed analysis of the science and dangers of climate change.



Since the onset of the industrial revolution in the 18th century, the massive burning of fossil fuel — coal, oil, and gas — has released enormous amounts of greenhouse gases into the atmosphere.

concentration by 2 parts per million each year. We should note that about another 3.5 billion tons of carbon dioxide is added each year due to cutting down trees and clearing land.

We are now clearly in the danger zone. The concentration of carbon dioxide has now surpassed 400 parts per million, represented by a giant spike over the past 150 years, a mere blink of an eye in planetary history. This is higher than at any time in the past 800,000 years. Indeed, the last time the level of carbon dioxide was so high was 3 million years ago, when the earth was a hotter and more hostile place. Humans did not exist. Sea levels were at least 6 meters higher and the global mean temperature was 7 degrees Celsius warmer than today.

Another by-product of carbon emissions is the acidification of the oceans. The carbon dioxide in the atmosphere dissolves in the oceans, producing carbonic acid. Rising acidity undermines the delicate ecosystem of the oceans, threatening all kinds of marine life—including corals, shellfish, and plankton. Ocean acidity has already increased by 26 percent, and it will get worse as carbon emissions increase.

All being told, the impact of human activity on the climate over so short a period has been so profound that many claim we have passed out of the Holocene—the 10,000-year period of temperate and stable climatic conditions that spawned civilization—into the Anthropocene, a new geological epoch in which human activity is a major influence on the earth’s systems, with unknown and uncertain implications for the future.

THE EFFECTS OF CLIMATE CHANGE

A defining feature of this Anthropocene is that ever-increasing greenhouse gas emissions are leading to ever-increasing global temperatures. Already, the earth has warmed by about 1 degree Celsius since the start of the industrial revolution. Global temperatures continue to trend upwards. The year 2016 was the hottest on record since measurements began in 1880. Even if we stopped adding greenhouse gases to the atmosphere, we would expect the temperature to rise by about another half degree, mainly because the oceans take a long time to warm up.

Yet the emission of greenhouse gases shows no sign of abating, reflecting the growth of our energy-intensive global economy. We are already at 400 parts per million, and this is increasing by 2 parts per million each year. If this pace continues, we could reach 500 parts per million in just 50 years. Yet if the global economy grows faster, so could carbon emissions. A prudent estimate suggests that the global economy could increase threefold by mid-century—this is based on continued economic convergence alongside forecast population growth. But a tripling of the global economy by 2050 would cause carbon concentrations to increase by 6 parts per million a year (assuming the energy intensity of the global economy is unchanged). This path is extremely perilous.

So what can we expect? Under the auspices of the Intergovernmental Panel on Climate Change (IPCC), the world's leading climate scientists have calculated that, by continuing on the current "business as usual" trajectory, human activity could cause the average global temperature to rise by an unprecedented 4-6 degrees Celsius by the end of the century.

An aerial photograph capturing a dramatic scene of coastal flooding and erosion. A wide, muddy brown river or tidal surge has inundated a large area of green land, washing away roads and small structures. A concrete seawall runs along the right side of the floodwater. In the background, more green land and a few buildings are visible, partially submerged. The water is turbulent and brown, indicating sediment-laden floodwaters.

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the poor will be on the front lines.
They will suffer most from droughts, floods,
diseases, and severe weather events.

The implications of such an increase would be disastrous, even catastrophic. We would expect to witness more severe droughts, flooding, forest fires, heat waves, and storms. Crop yields would be expected to decline, especially in the developing countries. And even with a modest increase in temperatures, atoll nations like Kiribati, Tuvalu, and the Maldives might simply cease to exist.

The effects of climate change on GDP are difficult to pin down. But they will be substantial. One study suggests that climate change could reduce global output by 23 percent by the end of the century.³ It would also widen inequality and hit the poor hardest.

This is a common theme: as climate change advances, the poor will be on the front lines. They will suffer most from droughts, floods, diseases, and severe weather events. And these are the very people least responsible for climate change. The poorest 3 billion people account for a mere 6 percent of the carbon emissions that threaten the health and vitality of our planet. In contrast, 85 percent of emissions come from 2.5 billion people in upper and middle-income countries.⁴ A mere 15 countries account for over 70 percent of the emissions. A recent World Bank study suggests that climate change could force 100 million people into extreme poverty by 2030.⁵ And this is even before the worst impacts kick in as the century progresses. In a very real sense, the poor are suffering for the lifestyles of the rich.

Although the temperature has risen by only 1 degree so far, we can already see the consequences. Scientists have shown that, across the world, the incidence of heat waves has increased dramatically since the 1950s—instead of one or two times per thousand days, they now occur at 50–100 times per thousand days. And severe weather events are on the rise—the warmer oceans make storms more powerful, and rising sea levels make them more harmful when they make landfall.

Over the past few years, flooding in places like China, Thailand, and Indonesia hurt the global economy and human well-being. In 2012, New York City was devastated by the powerful superstorm Sandy, and the rising sea level made the flooding associated with this storm a lot worse. A year later, a typhoon devastated the Philippines, claiming 6,000 lives. Meanwhile, places like Australia and Russia suffered record heat waves, Africa was hit by drought-induced famine, and a prolonged drought in California has vastly diminished the region's water supply. In 2015, India was hit by one of the worst heat waves in history—and a recurrence in 2016 brought about the highest temperature ever recorded. And Mexico was hit by hurricane Patricia, the strongest storm ever measured. The litany gets longer with every passing year.

Some of the worst impacts of climate change so far are being felt in already fragile areas like the Sahel region, a dry zone in West Africa between the desert and the tropics. Even with a 1-degree Celsius increase in global temperatures, the impact in this region is elevated. What was once savannah and scrubland has turned into full-blown desert, and Lake Chad—a great lake that used to cover 50,000 square miles—has now practically dried up.

Other parts of the world that are highly vulnerable to drought include the U.S. southwest and the entire Mediterranean region—including southern Europe, North Africa, and eastern Mediterranean countries like

3 Burke et al. (2015).

4 Ramanathan (2014).

5 Hallegatte et al. (2015).

Turkey, Syria, Israel, and Jordan. California is drawing down the store of water in underground aquifers at an unsustainable rate. Syria suffered its worst drought and most severe crop failure in recorded history over the period 2006–10—possibly even the worst since the dawn of agricultural civilization. The drought affected 1.3 million people, with herders losing 85 percent of their livestock and 75 percent of farmers experiencing crop failure.⁶

These pernicious effects come with only a 1-degree Celsius increase in temperature. With 4–6 degrees, all bets are off.⁷ Even at 2 degrees Celsius, the Arctic ice could tip over into an irreversible melt, given that the Arctic will warm a lot more than the global average—this comes with major implications for sea levels and global weather patterns. At 2 degrees, we could see millions displaced by torrential monsoons in places like Bangladesh. Meanwhile, countries like Peru, Ecuador, and Bolivia could face grave water shortages, as their mountain glaciers recede. The western United States would face similarly grave pressures.

At 3 degrees Celsius, we could expect to see chronic drought, water shortages, and agricultural devastation in places like southern Africa, Central America, Pakistan, and Australia. The mountain glaciers that water the Indian subcontinent could retreat, with dire consequences for irrigation in the densely populated Indus valley. We could expect to see superhurricanes with regularity. Along with continued rising sea levels, storm damage will magnify. Most of the Arctic sea ice will vanish, and land ice caps and glaciers will be retreating rapidly. Disastrously for the global ecosystem, the Amazon basin could even dry up.

With a 4-degree Celsius increase in temperatures, we could face a worldwide agricultural drought, including in areas that were once breadbaskets. Crop yields would collapse across the world, and Africa would be especially devastated, with yields down by 50 percent. Sea levels would rise dramatically. Across Europe, intense heat would become the norm, with the summer temperatures reaching levels now associated with the Persian Gulf. Europe's water tower would also run dry, with glaciers vanishing. And the Antarctic ice, once thought impregnable, would start to chip away. It is worth recalling that the last time the temperatures were 4 degrees warmer, there was no ice at either pole—although we should also appreciate that it could take centuries for all of Antarctica's ice to melt.

With temperatures jumping by 5 degrees Celsius or more, the world will be a very different place. The last time the earth was this warm, sea levels were several meters higher. This rise in sea levels will be enough to inundate major coastal cities like New York, London, Shanghai, Tokyo, and Hong Kong. This will threaten the lives and livelihoods of hundreds of millions of people. The world's deserts will all have expanded, and new deserts will have arisen in places like the Amazon, as the rainforests disappear. In inland areas, temperatures will be up to 10 degrees warmer than now. And while some areas burn, others will face torrential downpours and flooding. The polar ice sheets will eventually disappear at this temperature, although this could take a long time. All in all, human flourishing will only be possible in ever-shrinking habitable zones near the poles. The habitable conditions of the Holocene, which have supported the rise of human civilization over the past 10,000 years, will have become a thing of the past.

6 Femia and Werrell (2012).

7 For a detailed and lively account of the sequential costs of 1–6 degrees, see Lynas (2008).

TIPPING POINTS AND FEEDBACK LOOPS

The thing that keeps climate scientists awake at night is the possibility of tipping points and feedback loops. The idea is that rising temperatures can set in train a vicious cycle and accelerate the process of global warming. Take the melting of the ice sheets, for example. The disappearance of the polar ice caps would darken the surface of the earth, making it easier to absorb sunlight, which would warm the planet even more. And if the planet warms by 4 degrees Celsius, up to 500 billion tons of trapped carbon could be released from the previously frozen arctic soils—either as carbon dioxide or as methane. This would be disastrous.

We can find similar feedback risks coming from the rainforests. Deforestation adds directly to climate change, given that 15 percent of carbon dioxide emissions each year come from changes in land use. There is also an important indirect effect at play, as the cloud cover of the rainforests helps to keep the planet cool. If the Amazon dries out due to climate change, or disappears due to deforestation, global warming will be magnified. One major feedback loop could come from a potential reversing of the carbon cycle. Right now, the rainforests act as the lungs of the planet, absorbing carbon dioxide. But as the soil warms, the stored carbon could be released back into the atmosphere. This tipping point would trigger the collapse of the Amazon and add dramatically to climate change.

Further feedback loops come from the world's oceans. The combination of ocean warming and acidification is killing ocean life, especially the all-important plankton. Since marine phytoplankton absorb a huge chunk of carbon dioxide, their destruction could initiate a vicious cycle of accelerating climate change. More ominously still, a warming ocean could lead to the release of methane hydrates found in the subsea continental shelves, which could lead to accelerating and unstoppable global warming—although, of course, this kind of worst-case scenario could take centuries or even millennia to fully play out.

But the writing is on the wall. The main lesson of these tipping points and feedback loops is that global warming could become a runaway process. Once warming hits 3 degrees, it might not take much for it to jump to 5 or 6 degrees. And at that point, there is very little we can do about it.



The combination of ocean warming and acidification is killing ocean life, especially the all-important plankton.

CLIMATE CHANGE AND BIODIVERSITY

As we have seen, climate change is doing irreparable damage to the health of the entire ecosystem of the planet, including through a loss of vital biodiversity. The functioning of earth's ecosystems regulates the planet as a whole and ensures its continued health and well-being.

Ecosystems serve a number of vital functions. They provide directly for human needs—including food, water, wood, and biomass. They serve humanity by making sure that agriculture delivers needed food supplies, including through the cycling of nutrients and formation of healthy soil. They play an important regulating role, including by forming a crucial first line of defense against floods. They protect us from pathogens and pests. Ecosystems also regulate the climate, as we have seen from the many and varied feedback loops.

Biodiversity is important because it promotes the health, vitality, and productivity of these ecosystems. We depend on it for our food supply, our water, our safety from natural hazards, and our resistance to disease. Yet biodiversity is under grave threat from human activity. Deforestation continues apace, especially in vital equatorial ecosystems like the Amazon basin, the Congo basin, and the Indonesian archipelago. As we have seen, these forests are crucial for regulating the world's climate. Marine life is also under threat from overfishing, ocean warming, and acidification. The world's coral reefs—second only to rainforests in terms of biodiversity—are being destroyed.

The bottom line is that human beings have been poor stewards of the natural world and the amazing panoply of life on our planet and have not respected the intricate balance of the earth's ecosystems. A defining feature of the Anthropocene is that we are on course for the sixth great extinction in the earth's history. The first five were caused by natural events such as volcanoes and asteroids, but the sixth is being caused by human activity. Part of the problem is the unprecedented speed of climate change, like nothing seen on earth before—this makes it vastly more difficult for life on earth to adapt to changing circumstances.

CLIMATE CHANGE AND HUMAN HEALTH

Climate change hurts the health of the planet, but it also hurts human health directly. In 2015, *The Lancet*—one of the world's most prestigious medical journals—dubbed climate change the greatest global health issue of the 21st century.⁸ This is especially true for the poor, who already have inadequate access to basic health care.

Direct and grave threats to life and health will come from greater exposure to heat, storms, and flooding. Life and health will also be endangered by drought and flooding, which will lead to widespread food insecurity—and the threat of severe famine will always be lurking. We should also expect severe shortages of water, that most basic element of life and health. Ecological harm and loss of biodiversity will reduce protection against the adverse effects of nature. Rising temperatures will bring an increased risk of disease. Air pollution will also get worse, with particular problems for cardiovascular and respiratory health. Population displacement is also expected to intensify, which would also come with grave risks for life and health—as the European migration crisis shows only too clearly.

⁸ Lancet Commissions (2015).

Estimating the death toll from climate change is no easy task. One study—commissioned by 20 governments from a group called DARA International—estimated that climate change is responsible for 400,000 deaths a year, and that this could rise to 700,000 by 2030.⁹ This includes deaths from illnesses, hunger, and disease that primarily affect children. But if we add premature deaths from the pollution caused by burning fossil fuels, then this number increases dramatically to 5 million people a year, rising to 6 million by 2030. Over 90 percent of these deaths will be in developing countries. For the climate change effects alone, it is 98 percent. And all of this is projected through 2030. It would be dramatically worse if we stay on course for a 4-6 degree world by the end of the century.

Another point is that the destruction of ecosystems and loss of biodiversity will reduce our ability to find medical breakthroughs from the bounty of nature.¹⁰ As one example, consider the world's coral reefs, which are being threatened by ocean warming and acidification. According to experts, the cone snails of the corals display immense promise, and important new compounds with great medical value have already been discovered within them. For example, one substance has been found to treat severe pain better than opiates, and without any addictive features. There are also ongoing trials for epilepsy treatments, protecting nerve cells after injury or stroke, and protecting heart cells after a heart attack. Yet if these delicate ecosystems disappear, these discoveries disappear with them.

CLIMATE CHANGE AND CONFLICT

As climate change progresses, economic opportunities are likely to diminish, and conflict for precious resources is likely to increase. People are likely to migrate to more hospitable areas. A fallout of this could be greater violence, societal breakdown, and war.

This is a lesson too easily learned from the pages of history. Evidence shows that sustained shifts in climate tend to lead to greater conflict, societal disruption, and even collapse. For instance, a long-lasting drought about 4,000 years ago is associated with the collapse of numerous nascent civilizations in Egypt, Mesopotamia, India, and China. Another widespread drought about 1,000 years later contributed to the collapse of the world's first network of globalization during the Bronze Age—affecting the Hittites, the Mycenaeans, the Egyptians, the Assyrians, and the Babylonians. And the collapse of the once great Mayan empire is commonly linked to severe ecological pressures.¹¹

In more recent times, a comprehensive study traced the huge jump in violence in the 17th century—50 revolts, revolutions, and civil wars between 1618 and 1688—to the deep chill at the nadir of the “little ice age.”¹² This is also true for religious conflict—one scholar traced the dramatic deterioration in relations between Christians, Muslims, and Jews in the 14th century to climatic effects across Eurasia.¹³

We can already see evidence of anthropogenic climate change leading to conflict in our own times, including between religions. In the Sahel region, desertification is pushing pastoralist populations farther south, where

9 DARA and the Climate Vulnerable Forum (2012).

10 Chivian (2014).

11 Fagan (2004).

12 Parker (2013).

13 Jenkins (2007).

they encroach on farmland—and this in turn inflames tensions. These tensions are given an unfortunate religious character, as the pastoralists tend to be Muslim and the farmers tend to be Christian. Desertification is also causing people to leave rural villages and migrate to cities. With few economic opportunities, many of these people fall under the spell of criminal or terrorist activity.

Similarly in Syria, researchers have drawn a connection between drought and political instability. While the drought was surely only one causal factor, recent studies have established a link between anthropogenic climate change and Syria's brutal civil war, which caused 800,000 to lose their livelihoods and pushed 80 percent of the population into poverty.¹⁴ These developments also contributed to the destabilization of the entire region.

A recent study attempted to quantify the impact of recent climate change on violence.¹⁵ It found that a one standard deviation warming increased the frequency of interpersonal conflict by 2.4 percent and intergroup conflict by 11.3 percent. And all areas of the world are on course to warm much more than this. If the future behaves like the past, we should expect far more violent crime, terrorism, war, and political instability. One estimate is that global warming will increase armed conflict by 54 percent in the next few decades, leading to 393,000 extra deaths by 2030. In the coming decades, there can be little doubt that climate change will be a leading threat to peace in our world.

14 Kelley et al. (2015).

15 Burke, Hsieng, and Miguel (2014).

People are likely to migrate
to more hospitable areas.

A fallout of this could be greater violence,
societal breakdown, and war.



Chapter 2: The Moral and Religious Imperative

The previous chapter described how climate change is undermining the vitality of our planet and its people. Since this is one of the greatest challenges of our time, threatening life as we know it, we are faced with a clear moral imperative to respond. In this, the world's religions surely play a vital role. They cultivate the values and virtues that underpin our interaction with each other and with the earth, and orient us toward shared purpose and shared well-being. Each in its own unique way, the world's religions can all draw from their deep roots to marshal a moral call to action on climate change.

For the world's major religions, care for the earth is a religious obligation. Each of these religions has its own experience of the goodness, beauty, mystery, and harmony of the natural world with its abundance of life. Each in its own way has a religious orientation toward the environment that compels it to cherish and nourish the natural world. Each therefore affirms a moral imperative to protect the planet and its people from the ravages of climate change. And each believer is called upon to understand and internalize what his or her own religion has to say on this vital issue.

In what follows, we will briefly examine the main teachings of seven major world religions: Judaism, Christianity, Islam, Buddhism, Hinduism, Sikhism, and Indigenous. Together, these religions account for three-quarters of the world's population. We will then attempt to sketch out a multi-religious call to action.¹⁶

JUDAISM

In the Jewish tradition, the Torah is the divine guide for human conduct—for ethical relationships within our family, our community, between nations, and toward the earth. Central to these relationships and to Jewish theology is the belief that there is only one true being, one God who is the Creator of everything. It is our mission to develop a true appreciation for and understanding of God and to act based on this understanding.

To that end, the *shema* — the central declaration of Jewish faith that is recited every morning and evening — reminds us of our role in the unfolding of creation. Perhaps unsurprisingly, the *shema* has profound planetary insights. The first line, taken from Deuteronomy 6:4, is an affirmation of the unity and interconnectedness of all things. The second paragraph, Deuteronomy 11:14-17, is a statement that if we live well in relation to our natural environment, our environment will sustain us in return.

The first two chapters of Genesis teach a creation theology grounded in environmental responsibility. They state that creation is good; diversity in creation is to be cherished; and human beings are to act as divine partners by actively sustaining and conserving life on earth (Genesis 2:15). Should we fail in this task by forgetting the oneness of creation and refusing to release our claim to the earth, the earth will take its rest

¹⁶ For more detailed information on what the different religions teach on the environment, see the excellent online resources at the Yale Forum for Religion and Ecology (<http://fore.yale.edu>) and the Alliance of Religions and Conservation (<http://www.arcworld.org>). See also the issue of *Daedalus* from the Fall of 2001: <https://www.amacad.org/content/publications/publication.aspx?d=845>

despite us and upon us—through levels of drought and famine capable of turning an entire people into refugees (Leviticus 26).

One of the most important precepts in the Torah with respect to the earth is *shmita* (the sabbatical year). In Leviticus 25-26 and Deuteronomy 15, we read that one year of every seven must be a *shmita* year of restful release for the earth and its workers. The Torah indicates that in observing the *shmita*, we affirm our recognition that the land belongs to God. By compelling us to relinquish our claims to ownership and allowing time for renewal, *shmita* is the Torah's prescription for environmental, social, and economic preservation and justice.

Another important precept in the Torah is *bal tashchit*—the Jewish prohibition against wasteful consumption. *Bal tashchit* is taught in the context of a military campaign where Moshe—conveying God's command—instructions soldiers not to destroy food-producing trees as a tactic of war (Deuteronomy 20:19-20). As with many passages in the Torah, Rabbinic scholars have interpreted this passage to have multiple levels of meaning. Medieval commentator Rashi held that trees have a purpose outside of human affairs and should not be wasted. And medieval commentator Ibn Ezra reasoned that the prohibition serves to protect humankind's long-term interests by forbidding unsustainable practices. Other commentaries suggest the prohibition demonstrates that even in the most extreme and destructive times, the Torah commands that we limit wasteful consumption.

Although the scale of the problems brought on by climate change was unimaginable in the time of the Torah, the precepts of *shmita* and *bal tashchit* still apply. As in ancient times, self-interest, greed, short-term thinking, and the unsustainable exploitation of people and the earth endanger our existence.

On the Jewish High Holiday of *Rosh Hashanah* (the Jewish New Year), we celebrate the creation of the world. We are asked to imagine a balance, with all of humankind's good deeds on one side and destructive deeds on the other. The well-being of the world is in balance, and one deed of one person can tip the scale. The message is that every life-preserving act we do counts for the perfecting of creation, while wasteful and heedless acts, such as those driving climate change, can tip the scales to more destruction.

In the words of the Prophet Isaiah: “Not for chaos, destruction, did God create the world. For habitation God formed it!” (Isaiah 45:18).

CHRISTIANITY

Christians affirm the goodness of God's creation and believe that the earth was entrusted to humanity as a precious gift to be cherished and nourished. They also believe that the redemption of Christ has in turn redeemed all of creation, which is destined to share in God's glory.

Christianity therefore has a strong focus on caring for all of God's creation, both humanity and the rest of the natural world. Stewardship is an essential principle of Christian moral duty. God has given the earth to humanity with the explicit instructions to care for it. To mistreat the earth is to abuse and reject God's gift.

“The climate is a common good belonging to all and meant for all.”
– Pope Francis

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By letting climate change go unchecked, we are ignoring our responsibility to honor His creation. We are in essence inheriting a garden and bequeathing it as a wilderness.

In Christian theology, care for the earth and care for its people go hand in hand. And while the effects of climate change threaten the well-being of the entire earth, no one suffers more than the poor, who have always been prioritized by Christianity. The First Letter of John asks: “If anyone has the world's goods and sees his brother in need, yet closes his heart against him, how does God's love abide in him?” (1 John 3:17). And in viewing the earth as a “common good,” Christians must not only consider those who inhabit it now, but also future generations’ rights to experience the gifts of God.

This core responsibility toward creation has been long stressed by the Orthodox Church. Ecumenical Patriarch Bartholomew I stated that “the protection of the environment as God’s creation is the supreme responsibility of human beings, quite apart from any material or other financial benefits that it may bring. The almighty God bequeathed this ‘very beautiful’ world (Gen. 1:26) to humanity together with the commandment to ‘serve and preserve’ it.”¹⁷ Furthermore, “to commit a crime against the natural world is a sin.”¹⁸ The Orthodox Church has designated every September 1st (the beginning of the ecclesiastical calendar) as a day of prayer for the protection of the environment. Just recently, the Roman Catholic Church followed suit, when Pope Francis also called for a day of prayer for the care of creation on this date.

The Roman Catholic Church has also spoken out strongly on the need to protect God’s creation, especially as the scale of climate change and environmental degradation has become more urgent. Popes Saint John Paul II, Benedict XVI, and Francis have all drawn attention to this, as have many national bishops’ conferences.

In his 2009 encyclical, *Caritas in Veritate*, Pope Benedict XVI said, “The Church has a responsibility towards creation and she must assert this responsibility in the public sphere. In so doing, she must defend not only earth, water and air as gifts of creation that belong to everyone. She must above all protect mankind from

¹⁷ Message by His All Holiness Ecumenical Patriarch Bartholomew for World Environment Day (June 5, 2009). Retrieved from: <http://www.ec-patr.org/docdisplay.php?lang=en&id=1071&tla=en>

¹⁸ Address by Ecumenical Patriarch Bartholomew to environmental symposium, Saint Barbara Greek Orthodox Church, Santa Barbara, California, 8 November 1997. Retrieved from: <http://moralground.com/wp-content/uploads/2010/11/EcumenicalBartholomew.pdf>

self-destruction.”¹⁹ In his World Day of Peace message in 2010, Pope Benedict concluded that “if you want to cultivate peace, protect creation.”²⁰

In 2015, Pope Francis released the encyclical *Laudato Si': On Care of Our Common Home*²¹, the first papal encyclical devoted exclusively to ecology and creation care. In the encyclical, Pope Francis develops the theme of integral ecology, the idea that everything in the world is connected, and that there is an intimate relationship between the poor and the fragility of the planet. He also stresses that each living creature has its own purpose and should be cherished with love and respect. “The universe unfolds in God, who fills it completely,” he says, “Hence, there is a mystical meaning to be found in a leaf, in a mountain trail, in a dewdrop, in a poor person’s face.”

In this context, Pope Francis speaks bluntly about the current ecological crisis. He notes that “the earth, our home, is beginning to look more and more like an immense pile of filth” and “these situations have caused sister earth, along with all the abandoned of the world, to cry out, pleading that we take another course. Never have we hurt and mistreated our common home as we have in the last two hundred years.” And he points specifically to climate change as one of the principal challenges facing humanity, requiring urgent action. “The climate is a common good,” he says, “belonging to all and meant for all.”

Other Christian leaders have echoed these themes. Rev. Olaf Tveit, Secretary General of the World Council of Churches—and a Co-President of *Religions for Peace*—noted: “The human rights to have basic needs met—food, clean water and air, health services and more—are limited or violated by climate change already for many people in the world. Who has the right to take away the hope of a future where the next generations can enjoy life in its abundance on this planet?”²²

In sum, the Christian moral duty specifically entails care for the earth and all people, with special priority for the poor. Since climate change threatens all of God’s creation, Christians have a special responsibility to take action.

ISLAM

Islam sees itself as a religion of nature, with over 750 verses speaking about the responsibility of humanity to the natural world and its relationship with all creatures. The Qur'an and the Hadith are both filled with references to the sacredness of nature.

In Islam, Allah has created the universe in its diversity, richness, and vitality, and all creation reflects and manifests the glory and mercy of the Creator. Allah created the earth in perfect equilibrium, with natural

19 Pope Benedict XVI, *Caritas in Veritate*, Vatican City, 29 June 2009. Retrieved from: http://w2.vatican.va/content/benedict-xvi/en/encyclicals/documents/hf_ben-xvi_enc_20090629_caritas-in-veritate.html

20 Pope Benedict XVI, *World Day of Peace Message*, Vatican City, 1 January 2010. Retrieved from: https://w2.vatican.va/content/benedict-xvi/en/messages/peace/documents/hf_ben-xvi_mes_20091208_xliii-world-day-peace.html

21 Pope Francis, *Laudato Si'*, Vatican City, 24 May 2015. Retrieved from: http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html

22 Rev. Dr Olav Fykse Tveit, *The Right To Hope*, 28 November 2015. Retrieved from: <https://www.oikoumene.org/en/resources/documents/general-secretary/messages-and-letters/the-right-to-hope-cop-21>



“Injuring the earth hurts each of us.”
– Shaykh Abdallah bin Bayyah

rhythms and cycles in which all living things—including human beings—can thrive. As the Qur'an says, “He raised the heaven and established the balance, so that you would not transgress the balance” (Surah 55:7).

Allah has given humans the role of *khalifa*, or stewards, of Creation. Dr. Abdullah Omar Naseef, former secretary general of the Muslim World League, said, “We are not masters of this Earth; it does not belong to us to do what we wish. It belongs to Allah and He has entrusted us with its safekeeping.”²³ Muslims believe that they will be held accountable by Allah for how they treat the environment as his vice-regents on earth. As the Prophet Muhammad (peace be upon him) said, “The world is sweet and verdant, and verily Allah has made you stewards in it, and He sees how you acquit yourselves.”²⁴

The key concept of *fitrah*, the primordial harmony between humankind and nature, underlies Muslims' responsibility to the environment. “[Adhere to] the fitrah of Allah upon which He has created [all] people. No change should there be in the creation of Allah. That is the correct religion, but most of the people do not know” (Surah 30:30). Believers are called upon to respect the sacredness of nature by maintaining the balance. Human-caused climate change is a direct contradiction to this order; by disrupting the balance of nature and the earth's atmosphere, humans have disobeyed Allah's will and violated *fitrah*.

As Shaykh Abdallah bin Bayyah—President of the Forum of Peace in Muslim Societies and Co-Moderator of *Religions for Peace*—describes it, “Anyone who has reflected on the Qur'an's message will come to the conclusion that he has a place in the wondrous creation. Injuring the earth hurts each of us.”²⁵

Islam teaches that human beings have no right to harm the rest of creation. Believers are obliged to treat all things with care and awe (*taqwa*) of their Creator, compassion (*rahma*), and utmost good (*ihsan*). The Qur'an says that “the creation of the heavens and the earth is far greater than the creation of mankind, but most of mankind do not know it” (Surah 40:57).

23 Dr. Abdullah Omar Naseef, The Muslim Declaration on Nature, Assisi 1986. Retrieved from: <http://www.arcworld.org/faiths.asp?pageID=132>

24 Hadith from Abu Sa'id Al-Khudri.

25 Shaykh Abdallah bin Bayyah, transcribed from Faiths for Earth video: https://www.youtube.com/watch?v=E_3EuybS9Mk

The Prophet Muhammad (peace be upon him) also offers an example for all to follow. In his life, he emphasized conservation, stewardship, and compassion for the natural world. He urged his followers to conserve water, forbade the felling of trees in the desert, and established protected areas for conservation and sustainable use. He himself lived a frugal life, ate simply, and took delight in the natural world.

Muslims recognize that human activity, including through climate change, is bringing about corruption (*fasad*) on the earth. The Qur'an says, "Corruption has appeared throughout the land and sea, by [reason of] what the hands of people have earned so He may let them taste part of [the consequence of] what they have done that perhaps they will return [to righteousness]" (Surah 30:41).

By witnessing effects of climate change, Muslims have an opportunity to return to a better way of living and address the corruption of the environment. And since Islam is a complete way of life, an Islamic response to climate change could have wide-ranging effects.

Sheikh Ali Gomaa, former Grand Mufti of Egypt, put it this way: "If we take seriously our role as God's deputies on earth, not just by benefiting from the environment, but by preserving it and ensuring that other communities and generations will have the same possibilities to drink clean water, breath fresh air, and live in a world that is in harmony with itself and with ourselves, we may hope to be among those who are beloved to God due to their care for His creation."²⁶

In response to this urgent challenge of climate change, and in coherence with the Muslim tradition, over 60 leading Islamic scholars from over 20 countries issued a Islamic Declaration on Global Climate Change in 2015.²⁷ This declaration calls for concerted action to protect the earth from the ravages of climate change. Specifically, it calls on world leaders to phase out greenhouse gas emissions and move to 100 percent renewable energy as soon as possible.

BUDDHISM

Buddhism teaches that our lives are fully interconnected and that the web of all living things sustains us. This has profound implications for how we approach climate change. As Venerable Tep Vong—the Supreme Patriarch of Cambodian Buddhism and Co-President of *Religions for Peace*—put it: "Buddhism calls all people to respect that all beings are profoundly interconnected. Injuring the earth hurts each of us."²⁸

Buddhism also teaches that we achieve happiness through directly confronting challenges. We have no more urgent challenge than climate change—the harrowing ecological consequence of our collective karma. Our behavior has devastated our environment and set us on a path of unimaginable suffering. The good news is that with relentless determination, we can fix it. Buddhism believes that suffering is caused by ignorance of the truth, and that to overcome human suffering, we must understand its true causes.

26 Sheikh Ali Gomaa, The Role of Religion in Preserving the Environment, Speech to Parliament of World Religions, Melbourne, 10 December 2009. Retrieved from: <http://fore.yale.edu/news/item/the-green-profile-of-the-grand-mufti-of-egypt/>

27 Retrieved from: <http://islamicclimatedeclaration.org/islamic-declaration-on-global-climate-change/>

28 His Holiness Tep Vong, transcribed from Faiths for Earth video: https://www.youtube.com/watch?v=E_3EuybS9Mk



“Climate change is a severe challenge.
Is it not, however, a message from the Earth?
It invites us to return to our original selves:
the ones God and Buddha offer.”

– Kosho Niwano

The root causes of climate change are manifest. Our production and consumption of fossil fuels, our craving for material things and money, and our disrespect for nature and our planet have created an intolerable situation. Our habit of pillaging nature for profit has sickened the earth. In ignoring the drivers of climate change, we have lost sight of the truth that all beings are interconnected through one complex, natural system. As Zen Master Thich Nhat Hanh put it, we must awaken from the illusion of our separateness.

Venerable Maha Ghosananda, former Patriarch of Cambodian Buddhism, explained, "When we respect the environment, then nature will be good to us. When our hearts are good, then the sky will be good to us. The trees are like our mother and father, they feed us, nourish us, and provide us with everything; the fruit, leaves, the branches, the trunk. They give us food and satisfy many of our needs. So we spread the truth of protecting ourselves and protecting our environment, which is the truth of the Buddha. When we accept that we are part of a great human family—that every being has the nature of Buddha—then we will sit, talk, make peace. I pray that this realization will spread throughout our troubled world and bring humankind and the earth to its fullest flowering. I pray that all of us will realize peace in this lifetime and save all beings from suffering."²⁹

The symbol of the lotus flower crosses all Buddhist cultures. The lotus is rooted deep in swamp mud, a symbol of suffering that also provides rich potential for growth. The stem grows through the water and blossoms above the surface, signifying our ability to overcome our most challenging circumstances. Buddhism teaches that the more desperate our situation is, the more profound the potential is for transformation.

Buddhism does not demand that we renounce our possessions or deprive ourselves of basic comforts. In fact, after years of physical austerity, the Buddha encouraged the “middle path,” a life of moderation and balance—one in which we can sustain ourselves but remain free of the dangers of materialism and the distraction of riches.

29 His Holiness Maha Ghosananda, Buddhist Faith Statement, Alliance of Religions and Conservation. Retrieved from: <http://www.arcworld.org/faiths.asp?pageID=66>

We need to achieve this on a global scale. This type of transformation is impossible without determination and action. Buddhists practice their path through daily compassionate action.

Rev. Kosho Niwano—President-designate of Rissho Kosei-Kai and Co-Moderator of *Religions for Peace*—explained the Buddhist response to climate change: “Greed, fear, and insecurity do not provide the ground for solving the challenge of climate change. Rather reexamining that we are already blessed with what we truly need, must be and must remain our starting point for addressing this challenge. Climate change is a severe challenge. Is it not, however, a message from the Earth? It invites us to return to our original selves: the ones God and Buddha offer.”³⁰

HINDUISM

In Hinduism, the whole planet is considered sacred. Mother Earth is a beautiful goddess, married to Vishnu, the lord of the universe. In the Bhagavad Gita, Sri Krishna says, “I pervade the Universe. All objects in the Universe rest on me as pearls on the thread of a garland.” The Upanishad completes the story, saying, “After creating the Universe He entered into every object created.”

In Hinduism, humans cannot be separated from the Earth; they are part of the same family. This serves to emphasize the importance of protecting our home and respecting all parts of it: water, land, and air. Hindus hold all life in reverence, whether it is human or non-human, animal or plant. As Swami Vibudhesha Teertha writes, “Hindus believe that there is soul in all plants and animals. One has to do penance even for killing plants and animals for food.”³¹ Shrivatsa Goswami notes that, “the Sanskrit for family is parivara, and environment is paryavarana. If we think of the environment as our home and all of its members as our family it is clear that the key to conserving nature is devotion, love—giving and serving.”³²

The idea of doing no harm is a cardinal virtue, known as *ahimsa*. Causing harm to any living being goes against *dharma*, the fundamental truth of Hinduism that also calls all who follow to a moral or just way of life. In practice, following *dharma* means acting in accordance with Divine Truth, and this is in service to the good of the world.

Climate change threatens plants, animals, and natural resources through the same processes that connect life on Earth together. By paying attention to the interconnectedness of all things, Hindus can become more aware of the harm that pollution in one place does to life all over the world.

The emission of large amounts of greenhouse gases and other pollutants contradicts the principle of *ahimsa*, since it puts countless species in peril. We know that one in six of the Earth’s species may be lost as a result of climate change. If we truly act in accordance with the principles of Hinduism, this loss of life cannot be allowed to continue.

30 Rev. Kosho Niwano, Address at Pontifical Academy of Sciences workshop entitled “Protect the Earth, Dignify Humanity: The Moral Dimensions of Climate Change and Sustainable Development,” Vatican City, 28 April 2015.

31 Swami Vibudhesha Teertha, Hindu Faith Statement, Alliance of Religions and Conservation. Retrieved from: <http://www.arcworld.org/faiths.asp?pageID=77>

32 Shrivatsa Goswami, Hindu Faith Statement, Alliance of Religions and Conservation. Retrieved from: <http://www.arcworld.org/faiths.asp?pageID=77>

The 2009 Hindu Declaration on Climate Change³³ stated: “Knowing that the Divine is present everywhere and in all things, Hindus strive to do no harm. We hold a deep reverence for life and an awareness that the great forces of nature … are bound to each other within life’s cosmic web.” In 2015, another Hindu Declaration on Climate Change was released.³⁴ “Today we call on all Hindus to expand our conception of dharma,” it said. “We must consider the effects of our actions not just on ourselves and those humans around us, but also on all beings. We have a dharmic duty for each of us to do our part in ensuring that we have a functioning, abundant, and bountiful planet.... We must base our response to climate change on a number of central principles, expanding on the truism that the Divine is all and all life is to be treated with reverence and respect: Internalising *vasudhaiva kutumbakam* (the family of Mother Earth), promoting *sarva bhuta hita* (the welfare of all beings), and acting with an understanding of karma and the cycle of birth, death, and rebirth.”

In the original 2009 Hindu Declaration on Climate Change, the authors encourage a compassionate global response to the challenges of climate change. Mahatma Gandhi’s famous adage—“you must be the change you wish to see in the world”—serves as the basis for this manifesto. As “one-sixth of the human family,” Hindus are urged to lead by example in sustainable behavior and to “be prepared to respond with compassion to such calamitous challenges as population displacement, food and water shortage, catastrophic weather and rampant disease.”

The vast majority of Hindus live in India, a country that faces some of the highest risks worldwide from climate change impacts. Given the dire consequences of inaction, Hindus must call on the virtue of *ahimsa* and compassionately protect their people and the Earth from the effects of climate change.

SIKHISM

The wellspring of the Sikh ethos lies in its world-view. This is summed up in the Sikh sacred logo known as *Ik Oankar*, where the numeric representation of “One” (Ik) is followed by an expression of creation in its boundless diversity. This logo appears as the opening and recurring message of Sri Guru Granth Sahib, the volume of scripture revered by Sikhs as their eternal Guru. It affirms for them the ultimate reality of God’s existence. It also evokes a sacred oneness, which permeates and holds together a lovingly created and harmoniously sustained universe, where all is interrelated and interdependent. Importantly, it calls on all humans to recognize their shared values and responsibilities to care for a world divinely entrusted to us. It is this sentiment of loving responsibility that is embedded in the word *dharam*, which Sikhs use for the notion of “religion” or “faith.”

The word “Sikh” means “learner.” This carries the idea that we can discover our potential to make a difference in the world by becoming conscious of the divine presence around us and inside us. According to Sikh teachings, after creating naam—the divine word or spirit—God created kudrat, or nature, in whose awe-inspiring magnificence the Creator dwells and delights. In their daily prayers, Sikhs give praise to the life-giving elements that nourish and sustain us, evoking the air as Guru (pavan Guru), water as Father (pani

33 Hindu Declaration on Climate Change, presented to the Parliament of the World’s Religions, 2009. Retrieved from: <http://fore.yale.edu/news/item/hindu-declaration-on-climate-change/>

34 Bhumi Devi Ki Jai: A Hindu Declaration on Climate Change. Retrieved from: <http://www.hinduclimatedeclaration2015.org/english>

pita) and the great earth as Mother (mata dharat mahat). The planet itself is viewed as a dharamsal, a place to practice dharam—to attune and align us to a “right way” of being, which embraces and transcends our differences, to enable personal, social, and environmental flourishing. Each time Sikhs stand with folded hands for the *ardas* prayer of supplication, they ask humbly for the ability to enable “sarbat da bhalla,” the universal well-being of all. The Sikh way of life also requires the active practice in equal measure of *simran* (prayer and meditation) and *sewa* (serving others unconditionally).

For Sikhs, the aim of “learning” then, is to awaken and exercise attributes such as compassion, integrity, contentment, wisdom, humility, and forgiveness. As the closing message of Sikh scripture informs us, this spiritual awakening enables the mind and body to “blossom green” (*tan man theevai hariaa*). In the inner ecology of the self, the blossoming of these attributes is endangered by the working of *haumai*, the selfish ego, which fuels traits such as greed, hate, possessiveness, narrow-mindedness, and self-gain. As we learn to curb our selfish negativity and to mobilize our selfless positivity, this can tangibly transform the outer ecology of our environment, beginning with the atmosphere we create through our prevailing values and attitudes and the sense of hope, trust, faith, and ethical responsibility we emit into our surroundings.

The advent of Guru Nanak Dev Ji—the first in the line of ten gurus who founded the Sikh dharam or faith between 1469 and 1708—is attributed to a *pukaar* or cry of help from a world anguishing under the strain of human vice, ignorance, and lack of gratitude. Today, once again the planet’s cry for help is being felt and heard around us, loud and clear. This calls on Sikhs to rekindle their relationship with the Creator and creation, with reaffirmed commitment and in the characteristic spirit of *chardi kala*—courageous optimism—in the face of adversity. The inspirational Sikh concept of *sant sipahi*, the saintly soldier, goads us to be agents for change, fusing the qualities of initiative, grit, and courage with wisdom, care, and responsibility. Indeed, the outward form preserved by practicing Sikhs—with their *kes* or uncut hair and flowing beards—points to a special bond between nature and humans and the duty to be a particular kind of “eco-warrior,” empowered by spiritual values to safeguard our mother earth. It is an image that can further spur us to shift from being exploiters of the earth’s resources to being its deeply indebted custodians, so that the legacy we leave for future generations may have the most positive and furthest-reaching effects.

INDIGENOUS RELIGION

The term “Indigenous Religion” applies to beliefs, practices, and spiritualities of the thousands of societies all over the world who practice traditional forms of religion. Reflecting the concerns of people at the forefront of environmental degradation, representatives of the indigenous peoples have also issued a compelling statement on the gravity of climate change.³⁵

“This Sacred Way of Life has been passed down generation-to-generation since the beginning of the Creation of Life. The sanctity of this Way of Life has been violated and abused by people who are living without regard for the well being of Mother Earth and our collective future,” says the statement. “We recognize our umbilical connection to Mother Earth and understand that she is the source of life, not a resource to be exploited,” declare the indigenous representatives.

35 Indigenous Elders And Medicine Peoples Council Statement, United Nations Convention on Climate Change, 30 November 2015. Retrieved from: <http://nativenewsonline.net/currents/indigenous-peoples-release-joint-statement-to-un-talks-in-paris-on-climate-change/>

Yet because of climate change, “the Air is not the same anymore. The Water is not the same anymore. The Earth is not the same anymore. The Clouds are not the same anymore. The Rain is not the same anymore. The Trees, the Plants, the Animals, Birds, Fish, Insects and all the others are not the same anymore. All that is Sacred in Life is vanishing because of our actions.”

For the indigenous, the current state of affairs results from the “desecration, damage, and destruction to the Creator’s sacred creation.” As the statement puts it, “to truly heal Mother Earth and ensure our survival, we must recognize that the entire natural system is one life system rather than fragmented parts. Our concern is with the acceleration of the cumulative and compounding devastation that is being wrought by the actions of people around the world. Modern living and all that it encompasses does not respect the Sacredness of Life and has ruptured the sacred seal around the Earth.”

The statement notes painfully that “aboriginal indigenous peoples have seen first-hand the impacts these destructive actions have had on our sacred places and the natural world.” It calls for the world to heed the concerns of the indigenous peoples, the original caretakers of Mother Earth—and to heed “the natural system of life, the natural law, and our connection with all life.” The solution is for people to “re-align themselves in harmony and balance with the Creator’s natural law.” It is to “include the sacredness of all life in our discussions, decisions, and actions.”

The indigenous peoples call upon world leaders to end the commodification of Mother Earth, “which places our lives and our futures on an unstable foundation based on money, greed, and power.” Instead, “we must open our hearts to love, care and have respect for one another and all creation to create peace.” We are all called upon to “take action and responsibility to restore a healthy relationship with each other and Mother Earth.” “Know that you yourself are essential to this World,” says the statement. “Believe that! Understand both the blessing and the burden of that. You yourself are desperately needed to save the soul of this World. Do you think you were put here for something less?”

THE MULTI-RELIGIOUS CASE

It is also possible to discern a multi-religious case for taking action on climate change, drawing upon the core principles that are common to all. As a potential common ground for multi-religious action, this will be the starting point.

All faiths would agree that human engagement with the natural world can and needs to be profoundly positive and that creative harmony with nature—along with respect for human dignity and the common good—are foundational keys to sustainable human development.

Assisted by modern science, we can today recognize the incessantly dynamic interrelations among all natural systems and forms of life, including human life. As we have seen, the overwhelming scientific consensus makes clear that the collective impact of human behavior is profoundly altering the earth’s ecosystem and, in turn, imperiling the intricate web of life supported by it.

This, in turn, sets a profound moral challenge with three interlocking dimensions:

First, many ancient and modern forms of moral argumentation revolve around the reality of self-contradiction. In this case, high-carbon energy is being used to advance human flourishing. And yet this very use of high-carbon energy threatens to vastly alter the intricate web of life that supports the possibility of human existence. In the starker moral terms, we do not have the right to impose collective suicide and a related wider biocide. Rather, we are morally obliged to advance human development in harmony with nature so that development can be “sustained” by the natural systems upon which it depends.

Second, we also saw that climate change is having a disproportionate effect on the most vulnerable people. As we saw, climate change is largely being driven by the unsustainable activities of the world’s richest people. This is morally unacceptable because it fails to honor the inherent human dignity of those most vulnerable to climate change. In addition, the intricate web of life upon which all human life depends must be understood as a “common good.” Since all depend on it, it is morally unacceptable for the few to abuse and destroy it. Rather, we believe that sustainable human development must honor human dignity and protect the common good.

Third, there is a direct relationship between “capacity” and moral obligation. Diverse religious and moral traditions agree that the greater the capacity to address a grave threat, the greater the responsibility to do so. Collectively, we have the capacity to address climate change, and this capacity is a measure of our moral responsibility to act. While all people have a responsibility to limit climate change, those most able to do so—particularly those whose well-being is secure and whose lifestyles often include the abundant waste of energy—have the greatest responsibility to act. This is true of individuals and states alike. The countries that emit the most carbon dioxide as well as those with the greatest wealth are morally obliged to take the lead in climate protection. This must include standing in solidarity with developing countries, including by sharing technology and providing needed financial resources.



Photo: SandeepVirdee

Chapter 3: Solutions and the Role of Religious Communities

The first chapter laid out the enormity and urgency of the climate change challenge. The second chapter argued that we have a clear moral imperative to protect our planet from ruin, and that the source of the imperative can be found in the teaching of the world's major religions. This chapter turns its attention to action, to solutions, especially by asking, What can people, especially religious believers, do?

The starting point for any solution must be a global commitment at the institutional and political level to reduce the carbon emissions, which essentially means moving from high-carbon to low-carbon forms of energy. This strategy is known as decarbonization. It will not be easy, but it is feasible—and it is essential.

INTERNATIONAL EFFORTS TO COMBAT CLIMATE CHANGE

Given that climate change is a common problem facing all of humanity, the world needs to address it with a common plan. This has been the goal of international climate negotiations since the Rio Earth Summit in 1992.³⁶ That summit gave rise to the United Nations Framework Convention on Climate Change (UNFCCC), in which all parties pledged to achieve the “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.” Primary responsibility for action was placed on the richer countries, given they are predominantly responsible for the current state of affairs, and also better able to adjust to a low-carbon future.

Following Rio, the world community drew a red line under a rise in global temperatures by 2 degrees Celsius over preindustrial levels. This is not to say that this is a “safe” level of warming. As seen already, even at 2 degrees, the implications for human life and livelihoods could be severe. Restricting warming to the 2-degree guardrail is simply the minimum requirement for averting catastrophe and avoiding the pernicious tipping points of runaway climate change. And given that temperatures have already risen by 1 degree, there is little room for further warming.

In spite of the urgency, almost a quarter of a century passed without any real action on climate change. The treaty parties met each year, yet seemed incapable of halting the continuous rise in emissions. With the 1997 Kyoto Protocol, the richer countries pledged to reduce emissions by 20 percent in 2012 compared with 1990. This was a failure. In Durban in 2011, the parties agreed that they would finally reach an agreement in 2015, in which all countries—not just the rich ones—would make binding commitments to reduce emissions. And in Copenhagen in 2009, the parties to the UNFCCC agreed that the richer countries would mobilize \$100 billion a year by 2020 to support climate action in developing countries.

This forms the backdrop to the Paris Agreement, signed by 196 countries in December 2015.³⁷ In Paris, the nations of the world committed to taking action to stay beneath the 2 degrees Celsius limit. In fact,

36 For details, see Sachs (2015a).

37 The full document can be accessed from this link: <https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf>



In Paris, the nations of the world committed to taking action to stay beneath the 2 degrees Celsius limit.

Photo © Flickr / Presidencia de la República Mexicana, CC BY 2.0

they stepped up the level of ambition, promising to pursue efforts to contain global warming to 1.5 degrees Celsius—this is in recognition of new scientific evidence on fast-rising sea levels. This commitment is backed up by a bottom-up approach. Each country is called upon to come up with a climate plan—and at Paris, 187 countries had done so. The backbone of the agreement is that countries commit to peaking global emissions as soon as possible, with the goal of reaching net-zero greenhouse gas emissions in the second half of the century. The Paris Agreement came into force in November 2016.

When the Paris Agreement was signed, the national plans still lacked sufficient ambition. Collective commitments were not enough to keep within the 2-degree limit, let alone 1.5 degrees. But this is a dynamic, ever-evolving process. Every five years, countries are required to come back with updated climate plans—the aim is to ramp up ambition. And the agreement establishes a process whereby implementation will be assessed every five years, which ensures transparency and accountability. The first stocktaking exercise is proposed for 2018, even before the agreement comes into effect in 2020. And in 2020 itself, countries will provide their first updated plans.

The Paris Agreement also reaffirms the commitment that developed countries will provide \$100 billion a year to developing countries to help them cope with climate change by 2020—and extends this commitment to 2025. After 2025, governments will adopt a higher goal, with the \$100 billion regarded as a floor.

On the whole, the Paris Agreement is strong. By aligning all countries toward a single goal, it is truly transformative. Yet the hard work lies ahead. The level of ambition will need to be ratcheted up substantially in the years ahead, and that requires significant political will and courage.

As Professor Jeffrey Sachs—Director of the Earth Institute, Columbia University, and Trustee of *Religions for Peace*—put it, “The Paris agreement on climate change is a triumph of diplomacy. At its best, diplomacy enables countries to find the common good, just as politics at its best enables a single society to find the common good. The success of the new agreement will depend on whether diplomacy and politics can defend the common good against the ever-present tendencies toward corruption, confusion, and conflict.”³⁸

38 Sachs (2015b).

IMPLEMENTING THE PARIS AGREEMENT: THE PATH OF DECARBONIZATION

If countries are serious about the 2-degree limit, what does that mean in practice? As noted already, we are currently emitting about 35 billion tons of carbon dioxide each year. To have a decent chance—defined as a two-thirds probability—of staying at this guardrail, these emissions from energy would need to fall to between 10 and 15 billion tons by 2050—and to zero by about 2070. This is consistent with the commitments underpinning the Paris Agreement.

Yet this is a tall order, especially given that the economy will continue to grow. The only way to achieve this goal is through a profound transformation of the energy system—through what is known as “deep decarbonization pathways.”³⁹ The only way to effectively implement the Paris Agreement is to follow the path of decarbonization.

Decarbonization has three key strands. The first of these strands is improving energy efficiency. There are a lot of possibilities here—including more fuel-efficient vehicles, smarter urban design that upgrades public transportation and minimizes commuting distances, and more energy-efficient buildings to reduce heating, cooling, and ventilation. This shift will entail an upfront cost, but ultimately it should save money by lowering energy costs—especially important for the poor.

The second strand of decarbonization involves making electricity carbon-free. This would replace electricity generated by fossil fuels (coal, oil, gas) with electricity generated by renewables (hydro, wind, solar, geothermal). This is “clean” energy, as it does not emit greenhouse gases into the atmosphere.

The third strand is fuel switching. This means shifting from the direct use of fossil fuels for energy, to electricity that is generated by clean sources. For example, furnaces and boilers to heat buildings can be replaced by heat pumps that are powered by electricity. Internal combustion engines in cars can be replaced by electric motors. And low-carbon fuels can be used for things that cannot easily be electrified, such as airplanes and large trucks.

All of this presents a momentous challenge on the scientific, economic, and financial fronts. Yet we have the technological ability to move to a decarbonization strategy without any real deterioration in the quality of life. Recent technological advances include big reductions in the cost of wind and solar energy, as well as improvements in batteries for electric vehicles, smarter power grids, and far more efficient building design. And the technology should keep getting better, with more effective means of storing intermittent renewable energy, the potential for capturing carbon dioxide, and more efficient long-distance power transmission. Thanks to these technological improvements, the costs of clean fuels are often cost competitive with fossil fuels. And as technology advances, and as we become more efficient in our use of energy, these costs will only fall further.

Right now, renewable energy has great potential all over the world, in rich and poor countries alike. Solar potential is high in regions like Africa, Central and South America, Southeast Asia, and Australia. Wind power is cost competitive in windy regions, which include large swaths of the United States, the southern tip

³⁹ Sustainable Development Solutions Network and Institute for Sustainable Development and International Relations (2015).



Renewable energy has great potential all over the world, in rich and poor countries alike.

of South America, and parts of northern Europe and China. Geothermal energy also offers much promise, including in East Africa.

What about the overall costs of this energy transition? According to the International Energy Authority, about \$40 trillion in additional investment is needed to transition to a low-carbon energy system consistent with staying under the 2-degree limit.⁴⁰ This amounts to less than 1 percent of cumulative global GDP from 2016-50. And the Deep Decarbonization Pathways Project calculates that investment in low-carbon technology must rise to about 1.25 percent of GDP a year.⁴¹

This is affordable. As a point of comparison, world military spending is close to 2 percent of global GDP. And current fossil fuel subsidies amount to a whopping 6.5 percent of global GDP, largely because polluters are not paying the full social costs of their activities.⁴² So it is less a matter of resources than priorities. And not only is this additional investment affordable, but it also pays for itself many times over—the International Energy Authority calculates that the eventual fuel cost savings will be three times the additional investment.

This investment is a small price to pay to avoid catastrophic consequences down the line. As we saw in Chapter 1, this small transition cost needs to be assessed against a possible reduction in GDP by 23 percent by the end of the century, if we do not change course.

All in all, we have the ability to embark upon a safe, efficient, and low-cost transition from a high-carbon economy to a low-carbon economy. What we need now is implementation at the global, national, and local levels. And implementation is easier when businesses and consumers face the right incentives to reduce carbon emissions. In turn, this means “getting the pricing right”—making sure that people pay for the environmental harm they cause. Otherwise, those who emit carbon dioxide do not pay the true social costs of their behavior. Economists regard this as an important market failure that calls for corrective action—making people pay a higher price for using fossil fuels than they would on the market. This would surely encourage a speedier transition from fossil fuels to renewables.

⁴⁰ International Energy Agency (2015).

⁴¹ Sustainable Development Solutions Network and Institute for Sustainable Development and International Relations (2015).

⁴² Coady et al. (2015).

In practice, there are a number of ways to do this. The simplest is a tax on carbon, where the tax attempts to approximate the social cost of carbon emissions. This raises the cost of oil, coal, and gas relative to wind, solar, nuclear, and other low-carbon options. Another way is to issue emissions permits. To be allowed to emit carbon, people would need to purchase a permit on the open market. Although the permit system can work well, it comes with certain weaknesses. For example, the supply of permits can be increased following pressure, and governance problems can arise if certain industries are seen as favored.

During the transition to a net-zero-carbon future, the developed countries also need to follow through on commitments to help their poorer neighbors. As noted already, the world's poor are paying the price for the lifestyles of the rich—they contribute little to climate change, while bearing the brunt of its costs. The richer countries therefore have a moral obligation—not only to change their own behavior, but also to help the poorer countries through technology, technical assistance, and financial resources.

These resources can help poorer countries shift to low-carbon forms of energy—leapfrogging technologies based on fossil fuels and moving straight to renewable energy systems. They can also help countries adapt to climate change. As noted already, even 2 degrees can cause dramatic disruptions. It will be necessary to protect cities from storms and rising sea levels, make crops more resilient to heat and droughts, cope with population migrations, and take preventive action against the spread of diseases and other threats to health. And this is much harder for poorer countries—both because capacity and resources are limited, and because they are more exposed to the full force of climate change. This is why the financing assurances of the Paris Agreement are so important—and why, given the cost of the energy transition, the \$100 billion a year must be seen as a floor rather than a target.

Ideally, helping the poor cope with climate change should be seen as part of a broader sustainable development agenda. If the climate crisis is not solved, it will prove extremely difficult to reduce poverty, hunger, and social exclusion. The world's poor also need access to energy. Today, about 1.2 billion people have no access to electricity, and 2.8 billion rely on wood or other biomass, which leads to grave health problems. Helping people living in poverty adopt clean energy immediately, completely bypassing the path of fossil fuels, is therefore a priority. It is also affordable—the cost of providing renewable energy access to meet the basic needs of the bottom 3 billion has been estimated at \$250 billion, only about a 0.25 percent of global GDP.⁴³

THE ROLE OF RELIGIOUS BELIEVERS

As we move from commitment to implementation, every part of society must play its part. This is especially true as current commitments fall short of what is needed. Governments, of course, must keep the Paris commitments at the top of the policy agenda. Scientists and engineers must apply their ingenuity and creativity to solving the world's energy problems—making sure the path to a clean energy future is as smooth as possible. Businesses must invest in a sustainable development future. Financial managers must make sure that funds are directed toward investments in clean energy, not fossil fuels. And civil society organizations must play a strong watchdog role, holding political leaders accountable for past commitments, and encouraging greater ambition over time.

43 See Ramanathan (2015).

What about religious believers and religious communities? What role can they play?

To answer that question, we must first acknowledge that decarbonization is technologically and financially possible. We have the means to do it. The missing link is the political will and the translation of this will into concrete and courageous action—to ratchet up the ambition, as required by the Paris Agreement to be successful. This translates into a moral imperative, and—as we have seen—the moral case for caring for our earth is deeply rooted in the world’s religious traditions. Religious believers will therefore play a vital role in the years ahead.

Yet addressing climate change cannot be reduced to the domain of individual responsibility and individual action. As human beings, we are social beings, not disconnected individuals. We derive meaning through our relationships and we develop through institutions, which are patterns of social activity that give shape to individual and collective experiences.⁴⁴ This shared social life forms the basis of the common good, in and through which individual and communal flourishing mutually reinforce each other.

Yet various strands of modern thought have downplayed this traditional idea of a common good, envisaging only autonomous individuals who forge their own paths in life. According to this vision, human development does not require the mediation of institutions. Instead, each person acts independently and the common good is reduced to the sum of individual goods.

Yet this does not work. Disconnected individuals lack the ability to solve collective problems in complex market economies, especially when power is increasingly concentrated in corporate and bureaucratic structures. In these circumstances, the sum of individual goods can actually lead to a “common bad,” as is clearly the case with climate change.

The only solution is a reinvigorated commitment to the kind of civic deliberation needed to elevate the common good over private interests. In the process, social institutions would be renewed and endowed with a greater sense of public purpose—capable of responding effectively to large-scale collective problems like climate change.

Religious believers and communities have an important role to play here. At the core of any institution lies a moral framework, so religious believers are ideally placed to lead renewal efforts. Going even deeper, religious people understand at a profound level what it means to be a relational person rather than an autonomous individual. They understand that they are related to the Sacred. They understand that they are related to each other and to the natural world. Relationality is a core concern for the different religious traditions, which teach—each in its own way—that we “find” our true self by “going beyond” ourselves. Thus religious believers are ideally placed to locate and work for the common good.

In what follows, we can detail four different dimensions of how people of faith can engage on climate change. The first is through their personal choices, which we have argued is insufficient on its own, as it does not address the institutional dimension. Yet even here, the positive example from personal lives can indirectly affect institutional structure through the development of individual and social virtues. The next three dimensions relate directly to how religious believers collectively interact with some of the most vital

44 See Bellah et al. (1992).



Even the simplest choices
can have an impact.

institutions in society—in religious communities themselves, in economic interaction, and in political interactions. We will examine each in turn.

PERSONAL CHOICES

While the solutions to climate change are primarily political and institutional in nature, moving to a low-carbon economy will surely also entail changes in mindsets, habits, and lifestyles. This in turn can build up personal and social virtues.

All religious traditions emphasize that virtuous choices flow from an interior disposition to do what is right; this cannot be reduced to a mere Pavlovian response to an external stimulus. A virtue is really a habit, and it can only be perfected by practice. In this case, we need to build a whole new set of habits, a whole new set of virtues. This calls for the inculcation of earth-sensitive virtues, and a sincere motivation to develop a true ecological sensibility, recognizing that personal choices can affect the planet and our fellow human beings.

An important point about virtue is that it can be infectious—the good habits of one person can encourage good habits in others, which can in turn mold social norms. This is where religious believers can play a role. Religious communities have always been great seedbeds for nurturing virtue. And with the environmental crisis, people of faith can be pioneers in advancing ecological virtue. Especially in wealthy countries with large carbon footprints, believers can lead by example—such as by promoting more sober lifestyles, less dominated by excesses of consumerism.

Even the simplest choices can have an impact. For example, people can opt to travel more by foot, bicycle, public transport, or car pool. They can choose to turn off lights when not needed, recycle more, use heat and

air conditioning sparingly, plant more trees, and commit to wasting less food. On this point, many religious traditions attach great value to abstemious lifestyles, and to the production of food in a way that honors the earth and honors the people who have produced it. Many religious believers practice fasting and abstinence, and many refrain from eating meat. Given the heavy carbon footprint of some forms of meat in particular, these virtues have become especially important.

RELIGIOUS COMMUNITY ACTION

Aside from personal lifestyle choices, religious believers can help overcome climate change through their own religious institutions. It is well known that the vast majority of people in the world—85 percent—have a religious affiliation, and in many parts of the world, the most trusted leaders in the community are religious leaders. This presents a great opportunity for religious communities to lead.

Given their role as schools of virtue, religious communities can be in the vanguard of ecological education. Building up these virtues can be a vital part of the moral curriculum in churches, mosques, synagogues, and temples. Religious leaders can use their influence and authority to transmit information and resources on the environmental crisis to those in their congregation. They can do this by instituting formal or informal educational programs at their places of worship, theological training centers, and affiliated schools. The goal should be for the environmental teachings of each religion to become widely known, disseminated, and internalized by believers.

Religions can also incorporate an environmental sensibility into preexisting communal religious activities and practices—such as liturgies, large prayer gatherings, or celebrations around festivals, feasts, or commemorations. For example, communities that emphasize fasting can include a notion of “fasting for the earth.” Communities that emphasize pilgrimage can encourage “pilgrimages for the earth.” Communities can set aside particular periods to pray for the earth—an example here is how both Orthodox and Catholic Christians have set aside September 1 as an annual day of prayer for the care of creation.

One important way that religious communities can lead by example is by striving for net-zero carbon emissions in their own properties and structures—including places of worship, cemeteries, schools, universities, hospitals, and housing complexes. This might require a partnership with local banks and other financing mechanisms, but it is technologically feasible to install solar power at low cost in these buildings.

There is yet another benefit of this “greening” strategy. Especially in the developing world, it might also serve a valuable social function for the community as a whole. Places of worship help bring the whole community together. In regions where electricity is scarce, religious structures could help the community by providing facilities for charging cell phones or rechargeable flashlights. Even in richer countries, where the poor cannot always afford Internet access, religious buildings might be able to provide this valuable public service. And houses of worship in richer countries can partner with counterparts in poorer countries, by providing the needed financial resources to power the house of worship with affordable small-scale renewable energy.

In these ways, religious communities can provide a positive role model to the broader society and can help build up social virtues needed to reform institutions.

ECONOMIC ACTION

The market economy is one of the most important institutions in all countries, and it has proven incapable of coordinating—by itself—the collective action needed to combat climate change. By their participation in their local and national economies, religious believers can affect change and reform in these vital economic institutions.

All religious traditions would affirm that every economic decision constitutes a moral decision. The acts of consuming and investing are moral acts that must take place within a moral framework. Consumers, businesses, and investors all have a social responsibility, and once again, the moral compass to guide this responsibility comes from the world’s religious traditions.

When religious believers purchase a good or a service, they should assess the social and environmental implications of this purchase. Consumer movements driven by people of faith can exert pressure on businesses by insisting that they adopt sustainable practices and respect the environment. They might even send a message to companies by boycotting their products. As an example, religious communities in the United States successfully fought racial discrimination by businesses by organizing boycotts of these businesses.

Likewise, corporations run by people with religious conviction should strive to make sure that they account for all social costs associated with business activity. One implication of this is that corporations cannot be guided solely by the profit motive, as it is precisely this mentality that contributes to the ecological crisis. They must be responsible to a wide array of stakeholders—not just shareholders, but workers, suppliers, customers, and the environment too. And multinational companies should take care not to exploit the developing world, including indigenous communities. All in all, corporations must be seen as a vital part of the community. They draw from the common good and are responsible for helping to build up the common good.

Religious communities often control substantial financial assets and thus have the power to influence the allocation of resources for investment. An important movement is gaining traction encouraging people to divest from fossil fuels—from oil, coal, and gas companies—and invest instead in affordable renewable energy for all. By the time of the Paris climate talks, more than \$3.4 trillion had already been committed to divestment, and this number continues to grow.

This is a moral decision, given that it refuses to fund the very activities that are destroying our planet. Yet it is also a sound business decision, given that the fossil fuel industry is simply a bad investment at a time when the world has pledged to shift to renewables. And divestment can accelerate this shift, by moving capital away from oil, coal, and gas, and directly toward clean energy sources. This is a win-win strategy, as fossil fuel-free portfolios have a record of delivering competitive returns.

Religious communities can be in the vanguard here—not only by engaging in ethical investing themselves, but by providing a positive role model and encouraging other investors to follow suit. We have ample evidence that divestment can indeed work to change behavior. Think about the calls to divest from apartheid-era South Africa. This was driven in large part by religious communities, and it contributed to the ending of the apartheid regime. The same can be done for climate change.

POLITICAL ACTION

The political sphere is another core institutional dimension that has all too often proven incapable of putting the global common good over short-term vested interests when it comes to climate change. By their participating in the public square—on many different levels—religious believers can influence the quality of public life and the public debate. They can emphasize the moral dimension of public deliberation, bringing clarity to the fact that we are all jointly responsible for the common good.

The cultivation of virtue is therefore not just a personal call; it also has a strong public, or civic, dimension. Solving the environmental crisis will require the cultivation of new public virtues that orient the entire human family to summon the will to confront climate change. Old habits of waste, complacency, overly prolonged indecision, and the unwillingness to work together must be replaced with new habits of conservation, innovation, decision to act boldly, and a willingness to work in a global partnership. The world's diverse religious traditions can and must make clear that these climate-sensitive virtues must be chosen intentionally as values to be accepted, cultivated, and duly celebrated by the global community.



An example of a social-media-led campaign is *Religions for Peace's* Faiths for Earth campaign.

Photo: www.faithsforearth.org

This calls for political advocacy, which is a powerful tool for practicing public solidarity with others. Religious leaders are well placed to lobby governments and other decision-making bodies. This can be done at the local, national, regional, or global level. It can be done through quiet diplomacy, such as by building relationships of trust. Or, depending on the circumstances, it can be done more openly—such as by public statements, campaigns, petitions, and demonstrations. Direct mobilization can lead to powerful results, but—to cohere with the values of the religious traditions—it should always be underpinned by a strong ethos of nonviolence. In all of this, the multi-religious dimension would magnify the moral voice and show that all people of faith are united on this core moral issue.

Advocacy always works best when the desired result is as clear and specific as possible. Here, the focus should be on the campaign to decarbonize and move completely to renewable energy. Religious leaders should lobby governments to make the right choices, and hold them accountable for following through on any promises. Additionally, in richer countries, religious believers should stand up for global solidarity with their brothers and sisters in the developing world, urging their governments to provide the financial and technological assistance needed to overcome climate change and guarantee affordable renewable energy for all. They should stress that this is not aid or charity, but rather a moral obligation and a duty of justice.

Religious leaders and communities should also be adept in using both traditional and social media, which has a significant impact on public opinion. If needed, leaders and spokespersons should lay out a sequence of

lucid talking points, informed by their faith but accessible to a mainstream audience. Social media comes with unique challenges, given that its style of communication is more horizontal than vertical—which sometimes goes against the style of religious instruction and preaching. Nonetheless, a smart social media strategy has the potential to pay off significantly—including by reaching younger audiences who might know little about this dimension of their faith, but are nonetheless dedicated to environmental action and hungry for supportive religious material.

One example of a social-media-led campaign on this issue is *Religions for Peace*'s Faiths for Earth campaign. This is a global multi-religious campaign in which leaders from the world's religions invite believers and all people of good will to sign a petition calling on governments to commit to 100 percent renewable energy by 2050 and to invest resources in sustainable development pathways. This is a simple and specific message that is easy to remember and that can capture peoples' imaginations and appeal to their better natures.

The first phase of this campaign was launched in the run-up to the Paris climate negotiations at the end of 2015, with the aim of raising a groundswell of religious voices from all faith traditions to echo through the halls of power, providing a clear moral imperative for a binding climate agreement. The global campaign was headed by Desmond Tutu, archbishop emeritus of Cape Town and former President of *Religions for Peace South Africa*. As he himself put it, "As responsible citizens of the world—sisters and brothers of one family, the human family, God's family—we have a duty to persuade our leaders to lead us in a new direction: to help us abandon our collective addiction to fossil fuels. We can no longer continue feeding our addiction to fossil fuels as if there were no tomorrow. For there will be no tomorrow. As a matter of urgency we must begin a global transition to a new safe energy economy."

This kind of campaign must be sustained, not merely a one-off. It must last long after the Paris negotiations are complete, because the road to decarbonization is long and hard. But religious believers can help make the journey a little easier.

A final word on multi-religious collaboration: the gains from deploying religious resources in the fight against climate change are multiplied when the world's religions stand together. This kind of cooperation can prove more powerful—symbolically and substantively—than unilateral action by individual religious groups.

Each religious tradition has wisdom, experience, and resources to bring to the table. Through multi-religious partnership, these distinctive gifts can complement each other so that the whole is greater than the sum of the parts. When religious communities demonstrate the ability to work closely together, they build credibility and trust among the population at large. When they speak with one voice on issues like climate change, their moral authority is magnified. And they have a greater ability to influence policies, through their influence on individuals and institutions.

Multi-religious collaboration also brings internal gains. It promotes social cohesion by creating dialogue and action among diverse groups and persons, uniting them around a shared priority. It fosters openness and understanding between these diverse groups and people—and this in turn lays the groundwork for peace, human flourishing, and shared well-being. This is especially important in a world under increasing strain from climate change.

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