

Sources:

- “Drawdown” (book) ed. Paul Hawken
- BusinessGreen
- Clean Slate (CAT)
- The Environment (CIWEM)
- Population Matters
- Resurgence & Ecologist
- Root and Branch (A Rocha)

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Picture on front cover: June sunset from Almscliffe Crag, West Yorks. Emma King

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Prayer guide for the care of creation



June 2018

“Beloved, let us love one another, because love is from God”.
(1John 4.7)

“We must discover the power of love, the redemptive power of love. And when we discover that, we will be able to make of this old world a new world, for love is the only way.”
(Martin Luther King)

“Imagine our homes and families where love is the way.
Imagine our neighbourhoods and communities where love is the way.
Imagine our governments and nations where love is the way.
Imagine business and commerce where love is the way.
Imagine this tired old world where love is the way.

When love is the way, we will let justice roll down like a mighty stream and righteousness like an ever-flowing brook.
When love is the way, the Earth will be a sanctuary.”
(Bishop Michael Curry)



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Friday 1st June

The earth has only a finite amount of freshwater. NASA scientists now warn that water shortages are likely to be the key environmental challenge of this century. They identify 19 hotspots where water depletion has been dramatic, especially northern and eastern India, the Middle East, California and Australia. In Iraq and Syria, widespread over-reliance on groundwater has resulted from the construction by Turkey of 22 dams on the Tigris and Euphrates rivers. In northern India, groundwater extraction for irrigation of crops such as wheat and rice have caused a rapid decline in available water. Jonathan Farr of WaterAid commented: “We need to ensure that investment in water keeps pace with industrialisation and farming. Governments need to get to grips with this. However, we have been solving the problem

of access to water resources since civilisation began. We know how to do it. We just need to manage it, and that has to be done at a local level.”

Saturday 2nd June

According to “Drawdown” (see sources) agriculture and irrigation consume 70% of the world's freshwater resources and irrigation is essential for 40% of global food production. But irrigation can cause depletion of rivers and underground aquifers, sparking competition for water rights between farms, cities, businesses and nations. Pumping and distributing water also requires carbon-intensive energy. The invention of cheap plastic pipes in the 1960s enabled the development of sprinkler and drip irrigation. Drip irrigation achieves 90% application efficiency, sprinkler irrigation 70%. The greatest barriers to the spread of these

charging network. However, policy-makers around the world are seeking to incentivise the development of charging networks, while energy and auto giants with deep pockets are flocking to join the market, and engineers are increasingly confident that smart grid and vehicle-to-grid systems can address any technical concerns.

Friday 29th June

Carbon capture and storage (CCS) has come a step further as Drax has announced a pilot scheme for Europe's first biomass CCS project at its North Yorkshire power plant. If the scheme is successful, the electricity generated by its biomass units could be carbon-negative – meaning that the facility removes more CO₂ from the atmosphere than it creates from sourcing and burning wood pellets. Will Gardiner, CEO of Drax, said: “This is the UK's first step, but it won't be the only

one at Drax. We will soon have 4 operational biomass units, giving us the opportunity to test different technologies that could allow Drax, the country and the world to deliver negative emissions and start to reduce the amount of CO₂ in the atmosphere.”

Saturday 30th June

From today until July 8th runs the Climate Coalition's 'Speak Up Week', when people will be inviting their local MP on tours of local energy projects, joining a fair in the park, or gathering friends for a tea party etc. to share ideas on climate change and what can be done to meet the challenge. To download resources for the week, please go to:

<https://www.theclimatecoalition.org/speakupweek>

temperatures rise, GDP and other economic measures fall in most nations, due to factors including labour productivity, agricultural output and health. The conclusion reached is that if the world meets the 1.5°C target set in the Paris Agreement, nations representing 90% of the global population would benefit economically by some \$30 trillion, representing 3% growth in GDP by the end of this century. The world's biggest economies – the US, China and Japan – would benefit, as would Australia and South Africa, but the biggest winners would be Middle Eastern countries which would otherwise be threatened with extreme heat waves beyond the limit of human survival. Professor Noah Diffenbaugh of Stanford University said: “The exact size of the benefit will depend, for example, on whether new technologies are created that

help societies adapt to global warming, such as clean, cheap air conditioning, or whether climate change tipping points are passed, bringing more severe damage such as rapid sea level rise.”

Wednesday 27th June

A report from Bloomberg New Energy Finance states that sales of electric vehicles (EVs) rose to over 1.6 million last year as battery prices fell from \$1,000/kWh in 2010 to \$209/kWh at the end of last year. The biggest driver of growth in EV sales was the accelerating adoption of electric buses by city authorities. China already has 300,000 e-buses. By 2040 the report expects 80% of global bus fleets to be electric.

Thursday 28th June

Many potential customers for EVs are deterred by the absence of an extensive

methods is the cost of purchase and installation – far beyond the reach of most smallholders. Take-up of these methods varies from 42% in high-income countries to 6% in the poorer nations of Africa and Asia. If the area with improved irrigation grows from 133 million acres in 2020 to 448 million acres in 2050, this could save 90 billion gallons of water and avoid 1.3 gigatons of carbon emissions.

Sunday 3rd June

Father, we sometimes feel overwhelmed by the scale and complication of the environmental problems we face. Help us to see how we may respond in our daily lives to the challenges we face, and help us to understand that where we lead others will surely follow.

Monday 4th June

Women make up 43% of the agricultural workforce and

produce 60-80% of food crops in poorer parts of the world. Most of them are part of the 475 million smallholders who operate on less than 5 acres. Yet, compared to their male counterparts, women have less access to land ownership, finance, education and technology. According to the FAO, if all women received equal access to these resources, farm yields would rise by 20-30% and the number of undernourished people would fall by 12-17%, meaning that 100-150 million people would no longer go hungry. Many women are legally prevented from owning land, so they have less access to cash and credit. Lack of capital can mean lack of fertilisers, farm tools, water and seeds. Their second-class status restricts their access to technical information, membership of cooperatives and sales outlets. As more men migrate to the cities in search of

work, women become central to food production. Their responsibilities grow, but their rights and resources may not.

Tuesday 5th June

According to “Drawdown” girls’ education has a dramatic effect on global warming. The journal *Science* analysed the impact of girls’ education in South Korea from the period when it was one of the least-educated countries to the year 2011, when there was 100% enrolment of girls in primary and secondary education. If all nations achieved that standard by 2050, there would be 843 million fewer people on earth than if current enrolment rates still existed. That is 843 million fewer carbon-emitters. As Nobel Peace Laureate Malala Yousafzai famously said: “One child, one teacher, one book and one pen can change the world.” Her Malala Fund aims to secure 12 years of safe, quality

education for girls the world over.

Wednesday 6th June

Two solutions can influence family size and global population: Educating girls and family planning. Currently 214 million women in lower-income countries say they want the ability to choose whether and when to become pregnant, but lack access to contraception, resulting in 74 million unintended pregnancies each year. Honouring the dignity of women and children through family planning is not about centralised governments forcing the birth rate down through moralistic policies. Nor is it about agencies or activists in rich countries, where emissions are highest, telling people elsewhere to stop having children. It is essentially about freedom and opportunity for women and the recognition of basic human rights.

damage from trapped moisture. It holds moisture in periods of high humidity and releases it when humidity falls, so helping to prevent interior condensation. It takes longer to harden than cement but use of hydrated lime with certain impurities can shorten the process. For more information, go to: <http://info.cat.org.uk/> or call 01654 705989.

Sunday 24th June

Lord, we pray for the scientists engaged in research into ways of reducing our carbon footprint and for politicians who are responsible for converting their ideas into legislation. Grant them honesty, integrity and a deep perception of the long-term effects of their actions, so that short-term economics are not allowed to weigh their decisions when so much hangs on policies which will affect generations to come.

Monday 25th June

Britain is now the world leader in offshore wind power. In 2017 wind generated nearly 14.6% of the UK’s electricity as against 47.7% from fossil fuels. EU member states together produced 15.8 gigawatts of electricity from offshore wind – up 25% from 2016. Investment in offshore wind hit £20 billion last year, securing money for a further 11.5 GW of UK wind power. Floating wind turbines are opening deeper and more distant waters to future wind power. “Bat” technology is enabling offshore wind farms to store excess power in lithium ion batteries. Even Poland, hitherto reliant on coal, is building offshore wind farms to deliver clean electricity from 2021 onwards.

Tuesday 26th June

Research published in *Nature* has reviewed data from the last 50 years showing that when

adopted. The US burns more than 30 million tons of waste annually – roughly 13% of its total waste generation. Sweden has closed all its landfill sites and imports 800,000 tons of waste from other countries to fuel its 480 waste-to-energy plants. One ton of waste can generate as much electricity as one-third of a ton of coal. Nevertheless, even the modern technology used in Sweden cannot eliminate all toxic releases. Worse, waste-to-energy can impede the emergence of zero-waste practices that eliminate the need for landfills and incinerators altogether. Like solar and wind technologies, which were once considered unaffordable, zero-waste is an engineering and design revolution which will make waste so valuable that it is the last thing you would want to burn or bury.

Saturday 23rd June

A report from the Carbon Disclosure Project reveals that the cement industry is responsible for 6% of global carbon emissions. Concrete is the second most used substance after water and, with growing urban populations requiring houses and infrastructure, its use is not slowing down. The Centre for Alternative Technology (CAT) avoids using cement-based concrete wherever possible, opting instead for lime-based alternatives. Less energy is needed for lime-based building materials, hence less fuel and lower carbon emissions. Lime re-absorbs CO₂ from the atmosphere, which cement does not. Lime is re-usable at the end of a building's life as it gradually converts back to its raw form of calcium carbonate. Lime is breathable and, unlike cement, bonds well with other materials without fear of

Thursday 7th June

Today in Manchester Cathedral, a climate change conference for people of all faiths or none, takes place from 6.30 to 9 pm under the title “Our Faith, Our Actions, Our Planet”. It will focus on practical action, suggesting ways in which we can make a difference in our communities, with workshops, food, entertainment, networking and plenty of information. Free tickets are available at: <https://www.eventbrite.co.uk/e/our-faith-our-planet-our-actions-tickets-38831306483?aff=es2>

Friday 8th June

A new report from the World Bank and International Center for Research for Women called 'Economic Impacts of Child Marriage' highlights the impacts of child marriage on individuals and society in Ethiopia. It describes how child brides are often robbed of their rights to safety and security, to health

and education and to make their own life choices. More than one-third of Ethiopian girls are married below the age of 18. It estimates that a girl marrying at 13 will have on average 24% more children than if she had married at 18 or over. Ending child marriage could reduce total fertility rates by 13%, leading to a reduction in population growth over time. Higher GDP per capita from lower population growth could inject close to \$5b billion into the Ethiopian economy by 2030

Saturday 9th June

For the past 40 years EU institutions have enforced the effectiveness of laws which safeguard our environment, protect the health of our children's lungs and ensure the safety of the water we drink. Now DEFRA has launched a consultation on a new environmental watchdog to enforce existing environmental

laws post-Brexit. Unfortunately, the Government's proposed 'watchdog' would have oversight only over central government – not over other public bodies – and would have no power to initiate legal proceedings. According to ClientEarth, we need a watchdog with sharp legal teeth capable of issuing meaningful orders requiring specific actions by public bodies and that these should be backed up by the courts. Without these powers, there is a real risk that environmental laws remain impotent on statute books rather than working to protect the natural world.

Sunday 10th June

God the Holy Spirit
Come as the wind and cleanse us;
Come as the fire and burn;
Come as the dew and refresh;
Convict, convert and
concentrate many hearts and

lives to your greater glory and our greater good.

This we ask in the Name of Jesus Christ.
Amen.

Monday 11th June

The Paris Agreement sparked hope that governments were serious about working together to combat climate change. Unfortunately, there is still a yawning gap between the targets agreed in Paris and what governments have actually pledged. However, all countries must submit new action pledges every 5 years and these pledges must be declared next December at the UN climate talks (COP 24) in Katowice, Poland. Preparatory discussions now allow negotiators and citizen groups across the globe to input research to support an increased ambition in countries' pledges – the so-called Talanoa Dialogue. To monitor progress

3. Provide drinking water around the church and encourage people to bring their own refillable bottles.
4. Avoid the use of plastic straws or look for sustainable alternatives such as bamboo.
5. Organise a litter pick event. It can be fun to do and a great witness to church involvement.

A Rocha has produced an online toolkit of resources for all who are concerned about marine plastics:

www.arocha.org/en/work/scientific-research/marine-coastal/microplastics-toolbox/

Thursday 21st June

We produce globally 310 million tons of plastic a year – or 83 pounds per person – and production is expected to quadruple by 2050. Although plastics can be made from plant material, most of it is petro-

plastic made from fossil fuels. Five-six percent of all oil production goes to making plastics. As long as oil prices are low, bioplastics made from plant material struggle to compete in the market. Bioplastics such as polylactic acid can be used for disposable cups, but degrade only at high temperatures. Few bioplastics are compostable. All the world's chemical companies are investing in bio-based polymers because they believe this is a technology for the future. But questions remain as to whether there is enough plant-based feedstock available without converting land from growing food to growing plastics.

Friday 22nd June

Waste-to-energy plants around the world provide a temporary solution to waste disposal while preferable solutions, such as zero-waste, composting and recycling, become more widely

animals, together with all that means for land, water and soil.”

Tuesday 19th June

Around 640,000 tonnes of fishing gear are discarded or lost at sea each year. This results in “ghost fishing” whereby discarded nets continue to catch fish and other marine life while floating in the oceans for decades. Over 80% of recorded entanglements are from waste from the fishing industry, despite the fact that it is a small amount of the total plastic entering the oceans. A 2015 study published in *Science* calculated the amount of plastic waste generated per country and its level of waste management. The US generated the most plastic waste per person but had the best waste management practice. Worst for waste management were the big nations of Asia plus Nigeria. Judith Thornton of CAT,

reviewing the figures, believes the solution lies largely in the hands of policymakers who set the parameters for waste management. “We can all pick up litter and put it in nearby bins. If we don't, it could be littering the environment for the next 100 years. That's not to say that current initiatives relating to drinking straws and bottle recycling aren't useful – simply that they won't make the problem of marine plastic go away.”

Wednesday 20th June

What can the churches do to manage waste? Here are some suggestions:

1. Avoid disposable cups. If they have to be used, they should be compostable.
2. Buy as much unwrapped produce as possible and spread the message about reducing single-use plastic.

so far, go to:

<https://talanoadialogue.com/>

Tuesday 12th June

Mark Carney, governor of the Bank of England, has created a task force from the financial sector to recommend how businesses should report to investors on climate risk. However, this ignores the power of commercial banks to create new money through their lending policies. At present, excessive credit is allocated to environmentally destructive activity like fossil fuel production, while insufficient lending is provided to low-carbon industries. A report from Positive Money states that the main barrier to change is political as the Bank's mandate is set by Parliament, and primary legislation would be needed to amend it. Barry Gardiner MP comments: 'If climate change poses a systemic risk to our finances,

then it's surely in the Bank's remit to look at climate change.'

Wednesday 13th June

Major global investors representing \$10.4 trillion in assets under management, including Aviva, Axa and Legal & General, have called on oil and gas companies to be more transparent and robust in their efforts to tackle escalating climate risks. Their letter states that the case for action on climate change is clear and they are keenly aware of the need to shift the global economy onto a low-carbon footing. Emissions from the oil and gas industry account for about half of all global carbon pollution. Warning that a transition to a low-carbon economy is essential for maintaining global economic stability, the investors want to see oil and gas firms make concrete commitments to reduce their carbon impacts.

Thursday 14th June

Spanish oil company Repsol has become the first oil major to announce a plan to limit its oil and gas output to current levels and to keep no more than 8 years of reserves on its books. Eight African cities – Accra, Addis Ababa, Capetown, Dakar, Dar es Salaam, Durban, Lagos and Pretoria have pledged to work together to reduce emissions from transport, buildings, energy products and waste management and to reach net zero emissions by 2050. Nairobi and Abidjan are expected to sign the pledge shortly.

Friday 15th June

Pope Francis has issued a new missive entitled 'Oeconomicae et pecuniariae quaestiones' which envisages a new economic system governed by three principles – 'No profit is in fact legitimate when it falls short of the objective of the integral

promotion of the human person, the universal destination of goods and the preferential option for the poor.' It calls for an overhaul in the management and regulation of financial markets to promote more ethical trading principles and a more equitable society. 'Money must serve, not rule.'

Saturday 16th June

Operation Noah holds its AGM and supporter's meeting today from 10.30 to 4 at St. John's Church, Waterloo SE1 8TY. It is an opportunity to hear and discuss how to take action in our churches on climate change, to hear about the new study guide 'Tenants of the Earth' and a new report on church divestment. To book a place for, go to:

www.eventbrite.co.uk/e/operation-noah-agm-and-supporters-day-tickets-44632067716

Sunday 17th June

Loving God, open our hearts that we may feel the breath and play of your Spirit.

Unclench our hands that we may reach out to one another and touch and be healed. Open our lips, that we may drink in the delight and wonder of life.

Unclog our ears, to hear your agony in our inhumanity.

Open our eyes, that we may see Christ in friend and stranger.

Breathe your Spirit into us and touch our lives with the life of Christ.

(A prayer from New Zealand)

Monday 18th June

Philip Lymbery of Compassion in World Farming, in his book 'Dead Zone', quotes scientist Vaclav Smil who has calculated the sheer weight of intensively-reared livestock on earth today, that is 67% of all land mammals, with humans making

up most of the remaining 33%, leaving just over 1% made up of wild animals. He visited the original 'dead zone' in the Gulf of Mexico (an area the size of Wales) where from February to October plumes of fertiliser and pesticide run off from the Mississippi, where the accumulated spew from the industrial farmland and fertiliser of some 30 states drives away all marine life. He flew over Brazil's Mato Grosso, once tropical rainforest, but now cropland for nearly 10% of the world's soya production, much of which goes to fatten Europe's pigs and poultry, to produce 'cheap meat'. Claims that the UK is nearly 70% self-sufficient in food fail to account for the huge area across South America deforested and devoted to soya production. Lymbery writes: "To me the link (with population growth) is obvious. An extra billion people come with 10 billion extra farm