Come the Anthropocene
John Smith TSSF

It is too late. Humanity cannot cut the carbon accumulation in time. This is my conclusion having read the latest climate change publications. Catastrophes are increasing in number and intensity year by year. Although we cannot ascribe such events directly to global warming they mirror the prophecies of the scientists about the disasters of drought, floods, hurricanes and fires. We are in a new uncomfortable age, the Anthropocene.

CO$_2$ exists naturally in the atmosphere at about 280 parts per million (ppmv) Currently with humanity burning fossil fuels we are at about 390ppmv. The UK Government's maximum is 450ppmv and the Stern Report sees 550ppmv as the minimum possible. Some scientists see 650ppmv as inevitable. 450 is a $2^\circ$C rise in global temperature, 550; $3^\circ$C and 650; $4^\circ$C.

One author to have summarised the consequences of the above is Mark Lynas, Six Degrees, 2007. These peer reviewed scenarios should be treated with scepticism, despite the sophisticated computer effort that has gone into them. Some regard these futures before 2100 as too conservative; others, the doubters, as too sensational.

Summarising Mark Lynas's research to 4$^\circ$C +:

- $2^\circ$C At less than this the Arctic icecap disappears in summer leaving polar bears homeless and changing the Earth’s energy balance; ice reflects the sun’s heat whilst the open sea absorbs it. Expected 2015-30. Tropical coral reefs suffer severe bleaching killing most of the coral and making extinct many marine life forms. Droughts increase in the sub tropics with heat waves and wild fires. Worst hit are Mediterranean areas, South West USA, South Africa and Australia. The continental interior of Russia is also threatened.
- $+2-3^\circ$C. Summer heat waves in Europe become annual events reaching 40$^\circ$C in Northern Europe. Amazon rainforest becomes unviable and burns, replaced by desert and savannah. Dissolved CO$_2$ turns the oceans increasingly acidic, destroying coral reefs and wiping out many species of plankton. Several metres of sea rise becomes inevitable as the Greenland ice sheet melts.
- $+3-4^\circ$C. Glacier snow melts in the Himalayas, Andes, Rockies and elsewhere, depleting freshwater flows in the major and minor rivers. Most affected are California, Peru, Pakistan, India and China. Heat waves deplete grain production with major food shortages. The Gulf Stream Atlantic Conveyor declines significantly with the cooling of Northern Europe. Major ocean changes, disruptive weather patterns with higher sea levels.

Beyond this the planet will release clathrates (gas hydrates as crystals frozen in water) and methane frozen into the Siberian and Canadian permafrost; Southern Europe and North Africa become uninhabitable deserts. The human population moves north and is reduced to 500 million from 7-8 billion. This is where we must not go for it leads to the 6th great extinction of our planet with 90% of all species extinct. The cause: homo-sapiens.
However, the UK is only 2% of the carbon pollution. China is 24%, USA 22%, India 8%, Europe 12%, Russia 6%, rest 28%. An international agreement before 2050, and a cut of 80% in the carbon waste, is now an imperative if runaway global warming is to be avoided.

The ideal solution is to stop burning carbon, especially that most dangerous and dirty of fuels, coal. CO₂ accumulates in the atmosphere for hundreds of years and humanity needs to ration our use of oil until carbon free alternatives are more available.

Solutions proposed are to develop technologies; space mirrors that reflect sunlight back out into space, scrubbing CO₂ from the smoke stacks or from the atmosphere, and then burying it in non-leak geological seams, scattering the seas with iron so they absorb the carbon. These extreme technologies will have to be maintained, they are unnatural. Carbon Capture and Storage (CCS) is heralded as a solution. So far unproved, but liquid, poisonous CO₂, stored in leaky geology is much more dangerous than radioactive waste.

A solution proposed by The Club of Rome Report *Limits to Growth the Thirty year Update*, 2005, is a sustainability revolution, 'permitting the best of human nature rather than the worst', a reversal of the principles and norms we see as essential, replacing growth with new spiritual and ethical motivations, filling our lives with love, friendship, sacrifice and conviviality. Could there be enough time, energy, material and enough money to make a much better world, an integrated global society, a sustainability revolution? There is no other way of knowing than to 'try it'.

Greenwash efforts are not enough. There is a need for international agreements as 'agreed' in the Millennium Goals, but the individual and the UK must play their part. Humanity must:

- Move as quickly as possible to the carbon free generation of electricity, leaving that most dangerous of fuels, coal, in the ground. This can be done through conservation and renewable generation, including wind and tidal barrages on estuaries like the Severn. All backed up by nuclear power. Modern 'fast' nuclear reactors are 99% efficient and the waste becomes inconsequential after a few hundred years, not ten thousand. Nuclear warheads and waste can supply enough fuel to last a thousand years.
- Limit or ration our use of oil. For flight, oil is not replaceable, but in cars and public transport, efficiencies can be made by using carbon free fuels.
- Localise our economies, food growing and manufacturing. The Transition Town movement is showing the way. Local mixed farms selling to local communities are the most efficient way of using the land. In the post oil economy agriculture could return to more labour intensive methods.
- Limit meat consumption and stock rearing, reducing animal flatulence and making it possible to feed everyone. Stop felling the Amazon which absorbs CO₂. Plant more trees.
- Encourage community and simplicity, a partnership between human beings and the planet, not the competition which destroys the social fabric we

So far I have tried to be practical and scientific, but we also need spirituality.

♦ God is the creator and is concerned with the whole of creation. This is both a threat and a promise.

♦ Christ came to share his life with ours. The teaching of the incarnation is sharing and serving all creation.

♦ The Eucharist is an act of worship with political and ecological connotations.

♦ Seek a social ecumenism where Christians join with others of different faiths and none to work for the common good.

♦ Climate change will cause hopeless despair, with the eventual acceptance of the trials of the Anthropocene. A new meaning for life will be found followed by action for sustainability. These emotions are mirrored in the events of the crucifixion. Jesus and his disciples have already been there.

My granddaughter will be 91 in 2101. It will be a different world. If she survives the horrors of global warming she and her children could live well in a sustainable economy without economic growth. This is already seen as the future if humanity learns to share creation not exploit it. Surely this is what the creator intended for the species he made in his own image.

The Garden, post 2100, could be as good as God intended. f

*Editor's note:* The Anthropocene is a geological era characterised by human influence. Some say it began with the industrial revolution, others with the nuclear age.