Climate Stewards

Churches' Presentation Notes

Slide 1

Invite 28 people blow up a total of 28 balloons (or fewer people blowing up more balloons each).

What is going into those balloons? 4% of exhaled air is CO_2. (By volume, dry air contains 78.09% nitrogen, 20.95% oxygen, 0.93% argon, 0.039% carbon dioxide, and small amounts of other gases. Air also contains a variable amount of water vapour, on average around 1%.[1])

Other than humans and animals breathing out, what else puts CO_2 into the atmosphere? Burning fossil fuels – power stations; engines – planes, trains, cars, buses all produce carbon emissions. We measure these emissions as tonnes of CO_2.

Once the balloons are all blown up, ask the group to guess, based on the size of the balloons that have been blown up, how many balloons could 1 tonne of CO_2 fill (presuming that the balloons would contain only CO_2 – unlike the balloons that have actually just been blown up). The answer: about 28,000 (which is equivalent to the volume of 4.5 London buses). So that's what a tonne of CO_2 looks like.

Slide 2

Question: Where are you going on holiday this year? How are you getting there?

Because different modes of transport work differently we need to use a standard measure for calculating emissions in order to be able to make meaningful comparisons. The measure is kilos of CO_2 per passenger mile (or, for cars, simply $kgCO_2$ per mile) – i.e. the carbon cost of each person using that form of transport. All of the figures assume an "average occupancy". This allows us to compare different modes of transport – planes, trains, cars, buses, etc.

Question: which mode of transport would you expect to generate the most emissions per passenger – train, plane or car?
Answer: planes – but not by much per mile!

Slide 3

Question: Who will be driving to their holiday destination.

Figures ($kgCO_2$/mile) for the emissions from cars vary because they depend greatly on the size of the car. The Defra (Department for Environment, Food & Rural Affairs) figures for the various car types are given below:

Mini	0.174887	Luxury	0.383523
Supermini	0.224391	Sports	0.278223
Lower medium	0.249754	Dual purpose 4X4	0.385084
Upper medium	0.276968	MPV	0.310088
Executive	0.314112		

Compared to flying, we tend to drive shorter distances and there are fewer of us per car – the figures assume an average 1.6 people per car journey. (UK average annual mileage = 8,200 miles – emissions of

[1] http://en.wikipedia.org/wiki/Atmosphere_of_Earth

about 2.73 tonnes CO_2) – This still adds up though as there are over 28 million cars on the road in the UK alone!

Slide 4

Question: And who's going by train?
Trains have lower emissions because, generally speaking, they are more efficient.

Slide 5

Although planes, per passenger mile, don't seem to be too bad you have to remember that planes tend to travel further and carry more people for that distance. A Boeing 737-700 with 150 people aboard flying return London, Heathrow to New York, JFK (6,884 miles) will emit a total of 185 tonnes of CO_2.

The figures used in the slide are based on Defra's 2014 conversion factors[2] for greenhouse gases.
A long-haul flight is any flight over 4,000 miles[3]. Short-haul is between about 700 and 4,000 miles and domestic is any flight under 700 miles. Domestic flights are actually the worst for emissions – about 0.47 kg CO_2 per passenger mile. This figure is high because, proportionally, on a short flight more fuel is used in take-off and landing than for longer distances.

Slide 6

The video[4] on this slide is a visualisation of the number of flights in Europe in 24hrs.

Question: can you name the two busiest UK airports?
Answer: Heathrow and Gatwick.

Heathrow handled 1,286 air transport movements (flights!) per day in 2013 and Gatwick handled 664 (2011/2012). Between them they account for 47% of the UK's annual air passengers[5].

So flying is a major contributor to carbon emissions around the world.

More information on the video can be found at http://nats.aero/blog/2014/03/europe-24-air-traffic-data-visualisation/

Vital statistics from the link:

- On a typical July day there are around 30,000 flights across European airspace
- Approximately a quarter fly within UK controlled airspace
- The total distance flown by these aircraft is 25 million nautical miles
- That's 998 times around the Earth
- Or 104 trips to the Moon
- On 21 June 2014, 5,675 aircraft departed or arrived from UK airports, of which…
- 2,295 departed from or arrived at Gatwick (894) or Heathrow (1,401)
- 1,532 were overflights
- The video is 1440x faster than real time

Slides 7 to 11[6]

Revision of the basics of the greenhouse effect

[2] http://www.ukconversionfactorscarbonsmart.co.uk/
[3] http://archive.defra.gov.uk/environment/business/reporting/pdf/conversion-factors.pdf
[4] http://www.youtube.com/watch?v=s2b06qtqpp4
[5] http://en.wikipedia.org/wiki/Busiest_airports_in_the_United_Kingdom_by_total_passenger_traffic
[6] http://en.wikipedia.org/wiki/Greenhouse_effect

The Earth receives solar radiation from the Sun in the form of ultraviolet, visible light and near infrared radiation. This radiation passes through our atmosphere and reaches the earth where it warms the surface.

About 50% of the Sun's energy is absorbed by the earth's surface. The rest is reflected (by clouds) or absorbed by the atmosphere. The warm surface of the earth re-radiates a proportion of the received infrared radiation, and the gases in the atmosphere reflect some of that heat back to the earth's surface.

This blanket of gases (known as Greenhouse Gases, or GHGs) which surrounds the Earth serves, then, to keep some of the Sun's heat trapped – the greenhouse effect. Without these gases life on Earth would not be possible as the Earth's surface could not stay warm enough to support life. Without the greenhouse effect the Earth would have an average surface temperature of about -18°C; with the greenhouse effect the Earth has an average temperature of about 14°C.

The four major greenhouse gases are:

- Water vapor (H_2O): 36–70%
- Carbon dioxide (CO_2): 9–26%
- Methane (CH_4): 4–9%
- Ozone (O_3): 3–7%

By burning fossil fuels we are adding, in particular, more and more carbon dioxide to the atmosphere. This makes the "blanket" thicker and in turn traps more of the Sun's heat at the Earth's surface. The consequence? Rising surface temperatures which have an impact on the Earth's climate. We are changing the climate, hence the term that we are hearing more and more over the last few years – climate change.

Slide 12

In order to work out the impact of our carbon dioxide emissions we need to know how much of it there is in the atmosphere. The video on this slide shows what has been happening to CO_2 over time.

The American government operates a monitoring station near the summit of Mauna Loa in Hawaii.

Measurements of CO_2 from the Mauna Loa observatory show that concentration has increased from about 313 parts per million (ppm) in 1960 to about 389 ppm in 2010. It reached the 400 ppm milestone on May 9, 2013. The current observed amount of CO_2 exceeds the geological record maximum (~300 ppm)? from ice core data.[7]

This measurement fluctuates, as you can see in the video, but the trend is upwards. Over the past 800,000 years, ice core data shows that carbon dioxide has varied from values as low as 180 ppm to the pre-industrial level of 270ppm.[8]

The Keeling Curve (a graph which plots the ongoing change in concentration of carbon dioxide in Earth's atmosphere since 1958) also shows a cyclic variation of about 5 ppmv in each year corresponding to the seasonal change in uptake of CO_2 by the world's land vegetation. Most of this vegetation is in the Northern hemisphere, since this is where most of the land is located. From a maximum in May, the level decreases during the northern spring and summer as new plant growth takes carbon dioxide out of the atmosphere through photosynthesis. After reaching a minimum in October, the level rises again in the northern autumn and winter as plants and leaves die off and decay, releasing the gas back into the atmosphere.[9]

[7] http://en.wikipedia.org/wiki/Greenhouse_effect
[8] http://en.wikipedia.org/wiki/Greenhouse_effect
[9] http://en.wikipedia.org/wiki/Keeling_Curve

Slide 13

So, what are the effects of climate change? What are we doing to the Earth?

The image on this slide is the public domain "The Blue Marble" from NASA. It was taken by the crew of Apollo 17 on the 7th of December 1972. The Blue Marble is one of the most famous photos of the earth in existence. It was taken at a distance of 28,000 miles from our planet and "to the astronauts … had the appearance and size of a glass marble, hence the name".[10]

When you see the Blue Marble hanging in the black vastness of space you can't help but think of the fragility of life on Earth.

Slide 14

The climate is changing. We know this not because of any particular event. Instead, the proof lies in the emerging pattern of climate extremes around the world. These include record temperature rise, storms, floods, droughts, snowfall, sea level rises... sometimes known not as 'global warming', but "Global wierding"

The pictures show (clockwise from top left):

- Arctic sea ice cover reducing by about 5% per decade.
- This satellite image shows the northern half of Portugal obscured by smoke from forest fires during the great European heat wave of 2003. Fire was not the only problem – it is estimated that across Europe 30,000 people died from the heat.
- Hottest reliably measured temperature ever recorded on earth – June 30th, 2013 - 129.2°F (54 C) at Furnace Creek, Death Valley.
- Typhoon Haiyan 2013.

There are many other examples. What are the implications?

Image sources (clockwise from top left):

- U.S. Geological Survey. Public domain – http://gallery.usgs.gov/photos/aFVh84Kxw6_13ce
- The Met Office – http://www.metoffice.gov.uk/learning/learn-about-the-weather/weather-phenomena/case-studies/heatwave. Contains public sector information licensed under the Open Government Licence v1.0.
- http://www.wunderground.com/blog/weatherhistorian/june-2013-global-weather-extremes-summary Photo: http://commons.wikimedia.org/wiki/File:Death_Valley,19820817,Furnace_Creek,oasis.jpg Public domain.
- NOAA. Public domain – http://www.ospo.noaa.gov/Organization/History/imagery/Haiyan/img/20131107_2230Z-rgb.jpg

Slide 15

The poorest people suffer first and worst:

- Drought
- Floods
- Hurricanes
- Irregular rains
- Rising sea levels
- Water shortages
- Land erosion

[10] http://en.wikipedia.org/wiki/The_Blue_Marble

- Poor crops
- Rising food prices
- Migration

Suggested questions/discussion:

1. *Why might there be both water shortages and floods?* Changing climate leads to more extremes and unpredictability in the weather.
2. *Why would there be rising food prices?* Drought and extreme weather lead to crop failure. Irregular rains mean that crops don't grow as well as they should or when they are supposed to. Lack of water means that crops can't be cared for by farmers.
3. *Why will there be migration?* As sea levels rise, coastal areas will become uninhabitable (through flooding and salinity of the ground) and people will be forced to move inland, desertification will force people to move to more fertile areas etc.

Images:
Drought: USAID's photo of drought conditions in Ethiopia, amidst the 2011 Horn of Africa famine. Public domain.
Flooding: http://en.wikipedia.org/wiki/Typhoon_Morakot#mediaviewer/File:Philippine_typhoon.jpg – Public domain.

Slide 16

Images:
Top Left: Flooding on the A596 road at Workington, Cumbria, about 300 metres from Calva Bridge, 20 November 2009, 7.30am. By David Trochos. (License: Creative Commons Attribution 3.0 Unported)
Bottom Left: Flooding along the Missouri River on the Iowa-Nebraska border in 2011. US Army Corps of Engineers. https://www.flickr.com/photos/omahausace/5866540604/in/photostream/ (License: Creative Commons Attribution-NonCommercial-NoDerivs 2.0 Generic)
Right: A Pizza Hut restaurant surrounded by flood water in Chesterfield, England, 2007. By David Miller (License: Creative Commons Attribution 2.0 Generic)

Slide 17

Many kinds of plants, animals and habitats are also under threat, with unpredictable consequences. For example:

Warming: Comma butterfly (top left[11]) is now common in northern UK. The text book says they only live on the south coast. But the book is twenty years old – the butterflies are following the temperature rise. Many creatures have nowhere to go – their survival is threatened.

Ocean acidification: Coccolithophores (top right[12]) are phytoplankton – tiny plants which live in huge numbers on the surface of the ocean – tiny but vital! This one is called *Gephyrocapsa oceanica*. They are the bottom of the food chain – everything in the sea eats something that eats phytoplankton. They absorb many millions of tons of CO_2 from the air above the ocean. Their whiteness reflects a lot of the sun's heat. But their scales are made of calcium carbonate which will dissolve as the oceans become more acidic... Ocean creatures will lose their staple food. More CO_2 will stay in the atmosphere. The oceans will get warmer. A vicious circle.

[11] Photo: http://en.wikipedia.org/wiki/Polygonia_c-album#mediaviewer/File:Polygonia_c-album_qtl2.jpg License: Creative Commons, Attribution-ShareAlike 3.0 Unported. Author: Quartl.
[12] Photo: http://en.wikipedia.org/wiki/Coccolithophore#mediaviewer/File:Gephyrocapsa_oceanica_color.jpg. License: Creative Commons, Attribution-ShareAlike 2.5 Generic. Author: Photo by NEON ja, colored by Richard Bartz.

Dead forest: These forests in British Columbia (bottom left[13]) were killed by pine beetles infestation caused by warm winters. By the end of 2006 130,000 sq km in Western Canada had been destroyed. This will have the effect of releasing 270 million tonnes of CO_2 into the atmosphere.

Ice melting: The Arctic ice cap is shrinking. Images from NASA satellites show that the area of permanent ice cover is contracting at a rate of 5% each decade. Where will the polar bears[14] go?

Wild life matters because...
- ...it is part of God's creation, still sustained by Him (Colossians 1).
- ...the whole of creation is mutually dependent (food chains, symbiosis…).

There is also the practical matter that we humans rely on the natural world for all our needs (ecosystem services).

Slide 18

Many Christians think that, really, God cares mostly about people – Jesus came to save the lost. The rest of creation is only useful when it is useful to us. However, more and more Christians are starting to understand that, important as we are to God, we're only one part of His creation, which He cares for in its entirety. Here are some biblical references:

Slide 19

Dominion

"Then God said, 'Let us make man in our image, after our likeness. And let them have dominion over the fish of the sea and over the birds of the heavens and over the livestock and over all the earth and over every creeping thing that creeps on the earth'." **Genesis 1:26**

The Hebrew word translated "dominion" is also translated as "rule", "have charge" and "authority" elsewhere in the Bible. The OED defines dominion as "Sovereignty; control". God has given humanity dominion over His creation which means we are to rule over it, have charge of it, control it. But that doesn't give us the right to ruin it – dominion doesn't mean domination or destruction.

In the Bible Jesus is shown to have great authority but he serves others – an example is found in John 13 where Jesus washes his disciple's feet. Washing feet was the job of the household slave, not the Master of the house.

"You call me Teacher and Lord, and you are right, for so I am. If I then, your Lord and Teacher, have washed your feet, you also ought to wash one another's feet. For I have given you an example, that you also should do just as I have done to you." (John 13:13-15)

Jesus's example of Lordship and dominion was of loving service. And he wants his followers to act in the same way – towards others, certainly – but also towards the creation that we have dominion over. We see this more clearly in our next verse.

Stewardship

"The LORD God took the man and put him in the Garden of Eden to work it and keep it." **Genesis 2:15**

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[13] Photo: http://en.wikipedia.org/wiki/File:Pine_Beetle_in_Manning_Park.jpg. License; Creative Commons, Creative Commons Attribution 3.0. Author: Jon Hall.
http://www.terradaily.com/reports/Beetles_may_doom_Canadas_carbon_reduction_target_study_999.html

[14] Photo: U.S. Fish and Wildlife Service. Public domain image.

The LORD God gave the man a task – he was to look after the land, the garden, in which God had placed him. "To work it" means to cultivate it, that is, the man was to make the most of what God has already provided. The King James Version uses the word "dress", which shows what God intended – the man was to make the garden better by working it – not ruin it.

If there was any doubt that God wanted the garden to be looked after, the words "keep it" should help – it means "to exercise great care over".

In the context of Genesis 2:15, it expresses God's wish that mankind, in the person of Adam, 'takes care of', 'guards' or 'watches over' the garden. A caretaker maintains and protects his charge so that he can return it to its owner in as good or better condition than when he received it.

Covenant
"And God said, 'This is the sign of the covenant I am making between me and you and every living creature with you, a covenant for all generations to come: I have set my rainbow in the clouds, and it will be the sign of the covenant between me and the earth." **Genesis 9:12-13**

The covenant is not only between God and man's representative, Noah, but between God and the earth. Humans are part of all life on earth, not separate from it.

Slide 20

Revelation
"Great are the works of the LORD; they are pondered by all who delight in them." **Psalm 111:2**

God wrote two books – the Book of Words (the bible) and the Book of Works (creation). For example, Martin Luther wrote 'God writes the gospel not in the bible alone, but on trees and flowers and clouds and stars.' The bible is full of references to God's handiwork in creation.

Incarnation
"For God so loved the world, that he gave his only Son, that whoever believes in him should not perish but have eternal life." **John 3:16**

Jesus made it clear in numerous places in the New Testament that he came to reconcile the whole earth, (from the Greek word "kosmos"), to God. Thus God's salvation purposes are for the whole created order, not just humans. He cares about the whole person and the whole planet – only if they are all treated with respect will every part flourish. Our attitudes and lifestyles need to reflect Jesus's love for God's creation.

As Margaret Thatcher (perhaps surprisingly) said: "No generation has a freehold on this Earth. All we have is a life-tenancy – with a full repairing lease."

Eschatology
"Then I saw 'a new heaven and a new earth,' for the first heaven and the first earth had passed away, and there was no longer any sea." **Revelation 21:1**

The 'new' earth will emerge from the old and it is therefore incumbent upon Christians to care for this earth. Jesus will come to renew all things and in the meantime Christians are called to participate in the 'earthing of heaven' (quote from Bishop James Jones) by doing God's will on earth.

This contrasts with the erroneous view that Christians should not slow down the destruction of the earth, since only after it is destroyed can Christ return. This belief is strong among North American fundamentalist denominations, which subscribe to Dispensationalist theology, and has permeated wider

American Christian culture. For example former Secretary of the Interior James Watt, a member of a Pentecostal denomination, warned Congress not to look too far ahead on natural resource policy because he did not know 'how many future generations we can count on before the Lord returns'.

Recommended further bible study resources on a Christian response to climate change:

'Planetwise', Dave Bookless (IVP, 2008) available from http://www.eden.co.uk/shop/planetwise-pb-1121550.html

'The Bible and the Environment', Meg Guillebaud (Lulu, 2011) available from http://www.amazon.co.uk/The-Bible-Environment-Meg-Guillebaud/dp/1447673352

'Sustainable Faith: A green gospel for the age of climate change' (Nicola L Bull, 2014) Nicola Bull and Mark McAllister available from http://www.amazon.co.uk/dp/1291900209/ref=rdr_ext_tmb

Slide 21

Question:
What was the moral of the story of the Good Samaritan?
We can think of our neighbours in two different ways.
Firstly, there are our current global neighbours – every other person on this planet is our neighbour who we need to care about.
Secondly, there are the future generations (intergenerational), those who've not yet been born but who will inherit the earth from us. Our actions now will have an effect on their future.

Slide 22

Being good stewards of God's earth is built-in to our calling as Christians. If we can try and do that, together and individually, we will be serving God as well as helping our global neighbours and our future neighbours. And the world will be watching.

Christians make up 32% of the world population.

So, if Christians take the environment seriously, that could have a huge impact.

Slide 23

Video – Bedtime Story

Slide 24

Question: do you know how many people live in Europe? On Earth?
Europe has a population of 742.5 million people (depending a little on how you define Europe!). There are over 7 billion people on Earth. If everyone in the world lived like an **average** European we would need **three** planets to live on… this is a scary thought because we only have one planet and we all have to live on it.

The average UK citizen has a footprint of about 8 tonnes of CO_2 per year[15] (excluding embedded emissions). Americans have per capita emissions closer to 18 tonnes[16] and Ghana, where Climate Stewards

[15] http://data.worldbank.org/country/united-kingdom - figure is for 2010.
[16] http://data.worldbank.org/country/united-states - figure is for 2010.

works, each individual has emissions of about 0.4 tonnes[17]! In order to live sustainably (and fairly – assuming everyone on the planet has an equal share) we need to get this figure down to about 2 tonnes per year. How can we do that?

One Planet Living – http://www.oneplanetliving.net/ – gives more details.

Slide 25

First, you can calculate your own carbon footprint.

A carbon footprint is a measure of how much CO_2 our activities generate. For example, driving 3,000 miles in a medium-size car will release 1 tonne of CO_2 into the atmosphere. Heating your home for a year will cause about 2.4 tonnes of CO_2 to be emitted. And so on… Everything we do that consumes energy contributes to our carbon footprint – some activities are more obvious than others.

Ultimately, our decisions about how we want to live will reflect choices in how much energy we consume. Perhaps it is helpful to think in terms of treading lightly on God's earth.

Work out everything you consume during the year – heating, transport, food, shopping, holidays… all of these reflect the impact of our lifestyle on the planet. There are lots of websites which will help you to work out your carbon footprint. A good place to start would be: http://calculator.bioregional.com/

Slide 26

Question: What actions can we take to reduce our carbon footprint – individually, in families, as a church…? (If there is time this could be introduced as a discussion – maybe in smaller groups that feed back after, say, 5 minutes.)

Some ideas

- Turn down the thermostat by 1 degree this winter
- Have a 'carbon fast' in Lent http://www.thecarbonfast.org/
- Don't fly, or fly less often
- Buy green (renewable) electricity
- Cycle, walk, use public transport – 'active transport'
- Have meat-free Mondays
- Use Freecycle http://uk.freecycle.org/ or start it in your area
- Don't over-fill the kettle, and turn off the taps when you clean your teeth
- Take re-usable bags to the shops and check out the charity shops
- Sign your church up for Eco-Congregation http://ew.ecocongregation.org/

Could you set each other a challenge to try a new action each week or month?

It doesn't have to be expensive or hard work. Often living lightly means spending more time enjoying the simple things in life, sharing with friends and neighbours. For example, cycling instead of driving for short trips means you get exercise, save money and reduce your carbon footprint: a win-win-win!

But, there is still a problem. We will never get our footprint down to zero. So what can we do?

Slide 27

Here's what we are doing at CS

[17] http://data.worldbank.org/country/ghana - figure is for 2010.

Transpiration – trees absorb CO_2, emit O_2

Slide 28

In order to restore lost biodiversity, we plant mostly indigenous trees which provide good habitat for wildlife.

Slide 29

10% of each site is planted with a cash crop to provide income for the communities. In addition, Climate Stewards funds environment clubs at schools, and provides incentives such as fishponds, small livestock projects (cane rats, rabbits) or beehives and training to provide new sources of income.

Slide 30

Images (clockwise from top left):
School students using tree plantations as 'outdoor classrooms' at:
Kumasi Senior High School
Bompata Presbyterian High School
Namong Senior Secondary School
Nyanihini Catholic Senior Secondary School

Slide 31

Images (clockwise from top left)
Students from Nyanihini preparing to plant seedlings
Villagers from Damongo planting seedlings
Students from Namong after weeding their patch of 3-year old trees
Farmers transporting seedlings to planting sites in headpans, Larabanga

Slide 32

Images (from left):
Training in using a clinometer at Namong High School
Isaac, Namong student, in 4-year old plantation
Prosper Antwi, Climate Stewards Kumasi Schools Manager, hugging a 6 year old kapok tree at Asamama

Slide 33

Child helping with planting at Larabanga, northern Ghana, 2007
Setu Isaku in her one acre plot which she planted and nurtured, 2013

Slide 34

Conclusion
1 kg of wood
Question: How much CO_2

Our 28,000 balloons would hold 1 tonne of CO_2.
1 tonne of CO_2 contains 272 kg of carbon – (1/3.67 – atomic weights of C and O) – see note 1.
The tree on the right is a 6 year old Ofram that stands around 20m tall. It absorbs (average figures) about 380 kg of CO_2 per year – see note 2
So, this six year old tree has absorbed around 2280 kg of CO_2, (two and a quarter tonnes of CO_2, about 620kg of carbon) and overall now weighs somewhere around 1.8 tonnes since a living tree's biomass (wood, leaves, roots, water, etc.) is about one-third carbon. It's very hard, if not impossible, to get an exact figure – unless we cut the tree down and weigh it!!

For comparison – a 1 kg (approx.) block of (dried) wood is 50% carbon – i.e. contains 500g of carbon. This translates to 1.84 kg of CO_2 – equivalent to the contents of 51 balloons.

Note 1:
While carbon has an atomic weight of 12, CO_2 has an atomic weight of 44 (due to the two oxygen atoms each with an atomic mass of 16).
So to convert carbon dioxide to carbon, we need to divide by 44/12 i.e. 3.67. Thus 1 tonne of carbon dioxide becomes 1/3.67 = 0.272 tonnes of carbon.

Note 2:
41.2 tC/ha with 400 trees per hectare = 0.103 tC per tree per year. 103 * 3.67 (C to CO_2) = 0.378 tonnes.

Slide 35

So why do we do all this stuff? The desire to plant trees comes not just from the fact that we like planting trees (actually, we don't even do the planting...) or blowing up balloons and talking about chunks of wood (fascinating as that subject can be!) but because we are motivated to care for the planet and for other people because our first love is for God himself. Out of that comes our love for our neighbours and the world we live in.