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Cover photo: Burkina Faso, children collecting water,

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Children on the floodplain in Bangladesh

Photo: Nasimul Haque



### Richard Sandbrook

**August 13 1946 – December 11 2005**

It is with a great sense of personal and professional sadness that we report the death of Richard Sandbrook, one of the founding editors of *Tiempo*.

We first discussed with Richard the project that would become the *Tiempo* Programme in 1989 and continued our collaboration with him as co-editors of the bulletin through the 1990s. His vision

of a global climate information project that would serve the diverse interests of the developing world and promote global dialogue and understanding has guided the *Tiempo* Programme's development over the past 15 years.

We will miss Richard's inspiration, his wisdom, his integrity and his mischievous and irreverent sense of humour. Most of all, we will miss a valued friend.

The *Tiempo* Editorial Team

# Solar water heating in Brazil

**Steven Kaufman, Samuel Milton and Délcio Rodrigues describe the potential of solar water heating for the Clean Development Mechanism in Brazil**

Small-scale renewable energy projects can make significant contributions to global climate protection while playing an important role in improving the quality of life for people in poor countries. Solar water heating is particularly promising in this respect. It is one of the simplest and least expensive ways of harnessing renewable energy and can be a comparatively cost-effective way of reducing greenhouse gas emissions. If carbon trading and other mechanisms can help disseminate solar water heating technologies, they could become an important component of climate change mitigation efforts.

Water heating typically constitutes a large proportion of energy consumption in homes and businesses, in some cases 30 per cent or more. When solar water heating systems supplement or replace conventional water heaters they displace some or all of the fuel that would have been used in those systems.

The amount of greenhouse gases emitted when these fuels are burnt varies, but for water heating in many locations, it is generally high. Using solar water heating systems also reduces emissions of other pollutants, thereby improving local air quality.

In addition to providing environmental benefits, solar water heating can also contribute to economic development. For example, manufacturing solar water heating equipment need not be very capital-intensive, and

can therefore occur in many poor nations, small and large alike. Greater adoption of the technologies can provide substantial new job opportunities in manufacturing, sales and business administration, as well as in system design, installation and maintenance. Additional local economic benefits include financial savings from the reduced need for conventional fuel, and payback periods of three years or less in some locations for the equipment.

Despite the potential environmental and economic benefits of solar water heating, many barriers still hinder the adoption of these technologies. These include high upfront system costs compared to conventional alternatives, a lack of available financing for solar water heating businesses and consumers, insufficient quality control and a lack of awareness about the favourable lifecycle economics of the technologies compared to conventional water heaters.

## MAIN POINTS

- **The authors discuss** how solar water heating can contribute to climate protection and improve the quality of life of poor country citizens.
- **The potential of** solar water heating technologies in Brazil

and barriers to their increased adoption are explained.

- **The boost** that carbon finance from the Clean Development Mechanism could provide is discussed.

## Solar water heating in Brazil

In Brazil, electric showers are the main way of heating water in the residential market. According to the federal electric company, Eletrobras, electric showers are installed in more than 67 per cent of homes, and account for between six and eight per cent of Brazil's total electricity consumption. It only costs around US\$ 10 to install an electric shower heater in a home, but this then necessitates an investment of around US\$ 900 in electricity generation and distribution. One reason for this expense is that water heaters are used primarily during peak hours, and this affects generation capacity requirements and transmission and distribution infrastructure. The use of electric showers is responsible for more than 18 per cent of Brazil's national electricity demand during peak hours.

The use of electric shower heaters is likely to increase under a business-as-usual scenario. There is a clear relationship between rising income and energy consumption for heating in Brazilian households connected to the grid. The roughly 30 million people currently without electricity will likely also demand electric hot water systems when they eventually receive electricity.

This trend towards greater use of electric showers is of concern from the point of view of the investments needed for new electricity generation, and also from an environmental perspective. Increasing electricity generating capacity in Brazil often results in extensive environmental destruction. It commonly

involves construction of new hydroelectric facilities, where the greatest remaining potential is in the Amazon, or hydrocarbon-fired thermoelectric plants that contribute to local pollution, global warming and other environmental problems.

At the same time, Brazil has an average of 280 days of sunshine per year, which could generate up to 15 trillion MWh, or 50,000 times the amount of electricity consumed nationally in 1999. The country's domestic solar water heating manufacturers generally produce high quality equipment at a reasonable price, and given Brazil's ample solar resources, investments in solar technologies for water heating enable relatively fast guaranteed returns.

However, the use of solar thermal technologies is not wide in the Brazilian market, despite certain current tax exemptions. Brazil's existing solar thermal collectors total approximately 1,800,000 m<sup>2</sup>, which is small compared to countries like the United States and Canada. It is also far less than Barbados, where nearly 40 per cent of homes use solar water heating systems, and Israel, where the use of solar energy is obligatory for newly constructed homes.

There are several barriers to the increased use of solar thermal technologies in Brazil. The main obstacles stem from high up-front system costs, a failure to appropriately account for the social and environmental costs of conventional electrical generation, non-supportive building codes and constraints

on the availability of financing (housing financing bodies are often unfamiliar with solar thermal technologies and have little sensitivity to energy and environmental issues). There is also a lack of awareness amongst architects, engineers, builders and other decision-making professionals in the building construction sector about the technologies' multiple advantages and characteristics, and ways to meet aesthetic challenges.

## Leveraging carbon finance for solar water heating

In response to concerns about climate change and the social and environmental impacts of current trends in electricity generation, transmission and use, the Vitae Civilis Institute in São Paulo is leading an initiative to promote the use of solar thermal collectors to replace electric showers for residential water heating in Brazil. Through a dialogue between different stakeholders, Vitae Civilis has identified and is working to promote strategies for public policy interventions in the water heating services market to eliminate the obstacles to increased use of solar thermal technologies.

At the same time, the non-governmental organization Green Markets International has been assessing the potential contribution of solar water heating to climate protection and development. As part of this it has launched an initiative to boost solar water heating markets in selected locations, for example by facilitating access to carbon

finance. With support from the Blue Moon Fund, Renewable Energy and Energy Efficiency Partnership and the Oak Foundation, Green Markets and Vitae Civilis are working together to promote innovative financial mechanisms such as carbon finance, and business structures involving energy services companies and fee-for-service arrangements. The aim is to accelerate the use of solar water heating in Brazil, and, in collaboration with other organizations, in the Caribbean region and elsewhere.

For developing nations such as Brazil, the Kyoto Protocol's Clean Development Mechanism provides an opportunity for carbon trading to support both environmental protection and economic development. The emerging international market for greenhouse gas emission reduction credits offers an important opportunity to provide funding and help to overcome obstacles to the use of solar water heating technologies. Even using conservative values of US\$5 per ton of carbon dioxide and a ten-year crediting period, solar water heating projects under the Clean Development Mechanism could generate revenue equal to over ten per cent of the original cost of a solar water heating system. With higher carbon prices and longer crediting periods, the potential contribution could be far greater.

Revenue from emission reduction credits can help overcome many of the obstacles to wider use of solar water heating technologies. Foremost, carbon finance can help to

increase the affordability of solar water heating systems for their users and to enhance the viability of solar water heating projects and businesses. Financial arrangements that help make systems more affordable, such as third party financing, and energy services company or fee-for-service operations, could also support increased use of solar water systems with additional financing from the sale of certified emission reduction credits to creditworthy buyers.

Carbon trading also has the potential to help overcome institutional, technical and other barriers to the development of solar water heating markets. Solar water heating projects could use carbon finance for market development, training, awareness raising and other activities that could help overcome the obstacles to broader use of solar water heating. Depending on the outcome of Clean Development Mechanism Executive Board deliberations regarding the eligibility of projects involving public policy measures, a variety of public sector interventions such as the establishment and enforcement of quality standards and revisions to building codes could also potentially benefit from Clean Development Mechanism participation. But even without these benefits, given the substantial contribution of water heating to energy use and levels of carbon used for water heating in many countries, improved solar water heating markets can generate significant climate protection benefits. ■

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## FURTHER INFORMATION

● **On the Web:** For more information visit [www.green-markets.org](http://www.green-markets.org) and [www.vitaecivilis.org.br](http://www.vitaecivilis.org.br).



# Making MEAs work for the poor

**The Watson International Scholars of the Environment explain how to make Multilateral Environmental Agreements (MEAs) work better in developing countries**

**M**ultilateral environmental agreements (MEAs) are the preferred tool of the international community to address environmental issues that cross national borders.

The first MEAs were agreed in the early 1900s, and since the 1972 Stockholm Conference on the Human Environment many more have been negotiated. There are now over 700. Unfortunately, progress in negotiating MEAs has not been matched by tangible progress in improving environmental quality in developing countries. Preparatory assessments for the 2002 World Summit on Sustainable Development revealed that few advancements had been made in the priority areas of water, energy, health, agriculture and biodiversity over the past 30 years. This raises two questions. Why is progress towards sustainable development so slow? And how can we make

MEAs more effective as a tool for sustainable development?

This article offers a bottom-up, agent-focused analysis of the challenges of implementing MEAs in developing countries to try and answer these questions. It argues that MEA performance in developing countries can be enhanced in two ways. First, MEAs can-

## MAIN POINTS

- **The authors argue** that progress in negotiating MEAs has not been matched by improvements in environmental quality in developing countries.
- **They suggest** that top-down global recommendations on MEA implementation neglect national-

level variation in capacity to implement MEAs in developing countries, and offer a bottom-up analysis of the challenges.

- **Six recommendations** to make MEAs more effective as a tool for sustainable development are provided.

not lose sight of the need to reduce poverty while fostering environmental protection. Second, broadening participation in MEA design and implementation will reinforce their potential. It offers six recommendations on short-term, feasible improvements that will enhance MEA effectiveness in developing countries.

This bottom-up, agent-focused analysis is intended to supplement current top-down approaches that assess the challenges facing MEAs from a global policy perspective. Top-down recommendations address challenges such as balancing centralization and flexibility in global environmental governance, inadequate financing for sustainable development and the contradictory tendencies of international trade/finance regimes and environmental regimes. However, such global recommendations neglect national-level variation in capacity to implement MEAs, and ignore the challenges facing environmental

practitioners in developing countries. This article aims to redress this imbalance.

### Addressing poverty

The causes of poverty in developing countries are complex and multifaceted. The data, however, are clear: over one billion people live on less than US\$1 per day. MEAs alone cannot adequately address the causes and effects of poverty. A real commitment to poverty eradication must tackle macro-structural global inequalities, including unbalanced trade regimes, developing country debt and unequal representation in global governance organizations. However, MEAs do have potential. They can support sustainable development as long as they keep sight of the need to reduce poverty while enhancing environmental protection.

Poverty creates unique challenges for successful MEA implementation. First, MEAs must overcome the negative perception that they only provide solutions to protect the environment whilst reducing access to environmental resources and services by people already struggling for their livelihoods. Second, developing country governments are reluctant to allocate precious funds to implementing MEAs when wealthier industrialized countries are slow to fulfil their own environmental commitments.

Developing country skepticism about MEAs reflects the gaps, both real and perceived, between the agendas of environmental protection and poverty eradication. The

design and implementation of MEAs must directly address these gaps and recognize the links between poverty eradication and environmental protection in poorer nations.

**Recommendation 1:** *MEA motivated environmental protection schemes should acknowledge the importance of poverty and should direct accrued monetary benefits back to local communities.*

### Broadening participation

Broad participation in decision-making is a prerequisite for sustainable development. This article's bottom-up, agent-focused approach identifies the key stakeholder groups that should be involved in MEA design and implementation. It analyses the barriers to broad participation from the perspective of developing country civil servants, non-governmental organization (NGO) advocates, business leaders and environmental scientists, who must all fight for access to international decision-making forums. Their exclusion is integrally tied both to achieving sustainable development and the disappointing performance of MEAs.

### Challenges facing environmental ministries

National governments are the interface between the international arena, where MEAs are negotiated, and local communities, where MEAs are converted into action. They therefore play a crucial role in facilitating MEA implementation. National gov-



**Boy collecting water, Sierra Leone**

Photo: ©2002 EC/O.Lehner

ernments, however, are not unitary actors with perfect information. A country, led by its environmental ministry, may sign MEAs without an awareness of the full complexities of implementation. The environmental ministry must then coordinate and compete with the economics, finance, energy, agriculture, forest, fisheries and foreign affairs ministries in the complex process of converting an MEA into tangible programmes.

Many developing country governments lack coordination between ministries. Few

governments establish a national task force for each MEA and there may not be systematic lines of inter-ministerial communication for information sharing. For example, in the Philippines, coordination between the ministries of energy and environment is minimal, so public discussions conducted by energy officials on new technologies do not take into account their harmful effects on the environment.

MEAs can also cause internal power and resource struggles between government ministries. Sometimes the implementing agency is assumed to receive training opportunities and financial and technological benefits from MEA secretariats and/or international agencies like the World Bank or Global Environmental Facility, and is accused of not sharing resources. Finance ministries can also exert power over other agencies and impede access to funds needed for MEA implementation.

Developing country environmental ministries often suffer from a high turnover of professional staff. Government ministry organizational structures inhibit the advancement of mid-level professionals, provide few opportunities for upgrading skills and offer low salaries. There is little to support the career path of an environmental bureaucrat. For example, federal or provincial level civil servants in Argentina have had no promotions or salary increases for 12 years. As a result, environmental professionals leave government service and seek opportunities

in the private sector or international organizations. Government agencies then rely on new inexperienced staff, with limited knowledge of MEA goals and requirements.

**Recommendation 2:** *Government cabinets should formalize existing ad hoc MEA national coordinating committees. Such political support at the ministerial level will improve coordination, assure the commitment of relevant agencies to their responsibilities in MEA implementation and compliance, and enhance the retention of experienced professional staff.*

### **Excluded local government**

All international initiatives and agreements require local action. Local government is important for facilitating such action to support MEAs. The 1992 United Nations (UN) Conference on Environment and Development first acknowledged the critical implementing role of local government by agreeing that “because so many problems and solutions being addressed by Agenda 21 have their roots in local activities, the participation and cooperation of local authorities will be a determining factor in fulfilling its objectives” (Agenda 21, Chapter 28).

Despite this recognition, local government is still working to establish formal and effective links with the UN, and to secure acknowledgement of its key role in global development. Establishing the UN Advisory Committee of Local Authorities (UNACLA) in January 2000 was an important first step in this regard. UNACLA aims to strengthen dia-

logue between national governments and local authorities and is the first formal advisory body of local authorities that has been attached to the UN. UNACLA is a significant step forward, but local government continues to have little institutional influence on the UN system. During international debates such as the World Summit on Sustainable Development, local government was excluded from the official negotiation process. Instead, it was included as one of the nine major civil society groups.

This lack of UN recognition inhibits meaningful local government participation in MEA negotiations. It is also short-sighted given that local government is best placed to assess what can realistically be achieved at local levels and to identify what resources and tools are required for implementation. The problem is compounded by a shortfall in the resources and autonomy assigned to local government by national governments. Local governments are often expected to accept responsibility for implementing MEAs, which they were not party to negotiating, without additional human, financial or legislative resources. MEAs therefore become unfunded mandates. For example, the new South African Biodiversity Act (a response to national ratification of the Convention of Biodiversity) contains onerous administrative and implementation obligations for local government, with no mention of where the resources to fulfill these obligations will come from. South African local government





**Rural community, Mali**

Photo: © 2003 EC/G.Barton

is short of funds and skills, so the result will undoubtedly be local inaction.

**Recommendation 3:** Echoing the recommendation of the Local Government Declaration to the World Summit on Sustainable Development, the

*UN and the international community should “recognize that local government is an equal sphere of government, vital to the success of sustainable development and good governance, and not a non-governmental or sectoral group.”*

*National governments should also “work with local governments and their national and international associations in order to strengthen local government’s capacity, competences and resources (including local leadership develop-*

ment)... [to meet]... the challenges of sustainable development and urbanization” and to “involve local government as equal partners in action-oriented national sustainable development strategies and alliances”.

### **Southern NGOs**

Over the past 20 years, NGOs have grown to hold a unique position in global governance. Many policy-makers feel NGOs are the only way to link the global with the local and provide a democratizing influence on international politics. NGOs have an important role to play, but overly optimistic assess-

NGOs as actors in international politics, and there were no Iranian NGOs at the Rio Earth Summit in 1992. The situation is changing and Iran now has more than 500 environmental NGOs. Some 44 members of Iranian NGOs participated in the 2002 World Summit for Sustainable Development.

NGOs are viewed as representing the millions of local communities around the globe in multilateral environmental politics. However, relations between NGOs and local communities are complex. In many rural and urban centres, practitioners distinguish between NGOs and social movements and

public pressure on government agencies to fulfill their mandates. However, power imbalances can limit effective monitoring. Governments can censor information produced by NGOs or suppress NGO activities. Government agencies may also absorb NGOs by employing their staff. For example, in Mexico in the early 1990s, the small number of NGO practitioners working on climate issues were hired to organize the social participation section of Mexico's environmental agency.

**Recommendation 4:** *Continue and increase involvement of NGOs and social movement groups, especially from under-represented areas, in multilateral environmental politics. The NGO sector should also develop a code of conduct, to be enforced by peer monitoring, to prevent it becoming disconnected from the communities it serves.*

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## **“NGOs have an important role to play, but overly optimistic assessments of their potential ignore their role as political actors”**

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ments of their potential ignore their role as political actors.

NGOs are not uniformly distributed across the globe. Developed country NGOs often dominate international forums. They can access funds more easily and obtain the visas needed to attend international conferences. They have more staff and resources to lobby on environmental issues. In contrast, NGOs in poorer countries like Brazil, India and South Africa tend to focus on domestic poverty and environmental issues. Other developing countries have few NGOs. For example, Iran's isolation from the rest of world after the Islamic Revolution disempowered Iranian

feel NGOs are disconnected from the people they claim to represent. At worst, NGOs are used to infiltrate and gather information on local communities. NGOs may also come into conflict with other community-level actors over the distribution of scarce funds. As international agencies abandon state channels for disbursing funds, NGOs may increasingly act as rent seeking gatekeepers. For example, NGOs linked to the UN have monopolized most Global Environmental Facility financial resources in Zimbabwe.

NGOs are often expected to monitor state agency implementation and enforcement of MEAs. This can be constructive, generating

### **The absent private sector**

Developing country private sector actors are strikingly absent from multilateral environmental governance forums. This has three negative consequences for MEA effectiveness. First, private sector resources that could help meet sustainable development goals are untapped. Second, other stakeholders do not benefit from information held by the private sector. Third, developed country industry groups dominate private sector inputs on MEA design and implementation.

Climate change politics in the Philippines offers an instructive example. There is currently a growing gap between energy demand and supply in the Philippines. Decisions are

therefore being made on new energy supply capital investments. From a sustainable development perspective, these decisions should reflect the environmental goals of the Framework Convention on Climate Change and the Kyoto Protocol. Unfortunately, there has been little dialogue between the energy and environmental sectors. For example, firms engaged in energy production in the Philippines are rarely invited to meetings regarding project development under the Clean Development Mechanism (CDM) of the Kyoto Protocol. They therefore have few opportunities to articulate their needs, and multinational participants in the international climate debates dominate inputs on the opportunities and challenges of the CDM project approval process.

**Recommendation 5:** *There should be consistent developing country private sector engagement in international, national and local sustainable development initiatives. As a condition of participation in environmental forums, developing country private sector actors should promote environmental issues within regional and global trade alliances.*

### Empowering southern scientists

Developing country scientists struggle to participate in multilateral environmental decision-making due to a lack of research funding and the contribution that they can make to the policy process. In recent decades, government research funding, which is already limited compared to industrialized

country research funding, has significantly declined. For example, the annual government budget allocated to the University Abdou Moumouni of Niamey in Niger (the only university in a country of 11 million people) was approximately US\$12 million in 1985 and less than US\$6 million in 2004. International collaborations offer some additional sources of funding. However, new technologies for collecting environmental data, such as remote sensing, are also replacing field research by developing country scientists.

A second challenge facing developing country scientists and policy-makers is the lack of publicly accessible data on environmental quality. Few centralized institutions serve as clearinghouses for environmental data or coordinate research with policy demands. Correspondence between scientists and those translating MEA goals into local programmes is therefore often lacking. For example, in South Africa, the Durban local government has contracts with private research firms because local university research institutions do not work on topics relevant to local planners.

**Recommendation 6:** *Increased investment in developing country scientific research and increased engagement of southern scientists in international politics is needed. To this end, national governments should compile publicly available, issue-specific databases of local expert consultants. These can improve communication among research scientists and between scientists and government policy-makers.* ■

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## ABOUT THE AUTHORS

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## FURTHER INFORMATION

● **On the Web:** A database of international environmental agreements is available at <http://iea.uoregon.edu>.

# Priorities for the poorest

## CALL FOR ACTION

**Nasimul Haque explains the needs and concerns of poor and vulnerable people who are already experiencing the impacts of climate change locally.**

### NEWS

This article explains what priority actions are needed to build the resilience of the poorest and most vulnerable. It advocates a fundamental shift in our collective mindset to enable the most vulnerable to face current and future challenges using their own approaches. It explains the expectations that vulnerable people have from national and international actors and institutions to help them in their struggle for resilience. Priority actions are proposed to national and international policy-makers for consideration and action. Enabling the poor and vulnerable to access resources and services to address climate change related impacts and risks is their right. They do not want charity but rather what is owed to them, as enshrined in the United Nations Framework Convention on Climate Change (UNFCCC).



**Bangladeshi woman with fishing nets**

Photo: Nasimul Haque



### **Priority one: commitments to mitigation**

Establish a mitigation regime with larger greenhouse gas emission reduction targets to reduce the adverse impacts of climate change on future generations. Binding commitments from developed country parties to the UNFCCC are needed to combat the adverse impacts of climate change currently experienced by the poor and vulnerable.

### **Priority two: information access**

The poorest and most vulnerable communities have the right to access information early. Real adaptation will occur when they can secure access to the resources and services they need in a timely and adequate manner. This includes access to the right information to help them make decisions thereby building their resilience in the most cost effective way.

### **Priority three: effective participation**

To make good decisions on how to build resilience and take adaptation measures, the poor must participate meaningfully and effectively in all decision-making that addresses vulnerability reduction and adaptation needs.

### **Priority four: meeting resource needs**

Reducing vulnerability to climate change impacts on the ground can be achieved once the appropriate mechanisms, instruments and arrangements are in place to enable the



**Fishermen in Bangladesh**

Photo: Nasimul Haque

most vulnerable to match their needs and response strategies with their resources. The Global Environment Facility should accept and prioritise local mechanisms to help the most vulnerable access the resources and capacity building they need.

### **Priority five: supporting bottom-up approaches**

Parties to the UNFCCC must recognise and support bottom-up approaches to taking meaningful and effective action on adaptation. This process should start with vulner-

able people recognizing the climate risks relevant to their survival and livelihood security. Prevailing 'project' and 'study' based approaches must be replaced with approaches that support spontaneous participation and decision-making by the poor and vulnerable.

● **Further information:** Nasimul Haque, 'Know Risk, No Risk' campaign secretariat at the Sustainable Development Resource Centre, House 11, Road 4, Dhanmondi, Dhaka 1205, Bangladesh. Email: [sdrc@cgscomm.net](mailto:sdrc@cgscomm.net)



## TROPICAL STORMS

**The 2005 Atlantic hurricane season broke a number of records.**

Twenty-six tropical storms formed, compared to the previous high of 21 in 1933; 13 developed into hurricanes; four major hurricanes made landfall in the United States; five storms formed in July; Hurricane Dennis was the most powerful July storm recorded; three hurricanes reached Category Five status; Hurricane Vince became the first known tropical storm to hit Spain and Portugal and Hurricane Wilma was the most powerful hurricane known to have formed in the Atlantic Basin.

*Read more:*  
<http://www.tiempocyberclimate.org/newswatch/arnews05.htm#051211>

## WARMEST YEARS

**2005 will be the second warmest year since 1860 according to the provisional global surface air temperature estimate for the year released by the United Kingdom Met Office and the University of East Anglia (UEA).**

1998 remains the warmest year on record. Eight of the ten warmest years have occurred within the past ten years. Over the northern hemisphere, 2005 has been the warmest since 1860. "The data also show that the sea surface temperature in the northern hemisphere Atlantic is the highest since 1880," said David Viner of UEA.

*Read more:*  
<http://www.tiempocyberclimate.org/newswatch/arnews05.htm#051225>

## VILLAGERS MOVED

**One hundred villagers from Lateu, in northern Vanuatu, have been forced to move to higher ground by recurrent flooding, with the coastline eroding two to three metres a year.**

According to Taito Nakalevu of the Pacific Regional Environment Programme, "We are seeing king tides across the region flooding islands. These are normal events, but it is the frequency that is abnormal and a threat to livelihoods. People are being forced to build sea walls and other defences not just to defend their homes, but to defend agricultural land."

*Read more:*  
<http://www.tiempocyberclimate.org/newswatch/arnews05.htm#051218>

## DRIER SAHEL

**A new study predicts that the Sahel region of north Africa will become drier as global warming develops.**

"Our model predicts an extremely dry Sahel in the future," reports Isaac Held of the United States National Oceanic and Atmospheric Administration. "If we compare it against the drought in the 1970s and 80s, the late 21st century looks even drier - a 30 per cent reduction in rainfall from the average for the last century."

*Read more:*  
<http://www.tiempocyberclimate.org/newswatch/arnews05.htm#051211>

## DISEASE INCREASE

**People living in sub-Saharan Africa and along the Indian and Pacific coasts are likely to be most affected by the health impacts of climate change.**

The finding results from a new study led by Jonathan Patz of the University of Wisconsin-Madison. "Many of the most important diseases in poor countries, such as diarrhoea and malnutrition, are highly sensitive to climate," said co-author Diarmid Campbell-Lendrum of the World Health Organisation. "The health sector is already struggling to control these diseases and climate change threatens to undermine these efforts."

*Read more:*  
<http://www.tiempocyberclimate.org/newswatch/arnews05.htm#051127>

# Adaptation in the Cook Islands

**Imogen Ingram describes an innovative design for coastal defence as an adaptive measure to climate change for Small Island Developing States**

**T**he Cook Islands is an archipelago of 15 islands spread over more than 1,000 kilometres from the Tropic of Capricorn in the Southwest Pacific. Similar to its nearest neighbours, French Polynesia, Niue, Fiji and Samoa, the Cook Islands' most severely-felt impacts of climate change are caused through inundation by sea surge and flooding from heavy rain during severe weather events.

Flooding of low-lying areas and invasion by very high seas have led to coastal erosion and consequent loss of land. Cyclone Martin, which struck Manihiki Atoll in the Cook Islands during 1997, caused waves to inundate the atoll and resulted in the loss of 19 lives and of 95 per cent of all buildings. Most of the remaining residents were evacuated to Rarotonga, the main island, for up to 12 months while some residents went overseas and have never returned. Future impacts will

include longer dry periods resulting in water shortages and threats to food security.

The advice we have received suggests two approaches for affected Small Island Developing States to adapt to climate change – bearing in mind the cross-cutting issues of methodologies, data capture and modelling, and integration into sustainable development.

First, we need to improve our ability to cope with or respond to the impacts of climate

change through gathering of information, researching, making plans, forming networks and discussion fora. For island residents, this translates as assessing vulnerability and impacts, and we hope for rapid vulnerability assessment methodologies in view of the prevailing threat to many island nations.

Second, we need to implement adaptation activities through laws or policies, organizational change or individual action. For island residents, this means adaptation measures and planning. With this in mind we advocate the implementation of actual projects such as pilot demonstrations and case studies so that we can 'learn by doing' instead of awaiting the result of the stock-taking process.

John Hay of the International Global Change Institute, at the University of Waikato, New Zealand, carried out an intriguing cost-benefit analysis in 1994 of some of the practical adaptation projects that the Cook Islands might implement. His analysis showed that

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## MAIN POINTS

- **The author discusses** an innovative approach to coastal protection in the Cook Islands.

- **She describes** the Concrete Coastal Protection Devices being trialled in

vulnerable locations in the archipelago.

- **Experience indicates** that these structures can dissipate wave energy at a lower cost than conventional approaches.



**The breakwater concrete coastal protection device is a three tier coreless set-up mounted on beams to allow free flow of water both underneath and through the units. This set-up showed very successful results during extensive tests in wave tanks in the University of New South Wales Water Research Laboratories, and had since performed extremely efficiently during five hurricanes.**

Photo: © D Dorrell

deepening the streams around the island of Rarotonga by 900mm would significantly reduce flooding from heavy rain and improve drainage. The costing for a project like this was considerably less than some of the other options, for example, increasing the

size of bridge culverts, and benefited many more residents. This could be one example of 'learning by doing' which could be implemented promptly.

James Carley, a senior project engineer at the University of New South Wales Water

Research Laboratory in Australia, used computer simulations to assess what the impact of Cyclone Meena on Rarotonga during February 2005 would have been had the cyclone hit the island directly. The results of the simulations showed that giant waves would have crashed through the business district of the island.

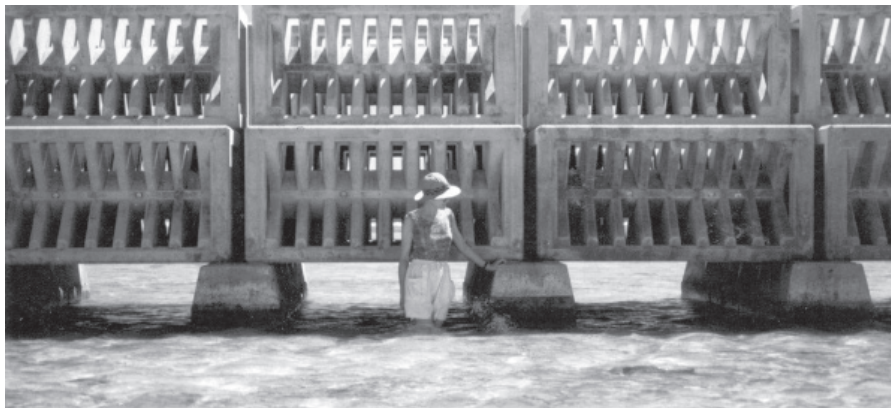
During October 2005, James Carley researched the usefulness of an innovative concrete coastal protection device (COPED) which had been designed by Don Dorrell of Rarotonga. There are several trial COPEDs installed around Rarotonga, and Don Dorrell is confident that they reduce the energy of storm waves.

Patented internationally in 1993, these COPEDs may well become a crucial compo-



**Prior to the installation of the concrete coastal protection device abutting the seawall at Rarotonga International Airport, the road behind was constantly being destroyed during hurricanes**

Photo: © D Dorrell



**Concrete coastal protection device, Raratonga International Airport**

Photo: © D Dorrell

nent of coastal defence if widely adopted at vulnerable spots. There are three main designs. One tall version has been installed to protect Rarotonga airport, where reclaimed land projects into the lagoon. A second version was successfully trialed that resulted in significant sand accretion, as well as dissipation of the energy of waves. The third design that Don Dorrell has recently worked on is a hinged version that is raised in the event of a storm.

The photos accompanying this article show the breakwater COPED protecting Raratonga International Airport. The COPEDs use approximately one quarter of the concrete required for alternative breakwaters and the crest levels can be significantly lower.

There has been a lot of interest in the

COPED units, both locally and internationally. The results of further modelling and testing at the University of New South Wales Water Research Laboratory in Australia are keenly awaited by residents. If the devices prove to be effective in the laboratory, then their construction and installation would constitute a very important pilot project.

Establishing COPEDs at vulnerable points of coast would constitute a significant adaptation measure which would greatly improve the resilience of Small Island Developing States to major climate change impacts. ■

## ABOUT THE AUTHOR



● **Imogen Ingram** is *Te Pa Mataiapo*, a traditional leader, in Raratonga involved in both climate change and development issues.

## CONTACT

● **Imogen Ingram**, Te Pa Mataiapo, PO Box 492, Raratonga, Cook Islands.

**Fax:** +682-22128

**Email:** imogen@oyster.net.ck

## FURTHER INFORMATION

● **In the Cyberlibrary:** The Tiempo Climate Cyberlibrary presents a listing of theme sites on Small Island Developing States at [www.tiempocyberclimate.org/portal/t3637web.htm](http://www.tiempocyberclimate.org/portal/t3637web.htm).

# CONFERENCES

## EVENTS

### 17th Global Warming International Conference & Expo (GW17) Miami, USA

20-04-2006 to 21-04-2006

Will include a wide range of oral and poster presentations as well as the Expo. Main themes for presentation and discussion include: sustainable environment and health for the 21st century; remote sensing and global surveillance; extreme events and impacts assessment; clean energy technology; greenhouse gas and ecosystems; global warming and the oceans; education - global change and sustainable development, amongst numerous other themes.

*Details: GWXV11 Secretariat, PO Box 50303, Palo Alto CA 94303, USA. Fax: +1-630-9101561. Email:*

*gw17@globalwarming.net*

*On the Web: [www.globalwarming.net](http://www.globalwarming.net)*

### Challenges in Coastal Hydrology & Water Quality

Baton Rouge, USA

21-05-2006 to 24-05-2006

Conference will be the 25th anniversary meeting of the American Institute of Hydrology. Main aim is to provide an international forum for the dissemination and exchange of information in coastal hydrology, hydraulics and water quality. The event will include exhibition booths, field trips and special prizes for Best Student Paper and Best Student Poster.

*Details: Conference Organizer, American Institute of Hydrology, 300 Village Green Circle, Suite 201, Smyrna, GA*

*30080, USA. Fax: +1-770-4386172.*

*Email: [aihydro@aol.com](mailto:aihydro@aol.com)*

*On the Web: [www.aihydro.org/conference2006](http://www.aihydro.org/conference2006)*

### 2006 World Environmental & Water Resources Congress

Omaha, USA

21-05-2006 to 25-05-2006

Organized by the American Society of Civil Engineers (ASCE). Main topics for presentation and discussion at the congress include: adaptive management in water and natural resources; applied research in water, wastewater and stormwater; environmental processes; climate, meteorology and water resources; irrigation and drainage; hydrology and its application in water resources and management; and, education and research, amongst others. *Details: 2006 Congress Organizer, ASCE, 1801 Alexander Bell Drive, Reston, Virginia 20191-6222, USA. Fax: +1-703-2956222. Email: [rrgraham@pbsi.com](mailto:rrgraham@pbsi.com)*

*On the Web: [www.asce.org/conferences/jewri2006](http://www.asce.org/conferences/jewri2006)*

### 6th International Conference on Urban Climate

Goteborg, Sweden

12-06-2006 to 16-06-2006

Co-sponsored by the International Association for Urban Climate, World Meteorological Organisation and Goteborg University. Conference will provide an international forum for the world's urban climatologists to meet and discuss current research develop-

ments as well as the application of climatic knowledge in the design of better cities. Will cater to meteorologists, hydrologists, climatologists, ecologists, engineers, architects and planners and other interested individuals. *Details: Urban Climate Group, Physical Geography, Goteborg University, Box 460 SE-405 30, Goteborg, Sweden. Fax: +46-31-7731986. Email: [icuc6@gvc.gu.se](mailto:icuc6@gvc.gu.se)*

*On the Web: [www.gvc.gu.se/icuc6/index.htm](http://www.gvc.gu.se/icuc6/index.htm)*

### Computable General Equilibrium Modeling in Environmental & Resource Economics

Venice, Italy

25-06-2006 to 01-07-2006

Organized by the European Association of Environmental and Resources Economists (EAERE), the Fondazione Eni Enrico Mattei (FEEM) and the Venice International University (VIU). The summer school intends to provide a comprehensive introduction to applied general equilibrium analysis of environmental policies by internationally renowned experts. Targeted at PhD students.

*Details: Angela Marigo, Fondazione Eni Enrico Mattei, Castello 5252, 1-30122 Venice, Italy. Fax: +39-41-2711461.*

*Email: [angela.marigo@feem.it](mailto:angela.marigo@feem.it)*

*On the Web: [www.feem.it/jess06](http://www.feem.it/jess06)*

### Third World Congress of Environmental & Resource Economists

Kyoto, Japan

03-07-2006 to 07-07-2006

Organized by the Society of Environmental Economics and Policy Studies and the European Association of Environmental and Resource Economists amongst others. Main themes for presentation of papers and sessions include: climate change impacts/ costs; air pollution; environmental taxation; emissions permits; and, pollution regulation.

*Details: Takamitsu Sawa, Chair of Organizing Committee, Institute of Economic Research, Kyoto University, Sakyo-san, Kyoto, Japan. Email:*

*wc3-info@congre.co.jp*

*On the Web: [www.worldcongress3.org](http://www.worldcongress3.org)*

### Asia Oceania Geosciences 3rd Annual Meeting

Singapore

10-07-2006 to 14-07-2006

Meeting aims to act as a catalyst for Asian and international participants to develop partnerships and other professional networking. Scientific sessions will cover such topics as: oceans and atmosphere; hydrological science; solid earth; planetary science; solar terrestrial; and interdisciplinary working groups. Organized by the Asia Oceania Geosciences Society.

*Details: Cheng-Hoon Khoo, AOGS Secretariat Office, Meeting Matters International, 5 Toh Tuck Link, 596224 Singapore. Fax: +65-64677667. Email: [kch@meetmatt.net](mailto:kch@meetmatt.net)*

*On the Web: [www.asiaoceania-conference.org](http://www.asiaoceania-conference.org)*



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**2006 ACEEE Summer Study on Energy Efficiency in Buildings California, USA**

**13-08-2006 to 18-08-2006**

Organized by the American Council for an Energy Efficient Economy (ACEEE). Working theme of the study is "less is more: en-route to zero energy buildings". Subject areas for interactive discussion include: design and performance of buildings; market transformation; energy and information technologies; human and social dimensions of energy use; efficient buildings in efficient communities; and, programme design, implementation, and evaluation.

*Details: Rebecca Lunetta, ACEEE Summer Study Office, PO Box 7588, Newark, DE 19714-7588, USA. Fax: +1-302-2923965. Email:*

*rlunetta@comcast.net*

*On the Web: [www.aceee.org](http://www.aceee.org)*

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**World Renewable Energy Congress IX & Exhibition Florence, Italy**

**19-08-2006 to 25-08-2006**

Theme for this years Congress is "energy/water and cleaner environment". Hosted by the University of Florence and organized by the World Renewable Energy Congress. Will act as a forum for networking for such interested parties as policy makers, researchers, manufacturers, economists, environmentalists and sociologists. Opportunities for presentation of ideas and views plus formal and informal discussions.

*Details: Ali Sayigh, PO Box 362, Brighton BN2 1YH, UK. Fax: +44-1273-625768. Email: [asayigh@netcomuk.co.uk](mailto:asayigh@netcomuk.co.uk)*

*On the Web: [www.wrenuk.co.uk](http://www.wrenuk.co.uk)*

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**International Disaster Reduction Conference 2006**

**Davos, Switzerland**

**27-08-2006 to 01-09-2006**

Conference will comprise of various events such as plenary sessions, thematic sessions, special workshops, and regional seminars. Main topics and themes regarding this issue include: natural hazards; environmental, biological and chemical risks; climate variability and climate change; technical risks; risk and demographics: gender, indigenous people, special needs, poverty; and, risk and resources management, amongst other topics.

*Details: Conference Secretariat, IDRC Davos 2006, Fluelastrasse 11, CH-7260 Davos Dorf, Switzerland. Fax: +41-81-4170823. Email: [davos2006@sif.ch](mailto:davos2006@sif.ch)*

*On the Web: [www.davos2006.ch](http://www.davos2006.ch)*

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**3rd International Symposium on Integrated Water Resources Management**

**Bochum, Germany**

**26-09-2006 to 28-09-2006**

Conference will be held at the Ruhr-University Bochum and is organized by their Institute of Hydrology, Water Resources Management and Environmental Engineering. Will look at the interdisciplinary character of water

resources management. Topics include: flood risk, flood vulnerability and flood protection; water management as a problem and solutions; and, vulnerable interactions.

*Details: Jana Radoi, Conventus Congressmanagement & Marketing GmbH, Markt 8, 07743 Jena, Germany.*

*Fax: +49-3641-3533271. Email:*

*[water@conventus.de](mailto:water@conventus.de)*

*On the Web: [www.conventus.de/water](http://www.conventus.de/water)*

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**Monitoring of Mediterranean Coastal Areas: Problems & Measurement Techniques**

**Sardinia, Italy**

**04-10-2006 to 06-10-2006**

Organized by CNR-IBIMET, the Institute for Biometeorology, with other Institutes. Main symposium session topics are: evolution of coastlines and coastal erosion; coastal vegetation; sea beds, plant cover and water quality; coastal and submarine archaeology; coastal fires and environmental recovery; and, coastal anthropization and socio-economic exploitation of the territory.

*Details: Organizing Secretariat, CNR-IBIMET sede di Sassari, Via Funtana di Lu Colbu 4/a, 07100 Sassari, Italy. Fax: +39-79-268248. Email: [segr.org@ss.ibimet.cnr.it](mailto:segr.org@ss.ibimet.cnr.it)*

*On the Web: [server.ss.ibimet.cnr.it/jital/simposio.htm](http://server.ss.ibimet.cnr.it/jital/simposio.htm)*

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**Global Environmental Change: Regional Challenges**

**Beijing, China**

**09-11-2006 to 12-11-2006**

Conference is being organized by the Earth System Science Partnership (ESSP). Intent of the 2006 conference is to present progress in understanding of the systems of global environmental change and to highlight the ESSP approach to the study of the Earth System. Will also discuss integrated regional studies, global change in monsoon Asia, and science for sustainability.

*Details: 2006 Conference Organizer, Institute of Botany, University of Basel, Schonbeinstr 6, 4056 Basel, Switzerland. Fax: +41-61-2673504. Email: [gmba@unibas.ch](mailto:gmba@unibas.ch)*

*On the Web: [www.essp.org/lessp/ESSP2006/](http://www.essp.org/lessp/ESSP2006/)*

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**International Dialogue on Science & Practice in Sustainable Development**

**Chiang Mai, Thailand**

**23-01-2007 to 27-01-2007**

Sub-theme of the conference is "linking knowledge with action". Aims to foster effective collaborations between scientists and practitioners to advance the practice of sustainable development, through knowledge sharing and promoting national, regional and international actions and implementation.

*Details: Jill Jaeger, IDSP Executive Director, c/o Sustainable Europe Research Institute, Garnisongasse 7/27, A-1090 Vienna, Austria. Fax: +43-1-2632104. Email: [jill.jaeger@seri.at](mailto:jill.jaeger@seri.at)*

*On the Web: [www.sustdialogue.org](http://www.sustdialogue.org)*

# Adaptation funding

## POST COP11

**Saleemul Huq describes the current status of adaptation funding under the United Nations Framework Convention on Climate Change.**

One of the most significant achievements of the eleventh Conference of Parties (COP11) to the United Nations Framework Convention on Climate Change (UNFCCC), and first Meeting of Parties (MOP1) to the Kyoto Protocol held in Montreal, Canada, at the end of 2005 was the adoption of the Marrakech Accords. These were originally negotiated in Marrakech, Morocco, during COP7 in 2001. They included several new funds for supporting adaptation activities in developing countries. The funds, which are all managed by the Global Environment Facility (GEF), are as follows:

*The Least Developed Countries Fund (LDCF)* is already functioning. It contains voluntary contributions from several Annex 1 countries (industrialised countries which have signed the UNFCCC). It has already supported the development of National Adaptation Pro-

grammes of Action (NAPAs) by the Least Developed Countries (LDCs) using guidelines drawn up by the LDC Expert Group. The NAPAs are supposed to identify urgent and immediate adaptation actions needed in each country and provide a prioritized list of adaptation projects. In Montreal, four LDCs submitted their completed NAPAs – Mauritania, Bangladesh, Samoa and Bhutan – and the rest are expected to complete and submit their NAPAs during the coming year.

*The Special Climate Change Fund (SCCF)* is for all developing countries and covers adaptation and other activities such as technology transfer, mitigation and economic diversification. The operating rules for the fund have been agreed, and funding for adaptation is classed as a 'top priority' activity. Although no adaptation projects have yet been funded, several candidate projects are being developed.

*The Adaptation Fund (AF)* is meant to support 'concrete adaptation' activities. It was established under the Kyoto Protocol, whereas the first two funds were established under the UNFCCC. As the Montreal meeting was the first Meeting of the Parties to the Kyoto

Protocol, the fund has been dormant until very recently. The fund was discussed in Montreal but operating rules were not agreed. Developing countries feel that it should not be managed by the GEF, while developed countries would like the GEF to manage it. Decision-making was postponed to the next Meeting of the Parties.

*The Strategic Priority on Adaptation (SPA)* was also recently established by the GEF. It contains US\$50 million from the GEF's own trust funds to support pilot adaptation activities over three years. The fund is already supporting several adaptation projects, but it is unclear whether it will continue after the pilot phase. Projects must also pass the GEF test of 'global environmental benefits' to be eligible for funding.

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● **Further information:** All project documents for activities funded under the SPA are public and available at [www.gefonline.org](http://www.gefonline.org)

## STATUS OF UNFCCC/GEF FUNDS FOR ADAPTATION AFTER MONTREAL

Fund name	Amount available (in US\$ millions)	Eligibility	Fund source	Activities funded so far
<b>Least Developed Countries Fund (LDCF)</b>	34 plus 34.3 pledged (totalling 68.3) <sup>1</sup>	Least Developed Countries (LDCs) only	Voluntary contributions	National Adaptation Programmes of Action (NAPAs) in 45 LDCs
<b>Special Climate Change Fund (SCCF) – the adaptation part only</b>	56.5 pledged	All developing countries	Voluntary contributions	Projects being developed in / on Ecuador, health, The Andes and The Pangani River
<b>Adaptation Fund (AF)</b>	5 (pledged by Canada)	All developing countries	2% adaptation levy on Carbon Emission Reductions (CERs) from Clean Development Mechanism (CDM) projects. Plus voluntary contributions	None
<b>Strategic Priority on Adaptation (SPA)</b>	50 (over 3 years). Pilot to be evaluated	All developing countries	Global Environment Facility (GEF) trust funds	1. Community Based Adaptation project (through the United Nations Development Programme - UNDP); 2. The Adaptation Learning Mechanism (through the UNDP); 3. Kiribati project (through the World Bank); 4. Colombia project (through the World Bank); 5. Coping with Drought project (through the UNDP); 6. Adapting to shoreline change in West Africa (through the UNDP); 7. Pilot adaptation project in Dominica, Saint Lucia and Saint Vincent and the Grenadines; 8. Integrating Vulnerability and Adaptation to Climate Change into Sustainable Development Policy Planning and Implementation in East Africa (through the United Nations Environment Programme)

NEWS

<sup>1</sup> Pledges are submitted on a revolving basis. In addition, the government of Denmark has offered to host a pledging meeting for the LDCF in April 2006.

# First meeting of the Kyoto parties

## CLIMATE NEGOTIATIONS

**Sarah Granich reports on the outcome of the latest round of climate treaty negotiations.**

The First Meeting of the Parties (MOP1) to the Kyoto Protocol took place from November 28th to 10th December 2005 in Montreal, Canada. It was held alongside the 11th Conference of the Parties (COP11) to the United Nations Framework Convention on Climate Change. With the Kyoto Protocol now in force, implementation issues that would make the most of the Kyoto provisions to 2012 were high on the agenda and there was considerable optimism, ahead of the meeting, that good progress could be made. There was less optimism, though, when it came to prospects for a post-Kyoto regime, at least with regard to the involvement of the United States.

"It will be very complex," said Elliot Diringer of the Pew Center on Global Climate Change. "Any agreement has to be more flexible than Kyoto but at the same time has to deliver real cuts in emissions and the Bush administration is adamantly opposed

to any process aimed at widening Kyoto." Jennifer Morgan of World Wide Fund for Nature (WWF) International proposed that "developed countries should continue after 2012 with Kyoto-type commitments with ever deeper cuts, but developing countries should start with less strict goals." "The United States wants to block this process from starting," observed David Doniger of the Natural Resources Defense Council. "Look for the United States to use a variety of strategies to try to veto consensus," he said, such as lining up Middle Eastern Organization of the Petroleum Exporting Countries (OPEC) and India in favour of voluntary approaches.

Negotiations on the implementation of the Kyoto Protocol did, in fact, prove successful. One major outcome was that rules for limiting greenhouse gas emissions under the Protocol were adopted. The Kyoto rules cover greenhouse gas accounting, investment in developing countries, emissions trading and other operational details.

Saudi Arabia attempted to block agreement on the provision on compliance with the Protocol commitments, arguing that implementing the compliance provision through

an amendment to the Protocol itself would strengthen the compliance mechanism. Others considered the Saudi move an attempt to delay agreement on the deal. "They're trying to stop any discussion of what to do after 2012," accused Jennifer Morgan of WWF International. Eventually, it was agreed to "approve and adopt" the compliance mechanism as a MOP decision, though the Saudi amendment to the Protocol will be considered at a later stage. The compliance system stipulates that any country that misses its target will have to make up the shortfall, with an additional 30 per cent penalty during the next period. Emissions trading rights may be affected.

Following years of debate over the extent to which, and just how, the climate treaty process should support the process of adaptation, COP11 saw the launch of a five-year work programme on this issue. "A certain degree of climate change is no longer avoidable", said Halldor Thorgeirsson, coordinator of the Climate Change Secretariat's Methods, Inventories and Science Programme. "All countries need to adapt to the inevitable impacts. Developing countries will be hardest hit by those impacts and need the necessary assistance."

## ADAPTATION PROGRAMME OF WORK: SUB-THEMES

The aim of the adaptation work programme is to enhance capacity at the international, regional, national, local and sectoral levels:

- to identify and understand possible impacts and vulnerability and possible adaptation responses;
- to enable countries to select and implement practical, effective and high priority adaptation actions; and,
- to provide the Conference of the Parties and, as appropriate, its subsidiary bodies, with information and advice on issues relating to the scientific, technical and socio-economic aspects of impacts, vulnerability and adaptation, including by facilitating the implementation of decision 1/CP.10 [the Buenos Aires programme of work on adaptation and response measures], where relevant.

Other matters discussed in Montreal included technology (particularly carbon capture and storage), and strengthening the Kyoto mechanisms. The industrialized nations committed US\$13 million to funding the Clean Development Mechanism over 2006-7 and the second Kyoto mechanism – Joint Implementation – was launched.

As he opened the ministerial meeting, Canadian Prime Minister Paul Martin challenged the United States to participate fully in the climate treaty process. “Climate change is a global challenge that demands a global response. Yet there are nations that resist, voices that attempt to diminish the urgency or dismiss the science, or declare, either in

### Impacts and vulnerability:

- Promoting development and dissemination of methodologies for impact and vulnerability assessments and sharing of experiences and lessons learned from undertaking such assessments
- Improving access to high quality data and information on current climate variability and likely future climate variability and change, including on extreme events
- Promoting understanding of climate risks, key vulnerabilities and thresholds of climate change, in particular with regard to sea-level rise, water, agriculture, health, energy, ecosystems and infrastructure
- Improving availability of socio-economic information on vulnerable sectors and on the socio-economic impacts of climate change.

### Adaptation, planning, measures and actions:

- Promoting the development and dissemination of tools for analysis, decision-making, monitoring and evaluation of adaptation planning, measures and actions
- Collecting and disseminating lessons learned from current practice, practical adaptation actions, and short- and long-term adaptation strategies
- Promoting research on adaptation solutions and the development and diffusion of technologies, know-how and practices for adaptation, including local and indigenous knowledge
- Promoting cooperation among Parties, relevant organizations, business and civil society aimed at assisting countries in enhancing their resilience and managing climate change risks, giving priority to the most vulnerable countries.

### Integration:

- Enhancing synergy and complementarities between actions.

word or indifference, that this is not our problem to solve. Well, let me tell you, it is our problem to solve,” he said. He singled out the United States by name at a later press conference.

After a considerable amount of grandstanding, agreement was reached on the way forward, although it did take an extra day of negotiations. “This has been one of the

most productive United Nations (UN) climate change conferences ever. Our success in implementing the Kyoto Protocol, improving the Convention and Kyoto, and innovating for tomorrow led to an agreement on a variety of issues. This plan sets the course for future action on climate change,” concluded Richard Kinley, acting head of the climate treaty secretariat.



The major agreement reached in Montreal concerned the signatories to the Kyoto Protocol alone. This gives the Kyoto members seven years to negotiate and ratify accords on the post-2012 phase, extending the current emissions control commitments.

Following a parallel track, a broader group of nations, including the United States, has agreed to non-binding talks on future cooperation. This will be a global "dialogue", not restricted to the industrialized nations. Negotiations leading to new emissions control commitments are explicitly ruled out. According to the COP11 decision, the dialogue should, amongst other things, "identify approaches which would support, and provide the enabling conditions for, actions put forward voluntarily by developing countries that promote local sustainable development and mitigate climate change in a manner appropriate to national circumstances, including concrete actions to enable countries, in particular developing countries, to manage and adapt to climate change."

● **Further information:** Webcasts of the formal proceedings and related events are available from the climate treaty secretariat ([unfccc.streamlogics.com/unfccc/agenda.asp](http://unfccc.streamlogics.com/unfccc/agenda.asp)) and the host country ([events.streamlogics.com/EnvCanada/2005/EN/](http://events.streamlogics.com/EnvCanada/2005/EN/)) websites. The Tiempo Climate Cyberlibrary lists websites related to the UN Framework Convention on Climate Change at [www.tiempocycleclimate.org/floor0/theme/t25web.htm](http://www.tiempocycleclimate.org/floor0/theme/t25web.htm).

## NEWS

# Getting new knowledge into the current IPCC assessment

## CALL FOR INFORMATION

**The Intergovernmental Panel on Climate Change (IPCC) is currently preparing its Fourth Assessment of climate science. The IPCC always welcomes suggestions from scientists and practitioners who have new research findings that they think should be included in its next assessment and would like to invite Tiempo readers to assist in this process.**

IPCC Working Group II covers climate change from the point of view of impacts, adaptation and vulnerability. The second-order draft of the Working Group II Fourth Assessment Report, which goes to governments for review in May 2006, is the point at which the individual chapters have reached their near-final state, so April 2006 is really the last opportunity for new material to be incorporated. This material can be in draft form, but it must be in print by early 2007.

If you know of new literature that you think is relevant to the assessment then

please pass this information on to the IPCC authors. You do not need to have written it yourself. There are chapters on each major sector (agriculture, water, etc.) and on all regions of the world. Specific areas of focus are cross-cutting issues such as: water, key vulnerabilities, relationships between adaptation and mitigation, and technology.

You can send details or copies of relevant material to the IPCC WGII Technical Support Unit, Hadley Centre for Climate Prediction and Research, Met Office, Fitzroy Road, Exeter EX1 3PB, United Kingdom (fax: +44 (0)1392 88 5681; email: [ipcc-wg2@metoffice.gov.uk](mailto:ipcc-wg2@metoffice.gov.uk)). Indicate clearly that the material should be forwarded to the relevant author(s).

With thanks:

Oswaldo Canziani and Martin Parry (Co-Chairs of Working Group II)  
Jean Palutikof (Head, Technical Support Unit, Working Group II)  
Intergovernmental Panel on Climate Change

**On the Web:** [www.ipcc-wg2.org](http://www.ipcc-wg2.org)

# Asia-Pacific Network meeting

## PUBLIC-PRIVATE PARTNERSHIP

**The inaugural meeting of the Asia-Pacific Partnership on Clean Development and Climate (AP-6) took place in Sydney, Australia, January 11-12th 2006.**

The aim of the Asia-Pacific Network, according to United States energy secretary Samuel Bodman, is to “work together with the private sector...to take concrete action to meet energy and environment needs while securing a more prosperous future for our citizens.”

The six nations involved in the partnership are Australia, China, India, Japan, the Republic of Korea and the United States. Ministers from the six countries met in Sydney with over 120 representatives from the electricity, mining, aluminium, cement, steel, finance and renewable energy business sectors.

In a statement issued at the end of the meeting, outlining the partnership's strategy, the group said that it recognized that “fossil fuels underpin our economies, and will be an enduring reality for our lifetimes and beyond. It is therefore critical that we work together

to develop, demonstrate and implement cleaner and lower emissions technologies that allow for the continued economic use of fossil fuels while addressing air pollution and greenhouse gas emissions.”

At the meeting, both China and India stressed the role of technology transfer and poverty alleviation. Vice-Minister for the National Development and Reform Commission in China, Jiang Weixin, said that, though the government attached a great deal of importance to climate change, one of the most pressing problems was reducing poverty. For India, Environment and Forests Minister A. Raja said that alleviating poverty was a priority for developing nations.

The United States and Australia committed a total of US\$128 million funding for the alliance and related activities. The first year commitment from the United States will be US\$52 million, with a similar amount likely in ensuing years. The money will be used to support the application of clean technology in the developing nation partners. Australia has pledged US\$76 million over five years for clean development projects, capacity building activities and a continuing role in AP-6.

The partners have stressed that the alliance rests on a non-binding compact designed to complement rather than replace the Kyoto Protocol. “While Kyoto puddles on nicely, the real reductions will come from technology,” claimed Ian Macfarlane, Australia's Minister for Industry. “This is not a diplomatic love-in. It's a hard-edged business plan with targets and reporting duties,” he continued. Catherine Fitzpatrick of Greenpeace reckons that the new agreement is more a trade pact than an environmental solution. “The short-term interests of the fossil fuel sector have been put ahead of the long-term health and welfare of ordinary people,” she concluded.

The inaugural meeting set up task forces covering cleaner fossil fuel energy, renewable energy, power generation, steel, aluminium, cement, coal mining, and buildings and appliances.

● **Further information:** Up-to-date coverage of current climate news and events can be found at [www.tiempocyberclimate.org/newswatch](http://www.tiempocyberclimate.org/newswatch)

# Climate change insurance

## NEWS

### NEW INITIATIVE

**Ian Burton describes how the Munich Climate Insurance Initiative could help provide research and ideas on insurance for climate risk, particularly for poor people.**

In April 2005, five organizations and some independent experts met in Munich at the invitation of Munich Re to explore their common interests in climate change risks and insurance. They agreed on a collective initiative for three purposes:

- 1) to serve as a research network and 'think tank';
- 2) to provide a source of ideas about possible climate risk related insurance products and programmes; and
- 3) to support the expansion and accessibility of climate related insurance, especially in developing countries and among low income populations.

Given the failure of purely market driven processes to provide adequate insurance at affordable rates, the Munich Climate Insurance Initiative (MCII) is exploring various

modes of public-private partnerships. These could be developed under the United Nations Framework Convention on Climate Change (UNFCCC) or under some other institutional arrangement. MCII members recognize the considerable challenges of developing insurance products through public-private partnerships that avoid the risks of 'adverse selection' (this is when only those who are certain, sooner or later, to suffer loss purchase insurance. For example, only those on floodplains want to buy flood insurance and this works adversely against the idea of spreading risk over a large population as occurs with fire insurance), and 'moral hazard' (this is the unintended consequence of insurance when it encourages more risk taking. The idea is that those with insurance make less effort to avoid risk). The MCII seeks to address these issues and to find ways to use insurance not only as a mechanism for spreading and sharing risk but also as a social policy instrument to help promote adaptation to climate change.

The members of MCII held a second meeting in September 2005 to plan an event at the eleventh Conference of Parties (COP11) to the UNFCCC in Montreal in December

2005. A series of papers, which will soon be published, was subsequently prepared and presented at COP11. A wider network is also being established, and further activities will be announced shortly.

● **Further information:** The founding members of MCII include Munich Re, Germanwatch, the International Institute for Applied Systems Analysis, the Tyndall Centre, The Energy and Resources Institute – Europe, the Potsdam Institute for Climate Impact Research and the Swiss Federal Institute of Technology. Independent experts include Ian Burton and Frank Sperling (from, but not officially representing, the World Bank). Information about the papers presented during COP11 and about the MCII is available from Koko Warner who can be contacted at [warner@slf.ch](mailto:warner@slf.ch)



# Tiempo

Issue 58 January 2006  
ISSN 0962-7030

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**Tiempo is published by:** the International Institute for Environment and Development, the University of East Anglia and the Stockholm Environment Institute-York, with financial support from the Swedish International Development Cooperation Agency (Sida).

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Design: A4  
Printed by: PMS Marketing  
Logistics, York

# Least Developed Countries' needs

Climate change is a great challenge to humanity, whose vulnerable communities feel its impacts most. The survival of many poor country citizens is at risk if this challenge is not confronted in an effective way. Only strong political will can deal with climate change and make real progress with reducing greenhouse gas (GHG) emissions. Least Developed Countries (LDCs) have eagerly awaited developed nation GHG emission reductions, in line with the targets committed to under the Kyoto Protocol. But sadly, LDCs have experienced lengthy negotiation processes and little action.

In December 2005 in Montreal, parties gathered for the first Meeting of the Parties (MOP1) to the Kyoto Protocol. LDCs wanted proof of political will by all industrialized countries party to the Protocol. But unfortunately, by reneging on their commitments, they instead challenged the credibility of the Protocol. LDCs want to see current com-

mitments met, and agreement reached on a regime for future GHG emissions reductions. They also want emissions reductions by industrialized countries not party to the Kyoto Protocol.

LDCs are trying hard to achieve the Millennium Development Goals, but climate change destabilizes efforts towards economic and social progress. Adaptation to climate change is a vast and costly task, especially for poor nations, and any delay in efforts to reduce emissions will increase the risks and costs of adverse impacts, thus frustrating development efforts.

Despite their limited capacities, LDCs have worked hard under the United Nations Framework Convention on Climate Change. Most are preparing or have prepared National Adaptation Programmes of Action (NAPAs), thus showing their commitment to adaptation to climate change. Industrialized nations must now honour their own commitments.

Urgent and real progress is needed in two

areas. First, LDCs need emission reductions fast. Second, they need immediate and adequate funding and resources for adaptation needs and priorities, and compensation for damages from the unavoidable adverse impacts of climate change. If voluntary contributions do not deliver, then binding commitments might be needed to secure enough funding to implement NAPAs.

Lastly, technology development and transfer is key. LDCs want to see action to: support technology development, particularly adaptation technologies; facilitate access to environmentally friendly technologies to reduce emissions; promote pro-poor Clean Development Mechanism projects with high sustainable development benefits; build LDC capacity, especially under the Kyoto Protocol; and, secure funding for technology transfer.

## THE FINAL WORD

**Mohammed Reazuddin** describes the actions taken and help needed by the Least Developed Countries to tackle climate change.



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