

# DOMINICANS AT THE UN

*"Cry out as if you have a million voices, for it is silence which kills the world."  
~Catherine of Sienna*

## What is Earth Asking of the Order?

*Margaret Mayce, OP*



*How might we renew  
our respect for two  
significant Planetary  
Boundaries – land and  
water – upon which  
all of life depends for  
its sustenance?*

*We stand at a critical moment in Earth's history, a time when humanity must choose its future. As the world becomes increasingly interdependent and fragile, the future at once holds great peril and great promise. To move forward, we must recognize that in the midst of a magnificent diversity of cultures and life forms, we are one human family and one Earth community, with a common destiny (Earth Charter).*

At the Dominican Sisters' Conference Convocation held last October, we began to explore the phenomenon of global climate change. From October 2013 through May 2014, we will be coming

together in area gatherings, to continue our common reflection on this most timely issue, and to begin to consider how we might respond – both on a local/regional level; and, as a Conference. We would like to keep the conversation alive through this next edition of the UN Newsletter, by considering two life-sustaining elements that are directly threatened by changing global weather patterns – food and water.

The theme for World Environment Day (June 5) was *Think, Eat, Save* – an effort to encourage us to *think before*

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*we eat, and save the environment.* World Oceans Day, which was observed on June 10<sup>th</sup>, explored the theme of *Oceans and People*. So this is a timely moment to consider how these elements are becoming increasingly endangered, and how we might renew our respect for two significant Planetary Boundaries – land and water – upon which all of life depends for its sustenance.

### WHAT IS A PLANETARY BOUNDARY?

*"Living in harmony with nature implies an equitable and balanced relationship with Earth, humanity's source and sustenance. At the core of that relationship lies both a profound respect for Earth, and an acknowledgement of the vital imperative that the planet continue to exist and thrive, as well as an acceptance of humanity's responsibility to restore the health and integrity of the Earth system."* (Harmony with Nature: Report of the Secretary General, August 2012)

Part of living in harmony with nature is an acknowledgement of, and respect for Earth's integrity as a living system with limited resources. A set of nine *planetary boundaries* within which humanity can continue to develop and thrive for generations to come, have been identified by researchers and scientists at the Stockholm Resilience Center. Crossing these boundaries could generate abrupt or irreversible environmental changes. Respecting the boundaries reduces the risks to human society of crossing these thresholds. These planetary boundaries are: climate change, rate of biodiversity loss, interference with the nitrogen and phosphorus cycles, stratospheric ozone depletion, ocean acidification, global freshwater use, change in land use, chemical pollution, and atmospheric aerosol loading.

For the past ten thousand years, Earth's climate and the environment have been relatively stable. This stable state of the Planet, known as the *Holocene*, is the only

planetary state we know that supports world development. But human-induced changes in the Planet's equilibrium have introduced a new epoch on the world stage - that of the *Anthropocene* – in which humanity is threatening this stability and exposing itself to unprecedented environmental shifts. To avoid the risk of environmental shocks and to ensure the future flourishing of both the human and the non-human, it will be necessary for the nations of the world to collaborate with the Earth system.

For more information, visit [www.stockholmresilience.org](http://www.stockholmresilience.org)



### A WATER SECURE WORLD

It is hard to imagine water "*insecurity*," isn't it? Didn't we all learn that three-fourths of the surface of Earth was water? This can easily lull us into the mistaken belief that there is an endless supply of this most precious resource. However, as we are quickly learning, there is a limit, a planetary boundary, beyond which we dare not tread. We live in an increasingly *water-insecure world*, where demands often outpace supply, and water quality often fails to meet minimum requirements for human consumption. Water is renewable, but finite; it can be recycled, but not replaced. In a 2012 survey by the World Economic Forum, water supply crises were listed as the second ranked global risk after major systemic financial failure, and ahead of food shortage crises and extreme

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volatility in energy and agricultural prices. Of all the world's water, only 0.03% is available as liquid freshwater, at or near land surface. This water supports life as we know it – all land and freshwater biodiversity. It is essential for human welfare, and for sustainable development.

## FRESHWATER

Over the past century, the global population has tripled, while our use of water has increased six-fold. During this time, the quality of our water resources has been severely compromised through human activities such as the excessive use of chemical fertilizers and the release of untreated sewage and industrial waste water into otherwise healthy rivers and streams. Currently, 884 million people (12.5% of the world's population) live without access to safe drinking water. By 2025, it is estimated that 1.8 billion people will be living in countries or regions with absolute water scarcity, and two-thirds of the world's population could be under severe water stress conditions.

For more information, visit  
[http://www3.weforum.org/docs/WEF\\_GlobalRisks\\_Report\\_2012.pdf](http://www3.weforum.org/docs/WEF_GlobalRisks_Report_2012.pdf)

The Intergovernmental Panel on Climate Change (IPCC) has concluded that water and its availability and quality will be the main pressures on societies and the environment under climate change. Climate change has already had a negative impact on precipitation in many parts of the world. For example, farmers in Kenya could count on the rains to arrive each year on November 15<sup>th</sup> – and their harvests were predictable. But the rains no longer come as they used to, and the harvests are unpredictable, at best. In other parts of the world, glacial melt due to warming temperatures contributes to rising

sea levels, with major implications for many of our major river systems.

The issue of water security is also affecting the world's food and energy systems, with the greatest impacts on those who are already among the poorest and most vulnerable of the world's population, and who also live in areas in which there is little resilience to cope. Many of these areas suffer under chronic political instability, tension and outright conflict – all of which will be heightened as competition for scarce water supplies increases.

But scientists are warning that those of us in the developed world will also suffer. For instance, there are now 210 million citizens of the US living within ten miles of an “impaired” water source. This number is likely to increase as the ongoing effects of global warming take hold, as well as the fallout from the process of hydraulic fracturing – more commonly known as “fracking.” And in Europe, many water sources are running dry as a result of “over-extraction” for irrigation – much of which is done in an unsustainable fashion.



*Fracking is an extremely water intensive process that poses long-term risks to water resources both in terms of the health of humans as well as that of the environment.*

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Water is, indeed, the primary medium through which we humans, as well as all of Earth's ecosystems experience the impacts of climate change. Floods and droughts accounted for 86% of the natural disasters that irrevocably altered the lives of nearly two billion people in the last decade of the 20<sup>th</sup> century. And judging from the last several years, both here in the US and abroad, the trend will continue at an alarming rate.

## WATER AND BIODIVERSITY

Biodiversity and the ecosystem services that it supports can help us achieve water sustainability. Ecosystems, especially forests, wetlands, grasslands and soils all play a central role in the water cycle, and influence the local, regional and global availability of fresh water. Forests can help regulate soil erosion and protect water supplies. Wetlands serve as natural infrastructures that can be used to store and clean water. Vegetated land cover regulates the movement of water over land, as well as water infiltration into soils. However, our current development model, heavily motivated by "profit," has severely compromised the capacity of nature's ecosystems to enhance our water security. Consider the damage done to the land through the extractive industries in mineral-rich parts of Africa and South America; through mountain-top mining in parts of the United States (for example in the Appalachian region); through fracking and the use of chemical pollutants. All of these activities have a direct bearing on the supply and availability of clean water – which we so easily take for granted.

For more information, visit [www.unesco.org/new/en/unesco/events/prizes-and-celebrations/celebrations/international-days/international-day-for-biological-diversity-2013/](http://www.unesco.org/new/en/unesco/events/prizes-and-celebrations/celebrations/international-days/international-day-for-biological-diversity-2013/)

*Biodiversity...can help us  
achieve water sustainability*

## OCEAN ACIDIFICATION



*Before and after, the effects of acidification on a coral reef*

All of life depends on our oceans. The National Oceanic and Atmospheric Administration (NOOA), has described ocean acidification as "the other carbon dioxide problem." Since the Industrial Revolution, the release of CO<sub>2</sub> from our industrial and agricultural activities has increased the amount of CO<sub>2</sub> in the atmosphere. While the ocean absorbs about one-quarter of the CO<sub>2</sub> released into the atmosphere on an annual basis, as this amount increases, so does the amount absorbed by the ocean – changing the chemistry of the seawater in the process. As ocean acidity begins to rise, it decreases the necessary mineral base needed by many sea organisms to produce and maintain their shells – e.g., oysters, clams, sea urchins, deep sea coral, and plankton. When these shelled organisms are at risk, the entire food web is placed in jeopardy. More than a billion people worldwide are dependent on food from the ocean as their primary source of protein. Meanwhile, many jobs and economies worldwide are dependent on the fish and shellfish that reside in our oceans.

For more information, visit [www.oceanacidification.net](http://www.oceanacidification.net)

## LAND AND FOOD SECURITY

When we hear the term "desertification," we tend to immediately think of previously fertile land turning to desert. However, desertification is a far more complex reality, and is considered

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one of the greatest environmental challenges of our time. Desertification is defined as the persistent degradation of dry land ecosystems by human activities, including unsustainable farming, mining, over-grazing, clear-cutting of land, and climate change. Wind and water erosion aggravate the damage, leaving behind an infertile mixture of dust and sand. Along with climate change and the loss of biodiversity, deforestation was identified as one of the greatest threats to sustainable development at the 1992 Rio Summit. Twenty years later, not much has improved.



*...deforestation was identified as one of the greatest threats to sustainable development*

Today, without addressing desertification, land degradation, and drought, we will not achieve food security for our soon-to-be world of 9 billion people. Consider just a few facts:

- 2.6 billion people depend directly on agriculture for subsistence
- 52% of land used for agriculture is moderately or severely affected by soil degradation
- Land degradation over the next 25 years may reduce global food production by up to 12%, resulting in potential 30% increase in global food prices
- Climate change will depress agricultural output up to 15%-50% in most countries by 2050
- The percentage of Earth's land area stricken by severe drought has more than doubled from the 1970s to the 2000s

## REDUCING YOUR FOOTPRINT

*Kati Garrison, Dominican Volunteer*

Approximately one third of all food production worldwide is lost or wasted in the food production and consumption systems every year. This amount of food possesses the potential to feed an estimated 900 million people currently experiencing hunger around the globe.

Food loss primarily occurs in the developing world due to problems that lead to post-harvest perishing such as pests, a lack of adequate storage facilities, inefficient supply chains, and - in the case of those who grow crops for export - the value placed on cosmetic perfection leads to the rejection by buyers of otherwise viable crops. On the other hand, food waste most frequently occurs in developed countries in which households, retail outlets, caterers, and restaurants throw away food. This waste increases landfills, thereby contributing to the emission of greenhouse gases, global warming, and climate change.

Both food loss and food waste result in substantial expenditure of resources including land, water, energy, labor, and capital. In this sense, they pose economic, environmental, and ethical issues that we need to address. Fortunately, according to the *Think. Eat. Save.* campaign, "with relative ease and a few simple changes to our habits, we can significantly shift this paradigm."

In contrast with the situation in developing countries (in which the solutions to food loss can be secured through investments in infrastructure, transportation, storage, and proper packaging), in developed nations, the behavior of consumers possesses the potential to substantially diminish food waste. For example, educating consumers about the true meaning of sell-by and use-by labels, revising

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business criteria for rejecting imperfect produce, and encouraging consumers to buy only what they need and re-use leftover food all provide means by which to reduce waste, conserve resources, minimize environmental impact, and foster the establishment of sustainable food systems while working to alleviate world hunger.

For more information, visit [www.thinkeatsave.org](http://www.thinkeatsave.org)



### WHAT CAN WE DO ?

It is not enough to merely read about the issues impacting Earth's environment, including water and waste. Rather, it is imperative that we take action to address and ameliorate these issues. The following content is a list of resources to help you take the next step.

Calculate your water footprint:

[www.gracelinks.org/1408/water-footprint-calculator#gsc.tab=0](http://www.gracelinks.org/1408/water-footprint-calculator#gsc.tab=0)

The Earth Charter Initiative:

[www.earthcharterinaction.org/content/](http://www.earthcharterinaction.org/content/)

Recycling: <http://earth911.com/recycling/>

21 Things You Didn't Know You Could Recycle:

[www.greenamerica.org/pubs/greenamerican/articles/21Things.cfm](http://www.greenamerica.org/pubs/greenamerican/articles/21Things.cfm)

Working for access to safe, affordable, and sustainable water for all:

[www.runningdry.org/world.html](http://www.runningdry.org/world.html)

*Of one thing we can be sure: our own future is inseparable from the larger community that brought us into being and which sustains us in every expression of our human quality of life, in our aesthetic and emotional sensitivities, our intellectual perceptions, our sense of the divine, as well as in our physical nourishment and bodily healing.*

*( Thomas Berry, The Great Work )*

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## DOMINICAN LEADERSHIP CONFERENCE

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