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**More Ambition Needed if Greenhouse Gases are to Peak in Time,  
Says New UNEP Report**

**Pledges Post Copenhagen Unlikely to Keep Temperatures Below 2 Degrees  
Celsius by Mid Century**

**UNEP Year Book Also Launched Today Outlines Growing Governance Challenge  
from Climate to Chemicals**

**Bali (Indonesia), 23 February 2010** – Countries will have to be far more ambitious in cutting greenhouse gas emissions if the world is to effectively curb a rise in global temperature at 2 degrees C or less.

This is the conclusion of a new greenhouse gas modeling study, based on the estimates of researchers at nine leading centres, compiled by the UN Environment Programme (UNEP).

The experts (see notes to editors) suggest that annual global greenhouse gas emissions should not be larger than 40 to 48.3 Gigatonnes (Gt) of equivalent CO<sub>2</sub> in 2020 and should peak sometime between 2015 and 2021.

They also estimate that between 2020 and 2050, global emissions need to fall by between 48 per cent and 72 per cent, indicating that an ambition to cut greenhouse gases by around three per cent a year over that 30 year period is also needed.

Such a path offers a 'medium' likelihood or at least a 50/50 chance of keeping a global temperature rise at below 2 degrees C, says the new report.

The new study, launched on the eve of UNEP's Governing Council/Global Ministerial Environment Forum taking place in Bali, Indonesia, has analyzed the pledges of 60 developed and developing economies.

They have been recently submitted to the UN Framework Convention on Climate Change (UNFCCC) following the UN climate convention meeting in Copenhagen in December.

The nine modeling centres have now estimated how far these pledges go towards meeting a reasonable 'peak' in emissions depending on whether the high or the low intentions are met.

“The expected emissions for 2020 range between 48.8 to 51.2 GT of CO2 equivalent based on whether high or low pledges will be fulfilled,” says the report.

The report, as noted earlier, says that in order to meet the 2 degree C aim in 2050, emissions in 2020 need to be between 40 Gt and 48.3 Gt.

Thus even with the best intentions there is a gap of between 0.5 and 8.8Gt of CO2 equivalent per year, amounting to an average shortfall in emission cuts of 4.7 Gt

If the low end of the emission reduction pledges are fulfilled, the gap is even bigger—2.9 Gt to 11.2 Gt of CO2 equivalent per year, with an average gap of 7.1 Gt says the report *How Close Are We to the Two Degree Limit?*

Achim Steiner, UN Under-Secretary General and UNEP Executive Director, said: “There are clearly a great deal of assumptions underlying these figures, but they do provide an indication of where countries are and perhaps more importantly where they need to aim.”

“There clearly is ‘Gigatonne gap’ which may be a significant one according some of the modelers. This needs to be bridged and bridged quickly if the international community is to pro-actively manage emissions down in a way that makes economic sense,” he added.

“There are multiple reasons for countries to make a transition to a low carbon, resource efficient Green Economy of which climate change is a key one. But energy security, cuts in air pollution and diversifying energy sources are also important drivers,” said Mr Steiner.

“This week at the UNEP GC/GMEF we will also shine a light on the opportunities ranging from accelerating clean tech and renewable energy enterprises to the climate, social and economic benefits of investing in terrestrial and marine ecosystems,” he added.

Some of those multiple opportunities for action are showcased in the UNEP Year Book 2010 which is being presented to ministers responsible for the environment who are attending the meeting.

These include Reduced Emissions from Deforestation and Forest Degradation (REDD) which gained political support at the Copenhagen climate change meeting.

REDD, which involves supporting developing countries to conserve rather than clear tropical forests, could make an important contribution not only to combating climate change but also to overcoming poverty and to a successful UN International Year of Biodiversity.

- The Year Book estimates that investing \$22 billion to \$29 billion in REDD could cut global deforestation by 25 per cent by 2015.

It also highlights a new and promising REDD project in Brazil, at the Juma Sustainable Development Reserve in Amazonas.

- Here each family receives US\$28 a month if the forest remains uncut, one potential way of tipping the economic balance in favour of conservation versus continued deforestation.

Renewables are also gaining momentum: although still very low compared to the huge potential of renewable energy, the global installed wind generation capacity has grown at the rate of 25 per cent per year over the past five years.

- In China, for example installed capacity has nearly doubled every year since the end of 2004 – and the report notes that the wind energy potential under perfect conditions has been estimated at up to 72,000 GW, nearly five times total energy demand. Probably 20 per cent of this energy potential could be captured in the future, representing almost 15 000 GW.

Managing a response to climate change also echoes the challenge of International Environment Governance, a key theme at this week's GC/GMEF.

Governance also underpins the international response to other challenges highlighted in the UNEP Year Book 2010.

### **Harmful substances**

Among the chemicals now causing the greatest concern worldwide are endocrine disrupters, which interfere with hormone systems and are linked to serious effects on reproductive health.

A growing number of scientists are concerned that spikes in cancer, reproductive abnormalities, infertility, and behavioural disorders are the result of exposure to these chemicals during the development of fetuses and children.

The Year Book also looks at the nitrogen cycle, which has been identified as one of three key areas where 'planetary boundaries' have been crossed.

Most of the world's biodiversity hotspots receive nitrogen from air and water at levels known to alter ecosystems, and nitrogen is creating dead zones in coastal waters—areas where big drops in oxygen levels can occur.

Global nitrogen use in agriculture is projected to double to some 220 million tonnes a year by 2050 if present trends continue.

Reducing the world's nitrogen use will require a profound transformation of agricultural practices. But this may be essential to keep ecosystems from becoming so saturated with nitrogen that they become terrestrial equivalents of the oceans dead zones.

### **Ecosystem management**

2010 is the International Year of Biodiversity. Changes in biodiversity due to human activities have been more rapid in the past 50 years than at any other time in human history.

- The latest IUCN Red List, 17,291 species out of 47,677 assessed are under threat: 21 per cent of all known mammals, 30 per cent of all known amphibians, 12 per cent of all known birds, 28 per cent of reptiles, 37 per cent of freshwater fishes, 70 per cent of plants, and 35 per cent of invertebrates.

The report emphasizes that ecosystem management, of which biodiversity is the building block, has an important role to play in mitigating and adapting to the impacts of climate change.

Managing ecosystems for resilience, and protecting biodiversity to support this resilience, is critical both to meet development objectives and to address the challenges of climate change.

### **Disasters and conflict**

In 2009, progress was made towards understanding how climate change, environmental degradation, and mismanagement of natural resources increase vulnerability to both disasters and conflicts, also within the context of the International Strategy for Disaster Reduction.

Equally how sustainable natural resource management may reduce vulnerability to disasters and conflict while supporting peacebuilding.

- Forty per cent of intra-state armed conflicts have been shown to be directly linked to competition over natural resources.

Disasters and conflicts are linked to the environment in two important ways. First, environmental degradation often results in the loss of natural defences and environmental services, increasing communities' vulnerability to environmental hazards and weakening their resilience.

Second, climate change is expected to exacerbate environmental degradation and increase disaster risks as storms, floods, and droughts become more frequent and more intense.

The year 2010 will see further work and research into this area, including new guidance on natural resource management, peacebuilding and ways to minimize conflict risks from natural resources while maximizing opportunities from economic development and livelihoods.

### **Notes to Editors**

How Close Are We to the Two Degree Limit?—An information note to the UNEP Governing Council/Global Ministerial Environment Forum. [www.unep.org](http://www.unep.org)

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The UNEP Year Book 2010 is available online at [www.unep.org/yearbook/2010](http://www.unep.org/yearbook/2010)  
To order the Year Book 2010, visit [www.earthprint.com/](http://www.earthprint.com/)

For more information on the 11<sup>th</sup> Special Session of the UNEP GC/GMEF, visit:  
[www.unep.org/gc/gcss-xi/](http://www.unep.org/gc/gcss-xi/)

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