

# ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

## ADAPTING TO A NEW REALITY

The demand for environmental resources, especially water, food and fuel, has exploded as populations and rate of consumption increase dramatically. Between 1960 and 1999 alone, the world population doubled from 3 billion to 6 billion people. As a result, the *Millennium Ecosystem Assessment*, a UN report commissioned in 2000, concluded that our ecosystems have been altered “more rapidly and extensively” during the past 50 years than at any time in the history of our planet.

Meanwhile, the window for climate change action is quickly closing. UNDP’s *Human Development Report 2007/2008* estimates that stabilizing greenhouse gas concentrations in the atmosphere at a level that

ing poverty reduction, disaster risk reduction, energy efficiency and natural resource management.

### ENERGY EFFICIENCY AND PROVIDING FOR A LOW CARBON FUTURE

UNDP believes that working with countries to reduce their carbon emissions in a pro-poor context is an essential component to finding a solution. UNDP promotes a number of low-carbon strategies, from supporting the market transformation of energy-efficient appliances to helping countries remove barriers to developing markets for renewable energies. UNDP also promotes a long-term shift toward low-emission and sustainable forms of transportation.

As a result, in 2009 alone, 59 UNDP projects, funded by the Global Environment Facility (GEF), enabled 44 countries to avoid emitting approximately 26 million tonnes of CO<sub>2</sub>. Together with UNDP’s Montreal Protocol programme, the UN’s MDG Carbon Facility played a lead role in developing innovative carbon finance solutions in Latin America and Africa related to the Montreal Protocol (See *Up Close: Brazil*, page 32). The Carbon Facility has also put in place a diverse project portfolio, including six projects that are forecast to generate 9.4 million carbon credits for the participating countries, representing \$140 million in foreign direct investment.

With UNDP’s support, 32 provincial governments in **China** are undertaking groundbreaking work in exploring and testing new institutional arrangements in response to climate change. In particular, the programme is strengthening the ability of provincial governments to implement national climate change policies. By the end of 2009, 18 provincial and regional governments had endorsed and initiated provincial climate change programmes and 13 had established climate change divisions within their administration.

In **Thailand**, UNDP, with funding from GEF and in partnership with the Government,

would prevent catastrophic climate change will require a 50 percent reduction in greenhouse emissions by 2050 from 1990 levels. Another 10 years of greenhouse emissions at the current rate could lock the world into catastrophic and irreversible climate transformations.

UNDP views climate change as not only a critical environmental challenge but also as a serious challenge to development for all countries. The ability of people and societies to plan for, adapt to and deal with the potential risks of climate change varies significantly worldwide. UNDP is the leader in assisting countries to manage their response to climate change across a number of sectors, includ-

### UNDP SUPPORT TO ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

Countries receiving UNDP support in 2009	<b>125</b>
Percentage of countries that are strongly in favour of UNDP’s contribution to this area (source: 2009 UNDP Partners Survey)	<b>93%</b>
Amount spent in strengthening the ability of local institutions to manage the environment and to provide environmental and energy services, especially to the poor	<b>\$139 million</b>
Tonnes of CO <sub>2</sub> and ozone-depleting substance emissions that have been avoided as a result of UNDP’s work	<b>2.7 billion</b>

helped to finance the construction of two pilot biomass power plants. The pilot programme was able to show that operating these environmentally friendly plants could be profitable, encouraging private companies across the country to begin operating their own. UNDP also provided funding for a Ministry of Energy-affiliated centre – called the Biomass One-Stop Clearing House – offering policy and technical advice. This centre has been instrumental in accelerating the replication of biomass power plants across the country over the past five years.

Today, there are more than 180 renewable energy power plants in Thailand, a construction boom that came about thanks in part to the pilot plants and the biomass policy centre. By the programme's conclusion in 2009, Thailand had the ability to produce 1,252 megawatts of renewable energy. This is an almost fourfold increase from 1999 and equivalent to 21 percent of the power provided by the country's largest energy provider.

The cumulative global warming potential that has been avoided as a result of UNDP's work on ozone-depleting substances around the world represents 2.7 billion tonnes of CO<sub>2</sub>. As of 1 January 2010, **Nigeria** completely stopped importing chlorofluorocarbons (CFCs), a common ozone-depleting greenhouse gas that also contributes to climate change. UNDP and the Ministry of Environment collaborated in training officials from the national customs services and other chemical enforcement officers in order to eliminate the importation of CFC-based materials and to convert existing refrigerators that run on CFC into ones that run on ozone-friendly gases.

New types of policies, partnerships and instruments are needed to scale up present climate-change efforts. For example, almost all adaptation policies and 50 to 80 percent of greenhouse gas emission reduction decisions are taken by the local and regional authorities that often regulate carbon-intensive industries, including energy utilities and public transportation systems. They are also in charge of long-term planning and development. Therefore regional executive authorities are natural partners in planning and implementing effective responses to climate change challenges.

Based on requests from governments, in 2009, UNDP initiated a programme called the Territorial Approach to Climate Change. It is designed to strengthen the ability of sub-national and national governments to alter their path toward a low-carbon future through a mix of policies, skills and incentives. The goal is to influence the behaviour of institutions



and people and to encourage investments in climate-friendly businesses and activities. Initial activities have begun at the subnational level in countries including **Albania, Algeria, Colombia, Ethiopia, Morocco, Nigeria, Peru, Senegal, Uganda** and **Uruguay**.

#### ADAPTING TO THE EFFECTS OF CLIMATE CHANGE

A large part of UNDP's efforts in climate change is focused on helping vulnerable people and countries adapt to the realities of climate change, from the poor farmer who wants to grow more resilient crops to the family whose home has just been destroyed by a flood. Indeed, least-developed and low-income countries in particular require significant financing options, above and beyond existing ODA, to meet the costs of adapting to climate change.

Half of the 8 million people who live in the Pacific island region live within 1.5 kilometres of the shoreline, making it especially vulnerable to the effects of climate change. Over the last five years, UNDP has leveraged more than \$90 million to support adaptation initiatives in the Pacific. Results include the preparation of National Adaptation Programmes

*A family using solar energy in Mongolia. A joint UNDP-GEF programme is bringing electricity to the nomadic peoples of this remote region.*

of Action in five Pacific countries, including **Kiribati, Samoa, Solomon Islands, Tuvalu and Vanuatu**. These national studies use empirical, scientific evidence to determine what countries must do to reduce their vulnerability or increase their ability to adapt in the face of ongoing climate change effects. With these plans in hand, governments are able to determine concrete adaptation projects and organize donor assistance.

ing with the small farmers and pastoralists of **Niger's** drylands where increasing droughts and floods threaten to destroy the delicate ecosystem. Projects include reducing erosion around increasingly fragile water sources, experimenting with quickly maturing crop seeds and establishing seed banks that will help the country's farmers to even out their production despite an increasingly variable ecosystem. The Niger projects form part of a \$4.5 million programme supporting community-driven projects across 10 pilot countries between now and 2012.

# 85,200,000

Number of hectares of land in 453 protected areas around the world in which UNDP promoted sustainable tourism and the sustainable harvest of natural resources in 2009. An additional 197 protected areas, covering 4.2 million hectares, are in the process of being established.

In addition, UNDP is pursuing adaptation programmes in Africa, where countries may be least responsible for climate change but stand to suffer greatly from its consequences. In 2009, 20 African countries began work with UNDP to address the anticipated impacts of climate change, including 17 least developed countries (LDCs) that have successfully prepared their own National Adaptation Programmes of Action with UNDP's support.

Through its community-based adaptation programme, UNDP and its partners are work-

## PROTECTING BIODIVERSITY

The deterioration of ecosystems damages not just the global environment but it also destroys the livelihoods and security of those who depend on them, many of whom are the poorest and most vulnerable. Today, for example, 25 countries have virtually no forest cover at all; another 29 countries have less than 10 percent of their forest cover remaining; and 20 percent of all coral reefs have disappeared, disrupting important fisheries and exposing coastal zones, islands and the people who depend on them to increased erosion and flooding.

UNDP is committed to working with countries in the development of national biodiversity protection plans that take into account the livelihoods of the people who live within

*Barriers installed in Uzbekistan as part of an anti-desertification effort funded by UNDP, GEF and the Government.*





*UNDP and expert teams work to rehabilitate the ecosystem of the Prespa Lakes Basin, an area shared by Albania, Greece, and The Former Yugoslav Republic of Macedonia.*

threatened ecosystems. In **Mongolia**, UNDP and the Ministry of Nature, Environment and Tourism is working with herders in the Altai-Sayan Mountain region in the conservation of the natural resources upon which their livelihoods depend. Working with 80 community-based herder groups, the programme trains them in social mobilization and advocacy methods to bring about community-based conservation.

By the end of 2009, 45 government-registered herder groups had taken over the management of 376,500 hectares of threatened lands, where they conduct monitoring and conservation activities. As a result, the population of argali sheep and ibex goat has increased. The programme also provides income-generation activities by training farmers in the processing of wool products. In early 2010, large parts of Mongolia were struck by an extremely high level of snowfall that killed millions of heads of livestock. However, the Altai-Sayan programme's focus on both improved pasture management as well as alternative livelihoods helped to buffer herders in the region from the snow's worst effects.

UNDP, in partnership with GEF, has assisted the Government of **Kazakhstan** in improving its regulatory framework for managing the use of its precious, and threatened, wetlands. As a result, a 2006 law was passed by the Government, along with a 2009 amendment to the country's Water Code, detailing the preservation and management of this water-scarce country's network of wetlands, crucial for animal and plant biodiversity. Their water overuse for agricultural and recreational purposes, however, has led to the destabilization of the country's environmental system. In 2009, the Government expanded an existing wetlands reserve and set aside 111,500 hectares for the newly-established Akzhaiyk State Nature Reserve. ●

# UP CLOSE: BRAZIL

## ELIMINATING CFCs

### BRAZIL FACTS

1.87 tonnes of CO<sub>2</sub>  
emissions per capita  
90% literacy rate  
1,444 protected areas

Indiai lives in a small house with her family of five in a poor neighbourhood in the city of Sao Goncalo, Brazil. Like many low-income people in Brazil, the refrigerator she scraped together money to buy over a decade ago is now not only old, but also, because it is not energy efficient, a serious financial burden.

Indiai cannot afford to buy a new refrigerator, so she was selected to participate in an energy efficiency programme by her utility company, AMPLA. One afternoon in August 2009, Indiai received a surprise delivery of a new, energy-efficient refrigerator. The truck not only dropped off the new appliance, but took away her old one.

The old refrigerator would usually be brought to a local dump, where the chlorofluorocarbon (CFC) gas contained in its insulating foam and compressor would leak into the atmosphere, adding to Brazil's environmental burden. These gases contribute to the depletion of the ozone layer and cause global warming. In fact, one ton of CFC can warm the atmosphere 10,000 times more than one ton of CO<sub>2</sub>.

However, Indiai's old refrigerator was brought to a CFC-extraction workshop, the first of several stops it would make in order to strip it of all CFCs and then safely dispose of its carcass.

This successful overlap between poverty reduction, greenhouse gas elimination and the green economy — the step-by-step disposal of Indiai's old refrigerator is part of a new, growing industry in Brazil — is the culmination of a two-decade partnership between UNDP and the Government of Brazil. That partnership began in 1987 with the Montreal Protocol, an international treaty calling for the elimination of ozone-destroying gases that was signed and ratified by 196 nations. With the financial support of the Multilateral Fund for the Implementation of the Montreal Protocol, GEF and a variety of donors, UNDP has

been assisting countries as they work to comply with the Protocol's control measures for the past 20 years.

UNDP has been managing a global programme of over \$500 million that provides financial and technical assistance to more than 100 countries, enabling them to phase out the use of ozone-depleting substances in everything from refrigerators and air conditioners to aerosol containers and crop fumigators. Working with a broad range of partners, including government, industry, academia and civil society, UNDP's Montreal Protocol programme has eliminated over 63,000 metric tonnes of ozone-depleting gases from the earth's atmosphere.

As a result of UNDP's efforts in Brazil — in partnership with the Government and the private sector — more than 10,000 metric tonnes of ozone-depleting substances have been completely phased out, putting Brazil three years ahead of the Protocol's schedule. UNDP helped Brazil mobilize resources from international finance mechanisms like the Multilateral Fund and GEF; it also assembled a team of scientists, engineers and ozone and climate change experts to initiate and sustain this effort.

Today, the production, import and use of CFCs in the manufacturing of new refrigeration equipment in Brazil has come to an end. Nevertheless, there are still an estimated 11 million old refrigeration units in Brazil containing CFCs, representing a global warming potential equivalent to 33 million tonnes of CO<sub>2</sub> should they be allowed to leak into the atmosphere. UNDP is now working closely with the Government and private and public partners on a nationwide initiative to ensure the safe extraction and destruction of CFCs from old appliances.

When, in 2000, Brazil passed a law requiring power distributors to increase energy efficiency in poor households, power companies such as AMPLA realized

*A resident of Brazil's Saracuruna district receives a new CFC-free refrigerator as part of a private-sector energy efficiency programme.*



that replacing old, inefficient refrigerators with new, CFC-free units would generate energy savings and ensure that low-income customers would be able to pay their electricity bills. UNDP helps private companies locate innovative finance solutions to pay for the proper management and disposal of CFCs from old appliances including the refrigerators being collected through this programme. For example, UNDP supplies the necessary equipment, including special recovery toolkits, to the dismantling shop that received Indiai's old refrigerator. UNDP also provides training so that workers can safely handle and extract CFCs from the refrigerator's compressor.

As a result of the partnerships being brokered through UNDP's efforts to elimi-

nate CFC consumption in Brazil, a new, greener economy is being developed that takes advantage of opportunities like carbon financing. That economy is part of a chain that begins with energy efficient, CFC-free refrigerators for people like Indiai and her family, and ends with the total elimination of CFC emissions in Brazil.