

The Earth Community:

In Christ

THROUGH THE INTEGRITY OF CREATION

towards Justice and Peace for ALL

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INTRODUCTION

When Pope Paul VI established the Pontifical Commission for Justice and Peace in 1967 he did not include Integrity of Creation as part of the title. From the point of view of the church's involvement in the world, the focus of the commission and indeed many of the documents of Vatican II was, and in many respects still is, Social Justice. This remained very much the case until John Paul II included the environment in his 1990 World Day of Peace message, *Peace with God the Creator, Peace with all Creation*.¹ This message signalled the Catholic Church's awakening to the dangers of the environmental crisis for all life forms and its recognition of the underlying causes of the environmental crisis as "spiritual and moral," thus making it an issue of "faith." Pope Benedict has lamented a lack of attention by modern theologians to the value of the created world. He has said that the human race must listen to the voice of the Earth or risk destroying its very existence.² Influenced by the decision of the World Council of Churches in 1983 to highlight "Integrity

1. Pope John Paul II, *Peace with God the Creator, Peace with all Creation*, January 1, 1990 at: www.vatican.va/holy_father/john_paul_ii/messages/peace/documents/hf_jp-ii_mes_19891208_xxiii-world-day-for-peace_en.html
2. Pope Benedict XVI, *Meeting with Clergy of the Dioceses of Belluno-Feltre and Treviso*, Italy, July 24, 2007 at: http://www.vatican.va/holy_father/benedict_xvi/speeches/2007/july/documents/hf_ben-xvi_spe_20070724_clero-cadore_en.html

of Creation,”³ many religious institutions added this focus to their agenda and gave a new title to the Pontifical Commission: “Justice, Peace and Integrity of Creation.”

An inter-congregational working group on the Integrity of Creation in Rome published two booklets a few years ago, one on climate change and the second on water.⁴ The success of these popular but comprehensive publications, translated into many languages, prompted this booklet designed to provide additional environmental resources for religious. The first part (See Section) of this booklet will give an overview of the state of the planet, limited to five issues; the second (Judge Section) presents theological, scriptural and ethical reflections; the final part (Act Section) will offer a series of practical suggestions for changing personal and communal behaviour and working for appropriate national and international legal frameworks that ensure a sustainable future for the Earth Community. Finally, the booklet offers resources, accounts of experiences, a prayer service and some questions for you and your community to evaluate your progress.

This booklet is intended to be general and not comprehensive in order to reach out to a global community of readers. However, we encourage you to particularize the reflection to suit your circumstances and adapt it to the most pressing environmental challenges of your region or country. Each religious institute is encouraged to add in an additional reflection highlighting the ecological dimension of its charism.

3. D. Preman Niles, *Ecumenical Dictionary* “Justice, Peace and Integrity of Creation.” At: <http://www.wcc-coe.org/wcc/who/dictionary-article11.html>

4. Environmental resources, including climate change and water: <http://www.ofm-jpic.org/ecology/index.html>



CHAPTER 1: SEE

We now present five brief reflections on specific issues of environmental concern: Climate Change, Biological Diversity, Peak Oil, Water and Genetically Modified Organisms.

CLIMATE CHANGE

The overwhelming consensus of scientific opinion is that an increase in the emissions of greenhouse gases into the atmosphere is the most potentially dangerous phenomenon for the continuation of life as we know it on planet Earth. According to the 4th Assessment Report by the Intergovernmental Panel on Climate Change (IPCC)⁵ in 2007, it appears that greenhouse gases, principally carbon dioxide, have been the dominant cause of observed global warming over the last 50 years. It is likely (90% probability) that most of this emissions increase, now higher than at any time in the past 650,000 years and subsequent warming in the lower parts of the atmosphere, is attributable to human activity.

5. Intergovernmental Panel on Climate Change, IV Report, at, http://www.mnp.nl/ipcc/pages_media/ar4.html

The UN Framework Convention on Climate Change (UNFCCC)

The UN Framework Convention on Climate Change was adopted at the Rio Summit in 1992, and entered into force in 1994. Its key provision aimed at stabilising climate change at a safe level. The UNFCCC Kyoto Protocol (containing binding emission reduction commitments for 37 developed countries) was adopted in 1997 and entered into force in 2005, but without the participation of the USA. China overtook the US in 2006 as the leading CO₂ emitter. The UNFCCC Contracting Parties have held fourteen conferences since 1995. The Protocol contracting parties have held four since 2005.

While the Protocol aims to achieve a 5.2% reduction in Greenhouse Gas emissions below the 1990 level by 2012, the 13th Conference Of the Parties (COP) in Bali (December 2007) recognised that the most recent scientific findings required a far more wide-ranging activity. This new approach should ensure that deep emissions cuts are made by 2050 to levels compatible with limiting the rise in global temperature above the pre-industrial level so as to avoid huge and unmanageable changes in climate. It should also ensure that the impacts on developing countries of climate change already 'built in' by past emissions be addressed in as far as possible in a preventative manner (Adaptation). The 'Bali Plan of Action' is the basis for on-going UNFCCC negotiations, aimed at achieving an agreement at the 15th COP in Copenhagen, December 2009.

Why should we be concerned?

- According to the 4th IPCC Assessment Report, there is a 90% probability that human activity is responsible for the unprecedented rate of global warming. It predicts an increase in global average surface temperature from 1.4°C to 6.4°C by 2100.
- The three warmest years on record have all occurred since 1998.⁶ 2007 tied with 1998 as the second warmest year in a century.⁷ Planet Earth has probably never warmed as fast as in the past 30 years.⁸
- In 2005, oceanographers reported a sudden and shocking slowdown in the currents of the North Atlantic, a critical part of the vast system of ocean circulation that influences temperatures and weather around the world.⁹

6. Will Knight, 'First quarter of 2002 is "Warmest for a millennium"', *New Scientist*, 26, April, 2002 at: <http://www.newscientist.com/article/dn2225>

7. Warmest years according to NASA are as follows: 2005, 1998/2007, 2002, 2003, 2006, 2004 at: http://www.nasa.gov/topics/earth/features/earth_temp.html
http://www.nasa.gov/vision/earth/environment/2005_warmest.html

8. *New Scientist* at <http://www.newscientist.com/channel/earth/climate-change>

9. Stephen Battersby, "Climate Change: The great Atlantic shutdown," *New Scientist*, 15 April 2006

- Glaciers are retreating and shrinking, sometimes dramatically. Mount Kenya's largest glacier has shrunk by more than 90%,¹⁰ while the accelerated melting of Himalayan and Andean glaciers will put the food security of hundreds of millions at risk.
- Global sea levels could rise between 18 to 59 cm this century, causing a typical shoreline to retreat nearly 30 meters.¹¹
- Climate change will exacerbate water shortages, increase the levels of species extinction, reduce crop yields, increase the numbers of internally displaced persons and refugees, negatively impact Gross Domestic Product (GDP) growth for many developing countries and have a disproportionate effect on poor people everywhere, including the poor in developed nations.¹²



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BIOLOGICAL DIVERSITY

Biodiversity is for life – extinction is for ever!¹³

At the 1992 Rio de Janeiro Earth Summit, world leaders agreed on a comprehensive strategy for “sustainable development” i.e. meeting our needs while ensuring that we leave a healthy and viable world for future generations. One of the key agreements adopted was the Convention on Biological Diversity. More than 170 countries are parties to the Convention and agreed to significantly reduce biodiversity loss by 2010. The Convention establishes three main goals: the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits from the use of genetic resources.¹⁴

There are possibly as many as 10 to 100 million different, distinct life forms or species on our planet.¹⁵ An educated guess states that the present global loss is 1000 species per year with a prediction that it could rise to 10,000 per year shortly.¹⁶ According to 19 world

10. Leslie Allen, “Will Tuvalu disappear beneath the sea?” August 1, 2004 at <http://www.smithsonianmag.com/travel/tuvalu.html>

11. IPCC report.

12. Ibid.

13. 10 simple steps to halt biodiversity loss at: http://www.env-health.org/IMG/pdf/Green_10_biodiversity_May2006.pdf

14. UN Convention on Biological Diversity: <http://www.biodiv.org/default.shtml>

15. E. O. Wilson, *The Diversity of Life* (NY: Penguin Books, 1992), p.124

16. UN Report: Global Diversity Outlook 2 (summary available in French, Spanish, English, Chinese and Russian) at <http://www.biodiv.org/gbo2/default.shtml>

experts in biodiversity, this would represent a 100 to a 1000 times faster than normal 'background' extinction.¹⁷ And the extinction of one species has a knock-on effect for at least 16 other species.¹⁸ Among the principal reasons for species losses are: climate change, overexploitation, destruction of habitat and either deliberate (human) introduction or spontaneous invasion of alien species.

Why should we be concerned?

Rich biodiversity is an essential ingredient for the web of life. It acts as a shock absorber to deal with multiple changes, some of which are natural but at present increasingly human-induced. Species loss weakens natural systems and their ability to cope with unexpected change. Anything that affects the integrity of one species will ultimately affect all species, including humans.

Tropical forests are among the world's richest areas in biodiversity. Forests are to land what coral reefs are to oceans (with reefs accounting for 25% of fish catch in many poor countries). Both are under threat. Moreover, forests both tropical and temperate act as 'sinks' for atmospheric carbon dioxide – but at present deforestation and forest degradation actually generate at least 15% of global CO₂ emissions. It is estimated that there are 75,000 edible plants in the world, with the majority found in rainforests; yet the vast majority of humans are dependent on just 200 species of plants and animals.¹⁹ Thousands of plants have potential for future cures of a host of diseases and yet less than 1% of the 250,000 tropical plants, many now endangered, have been screened for their pharmaceutical potential.²⁰ Perhaps 50% of the 150 most prescribed drugs, with an economic value of U.S. \$80 billion dollars, are derived from plants in the wild.²¹ A Time magazine article in 2000 raised the following question: 'How long will Earth be a hospitable place for humanity when it is no longer a fit home for our next of kin?'

PEAK OIL

Despite repeated warnings that "we're embarking on the beginning of the last days of the age of oil,"²² most people seem to think that enough fossil fuels exist so as to continue a "business as usual" scenario. In the course of a few short years, oil prices reached \$145 dollars a barrel in July 2008, although it fell back to \$58 in November of the same year, with predictions that overall price trends will continue to rise. Current world oil consumption is around 80 million barrels per day and is forecast to rise by 2.5% per annum to 100 million barrels per day by 2010.²³ However, many believe that we have already consumed half

17. Steve Connor, "Earth Faces 'Catastrophic loss of species'," *The Independent*, 20 July 2006.

18. Sean Mc Donagh, *The Death of Life* (Dublin: Columba Press, 2004), p. 19.

19. Mc Donagh, *The Death of Life*, p. 23

20. Tim Radford, "Species struggle as humans grab resources," *The Guardian*, 2 August 2002, p.7.

21. Mc Donagh, *The Death of Life*, p. 25.

22. Mike Bowling, Chairman and CEO, ARCO (1999) quoted in Richard Heinberg, *The Party's Over, Oil War and Fate of Industrial Societies* (Wiltshire: Cromwell Press Limited, 2003), p. 81.

23. Jay Hanson, "Energy Synopsis," Mar 8, 2001 at <http://www.dicoff.org>

of the world's available oil and will have consumed half of the gas supplies in the next few years.²⁴ Others forecast that the 'oil peak' will be reached by 2010 – when annual production will outstrip net new annual discoveries of reserves. With fast-growing demand from India and China, and falling supply, it is easy to understand why there will be shortages soon.

Conventional oil²⁵ provides 95% of all oil produced to date. Production peaked outside the Middle East in 1997 and is now in decline.²⁶

Why should we be concerned?

Yes, there are many other alternative resources (unconventional hydrocarbons – and some questionable, such as Bitumen in tar sands and Oronoco extra heavy oil as well as oil shale, coal and nuclear energy), and a growing sophistication in renewable energy sources such as wind, solar, biomass, bio-gas, geothermal, ocean waves, tidal power etc. However, none of these provide the same concentration of energy needed especially for transportation on which the present global economic order depends.

The crisis in fossil fuel availability will force a rethinking of food production and the way we organize our communities. Intensive agriculture, dependent on fossil fuel derived fertilizers, is unsustainable. Two thirds of agricultural land has been degraded in the past fifty years.²⁷ Modern agriculture inefficiently converts sunlight from fossil fuels into food. It takes about 10 calories of fossil fuels in the form of fertilizers, pesticides and powered machinery to produce one calorie of food.²⁸

The phenomenal increase in world population seems to parallel the discovery and production of oil and gas. If this is the case, what might we expect to happen to world population when oil and gas become scarce?

Most countries are dependent on oil and gas imports for their energy supply. A crisis in supply will have negative impacts on every aspect of life. Yet relatively small amounts of government financial resources have been dedicated to research in and production of alter-



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24. Colin Cambell, "When will the world's oil and gas production peak?" in *Before the Wells Run Dry* (Dublin: Lilliput Press, 2003), pp. 30-36.

25. Oil extracted from the traditional oil well method.

26. Colin Cambell, "Peak Oil: An Outlook on Crude Oil Depletion" [online], October 2000, at www.mbendi.co.za/indy/oil/p005.htm

27. Food, Land, Population and the U.S. Economy, Executive Summary, Pimentel, David and Giampietro, Mario. Carrying Capacity Network, 11/21/1994. at: <http://www.dieoff.com/page40.htm> in Dale Allen Pfeiffer, *The End of Oil* (Clarkston: Frustrated Artists Production, 2003), pp. 179.

28. Richard Manning, "The Oil We Eat" at <http://www.harpers.org/TheOilWeEat.html> Note: Ever since we ran out of arable land, food is oil. Every single calorie we eat is backed by at least a calorie of oil, more like ten.

native energy resources, in particular for the leading user sectors of fossil fuels – electricity production and road/maritime/air transport.

WATER

We can do without most things, but we can do without water for only a short time. Without water life is unsustainable. There are alternative energy and food supplies, but nothing substitutes for water. Wars of the 21st century will be fought over water.²⁹



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Transnational Corporations (TNCs), supported by international lending agencies, are trying to convince governments to regard water as a commodity and to entrust management of supplies to the private rather than the public sector. However, the Catholic Church considers access to water as a human right.³⁰ Between 1990 and 2002 the profits of Vivendi/Veolia rose from \$5 to \$12 billion.³¹ On one hand Forbes magazine estimates that the water market is a \$545-billion-a-year-industry;³² on the other hand one expert believes that just \$10 to \$20 billion would go a long way towards solving the world's water problems, provided the money was spent on community based projects and not on dams.³³ Between 40 and 80 million people have been displaced by dam projects in the twentieth century.³⁴

Why should we be concerned?

Almost 98% of the water on planet Earth is salt water. Of every hundred litres of water less than half a teaspoon is fresh water available for human use.³⁵

Water use has grown at twice the rate of population increase during the last century, leaving more and more areas chronically short. By 2025, 1800 million people will be living in countries or regions with absolute water scarcity, and two-thirds of the world population could be under stress conditions.³⁶ In the light of this trend it is unlikely that the Millen-

29. Ismael Serageldin, World Bank Vice President. Reference in Sean Mc Donagh, *Dying for Water* (Dublin: Veritas, 2003), p.25.

30. Archbishop R. Martino, "Water an essential element for life." Reference in Mc Donagh, *Dying for Water*, p.48.

31. The Centre for Public Integrity, www.icij.org/dtaweb/water, "Cholera and the age of Water Barons," 1 April 2003.

32. Mc Donagh, *Dying for Water*, p.44.

33. Peter Gleick, "World Water Spending Priorities Misguided," www.pacinst.org/reports/basic_water_needs/ and *The Worlds Water 2004-2005* at <http://www.worldwater.org/2004-2005.html>

34. Patrick McCully, "Big dams, big trouble," *New Internationalist*, March (2003), 14.

35. See previous publication, *Water for Life*, at <http://www.ofm-jpic.org/aqua/index.html>

36. UN-Water Thematic Initiative: "*Coping with Water Scarcity*" at [ftp://ftp.fao.org/agl/aglw/docs/waterscarcity.pdf](http://ftp.fao.org/agl/aglw/docs/waterscarcity.pdf)

mium Development Goals (MDGs), to reduce by half the proportion of people without access to safe drinking water by 2015 and to stop unsustainable exploitation of water resources, will be met.³⁷

Today more than a billion people lack safe drinking water and a billion and half live without access to safe sanitation systems.³⁸ An estimated 14 to 30 thousand people die each day from avoidable water related diseases.³⁹ If present trends continue, by 2025 two-thirds of the world's human population, not to mention our relatives – other species - will be living with serious water shortages or with almost no water.⁴⁰ Water borne diseases are responsible for 80% of illnesses and deaths in poor countries. As a result two million people per year, mostly in Africa, die needlessly from water borne diseases.⁴¹

GENETICALLY MODIFIED ORGANISMS (GMOs)

“Genetic engineering is very different, very powerful and worth a great deal of caution.”⁴² For better or worse, the next hundred years seems likely to be “the biotech century.” Wars of the 21st century may be fought not only over water but over control of the gene pool as well. Genes will be the primary raw material of the coming century just as oil, metals and minerals were in the colonial and industrial eras.

The term genetically engineered organism (GE) “refers to organisms (plants, bacteria and even mammals) produced by inserting a sequence of foreign DNA into the nucleus of a recipient organism. The new DNA thus becomes part of the recipient's genome, and the now-modified recipient produces a totally new protein [the building blocks of life] in the host. Genetically engineered foods represent a sub-category of GMOs since they are modified plants grown for direct human consumption.”⁴³ The ‘transgenic’ technology used in some GMOs involves inserting DNA from a different species (e.g., fish DNA inserted into a vegetable genome.) GMO technology is also being applied to develop modified tree species. There are several techniques available and all of them are “imprecise, inefficient and potentially dangerous,” according to an article published in *The Ecologist*.⁴⁴

The global value of the biotechnology industry is now estimated at \$17 billion dollars, with over 1300 firms involved as of the year 2000.⁴⁵ Many of these companies are household

37. United Nations: International Decade for Action, Water for Life, 2005-2015, <http://www.un.org/waterforlifedecade/>

38. UNDP, Millennium Development Goals, at www.undp.org/mdg/

39. UN Press release, Water Year 2003: International Year aims to galvanize action on critical water problems. Published by the United Nations Department of Public Information. DPI/2293A. December 2002.

40. UNESCO, *Courtier*, February 1999.

41. Paul Brown, “Failure to manage water kills two million a year – UN,” *Guardian*, 11 April 2002.

42. 2000 report by PANNA and U.S. Public Interest Research Group at: <http://www.panna.org/resources/documents/weirdScience.dv.html>

43. *Genetics! Where do we stand as Christians?* Chapter 6, “Genetically Modified Organisms,” Lutheran Church web site at <http://www.elca.org/DCS/genetics.study.html>

44. Cited in Mc Donagh, *Patenting Life? Stop*, p.74.

45. Quoted in Donna Dickenson, “Consent, Commodification and Benefit-Sharing in Genetic Research,” *Developing World Bioethics*, Volume 4 Number 2004, p.109.

names such as Monsanto, DuPont, Novartis (now part of Syngenta), Dow and Aventis. In a New York Times' article, Frank Rich explained that corporations are economically more powerful than most governments and therefore have no need to fear tough, independent regulation at any level.⁴⁶

Why should we be concerned?

Some of the issues causing concern for human health are: allergens, toxins, antibiotic resistance and nutrition. Many believe that it is virtually impossible to conceive of a testing procedure to assess the health effects of genetically engineered foods.⁴⁷ It also seems to be virtually impossible to prevent pollen from GE crops contaminating conventional crops – whatever the provisions for 'crop separation'.

Worldwide, about 1.4 billion farmers save seeds.⁴⁸ The genetics of crops has been tended by farmers for 10,000 years. Control of seeds implies control of farmers. Seed patents create a context of total control over the seed sector, and hence over food and agricultural security. Seven years after GM Soya beans were introduced into Argentina, opponents allege it is damaging soil bacteria and allowing herbicide-resistant weeds to grow out of control.⁴⁹

Monsanto says that GE foods are the answer to supply food for a growing world population. With 100 million acres of GM crops planted, they have yet to do a thing to reverse world hunger. There may be more food, but it is not available to the world's poor. In fact, much of this extra food is being used as feed to produce meat for the developed world.⁵⁰

According to Greenpeace International, terminator technology or "suicide seeds" (GM seeds unable to reproduce themselves) takes a massive risk with food supply, puts poor farmers into a near-servitude relationship with seed salesmen, and benefits only the multinational corporations like Monsanto which promote it.⁵¹ Moreover, GM-seeds are only marketed in a 'package' with related fertilisers and pesticides. The financial burden of such 'packages' outstrips the means, or access to credit, of most of the developing world's smallholders whose livelihoods would thus be extinguished if GM seeds were to become the 'norm'. In 1980 the US Supreme Court ruled that living products could be seen as "human-made inventions".⁵²

46. Frank Rich, "All the Presidents Enron's," *The New York Times*, June 6, 2002.

47. Alex Jack, *Imagine a World without Monarch Butterflies* (Becket, MA: One Peaceful World Press, 2000).

48. Rural Advancement Foundation International News release, "Suicide Seeds on the Fast Track," 25 February 2000, available at <http://www.rafi.org>

49. Paul Brown, "GM Soya 'miracle' turns sour in Argentina," *The Guardian*, April 16, 2004.

50. John Robbins, "Are Genetically Altered Foods the Answer to World Hunger?" *Earth Island Institute*, Winter 2001-2002, Vol. 16, No. 4.

51. Greenpeace International, "Canada endorsing Monsanto 'Suicide Seeds' – leaked document reveals secret plans," 9 February 2005 at <http://www.greenpeace.org/international/news/suicide-seeds>

52. Quoted in Mc Donagh, *Patenting Life? Stop*, p.186 from Andrew Kimbrell, *The Human Body Shop*, (San Francisco: Harper, 1993), p.195.

A Religious Institute's Ecological Network

In 2002, the Christian Brothers took a radical new step in their self-understanding and their mission. They began to focus on what their hearts were telling them. They expressed this as "The Heart of Being Brother"...and discovered a passion for social justice. They heard the yearning of the Earth itself for healing and re-generation. This was tangibly present in the story of the Earth Charter which they endorsed. Eco-Justice is the work of the Brothers and the wider Edmund Rice Network to implement the Earth Charter in their communities, ministries and provinces, and to live out their eco-spirituality. Go to: www.ecojustice.edmundclt.org/background/background.html

QUESTIONS

1. What fact or issue most struck you as you read this section of the document?
2. What were you feeling when you read this overview of the ecological reality of the world?
3. Prioritize the issues and give reasons for your choice.
4. Which issue might you be able to do something about - by yourself, with others?
5. Which issue most needs to be lobbied for in your country?

A large, stylized, black number '2' with a decorative, calligraphic tail that curves downwards and to the left.

CHAPTER 2: JUDGE

The following theological, scriptural and ethical perspectives are presented in an effort to judge on what basis those who live their lives from a faith perspective might best respond with urgency to the environmental crisis. Additionally, a short analysis from the perspective of two paradigms – a dominant social paradigm and a new environmental paradigm – is presented in the Appendix.

THEOLOGICAL PERSPECTIVES ON CONTEMPORARY ENVIRONMENTAL CHALLENGES

The Blessed Trinity is a community of relationships. It makes sense to infer that whatever emerges from the Trinity has the propensity to relate as embedded in its DNA. The circle analogy best describes this system. Everything in creation that has been, is and will be, has its origin in the Trinity and, eventually, will find its fulfilment back in the heart of that same Trinity. The whole of creation, including humanity, in a special way as *imago dei*, reflects in a way the relational dynamic going on within the Godhead. Creation is like a beautiful song that God freely desires to sing into the vastness of the Universe.⁵³

53. Ilia Delio O.S.F., 'Revisiting the Franciscan Doctrine of Christ,' *Theological Studies*, Vol. 64, 2003, p. 12.

Today's environmental challenges are issues for faith as well as science, politics and economics. Our greatest challenge is to change mentality to a new way of being in the world. Pope John Paul II defines this as "ecological conversion."⁵⁴ As religious men and women called to be prophetic, we need a new cosmology. We must re-discover the value and sacredness of the created world as a revelation of the divine where each human person sees himself or herself as an integral and significant part of that creation, interconnected and interdependent, respecting the intrinsic nature of every creature and striving to build *koinonia* – an earth community – not just between humans, but inclusive of every creature. Our hope is that a collective realization will emerge that humanity cannot be saved in isolation from the Earth community. Earth is no longer the background but the context. There can only be a viable human economy within Earth's economy, an effective human education system if the Earth first educates, and a human spirituality if there is Earth spirituality. This has implications for our individual and collective lifestyles. Religious must lead by example growing in the spirit of detachment so that right relations with the poor of humanity and the poor of creation can be restored.

When addressing environmental issues, one quickly learns to recognize that nature does not belong to human beings but has a consistency of its own that needs to be respected. Moreover, nature has to be seen as a whole: all things are connected and one cannot readily single out, separate off and privilege one element of nature over others. A **theology of creation** can be of help here. Although human beings undoubtedly play an important role in creation, the world is not theirs. As creation it is God's and has to be respected as such. Moreover, theology points to creation as a whole of interdependent creatures in a common history where events today may irreversibly determine tomorrow's situation and outlook.

That we human beings and our societies occupy a special place cannot be denied precisely because our actions are capable of fatally disrupting the world in which we live. We are very powerful, but are not always capable of wielding that power responsibly. Reflecting on the story of the fall we might ask: do we put our considerable capabilities at the service of creation as a whole or do we seek to submit other creatures to our will and use? Can we move out of structures of oppression and exploitation, particularly when such structures guarantee our lifestyles and expectations?

Theologians will point to the importance of **incarnation**. This theology points not only to the Creator sharing the life and reality of creation, but also to the call to follow Jesus the Christ right into the world by being and evermore becoming what we are: human beings in the world, creatures sharing creation with all living things and the Earth. Incarnation means compassionate commitment, entering into communion with the victims and work towards restoring creational community amidst a broken world.

The environmental situation is so serious and critical today that some of us give in to despair or refuse to confront the challenges. There is need for words and deeds of hope and

54. Pope John Paul II, General Audience Address, January 17, 2001, Catholic Conservation Center, at: http://conservation.catholic.org/john_paul_ii.htm; also published in *L'Observatore Romano*, 24 January, 2001, p. 11.

empowerment. On this point, theologians refer to the core of the good news given to us: God's promise of the **Kingdom of God**, of a sustainable future for the whole of creation. Although we cannot picture what the Kingdom will be like, we receive it as a vision for our broken world. It challenges us to creatively look forward: what can we do, already today, that prefigures the Kingdom? With the aid of scientists and in collaboration with others, can we use our imagination and flesh out as concretely as possible what a sustainable and dignified world means?

We have some instruments at hand that may help our imagination and our efforts at collaboration. **Liturgy and sacraments** powerfully embody the vision that sustains us. In baptism we celebrate our belonging together in the one creation; confirmation introduces us into the growing reality and the need to work together; ordination in the very broad sense of the word invites us to take on responsibility in the care for creation; marriage unfolds the creative intimacy that inhabits creation; in the Eucharist we celebrate our togetherness at the point of building up the alliance with the poor and excluded; reconciliation is the effort to work through our mistakes, failures and sins; in the sacrament of the sick we pay attention to the creativity of those who suffer, of the weak and the poor.

Theologians regain a sense of creativity when confronted by today's environmental challenges. Very traditional expressions acquire a new significance and unlock new ways to a better understanding of faith and commitment in the world. For example, in recent official declarations the Vatican has emphasized the "responsibility to protect" (R2P), an expression that can also be applied in the context of the environmental crisis to the responsibility towards future generations, a core dimension of sustainability. Here lies the challenge to move from re-activeness to pro-activeness. We have to learn to plan cautiously and to shape our lives in such a way that we take into account the lives of people and the planet into the future. Is not the idea of the "**communion of the saints**" a wonderful way to express this creational solidarity beyond our world today?

QUESTIONS

1. How do you imagine the Kingdom of God and what are the obstacles you feel when facing it?
2. Can you design a sacramental celebration in environmental perspective?
3. Which theological concept would you like to emphasize or rediscover when responding to environmental issues?
4. How do you concretely respond to the call to incarnation, particularly in view of the environmental crisis?

Franciscan Eco-Pastoral Service, Indonesia

In 2002 the Franciscans established an Eco-pastoral Centre in Flores, Indonesia, with 15 farm instructors to help 1000 farmers improve their livelihood and raise awareness around environmental issues among young people.

The principal programmes are: teaching organic farming and animal husbandry to farmers; incorporating organic theory and praxis in school curriculum (20 schools); forest and water resource management; and empowering women farmers.

The Eco-Pastoral Centre networks with agriculturalists, local government, local NGOs, religious figures, local community leaders and the local church.

ECOLOGY IN THE BIBLE

As Christians today, we are learning that there is a connection between our religious faith and the way we treat our home on earth. In fact, connection lies at the origins of our word “religion.” Its Latin ancestor, the verb *religare* means to bind or tie up, to connect. For the ancient Romans, the word *religio* seems to have conveyed the idea of an obligation, rather like the way we today would say we are duty bound to do something.

To think of our religious faith as tying us up or binding us in some way is not, at first sight, the most appealing approach. However, there may be an important resource for us in this ancient metaphor, especially if we want to bring a faith perspective to one of the major challenges that faces humankind today: the fact that our human future is, to say the least, precarious. We are gradually realizing how urgently we need to rediscover the connectedness of all life on our fragile planet, and, in particular our own connection with the earth that is our home. We are discovering, to use the words of the ecologist John Muir, that when we tug at a single thing in nature, we find it attached to the rest of the world. We are learning that if we do not learn to respect that, our viability as a species may well be at stake. Offended and damaged nature is protesting, and has made us begin, at last, to hear the cry of the earth.

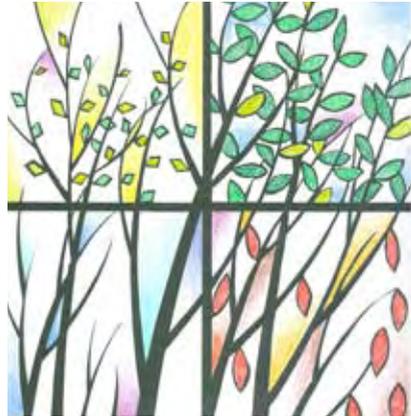
Brazilian liberation theologian Leonardo Boff is helping us connect all this with our religious faith. He describes the “myth” in the developed countries as “the logic that devastates the earth and plunders its wealth, showing no solidarity with the rest of humankind and with future generations.” Boff sees this logic as shattering “the fragile balance of the universe built up with great wisdom by nature throughout fifteen billion years of labour.”

When writing and speaking in his native Portuguese, Boff frequently calls for *re-ligação*, re-ligation, re-connection, indulging in a little word-play on the Portuguese word for religion, *religião*.

So can our religion resource us for this task of re-connection? Our Scriptures invite us to see a connection between our faith and whatever we do to care for the earth—even the smallest of gestures like recycling, or even cycling, participating in green initiatives, or keeping our beautiful environment free of litter. There are so many small ways that we can make significant gestures of commitment to that “future full of hope” that we believe God wants for our world, to that healing of the rift between humankind and its earth-home. Our biblical writings can also challenge our value systems, making us ask what myth or philosophy we are actually living by. Is it the myth of limitless resources and the ability of technology to manipulate nature to the short term advantage of those who can afford to pay for it? Or is there another myth? Can we identify ways in which our Jewish and Christian religious heritage can resource us for that “paradigm shift” on which ecologists tell us the future of humankind depends?

One passage of Scripture that has much to say in this vein is Isaiah 40: 12. 15. 22 - 26. This writing is the work of a Jewish prophet of the 6th century B.C. He imagines God the creator as a kind of landscape gardener: designing the world, weighing out quantities of earth, putting soil into a basket and then pouring it out to make such “garden features” as islands or mountains, scooping up handfuls of water to make water features—a pond here or a lake over there, calculating by finger-spans the dimensions of a massive gazebo, the canopy of the sky, and studding it with twinkling garden lights—the myriads of stars that will shine out one by one each evening, as God calls each by name. In all of this imagery, God appears to be unimaginably enormous and the more we allow the power of the poetry to shape our vision, the more we find ourselves shrinking. And sure enough, our Hebrew poet, who is not short of a sense of humour— informs us that from God’s perspective, we human beings are about the size of grasshoppers!

As with biblical metaphors generally, this one that has the salutary effect of cutting us down to size, is balanced by another that has the opposite effect, exalting us to the heights of world sovereignty. The poet who composed Psalm 8, gazing up at the night sky, lost in awe at its vastness and beauty, experiences a “grasshopper” moment.



MM

I see your handiwork
in the heavens:
the moon and the stars
you set in place
What is humankind
that you remember them,
the human race
that you care for them?

Yet, it is evident to this poet that the creation in all its mystery, intricacy and bounty is at the service of humans, providing all they need to sustain life. And so the prayer continues:

You treat (humankind) like gods,
dressing them in glory and splendour.
You give them charge of the earth,
laying all at their feet:
cattle and sheep,
wild beasts,
birds of the sky
fish of the sea ...

So God charges human beings to rule the earth, or as an older translation has it, “to have dominion over it.” This was quite counter-cultural in an Ancient Near East where the earth was venerated as a goddess. Be that as it may, many people today would see this “mandate to dominate” as a baneful influence and a root cause of our earth’s present ecological predicament. However, when we allow the Scriptures to define what it means to have dominion or to rule, by God’s mandate, we get quite a different picture.

First of all, humankind is to have dominion over “the works of God’s hands.” (Ps 8:6) The Bible does not let them forget that the earth is God’s creation and in a real sense God’s possession, and that human beings simply have charge of it, on a temporary basis and under a mandate from God. To rule, under God’s mandate, is to have that God-given sense of justice that is expected of any one ruling on God’s behalf. It is to do what is right for the powerless, to defend the poor, to see the plight of those no one speaks for, to listen to those no one cares for. It is all there in Psalm 72, the “programme for government” of an ideal Israelite King. So just as the Bible extends the symbol of kingly rule to humankind’s role *vis à vis* nature, so we must include the earth and all living things among those whose precious lives human beings are charged to save from violence.

Isaiah 40 and Psalm 8, read in the light of Psalm 72, are just small samples of how our Sacred Scriptures can inspire us to think of that mesh of unseen connections that links created things together, that holds us in solidarity with the natural world and that connects all of creation with the Source of Life.

Sr. Babaine Deus Venerato, a Missionary Sister of Africa from Uganda, has reclaimed a wetland on her father's farm and another in her village. She does this work of Environmental Conservation as a hobby and at the same time is training three ecological assistants. She is trying to get in contact with Education Institutes in order to reflect with them on issues of environment management and sustainable development. She believes that 'development and peace in the world depends on how we interact with nature and efficiently share resources for the common good'. She calls on all to be 'partners in environmental protection'.

QUESTIONS

1. What is your favourite Scripture passage related to creation? What challenge for your lifestyle do you identify?
2. What 'myth' or philosophy are you actually living by?
3. Can our Biblical Tradition resource us to reconnect with creation?
4. What resources would you recommend to friends to deepen their Scriptural appreciation of the creation theme?

ETHICS IN THE CONTEXT OF ECOLOGICAL DESTRUCTION

In discussing many current ecological problems from the extinction of species to the impact of climate change and genetic engineering it is essential to develop an appropriate ethical framework. This will demand a shift away from the exclusively anthropocentric focus which has been so pervasive in Western ethics and cultural traditions for almost two thousand years.

A human-centred ethics

Aristotle, whose impact on Western thought has been enormous, held that "since nature makes nothing without some end in view, nothing to no purpose, it must be that nature has made (animals and plants) for the sake of humankind."⁵⁵ The idea that animals and plants were created for humankind – either by God or the processes of nature – has dominated Western attitudes to the rest of creation for many centuries. St. Thomas Aquinas shared Aristotle's view.

The chasm between humans and the rest of creation was widened by scientists who shaped our modern view of the world. Descartes, for example, saw that the goal of human knowl-

55. Aristotle, *Politics*, (Harmondsworth, Penguin, 1985 edition), p.79.

edge and technology was to make humans “masters and possessors of nature.”⁵⁶ Philosophers such as Thomas Hobbes, John Locke and Jeremy Bentham dismissed the medieval view of the cosmos as organic and substituted instead a mechanistic view of nature and its laws.

Today, however, through the insights of modern scientists, a new cosmology is being developed. We know that the universe is around 13.7 billion years old. We also know that life on earth began over 3 billion years ago and that, for example, there was a complete functioning ecosystem in the Lower Carboniferous period 300 million years before humans appeared on the planet. To echo Genesis 1, God must have considered that world to be good. It is essential that a satisfactory ethical framework be based on our contemporary understanding of the relationship between humans and the rest of the natural world.

An Ethical Perspective

The Australian theologian Denis Edwards has helped to widen the ethical framework.⁵⁷ He argues that Christian ethical praxis is grounded in the understanding that creatures are endowed with ethical values independently of their usefulness to humankind: “Birds, plants, forests, mountains and galaxies have value in themselves because they exist and are held in being by the divine Persons-In-Mutual- Communion and because they are fruitful expressions of Divine Wisdom.”⁵⁸ He goes on to claim that “a Christian ecological praxis recognizes the interdependence of living creatures and gives particular ethical weight to biological communities, from local ecosystems to the biological community of the Earth.”⁵⁹

Edwards believes, furthermore, that there is no contradiction between affirming the intrinsic value of all creatures and respecting the unique dignity of each human person. It is not that he considers all creatures to be of equal value. He knows that ethical choices must be made between competing interests often involving humans and other creatures. He does believe that there are times, possibly when species are threatened with extinction, that human needs should take second place to the needs of the whole biological community.⁶⁰ There is a dire need for much more research in this important field and religious are in a privileged position to contribute to this research.

Some Ethical Principles that need to be considered, particularly in the light of climate change:

Responsibility for Damages: Rich nations which have caused most damage to the environment are ethically obligated to consider the interests of non-represented future generations and other creatures.

56. Stephen Mason, *A History of the Sciences* (New York: Collier Books, 1962), p. 27.

57. Denis Edwards, *Ecology at the Heart of Faith* (Maryknoll, N.Y.: Orbis Books, 2006).

58. Denis Edwards, *Jesus the Wisdom of God* (Maryknoll, N.Y.: Orbis Books, 1995) p. 155.

59. *Ibid.* p. 120.

60. *Ibid.* p. 167.

Polluter Pays Principle: There is an ethical imperative on every nation to try to promote sustainable development policies. This principle is consistent with principles of distributive justice.

Precautionary Principle: This principle comes into effect when ‘inaction’ due to a certain degree of uncertainty could endanger the well being of present and future generations of the Earth Community.

Cost to National Economy: It is ethically irresponsible to refuse to take actions to defend and promote life-supporting ecosystems on the basis of the financial cost to the national or international economy.

Potential New Technologies: In the light of the negative impact by some past technologies on the environment, it is ethically advisable to critically evaluate new ones before giving them a stamp of approval.

QUESTIONS

1. Do you know of examples of ‘ethical principles’ influencing the environmental debate at any level?
2. Which ethical principles need to be highlighted most?
3. Why do you think that Integrity of Creation has generally been ignored by the Church in general and in religious life in particular?
4. In concrete terms what is your local church doing to raise environmental consciousness?

ECO-SPIRITUALITY⁶¹

Consider the charism and tradition of your congregation.

1. What might it offer in the face of this issue of the environment?
2. What might it offer that helps humanity into a new relationship with earth and cosmos, into a new way of being on this earth?

61. Each Individual Religious Institute is encouraged to write a section on the Integrity of Creation from the perspective of their tradition and charism.

MA Ecology and Religion Programme

The Columban Mission Society in Ireland promotes a two year part-time Masters programme on Ecology and Religion. Few academic courses are available on the connection between faith and care for the earth. Each of the eight modules is taught over two week-ends. They are: Science & Religion, Ecology & Economics, The Ecological State of Our Planet and Country, Ecology and the Bible, Ecology and Ethics, Ecology and Ecofeminism, Ecology and Cosmology, Ecology and Theology. The participants are mature students from a variety of backgrounds.

For further information contact: imuinst@eircom.net



CHAPTER 3: ACT

Be the change you wish to see in the world
(Mohandas Gandhi).

Everyone's actions, individually or collectively, have ecological impacts. We consume natural resources, release pollutants and generate waste. In this section we make a number of concrete proposals for you and your community to encourage environmental sustainability and reduce the size of your "ecological footprints."⁶²

All or some of the suggestions for each of the target issues – Climate, Biodiversity, Energy, Water and Food - can be implemented in seven weeks or seven months!⁶³ We include a few suggestions for the rural and urban poor.

We encourage you to try some of these suggestions and to encourage others to do likewise. Consider proposing a simple project to your community based on some of these ideas. Remember to practise the three Rs: Reduce, Reuse, Recycle. Make a small change in your behaviour and observe what happens. Small changes in behaviour will help change your worldview.

62. The ecological footprint is a measure of human demand on the Earth's ecosystems.

63. This approach was inspired by Donnachadh Mc Carthy's article, "Seven Days to Green Your Life," *Irish Independent*, August 21, 2006.

WEEK 1 OR MONTH 1

Pray – *See Creation with new eyes.*

Choose one of the following Scripture passages: Genesis 1-2:3; Isaiah 11:1-10; Revelations 21:1-5.

Question for religious and small Christian communities: “What motivates you to care for the Earth and what can you do to walk more gently on the land as Christ did?”

Climate

Book your car in for a service to ensure it is running at top efficiency.

Biodiversity

Buy chemical free natural wash-up and laundry liquids. Avoid toothpaste and anti-bacterial soap containing Triclosan which is highly toxic to algae.

Energy

Make a commitment never to leave lights or heating on in rooms you are not using – note how much you save on the next bills.

Water

Take a shower and not a bath. A shower uses about 25 litres of water while a bath uses more than 80. Consider getting rid of your power shower if you have one.

Food

Consider becoming a vegetarian – if not fully, part time. Use vegetarian dishes and/or vegan meals (without dairy or eggs) occasionally.

WEEK 2 OR MONTH 2

Pray – *Be Stewards of God's Creation.*

Choose one of the following Scripture passages: Genesis 9:9-17; Sirach 18:13; Exodus 23:10-11; Wisdom 9:1-4

Climate

If you take a flight, buy carbon offset credits from a reputable organisation, e.g. one used to install renewable energy in developing countries, or plant trees to absorb the CO₂ emitted. (People in the developing world emit on average 10 million tons of CO₂ annually).

Biodiversity

Learn a little about where you live: your bio-region.⁶⁴ See how many of the species of trees, animals, birds or insects you can recognize in your garden or immediate hinterland.

64. For a description of a bio-region see:
http://www.nationalparks.nsw.gov.au/npws.nsf/content/bioregions_explained

Choose plant species which are less susceptible to disease. Fertilize fields with compost and green manure crops. Do you really need to buy pesticides, herbicides and fungicides? Try organic methods, and as a first step, integrated pest management.

Energy

Switch to a renewable energy supplier which can supply your home and/or office from installations such as wind turbines and solar electric panels.

Water

Place a filled plastic bottle in the toilet cistern, to reduce the number of litres used to flush. Continue experimenting until you reach an optimal level.

Food

Buy only the quantity you will use. Less waste means wiser use of natural resources.

WEEK 3 OR MONTH 3

Pray – Praise God with and through Creation.

Choose one of the following Scripture passages: Ps 19:1-6; Ps 29:3-11; Ps 8:3-8; Ps 96:11-13; Ps 148:1-10.

Climate

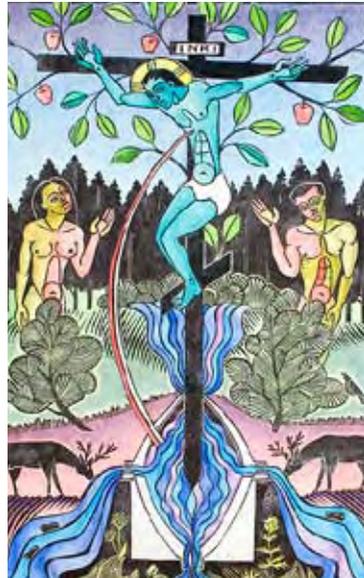
Use a bicycle for all journeys under five kilometres. Buy a battery charger and switch to rechargeable batteries, thus avoiding toxic waste in landfills.

Biodiversity

Adopt an acre in a rain forest by donating to the Adopt an Acre® program.⁶⁵ Ask for Forest Stewardship Council (FSC)⁶⁶ certified garden furniture and other wood products. Don't purchase endangered species.

Energy

Identify where you are losing heat in your house. Check keyholes, window-frames, chimney and doors. Block any drafts with basic insulating materials. If you are not using the chimney, block it off or seal it. Insulate your loft.



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65. Find out more at this site: <http://www.nature.org/joinanddonate/adoptanacre/about/>

66. <http://www.caribzones.com/foreststewardshipcouncil.html>

Water

Buy a water recipient to collect rainwater. Buy a down pipe diverter to channel bath, shower and washing machine water into watering the garden or for washing the car.

Food

Make a donation to an NGO or to a religious group who are helping farmers develop and save seeds for local food production. Purchase GMO-free food, seeds and crops.

WEEK 4 OR MONTH 4

Pray – *We are being redeemed with the whole of Creation.*

Choose one of the following Scripture passages: Mt 6:26-30; 2 Pet:1-3; Rm 8:18-23; Col 1:19-20.

Climate

Take public transport to work or car pool.

Biodiversity

Consider investing some of your assets in socially responsible portfolios and use your finances to influence business behaviour in favour of biodiversity. Money talks loudest in the battle to save biodiversity.

Eliminate or reduce the use of throw-away plastic bags.

Energy

Replace incandescent light bulbs with energy saving bulbs.

Water

Choose washing powders, dishwasher detergents and other cleaners which are phosphate free for the home, farm and business.⁶⁷

Food

Buy locally produced food and encourage one other person to do the same. Pay a visit to your local farmer's market. This slashes the number of food miles travelled and cuts CO₂ emissions.⁶⁸

WEEK 5 OR MONTH 5

Pray – Include a reflection on the Integrity of Creation from the writings of a Saint who inspires you in your personal and community prayer. Consider including these thoughts in a community reflection, in a sermon or in an article you might write in the future.

67. "Excessive inputs of phosphorus from several sources are the single biggest threat to the quality of our rivers and lakes." Enfo, *A Shopping and Investment Guide for Sustainable Living*. www.enfo.ie

68. Christian Ecology Link, UK, encourages people to choose food that fulfils one of 4 criteria known as L.O.A.F.: Locally Produced, Organically grown, animal friendly, fairly traded. Go to: <http://www.christian-ecology.org.uk/loaf.htm>

Climate

Swap your car for the smallest car adequate to your needs and with the lowest emissions in its class.

Biodiversity

Make your voice heard in political debates. Has your government taken the necessary steps to halt biodiversity loss by 2010?⁶⁹

Energy

If your fridge or central heating boiler is more than twelve years old, it is probably consuming too much energy. Ensure any replacement is A-rated for energy efficiency. Consider installing a solar water heater to provide most of your hot water needs.

Water

Stop running the tap too much and capture run-off water for other uses. Drink tap water where possible.

Food

Buy food producing plants such as soft fruit shrubs and herbs. Consider planting herbs in a window box, thus reducing dependency on the supermarket packaged variety.

WEEK 6 OR MONTH 6

Pray – Use a text from the Rule, Constitutions, or General/Provincial Chapter of your Institute that addresses our relationship with and responsibility towards Creation.

Climate

At the next available opportunity, take public transport at least on one occasion.

Biodiversity

‘What’s my impact on biodiversity?’ Investigate how eco-friendly you are – try the biodiversity quiz.⁷⁰

Energy

Buy a car with a more fuel efficient engine. Consider woodchip or wood burning stoves instead of gas and oil heating systems.

Water

Support some campaign, either nationally or internationally, that is working to defend the right of everyone to free access to the minimum amount of water needed to live in dignity.

69. To find out more about the 2010 target go to:
<http://www.worldwildlife.org/bsp/bcn/participate/savebiodiversity.htm> or <http://www.countdown2010.net/>

70. Royal Institute of Great Briton Biodiversity Quiz at:
<http://www.rigb.org/contentControl?action=displayContent&cid=0000001087>

Food

If you need something new for the kitchen, consider purchasing a second-hand appliance, thus eliminating the CO₂ involved in making a new appliance.

WEEK 7 OR MONTH 7

Pray – Compose a prayer service on a Creation issue (biodiversity, climate change, right-relations etc.) for your community. As you pray the liturgy, pay special attention to references in the texts to Creation.

Climate

Consider obtaining an eco-audit for your province or community. Alternatively try doing your own. For example, establish a baseline through the Carbon Footprint exercise. Focus on direct emissions such as onsite fuel usage and transport. Collect data from all utility bills; record total mileage, including vehicle and air transport; convert the fuel, electricity and transport consumption figures to CO₂ by using publically available tools (internet/local government/NGOs); set annual reduction targets of 3% until 2012; identify areas for improvement; implement changes.

Biodiversity⁷¹

Plant a tree that is native to your country or region. They also provide: food, beauty, shade, timber, firewood and charcoal. Think about making a present of a tree to others.

Energy

Invest in renewable energy and make this a possibility for the less well off.

When constructing a building use ecologically friendly energy efficient methods and materials, produced locally where possible.

Water

Buy an aerating head for your shower, thus reducing water use by mixing air with the water.

Food

Include as much raw fruit and vegetables as possible in meals. They cut down energy use in cooking. Avoid purchasing tuna, swordfish and other fish stocks in crisis.

Environmental Plan

The Ursulines in the USA have a ten-year environmental plan resulting from an environmental audit. This has been applied to all new buildings. They run a 700-acre farm on ecological principles. They offer environmental retreats, workshops, and environmental educational weekends. In cooperation with Brescia University, USA they promote an environmental/energy fair and workshop. Go to: www.greeningwesternkentucky.org

PRAYER SERVICE

Introduction

Today there is a growing awareness that world peace is threatened not only by the arms race, regional conflicts and continued injustices among peoples and nations, but also by a lack of due respect for nature, by the plundering of natural resources and by a progressive decline in the quality of life. When human beings turn their back on the Creator's plan, they provoke a disorder which has inevitable repercussions on the rest of the created order. If humans are not at peace with God, then earth itself cannot be at peace: "Therefore the land mourns and all who dwell in it languish, and also the beasts of the field and the birds of the air and even the fish of the sea are taken away" (Hos 4:3)

Reading: Psalm 19 (God's glory in creation)

How clearly the sky reveals God's glory!
 How plainly it shows what God has done!
 Each day announces it to the following day;
 Each night repeats it to the next.
 No speech or words are used, no sound is heard;
 yet their message goes out to all the world
 and is heard to the ends of the earth.
 God made a home in the sky for the sun;
 It comes out in the morning like a happy bridegroom,
 Like an athlete eager to run a race. (Psalm 19:1-5).

Let us pray:

Almighty God! Father, Son and Holy Spirit, you created the earth and entrusted it to human beings to fulfil your work. You filled the earth with so many beautiful things. We praise and thank you God for the beautiful creation. Let us open ourselves to experience the presence and love of God in all created things: in the sun, the moon, the stars, and in each lovely planet, the flowers, birds and animals, the sea and its waves. Every single creature is a book about God's love. Every creature, even the most insignificant, is part of the Earth Community. Help us Creator Spirit to come to know and experience God our Father and Mother through our relationship with one another and with the whole of creation.

Reflection: Let us reflect on the wonders of God's creation

Francis of Assisi loved creation: in it he found the love of God. His love was not confined to popular or beautiful species. According to Francis, God created everything and thus everything bears God's imprint, deserves respect and is worthy of relationship. Francis' love of God and God's creation is powerfully expressed in the Cantic of the Creation.

Reading: Life of St. Francis of Assisi

In every work of the artist he praised the Artist ... He rejoiced in all the works of the hands of the Lord In beautiful things he saw beauty itself; all things were to him good He embraced all things with a rapture of unheard of devotion, speaking to them of the Lord and admonishing them to praise him ... He walked reverently upon stones, because of him who was called the Rock He forbade the brothers to cut down the whole tree when they cut wood so that it might have hope of sprouting again. He commanded the gardener to leave the border around the garden undug so that in their proper times the greenness of the grass and the beauty of the flowers might announce the beauty of the Father of all things He removed from the road little worms, lest they be crushed under foot; and he ordered that honey and the best wines be set out for the bees, lest they perish from want in the cold of winter

(2 Celano 165 - Biographer of St. Francis of Assisi)

Prayers of Petition

1. God our creator, we are aware of the sins committed daily against our mother earth and against all of humanity. Lord forgive the injustice we have done to our Mother Earth. Lord hear our Prayer.

2. Lord! Give us the grace to respect and protect Mother Earth and to take bold steps to eradicate the wounds inflicted on the earth. ...Lord hear our Prayer.
3. Let us ask the Lord to give us the grace to admire and experience His love in every created thing... Lord hear our Prayer.
4. For what else would you like to pray...



JL

Conclusion

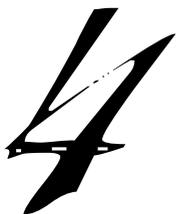
God our Father, you created the world and sent your own Son to live among us, made of the same stuff, breathing the same air, marvelling at sunrise and sunset just as we do. Help us to participate in the life around and within us as your life, as you living in us and we living in you and in each other. God of love and life, restore us to your peace, renew us through your power and teach us to love all that you have created and to care for the earth as your gift and our home.

For Further Reflection

1. Do I honour the sacredness of life in all living things?
2. To what extent does concern for Creation enter into my prayer life and relationship with God and neighbour?

Religious and Environmental Academics

Fr. Eduardo Andres Agosta Scarel O.Carm works with the Argentine Research and Technology Council. He is also involved in the Pontifical Catholic University of Argentina in an Interdisciplinary Team for the Studies of Atmospheric Processes in Global Change and lectures in Global Change and Climate Variability.



CHAPTER 4: EVALUATION

Despite the fact that evaluations are often ignored, we encourage you to evaluate how you and/or your community have managed to put some of the recommendations in this booklet into practice. We suggest that you do a personal and a community evaluation after six months and then after one year.

We offer some helpful questions:

1. What aspect of this booklet did you find most helpful?
2. What aspect of this booklet did you find least helpful?
3. What aspects of your behaviour did you manage to change? What sort of impact did it have on your life and on others?
4. What would you most recommend to another to help defend and save our environment? Why?
5. Have you any suggestions for future booklets on the environment?

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CHAPTER 5: RESOURCES

RELIGIOUS INSTITUTES - INTEGRITY OF CREATION WEB SITES

Congregation of St. Joseph. Click on 'Peace and Justice'
www.sistersofsaintjoseph.org (esp. Amazon)

Society of St. Columban:
www.columban.com (links to Columban sites around the world)

Sisters of Charity, Halifax. Enter and click on 'Global Concerns'
www.schalifax.ca

CHAPTER 5: RESOURCES

Sisters of St. Martha of Antigonish, Nova Scotia
www.themarthas.com (click on 'Ministries' and 'Martha Eco-connect')

Christian Brothers and Edmund Rice Network
<http://www.ecojustice.edmundclt.org>

Federation of Sisters of St. Joseph of Canada.
Click on Ecology Committee, MDG's: www.csjfederation.ca

Full Circle Eco-House of Prayer, Port Huron, Michigan, USA
www.fullcircleetreat.org

Kasiri Agricultural Training Center, near Lusaka, Zambia:
www.loyno.edu/~katc/

Sisters of St. Joseph of Peterborough:
www.csjpeterborough.com/ecology.htm

Society of the Sacred Heart, US and Canadian Provinces
www.sproutcreekfarm.org

Ursulines USA
<http://www.greeningwesternkentucky.org/index.htm>

Society of the Holy Child Jesus, American Province: Booklet on Water for Lent 2008
<http://www.sjweb.info/sjs/networks/ecology/LentBooklet2008Design.pdf>

Society of Jesus, Oregon, Regional Sustainable Development Plan
www.sjweb.info/sjs/networks/ecology/Regional%20Sustainable%20Development--Plan%20of%20Action.pdf

Society of Jesus, India, Solar Alternatives
<http://www.solar-alternatives.com/activities.html>

Earth Healing (Al Frish SJ)
<http://www.earthhealing.info>

Society of Jesus, Latin America, Revista Mirada Global (English, Spanish and Portuguese)
<http://www.miradaglobal.com/index.php?lang=en>

Eco-Congregation- an ecumenical programme at the service of parishes in UK & Ireland
<http://www.ecocongregation.org/>

Franciscans' JPIC Promoters Ecology Resources on Water and Climate Change
<http://www.ofm.org/ofmnews/ofmorg/00jpic3.php>

Portuguesa

Irmãs de São José de Chambéry, França (Brazil):

http://www.issj.com.br//portal/servicos/ambiente/?secao=9541&categoria=18063&hide_ld=1

Español

Biblioteca Franciscana de Sud America

(para una seria de articulos entra la palabra 'ecologia')

<http://www.franciscanos.net>

Compañía de Jesús, America Latina, Revista Mirada Global

<http://www.miradaglobal.com>

Fundación Proclade, una Organización no Gubernamental de Desarrollo (ONGD)

www.fundacionproclade.org

A Study Guide on Climate Change based upon key themes in Catholic Social Teaching

The guide contains agendas for six meetings with accompanying appendices, reflection and action sheets, reading sheets, plus a “prayers and liturgies” section. The full guide can be downloaded at:

<http://www.operationnoah.org/resources/liturgicalresources/between-flood-and-rainbow-download-version>

This table presents a short analysis from the perspective of two paradigms – a dominant social paradigm and a new environmental paradigm.

SCENERIO A: PRESENT SCENARIO	SCENERIO A: DOMINANT SOCIAL PARADIGM (DSP) ⁷³	SCENERIO A+: THE MILITARY OPTION	SCENERIO B: NEW ENVIRONMENTAL PARADIGM (NEP)
Capitalist system, aiming at continuous economic growth, based on massive consumption of "goods", energy and services, within a globalized market place.	A1. No relevant structural change. The DSP prioritizes economic growth accepting the risks to the environment as necessary but with faith in technology to override the negatives.	A1+. the same as scenario A	B1. Important structural changes in ethical, political and economic areas, aiming for a world where justice, peace and integrity of creation are leading values. The NEP postulates that economic growth must take place sustainably respecting natural limits.
Abuse of low cost fossil fuel, for energy production, transportation and petrochemical agriculture.	A2. Gradual actions, aimed at control of GGE. Refer to Kyoto and its recommendations, etc.	A2+. The same of scenario A + global military actions, including first strike nuclear option, in order to keep or to gain control of natural resources (oil, water, minerals, etc.)	B2. Significant change in personal and community life style, beginning with the developed world's peoples by reducing of energy demands and pollution.
Greenhouse gas effects (GGE)... severe pollution of air and water...seen as inevitable side effects.	A3. The objective is damage limitation, while taking into account mainly the needs of the developed world's peoples and the middle class in the developing world.	A3+. The same of scenario A	B3. Substitution of fossil fuels by renewable energy sources and a shift towards adequate biological agriculture.
			B4. Keeping GGE and pollution under control in accordance with limits appropriate for the life of the entire planet; focusing on food security and poverty reduction in the face of climate change and energy security.

Scenarios 'A and B' are different:

Scenario A assumes the perspective and needs of 'developed world' countries, with the possibility of military intervention. (scenario A+)

Scenario B assumes the perspective of the "developing world's" countries.

73. Lester Milbrath, "Becoming sustainable: Changing the way we think," Chapter 17 in Pirages, Dennis, ed. Building Sustainable Societies: A Blueprint for a Post-Industrial World, (Armonk, New York: M.E. Sharpe, 1996), pp.275-279.