

# livingCity

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## The Challenge of Climate Change

Global solutions to  
global problems

**Relationships in Law**  
Is there room for fraternity?

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# The Challenge of Climate Change

## Global solutions to global problems

BY LORNA GOLD

**2005** WAS THE YEAR when, for many people, the reality of extreme weather events hit home—quite literally. Hurricanes Katrina, Rita and Stan were just examples of what computer models predict could become more severe as the Earth warms. While it is still difficult to confirm “climate change” as the cause of one particular event, the scientific evidence keeps on mounting to demonstrate the negative effects of human interference in climate patterns. One can sense a worldwide urgency to address the issue. Last January, Lester Brown of the Earth Policy Institute said that we may be getting closer to a “point of no return.” He mentioned that increased temperatures

could accelerate the melting of Arctic ice which reflects some heat back into space from the sun. With the ice gone, more sunlight will reach the Earth and increase its warming.

According to the recent United Nations Climate Change Conference held in Montreal, climate change is here.<sup>1</sup> The U.S. government in accepting, although a little begrudgingly, the outcome of the Montreal Conference, has acknowledged the veracity of the evidence. This, in itself, is a hopeful sign according to the Dec. 10, 2005 *Economist* magazine.

The early signals of actual climate change are clearly visible. One key sign is an increase in variation itself: there are wider swings in what is “normal” weather. We hear news more frequently about “hottest (or coldest) days on record.”

## Facts Speak

Warmer temperatures mean greater evaporation, and a warmer atmosphere is able to hold more moisture, so that there is more water aloft that can fall as rain. Similarly, dry regions are apt to lose still more moisture if the weather is hotter; this exacerbates droughts and desertification. In Africa’s large basins of Niger, Lake Chad and Senegal, total available water has decreased by 40 to 60 percent, and desertification has been worsened by lower average annual rainfall, runoff and soil moisture.

Even the minimum predicted shifts in climate for the 21<sup>st</sup> century are likely to be “significant and disruptive.” The worst scenario would be catastrophic. Estimates of upcoming changes are wide-ranging: global temperature may climb from 1.4 to 5.8 °C (34-42 °F); the sea level may rise from 3.5 to 35 inches. This uncertainty

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Negative effects of climate change can be seen in the poles with melting ice (opposite page), in the severe drought in Africa (above) and in Nebraska (right), and in frequent tornadoes in many regions of the United States (below). People around the world are being forced to adapt to more extreme weather events caused by global warming.



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increases in temperature. Such changes are already causing disruptions in food supply in regions already afflicted with food shortages and famines, such as Malawi and Niger. In the future this effect will become more acute. Salt-water intrusion from rising sea levels will reduce the quality and quantity of freshwater supplies. According to the High Level Panel on Climate Change, higher ocean levels are already contaminating underground water sources in Israel and Thailand, in various small island states in the Pacific and Indian Oceans and the Caribbean Sea, and in some of the world's most productive deltas, such as China's Yangtze Delta and Vietnam's Mekong Delta.

### The Developing World will Suffer Most

For many living in the developed world, climate change so far is at worst an inconvenience. What we cannot see is that climate change is happening within a world that is already under stress from poverty, injustice and environmental mismanagement. The critical challenge in terms of climate change in Africa in particular is the "way in which multiple stressors—such as the spread of

reflects the complexity, interrelatedness and sensitivity of the natural systems that make up the climate. The predictions of future climate change may be fuzzy, but they are not meaningless. The *minimum* warming forecast for the next century is more than twice the 0.6°C (1.4°F) increase that has occurred since 1900—and that earlier increase is already having marked consequences. Sea levels have already risen by 3.6 to 7.2 inches over pre-industrial averages and are certain to climb farther.

Although regional and local effects may differ widely, a general reduction is expected in potential crop yields in most tropical and sub-tropical regions. Mid-continental areas, such as the United States' "grain belt" and vast areas of Asia, are likely to dry out. Where dryland agriculture relies principally on rain, as in sub-Saharan Africa, yields would decrease dramatically even with minimal



CITTA NUOVA



UN PHOTO/ EVAN SCHNEIDER



UN PHOTO/ SOPHIA PARRIS

In a world already under stress from poverty, injustice and environmental mismanagement, the most vulnerable are those who lack the resources and the mobility to adapt through migration. Above left: A child-feeding center run by Doctors Without Borders in Niger. Above right: Inhabitants on a rooftop surrounded by floodwaters and mud as Tropical Storm Jeanne hit Haiti in 2004 causing death, destruction and water shortages.

HIV/AIDS, the effects of economic globalization, the privatization of resources and conflict—converge with climate change,” Siri Eriksen reported in *Fields*. The consequences of overgrazed land, deforested mountainsides, and denuded agricultural soils means that nature will be more vulnerable than previously to changes in climate. Those most vulnerable are those who lack the resources and the mobility to adapt through migration. Millions live in dangerous places such as floodplains or in shantytowns on exposed hillsides around the enormous cities of the developing world. Often they are literally “trapped” in poverty—there is nowhere else for them to go. According to Eriksen, climate change is likely to “accelerate social stratification” in Africa, meaning that “those who don’t have sufficient wealth to buffer the effects of climate vulnerability will plunge deeper into poverty.”

The social and economic injustice of climate change is striking. The industrialized countries and corporations are responsible for the vast bulk of past and current greenhouse-gas emissions. Arguably, these emissions are a debt unwittingly incurred for the high standards of living enjoyed by a minority of the world’s population. The wealthy are by and large shielded from the largest impacts through abundant resources and opportunities to

adapt. Those who are already suffering most from climate change are in the developing world. They have fewer resources for coping with storms, with floods, with droughts, with disease outbreaks, and with disruptions to food and water supplies. They are often eager for economic development themselves, but find that this already difficult process is becoming even more difficult because of climate change. For example, in the case of Africa, climate change threatens to undo even the small gains that the poorest countries have made, setting back any real chances for lasting development.

## Facing Up to the Challenge

Almost ten years ago, the majority of governments signed the Kyoto protocol to reduce greenhouse gases—the principal cause of climate change. It came into effect in February 2005. In December 2005, new evidence showed that only two out of 15 EU countries will meet their targets by 2007. Some countries, such as Ireland, due to its rapid economic performance, will miss the target completely. Other countries, such as the U.S., decided not to participate in the protocol. The Montreal meeting was meant to begin discussions on what to do after the protocol expires in 2012.

While governments seem to be in

stalemate over how to tackle climate change, other parts of civil society seem to be waking up to the threat that this poses. Several initiatives, such as the new Environmental Sustainability Index (ESI), have emerged in order to tackle the underlying problems associated with environmental sustainability. This index, developed by Yale University in collaboration with the World Economic Forum, begins to quantify in economic and social terms the environmental resources and services which we have traditionally taken for granted. The issues incorporated and variables used were chosen through an extensive review of the environmental

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from the soil only  
what it needs.  
In the same way,  
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what we need  
to flourish.”**

**—Chiara Lubich  
to young people**



San Francisco was the venue where mayors of many cities around the world met in May 2005 to sign the Urban Environmental Accords.

MARTIN DULAY

Right: Aimed at shaping and guiding global ecological awareness, the common declaration (excerpts at right) was signed by Pope John Paul II and by the Ecumenical Patriarch Bartholomew I, also called “the Green Patriarch” for his active efforts to protect nature.

literature, assessment of available data, rigorous analysis and broad-based consultation with policy makers, scientists and indicator experts. According to ESI, the U.S. ranks 45<sup>th</sup> overall in the world in terms of environmental sustainability. Ireland ranks 21<sup>st</sup>, while the UK ranks at 65<sup>th</sup>. While still imperfect, such indices provide an alternative to the ranking of countries in terms of their ability to protect the environment over the next several decades.

Another initiative has been the decision taken by mayors of many cities across the globe, including many U.S. cities, to take action on climate change. In May 2005

they came together in San Francisco to sign the *Urban Environmental Accords*. This agreement has put sustainable urban living on the agenda of many cities across the U.S. By the end of 2005 over 180 U.S. mayors had signed an agreement to lower carbon dioxide levels in their cities with a view to beating the international Kyoto targets.

According to the Clinton Global Initiative, which has a major program on climate change and corporate responsibility, the opportunities for those businesses that can grasp the environmental market are considerable. Demand for clean energy is exploding around the world. Markets for

## An Invitation to Everyone

### *The Common Declaration on Environmental Ethics*

We invite all men and women of goodwill to ponder the importance of the following ethical goals:

1. To think of the world's children when we evaluate our options for action.
2. To study the true values of the natural law that sustain every human culture.
3. To use science and technology in a full and constructive way, in light of the centrality of the human person, of the common good and of the inner purpose of creation.
4. To be humble regarding the idea of ownership and to be open to the demands of solidarity.
5. To acknowledge the diversity of responsibilities in the work for a better world environment. Everyone has a part to play, but for the demands of justice and charity the most affluent societies must carry the greater burden.
6. To promote a peaceful approach to disagreement about how to live on this earth, about how to share it and use it, about what to change and what to leave unchanged. We trust in the path of dialogue to reach agreement.

Venice, June 10, 2002



DESIGNPHICS

wind and solar power are doubling every 2 to 3 years. Europe plans to generate 22 percent of its electricity from renewable sources by 2010; India plans to generate 10 percent of its electricity from renewables by 2012.

Many large and small companies are positioning themselves to take advantage of this emerging market. Emission trading offers companies the opportunity to capture extra profits from efficient production processes. In developing countries in particular, new sources of financing may be available for business ventures that help reduce greenhouse gas emissions. Companies that show leadership on this issue may be able to

win customer loyalty, attract investment and build a positive brand. The market, it seems, is beginning to undergo a “green revolution.”

## Do We Need an “Ecological Conversion”?

But is this enough? Some would argue that the environmental crisis is so deep-rooted that long-term solutions require different socioeconomic models to those we have at present. While new indicators of sustainability can point us in the right direction, environmental stewardship needs to be put at the center of our development. To do this would require a sea-change in our behavior, values and ideas as current policies and practices remain locked in a model of economic development which pays scant regard to environmental and social consequences.



Such problems are deeply entrenched within the model of economic development and cannot be resolved without concerted political will, both in the North and South. Pope John Paul II, when speaking on the environment in 2001, called for an “ecological conversion” to avert a major global ecological disaster. In his writings, he often

pointed to the injustice of expecting poor countries to shoulder the cost of environmental problems that rich countries have disproportionately contributed to. Governments and private corporations alike have a responsibility to ensure that everything possible is done to ensure that climate change does not become an additional burden on the poor and

# Back from Montreal

Almost 10,000 delegates and observers from 189 countries attended the UN meeting in Montreal to discuss how countries can better work together to address climate change, including the implementation of the Kyoto Protocol and future initiatives. They included government officials, scientists and members of Non Governmental Organizations (NGO). The Washington, D.C.-based Climate Institute was among the NGOs represented and *Living City* interviewed its president, John Topping, regarding the Montreal meeting.

By LUCIA MARTINEZ

**T**HERE WERE MIXED REPORTS REGARDING the results of the United Nations Climate Change Conference. Some said it was a waste of time since the big players didn't agree to commit themselves with specific targets. Others said that at least we all agree to continue the dialogue. What was your impression of its outcome?

What was most impressive was evidence of activity in innovative actions to protect the climate among many state governments, cities, private companies and civic and religious groups. While national governments, even signatories to the Kyoto Protocol, have generally made disappointingly little progress in curbing greenhouse emissions, there has been astonishing progress at other levels. Governor Schwarzenegger in June 2005 committed California to what amounts to a 93% reduction in

per capita emissions by 2050. Governor Fidel Herrera of Veracruz, Mexico, has committed his petroleum-producing state to build a high altitude CO<sub>2</sub> observatory to increase monitoring and study and to follow a diversified energy policy including renewables. Cities such as Aspen in Colorado are designing very innovative energy policies and looking at reducing impacts of climate change on local industries such as skiing and recreation.

**Scientists and environmentalists have a certain urgency in getting governments to take action before it is too late. As a person dedicated to the climate issue, what helps you keep going when faced with the inertia of others? Do you see any signs of hope?**

I see a lot of encouraging signs. Besides the progress at the level of state and city in the U.S. and abroad, many companies in the manufacturing, finance and insurance area are becoming involved. Goldman Sachs has recently become involved in wind energy solutions. Once major private sector movers and shakers start putting their investment funds to work, we



CITTA' NUOVA / GIUSEPPE DI STEFANO

**Demand for clean energy is exploding around the world. Markets for wind and solar power are doubling every 2-3 years. From left: A laundromat in California powered in part through solar panels, and wind turbines in the Midwest.**

that the mistakes of the past are not repeated.

At a deeper level, the over-consumption in Northern countries—at the heart of our model of economic development—continues to place a huge burden on the environment and calls for a change of attitudes within society. New ways need to be found to foster an attitude of

*stewardship* towards the environment and use of resources. Such stewardship involves treating what we use and consume with respect. Chiara Lubich, when speaking to a gathering of teenagers, summed this new attitude up in terms of the natural world: “A plant takes from the soil only what it needs. In the same way, we too should only take from the earth what we need to flourish.” This simple thought, if put into practice, would generate a revolution in our economy and society.

While the major problems of climate change remain in the hands of governments, there is something that each of

us can do to make a difference. The little known *Common Declaration on Environmental Ethics*<sup>2</sup> signed by Christian leaders in 2002 ahead of the Johannesburg Summit on Sustainable Development, points to some practical ways in which churches can work together to change attitudes and policies (see box on page 11 and *Living City*, Nov. 2002). The Charter calls on everyone, from governments to institutions, to churches and communities, to families and individuals, to think about their relationship with the environment—and how this affects others. It reminds us that our existence on earth is only temporary—and that we need to think of our children and our children’s children when we make decisions. LC

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1) [www.montreal2005.gc.ca](http://www.montreal2005.gc.ca); 2) [www.columban.com/veniced.htm](http://www.columban.com/veniced.htm)



NABIR KHATTAK

**John Topping, president of the Climate Institute in Washington, D.C.**

are likely to see transformative results in energy akin to what we have come to expect in telecommunications. Only through such private sector action do we have a realistic chance of stabilizing global greenhouse concentrations. Perhaps the most important effect of the negotiations and of meetings such as the Montreal Conference has been

to highlight the need for creative energy solutions and to induce private sector groups to think out of the box. I believe we will solve the greenhouse emissions challenge well before we have arrived at a negotiated solution.

### **What can individuals do to help solve the problem?**

A number of individuals, many from the Faith Communities, are seeking to develop a Climate Neutral position, reducing their energy use and offsetting their remaining greenhouse emissions

by buying carbon offsets that might, for example, enable developing countries to install energy efficient compact fluorescent bulbs or install solar panels on non-electrified islands thus providing refrigeration for vaccines in health clinics, for example. Many families can save enough by wise energy use to more than cover the costs of

carbon offsets on their remaining emissions.

More and more people realize that we do not have the moral luxury of waiting for governments to act. We as individuals need to step forward if we truly care about preserving God’s creation. I think the big news of 2006 on climate may well be the movement of many denominations to ask their members to assume personal responsibility for their impact on our planet’s resources. The 2001 Statement on Global Warming of the U.S. Conference of Catholic Bishops was quite prescient in recognizing that global warming poses great challenges both to the environment and to our ideas of social justice. As we saw in the terribly destructive hurricane in Haiti in 2004 and in hurricanes Katrina and Rita in the U.S. in 2005, weather-related disasters tend to take an especially heavy toll on the poorest portions of our societies.

We can make a difference by acting to reduce our energy use and using carbon offsets. Through a collective, concerted effort we can protect the climate and enhance the quality of life of the most vulnerable of our fellow human beings. LC

March 22 is  
World Day for Water

IT IS WIDELY THOUGHT THAT water scarcity and quality will be one of the major problems of the 21st century and the biggest threat to food security. When it is scarce or lacking, innumerable social, health and economic problems arise which must be recognized and addressed. Spreading desert conditions, lack of adequate sanitation and global warming cause life threats such as dehydration and dysentery, decrease of food production, mass migration and exodus of whole peoples in search of a place where life is possible.

Throughout the world symposia, conferences, national and international forums are gathering together scientists, politicians, decision-makers and different stakeholders to offer a platform for discussing the improvement of the water



Water: Source of Life

FABRIZIO CALEGARI/PIRELLA

environment, bringing water and basic sanitation to those in need, and increasing knowledge through ground-breaking research. Various solutions are being explored that can be tailored to meet the peculiar development needs in different parts of the world. Community participation and new technological approaches are among the key ways for solving this monumental issue. In 2004 Brazil's National Catholic Bishops' Conference

promoted its annual Brotherhood Campaign with the theme, "Water, a source of life." Pope John Paul II sent a message to them underlining the importance of their effort, especially in the context of Lent when every Christian "is especially invited to reflect on the various social situations that require greater brotherhood." He wrote: "Without this gift the earth would rapidly become an arid desert. Its rational use in solidarity

demands the collaboration of all people of goodwill with government institutions so as to ensure the effective protection of the environment understood as a gift from God. This is a question that must be set in context in order to establish moral criteria based precisely on the value of life and the respect for the rights and dignity of all human beings. May sentiments of brotherhood and lively cooperation be reawakened in every heart."

—Emilie Christy

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