

‘It’s Our Earth Too!’

Environmental Justice & Climate Change



A Resource for Youth Group Leaders and Tertiary Chaplaincies

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1) About this Resource and How to Use It

This resource is meant to be environmentally friendly - by circulating it through cyberspace, only those who are interested in it need to use paper to print it. If you know of groups who could use this resource but do not have Internet access, please ask them to contact Caritas for a paper copy.

The resource contains background ideas and raw materials on climate change and Catholic social teaching for leaders of youth and chaplaincy groups. The ideas and information in the resource can be presented in ways best suited for particular groups, with care to present in an age-appropriate way for younger groups.

The Caritas Aotearoa New Zealand Statement on Environmental Justice, *Renew the Face of the earth*, may be used as further reference and can be found on the Caritas Aotearoa New Zealand website at <http://www.caritas.org.nz>.

A power point presentation ('It's Our Earth Too' - An Introduction to Climate Change) can also be downloaded from the website. For activities, please see the CAFOD site, http://www.cafod.org.uk/resources/youth_leaders/global_issues.

Thank you for your commitment to environmental and social justice, and may this resource be part of a learning experience for many!

2) Climate Change: What is It? Why Should I Care?

Climate change happens naturally over geological time, and with natural fluctuations in ocean temperatures and currents. But scientists now know that some climate change is due to human activity on Earth.

The climate change which is causing concern is also called global warming. Our Earth's atmosphere with its water vapour and other gases traps the sun's heat, which enables life to flourish. The atmosphere is sometimes compared to a glasshouse, or greenhouse, which lets the light and heat through and keeps in the heat. Problems arise when from natural or human causes, too much of gases like carbon dioxide (CO₂), methane (CH₄) or nitrous oxide (N₂O) accumulate in the atmosphere. When too much of these gases - known as greenhouse gases - build up, they do not allow enough heat to escape from the atmosphere, and this causes global surface temperatures to heat up.

**Why is it so bad if the earth heats up a few degrees?
Doesn't that mean our seasons would be nicer and more crops would grow?**

A warmer Earth will have some advantages in countries like New Zealand. For example, sub-tropical fruits and temperate grains may be able to be grown farther south. Can you think of more advantages to warmer temperatures?



Unfortunately, there are also some serious downsides. When the Earth heats up, even a little, polar icecaps and land-based ice sheets and glaciers begin to melt. *Has anyone visited Franz Josef or Fox glaciers and noticed how far the glaciers have receded in the past decades?*

When all this ice melts, it goes into the oceans, and the oceans begin to rise. The oceans are rising because of ice melt and also because as the Earth's temperature rises, water expands and takes up more space.

Records show that the sea has risen an average of 18 cm over the last century (faster than in previous centuries). But because average temperatures are predicted to rise between 1.4°C and 5.8°C by 2100, the oceans are expected to rise by an average of 30 to 40 cm more (models predict up to 88 cm). [<http://www.grida.no/climate/ipcc>]

Why Should We Care?

For **New Zealand**, a rising sea means that coastlines will move further inland (up to 90m - nearly the length of a rugby field [<http://www.ew.govt.nz>]), so that homes, office buildings, warehouses, roads, railways and other infrastructure on waterfronts will have to be either protected or moved further back. It means that there will be a loss of coastal wetlands and dunes, and intrusion of salt water into some fresh water supplies.

In the **Pacific Islands**, sea level rise is already causing serious problems. On the small island atolls of Kiribati and Tuvalu, recent local king tides and storm surges have brought the worst flooding in living memory. Salt water has intruded into wells, making fresh water scarce, and even into soils, making growing of food plants impossible in some places (taro now must be grown in buckets). It is expected that in the next 40-50 years, the islands will become uninhabitable. The Friends of the Earth estimate that there may be a million 'environmental refugees' from island states by 2050 [<http://www.foe.org.au>] who will need to be taken in by other nations.

Worldwide, millions of people live along coastlines in many countries, including India, Bangladesh, China, Egypt and many developed countries like New Zealand, Australia and the United States. While developed countries have the resources to protect or relocate their citizens, countries like Bangladesh, India and the Pacific Islands, will need aid and new settlement areas for the environmental refugees displaced by climate change.

People may become environmental refugees not only because of sea level rise, but because climate change has other effects as well. It changes weather patterns so that wetter places often become wetter still, resulting in more flooding, landslips and more intense and



frequent cyclones and hurricanes. Dry places become dryer, increasing the intensity and frequency of droughts.



In New Zealand, dry weather and intensive irrigation have caused some Canterbury river aquifers to decline to record lows [<http://www.greens.org.nz/freshwater>].

Fields have become parched in recent years. Conversely, areas like the Manawatu and the Bay of Plenty have experienced severe floods.

Elsewhere, it is estimated that increasing drought will cause millions of deaths in sub-Saharan Africa by 2100 [<http://www.christian-aid.org.uk>]. Even some towns in Australia now

have no water at all, and need to have it trucked in. Yet cyclones and hurricanes have caused flooding, complete destruction of property and often the loss of many lives in the Pacific Islands and in the Caribbean.

Ironically, the people who contribute the least to global warming are also those who use the least resources, and are the poorest. They are the ones who will suffer first and most from climate change. They come from small island countries, from countries stricken by drought, from coastal and low-lying areas with no protection from flooding. Pacific Islanders, for example, contribute the least to global warming (0.06 percent [<http://www.cana.net.au>]), and yet some of them will be among the first to lose their homes, land and nations. It is they and others from developing countries who are the most vulnerable, and who are most likely to become environmental refugees.

These impacts are why climate change matters. A little warming on its own might be fun, but the overall effects could be devastating.

How might Climate Change affect your community?

Do some web-surfing to help you understand what might happen in your part of New Zealand.

A good place to start is the website of your regional or city council, for example:

<http://www.gw.govt.nz> Greater Wellington
<http://www.ew.govt.nz> Environment Waikato
<http://www.orc.govt.nz> Otago Regional Council
<http://www.arc.govt.nz> Auckland Regional Council
<http://www.ecan.govt.nz> Environment Canterbury
<http://www.waitakere.govt.nz> Waitakere City

For more general information, see websites like
<http://www.4million.org.nz> New Zealand - 4 million careful owners (has a good resource for teens)
<http://www.globaled.org.nz> Education for a just world
<http://www.catholicearthcareoz.net> Australian Catholic ecological agency
<http://www.ozspirit.info> Global issues for students, teachers, parishes
<http://www.erc.org.au> Edmund Rice Centre

For a bit more technical information:
<http://www.niwascience.co.nz> National Institute for Water and Atmosphere
<http://www.climatechange.govt.nz> New Zealand Climate Change Office
<http://www.grida.no/climate/ipcc> IPCC (Inter-governmental Panel on Climate Change) reports of the UN Environmental Programme and World Meteorological Office

3) FAQs

What Causes Climate Change?

Climate change is happening because of the increase in greenhouse gases in the Earth's atmosphere. Some of the gases are in the atmosphere naturally. Carbon dioxide (CO₂), for example, is a necessary component in the atmosphere: plants need it to photosynthesise.

But CO₂ levels have been increasing over past decades, and since 1750, have increased by 25 percent. Methane (CH₄) has increased by 151 percent, and nitrous oxide (N₂O) by 18 percent. This rapid increase is more than can be accounted for by natural processes.

[<http://www.niwascience.co.nz>]

Scientists have documented these increases (from bubbles trapped in Antarctic ice, from tree rings and bore holes) as well as the amounts of greenhouse gases human activities release into the air. It is these human activities, mostly since the beginning of the industrial age, which are the cause of the climate change we are beginning now beginning to experience.

What Human Activities Produce Greenhouse Gases?



Anytime we burn carbon or cause it to decay, we release CO₂ into the air. All living things, as well as materials that used to be living contain carbon. Wood and wood products are made of carbon, and CO₂ is released when we clear forests, burn wood or dump paper products into landfills.

But the biggest releases of CO₂ are from the burning of 'fossil' fuels like petrol, gas, oil and coal. These resources are the fossilised remains of the forests, dinosaurs and other living things which have lain for hundreds of millions of years beneath the earth. When we drive our cars or produce electricity from coal, gas or oil, we are releasing CO₂.

The more vehicles we drive, the more electricity we use (that is not produced from renewable sources like water or wind), the more plastics we use (plastics are made from petroleum products), the more waste that goes into our tips, the more we are contributing to greenhouse gases and climate change.



In New Zealand, about 43 percent of our greenhouse gases come from the use of fossil fuels. Industrial processes and waste decomposition make up about 7 percent. About 50 percent of our greenhouse gases (and this is relatively unique to New Zealand) come from agriculture, particularly from the methane (mostly) and nitrous oxide animals

produce on their way to becoming meat, dairy products and wool [<http://climatechange.govt.nz>]. Methane is produced mostly in the normal respiration and digestion process of ruminant animals (mostly cows, but also sheep).

What happens if we were able to keep our release of greenhouse gases to our present levels? Is this likely?

If we could do this, the earth would continue to warm, and the warming would continue to have effects for the next century or so, but perhaps with some additional reductions in emissions, our planet and its people may be able to live with the changes and adapt to them.

Although there have been international efforts (the Kyoto Protocol) to cap or reduce greenhouse gases, the worlds largest emitter (the United States) and the world's largest per capita emitter (Australia) have not signed the agreement [<http://www.foe.org.au>]. New Zealand, which committed to reducing emissions to its 1990 levels over the period 2008-2012 has already increased greenhouse gas emissions by more than 22 percent [<http://www.climatechange.govt.nz>].

The world, its nations, and all of us as individuals, have to try much harder to reduce greenhouse gases so that future generations have a safe world to live in.

What is being done to minimize Climate Change?

Some countries have signed the Kyoto Protocol, and are reducing their emissions. Some have invested in renewable energies, like using wind or the tides to produce energy instead of coal. Some cities maintain and encourage good public transportation and bicycle lanes so that people don't need to



drive cars as much. Some areas have reforestation programmes: forests (all plants) are natural carbon sinks, so maintaining land in forest means less carbon is in the air. Check the websites for more!

4) What's Your Ecological Footprint?

Definition: Ecological Footprint

- A measure of how lightly or heavily we step on the earth in terms of our use of the earth's resources
- Technically, the 'area of productive land and aquatic ecosystems required to produce the resources used, and to assimilate the wastes produced by' any given population
- Can be estimated for individuals, schools, cities or countries
- Usually measured in hectares (ha) per person. If all the productive earth were divided equally for each person on the planet, about 1.7-1.8 ha per person are available to sustain an individual's needs for food, water, energy, other resources and to absorb waste. If, as predicted, the earth's population grows to 10 billion in another 25 years, there will be only 1 ha to support each person.
- The average ecological footprint of a New Zealander has been calculated at 7.6-8.7 ha/person. For Bangladesh it is 0.5. For Australia it is 9.0, and for China it is 1.2. The world average is about 2.8.
- We would need at least four earths if everyone on our planet used as many resources as Kiwis do!

- If we own a lot of material things, take the car everywhere and use a lot of electricity - then we probably have a **large** ecological footprint.
- If we are careful with our use of electricity; walk, cycle or use public transport; and keep our material possessions modest - then we have a *smaller* ecological footprint.

Why Our Ecological Footprints Matter ...

As you can see from the figures above, Kiwis have a larger ecological footprint than the world average. It means that we use more resources than, for example, people in Bangladesh or China.

Can We have as Big an Ecological Footprint as We Want?

Well, no, not forever. The earth's productive land and water and resources provide a biocapacity (ability to support human needs) of only 2.1 ha/person. So already we are taking way more than our share.

What Happens if We Don't Reduce our Ecological Footprint?

- our rate of deforestation will become unsustainable through our use of wood for building, paper products and fuel
- we may overgraze our land as we have already overfished some of our seas, turning marginal lands into deserts
- we may damage and run short of fertile lands for growing grains and other food crops
- fresh water will become hard to come by, as has happened in many parts of the world (including cities in Australia)
- we will use so much electricity and heating/cooling that (if it is produced with coal, oil and gas) we will push CO₂ levels high enough to bring about irreversible global warming.

Want to find out what your ecological footprint is?

1. Go to: <http://www.myfootprint.org> or <http://www.earthday.footprint> or <http://ecofoot.org> to take the quick 14-15 question quiz to determine your footprint.
2. Compare your footprints with each other.
3. What could you do to lessen your footprints?
4. Most of these sites also have FAQs and suggestions for What You Can Do!

If you're interested in more information on footprints, go to: <http://aurora.icaap.org> for an interview with the inventor of the footprint concept, Bill Rees, from Vancouver, Canada

A more complex footprint calculator can be found at: <http://www.mfe.govt.nz/withyou/do/footprint/calculator>

Information on country footprints can be found at <http://ecologicalfootprint.org> and <http://www.footprintnetwork.org>

5) What does Catholic Social Teaching Say about Caring for the Earth?

It speaks of stewardship or kaitiakitanga. (We suggest that you copy a small selection of these onto overheads and ask youth some questions like those that follow.)

An abuse, a deterioration, in one part of the world has repercussions in other places and can spoil the quality of other people's lives, often unbeknown to themselves, and through no fault of their own.

Pope Paul VI, *Message to the Stockholm Conference on Human Development*, 1972

Today the ecological crisis has assumed such proportion as to be the responsibility of everyone.

Pope John Paul II, *Message for the World Day of Peace*, 1990

A Consistent Ethic of Life must be promoted. This places the sacredness of creation and the need to protect and enhance all human life, and the life of our planet on which we depend, as a basic and central moral point of reference.

New Zealand Catholic Bishops Conference, *A Consistent Ethic of Life*, 1997

...in keeping with the traditions of the Maori of Aotearoa ... we need to respect the sacredness of creation, as partners in life with the earth, the oceans, the lakes, the animal world, the mountains, the fish of the sea and the birds in our forests and gardens.

New Zealand Catholic Bishops Conference, *A Consistent Ethic of Life*, 1997

The integrity of the ecosystem within which human life exists is vital to our very survival, to the well-being of future generations, and to respect for the work of God

New Zealand Catholic Bishops Conference, *A Consistent Ethic of Life*, 1997

The very life and ecology of the planet face severe threats from pollution, exploitation and mismanagement of its resources. Too often the driving forces for social change are greed and the desire for power, rather than the common good and solidarity of humanity.

New Zealand Catholic Bishops Conference, *A Consistent Ethic of Life*, 1997

The danger of serious damage to land and sea, and to the climate, flora and fauna, calls for a profound change in modern society's typical consumer life-style, particularly in the rich countries.

Pope John Paul II, *New Year Message*, 1999

Human beings are appointed by God as stewards of the earth to cultivate and protect it. From this fact there comes what we might call their 'ecological vocation', which in our time has become more urgent than ever.

Pope John Paul II, August 2000

In our time, humanity has unhesitatingly devastated wooded plains and valleys, polluted the waters, deformed the earth's habitat, made the air unbreathable, ... blighted green spaces, implemented uncontrolled forms of industrialization, humiliating the earth.

Pope John Paul II, General Audience Address, 17 Jan 2001

Because creation was entrusted to human stewardship, the natural world is not just a resource to be exploited but also a reality to be respected and even revered as a gift and trust from God. It is the task of human beings to care for, preserve and cultivate the treasures of creation.

Pope John Paul II, *Ecclesia in Oceania*, 2001

In facing climate change, what we already know requires a response: it cannot be easily dismissed.

United States conference of Catholic Bishops, *Global Climate Change: A Plea for Dialogue, Prudence, and the Common Good*, 2001

Significant levels of scientific consensus - even in a situation with less than full certainty, where the consequences of not taking action are serious - justifies, even can obligate, our taking action intended to avert potential dangers.

United States conference of Catholic Bishops, *Global Climate Change: A Plea for Dialogue, Prudence, and the Common Good*, 2001

We, and much more, our children and future generations are entitled to a better world, a world free from degradation, violence and bloodshed, a world of generosity and love ... It is not too late. God's world has incredible healing powers. Within a single generation, we could steer the earth toward our children's future. Let that generation start now, with God's help and blessing.

Declaration of Pope John Paul II and Ecumenical Patriarch Bartholomew I, 2002

The Magisterium [teaching authority of the church] underscores human responsibility for the preservation of a sound and healthy environment for all...Responsibility for the environment, the common heritage of humankind, extends not only to present needs but also to those of the future.

Pontifical Council for Justice and Peace, *Compendium of the Social Doctrine of the Church*, 2004

The external deserts in the world are growing, because the internal deserts have become so vast. Therefore the earth's treasures no longer serve to build God's garden for all to live in, but they have been made to serve the powers of exploitation and destruction.

Pope Benedict XIV, *Homily at Inaugural Mass*, 2005

The existence of extreme poverty and environmental destruction in our world are not natural forces, nor acts of God, but result from human behaviour.

New Zealand Catholic Bishops Conference, *Environmental Justice*, 2006

Our world is facing an ecological crisis, which could equally be called an economic crisis, or a poverty crisis.

New Zealand Catholic Bishops Conference, *Environmental Justice*, 2006

Our understanding that we are stewards of God's creation, our solidarity with the poor, and our respect for the common good make the issue of environmental justice the responsibility of every person.

New Zealand Catholic Bishops Conference, *Environmental Justice*, 2006

Some Questions for Reflection

As young people, this earth is your future. What do you think about the way it has been treated by people in past generations? What do you want to do differently? What are some of the challenges you might face in doing things differently?

Do you think that we need to change our lifestyles? Give a few reasons why.

How do you understand the connection between our lifestyles, environmental degradation and poverty in the developing world?

6) What Can We Do About Climate Change?

What we can do depends on our ages and where we live. Ask the group for ideas of what they'd like to do.

Here are some starters:

- When you buy things, try to buy things with a minimum of packaging - and when you do have packaging, reuse it or recycle it when possible. You can prevent the release of 1090 kg CO₂ per year by recycling half of your household waste!
- Invite a speaker on climate change from Caritas, Forest and Bird, NIWA or your regional council.
- Turn off lights when you leave a room, and don't forget to shut doors to heated rooms, outside doors and the refrigerator door!
- Ride your bike or walk with friends when it's safe, or take public transport, instead of asking for a ride in/driving the car.



- Find out about the cultural history and environmental concerns of tangata whenua in your area.
- Contact Caritas for an Environmental Audit CD and see how your parish or meeting room might be made more environmentally friendly.
- Plan a prayer time for your group or a liturgy for your parish around the theme of environmental justice and care of the earth. Can you find some bible readings about the goodness of creation? Can you choose some music which reflects care of creation? Look on the Caritas website if you need some liturgy resources. See the next section for some prayers you might want to use.
- As a group, find out from your regional council where you might help plant trees (to absorb carbon dioxide and store carbon). Find out what native trees grow best there, and where they can be obtained locally.
- Change to compact energy-saving light bulbs in your room or flat. Replacing one bulb will prevent the release of 68 kg of CO₂ per year.

- Go on a day tramp as a group and take someone along who can tell you about the trees and birds you might see along the way, and how they might be affected by climate change.



- Check out <http://www.passport.panda.org> to take online action for conservation.
- Turn off all your electronic devices at the wall when you're not using them (TV, DVD, computer, microwave, stove, washer). Not only will it save electricity and prevent thousands of kg of CO₂ from being released into the air, it will save money!
- Contact your regional council to see if they have any hints for climate action. At Auckland Regional Council, you can join The Big Clean Up, and will be sent a booklet with lots of ideas for a better environment. Email bigcleanup@arc.govt.nz or visit <http://www.arc.govt.nz>
- If you are in secondary school, get your school to join the NZ Schools climate change competition (climate change modeling) which runs through early Nov 2006, see <http://www.niwascience.co.nz/edu/students/climatechange>
- Is your school an Enviroschool? If you're interested in asking about becoming one, see <http://www.enviroschools.org.nz>
- See <http://www.eds.org.nz> Environmental Defense Society for cool climate change snapshots to share with your group.
- Contact Caritas if you would like to borrow a DVD on the climate changes happening in Kiribati, and don't forget to check the website to view or download the slide show on climate change, <http://www.caritas.org.nz>

7) Some Resources for Prayer and Reflection

Be a gardener. Dig a ditch, toil and sweat, and turn the earth upside down, and seek the dampness, and water the plants in time. Continue this labour, and make sweet floods to run, and noble and abundant fruits to spring. Take this food and drink and carry it to God as your true worship.

Julian of Norwich, 14th Century English Mystic

It was you who gave me true knowledge of all that is, who taught me the structure of the world and the properties of the elements, the beginning, end and middle of the times, the alternation of the solstices and the succession of the seasons, the revolution of the year and the positions of the stars, the natures of animals and the instincts of wild beasts, the powers of spirits and the mental process of humanity, the varieties of plants and the medical properties of roots. All that is hidden, all that is plain, I have come to know, instructed by Wisdom who designed them all.

Wisdom 7:17-21

The day will come when, after mastering the wind, the waves, the tides and gravity, we shall harness for God the energies of love. And on that day, for the second time in the history of the world, humanity will have discovered fire.

Teilhard de Chardin, French Jesuit Anthropologist from *EarthSpirit: A Handbook for Nurturing an Ecological Christianity* by Michael Dowd

A certain Philosopher asked St Anthony: "Father, how can you be so happy when you are deprived of the consolation of books?" Anthony replied: "My book, O philosopher, is the nature of created things, and any time I want to read the words of God, the book is before me."

Thomas Merton, American Trappist Monk from *The Wisdom of the Desert*

Hutia te rito o harakeke, kei hea te Komako e Ko? Ki mai koe ki ahau he aha te mea nui i te Ao? Maku e ki atu he tangata, he tangata, he tangata.

When the heart is torn from the flaxbush, where will the bellbird sing? You ask me: What is the greatest thing in the world? My reply is: people, people, people.

Maori proverb

When we see the land as a community to which we belong, we may begin to use it with love and respect. Aldo Leopold, American Environmentalist, from *A Sand County Almanac*

Praise to you, God, with all your creatures, especially Brother Sun, who is our day and lightens us. Beautiful is he and radiant with great splendour. Of you, Most High, he bears expression.

Praise to you, God, for Sister Moon, and for the stars in the heavens which you have formed bright, precious and fair.

Praise to you, God, for Brother Wind, and fro the air and the cloud of fair and all weather, through which you give sustenance to your creatures.

Praise to you, God, for Sister Water, who is most useful. humble.



Praise to you, God, for Brother Fire, by whom you light up the night: he is beautiful, merry, robust and strong.

Praise to you, God, for our sister, Mother Earth, who sustains and governs us, and brings forth diverse fruits with many-hued flowers and grass.

St Francis of Assisi

But ask now the animals, and they shall teach you; and the birds of the air, and they shall teach you; or speak to the earth, and it shall tell you; and the fishes of the sea shall declare unto you.

Job 12:7-8

I walked out alone in the evening ... a lark rose suddenly from the ground beside the tree by which I was standing and poured out its song above my head and then sank, still singing, to rest. Everything then grew still as the sunset faded and veil of dusk began to cover the earth. I remember now the feeling of awe which came over me. I felt inclined to kneel to the ground, as though I had been standing in the presence of an angel; and I hardly dared to look on the face of the sky because it seem as though it was but a veil before the face of God.

Bede Griffiths, Benedictine monk, from The Golden String

8) Further References and Acknowledgements

Many of the websites noted in this resource were used as sources for the information contained here. Other resources consulted include:

Caritas Aotearoa New Zealand, *Renew the Face of the earth*, 2006, see <http://www.caritas.org.nz>

Catholic Earthcare Australia, *On Holy Ground: An Ecological Vision for Catholic Education in New South Wales*, see <http://www.catholicearthcareoz.net>

Climate Action Network Australia, <http://www.cana.net.au>

Climate Crisis, <http://www.climatecrisis.net>

Friends of the Earth, *A Citizen's Guide to Climate Refugees*, see <http://www.foe.org.au>

Mathis Wackernagel and William Rees, *Our Ecological Footprint: Reducing Human Impact on the Earth*. New Society Publishers, Gabriola Island, Canada, 1996.

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