

Climate Justice

Contemporary developments in science, policy, action and theology

Martin & Margot Hodson provide an update on the science and policy of climate change. This is one of the key issues facing humanity this century and the most negative impacts will be on the poorest in the world. They investigate climate justice through advocacy and mitigation. Finally their theological reflection offers a clear biblical foundation for caring for creation through ethical living, practical action and advocacy.

If there is one single issue that could define this century it is climate change. Although there are still those who would wish to say that it is not happening or that it is not human-induced, such positions are becoming increasingly untenable. In this chapter we will assess where we stand on climate change in 2012. We will begin by looking at the science of climate change, concentrating particularly on the most recent data and observations. We will then consider the policy situation leading up to and following on from the Rio+20 conference earlier this year. We will also look briefly at what is being done about the situation we find ourselves in, by way of action. Our final section will concern what Christians can and should do, and we will reflect theologically on where we stand. A key question being asked is quite simply; is there any hope?

Climate Science

In this section we will not spend our time going over the basics of climate change science. For those who wish to find out more about this we would recommend Maslin¹ for a brief overview and Houghton² for a more in depth treatment. Instead, we will just concentrate on what has happened in about the last twelve months. The whole area of climate

science is changing quickly, but we will soon find that the climate itself is also changing very rapidly.

Global carbon dioxide (CO₂) emissions have been increasing since the beginning of the Industrial Revolution due to the burning of fossil fuels, but the increase has been particularly marked since about 1950. At the end of 2011 the data was assembled to assess CO₂ emissions from the two decades from 1990 (the reference year for the Kyoto protocol) to 2010.³ It was reported that emissions had increased by 49% in those two decades and by a worrying 5.9% in 2010 alone. Although global emissions have been steadily increasing, the United States is now reporting decreased emissions.⁴ It appears, however, that this decrease has more to do with switching from coal to cheaper gas, than to measures restricting CO₂ emissions. It should be noted that on a *per capita* basis CO₂ emissions are between 10 and 50 times higher in high income countries than in developing countries.⁵

Over the last year there has been a considerable battle in the United States over the Keystone XL pipeline that would bring oil from the tar sands in Alberta, Canada to Texas. The extraction process is very damaging to the local environment in Alberta, and poses some threat to important aquifers should the pipeline ever break. The amount of carbon locked up in the tar sands is huge and would contribute a massive amount of CO₂ to the atmosphere should it ever get burnt. Many have argued that the best policy is to leave the tar sands underground and to concentrate on developing renewable energy sources. James Hansen, the top NASA climate scientist, stressed the dangers of exploiting the tar sands stating that it would be “game over for the climate” if the carbon was used.⁶

If CO₂ emissions have then continued to increase, we would expect that the concentration of CO₂ in the atmosphere would also increase, unless significant amounts are absorbed and sequestered by plants or the oceans. The atmospheric concentration of CO₂ was about 280 ppm at the beginning of the Industrial Revolution, reached 315 ppm in 1950 and it has climbed to 394.49 ppm as of July 2012.⁷ We are increasing by about 2-3 ppm in the atmosphere every year. During the last year the first reports came in of readings surpassing 400 ppm in isolated areas away from industrial activity in the Arctic.⁸ It is estimated that the global average CO₂ concentration will reach this figure in about 2016. So it is safe to conclude that our CO₂ emissions have led to an increase in the concentration of the gas in the atmosphere.

As CO₂ is a greenhouse gas, we would expect that the temperature of the atmosphere would begin to rise as the concentration rises. In 2007 the

Intergovernmental Panel on Climate Change (IPCC) reported that over the period 1906–2005 there had been a 0.74 [0.56 to 0.92] $^{\circ}\text{C}$ increase in global temperature.⁹ Others have been less certain. In the Climategate episode in 2009, hacked emails from the Climate Research Unit in Norwich were used to cast doubt on the idea that there had been a rapid temperature increase in the 20th Century. A group of more sceptical scientists, The Berkeley Earth project based at Berkeley, California in the United States, decided to re-investigate the phenomenon. After three years work they have begun to publish their findings on-line.¹⁰ They considered more than a billion temperature records and showed that the mean global land temperature had risen by about 1°C since the mid-1950s. In July 2012, the leader of the project, Richard Muller, wrote a remarkable article in the New York Times in which he stated, “Last year, following an intensive research effort involving a dozen scientists, I concluded that global warming was real and that the prior estimates of the rate of warming were correct. I’m now going a step further: humans are almost entirely the cause.”¹¹ It is too early to say whether the work of The Berkeley Earth project will dampen the controversy over the science of climate change.

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What are the future predictions with regard to temperature change? The most recent modelling of future temperature scenarios has suggested increases of between 1.4 and 3.0°C by 2050 assuming medium emissions, which is in a similar range to that suggested by the IPCC in 2007.¹² Scientists and policymakers have often suggested a target of limiting global temperature rise to 2°C above the average temperature before the Industrial Revolution. Although even a 2°C rise will cause considerable problems, it is nowhere near as bad as the scenarios that might arise with greater rises.¹³ There is little doubt that increases in global average temperature will have serious impacts, but in many respects temperature extremes are even more important.

A recent analysis by James Hansen and his team compared global temperatures for two 30-year periods; 1951–1980 and 1981–2010.¹⁴ Daily maximum temperatures shifted towards higher values in the last 30 years. One very important change has been the appearance of extremely hot events in the summertime, very much warmer than during the earlier period. These extreme events covered much less than 1% of Earth’s surface during 1951–1980, but now cover around 10%. The authors concluded that extreme heat waves, including those in Moscow in 2010 and in parts of

the United States in 2011, were a consequence of global warming as the chance of their happening without global warming would be extremely small. As we write this chapter in the summer of 2012 the United States is again in the grip of an extreme heat wave (July 2012 was their hottest ever month), accompanied by drought and wild fires. Hansen considers that once the data analysis is complete the present heat wave will also be attributed to climate change.

If the temperature rises then one of the effects we would expect to see is ice caps and glaciers beginning to melt. The northern polar ice cap has been shrinking at an alarming rate for some time. Earlier predictions that it might completely disappear by the 2080s now seem very optimistic, and it is possible that this might happen, at least in the summer, within the next few decades.¹⁵ Ironically, oil companies are already lining up to explore the Arctic Ocean once it is free of ice. In August 2012 the Arctic sea ice extent was below the 2007 record low. In August 2012 reports came in that the huge ice cap over Greenland had undergone unprecedented summer melting.¹⁶ The problem with the Arctic sea ice melting is not confined to effects on animals such as polar bears. Because the ice is white it reflects a lot of incoming energy from the sun. Without the ice, global warming will speed up even faster. Sea ice, as it is floating, does not contribute much to sea level rise, but the ice over the Greenland land mass will do as it melts. The speed of sea level rise this century is one of the most

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difficult parameters to predict, but it now seems possible that we might see in excess of one metre by 2100, more than enough to cause major problems for low lying islands and coastal communities.

Higher temperatures mean that there is more energy in the atmospheric system, and this tends to lead to more droughts, more floods and more extreme weather events. We mentioned above the 2012 drought in the United States. Drought has also been experienced this year in Brazil, Spain, Morocco, Russia, and the Ukraine. Flooding events this year have also happened in Argentina, Brazil, China, Honduras, Ethiopia, the United Kingdom, Bangladesh, Madagascar, the Philippines, Cambodia, Spain and Florida. Some of these events would have occurred without any influence from global warming, but anecdotally they do seem to be happening more often and have worse effects. In fact, the weather system seems to be less stable than it was, and shows less reliable patterns. This has been termed “global weirding” by some climate scientists, including Katharine Hayhoe, a Christian, and an atmospheric scientist at Texas Tech University.¹⁷ It

has become clearer that events such as the extreme heat waves we are now seeing can be directly attributed to climate change. The statistical work by Hansen and others has established this beyond reasonable doubt. It is, however, much harder to assess this for events such as droughts, floods, hurricanes and tornados, although we would expect such events to show an overall increase at a time of warming.

In November 2011 a group of scientists gathered at the Royal Society in London for the conference “Climate Change: Biodiversity and People on the Front Line”, which was organised by RSPB, WWF and Natural England. The report on the meeting came out in 2012, and is freely available.¹⁸ The meeting mostly concentrated on the climate change / biodiversity interaction. Climate change is already having major effects on animals and plants. In the spring in temperate zones, plant buds are bursting earlier and flowers are coming out earlier. Birds are laying eggs earlier and insects are active earlier. In general, organisms that are able to move are moving towards the poles or up mountains. The changes are happening in all environments investigated, and are particularly fast in the oceans. The longer term worry is that the changes will be too fast, this century, for many organisms to adapt, and many will become extinct.

Thus far we have had little directly to say about the impacts of climate change on people, but this will change for the rest of this paper. As we write this in August 2012, there are already warnings of a coming food crisis due to the impacts of the drought in North America.¹⁹ Food prices are likely to rise on a global scale from an already high level²⁰, and this will have its greatest impacts on the poor. Pest species change their distributions as the climate warms, tending to move northwards in the northern hemisphere. Because of the exceptionally hot weather in Texas in the summer of 2012 the mosquitoes carrying the West Nile Virus Fever have been more active than normal leading to at least ten deaths. This has caused the authorities in Dallas to resort to aerial spraying.²¹

The poor are affected worst wherever they happen to be. We immediately think of the poor in the developing world who are taking the brunt of the effects of climate change, but we should also remember events like Hurricane Katrina in 2005, discussed briefly in another chapter by Andy Kingston-Smith, which devastated New Orleans in the richest country in the world, the United States. The well off were able to escape the worst effects of the hurricane whilst many of the poor were left behind to cope with the devastation. Although the developed West is responsible for the vast majority of the emissions, it will be the poor who suffer most. Christian Aid stated in a 2006 report, “The potential ravages of climate

change are so severe that they could nullify efforts to secure meaningful and sustainable development in poor countries. At worst, they could send the real progress that has already been achieved spinning into reverse. No other single issue presents such a clear and present danger to the future welfare of the world's poor. Climate change, then, is a pressing poverty issue.”²²

So far we have painted a pretty bleak picture of the science of climate change as it stands in 2012. But what is humanity doing about this problem? We will now turn to assess the policy situation.

Policy

Serious attempts to frame world policy on climate change can be dated from the United Nations Conference on Environment and Development (UNCED), commonly known as the Earth Summit, in Rio de Janeiro, Brazil in 1992. Scientists were already concerned at the rise in atmospheric CO₂ concentrations, as documented by the first report of the IPCC in 1990, and governments appeared to be ready to act. The Framework Convention on Climate Change (FCCC) was approved by 162 countries in Rio and it was agreed that these countries should take, “precautionary measures to anticipate, prevent or minimise the causes of climate change and mitigate its adverse effects. Where there are threats of irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures.”²³ The FCCC set in train a process to look at emissions reductions under the Conference of Parties (COP) meetings. In 1997 COP 3 met in Kyoto, Japan and agreed to reduce greenhouse gas emissions by 5%, relative to a 1990 benchmark, by 2012 (the Kyoto Protocol). This then required ratification by each government. The process took until November 2004 when Russia eventually signed and the Protocol entered force on 16th February 2005. The United States is the one country that never ratified the Protocol, and Canada withdrew from it in 2011. President George W. Bush strongly opposed the Kyoto Protocol on the grounds of the potential damage that it might cause to the US economy, and that large nations including China and India were not involved. By the middle of the first decade of the 21st Century it was clear that work needed to begin on an extension of, or replacement for, the Kyoto Protocol that would include all nations.

In 2007 the IPCC released its fourth report, which was even clearer on the potential dangers of human-induced climate change than the previous three reports. A whole series of meetings led up to the crucial COP 15 in Copenhagen, Denmark in December 2009. The expectations before the

Copenhagen meeting were high, and the activity beforehand, on all sides of the debate, was frantic. In many quarters the conference was billed as the “last chance” to save the planet. The sceptical lobby made much of the so-called Climategate episode that was outlined above, whilst the environmental and world development groups mobilised huge demonstrations around the world to persuade governments to act. COP 15 proved to be a big disappointment to all those hoping for a fair, binding agreement that would ensure that CO₂ concentrations, and thus global temperatures, did not rise beyond safe levels. The precise reason(s) for the failure of Copenhagen are still shrouded in mystery. Mark Lynas was in the room where world leaders hammered out the final, very weak, agreement in the early hours of the final day of COP 15.²⁴ His conclusion was that China was the nation most responsible for the debacle: “China was the big story: here was a new, emerging global superpower, going eyeball to eyeball with the United States—and winning.” Lynas considered that China could not allow large cuts in emissions because of the likely impacts on its growing economy and the need to sustain growth in order to maintain internal stability. Although China was almost certainly a major reason for the poor

outcome of Copenhagen, we cannot blame them for their attempts to bring their country up to the kinds of lifestyles enjoyed in the West. Copenhagen has proven to be a key moment in the fight against

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climate change. Before Copenhagen there was much optimism that the problem could be tackled, but since then there has been considerable pessimism. The Copenhagen Accord made the 2°C global warming temperature increase limit international policy, but the most climate change vulnerable nations would have lobbied for a 1.5°C maximum, and this long term goal is open for review at some later date.

The FCCC process has continued since Copenhagen, with further COP meetings in Cancun, Mexico (COP 16) in 2010, and Durban, South Africa (COP 17) in 2011. The Durban conference agreed to the legally binding “Durban platform” involving all countries. The procedures for an emissions cutting deal will be in place by 2015, and this will take effect in 2020. As the Kyoto Protocol agreement ends on 31st December 2012 there will certainly be a gap between the commitment periods. Responses to the Durban Platform were predictably varied, with many politicians considering it a success, and others less certain.²⁵ For example Kumi Naidoo, of Greenpeace International, was quoted as saying, “Right now the global climate regime amounts to nothing more than a voluntary deal that’s put

off matters for a decade. This could take us over the 2°C threshold where we pass from danger to potential catastrophe.”

One of the key areas that FCCC has been concentrating on is the funding of adaptation schemes for developing countries. At the Durban meeting some progress was made in creating a Green Climate Fund (GCF), and a management framework was adopted. The fund is to distribute US\$100 billion per year by 2020 to help poor countries adapt to climate impacts. Tearfund and CAFOD have demanded that if the agreed 2020 target is to be met, the finance must be additional to existing aid budgets and be scaled up from 2013 onwards.²⁶

The latest (June 2012) international meeting to address the climate change issue was the United Nations Conference on Sustainable Development (UNCSD), commonly known as Rio+20, meeting following 20 years after the original meeting in Rio de Janeiro. Rio+20 had a much bigger brief that just climate change²⁷, and expectations prior to the meeting were not high, partly because of the very large agenda. It is difficult to assess the effect of Rio+20 only a relatively short time after the meeting, but the main product was a 49 page document “The Future We Want”, which had non-binding status. Twenty years after the first Rio meeting there was no doubt that the authors of the final report were very worried about the lack of progress on climate change: “We note with grave concern the significant gap between the aggregate effect of mitigation pledges by parties in terms of global annual emissions of greenhouse gases by 2020 and aggregate emission pathways consistent with having a likely chance of holding the increase in global average temperature below 2°C, or 1.5°C above pre-industrial levels.”²⁸

So where do we stand now on climate change in the global policy arena? Sir Bob Watson is a former chair of the IPCC and former chief scientist at the Department for Food and Rural Affairs, and frequently writes and speaks on climate change. Interviewed by the BBC in August 2012 he had this to say: “I have to look back on [the outcome of successive climate change summits] Copenhagen, Cancun and Durban and say that I can’t be overly optimistic. To be quite candid the idea of a 2°C target is largely out of the window.”²⁹ Some would suggest that we should entirely abandon the United Nations FCCC process, as it is too expensive and seems to be going nowhere. However, Evan Juska argues that this would be unwise and he considers that we need the FCCC for two reasons: climate change cannot be solved without international cooperation and the UN provides the most likely forum; and the effect that the international UN negotiations have had in catalysing progress on national climate change policies in the

last 20 years.³⁰ The next FCCC meeting is due in Doha, Qatar (COP 18) at the end of 2012.³¹

We will give the last words in this section to Tearfund whose report “Dried up, Drowned out. Voices from poor communities on a changing climate,”³² gathered the opinions of poor people living in the developing world concerning climate change. They are the people that are most affected by climate change, have done the least to cause it, and are those with the smallest voice on the international stage where decisions are made. This is a summary of the points made by poor communities to encourage rich nations and their governments to take action³³:-

- Get serious about cutting emissions globally
- Respect the commitments made for the reduction of greenhouse gases and finance sustainable development
- Commit to investments on the necessary scale and in the long term. NGOs working on climate change have estimated that by 2020 at least US\$200 billion per year will be needed for adaptation and mitigation
- Follow through on internationally binding agreements
- Face the truth: climate change is happening; it is not science fiction.

Action

It is quite evident from the above that climate change is a serious issue, and that it is a justice issue both for the human poor and for all other organisms resident on this planet. If the current scientific prognosis is anywhere near correct then this century could be a very difficult one, and even those who are currently well off may also suffer. What is on the table at the climate change negotiations appears to be woefully inadequate. In this section we will assess what can be done about the problem. There are a number of ways of categorising responses, and these could be broken down into mechanics, organisational level and type of action. Under mechanics we will include mitigation, adaptation and geo-engineering. Mitigation responses largely seek to reduce carbon emissions, whilst adaptation responses assume some level of climate change and attempt to prepare for it. One method, we will only briefly mention

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here, is 'geo-engineering responses', which attempts to solve the problem by such means as artificially absorbing atmospheric CO₂, and putting giant reflectors into space. As yet geo-engineering is very much in the research stage, and has not been deployed, although many suggest we may need it in the future. It is also possible to consider the organisational level at which the response is made: individual; community; national; and international. The final classification involves the types of action that can be taken: education; advocacy; changing practices; and campaigning. Obviously these types of action could involve mitigation, adaptation or geo-engineering, and can often be taken at different levels. We will organise this section around the types of action that can be taken.

Education may not be seen by many as an "action" that can help deal with climate change. Unfortunately, however, there has been so much misinformation and so many confusing messages in the media that there still is a need for education. One of the major problems with education in this area is that it is easily possible to take a person from ignorance, or apathy, to a fatalistic "it's all too late" position without considering a realistic activist position. On the "Hope for Planet Earth"³⁴ tours of 2008 and 2009 we frequently found that teenagers were very familiar with climate change, but had adopted a highly fatalistic response, "we are all going to die". In the United States, sadly, climate scientists are suffering from a systematic persecution³⁵, and science itself is under suspicion by many from the Christian right. There is, undoubtedly, a need to re-think climate change education, and to work out what is appropriate for each age group and situation.

Advocacy is undertaken by individuals or organisations in order to affect the political process. It can occur at local levels, but is most well known at national and international levels. It is certainly an activity that many non-governmental organisations have been involved in with respect to climate change. Such activity has been very evident at the COP meetings and at Rio+20. Advocacy has had some effects on international policy, and the situation would have been worse without it. However, it has not delivered enough policy change at sufficient speed. There are those who feel that the endless rounds of international meetings are getting us nowhere, and would cite the well funded advocacy of the petrochemical and coal lobbies in the United States and elsewhere as a major reason. Some national governments are under major pressure from advocates who do not wish to cut carbon emissions, and so advocacy is a double-edged sword. When such countries arrive at international negotiations they often seem to be unable to make the needed policy decisions due to lobbying pressure back home.

Given the apparent lack of willingness of most governments and international bodies to make the necessary changes in policy, there are growing numbers of people who say we should essentially give up at that level and concentrate on what can be done locally. Much of this can be done by individuals changing aspects of their lifestyles, for example with transport, housing, and food.³⁶ Even more is possible at a community level, and so organisations like the Transition Network³⁷ have encouraged local activism as the solution to our problems. Transition groups will often look at energy, food and transport, and try to move communities along an “energy descent plan”, aimed at decreasing dependence on fossil fuels. Very often such groups have been motivated more by concerns about peak oil than climate change. Whilst all this low carbon activity can only be good for decreasing emissions, the big question remains; will it be enough? Is this attempt at localism just blowing in the wind? Speaking at the “Sustainability in Crisis” meeting in Cambridge in 2011, Bill McKibben voiced serious concerns.³⁸ He cited the example of Vermont, his home state, and one of the greenest, most environmentally friendly areas in the United States. Vermont had highly developed organic agriculture, farmers’ markets and a flourishing local green economy. Then on one day, 28th August 2011, the tail end of Hurricane Irene, which caused the closing of the subway in New York City, dumped huge amounts of rain on Vermont. This caused massive damage to crops, washed away soil, and destroyed many farms and bridges. McKibben argued that localism was fine, but these kinds of events suggest that it will not stop global climate change, and remains extremely vulnerable to it. He stated, “you can have the most beautifully designed local agricultural system in the world and if it rains 30% more than it ever rained before... then you are still not going to grow anything.” He went on to say that we needed a “sprint” to beat global warming, and that in order to get the changes needed fast enough, work needs to be done at national and international levels.

The final category we need to consider is campaigning. This does overlap to some extent with advocacy, and many campaigners are involved in education, and also attempt to change their own lifestyles. Campaigning can take many forms, but here we will confine ourselves to the more obvious types of demonstrations. Many of these are symbolic, and not intended to have a direct effect on carbon emissions. So, for example, the Wave demonstration on 5th December 2009 mobilised thousands of people to march through London and Glasgow as a show of strength before the Copenhagen climate change meeting. Such events are entirely peaceful, and there is no intention to break any laws. However, there are now some, including the scientist James Hansen and the activist Bill McKibben, who

feel that such campaigning is less effective than non-violent direct action. Such action, it is argued, is much more likely to gain the attention of the public and governments. In August 2011 over 1000 peaceful demonstrators were arrested outside the White House in Washington D.C. at a demonstration coordinated by Bill McKibben and 350.org. The demonstration concerned the building of the Keystone XL pipeline mentioned above. As we have already noted, the potential for carbon emissions from tar sands products is huge. Those arrested at the demonstration included Bill McKibben, James Hansen and the actress Daryl Hannah. On November 6, 2011, twelve thousand people formed a human chain around the White House to protest against the pipeline. Four days later President Obama announced a delay in the decision on the pipeline permit until at least 2013, while further environmental reviews were carried out. As we write there is still a battle going on over the pipeline with attempts to build sections of it being met by fierce resistance from 350.org and its allies. In many of these cases demonstrators are directly attempting to block the development of the pipeline, and their action is more than symbolic.

As yet, environmental demonstrations have been almost entirely non-violent; indeed the vast majority of the organisers of such demonstrations and those who take part would be horrified by any resort to violence. There is always the possibility that a radical violent wing might emerge, as in the animal rights movement, but fortunately this has not yet happened.

Engaging theology: how should the Church respond?

Having looked at possible responses to climate change, we will now examine the question, ‘how should the Church respond?’ There has been an increasing number of Christians who have become concerned by climate change, though this concern is not geographically uniform: it is stronger in the UK than in North America and is mixed in other areas. Plenty has been written to provide a biblical basis for creation care and the biblical imperative is now well-established.³⁹ Lifestyle responses have become embedded in many churches and the individual lives of Christians. Eco-Congregation in the UK has been especially good at facilitating churches to respond as

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communities to climate change and organisations such as A Rocha UK (with their Living Lightly project), Tearfund and Christian Ecology Link have all promoted lifestyle initiatives.⁴⁰ Some activists are scathing of these, seeing the only

appropriate response to be prophetic advocacy and campaigning.⁴¹ Other

groups such as the John Ray Initiative (JRI)⁴² believe it is important to respond at many different levels. Though concentrating on education and advocacy, JRI also encourages a lifestyle response. A few Christians have taken direct action and this section will consider whether this is an authentic Christian response.

An interesting biblical starting point is 2 Corinthians 5:17. This gives insight into the relationship between Christians and the world in the light of Christ's salvation. It can be translated: "So if indeed someone is in Christ the new creation has come, the old has passed and the new has arrived." New creation is revealed in and through each individual who has come to Christ. Conversion is therefore an eschatological event, as each person coming to Christ reveals something of the future hope when all will be made new. We can conclude that being "in Christ" means that a little bit of the new creation is exposed here and now amid our present suffering creation. For each Christian this means that we experience personal transformation in Christ. We carry the resurrection hope with us in the whole of our lives, whether we are doing something 'spiritual', or something very 'nuts-and-bolts'. The new creation is with us and we can see it worked out in our lives. But new creation is not just for individuals, it also impacts on us, and through us, as a community. As the church we are the body of Christ and so collectively we are new creation. We demonstrate that new creation in all that we do and in the way we are as people in society.

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As we look at the various ways in which we can respond to climate change, as Christians we should ask which response will reveal the new creation to those around us? In some situations it will be living in a new creation way by making the sort of lifestyle changes that are life-giving to the rest of nature on the planet. In other situations the response that will bring new creation will be one of advocacy, campaigning and direct action. The biblical description of the new creation has certain consistent features and three common strands emerge. The first is a restored harmony between God, humanity and the natural world. The second is a realisation of human welfare for the redeemed, the poor and the oppressed. The third is the establishment of a reign of justice and judgement on those who oppress. Each of these will now be addressed.

Isaiah anticipates a future where there will be harmony between human and animal; wild and domestic creatures (Isaiah 11:6-9, 65:25). Similarly, St. John foresees harmony between God, humanity and the whole of creation (Revelation 22:1-4). If Christians are to reveal the new creation, we

will glorify God when we live out that harmony today. Given the damaging impacts of climate change, a key component has to be lifestyle choices that support this harmony. This will mean reducing carbon emissions through a myriad of different lifestyle choices. Joining a local Transition network or similar environmental group might help us develop lower carbon lifestyles. Whether we fly less, grow our own food to reduce food miles, cycle or put solar panels on our roofs, there are numerous ways in which we can live in a more climate-sustaining lifestyle. We must also be concerned at threatened biodiversity hotspots globally, and our care of nature, locally. So we might refuse to purchase items made from tropical hardwoods, or items grown on areas cleared of tropical forest. We might seek to demonstrate human and ecological harmony in our own local areas through positive recreation schemes, which strengthen local community and have a policy of encouraging ecological diversity.

Human welfare must also be a central concern to those who have found themselves belonging to the new creation community of faith. In Revelation 21:4, John's view of the future is one where: "he [God] will wipe every tear from their eyes. There will be no more death or mourning or crying or pain, for the old order of things has passed away."

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Suffering belongs to the old order and it is a Christian imperative to alleviate this as we represent and bring in the new order. Tearfund have worked for decades to demonstrate this new creation hope in

their relief and development work world wide, but they work against a backdrop of increasing suffering in many parts of the world. As noted above, Tearfund recently reported on their findings concerning the impact of climate change on local communities in the developing world.⁴³ They had interviewed their global partner organisations in 2005 and discovered that many parts of the world were already experiencing severe impacts from climate change, especially in the form of unusually severe droughts and floods. They concluded that urgent action was needed to mitigate these climate induced problems. In 2012, Tearfund again interviewed these global partners to assess what had changed. They found that the climate issues had become more severe: "A vicious cycle of floods and droughts has now become normal, reducing people's ability to meet their own needs and forcing many into poverty. Their animals and fish are dying. People are moving away from their homes to find work – sometimes never to return."⁴⁴ In 2005 the hope had been that international agreements would support poorer countries and enable communities to adapt to climate

change. Sadly, their report concluded that despite many meetings between world leaders, they had not made effective agreements to make a difference to those suffering on the ground. A typical story comes from Bangladesh:

Archona and Priambandhu have been married for 28 years. They live in Kaya Benia village in Bangladesh. They used to have 11 acres of land. Cyclones and floods have reduced that to two acres. They used to have a rice paddy that produced 2,000 kg of rice. That's all gone. Farming is no longer viable for them, so they've turned to fishing and growing a few vegetables for themselves. But salination means that the land is now poor, which means that the vegetables are poor quality too. For four months of the year, the whole of their land is flooded, meaning that they can't grow anything. 'We are suffering, losing our land and house,' says Archona. 'We don't know the future, but we can assume that we will lose it all.'⁴⁵

Tearfund partners are responding to these situations to meet the humanitarian need. In Bangladesh they are building embankments to protect villages from flooding. They are also seeking to enable climate change victims to find new sources of income. These humanitarian responses are crucial but the message of this report is that these responses on their own will not address the suffering that is being caused by climate change.

In addition to ecological harmony and human wellbeing in the new creation, there is a strong thread of justice. Isaiah 11 begins by setting out the messianic task: "with righteousness he will judge the needy, with justice he will give decisions for the poor of the earth" (11:4). This thread is echoed in Revelation 19 and 20, where the new creation is ushered in with the restoration of justice. This aspect of demonstrating new creation undergirds those Christians who are actively involved in advocacy, campaigning and direct action. The advocacy route is taken by organisations such as Tearfund, JRI, CAFOD, A Rocha and Christian Aid. These organisations were represented at the Copenhagen climate change summit and most regularly encourage their supporters to write to their MPs and others to ask them to take action on climate change. In the United States, there have been a number of advocacy initiatives, which have tried to influence government, one being the Call to Action by the Evangelical Climate Initiative.⁴⁶ This is supported by over 300 senior Christian leaders and has had contact with political leaders.

Justice demands advocacy but for some it also requires direct action. Jesus turned over the tables in the Temple to restore it as a house of prayer for those who could only pray in the outer courts (Matthew 21:12-14). These were the Gentiles and also the blind and the lame that he went on to heal once he had cleared the Temple. Those Christians who take direct action see their activities as prophetic. Like Just War theory they would

see the suffering of the innocent victims of climate change, both human and ecological, to be a justification for action. This is especially true in the face of inaction by most governments and the problem of dealing with a long-term threat through a democratic system that favours responses to short and medium term problems. Bill McKibben, mentioned previously in connection with the tar sands pipeline issue, is a committed Christian and his radical interpretation of his faith undergirds his environmental campaigning.⁴⁷ For McKibben, the radical life and teaching of Jesus justifies his actions on climate change issues. Bill takes some of his inspiration from the Sermon on the Mount and it is notable that his campaigning is always of a peaceful nature.

In 2011 and 2012, JRI and A Rocha UK jointly facilitated two gatherings on the theme of “hope”. This sought to find a hope that would be realistic and sustaining in a world where we are experiencing the negative impacts of climate change. The hope that emerged was a robust hope that acknowledged the proximate hope of acting in the present and the eschatological hope of a restored future, and enables us to work that out in our present suffering world.⁴⁸ As “new-creation Christians” we are Christ’s ambassadors, committed to the task of reconciliation (2 Corinthians 5:19-20). We are called to work towards that new creation for both ecology and humanity. We should work in practical ways, through advocacy and campaigning. There is also a place for direct action, provided that the action itself is consistent with the actions of Christ. In all this we should demonstrate the new creation and bring realistic hope to a suffering world.

Conclusion

The world faces a crisis with climate change this century. The climate is already changing and it seems to be happening faster than scientists had expected. The poor are those who are suffering the most from the effects of climate change. Global climate change policy is happening too slowly, with a replacement for the Kyoto Protocol now unlikely to happen until at least 2020. The target of restricting global warming to 2°C above pre-industrial times now seems unlikely to be met. There is, however, much that can still be done to limit the damage caused by climate change. Christians, both individually and collectively, have a huge role to play in this work, and, if nothing else, we can be bringers of hope to an otherwise hopeless world.

Dr Martin J Hodson is a plant scientist and environmental biologist, and is Operations Manager for the John Ray Initiative. He was the tour scientist for the Hope for Planet Earth tours, and writes and speaks widely on environmental issues. He has over 90 research publications. His recent publications include *Climate Change, Faith and Rural Communities* (with Margot Hodson, 2011) and *Functional Biology of Plants* (with John Bryant, 2012).

Revd Margot R Hodson is Vicar of Haddenham Benefice in Buckinghamshire and was previously Chaplain of Jesus College, Oxford. She has taught Environmental Ethics at Oxford Brookes University and is on the boards of The John Ray Initiative and A Rocha UK. Margot has published several books including *Cherishing the Earth*, (co-authored with Martin Hodson, 2008), and *Uncovering Isaiah's Environmental Ethics* (Grove Booklet E161, 2011).

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