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# Climate change migrants

**Md Shamsuddoha and Rezaul Karim Chowdhury argue that those forced to migrate due to climate change deserve recognition under a new protocol**

**T**he First Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) in 1990 noted that the greatest single impact of climate change might be on human migration. The report estimated that by 2050, 150 million people could be displaced by climate change-related phenomenon. More recent studies increase this estimate. For instance, Norman Myers of Oxford University has argued that “when global warming takes hold there could be as many as 200 million people displaced by 2050 by the disruptions of monsoon systems and other rainfall regimes, by droughts of unprecedented severity and duration, and by sea-level rise and coastal flooding.” The Stern Review on the Economics of Climate Change in 2006 and a Christian Aid report in 2007 estimated displacement of 200 million and 250 million people, respectively, by

climate change and related impacts. These figures mean that by 2050 one in every 45 people in the world could be displaced by climate change and that the number of future climate migrants will be ten times greater than today’s entire population of documented refugees and internally displaced persons (IDPs).

## MAIN POINTS

- **The authors explain** that climate change related phenomena could displace up to 250 million people by 2050.
- **They describe** the weak policy response to this looming crisis and explain how support for climate-induced migrants

under existing legal frameworks is insufficient.

- **They call for** new legal recognition for these migrants that makes developed countries accountable for the consequences of their past greenhouse gas emissions.

The policy response to these potential floods of climate change-induced forced migrants has been weak, despite the warnings. Even the terms and concepts used to refer to climate change-induced migrants are not consistent. They are called ecological and environmental refugees, climate refugees, climate change migrants, environmentally-induced forced migrants and so on.

The United Nations Environment Programme calls these migrants ‘environmental refugees’ - people who have been forced to leave their traditional habitat, temporarily or permanently, because of marked environmental disruption (natural and/or triggered by people) that jeopardizes their existence and/or seriously affects the quality of their life. Based on this, the office of the United Nations High Commissioner for Refugees (UNHCR) and International Organization for Migration have advised that terms like ‘cli-



**Children fishing in the Maldives**

Photo: © nattu/flickr

mate refugees' or 'environmental refugees' have no legal basis in international refugee law and should be avoided so as not to undermine the international legal regime for the protection of refugees.

Following legal concerns about the term 'refugee', some international organizations are calling for climate change-induced forced migrants to be treated as 'environmentally displaced persons'. In line with the mandate regarding IDPs under the UNHCR, the international community is deemed less responsible for helping these people.

One pertinent question, however, is why categorize climate change-induced forced

migrants as political refugees (as narrowly defined under the 1951 Geneva Convention), or IDPs at all? This article argues that people forced to migrate due to climate change require a new dignified status providing for social, cultural and economic rehabilitation. A new legal framework is needed, arguably under the United Nations Framework Convention on Climate Change (UNFCCC), to reflect one of the most fundamental climate change issues: accountability – or the obligation of polluting countries in the global north to address the needs of the countries that will suffer most in the global south.

## **Climate change-induced forced displacement: a consequence of global processes not local crises**

Climate change will significantly affect migration in three distinct ways. Firstly, through warming and drying in some regions, which will reduce agricultural potential and undermine 'ecosystem services' such as the provision of clean water and fertile soils. Secondly, through increases in extreme weather events, particularly heavy precipitation, resulting in flash or river floods. Finally, sea-level rise will permanently destroy certain productive low-lying coastal areas that are home to millions of people who will have to be permanently relocated.

In coastal Bangladesh, for example, sea-level rise and extreme weather events like flooding and tropical cyclones could forcibly dislocate more than 35 million people. Most of the Maldives might become sandbars, forcing 300,000 people to flee to India or Sri Lanka. Vietnam could lose 500,000 hectares of land in the Red River Delta and another two million hectares in the Mekong Delta, displacing roughly ten million people. Egypt could lose at least two million hectares of land in the fertile Nile Delta, displacing eight to ten million people. In Guyana, 600,000 people - 80 per cent of the population - could be displaced.

Models predicting longer-term coastline changes resulting from sea-level rise suggest that governments may have to support mass coastal population movement. Climate

change-induced migrants could also cross international borders. The Development, Concepts and Doctrine Centre, Global Strategic Trends Programme, under the United Kingdom's Ministry of Defence, predicts large flows of migrants from sub-Saharan Africa to the Mediterranean, the Middle East and Europe between 2007 and 2036. The German Advisory Council on Global Change predicts mass migration from Caribbean islands and Central America to the United States and many migration flows within Central America.

In light of this looming climate migration crisis, many international humanitarian organizations, civil society organizations and governments of vulnerable countries are demanding the protection and resettlement of migrants. It is, therefore, important to mainstream environment and climate change considerations into migration management policy and practices, and to bring forced migration issues into global environmental and climate change discourses. The protection of climate change-induced forced migrants should be a global problem and a global responsibility.

### **Climate refugees: the need for new legal recognition**

By definition, IDPs flee natural and man-made disasters and remain in their own country. International humanitarian law articulated in the Guiding Principles on Internal Displacement dictate that the rights of IDPs should

be protected by their own governments. These principles clearly define the rights of people displaced by ecosystem degradation, natural disasters and development projects, but in many cases these rights are poorly protected.

Displacement and environmental migration is not a new phenomenon. For years people in rural areas have been forced to flee to urban areas or neighboring countries due to destruction of livelihoods. Such people often end up living in refugee camps or urban slums where their health suffers due to close living quarters, poor sanitation and insufficient food supplies or livelihood opportunities. In Bangladesh, around 20,000 people migrated from a South Eastern coastal island of Bangladesh, Kutubdia, to Cox's Bazar, a sea resort town, in 1991 because they lost their homes in a cyclone. They currently live in an urban slum called 'Kutubdia Para' that lacks civic amenities and services. People are still

moving from the island, which is gradually going underwater due to sea-level rise.

Unable to make a living inside their country, many Bangladeshi people have migrated to neighboring countries, primarily India and Pakistan. Since the 1950s, 12 to 17 million Bangladeshis have migrated (often illegally) to adjacent Indian states, primarily Assam and Tripura, in search of a better life. Many Bangladeshis have also migrated to the coastal Pakistani city of Karachi where they live as illegal migrants in urban slums and work as fishing labourers in the deep sea fishing industry. Human rights violations are common, whether migration is internal or across borders.

Climate change will increase existing internal displacement and cross border migration. In Bangladesh, some estimates suggest that one in every seven people will be displaced by climate change impacts by 2050.



**Cox's Bazar, Bangladesh**

Photo: © Joe Coyle

Many of those displaced may never be able to return home because their places of origin have been destroyed or permanently inundated. Recipient countries may well not be able to accommodate the huge numbers of people likely to be uprooted due to extreme weather events. Defining the rights of people who will be displaced permanently and forced to flee their country in search of a better life is a priority.

Categorizing climate-induced forced migrants and IDPs together may undermine the notion of justice for the climate change-induced migrants and their right to appropriate assistance. Attempts to link climate change victims to IDPs are often politically motivated, aiming to avoid the obligations and responsibilities of Annex 1 countries (industrialized countries) made under UNFCCC to look after these people. Current terms are inappropriate, and climate-induced migrants now need new legal recognition that resonates with a sense of global responsibility and accountability, as well as a sense of urgency for impending disasters.

### **Legal frameworks on human rights: inadequate for climate-induced forced migrants**

There is a growing debate over whether those affected by climate change are a 'new' group in need of protection or if existing legal frameworks are sufficient. International, regional and national legal instruments, covenants and institutions exist to protect the rights of



**Bangladesh, fish market** Photo: © Aftab Uzzaman

people forcibly displaced by conflict, persecution *et cetera*. The UNHCR's mandate is to lead and coordinate international action to protect refugees and resolve their problems worldwide. Its responsibilities include supervising, in co-operation with states, the application of the 1951 Convention relating to the Status of Refugees. This Convention defines refugees as people who live outside their countries of origin because of a well-founded fear of persecution based on their race, religion, nationality, political opinion or membership of a particular social group, and who cannot or do not want to return home. The mandate of this Convention does not cover climate change-induced migrants. Further still, climate change-induced forced migration could undermine the aims of several other United Nations conventions.

The 1948 Universal Declaration of Human Rights protects freedom of movement and

other social, cultural and economic rights that might be threatened when people are forced to migrate by climate-induced environmental degradation.

The right to adequate housing is enshrined in several core international human rights instruments and most comprehensively under the International Covenant on Economic, Social and Cultural Rights. Core elements of these rights include security of tenure, protection against forced evictions, availability of services, materials, facilities and infrastructure, affordability, habitability, accessibility, location and cultural adequacy. Observed and projected climate change impacts such as sea-level rise will directly affect the right to adequate housing.

The right to self-determination is established in the International Covenant on Economic, Social and Cultural Rights and the International Covenant on Civil and Political Rights. Under this, people can "freely determine their political status and freely pursue their economic, social and cultural development." The inundation and disappearance of state territories and small island states has implications on this right to self-determination. This raises a range of legal questions, for example concerning the status of people living in disappearing territories.

### **The equity principle of the UNFCCC**

Climate change is a consequence of the cumulative build-up of greenhouse gases dating back as far as the industrial revolution. Alt-

ough Annex 1 (industrialized) countries under the UNFCCC have historically contributed most to anthropogenic greenhouse gas emissions, the impacts of climate change are disproportionately experienced by poorer nations. Industrialized countries should, therefore, accept the burden of dealing with their distress.

Article 3 of the convention (commonly referred to as the equity article) stipulates that Parties should protect the climate system “on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.”

Principles of equity require developed countries to address the emerging needs and crises that developing countries will be facing. Ongoing negotiation on this equity principle of the UNFCCC focuses on two major strategies to address climate change: mitigation and adaptation. Debates around climate change adaptation include a wide range of activities, such as relocating people from flood-prone or at-risk areas, but they have not clearly defined how to address the many causes of forced displacement largely due to climate change. There is a growing need to recognize populations affected by climate change as a ‘new’ group in need of protection as support under existing legal frameworks and conventions is insufficient.

## Conclusion

The UNFCCC has near universal membership and provides a common international framework for addressing the causes and consequences of climate change. It does not, however, mention climate change-induced forced migrants. For reasons of justice, the equity principle of the UNFCCC and also obligations under Article 13 of the 1948 Universal Declaration of Human Rights, the international community and especially the United Nations must protect these forced migrants. A separate, independent legal and political regime is needed under a new protocol to safeguard these people. This protocol could draw on widely agreed principles such as the common but differentiated responsibilities of country Parties, and it must consider three basic principles.

First, legal debates regarding climate migrants must take into account the dignity of people concerned as their contributions to greenhouse gas emissions are small. Those forced to migrate due to climate change need a different status, such as ‘Universal Natural Person’, with associated social, cultural and economic rights.

Second, climate refugees must be treated as permanent immigrants to the regions or countries that accept them. Finally, climate change migrants should be helped as entire groups, such as the population of a village, city, province or even an entire nation as is the case for the small island states. ■

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## FURTHER INFORMATION

● **On the Web:** This article was written to support an Equity and Justice Working Group, Bangladesh (EquityBD) campaign. For further information, visit [www.equitybd.org](http://www.equitybd.org).

# The consumption problem

**David Satterthwaite** explains how it is the growth in consumption, not the growth in population, that drives climate change

It seems obvious that with more people on earth there will be greater pressure on planetary resources and larger emissions of greenhouse gases. But it is also well known that very poor households contribute little to greenhouse gas emissions. While it may seem obvious that population growth must be driving global warming, if most of this population growth is among very poor households then this cannot be true.

Global warming is driven by the number of consumers on the planet and their consumption levels. For any individual or household to contribute to global warming, they have to consume goods and services that cause greenhouse gas emissions – for instance, owning a fridge or a car and so being responsible for all the fossil fuels that go into making, distributing, advertising, selling, using and then disposing of them.

## **The lowest-income groups contribute very little to global warming**

A significant proportion of the world's urban and rural populations – perhaps as many as one in five persons – have very low levels of greenhouse gas emissions because their incomes and thus their consumption levels are so low. There are no precise figures, but studies of resource use and consumption among low-

### **MAIN POINTS**

- **The author explains** how little low-income households in poor countries contribute to global warming, which is instead driven by consumer numbers and consumption levels.
- **He argues that** responsibility for emissions should lie with

the individuals responsible for consumption, rather than the country where emissions occur.

- **Population growth** matters, however, because family planning can reduce the vulnerability of low income groups to climate change impacts.

income households show that most do not use fossil fuels (they rely on fuelwood, charcoal or agricultural wastes) and most do not have electricity (and so they have no household appliances that use electricity). If they do use electricity and fossil fuels (for instance, kerosene for cooking), their consumption levels are very low. Their diets are dominated by food with very low carbon footprints (unlike high-income households whose diets are very land and energy intensive). If households are so constrained in their income that family members are severely undernourished and often have to resort to eating only one meal a day, it is hardly likely that their consumption patterns are generating significant greenhouse gas emissions.

So it is not the growth in the world's population that contributes to climate change but the growth in consumption. This comes from both the growth in the number of consumers and the growth in consumption levels. Stable



or shrinking populations may still be rapidly increasing their contribution to greenhouse gas emissions. For instance, London today has less people than it had 70 years ago but the consumption levels of its population (and thus their contribution to global warming) have grown dramatically.

The contribution to global warming of a person born today depends on the circumstances into which they are born and their life possibilities and choices. To take an extreme example, an infant born into a very low-income household in Africa or Asia that dies before the age of one contributes almost nothing to global warming. This is not unusual; it is common for one in ten children in these regions to die before their first birthday. Even if a person born today avoids premature



**Bangladesh**

Photo: © John Soussan

death, they may still contribute very little to greenhouse gas emissions – for instance living a full life as a farmer with a small plot of land or an agricultural labourer or living and working in a ‘slum’ – because their consumption over their lifetime is very low. If part of their livelihood is from collecting material from waste streams and re-using or recycling it and they are credited with the greenhouse gas emissions this avoids, this further reduces their net contribution to global warming. By contrast, a child born into a high-income household that lives a full life and enjoys a high consumption lifestyle will contribute hundreds or thousands of times more to global warming.

### **Allocating responsibilities for reducing greenhouse gas emissions**

Responsibility for emissions should be allocated to individuals and households, not nations. It should be based on the greenhouse gas implications of their consumption. The wealthiest fifth of the world’s population is likely to account for more than 80 per cent of all human-induced greenhouse gas emissions and an even higher proportion of historical contributions. Although most of these people live in high-income nations, a significant and growing proportion live in the more successful middle-income nations.

Avoiding dangerous climate change depends on greatly reducing the emissions of these wealthy households and far more attention needs to be directed at this. This requires delinking high incomes from carbon-

intensive consumption – or to put it another way, delinking a high quality of life from high consumption and waste generation. But at present we do not have systems that can measure and allocate greenhouse gas emissions to consumers. Data on emissions is for nations and it is not tied to consumption but to where the emissions take place. This is misleading because it means that greenhouse gas emissions are allocated to the producers of goods, not the consumers. So if I purchase a car, fridge or television that is made in China or Brazil, the greenhouse gas emissions that went into making these goods are allocated to China or Brazil, not me (or the country I live in). This makes the official figures for national greenhouse gas emissions misleading. It hides how much the growth in consump-



**California**

Photo: © ex.libris/flickr

tion has driven the growth in greenhouse gas emissions.

However, even if official statistics on greenhouse gas emissions do understate how much is caused by high-income nations (or rather middle- and upper-income groups in these nations), they still show the very small contribution of most low-income nations. Many low-income nations have averages for greenhouse gas emissions per person of under 0.2 tonnes of carbon dioxide equivalent a year, compared to most European nations with over 10 tonnes a year and Canada and the USA with over 20 tonnes a year.

### Does population growth drive climate change?

Again, because statistics on greenhouse gas emissions are for the emissions produced within nations and not for the emissions caused by consumption, it is not possible to say how much greenhouse gas emissions have been driven by population growth. Data are also incomplete on each nation's contribution to global warming from land-use changes (including deforestation) and greenhouse gases other than carbon dioxide. But even accepting these limitations, much of the growth in carbon dioxide emissions from 1980 to 2005

has been in nations or regions that have slow population growth.

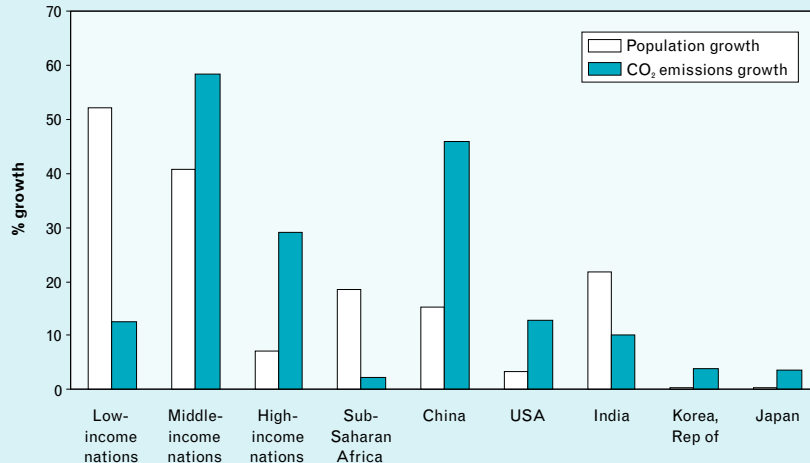
During these 35 years, Sub-Saharan Africa had 18.5 per cent of the world's population growth but its share in the growth of carbon dioxide emissions was just 2.5 per cent. Northern America had 4.0 per cent of the world's population growth but its share in the growth of carbon dioxide emissions was 13.9 per cent. China had 15.3 per cent of the world's population growth and 44.5 per cent of the growth in carbon dioxide emissions.

This actually understates the contributions of high-income nations for two reasons. The first reason was noted above – the fact that emissions from producing goods are allocated to nations where production is located, not to the consumers of those goods. The second is that Northern America and much of Europe already had very high levels of greenhouse gas emissions in 1980. Europe's share in carbon dioxide emission growth over these 35 years was negative – as so much industry closed down or shifted to low- and middle-income nations. If greenhouse gas emissions were allocated to consumers, the contributions of Europe and Northern America to the growth in such emissions over these years would be much higher and that of China much lower.

### So does population growth matter?

The two key issues for climate change are first, how to slow, stop and then reduce global emissions and, second, how to build resilience to climate change impacts. The

**CONTRIBUTIONS TO THE GLOBAL GROWTH IN CARBON DIOXIDE EMISSIONS AND POPULATION 1980 - 2005**



first depends on reducing the greenhouse gas emissions driven by consumption. This has to reduce emissions per person among middle- and upper-income groups and, in effect, demonstrate how a high quality of life can be combined with much lower emissions. It falls to governments in high-income nations to demonstrate how this

tals) to respond to acute illness or injury and disasters. It also includes sexual and reproductive healthcare that incorporates family planning (along with other key healthcare issues, especially for infants and children).

Improved healthcare will help address one of the most intractable failures of

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**“...much of the growth in carbon dioxide emissions from 1980 to 2005 has been in nations or regions that have slow population growth...”**

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can be done; without this, why should the successful low- and middle-income nations whose greenhouse gas emissions are rising rapidly agree to act on this?

Adaptation - building resilience to the storms, floods, heatwaves, water supply constraints and other impacts of climate change - depends on good development. The reason so many people in low- and middle-income nations are so at risk from climate change is because they have been failed or bypassed by development. They live in poor quality housing in sites that lack the necessary protective infrastructure and services. A very important part of development and of building people's resilience to the impacts of climate change is good quality, easily available and affordable healthcare. This includes emergency services (ambulances, accessible hospi-

development - the very high rates of infant, child and maternal mortality in low-income and most middle-income nations. This will also help slow population growth. So too will other aspects of development - for instance, good quality schools and provision for water, sanitation and flood protection, more stable livelihoods and better quality housing. Such progress will also greatly reduce the vulnerability of low-income groups to climate change impacts, but will not necessarily reduce greenhouse gas emissions. If the wealthy demonstrate the commitment needed to reduce their emissions, however, the planetary implications of the additional emissions implied by achieving the above are not very large and should be accommodated. ■

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## FURTHER INFORMATION

● A longer version of this article was printed in 2009 in the journal *Environment and Urbanization* (volume 21, issue number 2, pages 545-567). This can be downloaded at no charge at <http://eau.sagepub.com/content/vol21/issue2/>.

# Gender and climate change

## The Asia Pacific Mountain Network reports on an e-discussion on gender and climate change in October 2009

**T**he e-discussion on Gender and Climate Change in the Himalayas, facilitated by the Asia Pacific Mountain Network, was initiated as the world's attention turns to changes in climate that may have consequences on natural resources and every aspect of health, food production, economic development and our general well-being. Held from October 5-26th 2009, the e-discussion aimed to provide input to the discussions taking place in the run up to and at the 15th Conference of Parties to the United Nations Framework Convention on Climate Change in Copenhagen in December 2009. It attracted 130 contributions from a total of 407 registered participants. The contributions came from a diverse spectrum of participants including academics, development practitioners, researchers and students, who shared their experiences, observations, perceptions and

opinions on gender, development, climate change, natural disasters and planning to mitigate the impacts of climate change on the most vulnerable people.

Climate change in the Himalayas, the world's 'third pole', is affecting the lives of millions of people living in the highlands or lowlands. Mountain people's livelihoods are affected by erratic rainfall, increased occurrence of droughts and changing tem-

### MAIN POINTS

- **The Asia Pacific Mountain Network** held an e-discussion on gender and climate change in October 2009.
- **The discussants presented** examples of how women are especially vulnerable to the many impacts of climate change from forests to water supply to livelihoods and health.
- **They emphasized the need** for the active participation of women and vulnerable people in planning aimed at mitigating these impacts.



Himalayan lady

Photo: © Asia Pacific Mountain Network

peratures. As women and men generally play different roles in ensuring their livelihoods, their lives may be affected differ-

ently and they may play different roles in adapting to the changes.

The discussion aimed to learn how women and men may be affected differently by climate change. What do they do to respond to those stresses? How can we tap on mountain women and men's knowledge and capacities to support adaptation strategies to climate change? In brief, most participants agreed that both women and men are affected by climate change impacts but are vulnerable in different ways. Both women and men also play an essential role in adapting to their changing environment; however, women's roles and capacities are often overlooked. Mechanisms to support adaptation strategies must be gender sensitive in order to address the potentially differential needs of women and men and tap their respective knowledge and skills to make those strategies efficient and sustainable.

#### **Men migrate and women are left behind...**

*"We are dependent on agriculture, which is totally dependent on good weather conditions. The biggest problem we face is food insecurity. If there was good weather, timely rain and food security, we would never migrate. Why do we want to leave our family and travel to another place to work like animals?"*

Moti Ram Khadka, Village Development Committee Secretary, Chheudi, Dailekh



**Yaks in the Himalayas**

Photo: © Raul Gutierrez

#### **Women and men are vulnerable in different ways to disasters and the impacts of climate change**

The negative effects of climate change have definitely affected both women and men, especially those living in poverty in developing countries. The participants generally agreed, however, that women are affected more adversely by disasters and the impacts

of climate change due to their essential roles in agricultural and household matters. When the male household members leave for wage labour and employment, the women must assume more responsibilities in addition to their traditional socio-economic and cultural roles.

The participants described how, as the climate changes, women are forced to go further

for drinking water as water resources dry up and further to collect wood. Millions of people in areas suffering food scarcity may have to give up traditional crops, which could lead to social upheaval, mass migration and conflict over water resources. These events could further increase the vulnerability of women to poverty and various forms of violence.

There is a need for more research backed by clear evidence of the greater effect of climate change on women. Although a range of methodological toolkits exist to describe how to assess vulnerability and the adaptive capacity of people to climate change, none specifically focus on the gender dimension of climate change.

The participants generally agreed on the importance of research on the impacts on women of the Koshi flood in eastern Nepal,

#### **What happens when rain is delayed or doesn't come...**

*"We cannot give the same amount of food and variety to our children now, the price of potatoes and beans has gone three times higher; we produced less than one fourth of crops than last year due to change in rainfall time; the land has become so hard that we can hardly do our weeding activity with bare hands; it requires triple the time and labour now; but we do not have any alternate tools to handle weeding."*

Woman farmer near Kathmandu, Nepal, in a group interviewed by Kanchan Lama in 2009

deforestation in Humla district and flooding in Kailali district of western Nepal and the monsoon and cyclones in Pakistan and Bangladesh. This research could reveal the root causes of the impacts and thus indicate ways to mitigate the impacts of future flash floods, drought, melting ice, rising sea level, heat-waves and colder winters. The participants suggested that the concept of gender should be extended to look at intersectionality with caste, ethnicity, class, age and education.

#### **Women's and men's assets – knowledge, skills and capacities – can contribute to adaptation strategies**

In response to the questions posed by the moderator, the participants described how the assets for adaptation to climate change are based on the understanding that the individual or collective has about their immediate environment and the potential impact the specific change would have. For example, local or traditional knowledge is often extremely detailed and strong among remote, insular or isolated communities; it is also crucial and critical for the sustenance and livelihood security of such remote communities. Mountain women have the knowledge to produce and preserve food for cold weather and to sustain life under harsh conditions, but they are now searching for alternatives to increase their food security. They have knowledge of agricultural crops, wild edibles, useful forest resources, seed selection and storage, weeds and weed management.

#### **Social and economic factors may hinder women's and men's capacity to adapt to climate change impacts in the Himalayas**

Climate changes are affecting human lives physically, psychologically, socio-economically and culturally due to the depletion of local sources of livelihood. Other factors include rapid population growth, poverty, improper use of natural resources and unplanned and unsustainable development practices that have contributed to escalating the magnitude of risks. This stress on livelihoods erodes family stability and results in domestic violence and criminal offences, which are mostly committed against women or other vulnerable people.

The cultural norms and values of the Hindu Kush Himalayan regions have a strong influence on the capacities of women and men to adapt to climate change. As men are more able to move for employment and livelihoods, there has been a 'feminization of agriculture' that has resulted in a 'feminization of poverty' over the years.

As transformations take place, women's knowledge and skills are sometimes overlooked. It is essential, however, to safeguard, conserve and build upon this rich knowledge base if effective adaptation strategies are to be formulated.

Gender issues in water resources are also contentious, and the impacts of climate change will no doubt exacerbate these issues. The adaptation capacity in water re-

sources will only be achieved through a fully participatory approach at all levels, which includes women. A strong gender constituency is needed to ensure that the voices of the most vulnerable will be heard when issues such as REDD (Reducing Emissions from Deforestation and Degradation) and the Clean Development Mechanism are being discussed.

### **Support to mountain people's adaptation strategies**

The e-discussion concluded with a discussion of approaches for supporting mountain people's strategies to adapt to climate change from a gender perspective. The questions posed to the participants included:

- What measures would support mountain people's capacity to adapt to climate change impacts?
- How are the national climate change policies and strategies of the Himalayan countries addressing the different adaptation needs of women and men living in the mountains?
- What else must government institutions do to effectively support climate change adaptation of mountain women and men?

A general theme at the root of many comments was that, thus far, most approaches have been reactive whereas there is a need for integrated policies, strategies, practices and adaptations to be proactive.

## **THE ASIA PACIFIC MOUNTAIN NETWORK**

The Asia Pacific Mountain Network (APMN) is a knowledge-sharing platform connecting mountain regions and communities through dialogue and networking. Managed by the Integrated Knowledge Management group of the International Centre for Integrated Mountain Development, APMN captures, enriches and disseminates information on mountain development issues in and for the Asia-Pacific region. APMN acts as the Asia-Pacific node of Mountain Forum and has shared resources including a dedicated web page, experts database, e-dialogue platform, thematic and geographic discussion lists, online library, calendar of events, survey and e-election tool. APMN also publishes the biannual Asia Pacific Mountain Courier, occasional e-dialogue synthesis reports, mountain development briefs and publicity materials. All these products are offered to interested readers at no charge.

### **Specific measures to support mountain people's capacity to adapt to impacts**

The participants suggested a number of specific measures to support the adaptive capacity of women and men living in the mountains. These included:

- building awareness of the impacts of climate change in their daily lives;
- investing in renewable technologies, like solar energy and wind energy, while dis-

couraging activities that lead to deforestation;

- implementing drudgery reduction programmes to reduce the workload of women and children by providing subsidies for appropriate technology;
- empowering women in decision-making processes;
- developing early warning systems for disasters;
- protecting indigenous traditional knowledge that the farmers are applying in the changed climatic conditions for food and agriculture;
- providing access to financial services and income-generating activities to communities in remote mountains;
- adding value to the mountain niche products, such as non-timber forest products species, if appropriate market accesses is explored; and,
- promoting/building alliances of mountain women and men to have collective strength to better communicate their problems and strengths to development organizations including government.

The participants also agreed that national climate change policies and strategies in the Himalayan countries should address the different adaptation needs of women and men living in the mountains by recognizing the right of each individual to live with dignity and support victims of disaster. They suggested that governments should also realise the farmer's right to equitably participate



**Nepalese children**

Photo: © Ilker Ender

and share benefits of indigenous traditional agriculture practices.

### **Actions of governmental institutions to support climate change adaptation efficiently**

The e-conference discussion also brought out several general recommendations for actions to make climate change adaptations more

efficient and effective. There was a consensus among the participants that gender inequality is a major obstacle to adaptation to change and this issue must be addressed.

- Gender must be mainstreamed in all strategies and programmes aiming to support mountain people's resilience to climate change, especially by promoting the participation of women in decision making at all levels – national to local.
- Government has an important role in coordinating the efforts of other organizations to mainstream gender in all climate change-related efforts and development interventions and making the working environment gender friendly through support from gender experts.
- The role of international institutions is important to enhance the capacity of governments to respond to people's issues.
- Since men and women have different knowledge and concerns about the use and management of mountain natural resources, the policy-making process should involve men and women who represent different disciplines, experience and positions.

In conclusion, the participants discussed how the knowledge and skills of women and men must be tapped in order to address their respective needs and to make mechanisms to support adaptation strategies efficient and sustainable. ■

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### **CONTACT**

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**Web:** [www.icimod.org/index.php?page=168](http://www.icimod.org/index.php?page=168)

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### **FURTHER INFORMATION**

● **In the Cyberlibrary:** The Tiempo Climate Cyberlibrary lists websites on gender and climate change at [www.tiempocyberclimate.org/portal/t56web.htm](http://www.tiempocyberclimate.org/portal/t56web.htm) and on mountains and climate change at [www.tiempocyberclimate.org/portal/t4445web.htm](http://www.tiempocyberclimate.org/portal/t4445web.htm).

● **On the Web:** The names of the e-discussion discussants, contributions and summaries are available on-line, along with a background paper, at [www.icimod.org/index.php?page=555](http://www.icimod.org/index.php?page=555).

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### **ACKNOWLEDGEMENTS**

● This report is based, with permission, on the pamphlet *Gender and Climate Change in the Himalayas* published by the Asia Pacific Mountain Network. The e-discussion was moderated by **Brigitte Leduc** and **Tek Jung Mahat**. The summaries were prepared by **Frances Klatzel**.



## WARMEST DECADE

**The first decade of the present century is “by far” the warmest since instrumental climate records began in the 19th century, according to the latest data from the World Meteorological Organization (WMO).**

2009 is set to become the fifth warmest year on record. “We’ve seen above average temperatures in most continents, and only in North America were there conditions that were cooler than average,” reported WMO secretary-general Michel Jarraud. “We are in a warming trend - we have no doubt about it,” he continued.

*Read more:*  
[tinyurl.com/jyes69hc](http://tinyurl.com/jyes69hc)

## EMISSIONS

**Global carbon dioxide emissions increased by 29 per cent over the nine years to 2008, reports the Global Carbon Project.**

“The current growth in carbon dioxide emissions is closely linked to growth in Gross Domestic Product,” commented contributor Mike Raupach of the Commonwealth Scientific and Industrial Research Organization in Australia. “Carbon dioxide emissions from fossil fuel combustion have increased 41 per cent above 1990 levels with emissions continuing to track close to the worst-case scenario of the Intergovernmental Panel on Climate Change”.

*Read more:*  
[tinyurl.com/lyadfhm9](http://tinyurl.com/lyadfhm9)

## SINKS DECREASING

**The global carbon budget indicates that natural carbon sinks have not been able to keep pace with rising carbon dioxide levels.**

“45 per cent of each year’s emissions remain in the atmosphere,” said Shobhakar Dhakal from the National Institute for Environmental Studies in Japan. “The remaining 55 per cent is absorbed by land and ocean sinks. However, the carbon dioxide sinks have not kept pace with rapidly increasing emissions, as the fraction of emissions remaining in the atmosphere has increased over the past 50 years. This indicates the vulnerability of the sinks to increasing emissions and climate change.”

*Read more:*  
[tinyurl.com/lyadfhm9](http://tinyurl.com/lyadfhm9)

## WOMEN'S ROLE

**The United Nations Population Fund (UNFPA) has called on policy makers to heed the role of women - who make up the majority of the poor - in combating climate change.**

The international community’s fight against climate change would be more successful, State of World Population 2009 concludes, if policies, programmes and treaties consider the needs, rights and potential of women. “Poor women in poor countries are among the hardest hit by climate change, even though they contributed the least to it,” said UNFPA head Thoraya Ahmed Obaid.

*Read more:*  
[tinyurl.com/lyadfhm9](http://tinyurl.com/lyadfhm9)

## DISASTERS

**“Three quarters of all disasters globally are now climate-related, up from half, just a decade ago, and we can expect worse,” Ban Ki-Moon, United Nations secretary-general, told the Ninth Conference of the Parties (COP-9) to the Convention to Combat Desertification (UNCCD).**

“These disasters are exacerbated by desertification, land degradation and drought,” he continued, describing these as “among the most pressing global environmental challenges of our time, threatening to reverse the gains of sustainable development that have emerged in many parts of the world over the past few years.”

*Read more:*  
[tinyurl.com/ly9b4pkh](http://tinyurl.com/ly9b4pkh)

# CONFERENCES

## EVENTS

### European Geosciences Union General Assembly 2010

Vienna, Austria:

02-05-2010 to 07-05-2010

Amongst other things, the conference will bring together participants such as young scientists and geoscientists from the disciplines of Earth, Planetary and Space Sciences. Will include a Job and Education Market which will provide an opportunity for exhibitions and presentations. It is anticipated that young scientists will be able to meet experts in their fields with the possibility of recruitment.

*Details: Conference Organizer, Copernicus Gesellschaft mbH, Bahnhofsallee 1e, 37081 Göttingen, Germany.*

*Fax: +49-551-900339  
Email: meetings@copernicus.org  
Web: www.copernicus.org/legu2010/imprint.html*

### 5th Annual International Symposium on Environment

Athens, Greece:

20-05-2010 to 23-05-2010

Main session topics include: energy, which will cover efficiency, renewables, management strategies and technologies; water, which will cover waste, quality, engineering and policies; and pollution, which will cover atmospheric, climate change, cleaner production and management. Open to all those working or interested in environmental disciplines and related disciplines.

*Details: Theophilos Theophanides,*

*Athens Institute for Education and Research, 8 Valaoritou Street, Kolonaki 10671 Athens, Greece.*

*Fax: +30-210-3634209*

*Email: atiner@atiner.gr*

*Web: www.atiner.gr/docs/Environment.htm*

### Resilient Cities 2010: 1st World Congress on Cities & Adaptation to Climate Change

Bonn, Germany:

28-05-2010 to 30-05-2010

Co-hosted by ICLEI - Local Governments for Sustainability and the City of Bonn, this is the annual forum on urban resilience and adaptation to climate change. Open to all partners of the ICLEI organization which has members across five continents, as well as interested parties from all related sectors. Aims to provide a forum for networking, discussion and policy propositions.

*Details: ICLEI World Secretariat, 401 Richmond St, Studio 417, Toronto, Ontario M5V 3A8, Canada.*

*Fax: +1-416-6420954*

*Email: iclei@iclei.org*

*Web: www.iclei.org/bonn2010*

### Save Energy, Save Water, Save the Planet

Sofia, Bulgaria:

03-06-2010 to 05-06-2010

The sixth forum and expo organized by Via Expo for the South East Europe region. The three main topics are energy efficiency, water and sewage tech-

nologies, and waste management and recycling. Will act as a marketplace for providers of technology and expertise in these key areas as well as their application in progressing towards sustainable energy consumption and reducing greenhouse gas emissions in the region.

*Details: Maya Krusteva, Via Expo Ltd, 3 Anton Chehov Square, 4003 Plovdiv, Bulgaria.*

*Email: office@viaexpo.com*

*Web: www.viaexpo.com*

### ASLO-NABS 2010 Joint Meeting Santa Fe, USA:

06-06-2010 to 11-06-2010

Working theme of the meeting is "Global Changes from the Center to the Edge". Conference is organized by the American Society of Limnology and Oceanography and the American Benthological Society. Aims to draw attention to the entirety of aquatic systems on which humans depend encompassing the entire hydrological cycle. Session topics include watersheds, water resources, science education and public policy.

*Details: 2010 Meeting Organizer, ASLO Business Office, 5400 Bosque Blvd, Suite 680, Waco, Texas 76710, USA.*

*Fax: +1-254-7763767*

*Email: business@aslo.org*

*Web: www.aslo.org*

### Third International Conference on Sustainable Irrigation Management, Technologies & Policies

Bucharest, Romania:

07-06-2010 to 09-06-2010

Meeting will consider the strategic importance of fresh water resources, their over-exploitation, contamination and detrimental environmental effects. Participants will address the different aspects of irrigation including management, scientific and technical aspects together with matters related to policy and economics.

*Details: Irene Moreno Millan, Sustainable Irrigation 2010, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton SO40 7AA, UK.*

*Fax: +44-238-0292853*

*Email: imoreno@wessex.ac.uk*

*Web: www.wessex.ac.uk/10-conferences/sustainable-irrigation-2010.html*

### 9th World Wind Energy Conference & Renewable Energy Exhibition: WWEC2010

Istanbul, Turkey:

15-06-2010 to 17-06-2010

Conference is organized in cooperation with EUROSOLAR Turkey. Aimed at major players of wind energy technologies, industries and policies to share the latest technologies and information effecting strategic decisions. Special focus will be on how to integrate large capacities of wind power into existing grid infrastructure and how to adjust grid capacities.

*Details: World Wind energy Associa-*

tion, WWEA Head Office, Charles-de-Gaulle-Str 5, 53113 Bonn, Germany.  
Fax: +49-228-3694084  
Email: [contact@wwec2010.com](mailto:contact@wwec2010.com)  
Web: [www.wwec2010.com](http://www.wwec2010.com)

#### 2010 International Energy Workshop

**Stockholm, Sweden:  
21-06-2010 to 23-06-2010**

Organized in cooperation with the KTH Royal Institute of Technology in Stockholm. Intended for participants such as researchers and practitioners in developed and developing countries interested in the analysis of the interrelationship between climate change and energy. Main themes are climate change - mitigation and adaptation, energy and transport modelling, and the economics of low carbon technologies.

*Details: Massimo Tavoni, Fondazione Eni Enrico Mattei, Corso Magenta 63, 20123 Milan, Italy.*  
Email: [info@internationalenergyworkshop.org](mailto:info@internationalenergyworkshop.org)  
Web: [www.internationalenergyworkshop.org/Workshop\\_2010.html](http://www.internationalenergyworkshop.org/Workshop_2010.html)

#### Fourth World Congress of Environmental & Resource Economists

**Montreal, Canada:  
28-06-2010 to 02-07-2010**

Papers will be presented in the three main areas of open sessions, special sessions and a poster session. Special session topics will include: economics of species and habitat conser-

vation; demography and environment; climate impacts and policy in the Mediterranean region; impact of climate change on agriculture; new perspectives on water demands and valuation; and, real options and renewable resources, amongst others.  
*Details: WCERE 2010 Secretariat, Bureau des Congres Universitaires, 162 Place Gatine, St-Jerome (Quebec) J7Y 5K2, Canada.*

*Fax: +1-514-3404440  
Email: [info@wcere2010.org](mailto:info@wcere2010.org)  
Web: [www.wcere2010.org](http://www.wcere2010.org)*

#### 2010 International Climate Change Adaptation Conference - Climate Adaptation Futures

**Gold Coast, Australia:  
29-06-2010 to 01-07-2010**

Working theme of the conference is 'Preparing for the unavoidable impacts of climate change'. Co-hosted by the Australian National Climate Change Research Facility and the CSIRO Climate Adaptation Flagship. One of the first international forums to focus solely on climate impacts and adaptation, bringing together scientists and researchers from developed and developing nations.

*Details: Conference Secretariat, YRD (Aust) Pty Ltd, PO Box 717, Indooroopilly, Qld 4068, Australia.*  
*Fax: +61-7-33682433  
Email: [nccarf-conf2010@yrd.com.au](mailto:nccarf-conf2010@yrd.com.au)  
Web: [www.nccarf.edu.au/conference2010](http://www.nccarf.edu.au/conference2010)*

#### 5th International Conference on Environmental Science & Technology

**Houston, USA:  
12-07-2010 to 16-07-2010**

Sponsored by the American Academy of Sciences, the conference aims to provide a platform for environmental scientists, engineers, management professionals and government parties to discuss the latest developments in environmental research and applications. Session topics include: water pollution and water quality control; air pollution and air quality control; global change; wetlands; ecosystem assessment and restoration; and, society and the environment.

*Details: Environmental Conference Program, American Academy of Sciences, 9720 Town Park Drive, Ste 18, Houston, Texas 77036, USA.*  
Email: [env-conference@aasci.org](mailto:env-conference@aasci.org)  
Web: [www.AASci.org/conference/env/2010](http://www.AASci.org/conference/env/2010)

#### 6th Australia-New Zealand Climate Change & Business Conference

**Sydney, Australia:  
10-08-2010 to 12-08-2010**

Conference will include discussion and debate on international developments, policy outlook and impacts, best practice responses and the challenges of adaptation and how they are all linked together. Sponsorship and exhibition opportunities are available and it is advised that interested par-

ties contact the organizers as soon as possible.

*Details: Conference Organizer, Climate Change & Business Centre, PO Box 375, Collaroy, NSW 2097, Australia*  
Email: [secretariat@climateandbusiness.com](mailto:secretariat@climateandbusiness.com)  
Web: [www.climateandbusiness.com](http://www.climateandbusiness.com)

#### ISEE 2010 Conference: Advancing Sustainability in a Time of Crisis

**Oldenburg and Bremen, Germany:  
22-08-2010 to 25-08-2010**  
The 11th biennial conference organized by the International Society for Ecological Economics. Will be held in the adjacent cities of Oldenburg and Bremen. Main subjects for presentations and discussion include: climate change; energy; biodiversity and ecosystem services; sustainable development; land use; green business; environmental ethics and values; and, ecology.

*Details: Bernd Siebenhuner, School of Computing Science, Business Administration, Economics and Law, Carl von Ossietzky University of Oldenburg, 26111 Oldenburg, Germany.*  
*Fax: +49-441-7984379  
Email: [bernd.siebenhuner@uni-oldenburg.de](mailto:bernd.siebenhuner@uni-oldenburg.de)  
Web: [www.isee2010.org](http://www.isee2010.org)*

# A drama to ease suffering

## BANGLADESH

**Sarder Shafiqul Alam explains how a drama helped reduce people's suffering from climate change impacts in a vulnerable coastal region of Bangladesh.**

The 2005 Bangladesh National Adaptation Programme of Action defines the coastal region of Bangladesh as that likely to be affected most by climate change. Impacts include sea-level rise, saline water intrusion, cyclones, tidal surges and coastal erosion. Shyamnagar Upazila in the south-western coastal region of Bangladesh has been identified as one of the most vulnerable areas to climate change. Frequent cyclones with tidal surges, sea-level rise, saltwater intrusion, river erosion and increases in high tide levels in recent times have become major problems, dramatically increasing the vulnerability of local communities. Many people have been displaced from villages in Shyamnagar Upazila due to rapid erosion, and homesteads and crop lands have also been lost.

The drama 'Feria Dao' (Give me Back or Return Back) was written by a group of people concerned about climate change and eager to explore adaptation options and improve communication at different levels amongst a range of stakeholders. The drama was performed in three villages in Munshiganj and Gabura Unions in Shyamnagar Upazila, Satkhira District. About 5000 local, national and international stakeholders in total watched these performances. The drama's major themes were climate change-induced vulnerabilities related to disasters, the trend of increasing disasters, disaster preparedness, population displacement and a demand to return back to land that had been lost or, failing that, an appeal for planned migration to help vulnerable communities survive.

Immediately following the final showing of the drama, cyclone Aila hit the area on 25th May 2009. A large number of people lost their land, homesteads and property and had to move away from the places their houses were originally located. Most of these displaced people now lack basic survival needs at their new locations in cities or other areas. All affected families agree with the main messages

communicated by the drama: they are afraid of future climatic disasters and of increases in vulnerability and the number of displaced people.

Any planned adaptation in Bangladesh needs to include a 'migration' strategy for vulnerable coastal communities. Developed countries are responsible for the increasing number of climatic disasters, which damage the lives, livelihoods and assets of coastal communities in Bangladesh. Developed countries should, therefore, be responsible for providing funding and securing places to live for vulnerable communities forced to migrate because of climate change.

Through the drama, levels of understanding about climate change and its impacts on lives, livelihoods and on livelihood assets amongst local communities and other stakeholders has increased. The drama 'Feria Dao' continues to be in huge demand amongst both local and national stakeholders.

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● **Further information:** Sarder Shafiqul Alam is a research fellow at the Bangladesh Centre for Advanced Studies.  
**Email:** sarder.shafiqul@bcas.net

# Community-based adaptation

## GAINING MOMENTUM

**Saleemul Huq and Jessica Ayers report on a recent conference on community-based adaptation (CBA).**

Community-based adaptation describes an approach to increasing the resilience of some of the world's poorest communities to the impacts of climate change. It builds the capacity of local people to develop under, and adapt to, a changing climate. It generates strategies through participatory processes, learns from existing cultural norms and addresses local development issues that make people vulnerable to the impacts of climate change in the first place.

While still a relatively new approach to climate change adaptation, the CBA agenda has grown in size and significance over the past few years. There have been four international conferences on CBA since 2005, and projects are now in operation in vulnerable communities in both developing and also some developed countries. The Fourth International Conference on CBA took place in Dar

es Salaam, Tanzania, in February 2010. Nearly 200 participants were present, including representatives from governments, non-government organizations, community-based organizations, United Nations agencies and major donors. The Global Initiative on Community Based Adaptation (GICBA) was formally launched at the conference as a knowledge sharing platform for supporting and promoting a stronger voice on CBA issues, and the CBA Exchange Network continues to play a key role in sharing information about CBA.

There has been a rapid increase in understanding and knowledge on CBA. At the second CBA Workshop, the task was to convince development practitioners working at the CBA level that climate change was relevant to them, and that vulnerability to climatic variability was the entry point for building adaptive capacity. The battle to convince them of the value of CBA is now largely won and discussions at the third and fourth conferences focused more on topics such as distinguishing CBA from community-based development, how to demonstrate the value of CBA and develop

indicators for monitoring and evaluation; scaling-up CBA and making it policy-relevant and how to integrate climate science into CBA whilst maintaining a community-driven process. Several working groups were formed, for example on 'terminology and concepts'.

Large-scale CBA initiatives are now being designed to try and answer some of the questions arising through 'action research'. Donor interest in supporting CBA has also increased. For example, Global Environment Facility-supported projects have been systematically piloted in ten countries since May 2008 and in 2009 the Small Grants Programme launched a Mekong and Asia-Pacific CBA Programme with AusAID support. The United Nations Environment Programme has further plans to scale up financial support for CBA including launching a Global Partnership on CBA involving United Nations agencies and civil society with support from the private sector and foundations. The Climate Change Adaptation in Africa research and capacity development programme funded by the International Development Research Centre,



**Euster Kibona, Environmental Protection and Management Services, Tanzania, and Tanzanian Minister for Environment Batilda Burian at the Fourth International Conference on CBA, Dar es Salaam, February 2010**

Photo: © Hannah Reid

Canada, and the Department for International Development, United Kingdom, also funds several CBA projects.

There are, however, still many challenges for CBA, including:

- finding practical ways of scaling up CBA from piecemeal case studies;
- finding better ways of drawing out and communicating lessons from CBA;
- ensuring adaptation science informs CBA strategies without losing community-driven approaches;
- finding ways of demonstrating the value of CBA - as different but complementary

to community-based development - to both development and climate change policy makers;

- developing a monitoring and evaluation framework that responds to donors' demands whilst also being accessible to communities so that they can access resources for CBA quickly and efficiently; and,
- acknowledging the limits of a project-based approach to CBA that could be inappropriate where future climate change impacts operate at a scale that cannot be addressed by isolated interventions.

Many initiatives, including the GICBA, the CBA-Exchange, and existing action research projects are helping to address these challenges. It is hoped that by the time of the Fifth International CBA Conference in Dhaka, Bangladesh, in February 2011, we will be seeing significant progress against these challenges.

• **Further information:** Saleemul Huq, *Tiempo* editor, and Jessica Ayers are staff members of the International Institute for Environment and Development, London, United Kingdom. The CBA Exchange Network can be accessed at [www.cba-exchange.org](http://www.cba-exchange.org) and further information on the Fourth International Conference on CBA is available, in summary form, at [tinyurl.com/yl3eyq9](http://tinyurl.com/yl3eyq9) and, in depth, at [www.iisd.ca/yimb/climate/cba4/](http://www.iisd.ca/yimb/climate/cba4/).  
**Email:** [saleemul.huq@iied.org](mailto:saleemul.huq@iied.org) or [jess.ayers@gmail.com](mailto:jess.ayers@gmail.com)

# A world divided?

## CLIMATE NEGOTIATIONS

**The Copenhagen climate summit exposed serious rifts within the international community. Mick Kelly and Sarah Granich report.**

The Copenhagen climate summit (the 15th Conference of the Parties to the United Nations Framework Convention on Climate Change and the 5th Meeting of the Parties to the Kyoto Protocol) marked the original deadline set by the Bali Road Map, agreed two years earlier, for a framework for climate change mitigation beyond 2012. While it had been clear for some time that the outcome of the summit would be a high-level political statement rather than a detailed treaty, hopes remained high as the summit got underway.

“Copenhagen can and must be a turning point in the world’s efforts to prevent runaway climate change,” charged United Nations secretary-general Ban Ki-moon. “Our target, our goal, is to have a legally binding treaty... as soon as possible in 2010,” he said. “But before that, we must have a strong political agreement in Copenhagen... The more

ambitious, the stronger agreement we have in Copenhagen, the easier, the quicker the process we will have to a legally binding treaty in 2010,” he continued. “This is our commitment.”

In the event, Copenhagen proved an acrimonious meeting with tension high both within the conference centre and on the streets outside. Deep rifts were evident between the industrialized nations and the developing nations, and also within the G77 group of developing nations, with disputes over who should commit to emissions constraints and whether the Kyoto Protocol has a future or not leading, on occasion, to suspension of the negotiations. Outside the conference centre, demonstrators met with determined opposition from the Danish police.

During the first week Tuvalu and other smaller developing nations made waves by proposing discussions on a legally-binding amendment to the Kyoto Protocol that would, for the first time, set emissions targets for major developing nations such as China and India. “We know the implementation of the Kyoto Protocol is not complete and we want

to create an impulse for a stronger commitment,” said Taukiei Kitaru from Tuvalu’s delegation. The move was opposed by the larger developing nations and disagreement over whether to proceed through open contact group or informal private discussions proved impossible to resolve.

While that debate continued, a leaked negotiating text developed by the Danish government angered developing nations. The anger was, in part, directed at what was perceived as a secretive and exclusive process, but there was also serious concern that the draft made no mention of extension of the Kyoto Protocol, a goal that developing nations regard as an essential commitment on the part of the industrialized world. Lumumba Stanislaus Di-Aping, speaking for the Group of 77 developing nations, described the draft as a “serious violation that threatens the success of the Copenhagen negotiating process.”

The Danish government was quick to respond that the text was not a “secret Danish draft” for a new climate change agreement. “In this kind of process, many different working papers are circulated amongst many dif-



**The Copenhagen negotiations**

Photo: © UN Climate Talks

ferent parties with their hands on the process,” a statement from the Danish Ministry of Energy and Climate said. “These papers are the basis for informal consultations that contribute with input used for testing various positions.”

A proposed accord drafted by China, India, South Africa and Brazil was also leaked. This agreement would commit industrialized nations to “multiply by eight” their commitment under the existing Kyoto Protocol for a second, seven-year period to 2020. The com-

mitment, a reduction in emissions of around 40 per cent below 1990 levels, must be made “mainly through domestic measures.”

On the positive side, good progress was made in developing the Reducing Emissions from Deforestation and Degradation (REDD) programme. The United States made a conditional pledge of one billion dollars towards initial financing over the period to 2012. “Protecting the world’s forests is not a luxury. It’s a necessity,” observed United States agriculture secretary Tom Vilsack. “This substantial

commitment is reflective of our recognition that international public finance must play a role in developing countries’ efforts to slow, halt and reverse deforestation,” he continued. “This is what’s needed to break the log jam of the REDD negotiations here in Copenhagen and spark the additional funding needed to address the global challenge of deforestation,” commented Andrew Deutz from The Nature Conservancy.

New Zealand launched the Global Research Alliance on Agricultural Greenhouse Gases. The Alliance involves 20 or more countries in a multi-year programme aimed at reducing emissions from livestock, cropping and rice production. “Fourteen per cent of the world’s greenhouse gas emissions are from agriculture, but for New Zealand and parts of the developing world, that figure is much higher,” said Tim Groser, New Zealand’s associate climate change issues minister. The United States Department of Agriculture will expand research on climate change mitigation in this sector by US\$90 million over the next four years. “No single nation has all of the resources needed to tackle agricultural greenhouse gas emissions while at the same time enhancing food production and food security,” observed agriculture secretary Vilsack. “We will not only pool our talents and existing resources but draw new resources, and even new scientists, to better understand climate change in an agricultural context and in so doing tackle one of the most important international issues of our time.”



The African group of nations, with backing from the European Union, advanced a financing plan for developing countries during the summit. The plan starts with a sum of US\$30 billion over a three-year start-up period, rising to US\$50 billion a year by 2015 and US\$100 billion by the end of that decade. Announcing the plan, Ethiopian prime minister Meles Zenawi suggested that 40 per cent of the start-up funds should go to Africa. Over the long-term, at least half the funding should be directed towards adaptation in vulnerable nations and poor countries and regions. "I know my proposal will disappoint those Africans who, from the point of view of justice, have asked for full compensation of the damage done to our development prospects. Because we have more to lose than others, we have to be prepared to be flexible," he said.

As the high-level meeting of government leaders that formed the final phase of the summit drew to a close, the Copenhagen Accord emerged (see box), drafted by a five-nation group consisting of the United States and the BASIC countries of Brazil, South Africa, India and China. The commitment to financial support for developing nations in the Accord is in line with the earlier proposal by the African nations and this secured the support of much of this continent. Nevertheless, a number of countries objected that the Accord had not been reached by "due process" and lacked specific targets. As a result of the lack of consensus, the summit adopted a decision that merely took note of the agree-

## THE COPENHAGEN ACCORD

The Copenhagen Accord commits signatories to "enhance long-term cooperative action," recognizing that "deep cuts in emissions are required according to science." It acknowledges the scientific view that the global temperature rise should be limited to two degrees Celsius above pre-industrial levels. There is provision for review in 2015, including "consideration of strengthening the long-term goal referencing various matters presented by the science, including in relation to temperature rises of 1.5 degrees Celsius." It stresses that "social and economic development and poverty eradication are the first and overriding priorities of developing countries."

The Accord commits industrialized signatories to submit emissions targets

for the year 2020, which will be appended to the agreement. International verification of emissions reduction will take place in these countries. Mitigation actions will be undertaken by developing nations and reported on with some international checks, though national sovereignty will be respected. The Accord reiterates the principle of common but differentiated responsibilities. In the case of the least developed countries and small island developing states, mitigation actions will be voluntary.

The Accord commits the developed world to finding new and additional resources to support developing nations in the areas of mitigation, reducing emissions from deforestation and forest degradation, adaptation, technology develop-

ment and transfer and capacity building. This support should include a sum of approaching US\$30 billion over the period 2010-2012, rising to a target of US\$100 billion in 2020.

Four new bodies will be established: the Copenhagen Green Climate Fund, through which a significant portion of the financial support for developing countries will flow; a mechanism on REDD-plus; a high-level panel to study the implementation of financing procedures; and a technology mechanism.

The Accord itself contains no commitment to develop a legally-binding treaty by the end of 2010, though a proposal attached to the document does suggest this goal.

ment without making it legally binding. Discussions regarding the two main tracks of the negotiations, a second period under the Kyoto Protocol covering emissions targets for the industrialized nations and a new agreement extending to all nations, moved

forward, but many issues remained to be resolved at the end of the meeting and the Copenhagen Accord proved the only substantive outcome.

Barack Obama, United States president, described the Accord as an "unprecedented

breakthrough” covering, as it does, action by both developed and developing nations. “We have come a long way, but we have much further to go,” he said. Waiting to reach a full, binding agreement could have resulted in “such frustration and cynicism that rather than taking one step forward, we ended up taking two steps back,” he continued.

Venezuelan delegate Claudia Salerno Caldera, however, saw the deal as a “coup

d’etat against the authority of the United Nations. “What we have after two years of negotiation is a half-baked text of unclear substance,” said Kim Carstensen from WWF’s Global Climate Initiative. Oxfam International described the deal as a triumph of spin over substance. “This agreement barely papers over the huge differences between countries which have plagued these talks for two years,” said Jeremy Hobbs, executive director of Oxfam International.

Evo Morales, president of Bolivia, called the Copenhagen summit “a triumph of the people” as “the presidents came, proposed and went without hearing, but this time they could not impose their declaration.” Bolivia was one of a group of nations that blocked a consensus on the Copenhagen Accord, objecting to the deal being done in secret by a small group of nations. Morales is to host an alternative climate conference in April 2010.

The European Union, having been sidelined during the drafting of the Accord, accepted the outcome on the basis that some agreement was better than none. German chancellor Angela Merkel said that she had “mixed feelings” about the Accord, which she regarded as only a first step.

United Nations secretary-general Ban Ki-moon acknowledged that the Copenhagen Accord was “not everything we had hoped for” but said that it was an “essential beginning. He stressed that a legally-binding agreement must be in place during 2010.

● **Further information:** The Tiempo Climate Cyberlibrary provides weekly coverage of news at [www.tiempocyberclimate.org/news-watch/](http://www.tiempocyberclimate.org/news-watch/). For detailed discussion of all climate negotiating meetings, visit Earth Negotiations Bulletin (ENB) at [www.iisd.ca/process/climate\\_atm.htm](http://www.iisd.ca/process/climate_atm.htm). ENB has published daily reports and a summary of the deliberations at the Copenhagen climate summit at [www.iisd.ca/climate/cop15/](http://www.iisd.ca/climate/cop15/).



**Protests - Copenhagen, COP 15**

Photo: © UN Climate Talks

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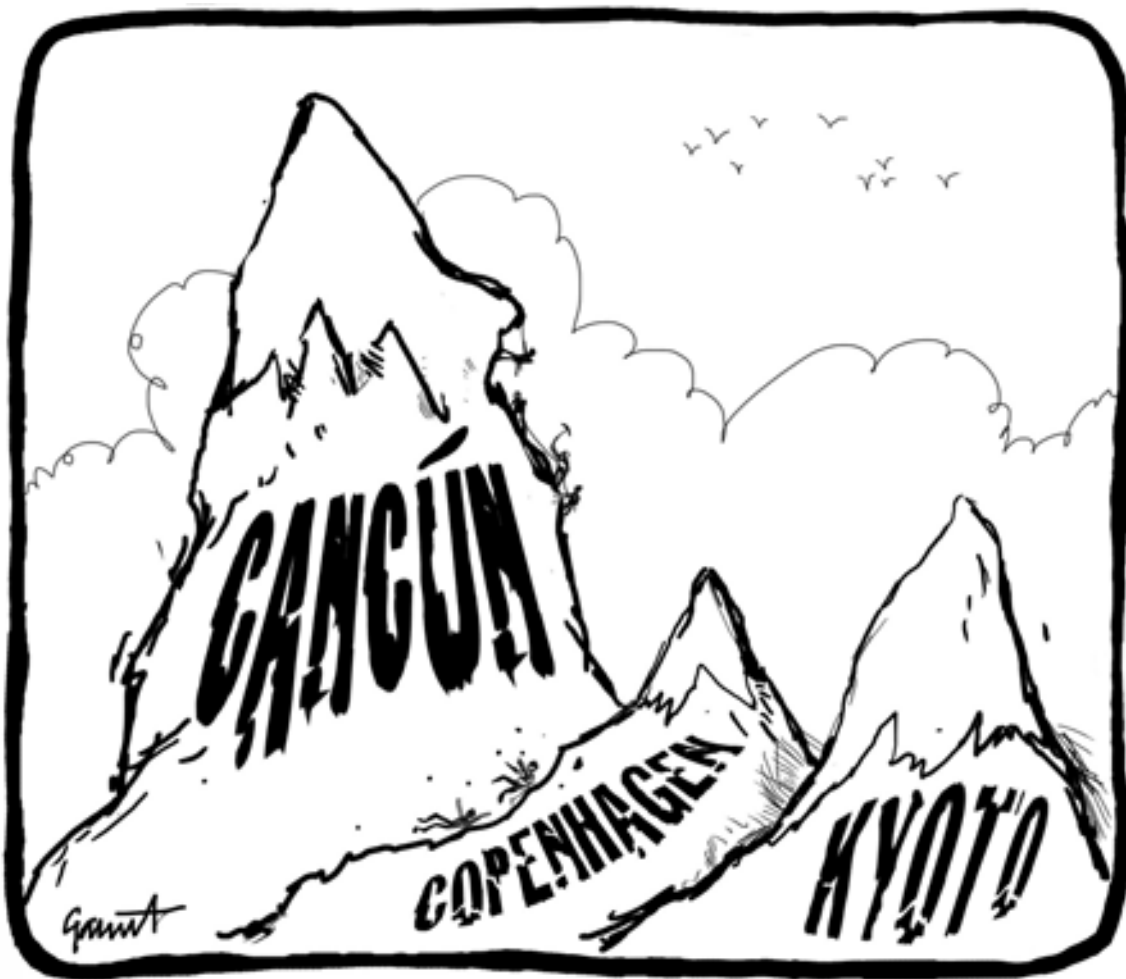
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# Defining the most vulnerable

**T**he United Nations Framework Convention on Climate Change (UNFCCC) commits developed countries “to assist developing countries that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation”. Yet, but for a rough grouping in the preamble, the UNFCCC does not say which countries are particularly vulnerable, nor how they might be identified.

Given the limited funds available for adaptation, some Parties to the UNFCCC have suggested prioritizing between developing countries on the basis of their vulnerability to climate change. At a UNFCCC meeting in 2008, Bangladesh proposed developing a ‘vulnerability index’ for doing so. Such an index should provide a systematic and transparent way of measuring and comparing the vulnerability of countries to climate change. The problem is that ‘vulnerability’ means different things to different people. Human life, productive land, physical

infrastructure and biological diversity are all vulnerable to climate change, but there is no consensus on which of these are more or most important.

Is Vietnam more vulnerable than Vanuatu because more people will be affected? Or is Vanuatu more vulnerable than Vietnam because all of its land is exposed? Is Mexico more vulnerable than Mali because more economic assets are at risk? Or is Mali more vulnerable than Mexico because it is already affected by drought? And if a country were considered more vulnerable, what would make it ‘particularly vulnerable’?

In principle it is relatively easy to construct an index to rank Vietnam, Vanuatu, Mexico, Mali and all other countries in order of vulnerability. This is exactly what has been done over the past ten years. Scientists have developed a series of different indices, each of which produced a different ranking of vulnerable countries, based on different views and assumptions about what makes a country vulnerable.

## THE FINAL WORD

**Richard Klein explains why politicians, not scientists, must lead decision making on how to measure a country’s vulnerability to climate change**

Measuring vulnerability is clearly not an exact science. Bangladesh’s suggestion to develop a vulnerability index should, therefore, not be delegated to scientists. Scientists cannot provide an objectively ‘true’ answer to what is essentially a political question. They may well make an important contribution (for example, by proposing methods and collecting data), but the decisions required to construct the index are best left to negotiators. These decisions include which variables to consider, what weights to attach to them, and where to set the threshold beyond which countries are considered ‘particularly vulnerable’.

If sufficient resources were available to address the adaptation needs of all developing countries, no such decisions would need to be made. But this is currently not the case.



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