

## **Climate change: a development perspective**

**A Note for the Special UN General Assembly Session on Climate Change  
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### **A. Background and Latest Scientific Information and Scenarios**

Climate change is a genuine and serious crisis. The latest IPCC reports have done valuable service by placing the scientific and other aspects on the global agenda in a more scientifically clearer manner.

It shows that "business as usual" will lead to temperatures rising by 3°C to 6°C, with catastrophic results in the form of rising sea levels, melting glaciers, water shortages, floods and decreased agricultural yields.

It would take only 3% of world income in 2030 to carry out the major changes needed. That works out to a reduction in the growth of gross domestic product (GDP) of only 0.12% per year until 2030.

However major changes are needed changes needed to energy systems, technology, transport, buildings, industry, agriculture, how we treat forests and seas, and to lifestyles, aimed at quickly bringing down the emissions of greenhouse gases.

The IPCC's third report (May 2007) shows that Greenhouse gas emissions have grown by 70% between 1970 and 2004. The largest growth has come from the energy supply sector (an increase of 145%), transport (120%), industry (65%) and land use, land use change, and forestry (40%). With current policies, global greenhouse gas emissions will continue to grow with carbon dioxide (CO<sub>2</sub>) emissions from energy use rising by 45% to 110% between 2000 and 2030.

That would be disastrous in the effects it would have on raising temperatures. The present global temperature is already 0.7°C above the pre-industrial level. There is near scientific consensus that if the global temperature increases by more than 2°C above the pre-industrial level, there would be irreversible climate changes. With changes above 3°C, there would be catastrophic changes.

An interesting table in the IPCC report shows what could happen with different scenarios. In order to keep temperatures from rising more than 2-2.4°C, the greenhouse gas concentration in the atmosphere has to be contained to 445-490 parts per million (ppm). And for that to happen, CO<sub>2</sub> emissions must be cut by 2050 to 50-80% below the year 2000 level. And to keep on track to this timetable, the emissions must peak by 2015.

This is the IPCC's the best scenario, but even then many scientists and environmentalists would claim it is not enough.

In the next scenario, the temperature rise is restricted to 2.4-2.8°C, the greenhouse gas concentration must be contained to 490-535 ppm, and emissions must be cut by 30-60% by 2050.

In the next scenario, temperature rises by 2.8-3.2°C, with gas concentration at 535-590 ppm, and emission changes range from 5% rise to 30% cut.

A worse scenario is where the CO<sub>2</sub> emissions rise by 10%-60%, causing greenhouse gas concentration to be 590-710 ppm, with temperatures rising by 3.2 to 4°C, resulting in runaway climate chaos.

In the most disastrous scenario, emissions rise by 25% to 140%, the greenhouse gas concentration rises to 710 to 1130 ppm, and temperatures rise by 4 to 6.1°C. Human life is almost certainly impossible in many parts of the world.

In order to keep to the first and best scenario, the IPCC estimates that 3% of the world's GDP is required to be spent by 2030, not a very large sum compared to how it would prevent damage worth much more.

Changes required to bring down greenhouse gas emissions would include the use of current technology:

- ENERGY supply - improved efficiency, switching from coal to gas, nuclear power and renewable energy (hydropower, solar, wind, geothermal, bioenergy);

- TRANSPORT - More fuel-efficient vehicles, hybrid vehicles, cleaner diesel vehicles, biofuel, shift from road transport to rail and public transport systems, non-motorised transport, and land-use and transport planning;

- BUILDINGS - Efficient lighting and day-lighting, more efficient electrical appliances and heating and cooling devices, improved cook stoves, improved insulation, solar heating and cooling design, and alternative refrigeration fluids;

- INDUSTRY - More efficient end-use electrical equipment, heat and power recovery, material recycling and substitution, control of non-CO<sub>2</sub> gas emissions, among others;

- AGRICULTURE - Improved crop and grazing land management to increase soil carbon storage, restoration of cultivated peaty soils and degraded lands, improved rice cultivation techniques and livestock and manure management, improved nitrogen fertiliser application techniques, and dedicated energy crops to replace fossil fuel use;

- FORESTRY - Afforestation, reforestation, forest management, reduced deforestation, wood product management, and use of forestry products for bio-energy; and

- WASTE - Landfill methane recovery, waste incineration with energy recovery, composting of organic waste, controlled waste water treatment, and recycling and waste

minimisation.

Some of these proposals are controversial. Environmentalists for example decry the proposed shift to nuclear power, which brings its own massive problems. The role of biofuels, positive and negative, is still to be assessed.

The IPCC report also advocates changes in lifestyle and behaviour patterns so that resource conservation is emphasised. This will contribute to developing a low-carbon economy.

## **B. The need for major change in developed countries.**

The most important contribution to change has to come from developed countries. This is because they have been historically most responsible for Greenhouse Gas emissions; they are still the most important emitters, especially per capita; and they have more financial and technological resources.

The Kyoto Protocol recognized this by requiring Annex I countries to cut their emissions. The Kyoto Protocol requires industrialized countries to reduce greenhouse emissions by an average of 5% below 1990 levels in its first commitment period between 2008 and 2012. However generally the developed countries have not so far made enough progress in meeting up to their targets.

The Greenhouse Gas Data 2006 report by the UNFCCC (UN Framework Convention on Climate Change) secretariat (which was issued in October 2006) reported a "worrying" upward trend in the 2000-2004 period.

Although the overall emissions by these countries dropped 3.3% in the 1990-2004 period, this was mostly due to a 36.8 per cent decrease by economies in transition of eastern and central Europe (EITs). Most worrying was that the other industrialized Parties of the UNFCCC registered an increase of 11%.

"The worrying fact is that EITs, which were mostly responsible for the overall emissions reductions of industrialized countries so far, as a group have experienced an emission increase of 4.1% in the period 2000-2004," UNFCCC Executive Secretary Yvo de Boer said when launching the report in Bonn. "This means that industrialized countries will need to intensify their efforts to implement strong policies which reduce greenhouse gas emissions," he added.

Emission reductions are urgently required in the transport sector but they seem to be especially difficult to achieve, growing by 23.9% from 1990 to 2004, the report noted.

Thus, the UNFCCC data is really gloomy as it shows an overall lack of action on the part of industrialized countries, and even then excluding the US, which itself has one of

the poorest records. According to one estimate, the United States' emission level in 2005 was 12% above the 1990 level and could rise to 30% above that level in 2012.

There is need for action in developed countries to deeply cut their emissions. The mechanisms such as carbon trading and clean development mechanism should not be used as "escape routes" from this. That escape route is for those under-performing developed countries to fund climate-friendly projects in developing countries and thus earn "credits" allowing them to continue emitting Greenhouse Gases above their permitted level.

The recent initiative in the EU to set targets for its emission cuts 2020 is a good start, though many would agree it is not enough. The G8 Summit 2007 also set targets for emission reduction, although it did not bind all G8 members. Those are numbers to be worked further on.

### **C. The equity perspective and North South relation**

Historically and presently the developed countries have been most responsible for Greenhouse gas emissions, and have greater resources and technical capacity, and thus should contribute most in terms of (1) changes in their own countries; (2) assisting developing countries to move onto a sustainable path.

According to United Nations statistics, in 2003 there was a total of 27.5 billion tons of CO<sub>2</sub> emissions worldwide. Major emitting countries included the US (5.8b tons, 21% of total), China (4.2b tons, 15%), EU (3.8b ton, 13.7%), Russia (1.5b tons, 5.4%), India (1.3b tons, 4.6%), Japan (1.2b tons, 4.5%).

However, what is more important are the data for per capita emissions. In 2003, according to UN statistics, the CO<sub>2</sub> emissions per capita were US 19.8 tons, Australia 18, Canada 17.9, Germany 9.8, Japan 9.7, UK 9.4, China 3.2, Brazil 1.6, Indonesia 1.4, India 1.2, Pakistan 0.75, Nigeria 0.42, Zambia 0.19, Tanzania 0.1 and Chad 0.01.

It is more equitable and fair to consider the per capita emission concept and data. This is because some countries have large total emissions mainly because of their huge population sizes, and not because of the emission intensity.

The principle of "contraction and convergence" would be equitable and thus more capable of winning support by more people. In this principle, the world as a whole has to contract or reduce its total emissions. In doing so, an equitable principle is used. Take the total maximum emission level that is sustainable, i.e. that the world is able environmentally to sustain. Divide this total by the world's population. That level of emission per capita could be considered the "emission right" or "emission entitlement" per person.

In countries where this level is exceeded, there should be targets and plans to bring down the emissions aimed at reaching the average per capita entitlement level. In countries where this level is not yet reached, there is the possibility to expand up to that level; however this should be done in the most efficient manner so that the level of economic activity can be higher at each per capita emission level.

In fact, there is a strong case that the developing countries should be allowed to exceed the per capita entitlement level, while the developed countries should reach an equilibrium below the entitlement level. This is because of the superior technological level that the latter have reached, and also because of the much extra “space” that they enjoyed since the industrial revolution to grow and to emit. Due to this historical and present reality, the developing countries can argue that they require the extra “space” to catch up especially technologically. As they develop their technology and become more climate-efficient, the developing countries could go down to the average entitlement level.

The principle of “fair shares for environmental space” should be coupled with the principles of “common and differentiated responsibility” and “contraction and convergence.”

#### **D. Guidelines for future action**

The UNFCCC has been the multilateral forum for global action on climate change. It should remain so, as it has universal membership. The Kyoto Protocol is the main instrument of the UNFCCC at present, and a post Kyoto regime should be established within the UNFCCC framework. This is the best chance to continue international cooperation on the climate issue.

UNFCCC and Kyoto are based on a central principle, that of common and differentiated responsibility (CDR). This should remain the central principle of a post Kyoto regime.

The articulation of this principle in Kyoto called for developed countries (Annex I countries) to undertake emission reduction according to time-bound targets, while all countries would undertake relevant programmes to be less carbon dependent, and report on them. Developed countries would also assist developing countries through financial resources and technology transfer.

In a post Kyoto regime, the CDR principle should remain central. Developed countries should take the lead in contributing most through reduction commitments. Their record has to improve tremendously from the performance so far in this Kyoto period.

The equity principle and the related principles of “fair shares for environmental space”, “emission entitlements”, “contraction and convergence”, should guide the process.

Developing countries for their part should recognize that there is a serious climate crisis, and upgrade the priority they put in mitigating and adapting to this crisis. This calls for high-level coordination between various Ministries and agencies, and a strong implementation plan and capacity.

The developing countries will not be able to undertake this major task themselves. They have to be assisted through financial resources for both adaptation and mitigation.

Since new climate-friendly and energy-efficient technologies are crucial, there must be worked out multilaterally a scheme for equitable sharing of the technologies and the benefits from them.

In this the issue of intellectual property of these technologies is key. The full operation of the IP system can and is likely to hinder the transfer of climate-friendly technology to developing countries. One option is that patents on climate-friendly technologies be exempted. Another is that they be provided in developed countries but that developing countries can exempt them. In any case, the climate crisis should not be seen as a business opportunity to make monopoly profits especially from the developing countries. It should be an occasion to demonstrate the human capacity to cooperate especially in the face of life-threatening phenomena.