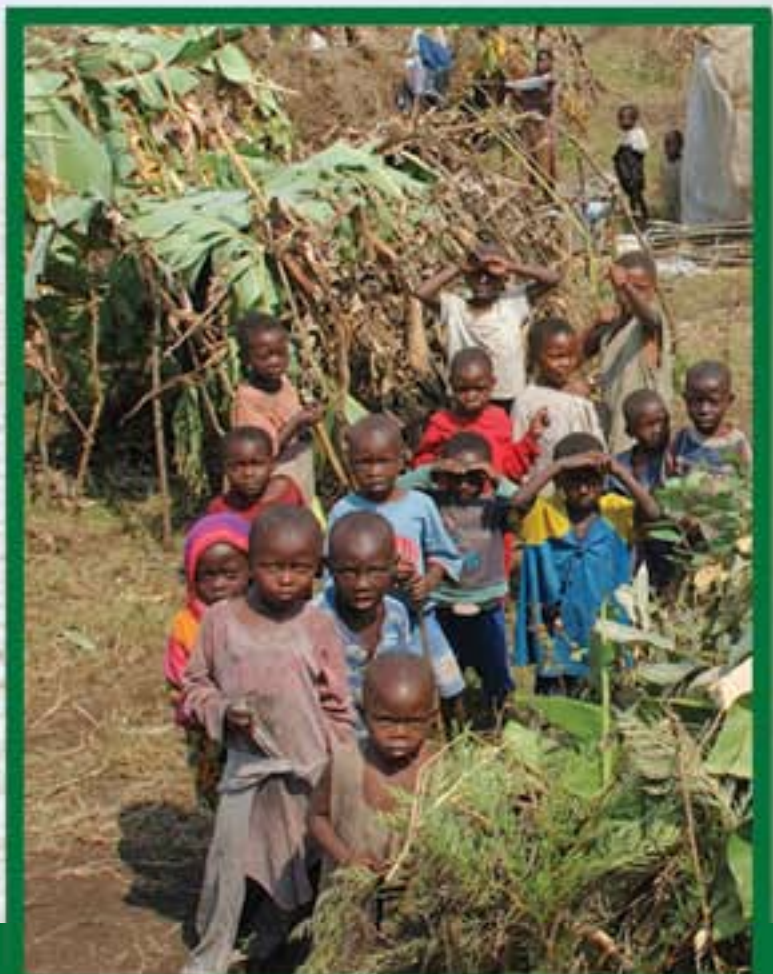


IBON PRIMER on CLIMATE CHANGE



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IBON International



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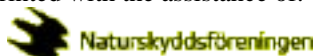
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INTRODUCTION

The earth's climate is changing. Global warming is real. Here are the facts: The world is heating up fast. Temperatures are rising more quickly than they have done for the last 10,000 years. The 1990s were the warmest decade, and 1998 was the hottest year. The earth's average temperature has warmed between 0.3 and 0.6 degrees Celsius in the last 100 years. It may rise by two degrees in the next 100 years, if we go on producing greenhouse gases at the present rate. Sea levels have risen by between 10-25 centimeters in 100 years, as polar ice caps have melted. They are projected to rise another 50 centimeters by 2100.

These have been some of the findings of the Intergovernmental Panel on Climate Change (IPCC), the United Nations scientific panel studying climate change. They said that the evidence of a warming trend is "unequivocal," and that human activity has "very likely" been the driving force in that change over the last 50 years.

They said the world was in for centuries of climbing temperatures, rising seas and shifting weather patterns because of the build up of heat-trapping gases in the atmosphere.

But the IPCC also said that global warming and its harmful consequences could be substantially blunted by prompt action.

This primer is being published as a contribution to the urgent need to raise awareness among the people about climate change, the possible consequences for humanity and the urgent need for action.

This primer takes the standpoint of the world's poor who are the most vulnerable to the negative effects of climate change and the least able to adapt to the challenges of climate change.

The primer takes a partisan stand in pointing to those most responsible for what has been rightly termed as the "great catastrophe of the 21st century" and the measures they must take to make amends for their debt to humanity.

This primer then puts forward the People's Protocol on Climate Change as a statement of the stand of the people on the various issues surrounding climate change and what action must be taken to mitigate and adapt to climate change.

A. HISTORICAL AND SCIENTIFIC BACKGROUND

As early as the 1970s, studies by scientists raised concerns about possible global warming. In 1975, scientists still weren't sure whether the Earth was warming or cooling. In response to the climatic events in the early 1970s (i.e. droughts in Africa, Soviet Union and Europe; El Niño off Peru; monsoons in India; cold waves in Brazil; cold winters in the US), the first World Climate Conference was held in Geneva, Switzerland in 1979. The conference adopted climate change as a major issue and called on governments "to foresee and prevent potential man-made changes in climate".¹

In 1985, at the first major international conference on the greenhouse effect at Villach, Austria, climatologists warned of a rise of global mean temperature which is greater than any in human history in the first half of the 21st century and up to a one-meter rise in sea levels. In 1988, NASA scientist James Hansen told the U.S. Congress that global warming "is already happening now." A meeting of climate scientists in Toronto, Canada called for 20% cut in global CO₂ emissions by 2005. The UN subsequently set up the IPCC to analyze and report scientific findings.²

Several treaties and protocols have been adopted in response to global warming:

The Vienna Convention on the Protection of the Ozone Layer, signed in 1985, is the precursor to the Montreal Protocol on Substances That Deplete the Ozone Layer originally signed in 1987 and substantially amended in 1990 and 1992. The latter was designed to protect the stratospheric ozone layer, and stipulated that the production and consumption of compounds that deplete ozone in the stratosphere, such as chlorofluorocarbons (CFCs), halons, carbon tetrachloride and methyl chloroform, were to be phased out by 2000 (2005 for methyl chloroform). The protocol was signed by 191 countries including the US.³

The UN Framework Convention on Climate Change (UNFCCC), signed by 154 countries during the United Nations Conference on Environment and Development (UNCED) in June 1992 in Rio de Janeiro, Brazil (otherwise known as the Earth Summit), encouraged developed countries to stabilize GHG emissions to 1990 levels by the year 2000. The UNFCCC is only one of five documents agreed at the Rio conference.

¹ IBON Facts and Figures Special Release on Climate Change, February 2008

² Ibid

³ Ibid

Alongside UNFCCC, Agenda 21 was also agreed upon and signed by 179 countries. Agenda 21 is a program of action for sustainable development in the 21st century, aimed at providing high quality environment and healthy economy for all the peoples of the world.

Five years later the Kyoto Protocol was adopted at the 3rd Conference of the Parties to the UNFCCC (COP 3) in Kyoto, Japan on 11 December 1997. The Kyoto Protocol shares the objective and institutions of the UNFCCC but commits countries listed in its Annex B to implement cuts to their GHGs emissions especially CO₂ by an average of 5% (against the baseline of 1990) below levels specified for each country between 2008 and 2012. The Kyoto Protocol places a heavier burden on the developed countries.

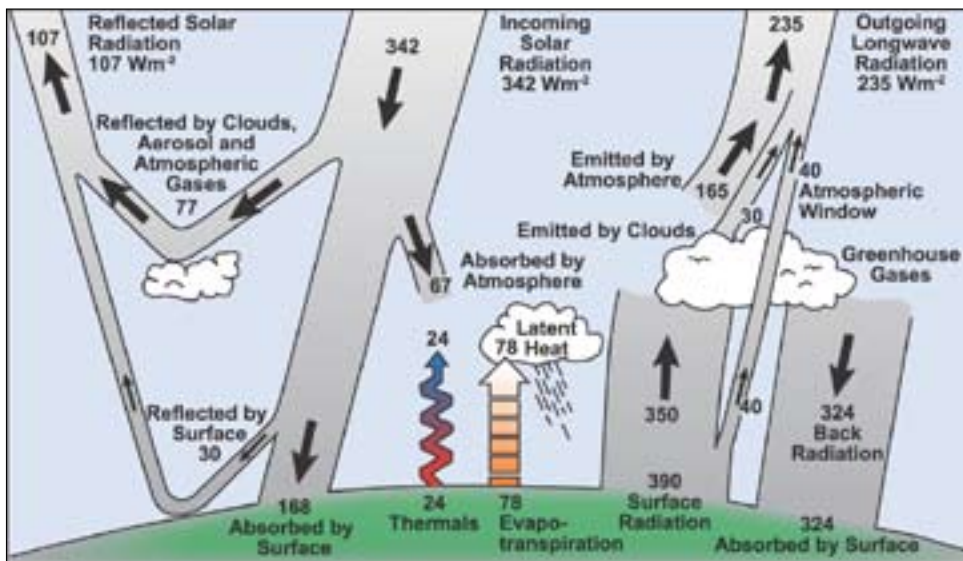
On Feb. 2, 2007, the IPCC declared that the evidence of a warming trend is “unequivocal,” and that human activity has “very likely” been the driving force in that change over the last 50 years. In its 2001 report, the panel had said that humanity had “likely” played a role. In their latest report, they added the word “very” because of the overwhelming scientific evidence on the reality of climate change and the central role played in it by human activity.

In 1990, in its first report, the panel found evidence of global warming but said its cause could be natural as easily as human. In a landmark 1995 report, the panel changed its judgment, saying that “the balance of evidence suggests a discernible human influence on global climate.” In 2001, it placed the probability that human activity caused most of the warming of the previous half century at 66 percent to 90 percent.

In their latest report, the world’s most authoritative group of climate scientists issued its strongest statement yet on the relationship between global warming and human activity. The IPCC said the likelihood was 90 percent to 99 percent that emissions of heat-trapping greenhouse gases like carbon dioxide, spewed from tailpipes and smokestacks, were the dominant cause of the observed warming of the last 50 years.

What is Global Warming and Climate Change?

Global warming and climate change refer to an increase in average global temperatures. Natural events and human activities are believed to be contributing to an increase in average global temperatures. This is caused primarily by increases in “greenhouse” gases such as Carbon Dioxide (CO₂).



The climate system is a complex system consisting of the atmosphere, land surface, snow and ice, oceans and other bodies of water, and living things. Climate is often defined as ‘average weather’. It is usually described in terms of the mean and variability of temperature, precipitation and wind over a period of time, ranging from months to millions of years.⁴

The climate system evolves under the influence of its own internal dynamics and also to changes in external factors that affect climate (called ‘forcings’). External forcings include natural phenomena such as volcanic eruptions and solar variations, as well as human-induced changes in atmospheric composition.⁵

Solar radiation powers the climate system. There are three fundamental ways to change the radiation balance of the Earth:

1. by changing the incoming solar radiation (e.g., by changes in Earth’s orbit or in the Sun itself);
2. by changing the fraction of solar radiation that is reflected (called ‘albedo’; e.g., by changes in cloud cover, atmospheric particles or vegetation); and
3. by altering the longwave radiation from Earth back towards space (e.g., by changing greenhouse gas concentrations).⁶

‘Climate change’ refers to a change in the state of the climate that can be identified by changes in the mean and/or the variability of its

⁴ IPCC WG1 AR4 Report

⁵ Ibid

⁶ Ibid

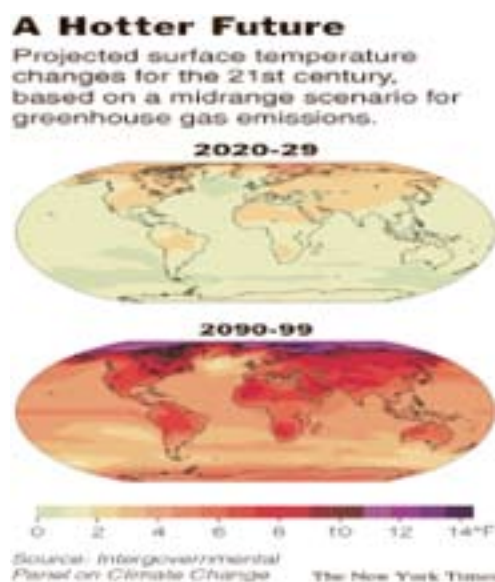
properties, and that persists for an extended period, typically decades or longer. Climate change may be due to internal processes and/or external forcings. Some external influences, such as changes in solar radiation and volcanism, occur naturally and contribute to the changes in the climate system. It has been established that human activity also contributes to such changes.⁷

The 2007 IPCC report cites a wide variety of ways in which global warming is manifesting itself.

In temperate zones, the frequency of cold days, cold nights and frosts has decreased, while the frequency of hot days, hot nights and heat waves has risen. Droughts in some parts of the world have become longer and more intense. Precipitation has decreased over the subtropics and most of the tropics, but increased elsewhere in the Northern and Southern Hemispheres.

In many places, rainfalls and snowfalls occur less but harder. One-day rainfalls resulting in four to eight-inch floods have been happening in the US and elsewhere. There are more and more extreme downpours and floods.

The scientists have concluded that if greenhouse gas emissions continue unabated, they will most likely warm the earth by about 3 to 7 degrees Fahrenheit by the end of this century, with a wider range of about 2 to 12 degrees possible.



⁷ Ibid

What is the Greenhouse Effect?

The greenhouse effect is the rise in temperature on Earth as certain gases in the atmosphere trap energy. Energy from the sun drives the earth's weather and climate, and heats the earth's surface. In turn, the earth radiates energy back into space. Some atmospheric gases such as water vapor, carbon dioxide, and other gases trap some of the outgoing energy, retaining heat like the glass panels of a greenhouse. These gases are therefore known as greenhouse gases.

Six main gases considered to be contributing to global climate change are carbon dioxide (CO₂), methane (CH₄) (which is 20 times as potent a greenhouse gas as carbon dioxide) and nitrous oxide (N₂O), plus three industrial gases: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆).

Many of these greenhouse gases are actually life-enabling, for without them, heat would escape back into space and the Earth's average temperature would be a lot colder. However, if the greenhouse effect becomes stronger, then more heat gets trapped than needed, and the Earth might become less habitable for humans, plants and animals.

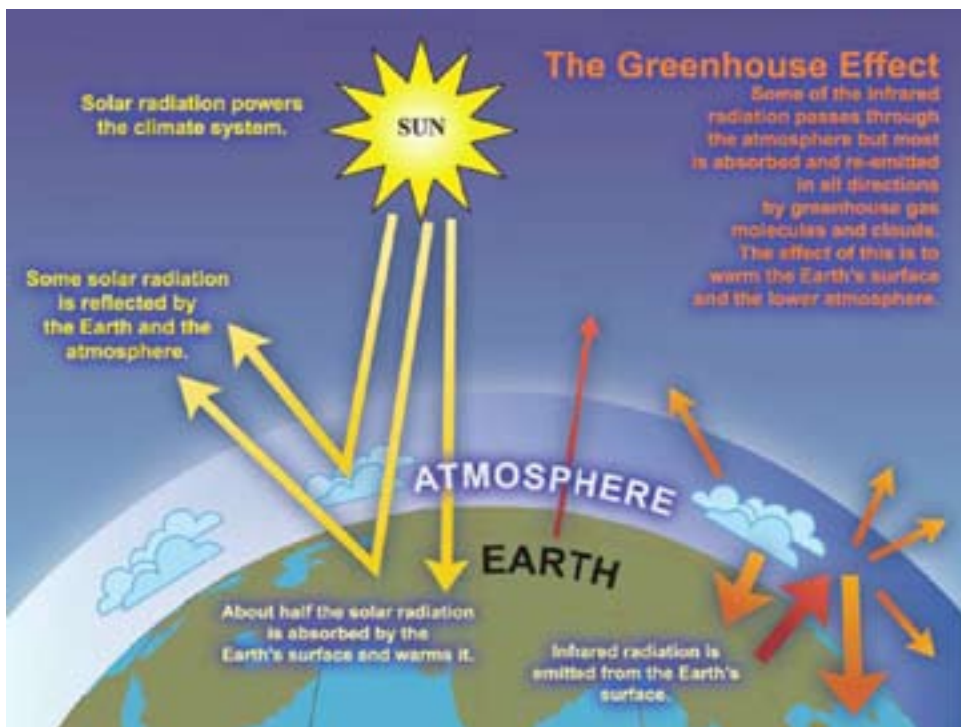


Figure: IPCC 2007 Report

What are the impacts of Global Warming?

Rapid changes in the temperature

There is an overall warming of the Earth's climate. However, some regions may experience cooling, or wetter weather, while the temperature of the planet on average is on rise.

According to the World Meteorological Organization (WMO), the 1990s was the warmest decade and the 1900s was the warmest century during the last 1,000 years.

However, it is the *rapid* pace at which the temperature will rise that will result in many negative impacts to humans and the environment and this is why there is such a world-wide concern.

Extreme Weather Patterns

Most scientists believe that **the warming of the climate will lead to more extreme weather patterns** such as more hurricanes and drought; longer spells of dry heat or intense rain (depending on where one is in the world). Scientists have pointed out that Northern Europe could be severely affected with *colder* weather if climate change continues, as the arctic begins to melt and send fresher waters further south. It would effectively cut off the Gulf Stream that brings warmth from the Gulf of Mexico, keeping countries such as Britain warmer than expected. In South Asia, the Himalayan glaciers could retreat causing water scarcity in the long run.⁸

While many environmental groups have been warning about extreme weather conditions for a few years, the World Meteorological Organization (WMO) announced in July 2003 that "recent scientific assessments indicate that, as the global temperatures continue to warm due to climate change, the number and intensity of extreme events might increase."⁹

The WMO also notes that "new record extreme events occur every year somewhere in the globe, but in recent years the number of such extremes have been increasing." (The WMO limits the definition of extreme events to high temperatures, low temperatures and high rainfall amounts and droughts.)

Super-typhoons

In 1998, Hurricane Mitch killed nearly 20,000 people in Central America, and more than 4,000 people died during disastrous flooding in China.

⁸ "Extreme Weather", World Wide Fund for Nature, September 2000

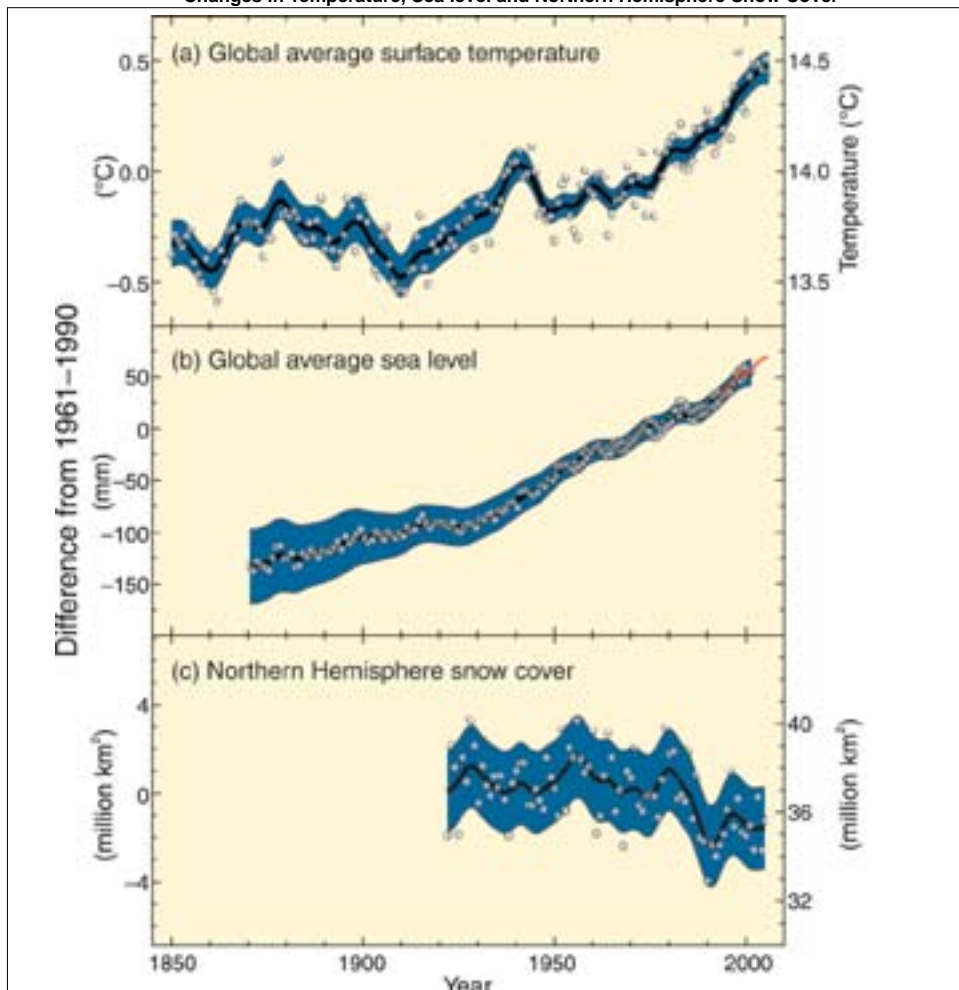
⁹ "Extreme Weather Events Might Increase", World Meteorological Organization, July 2, 2003

Bangladesh suffered some of its worst floods ever the following year, as did Venezuela. Europe was hit with record floods in 2002, and then a record heat wave in 2003. Brazil was struck by the first-ever recorded hurricane in the South Atlantic.¹⁰

James McCarthy, a professor at Harvard University notes that the world's oceans are approaching 27° C or warmer during the summer. This increases the chance of major storms. When water reaches such temperatures, more of it evaporates, priming hurricane or cyclone formation. Once born, a hurricane needs only warm water to build and maintain its strength and intensity.¹¹

As emissions of greenhouse gases continue to trap more and more of the sun's energy, that energy has to be dissipated, resulting in stronger storms, more intense precipitation and higher winds.

Changes in Temperature, Sea level and Northern Hemisphere Snow Cover



¹⁰ Stephen Leahy, "Global Warming May Spawn More Super-Storms", Inter Press Service, September 20, 2004

¹¹ Ibid

Impacts on Ecosystems

An ecosystem is an interdependent, functioning system of plants, animals and microorganisms. An ecosystem can be as large as the Mojave Desert, or as small as a local pond. Without the support of the other organisms within their own ecosystem, life forms would not survive, much less thrive. Such support requires that predators and prey, fire and water, food and shelter, clean air and open space remain in balance with each other and with the environment around them.¹²

Climate is an integral part of ecosystems and organisms have adapted to their regional climate over time. Climate change is a factor that has the potential to alter ecosystems and the many resources and services they provide to each other and to society. Human societies depend on ecosystems for the natural, cultural, spiritual, recreational and aesthetic resources they provide.¹³

The overwhelming majority of studies of regional climate effects on terrestrial species reveal consistent responses to warming trends, including pole-ward and elevational range shifts of flora and fauna. Responses of terrestrial species to warming across the Northern Hemisphere are well documented by changes in the timing of growth stages (i.e., phenological changes), especially the earlier onset of spring events, migration, and lengthening of the growing season (IPCC, 2007).

In various regions across the world, some high-altitude and high-latitude ecosystems have already been affected by changes in climate. The Intergovernmental Panel on Climate Change reviewed relevant published studies of biological systems and concluded that 20 to 30 percent of species assessed may be at risk of extinction from climate change impacts within this century if global mean temperatures exceed 2-3 °C (3.6-5.4 °F) relative to pre-industrial levels (IPCC, 2007).

With global warming on the increase and species' habitats on the decrease, the chances for various ecosystems to adapt naturally are diminishing.

Many studies have pointed out that the rates of extinction of animal and plant species, and the temperature changes around the world since the industrial revolution, have been significantly different to normal expectations.

Some scientists are predicting that global warming will lead to the following situations, among others:

¹² <http://www.epa.gov/climatechange/effects/eco.html>

¹³ <http://www.epa.gov/climatechange/effects/eco.html>

- ▶ Massive extinction of species will aggravate the environmental crisis;
- ▶ Sudden collapse of biological and ecological systems may occur, but will have a very slow recovery;
- ▶ While effective measures can decrease global warming and other problems the world community has repeatedly failed to establish cooperation.

The IPCC 2007 Report has noted that if greenhouse gas emissions and other changes continue at or above current rates, by 2100 ecosystems will be exposed to atmospheric CO₂ levels substantially higher than in the past 650,000 years, and global temperatures at least among the highest as those experienced in the past 740,000 years. This will alter the structure, reduce biodiversity and disturb the functioning of most ecosystems.

Rising Sea Levels

Water expands when heated, and sea levels are expected to rise due to climate change. Rising sea levels will also result as the polar caps begin to melt. Rising sea levels is already affecting many small islands.

The *WorldWatch Institute* reports that “[t]he Earth’s ice cover is melting in more places and at higher rates than at any time since record keeping began”.¹⁴

Rising sea levels will impact many coastlines, and a large mass of humanity lives near the coasts or by major rivers.

Increase in Pests and Disease

An increase in pests and disease is also feared. A recent study entitled *Human Health and Climate Change* by Dr. Paul Epstein predicts wide-ranging impacts on human health. He warns, “There have been periods of uncontrollable waves of disease that radically altered human civilisation in the past, such as when Europe’s population was devastated by bubonic plague in the Middle Ages. That problem was associated with population growth and urbanisation.”¹⁵

According to Epstein, a warming climate, compounded by widespread ecological changes, may be stimulating wide-scale changes in disease patterns. His study suggests that climate change could have an impact on health in three major ways, by: (a) creating conditions conducive to outbreaks of infectious diseases, (b) increasing the potential for

¹⁴ Lisa Mastny, “Melting of Earth’s Ice Cover Reaches New High”, *WorldWatch Institute*, March 6, 2000

¹⁵ Martin Jalleh, *A changing climate for disease and death*, Third World Network

Table 1. Recent trends, assessment of human influence on the trends and projections for extreme weather events for which there is an observed late-20th century trend. (Tables 3.7, 3.8, 9.4; Sections 3.8, 5.5, 9.7, 11.2-11.9)

Phenomenon and direction of trend	Likelihood that trend occurred in late 20th century (typically post 1980)	Likelihood of a human contribution to observed trend	Likelihood of future trends based on projections for 21st century using SPES scenarios
Warmer and fewer cold days and nights over most land areas	Very likely ^c	Likely ^d	Virtually certain ^d
Warmer and more frequent hot days and nights over most land areas	Very likely	Likely (nights) ^d	Virtually certain ^d
Warm spells / heat waves. Frequency increases over most land areas	Likely	More likely than not ⁱ	Very likely
Heavy precipitation events. Frequency (or proportion of total rainfall from heavy falls) increase over most areas	Likely	More likely than not ⁱ	Very likely
Area affected by drought increases	Likely in many regions since 1970's	More likely than not	Likely
Intense tropical cyclone activity increases	Likely in some regions since 1970	More likely than not ⁱ	Likely
Increased incidence of extreme high sea level (excludes tsunamis)	Likely	More likely than not ^h	Likely

transmissions of vector-borne diseases and the exposure of millions of people to new diseases and health risks, and (c) hindering the future control of disease. ‘There are indications, he notes, ‘that this disturbing change has already begun.’¹⁶

Extreme weather brings about a drastic increase in pests and hence, the spread of diseases. Rates of insect biting and the maturation of microorganisms within them are temperature-dependent and both rates increase when the air warms.

An example of the strong link between climate change and the increase of pests is that of heavy rains producing insect-breeding sites, driving rodents from burrows, and contaminating clean water systems. In southern Africa, rodent populations exploded in 1994, following heavy rainfall in 1993 that had been preceded by a prolonged drought. As a result, the

¹⁶ Ibid

maize crop in Zimbabwe was crippled and plague broke out in Zimbabwe, Malawi and Mozambique.

Both El Niño and La Niña bring climate extremes to many regions around the globe. During the cold phase, from 1995 to 1996, many regions of the world experienced intense rains and flooding, following prolonged drought.

Such rains have been associated with outbreaks of Murray Valley encephalitis and Ross River virus in Australia, and malaria in Argentina, southern Africa and Pakistan.

The dry phases that preceded the wet phase of El Niño also resulted in an increase in the incidence of disease. For example, meningitis epidemics 'are associated with severe drought conditions, which apparently dry our mucus membranes, making them vulnerable to penetration by colonising organisms'. In sub-Saharan Africa, the 1995-96 outbreak was among the largest ever recorded: over 100,000 people contracted the disease and died.

Extreme climate changes like El Niño can in fact result in disease clusters. Epstein's study claims that '...other diseases likely to increase and change in connection with the climate include Guinea worm, leishmaniasis, lymphatic filiasis, onchocerciasis, and Chagas' disease, which altogether affect more than 147 million already.'

Climate changes and disease clusters - the case of El Niño¹

ACCORDING to Dr Epstein, the 1997-98 El Niño event, which was the strongest of the century, resulted in 'a cluster of diseases'. Its impacts were felt worldwide.

As extreme droughts and fires occurred in Asia, across Mediterranean nations, in the Amazon, in Mexico's tropical rainforest, in Central America and in Florida, US, the incidence of respiratory illness, cardiovascular disease and eye irritations rose dramatically. Droughts led to increased cholera in many tropical regions. Heat waves killed thousands in India, and hundreds in the US and Central Europe. The Horn of Africa was deluged and experienced upsurges of cholera, malaria and Rift Valley Fever, which killed both humans and livestock.

In Latin America, flooding along the Pacific coast and in southern Brazil resulted in increases in cholera and vector-borne diseases (VBDs), and many South American nations experienced outbreaks of rodent-borne hantavirus. In south-western US, rodent populations began to explode in January and February of 1998, which was extremely early, and cases of HPS occurred during that spring. The most devastating floods since 1949 occurred in China as El Niño waned and La Niña began its cooling of the Western Pacific Ocean.

He quotes a 1996 World Health Organisation report which states that at least 30 infectious diseases new to medicine have emerged in the past 20 years.

Dengue, or breakbone fever, which had essentially disappeared in the Western Hemisphere, has now reappeared in the Americas, infecting over 200,000 people in 1995. Also in 1995, the largest epidemic of yellow fever in the Americas since 1950, struck Peru.

Forms of hantaviruses have resurged in several European nations, particularly in the former Soviet Union and in the war-torn former Yugoslavia. In 1994, plague resurfaced in India following a blistering summer, when temperatures reached 51°C (124°F), and an unusually heavy monsoon season.

He claims that ‘global warming is predicted to bring warmer winters to many places, and therefore increasing the potential for transmission of vector-borne diseases at higher latitudes and elevations.’ He uses malaria and dengue fever to support his argument.

According to Epstein, malaria is already being reported at unusually high elevations in the mountains of Central Africa as well as Ethiopia and parts of Asia. He cites a study which suggests that malaria transmission would increase from 45% to 60% with the doubling of CO₂ emissions.

Failing Agricultural Output; Increase in World Hunger

Agriculture is highly sensitive to climate variability and weather extremes, such as droughts, floods and severe storms. The forces that shape our climate are also critical to farm productivity. Human activity has already changed atmospheric characteristics such as temperature, rainfall, levels of carbon dioxide (CO₂) and ground level ozone.

While food production may benefit from a warmer climate, the increased potential for droughts, floods and heat waves will pose challenges for farmers. Additionally, the enduring changes in climate, water supply and soil moisture could make it less feasible to continue crop production in certain regions.¹⁷

Recent studies indicate that increased frequency of heat stress, droughts and floods negatively affect crop yields and livestock. Changes in climate also influence the risks of fires, pest and pathogen outbreak, negatively affecting production of food, fiber and forestry.

¹⁷ <http://www.epa.gov/climatechange/effects/agriculture.html>

The United Nations had issued the warning in 2005 that, “One in six countries in the world face food shortages this year because of severe droughts that could become semi-permanent under climate change.”¹⁸

Drought and desertification are starting to spread and intensify in some parts of the world already. If some of this does get worse, it is likely that the poorest regions and people are likely to suffer the most, as they would have the least resources at hand to deal with the effects.

Wulf Killman, chairman of the UN Food and Agriculture Organization’s climate change group, said the droughts that have devastated crops across Africa, Central America and south-east Asia are part of an emerging pattern.

Among the worst affected countries are Ethiopia, Zimbabwe, Malawi, Eritrea and Zambia, where at least 15 million people will go hungry without aid. The situation in Niger, Djibouti and Sudan is reported to be deteriorating rapidly. Many countries have had their worst harvests in more than 10 years and are experiencing their third or fourth severe drought in a few years.

Severe droughts have also badly affected crops in Cuba, Cambodia, Australia, Afghanistan, Vietnam, Morocco, Guatemala, Honduras and Nicaragua. According to the UN’s famine early warning system, 16 countries, including Peru, Ecuador and Lesotho, face “unfavourable prospects” with current crops.

In Europe, one of the worst droughts on record has hit Spain and Portugal and halved some crop yields. Both countries have applied to the EU for food assistance. In Morocco the same regional drought has devastated farming and the government fears an influx of people into the cities. Researchers are reporting a general drying of the land and growth of desertification in the Mediterranean region.

Chaos and war

A study made by the CNA Corporation which conducts in-depth research and analysis on a wide range of issues warns of a future world in turmoil created by climate change. The study which involved retired US generals and admirals in the advisory board takes the viewpoint of how climate change would affect US national security. Thus, it is heavy on US interests as superpower. Nevertheless, it is quite instructive on the possible consequences of climate change on global security and stability.

¹⁸ John Vidal and Tim Radford, The Guardian, Thursday June 30 2005

“Climate change can act as a threat multiplier for instability in some of the most volatile regions of the world...The decision to act should be made soon in order to plan prudently for the nation’s security. The increasing risks from climate change should be addressed now because they will almost certainly get worse if we delay.”¹⁹

Among its findings is the assertion that ‘extreme weather events, drought, flooding, sea level rise, retreating glaciers, habitat shifts, and the increased spread of life-threatening diseases’ will potentially create chaos. It continues: “On the simplest level, it has the potential to create sustained natural and humanitarian disasters on a scale far beyond those we see today.”²⁰

With living conditions in many countries belonging to the Middle Eastern, African and Asian regions eroding dramatically, the report forecasts the USA and its allies will be drawn into providing humanitarian aid and disaster relief, to avoid the situations being ‘exploited by extremists.’ The report warns that even areas of the world currently regarded as stable may be plunged into turmoil by climate change²¹.

It says: “The US and Europe may experience mounting pressure to accept large numbers of immigrant and refugee populations as drought increases and food production declines in Latin America and Africa. Extreme weather events and natural disasters, as the US experienced with Hurricane Katrina, may lead to increased missions for a number of US agencies, including state and local governments, the Department of Homeland Security, and our already stretched military, including our Guard and Reserve forces.”²²

To avoid complete disaster in a future shaped by climate change, the retired officers put forward their own recommendations for action. They suggest: Dealing with the threats thrown up by climate change should be incorporated into both national security and defense strategies; the USA should play a bigger role at both national and international level in helping ‘stabilize climate change at levels that will avoid significant disruption to global security and stability’; the USA should also enter partnerships with Third World nations to help them manage the impact of climate change; future and present US military capabilities should become more energy efficient.²³

The Debate on Climate Change

For a very long time, a lot of contention and debate had been whether or not climate change has in fact been induced by human activities.

¹⁹ Charles Strathdee, “Climate change chaos”, WARSHIPS International Fleet Review, 2007

²⁰ Ibid

²¹ Ibid

²² Ibid

²³ Ibid

Skepticism on Global Warming or That it can be human-induced



© Anne Ward Penguin

In May 2002, the Bush Administration in the U.S. did admit a link between human activities and climate change. However, at the same time the administration has continued its controversial stance of maintaining that it will not participate in the international treaty to limit global warming, the Kyoto Protocol, due to economic priorities and concerns.²⁴

Throughout the 1990s, especially in the United States, but in other countries as well, those who would try and raise the importance of this issue, and suggest that Americans are perhaps over-consuming, or unsustainably using resources, were faced with a lot of criticism and ridicule.²⁵

In 2004, media attempts at balance has led to “false balancing” whereby disproportionate time is given to more fringe scientists or those with less credibility or with additional agendas, without noting so, and thus gives the impression that there is more debate in the scientific community about whether or not climate change is an issue to be concerned about or not.

Towards the end of January 2006, NASA’s top climate scientist, Dr. James Hansen revealed that NASA and the Bush Administration had tried to silence him.²⁶

Dr. Hansen had asserted that significant emission cuts could be achieved with existing technologies, particularly in the case of motor vehicles, and that without leadership by the United States, climate change would

²⁴ “U.S. Report Links Human Actions to Global Warming”, Environment News Service, June 3, 2002

²⁵ George Monbiot, “Apocalypse Now”, Guardian, July 29, 1999.

²⁶ Andrew Revkin, “Climate expert says NASA tried to silence him”, New York Times, January 29, 2006

eventually leave the earth a different planet. The Bush administration's policy is to use voluntary measures to slow, but not reverse, the growth of emissions.²⁷

After Dr. Hansen released data on Dec. 15 showing that 2005 was probably the warmest year in at least a century, he was warned that there would be 'dire consequences' if such statements continued.

At the beginning of June 2006, the *BBC Panorama* documentary followed up on this and found that many scientists felt they were being censored and that various reports had been systematically suppressed, even altered. In one case, a major climate assessment report was due out a month before the 2004 presidential elections, but was delayed because it had such a bleak assessment, and the Bush administration did not want it to be an election issue. It was released shortly after the elections were over.²⁸

Just weeks before hurricane Katrina devastated parts of Southern United States, *Panorama* reported that "Another scientist from the National Oceanic and Atmospheric Administration (NOAA) ... had research which established global warming could increase the intensity of hurricanes. He was due to give an interview about his work but claims he was gagged." After Katrina, the "NOAA website said unusual hurricane activity is not related to global warming."²⁹

Almost a year after the story about attempts to silence NASA's top climate scientist, many media outlets have reported on a new survey where hundreds of government scientists say they have perceived or personally experienced pressure from the Bush administration to eliminate phrases such as "climate change" and "global warming" from their reports and public statements.³⁰

There has been a similar concern in Australia. At the beginning of 2006, the *Australian Broadcasting Company* (ABC) revealed that some business lobby groups have influenced the Australian government to prevent Australia from reducing greenhouse gas emissions. This lobby group included interests from the coal, electricity, aluminum, petroleum, minerals and cement industries. The documentary exposing this revealed possible corruption within government due to extremely close ties with such industries and lobby groups, and alleged silencing of government climate scientists.³¹

²⁷ Ibid

²⁸ Ibid

²⁹ Ibid

³⁰ "Government Scientists Accuse Bush Administration of Interfering, Misleading on Climate Change," Democracy Now! January 31, 2007.

³¹ Janine Cohen, "The Greenhouse Mafia", Four Corners, Monday 13 February, 2006.

B. THE SOCIAL IMPACT OF CLIMATE CHANGE

The cumulative and, much more so, the catastrophic impacts of climate change will have severe social implications especially in the poor countries of the South. Changes in weather patterns are expected to have severe impacts on agriculture in many developing countries whose populations are principally dependent on. The displacements on principally rural communities will be both economic due to the failure of crops and overall weakening of rural economies, and physical as climate catastrophes destroy communities or slowly force communities to move to better climes. Thus the impact may be immediate and disastrously due to super-hurricanes and typhoons, tornadoes or severe drought, or climatic change may wreak havoc on livelihoods and living conditions through slow shifts.

There are a number of particular areas of special concern in terms of social impact which bears additional discussion. One is gender due to the extreme vulnerability of women and girls who already suffer from discrimination under 'normal' circumstances. Women are taking on more chores both in the home and in the workplace.³² Other areas includes water as an already critical resource that will be even more severely impacted by climate changes, or migration, which is the direct implication of climate change as communities seek better livelihoods and living conditions in a world where globalization has created extreme difficulties for many societies and forced many of their populations to migrate and live in societies without enjoying their human rights. Small island states which are threatened with extinction also present special problems for adaptation.

Climate Change and Gender

It is a recognized fact that women and children are extremely vulnerable to climate change and that they bear a large share of the burden of adaptation. Generally speaking, women are poorer than men, are more dependent on primary sources (e.g. agriculture) that are threatened by changes in climate. Women stand a greater risk of a climate-induced disaster.

In developing countries like Africa and Asia where women are part of production for cash crops and cultivate paddies, women are responsible for up to 80 percent of food production. Significant decrease in food production due to soil condition, plant and animal diseases and pests

³² Tauli-Corpuz et al 2008. Guide on Climate Change and Indigenous Peoples. Tebtebba Foundation

in regions vulnerable to climate change would increase the number of hungry and malnourished world population. Consequently, women would be the first to go hungry and suffer nutritional defects since they give their food share to the other members of their families besides their special reproductive needs.

Women are the most affected by the destruction and degradation of the environment including climate change, given the variety of women's daily interactions with the environment, such as what one perceives as simple activities of fetching water, washing, cooking, tending crops and herding animals.

Take for example the task of women to fetch water for the needs of the family and for food production. This daily task makes women susceptible to water-based infectious diseases (such as schistosomiasis which results in bloody urine and liver disorders) that kill 5 to 12 million per year most of the victims are women and children. Millions more are made ill with diarrhoea, hepatitis and trachoma. Women also take on the main responsibility of caring for those who are ill.

Children are also very vulnerable to the effects of climate change. Nearly 10 million children under the age of five die every year of largely preventable diseases. Many of the main global killers of children, including malaria and diarrhoea, are sensitive to changes in temperature and rainfall, and could become more common if weather patterns change.

Women and children are also disproportionately affected by hurricanes and flooding, which climate change experts say will increase in intensity and frequency in the coming years. The destruction of homes, schools and health centers resulting from natural disasters reduce services available to families.

Because women are extremely affected and vulnerable to climate change, it is imperative that women's voices be heard and their needs be part of the international response in facing the challenges of climate change. They must have access and tools necessary to protect themselves, their families and their communities.

Climate change and small island states

In small island developing states (SIDS) such as Tuvalu, Marshalls, Maldives and Kiribati, climate change has affected both the environment and living systems, threatening social and institutional life. Climate

change and the associated sea-level rise threatens the long-term habitability of these island states, posing a grave threat to their national sovereignty and culture.

SIDS are defined by the UN as “low-lying coastal countries that share similar sustainable development challenges, including small population, lack of resources, remoteness, susceptibility to natural disasters, excessive dependence on international trade and vulnerability to global developments.”³³

Although Pacific SIDS greenhouse-gas emissions are less than 0.03 and the mean island resident produces only one-quarter of the emissions of the global average, SIDS are the most vulnerable group in the international community. The FAR Working Group II on Small Islands noted that, “the rate of increase in air temperature in the Pacific and Caribbean during the 20th century exceeded the global average.”³⁴

The most prominent impact from increasing air and ocean mean temperatures is accelerated sea level rise, which leads to increased coastal erosion, inundation of low-lying coastal areas, increased flooding and storm surge, wetland loss, and increase salinity of surface and ground water. Sea level rise (SLR) in the South Pacific has increased more than ten times the global trend this century and it is accelerating.³⁵

Sea level rise is expected to threaten “vital infrastructure, settlements and facilities that support the livelihood of island communities.”³⁶

Other impacts include changes in weather patterns, coastal erosion, changes in the frequency of extreme events including potential increases in the intensity of tropical cyclones/hurricanes, reduced resilience of coastal ecosystems and saltwater intrusion into freshwater resources.

These conditions coupled with fragile socio-economic structures in developing areas, make climate adaptation extremely difficult and can substantially intensify current environmental vulnerabilities. Moreover, because of their miniscule contribution to the problem (less than 1% of global GHGs), there are profound equity and justice implications when aggregate GHG emissions affect their communities, society and culture. For example, many small islands have already begun to reallocate scarce resources away from economic development and poverty alleviation, towards the implementation of strategies to adapt to the growing threats posed by global warming.³⁷

³³ United Nations Department of Economic and Social Affairs, Division of Sustainable Development, “Small Island Developing States,” UNDESA, <http://www.un.org/esa/sustdev/sids/sids.htm>, accessed Sept. 23, 2007.

³⁴ IPCC, 2007, WGII, Small Islands, p. 690.

³⁵ South Pacific Climate Change, 26 *Tiempo* (1998), <http://cru.uae.ac.uk/tiempo/floor0/archive/issue26/t26art2.htm>; Small Islands Developing States Network,

³⁶ IPCC, 2007, p. 52.

³⁷ Nurse and Moore, 2005

The Case of Maldives

Maldives is a string of coral islands in the Indian Ocean, south-west of India. It is one of the world's most desirable holiday destinations, renowned for its exotic marine life, relaxing beaches and luxurious resorts.

But rising sea levels are spelling disaster for the islands. Three of the archipelago's 280 inhabited islands have already been evacuated, and oceanologists predict most of the Maldives will be washed away within 30 years.

The small island state is undertaking the largest and most complex project of its kind. The government is building an artificial island to replace the capital, Male, which is gradually going under water.

An estimated 80,000 people live on Male in less than two square kilometres, and the population is expected to reach at least 100,000 in the next five years.

"The moment the sea level rises by one millimetre the energy of the wave increases and it has more destructive power," explains Mohamed Ali, director of the Environmental Research Centre in Male. "What protects Male from waves is the reef it is on, but we have already reclaimed the whole reef. There is nothing we can do. We can try to stop the stronger waves but we can't stop the sea rising."

Ali says it would cost the Maldives \$US1.2 billion (the country's GDP) just to protect a quarter of the inhabited islands with walls and a breakwater.

Taken from: Sinking Maldives creates new island home, by Benjamin Joffe-Walt, <http://www.theage.com.au/articles/2004/08/27>

Climate change and migration

According to a report from Christian Aid, a billion people - one in seven people on Earth today - could be forced to leave their homes over the next 50 years as the effects of climate change worsen an already serious migration crisis. The report says conflict, large-scale development projects and widespread environmental deterioration will combine to make life unsupportable for hundreds of millions of people in the Sahara region, south Asia and the Middle East.³⁸

At present, about 155 million people are estimated to be displaced by conflict, natural disaster and development projects. As many as 850 million more could be displaced by water shortages, sea level crises, deteriorating pasture land and famine.³⁹

According to the latest Intergovernmental Panel on Climate Change (IPCC) report by 2080, 1.1-3.2 billion people would be experiencing water

³⁸ Climate change and mass migration, John Vidal, The Guardian, May 14, 2007.

³⁹ Ibid

scarcity, 200-600 million hunger and 2-7 million a year coastal flooding. These factors can lead to a flood of mass migrations.

By 2050, about 250 million could be permanently displaced by climate change-related phenomena such as droughts, floods and hurricanes. The Christian Aid report warns that if urgent action is not taken the growing number of disasters and conflicts linked to future climate change will push the numbers far higher and estimates that between now and 2050, a total of 1 billion people will be displaced from their homes.⁴⁰

Some movement of people will be from rural areas where agrarian lifestyles have been overwhelmed by climate change into urban centers to search for better livelihood options. Others will cross borders for a new land that offer better prospects. It would accelerate urbanization adding to urban poverty, conflict and probably criminality.

Some receiving countries have difficulty in accepting immigration. Problems can arise when those who already live in an area feel that newcomers are an unwanted burden.

What are some policy implications?

People displaced by environmental changes are currently not recognised by the 1951 Geneva Convention on the status of refugees. Environmental migration is usually not addressed by migration policies or environmental policies, and raises important policy implications.⁴¹

Advocacy groups are proposing that an international status should be granted to environmental migrants, either through a new international convention or an amendment to the Geneva Convention.⁴²

A second policy implication deals with adaptation strategies. Adaptation strategies allow to increase the resilience of the populations affected, and reduce the migration pressure. Adaptation mechanisms are also needed to help destination regions deal with potential influxes of environmental migrants. Environmental migration itself, in some cases, can be used as an adaptation strategy to cope with the impacts of environmental change and alleviate them.⁴³

Environmental migration also raises the issue of environmental responsibility and justice, especially with regard to climate change. The issue of injustice is based on the fact that the regions that will be most

⁴⁰ Ibid

⁴¹ Environmental Migration, Francois Gemenne, Centre for International Studies and Research (CERI)

⁴² Ibid

⁴³ Ibid

Bangladesh: Climate change, migration and conflict risks

Bangladesh has a growing population for whom there already is not enough land available, and is vulnerable to severe effects from climate change. Half of Bangladesh is located only a few meters above the sea level and about a third is flooded in the rainy season.

The Indian Farakka Barrage has made the problem worse. India constructed the barrage close to the border of Bangladesh which diverts water from the Ganges to its India tributary reducing the flow of water in the Bangladesh tributary. This has caused severe problems: salt water intrusion into Bangladeshi coastal waters as far as 100 miles inland, consequent decline in river fishing, summer droughts, loss of land to the sea and worsened flooding when cyclones hit.

These directly affect about 35 million people. Unable to make a living, many people have migrated. Since the 1950s 12-17 million Bangladeshis have migrated to India mostly to the adjacent states of Assam and Tripura. The natives in Assam resented the newcomers accusing them of stealing land. The immigrants' arrival affected the economy, land distribution and the balance of political power. Violence first erupted in the early 1980s.

These problems continue to date and further migration as a result of climate change will make them worse. If local and national governments cannot develop measures to cope with the pressures on resources from migration and climate change, the risk of *further and more intense violence is very high*.

Taken from: A Climate of Conflict, by Dan Smith and Janani Vivekenanda, Nov. 2007

affected by its impacts are also those that have the least carrying capacity and the least responsibility for climate change.⁴⁴

Climate change and water

According to a study from Ohio State University, as sea levels rise, coastal communities could lose up to 50 percent more of their fresh water supplies than previously thought. The IPCC has predicted that within the next 100 years, sea level could rise as much as 23 inches, flooding coasts worldwide.⁴⁵

Scientists previously assumed that, as saltwater moved inland, it would penetrate underground only as far as it did above ground. But this new research shows that when saltwater and fresh water meet, they mix in complex ways, depending on the texture of the sand along the coastline. In some cases, a zone of mixed, or brackish, water can extend 50 percent further inland underground than it does above ground. Brackish water is not safe to drink because it causes dehydration. Water that contains less than 250 milligrams of salt per liter is considered fresh water and safe to drink.⁴⁶

⁴⁴ Ibid

⁴⁵ Climate Change Threatens Drinking Water, As Rising Sea Penetrates Coastal Aquifers, ScienceDaily, Nov. 7, 2007.

⁴⁶ Ibid

The study states that, almost 40 percent of the world population lives in coastal areas, less than 60 kilometers from the shoreline. These regions may face loss of freshwater resources more than we originally thought.

Some of the most vulnerable areas are those along the East Coast and the Gulf of Mexico in the US, and many countries in Southeast Asia, the Middle East, and northern Europe.

The study says that in order to obtain cheap water for everybody, there is a need to use groundwater, river water, or lake water. But all those waters are disappearing due to several factors --including an increase in demand and climate change.

Meanwhile, U.N. secretary-general Ban Ki Mun, asserting that water shortages will drive future conflicts has publicly stated that the slaughter in Darfur was triggered by global climate change.⁴⁷

Ban said that it is no accident that the violence in Darfur erupted during the drought. He said that when Darfur's land was rich, black farmers welcomed Arab herders and shared their water. With the drought, however, farmers fenced in their land to prevent overgrazing. For the first time, there was no longer enough food and water for all. That is when fighting broke out.

⁴⁷ Climate Change Deepening World Water Crisis, Thalif Deen - Inter Press Service, March 21, 2008

C. WHY IS CLIMATE CHANGE AN ISSUE OF SOCIAL JUSTICE?

Who is to blame for the great catastrophe of the 21st century?

Today's rich nations bear the major responsibility for global warming. Greenhouse gases tend to remain in the atmosphere for many decades, and rich countries have been industrializing and emitting climate changing pollution for many centuries whereas poor countries remain mostly pre-industrial.

In terms of historical emissions, industrialized countries account for roughly 80% of the carbon dioxide buildup in the atmosphere to date. Since 1950, the U.S. has emitted a cumulative total of roughly 50.7 billion tons of carbon, while China (4.6 times more populous) and India (3.5 times more populous) have emitted only 15.7 and 4.2 billion tons respectively.⁴⁸

Annually, more than 60 percent of global industrial carbon dioxide emissions originate in industrialized countries, where only about 20 percent of the world's population resides.⁴⁹

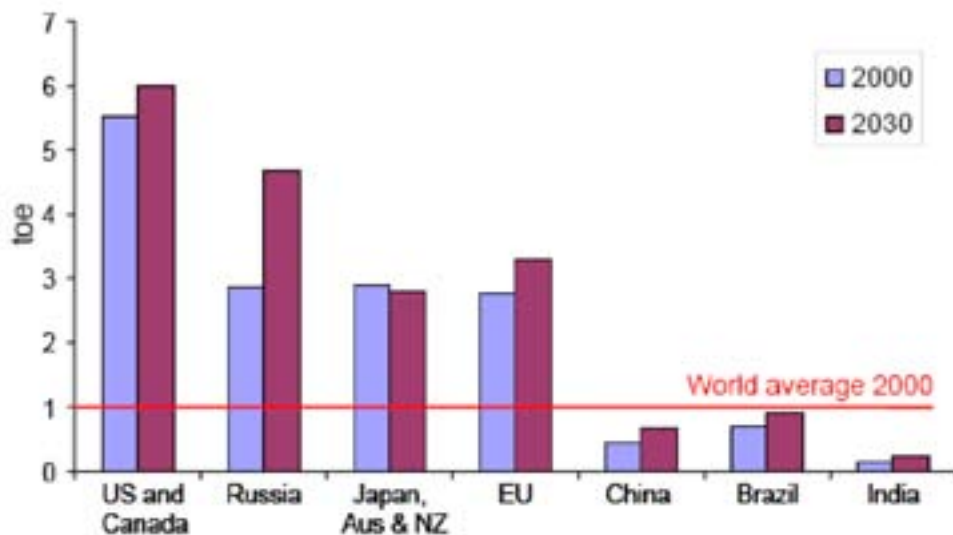
The environmental consequences of the policies of industrialized nations have also had a detrimental and costly effect on developing countries -- especially the poor in those countries -- that are already burdened with debt and poverty.

Much of the growth in emissions in developing countries results from the provision of **basic human needs for growing populations**, while emissions in industrialized countries contribute to growth in a standard of living that is already far above that of the average person worldwide. This is exemplified by the large contrasts in per capita carbon emissions between industrialized and developing countries. Per capita emissions of carbon in the U.S. are over 20 times higher than India, 12 times higher than Brazil and seven times higher than China.

The United States is the world's largest emitter of greenhouse gases. It accounts for roughly four percent of the world's population but accounts for approximately 23% of global emissions and 42% of industrialized country emissions.

⁴⁸ "Climate change and developing countries", World Resources Institute (WRI), May 6, 2003

⁴⁹ Ibid



Source: IEA World Energy Outlook 2002

The European Union is also a large emitter. If considered as a whole, it accounts for roughly 3 percent of the world's population and accounts for around 10% of global emissions and 24% of industrialized countries' man-made emissions of the six main gases.

Industrialized countries set out on the path of development much earlier than developing countries, and have been emitting GHGs [Greenhouse gases] in the atmosphere for years without any restrictions. Since GHG emissions accumulate in the atmosphere for decades and centuries, the industrialized countries' emissions are still present in the earth's atmosphere. Therefore, the North is responsible for the problem of global warming given their huge historical cumulative emissions. It owes its current prosperity to decades of overuse of the common atmospheric space and its limited capacity to absorb GHGs.⁵⁰

A matter of social justice

The fundamental unequal relations are at the root of the climate change issue. It is not simple a matter of different levels of development but the historical fact that the difference in levels of development resulting from exploitation by colonialism and neocolonialism is the reason behind the inordinate distinction between development and greenhouse gas emissions in the industrialized world and the poor countries.

Adding to the inherent injustice of this inequality of development and GHG emission is the fact that the main brunt of the effects of climate

⁵⁰ Center for Science and Environment, October 25, 2002

change such as catastrophic climatic phenomena and the negative effects on production, health and wellbeing of society is on the poor countries of the world who have less capacity for adaptation and humanitarian response.

Climate change mitigation, or the reduction of greenhouse gas emissions is principally the responsibility of the industrialized nations and not of poor countries. It is unfair to expect the non-industrialized countries, including the so called emerging economies to make emissions reductions to the same level as rich nations considering that their development and consumption is for basic needs, while for the rich, it has moved on to luxury consumption and associated life styles.

According to a *Christian Aid* report, industrialized nations should be owing over 600 billion dollars to the developing nations for the associated costs of climate changes. This is three times as much as the conventional debt that developing countries owe the developed ones.⁵¹

In developing countries, much of the growth in emissions comes from the provision of basic human needs for growing populations, while emissions in industrialized countries contribute to growth in a standard of living that is already far above that of the average person worldwide. This is



© Centre for Science and Environment and Equity Watch

⁵¹ "Who owes who; Climate change, debt, equity and survival", *Christian Aid*, September 1999

shown by the large contrasts in per capita carbon emissions between industrialized and developing countries. Per capita emissions of carbon in the U.S. are over 20 times higher than India, 12 times higher than Brazil and seven times higher than China.⁵²

Developing countries, on the other hand, have taken the road to growth and development very recently. In countries like India, emissions have started growing but their per capita emissions are still significantly lower than that of industrialized countries.

The difference in emissions between industrialized and developing countries is even starker when per capita emissions are taken into account. In 1996, for instance, the emission of 1 US citizen equalled that of 19 Indians, 30 Pakistanis, 19 Sri Lankans, 107 Bangladeshis, 134 Bhutanese or 269 Nepalese. Per capita emissions in the European Union (EU) and Japan are about half the levels of the United States and Australia.⁵³

In terms of the total emissions of each country, since the early 1900s, every living American carries a natural debt burden of more than 1,050 tonnes of CO₂. In comparison, every living Chinese has a natural debt of 68 tonnes and every living Indian, a mere 25 tonnes.⁵⁴

This principle was accepted by the climate convention, which agreed that the rich world had to reduce its emissions to make space for the poor to grow. In 1997, the Kyoto Protocol set the first, hesitant and weak, target for reduction by the rich countries. But this agreement has been more or less set aside. The per capita emission of CO₂ from fuel combustion in the US is still roughly 20 tonnes per year; between 6 tonnes and 12 tonnes for most European countries. This is still way above the per capita emissions of 4 tonnes in China and 1.1 tonnes in India.⁵⁵

Furthermore, a large number of emissions in countries such as India and China are from rich country corporations out-sourcing production to these countries. Products are then exported or sold to the rich. Companies that want to avoid more regulation in carbon emissions and higher wages in richer countries are outsourcing production to developing countries.

Reduction of GHG emissions should not be at the cost of development and industrialization of the developing countries. On the other hand, climate justice requires the industrialized countries compensate for the historical imbalance by supporting countries address the devastating effects of

⁵² Center for Science and Environment, October 25, 2002

⁵³ Ibid

⁵⁴ "What equals effective", Down To Earth Magazine, CSE, December 15, 2007

⁵⁵ Ibid

Mozambique: Integrating Adaptation to Climate Risks into Mozambique's Action Plan for Poverty Reduction

Mozambique is particularly vulnerable to shocks arising from natural disasters. The floods experienced in 2000 and 2001 had far-reaching social and economic consequences. The impact of natural disasters is recognised in the country's Action Plan for the Reduction of Absolute Poverty 2001-05, in which vulnerability to natural disasters is one of the key action areas. It states, "*Natural disasters are a risk factor, which affect the pace of economic growth, and destroys assets of the poorest segments of the population in affected areas... Therefore measures aimed at managing this risk are of utmost importance*" (Mozambique Action Plan 2001-05). The Action Plan goes on to recommend that action be taken to strengthen the national capacity to respond to natural disaster by raising the standard of national early warning systems. This limited means of enhancing the capacity to deal with climate-related disasters represents a type of adaptation to climate change that also contributes to reducing vulnerability to current risks, helps reduce threats to livelihoods and hence contributes to poverty eradication.

Source: The Energy and Resources Institute (TERI)

climate change and adapt their comprehensive development efforts to changes in climate and its effects.

Rich countries, primarily responsible for creating the problem, must stop harming, by fast cutting their greenhouse-gas emissions, and start helping, by providing finance for adaptation. Rich countries are planning multi-billion dollar adaptation measures at home. But to date they have delivered just \$48m to international funds for least-developed country adaptation, and have counted it as aid: an unacceptable inequity in global responses to climate change.⁵⁶

Rich countries have caused the problem with many decades of greenhouse-gas emissions (and in the process have grown richer). But poor countries will be worst affected, facing greater droughts, floods, hunger, and disease.⁵⁷ Poor countries also have weak capacities to deal with vulnerabilities and risk, including the lack of insurance systems and the like to cover losses in property.

Climate change impacts are already hitting vulnerable communities. In South Africa, less frequent and less reliable rains are forcing farmers to sell their cattle and plant faster-maturing crops. In Bangladesh, villagers are creating floating vegetable gardens to protect their livelihoods from flooding. In Vietnam, communities are helping to plant dense mangroves along the coast to diffuse strong waves from storms.

⁵⁶ Adapting to climate change, Oxfam Briefing paper, May 2007

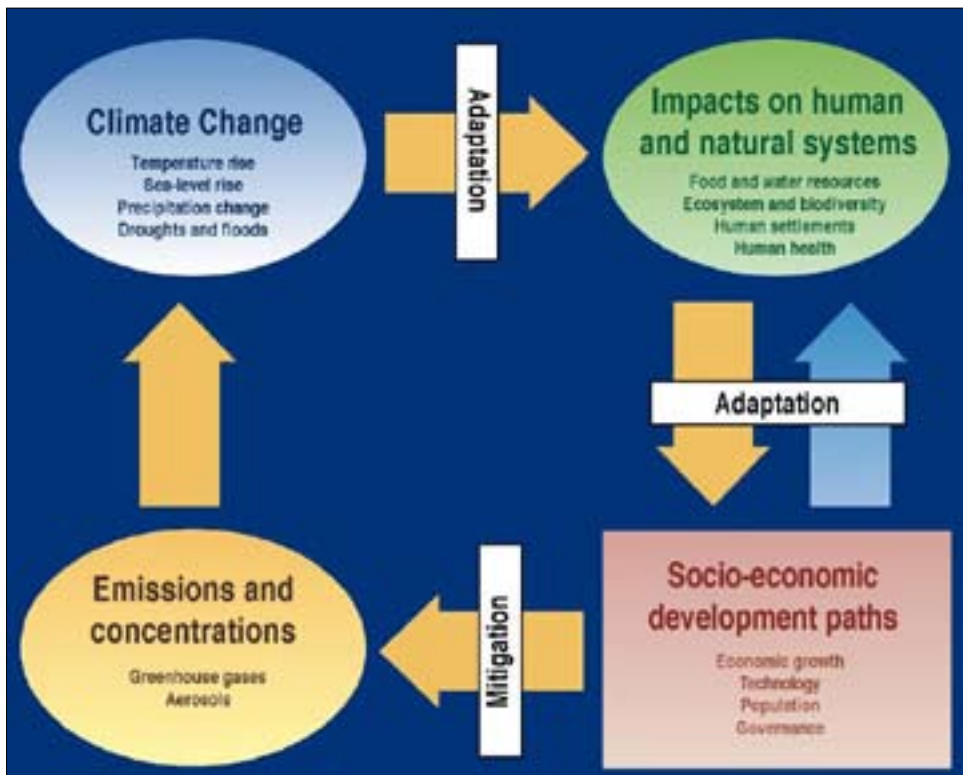
⁵⁷ Ibid

D. ADDRESSING CLIMATE CHANGE

What is mitigation and adaptation in relation to global warming?

The UNFCCC (United Nations Framework Convention on Climate Change) cites two fundamental response strategies to climate change: mitigation and adaptation. While mitigation seeks to limit climate change by reducing the emissions of GHG (greenhouse gases), adaptation aims to alleviate the adverse impacts through a wide range of actions.

The figure below shows how alternative development pathways can give rise to different levels of greenhouse gas emissions leading to climate change impacts on natural and human systems. It also identifies mitigation and adaptation as the two response strategies to the problem of climate change: by curtailing GHG emissions, the magnitude of temperature rise can be abated; additionally, by increasing community coping capacities and reducing their vulnerability one can adapt to climate change impacts that are already occurring. The IPCC Third Assessment Report



Source IPCC (2001)

emphasized that as a result of the linkages described, climate change mitigation and adaptation policies can be more effective when consistently embedded within broader strategies designed to make national and regional development paths more sustainable.

Mitigation

Mitigation of global warming is generally meant as taking actions to reduce greenhouse gas emissions aimed at reducing the extent of global warming. This is differentiated from adaptation to global warming which means taking action to minimize the effects of global warming.

Most proposals at mitigation center around the reduction of greenhouse gas emissions through reducing energy use and switching to cleaner energy sources.

Newly developed technologies including cleaner fuels such as hydrogen fuel cells, solar power, nuclear power, tidal and ocean energy, geothermal power, and wind power and the use of carbon sinks, carbon credits, and taxation are aimed at countering continued greenhouse gas emissions.

Among the most discussed energy conservation methods include increasing the fuel efficiency of vehicles through hybrid, plug-in hybrid, and electric cars and improving conventional automobiles, individual-lifestyle changes and changing business practices.

More radical proposals include planetary engineering techniques ranging from carbon sequestration to orbital solar shades and even population control, to lessen demand for resources such as energy and land.

Governments generally recognize energy conservation as an important element of public policy. For example, if there is less demand for energy from society, the need for new power plants or importation of energy would be lessened. Encouraging energy conservation among the populace is often advocated as a cheaper or more environmentally friendly alternative to increased energy production.

Residential buildings, commercial buildings, and the transportation of people and freight use the majority of the energy consumed by the United States each year. Specifically, the industrial sector uses 38 percent of total energy, closely followed by the transportation sector at 28 percent, the residential sector at 19 percent, and the commercial sector at 16 percent.

Table 2. Potential wedges: strategies available to reduce the carbon emission rate in 2055 by 1 GtC / year, or to reduce carbon emission from 2005 to 2055 by 25 GtC

	Option	Effort by 2055 for one wedge, Relative to 14 GtC / year BAU	Comments, Issues
Energy Efficiency And Conservation	Economy-wide carbon-intensity reduction (emission / \$CDP)	Increase reduction by additional 0.15% per year (e.g, increase U.S. goal of reduction of 1.95% per year to 2.11% per year)	Can be turned to carbon policy
	1. Efficient vehicles	billion cars from 30 to 60 mpg	Car size, power
	2. Reduced use of vehicles	Decrease car travel for 2 billion 30 mpg cars from 10,000 to 5,000 miles per year	Urban design, mass transit, telecommunicating
	3. Efficient buildings	Cut Carbon emissions by one fourth in buildings and appliances projected for 2055	Weak incentives
	4. Efficient baseload coal plants	Produce twice today's coal power output at 80% instead of 40% efficiency (compared with 32% today)	Advanced high-temperature materials
Fuel Shift	5. Gas baseload power for coal baseload power	Replace 1100 GW 50% efficient coal plants with gas plants (4 times the current production of gas-based power)	Competing demands for natural gas
CO ₂ Capture and Storage (CCS)	6. Capture CO ₂ at baseload power plant	Introduce CCS at 800 GW coal or 1600 GW natural gas (compared with 1060 GW coal in 1999)	Technology already in use for H ₂ production
	7. Capture CO ₂ at H ₂ plant	Introduce CCS at plants producing 250 Mt H ₂ / year from coal or 500 Mt H ₂ / year from natural gas (compared with 40 Mt H ₂ / year today from all sources)	H ₂ safety, infrastructure
	8. Capture CO ₂ at coal-to synfuels plant	Introduce CCS at synfuels plants producing 30 million barrels per day from coal (200 times Sasol), if half of feedsleek carbon is available from capture	Increased CO ₂ emissions, if synfuels are produced without CCS
	Geological storage	Create 3500 Sleipners	Durable storage, successful permitting
Nuclear Fission	9. Nuclear power for coal power	Add 700 GW (twice the current capacity)	Nuclear proliferation, terrorism, waste
Renewable Electricity and Fuels	10. Wind power for coal power	Add 2 million 1-MW-peak windmills (50 times the current capacity) occupying 1 30 x 106 ha, on land or off shore.	Multiple uses of land because windmills are widely spaced
	11. PV power coal power	Add 2000 GW-peak PV (700 times the current capacity) 20 2 x 108 ha	PV production cost
	12. Wind H ₂ in fuel-cell car for gasoline in hybrid	Add 4 million 1-MW-peak windmills (100 times the current capacity)	H ₂ safety infrastructure
	13. Biomass fuel for fossil fuel	Add 100 times the current Brazil or U.S. ethanol production, with the use of 250 x 106 ha (1/6 of world)	Biodiversity, competing land use

Source: Socolow R. 2006. *Stabilization Wedges : An elaboration of Concept.*

On a community level, transportation can account for 40 to 50 percent of total energy use, and residential buildings use another 20 to 30 percent.⁵⁸

In developed nations, the way of life today is heavily dependent on abundant supplies of energy. Energy is needed to heat, cool, and light homes, fuel cars, and power offices. Energy is also necessary for manufacturing the products used every day.

Emissions from housing are substantial, and government-supported energy efficiency programs can make a difference. New buildings can be constructed using solar energy and other renewable energy sources.⁵⁹

In the area of transport, energy efficient technologies, such as hybrid electric vehicles and hydrogen cars, can reduce the consumption of petroleum and emissions of carbon dioxide. A shift from air transport and truck transport to electric rail transport would reduce emissions significantly. Increased use of public transport can also reduce greenhouse gas emissions per passenger kilometer.⁶⁰

There are now discussions in some countries about the future role of nuclear power as a possible alternative to fossil fuels. But the use of nuclear energy to combat global warming is opposed by some sectors for environmental, social and political reasons.

In some countries, government action has boosted the development of renewable energy technologies. For example, there is a program to put solar panels on the roofs of a million homes in Japan. Denmark on the other hand, has concentrated on wind power.

Carbon capture and storage (CCS) is another method to mitigate climate change by capturing carbon dioxide from such large sources of emissions as power plants and storing it away safely instead of releasing it into the atmosphere.

CCS applied to a modern conventional power plant can reduce carbon dioxide emissions to the atmosphere by approximately 80-90% compared to a plant without CCS. But capturing and compressing carbon dioxide requires much energy. There has to be a balancing of the benefits and disadvantages of this method.

Storage of the carbon dioxide is planned either in deep geological formations, deep oceans, or in the form of mineral carbonates. Geological formations are currently considered the most feasible.

⁵⁸ Ron Scherer, "Oil supplies fall as nation shivers", *The Christian Science Monitor*

⁵⁹ Osborne, Hilary, "Energy efficiency 'saves £350m a year'", *Guardian Unlimited*

⁶⁰ Lowe, Marcia D. (1994, April). "Back on Track: The Global Rail Revival"

Another mitigating method proposed is geo-engineering which means rearranging the earth's environment on a large scale to suit human needs and promote habitability.⁶¹ Some examples of this are: reforestation, increasing ocean absorption of carbon dioxide (carbon sequestration) and screening out some sunlight. However, there are serious concerns that any attempt at geo-engineering may result in unpredictable changes to the environment.

What is meant by adaptation?

The IPCC 2001 report defines adaptation as “*adjustments in ecological, social or economic systems in response to actual or expected stimuli and their effects or impacts. This term refers to changes in processes, practices and structures to moderate potential damages or to benefit from opportunities associated with climate change*”. Adaptation hence involves adjustments to decrease the vulnerability of communities, regions, and nations to climate variability and change and in promoting sustainable development.

Adaptation is important in the climate change debate in two ways: relating to the assessments of impacts and vulnerabilities, and to the development and evaluation of response options.⁶²

It is generally agreed that effective adaptation must reduce vulnerability of the system and develop the potential to anticipate and act to future climatic changes; must take into account the local environmental conditions and the needs of the local populace; and responses and measures must be integrated into development and poverty eradication processes.⁶³

Depending on its timing, goal and motive of its implementation, adaptation can either be reactive or anticipatory, private or public, planned or autonomous.⁶⁴

Reactive or Anticipatory Reactive adaptation takes place after the initial impacts of climate change have occurred. Anticipatory adaptation takes place before impacts become apparent. In natural systems, there is no anticipatory adaptation.

Private or Public The distinction is based on whether adaptation is motivated by private (individual households and companies) or public interest (government).

Planned and Autonomous Planned adaptation is consequence of deliberate policy decision, based on the awareness that conditions have changed or are expected to change and that some form of action is

⁶¹ “How to Cool a Planet (Maybe)”, New York Times - June 27, 2006

⁶² Adaptation to Climate Change in the Context of Sustainable Development, Background Paper prepared under contract by The Energy and Resources Institute (TERI)

⁶³ Ibid

⁶⁴ Ibid

required to maintain a desired state. Autonomous adaptation involves changes that systems will undergo in response to changing climate irrespective of any policy, plan or decision.

Developing countries are likely to face the most adverse effects of climate change and are less capable of coping or adapting to such changes. Recognition of how climate change is likely to impact development priorities is crucial in developing effective strategies and institutional capacity in these countries.

In developing countries, the cost of adaptation is estimated at \$50 billion each year, and a lot more if global emissions are not cut rapidly. According to experts, the USA, European Union, Japan, Canada, and Australia should contribute over 95 per cent of the finance needed. This finance must not be counted towards meeting the UN-agreed target of 0.7 per cent for aid in connection with the Millennium Development Goals (MDGs).

In developing countries changes are needed at different levels. Communities must build their resilience by adopting appropriate technologies and diversifying their livelihoods to cope with the coming climate stress that still lies outside the realm of human experience. Government ministries must learn to plan and make budget around climate uncertainty.⁶⁵ Even infrastructure development must be adjusted to climate proof various forms of infrastructure.

		Anticipatory	Reactive
Human Systems	Natural Systems	X	<ul style="list-style-type: none"> • Changes in length of growing season • Changes in ecosystem composition • Wetland migration
	Private	<ul style="list-style-type: none"> • Purchase of insurance • Construction of house on stilts • Redesign of oil rigs 	<ul style="list-style-type: none"> • Changes in farm practices • Changes in insurance premiums • Purchase of air-conditioning
	Public	<ul style="list-style-type: none"> • Early-warning systems • New building codes, design standards • Incentives for relocation 	<ul style="list-style-type: none"> • Compensatory payments, subsidies • Enforcement of building codes • Beach nourishment

Source IPCC 2001. <http://www.grida.no/climate/ipcc_tar/wg2/645.htm#1825>

⁶⁵ Adapting to Climate Change, Oxfam Briefing Paper, May 2007

Rich countries are investing in their own climate change adaptation, with budgets for individual projects at home outstripping their total contribution to international adaptation funds. The UK – the biggest contributor to international funds so far, pledging \$38m – is investing £178m (\$347m) just in cooling systems for the London Underground, partly in preparation for climate change. The Netherlands, pledging \$18m to international funds, is spending at least €2.2bn (\$2.9bn) just on building new flood dikes at home, in anticipation of climate-change impacts.⁶⁶

Why is funding for climate change adaptation important?

The poorest people in the poorest countries who contributed least to climate change are also the first and foremost affected by it. While world leaders are haggling over emissions reductions and who will pay for the mitigation and adaptation, millions of the world's poorest populations are daily suffering the consequences of climate change -- extreme weather events that destroy crops, livestock and homes, more frequent and prolonged droughts and floods, loss of freshwater supplies, increase in pathogens, destruction of marine and coastal resources, ancestral land, food and water insecurity, energy insecurity, and so on.⁶⁷

In the face of these deteriorating environmental conditions, the most vulnerable communities are forced to cope with changes, using traditional knowledge, practices and innovations to adapt as best they could. The Dayaks of Borneo for instance are diversifying their crops and field location to minimize risk of harvest failure. The Inuits are changing their fishing and hunting areas as well as their travel routes. The indigenous people of Belize are altering their growing season and the timing of animal migration. Entire communities in Western and Northern Alaska are relocating from areas that are becoming uninhabitable due to thawing of permafrost and rising sea levels.⁶⁸

Some indigenous peoples in Borneo are changing their diets, shifting to more wild foods as agricultural harvests become less reliable. Communities in Samoan islands are planting and preserving dense mangrove forests to act as seawalls. People of the Cordilleras in the Philippines are planting hunger crops such as sweet potatoes and cassava to cope with food shortages. They are also building greenhouses to protect crops from cold spells. In Africa local farmers are practicing zero-tilling in cultivation, mulching and other soil-management techniques. Women are planting more crops that are more resistant to droughts and pests,

66 Ibid

67 Tauli-Corpuz et al 2008. Guide on Climate Change and Indigenous Peoples. Tebtebba Foundation

68 Ibid

selecting and saving seeds to ensure resistance to a range of conditions that may arise in growing seasons. In Bangladesh, villagers are creating floating gardens to protect their livelihoods from flooding.⁶⁹

Despite these efforts on the part of local communities and households, climate change is expected to take a massive toll on lives and livelihoods especially in the poorest and most vulnerable populations. An estimated 50 million more people will be at risk of hunger by 2020 plus another 132 million by the middle of the century. Glacial melting could affect water sources for over a billion people in Asia. Millions more people risk facing annual floods, especially in the mega-deltas of Asia and Africa. Entire populations in small island nations face the prospect of becoming environmental refugees. Over 150,000 people are currently estimated to die due to diarrhea, malaria and malnutrition caused by climate change.⁷⁰

Many of the coping strategies of affected communities would have to be scaled-up, complemented and supplemented by other adaptation and mitigation measures at the local, national and international levels, if humanity is to avoid the worst possible consequences of climate change.

These may include improving water supplies in rural areas, developing disaster-preparedness programs, improving weather monitoring systems, vaccination programs, improving land-use planning to reduce flooding, improving sanitation systems, constructing appropriate infrastructure such as landslide or flood control and riverbank stabilization systems, promoting risk reduction and disaster preparedness among the population, massive education campaigns, capability-building programs; conducting geohazard studies,⁷¹ as well as new institutional arrangements.

Climate change adaptation therefore requires grassroots-based national strategies as well as long-term international cooperation. Significant financial and technological support for both adaptation and mitigation would have to be generated, especially for developing countries and vulnerable communities who are the worst-affected yet least empowered to deal with climate change. In turn, this would require equitable, effective and participatory institutional arrangements and processes for ensuring that these financial and technological flows truly benefit the most vulnerable communities as well as the global environment.

What is clear is that poor people in impoverished countries cannot and should not be expected to shoulder the burden of adaptation. And

69 Ibid

70 Oxfam International (2008). *Climate Wrongs and Human Rights: Putting People at the Heart of Climate Change Policy*. Oxfam Briefing Paper 117, September 2008.

71 IPCC (2001). *Climate Change 2001: Impacts, Adaptation and Vulnerability*. Accessed at http://www.grida.no/publications/other/ipcc_tar/?src=/climate/ipcc_tar/wg2/059.htm#134

adaptation will have to move to the top of the policy agenda today if it is to make a difference tomorrow.⁷²

How much is needed?

Various estimates have been put forward . The World Bank has estimated that it will cost US \$10 billion to \$40 billion annually to “climate-proof” investments in developing countries. However, an Oxfam report points out that this estimate only refers to the cost of integrating adaptation into ongoing planning, policies, and practices, and to climate-proofing ongoing infrastructure investments. It does not account for the costs needed to climate-proof the existing supply of natural and physical capital where no new investment had been planned; the cost of financing new investments needed specifically to deal with the effects of climate change; nor the costs faced by households or communities for the great majority of their adaptation needs.⁷³

If these were factored in, Oxfam estimates that the true monetary cost of adaptation could be upwards of \$50 billion annually. And this estimate may become significantly higher if current emissions levels are not immediately and significantly reduced.

Indeed, in a 2007 report prepared by the UNFCCC Secretariat for COP 13, the authors estimate that the incremental investment and financial flows needed to adapt to climate change in selected sectors range from \$49 to \$171 billion globally by 2030. Reducing global CO₂ emissions by 25% below 2000 levels would require an additional net increase of \$200-\$210 billion globally by 2030. This means the additional investment and financial flows needed for climate change adaptation and mitigation in 2030 would range from \$249 to \$381 billion (in 2005 \$) or 0.3 to 0.5% of the estimated global domestic product in 2030. Around half of this amount would be for developing countries.⁷⁴ An amount approaching these figures would have to be available much earlier if global emissions are to peak sometime around 2020 and decline thereafter (UNDP 2008).

What are the current sources of financing for adaptation under the UNFCCC?

There are various sources of financing for climate change adaptation at present: the UNFCCC-related funding mechanisms; the funding streams established by the World Bank and other international financial

⁷² Solomon, Ilana (2007). Compensating for Climate Change: Principles and Lessons for Equitable Adaptation Funding. ActionAid Discussion Paper, December 2007. ActionAid USA.

⁷³ Oxfam International (2007). Adapting to climate change: What's needed in poor countries, and who should pay. Oxfam Briefing Paper 104. Oxfam International.

⁷⁴ UNFCCC (2007). Investment and Financial Flows to Address Climate Change, UNFCCC, Bonn.

Table 3. Change to the annual investment and financial flows in 2030 for climate change adaptation

	Global (billions of \$ 2005)	Developing countries (percentage)
Agriculture	14	50%
Water Supply	11	85%
Human health	5	100%
Coastal protection	11	45%
Infrastructure	8 to 130	25 to 35%
Total	49 to 171	35 to 60%

Source: UNFCCC 2007. *Investment and Financial Flows to Address Climate Change*, Table IX-65, p. 177

Table 4. Change to the annual investment and financial flows in 2030 for climate change mitigation

Sectors	Global (billions of \$ 2005)	Share of NAI parties (percentage)
Fossil Fuel Supply	(-) 59	50 to 55%
Electricity Supply	(-) 7	50 to 55%
Fossil-fired generation, transmission and distribution	(-) 156	50 to 55%
Renewables, nuclear and carbon, capture & storage (CCS)	148	50 to 55%
Industry	36	50 to 55%
Building	51	25 to 30%
Waste	0.9	66 to 70%
Transport	88	40 to 45%
Forestry	21	Almost 100%
Agriculture	35	35 to 40%
Energy RD&d	35-45	-
Net Change	200-210	35 to 40%

Notes: NAI Parties: Parties to the United Nations Framework Convention on Climate Change that are not included in Annex I, developing countries
RD&D: Research, development and demonstration

Source: UNFCCC 2007, *Investment and Financial Flows to Address Climate Change*, Tables IX-61, IX-62 and IX-63, pp. 173 and 174)

institutions; bilateral official development assistance; and private corporate investments.

The Global Environment Facility (GEF) is a global partnership among 178 countries, international institutions, non-governmental organizations (NGOs), and the private sector to address global environmental issues while supporting national sustainable development initiatives. The GEF is the designated financial mechanism for a number of multilateral environmental agreements (MEAs) or conventions including the UNFCCC.⁷⁵

As the financial mechanism of the UNFCCC, the GEF allocates and disburses funds for projects implemented in developing countries and economies in transition that minimize the damage or the adverse effects of climate change. These include climate mitigation projects that reduce or avoid greenhouse gas emissions in the areas of renewable energy, energy efficiency, and sustainable transport. The GEF also supports climate change adaptation measures that increase resilience to the adverse impacts on vulnerable countries, sectors, and communities.⁷⁶

In 2001, two new dedicated funds were created under the UNFCCC — the Least Developed Countries Fund (LDCF) and the Special Climate Change Fund (SCCF). In managing these funds, the GEF's mandate on adaptation expanded from supporting studies, assessments, and initial pilot projects to financing the implementation of concrete actions on the ground.

The LDCF is designed to support projects addressing the urgent and immediate adaptation needs of the least developed countries (LDCs) as identified by their National Adaptation Plans of Action (NAPAs). The SCCF is designed for long-term adaptation measures which increase the resilience of national development sectors. Its main areas of funding are adaptation funding, as well as technology transfer and capacity building associated with it.

To date, 12 donors (Canada, Denmark, Finland, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom) have made pledges to the SCCF while 15 donors have pledged to the LDCF: Canada, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, and United Kingdom.⁷⁷

Apart from the GEF, an Adaptation Fund (AF) was established under the Kyoto Protocol to finance concrete adaptation projects to help developing

⁷⁵ GEF Website <http://www.gefweb.org/interior.aspx?id=50>. Accessed on 20 November 2008.

⁷⁶ GEF Website <http://www.gefweb.org/interior.aspx?id=232> Accessed on 20 November 2008.

⁷⁷ GEF Website http://www.gefweb.org/interior.aspx?id=192&ekmense=c57dfa7b_48_60_btnlink and http://www.gefweb.org/interior_right.aspx?id=194&ekmense=c580fa7b_48_62_btnlink Accessed on 20 November 2008

countries cope with the effects of climate change. Unlike the other funds, the AF is financed by a 2% levy on Certified Emissions Reductions (CER) traded under the CDM and is therefore not dependent on voluntary contributions by developed countries. Currently, the AF is worth about \$51 million. Assuming annual sales of 300-450 million CERs, it is expected to generate up to \$80-300 million per year from 2008 to 2012.⁷⁸

What are some of the problems with UNFCCC-related funds for adaptation?

First, the existing UNFCCC-related adaptation funds are far from adequate. The GEF allocates and disburses about \$250 million dollars per year climate change adaptation. The total amount pledged for the SCCF and the LDCF are \$60 million and \$120 million, respectively. Some \$50 million were earmarked for the SPA when it was established. The 2% levy on CDM projects is expected to generate \$300 million, at most, for the AF. All these funds do not even add up to 2% of the estimated \$50 billion required for adaptation per year.⁷⁹

Second, except for the AF, all these funds are voluntary contributions of developed countries rather than resources provided in fulfillment of their legally binding obligations under the UNFCCC. Treating these GEF funds as “voluntary contributions” elides the fact that the industrialized countries actually owe an ecological debt to the developing world for having inflicted the most damage to the climate and the global commons. Even the UNFCCC acknowledges this in the principle of “common but differentiated responsibilities and respective capacities”. Indeed, the foremost GHG emitter, the US, has chosen not to contribute to the LDCF or the SCCF. Even the AF contradicts the polluter’s pay principle since it is a levy on mitigation effort rather than on GHG emissions.

Third, only the AF represents new funding that is not counted as ODA from developed countries. This runs counter to the intent of Article 4.3 of the UNFCCC which requires Annex 1 countries to provide “new and additional” funds for climate change mitigation and adaptation. This means that the amounts provided by developed countries as part of their commitments under the UNFCCC must be additional to their pledge of providing ODA equivalent to 0.7% of their GDP for poverty eradication and meeting the MDGs as part of the Monterrey Consensus. As it is, only a handful has fulfilled their ODA pledge.⁸⁰

⁷⁸ Erik Haites Margaree Consultants, Inc. (2008). Negotiations on additional investment and financial flows to address climate change in developing countries. An Environment & Energy Group Publication. United Nations Development Programme.

⁷⁹ Data from GEF Website http://www.gefweb.org/interior.aspx?id=192&ekmense=c57dfa7b_48_60_btnlink and http://www.gefweb.org/interior_right.aspx?id=194&ekmense=c580fa7b_48_62_btnlink Accessed on 20 November 2008

⁸⁰ Ibon International (2007). Primer on Development and Aid Effectiveness. Quezon City.

Fourth, because these funds are “voluntary contributions”, they are unpredictable sources of finance. As such, developing countries cannot rely on these for long-term planning and investment. Even the AF is unpredictable as it depends on the actual number of CDM projects and the quantity and price of CERs traded in any given year.

Fifth, the governance of these funds remains undemocratic. While the governing body of the GEF has 16 representatives from developing countries, 14 from developed countries and 2 from transition economies, decisions must be based on consensus or a vote weighted by donation levels. This essentially gives the five largest donor countries veto power.⁸¹

In contrast, the Adaptation Fund’s Board was created in 2007 with representation distributed equally between developed and developing countries, and includes representatives from least developed countries (LDCs) and small island developing countries (SIDs). When consensus is not possible, decisions are made by 2/3 majority vote according to a “one-member-one-vote” rule. Moreover, the AF is directly accountable to the COP of the UNFCCC where decisions on its overall policy are taken.⁸²

Sixth, while there is explicit mention of developing countries as priority recipients of these funds, there is no mention of vulnerable communities and households within countries in any of the eligibility criteria. Indeed, there is no mechanism to ensure the meaningful participation of grassroots communities in defining priorities for adaptation, project design, implementation, monitoring and evaluation. There is a presumption that the in-country NAPA process is inclusive and participatory. But even then, there is no assurance that the projects identified in the NAPA will actually be supported by these funding mechanisms.⁸³

Lastly, these funds follow complex procedures and impose burdensome requirements that limit the accessibility of these funds for those who need it the most. These include co-financing requirements and the concept of “incremental costs” that developing country proponents must demonstrate — they must separate the costs of adaptation from development-related costs.⁸⁴

Why is the World Bank getting more involved in climate funding?

The World Bank is one of three implementing agencies carrying out the work of the GEF, along with the United Nations Development Programme

⁸¹ Solomon (2007). *op.cit.*

⁸² Lottje, Christine (2008). International Instruments for Financing Adaptation to Climate Change. Discussion paper, October 2008. Bread for the World (Germany) and Church Development Service (EED, Germany).

⁸³ *Ibid.*

⁸⁴ Solomon 2007. *Op.cit.*

(UNDP) and the United National Environment Programme (UNEP). Not content with its role as trustee, the World Bank is now positioning itself to capture the market on climate change financing by coming up with its own funding mechanism. It is taking advantage of the widely acknowledged urgency of the problem of climate change on the one hand, and the limitations in the main financing mechanisms available for mitigation and adaptation on the other, to reclaim its eroded influence.

In 2007 the World Bank Group began developing its strategic framework for integrating climate change and development, initially involving donors exclusively in its initial stages then involving other stakeholders in 2008 through consultations and comments. The latest draft of the Bank's Strategic Framework on Climate Change and Development (SFCCD) proposes Climate Investment Funds (CIF) and market-based carbon finance as the main mechanisms for channeling climate-related funding. In July 2008, the Bank unveiled the CIF with an initial pledge of \$6.1 billion from 10 industrialized countries to aid developing countries address the problem of climate change.⁸⁵

The CIF include a Clean Technology Fund (CTF) and a Strategic Climate Fund (SCF). According to the Bank, the CTF is designed to promote scaled up demonstration, deployment and transfer of low-carbon technologies in power sector, transportation, and energy efficiency in buildings, industry and agriculture. The SCF on the other hand will provide financing to pilot new development approaches or to scale-up activities aimed at a specific climate change challenge through targeted programs. The SCF will pilot national level actions for enhancing climate resilience in a few highly vulnerable countries. Other programs under consideration include: support for energy efficient and renewable energy technologies to increase access to "green" energy in low income countries; investments to reduce emissions from deforestation and forest degradation through sustainable forest management; and "pre-commercial technologies," including carbon capture and storage.⁸⁶

The Adaptation Pilot Fund, renamed the Pilot Programme for Climate Resilience (PPCR), will be established as a programme under the SCF framework at the outset although it will have a separate oversight committee. The PPCR aims at exploring 'practical ways to mainstream climate resilience into core development planning and budgeting' by providing developing countries with 'technical and financial support to routinely consider climate information, impacts, risks and cost effective

⁸⁵ World Bank website. Viewed at <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/ENVIRONMENT/EXTCC/0,,contentMDK:21713769~menuPK:4860081~pagePK:210058~piPK:210062~theSitePK:407864,00.html>

⁸⁶ Tan, Celine (2008). No Additionality, New Conditionality: A Critique of the World Bank's Climate Investment Funds. TWN May 30, 2008.

adaptation options in their normal planning, budgeting and regulatory processes'⁸⁷.

These CIFs are to be established as trust funds within the World Bank Group with the Bank acting as overall coordinator and trustee of the funds. Financing will take the form of credit enhancement and risk management tools, such as loans, grants, equity stakes, guarantees and other support mobilised through donor contributions to the respective trust funds and implemented in collaboration with the regional development banks⁸⁸.

The CIFs will serve as the central instruments through which donor resources are collected and disbursed for climate-related financing to the various multilateral development banks (MDBs), including the World Bank Group. Resources from the CIFs will, in effect, subsidise the financing made by the MDBs to developing countries for climate-related activities.⁸⁹

Each fund will be managed by a committee with equal representation from donor and recipient countries.⁹⁰

What is wrong with the World Bank as “Climate Banker”?

First, the World Bank is creating a parallel structure for financing climate change adaptation and mitigation that undermines the multilateral framework of the UNFCCC; and one that is even more contradictory to the internationally agreed principle that the developed countries should shoulder the main burden for mitigation and adaptation due to their larger share of the CO₂ emissions stock in the atmosphere and due to their higher technological and economic capabilities.

The Bank's CIF will not come under the authority of the UNFCCC's Conference of Parties and will not necessarily adhere to its provisions, despite assurances from the Bank that it considers the UN as the primary body for adaptation support for developing countries. Developing countries have argued that financial resources disbursed in fulfillment of obligations of developed countries under the UNFCCC should be placed under the authority (and not just guidance) of the Convention's COP. Indeed, the Bank is raising much bigger amounts for the CIF and in effect may be diverting resources away from the GEF since they are dipping from the same donor pool.

Second, the World Bank is hardly qualified to take a leading role in cleaning up the atmosphere given its long history of financing ecologically

⁸⁷ Ibid

⁸⁸ Ibid

⁸⁹ Ibid

⁹⁰ World Bank (2008). Q & A : Climate Investment Funds. Available at http://siteresources.worldbank.org/INTCC/Resources/Q&A_CIF_July_1_08.pdf

destructive activities and projects. For instance, from 1997-2007, the Bank has financed 26 gigatons of carbon dioxide emissions – about 45 times the annual emissions of the UK -- according to the World Wildlife Fund-UK. The Bank remains heavily committed to investments in carbon-intensive energy projects and reforms in energy sectors that focus on large-scale, privatised energy provision. Hence, climate funds under the World Bank are likely to be used to finance a version of “clean technology” that includes dirty coal, agro fuels and large hydro dams.⁹¹

This year the World Bank Group’s total lending to coal, oil and gas is up 94 percent from 2007, reaching over \$3 billion, contrary to the recommendations of the Extractive Industries Review. Coal lending alone has increased an astonishing 256 percent in the last year. It reported lending over \$2.5 billion for renewable energy and energy efficiency but the bulk of this went to large hydropower projects and supply-side energy efficiency. Only \$476 million went to support “new” renewables such as wind, solar, biomass, geothermal, and hydropower projects that will produce up to 10 MW per facility⁹².

Third, the Bank is ideologically committed to pushing the corporate agenda of market-friendly techno-fixes to climate change. In rationalizing the US-sponsored Clean Technology Fund, the Bank identifies “the further development of innovative financing mechanisms designed to promote market-based solutions and trigger private investments in low carbon development”⁹³ as a priority for the international community. It wants the Forest Investment Fund to complement, among other things, existing carbon finance instruments and to facilitate investments in forestry products and biomass and biofuel supplies as well enhance access to international markets for these products⁹⁴. Thus, the Friends of the Earth - International (FOEI) warns that the Bank may place the last remaining forests in so called ‘carbon offset schemes’, which would undermine indigenous peoples’ land rights and do nothing to reduce emissions.

While at it, the Bank also wants to address the problem of ‘policy and regulatory barriers’ that create ‘disincentives’ to private sector investment in these areas. Once again, civil society groups have expressed concerns that these market-based solutions are designed to create new sources of revenues for logging companies and other TNCs rather than safeguarding the environment or communities which depend on natural resources for their livelihoods and domicile.

⁹¹ Redman, Janet (2008). *Dirty is the New Clean: A Critique of the World Bank's Strategic Framework for Development and Climate Change*. Institute for Policy Studies, Campagna para la riforma della Banca Mondial, Oil Change International, Friends of the Earth International.

⁹² Ibid

⁹³ Quoted in Tan (2008), op. cit.

⁹⁴ Ibid

Fourth, the CIF is a donor-driven scheme that places developing countries at a disadvantaged position. Although the funds are governed by Trust Fund Committees with equal representation from developing and developed countries, donors can pick and choose which programmes to contribute to.⁹⁵ Decisions are supposed to be made by consensus. But in an aid framework, recipients may be pressured to accept donor impositions just to ensure funds flow their way. This runs counter to the principle of ownership and makes these financing flows unpredictable. Donor countries are also likely to treat their CIF contributions as part of their ODA, contrary to the principle of additionality in the UNFCCC.

Fifth, since a large part of financing under the CIF will take the form of loans, these financial flows will add to the debt burden of developing countries. This means that developing countries will be made to pay for dealing with a problem largely caused by “donor” countries -- turning the principle of “common and differentiated responsibility” on its head. A heavier debt burden would also weigh down on poor countries’ ability to generate resources for sustainable development.

Sixth, the CIFs impose new conditionalities on developing countries. Again this is contrary to the spirit of the UNFCCC which specify binding commitments only on the advanced industrialized countries for having spewed the most GHGs into the atmosphere. For example, access to funds from the CTF would be judged not only on the applicant’s demonstrated potential for transformation to low-carbon development but also for maintaining a ‘minimum level of macroeconomic stability and stable budget management’ as well as a ‘commitment to an enabling policy and regulatory framework’. This means that aside from specific climate-related criteria, access to the CIFs will also be based on the Bank’s traditional criteria for financing, including tight fiscal discipline and implementation of economic and other structural and policy reforms.⁹⁶

Seventh, like UNFCCC-related funds, the Bank’s CIF does not ensure that resources will benefit the most vulnerable communities nor does it allow for meaningful grassroots participation. Like the UNFCCC-related funds, the CIF passes this burden to the in-country NAPA process. But there are no clear guidelines on how monitoring and evaluation will be conducted and by whom.⁹⁷

⁹⁵ Ibid

⁹⁶ Ibid

⁹⁷ Lottje (2008). Op.cit.

What are some of the new financing instruments being proposed?

- ▶ Carbon taxes at the national and/or international levels (or a global carbon-added tax to avoid carbon leakage)
- ▶ Taxes on speculative investment
- ▶ Taxes on oil profits
- ▶ Air and maritime levies
- ▶ Redirecting state budgets away from fossil fuel subsidies and military spending
- ▶ Linking adaptation funding to GHG emissions
- ▶ Fixed assessment (e.g. 0.5% of GDP for climate change adaptation funding, in addition to 0.7% as ODA commitment)
- ▶ Extending the 2% levy for the Adaptation Fund to Joint Implementation projects and other activities
- ▶ Etc.

What should be the criteria for a just financing scheme for climate change adaptation?

There must be equitable burden-sharing

This is formally expressed as the principle of “common but differentiated responsibility and respective capacities” in Article 3 of the UNFCCC. This means that restorative justice requires distribution of responsibility according to historical per capita emissions, not just on a by country basis but more significantly on a by polluter basis. The greatest burden of adjustment must be on the Northern countries and their TNCs (wherever these are located), as well as on Southern elites, who have caused and benefited the most from exploiting the global commons.

Funds must be adequate

The UNFCCC Secretariat estimates that the additional investment and financial flows needed for climate change adaptation and mitigation in 2030 would range from \$249 to \$381 billion (in 2005 \$) or 0.3 to 0.5% of the estimated global domestic product in that year. Funds approaching these amounts would have to be raised and utilized soon for mitigation,

adaptation, development and dispersion of appropriate technology, and ultimately for overhauling the whole economic framework into one of eco-sufficiency and sustainability.

New and additional

Adaptation finance for developing countries must come from new sources and in addition to the long-standing (and yet to be realized) commitment of developed countries to spend 0.7 percent of their gross national income on ODA. The latter pledge is intended for poverty eradication first and foremost which remains a gargantuan unfulfilled task even when viewed without consideration for the effects of climate change on the poor and vulnerable populations.

Predictable

Long-term and reliable flow of finances must be assured rather than rely on “voluntary contributions” from industrialized countries since these will be subject to changing administration priorities and preferences, short-term budgetary or revenue fluctuations, and horse-trading.

Focused on the vulnerable

Just as different countries and different classes or economic actors within the country contribute different amounts of greenhouse gas emissions to the atmosphere, the adverse consequences of climate change also impact populations and communities differently.

Article 4.4 of the UNFCCC stipulates that developed country Parties shall assist particularly vulnerable developing country Parties to meet the costs of adaptation. These include (according to Article 4.8):

- a) Small island countries;
 - b) Countries with low-lying coastal areas;
 - c) Countries with arid and semi-arid areas, forested areas and areas liable to forest decay;
 - d) Countries with areas prone to natural disasters;
 - e) Countries with areas liable to drought and desertification;
 - f) Countries with areas of high urban atmospheric pollution;
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- g) Countries with areas with fragile ecosystems, including mountainous ecosystems;
 - h) Countries whose economies are highly dependent on income generated from the production, processing and export, and/or on consumption of fossil fuels and associated energy-intensive products; and
 - i) Land-locked and transit countries.

Civil society extends the principle of equity within society. Hence a focus on vulnerability refers not just to countries but also local communities including indigenous peoples, farming communities, coastal communities, urban slums, fisherfolk, rural women, children, and other marginalized groups in society.

There must be democratic governance over these financing mechanisms

Developing countries, especially the most vulnerable to climate change, should have genuine influence over the identification, definition, implementation and evaluation of programmes, projects and activities for mitigation and adaptation. This contrasts with the donor-driven process that typifies ODA flows. Donor-imposed economic policy conditionalities would have no place under such a scheme. There must be transparency and accountability to ensure that these funds are effective and really utilized for their intended purposes and target beneficiaries.

There must be meaningful people's participation

Grassroots communities through their organizations must have meaningful and effective participation in the identification, definition, implementation and evaluation of programmes, projects and activities for mitigation and adaptation. There must be community-level management and decision-making supported by national-level authority or public-community partnership in the utilization and of these resources.

What is meant by the additionality issue in aid to finance climate change responses?

Adaptation calls for many tens of billions of dollars each year. But rich countries have so far pledged a mere \$182m to international funds for developing-country adaptation – less than 0.5 per cent of the minimum amount that is needed overall.⁹⁸

⁹⁸ Adapting to Climate Change, Oxfam Briefing paper, May 2007

Not only is this funding a fraction of what is needed, but it is almost all being counted towards long-standing commitments to provide 0.7 per cent of national income as aid. Only the Netherlands has explicitly committed to provide climate-related finance in addition to this. Development and poverty reduction are hugely under-funded and donor countries must raise their aid to 0.7 per cent as was promised in 1970. Finance for adaptation should be provided in addition to this, and should not be included in the definition of aid.⁹⁹

Development is essential to enable poor people to adapt successfully, but it is still hugely under-funded. Donor countries must live up to the commitment of providing 0.7 per cent of gross domestic product (GDP) under the UN Medium-Term Development Goals in order to eradicate poverty.

But finance for adaptation to climate change for developing countries must not be rebranded or diverted from such development aid commitments. They must be reported systematically and transparently as addition to development assistance. As a climate justice issue in line with the ‘polluter pays’ principle, it is owed not as *aid* from rich country to poor country, but as *compensatory finance* from high-emissions countries to those most vulnerable to the impacts.¹⁰⁰

What is sustainable economic framework in the climate change debate?

The idea of sustainable development grew from numerous environmental movements in earlier decades and was defined in 1987 by the World Commission on Environment and Development (*Brundtland Commission 1987*) as: development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

This contributed to the understanding that sustainable development encompasses a number of areas and highlights sustainability as the idea of environmental, economic and social progress and equity, all within the limits of the world’s natural resources.

The 1992 Rio Earth Summit was attended by 152 world leaders, and sustainability was enshrined in Agenda 21, a plan of action, and a recommendation that all countries should produce national sustainable development strategies.

⁹⁹ Oxfam Briefing paper, May 2007

¹⁰⁰ Ibid

But according to the World Development Movement, in the more than 10 years since Rio, there has been little change in poverty levels, inequality or sustainable development. “Despite thousands of fine words the last decade has joined the 1980’s as another ‘lost decade for sustainable development’ with deepening poverty, global inequality and environmental destruction”.¹⁰¹

Sustainable development is now generally accepted as an important principle in approaching the issues of poverty, economic stagnation, environmental degradation and globalization. The term was coined in the 1980s.

During the 1980s, the separate strands of nature conservation, pollution concerns and economic development came together. Also the creation of the WCED (World Commission on Environment and Development) by the UN in 1985 represented a turning point in the debate, incorporating developing countries’ concerns.

The three main dimensions of sustainable development have been identified as economic, social and environmental, and these should be advanced at the local, regional, national and global level. These concerns reached their zenith at the UNCED (United Nations Conference on Environment and Development) held at Rio de Janeiro in 1992.

In March 2005, the Millennium Ecosystem Assessment (MEA) was released. This 2,500-page report was four years in the making, drawn up by 1,300 researchers from 95 nations over four years, and funded by the Global Environment Facility, the United Nations Foundation, the World Bank and various others.¹⁰²

Surveying the planet, it made a number of conclusions that many have stressed for years. The key messages from the report included the following points:

- ▶ Everyone in the world depends on nature and ecosystem services to provide the conditions for a decent, healthy, and secure life.
- ▶ Humans have made unprecedented changes to ecosystems in recent decades to meet growing demands for food, fresh water, fiber, and energy [which has] helped to improve the lives of billions, but at the same time they weakened nature’s ability to deliver other key services such as purification of air and water, protection from disasters, and the provision of medicines....

¹⁰¹ <http://www.wdm.org.uk/index.htm>

¹⁰² Living Beyond Our Means: Natural Assets and Human Well-being, Millennium Ecosystems Assessment, March 2005

- ▶ Human activities have taken the planet to the edge of a massive wave of species extinctions, further threatening our own well-being.
- ▶ The loss of services derived from ecosystems is a significant barrier to the achievement of the Millennium Development Goals to reduce poverty, hunger, and disease.
- ▶ The pressures on ecosystems will increase globally in coming decades unless human attitudes and actions change.
- ▶ Measures to conserve natural resources are more likely to succeed if local communities are given ownership of them, share the benefits, and are involved in decisions.
- ▶ Even today's technology and knowledge can reduce considerably the human impact on ecosystems. They are unlikely to be deployed fully, however, until ecosystem services cease to be perceived as free and limitless, and their full value is taken into account.
- ▶ Better protection of natural assets will require coordinated efforts across all sections of governments, businesses, and international institutions. The productivity of ecosystems depends on policy choices on investment, trade, subsidy, taxation, and regulation, among others.¹⁰³

Human-induced climate change poses a real threat to the achievement of the MDGs (Millennium Development Goals) which established the relation between poverty alleviation and sustainable development.

Human health and well-being which are dependent on the sustained resilience and robustness of ecosystems get debilitated, worsening existing conditions of poverty, malnutrition and illness, and pressure on natural resources, thereby exacerbating the vicious cycle. This relates to sustainable development largely through impediments to and implications on the opportunities for socio-economic development and issues of equity and justice.¹⁰⁴

In turn, alternative development pathways will determine GHG emission levels that will affect future climate change, influence non-climatic stressors such as land-use changes, and future capacity to adopt mitigation and adaptation measures. Also, wider development goals such as improving of institutions to address current socio-economic and environmental problems, and to augment social capital; stimulating technological innovation of promotion of environmentally friendly

¹⁰³ Ibid

¹⁰⁴ Adaptation to Climate Change in the Context of Sustainable Development, Background Paper prepared under contract by The Energy and Resources Institute (TERI)

technologies; development of drought-resistant varieties of crops can help in enhancing the capacity to cope and adapt to climate change.¹⁰⁵

The global community has begun to develop and implement strategies and approaches for adapting to the on-going process of climate change, vulnerability-based assessments have been completed and priority areas for enhancing adaptive capacity have been identified.

Mainstreaming refers to the incorporation of initiatives, measures and strategies to reduce vulnerability to climate into existing policies, processes and structures regarding environmental datasets, disaster management plans, food security, water resource management, health issues, sustainable livelihoods, institutional structures, project design and implementation and others, the primary objective being that “adaptation to climate” become part of programs that further sustainable development planning.¹⁰⁶

Embedding climate change adaptation into sector policies, programs and projects, expands the range of opportunities for reducing vulnerability

Millenium Development Goal 7: Ensure Environmental Sustainability

Most countries have committed to the principles of sustainable development and to incorporating them into their national policies and strategies. They have also agreed to the implementation of relevant international accords. But good intentions have not translated into sufficient progress on the ground to reverse the loss of our environmental capital. Even regions that have made significant progress towards achieving other Millenium Development Goals, such as parts of Asia, tend to have a much poorer record on environmental issues.

Per capita carbon dioxide emissions, the main source of the “greenhouse effect” causing climate change, have increased in developing countries and remained stable in the group of industrialized countries (known as “Annex I Parties”) that have ratified the Kyoto Protocol. At the world level, per capita emissions have slightly decreased, mainly as the result of a decline in industrial production in the economies in transition in the 1990s.

Progress in energy efficiency and access to clean technology and fuels is ongoing. But the transfer of these new technologies to the developing countries, where energy needs are skyrocketing, is not proceeding at a fast enough pace. Rational consumption patterns among the richest countries could also help ensure environmental sustainability. In contrast, nearly half the world’s population depend on solid fuels, including wood, dung, crop residues and coal, to meet their most basic energy needs. Indoor air pollution from cooking with such fuels is responsible for more than 1.6 million deaths annually, mostly among women and children.

Source: Progress towards the Millenium Development Goals, 1990-2005
http://unstats.un.org/unsd/mi/mi_coverfinal.htm

¹⁰⁵ Ibid

¹⁰⁶ Ibid

and also enables impacts to be addressed in a more economically efficient manner.¹⁰⁷

Vietnam: Mangrove Planting

The Vietnam Red Cross (VNRC) has supported local communities in the northern coastal provinces in planting 12000 hectares of mangrove trees to break the 1.5 meter eaves typically associated with tropical typhoons and to act as a buffer to 110 km of sea dyke. The program has cost US\$1.1 million; the benefits have already proved far greater.

Costs of dyke maintenance have fallen by us\$7.3 million a year. Typhoon Wukong in October 2000 claimed no lives on the island, no damage to the dyke and minimal damage to property and possessions. The mangrove planting has created livelihood opportunities for 7750 families involved in the replanting and protection effort and who are harvesting shellfish among the mangroves (Source: IFRC-RCS 2002).

E. THE CORPORATE GLOBALIZATION RESPONSE TO CLIMATE CHANGE

“The fundamental success of the Kyoto Protocol negotiations was the decision to employ market-based mechanisms as a primary means of achieving greenhouse gas emissions reductions.”

— International Climate Change Partnership, an industry lobby group involving BP Amoco, Total, Fina, Elf, Statoil and many other TNCs.

During the COP-2 climate negotiations in Geneva in July 1996, the US, the world’s largest emitter of greenhouse gases, for the first time announced that it would support a binding UN climate treaty. The commitment, however, came at a price— greenhouse gas reductions should be pursued through “market-based solutions that are flexible and cost-effective,” US negotiator Tim Wirth explained.¹⁰⁸

The US government was sending the message that it would only accept a climate treaty that did not threaten US corporate interests. Over the next 18 months until COP-3 in Kyoto, US negotiators insisted on placing market-based mechanisms onto the agenda. The result was a Kyoto Protocol with a very moderate target to reduce greenhouse gas emissions and with the prominent inclusion of the three market-based mechanisms: carbon trading, joint implementation and clean development mechanism. [See boxed explanation]

An escape route was thus opened-up for Northern governments hoping to avoid cutting emissions at home, as well as creating new avenues for the boosting of corporate profits. A satisfied Al Gore, then US vice-president, praised “the magic of markets” as the way forward in tackling climate change.¹⁰⁹ Environmental NGOs warned against potential ‘loopholes’, while the Danish minister of environment went a step further and labelled emissions trading as “climate fraud.”¹¹⁰

Since the Kyoto summit, the US position has been to steer the negotiations towards the dominance of market-based mechanisms. After the last official negotiations session before COP-6 in Lyon from 11-15 September, US lead negotiator David Sandalow reaffirmed the US position— no limits on the use of emissions trading and no restriction on the use of carbon sinks.

¹⁰⁸ Quote from “A Neo-Gramscian Approach to Business-Society Relations: Conflict and Accommodation in the Climate Change Negotiations.” Paper by David L. Levy presented at the Academy of Management Annual Meeting, “Social Issues in Management Division”, Toronto, August 2000.

¹⁰⁹ ‘Climate Change: A Bull Market in Hot Air’, Financial Times, 4 November 1999.

¹¹⁰ ‘Climate fraud’ (‘klimasvindel’) has become a much-used term in the Danish debate about the implementation of the Kyoto Protocol. ‘Klima-mål under Pres’, Information, 31 August 2000, our translation.

What is carbon trading?

Carbon Trading or Emissions Trading, as it is alternatively known, involves trading carbon emission credits between nations. Polluters can continue their GHG emissions if they pay for mitigating activities by other parties in other nations. In a sense it is using the power of wealth to buy one's right to continue polluting.

The Kyoto Protocol says that it is all right to trade in emissions, but that it should not be the major means to comply with one's commitments for mitigation. Supporters say that this mechanism will bring in private corporations and with that will come market pressures pushing for efficiency, innovation and the best results.

The proponents of carbon trading believe that markets can also be useful in gaining experience and developing standard framework for monitoring emissions. It can also help in discovering the price of reducing GHGs [greenhouse gases]. But opponents feel that stress should be on undertaking real reductions by cutting fossil fuel use causing GHG emissions rather than on purchasing the right to pollute by buying emission allowances.

Critics argue that it will be easier to buy credits than to reduce emissions hence it won't really work and will just be a license to pollute.

To cite an example. Because of the collapse of the former Soviet Union, the emissions from the countries of the former Soviet Union are much reduced. Under the Kyoto agreements, they can still emit up to their 1990 limits, but trading their right to pollute at 1990 limits carbon trading could lead to more emissions.

Under the Kyoto Protocol, Russia and the Ukraine have the right to stabilize their emissions at 1990 levels by 2012. Since their economies collapsed after 1990, Russia and the Ukraine's emissions are currently far below 1990 levels. This means that these two countries will be allowed to increase their emissions by 50% and 120% respectively by 2012. However, their industries will not conceivably be able to grow this fast. Instead, they will be able to sell much of that entitlement to other countries. The United States has already made clear its intention to purchase this "hot air" in order to achieve a substantial proportion of its reduction requirement.¹

¹ Simon Retallack, "The Kyoto Loopholes", *Third World Network*, March 2001

The second key US demand, that large Southern countries like China, Brazil and India accept emissions reduction targets, is closely linked with a desire to use the Kyoto mechanisms to their full potential. If these countries accept greenhouse gas limits, they will consequently have plenty of emissions credits to sell to US corporations.

A number of Northern governments who were initially skeptical have further undermined the Kyoto Protocol by gradually embracing greenhouse gas trading. Japan, for example, was quick to jump on the

emissions trading bandwagon. At COP-4 in Buenos Aires, the Japanese delegation pushed for the inclusion of corporations, and not only countries, in the market-based mechanisms. This vision has since gained further momentum, opening the floodgates wider for climate fraud and profiteering from the Kyoto Protocol.¹¹¹

An EU-wide emissions trading programme has been under development and individual member states are now supportive of market-based mechanisms. The Netherlands for instance plans to achieve 50% of its reduction commitments abroad through emissions trading.¹¹²

Sweden and Finland are promoting the use of ‘carbon sinks’. They are attracted by the potential of earning carbon credits and making massive profits from industrial tree plantations. The UK, France and several European Commissioners are pushing for the inclusion of nuclear energy investments in the Clean Development Mechanism.

Within the EU, the Danish government is one of the few that still officially opposes the attempts to undermine the Kyoto Protocol by allowing climate fraud. “We will cut the 21% of greenhouse gas emissions as we promised in Kyoto, and we will do it at home,” Danish environment minister Sven Auken said in March 2000.¹¹³

While the Danish government’s position illustrates alternatives to entirely selling out to commercial interests, this critical stance is under growing pressure from Danish industry and the Ministry of Finance, which wants to buy cheap emission rights abroad to enable the continued export of electricity from coal-fired power plants.¹¹⁴

US corporations are strongly opposed to any international rules on climate change. This is the reason why the US government has made it a point to steer the UN climate treaty into a virtual trade agreement for greenhouse gases. While most US lobby groups continue to oppose the ratification of the Kyoto Protocol, they have fully embraced emissions trading.¹¹⁵

Since Kyoto, corporate lobby groups, on the national, regional and international levels, have lobbied for the unrestricted use of market-based mechanisms. Aside from pre-empting government restrictions on their operations, these market-based mechanisms open up lucrative opportunities for profit-making.¹¹⁶

¹¹¹ Greenhouse Market Mania, UN climate talks corrupted by corporate pseudo- solutions, Corporate Europe Observatory Briefing, November 2000.

¹¹² “Netherlands Allocates Climate Commitments”, ENDS Environment Daily, 23 June 1999.

¹¹³ “If we are to use the so-called Kyoto mechanisms, then it should only be to put another layer of cream on the environmental pie” (on top of the 21% reduction commitment), Auken explained on 31 August 2000.

¹¹⁴ Ibid.

¹¹⁵ IBON Facts and Figures Special Release on Climate Change, February 2008

¹¹⁶ Greenhouse Market Mania, UN climate talks corrupted by corporate pseudo- solutions, Corporate Europe Observatory Briefing, November 2000.

What were initially environmental motivations for the climate talks have now largely been hijacked by corporate interests. Through strong lobbies and media spins, corporations have succeeded in promoting the global free trade in greenhouse gases as the solution to the climate crisis.

Northern governments remain blindly committed to the neo-liberal dogma that embraces deregulated market as the solution to every imaginable problem. Influenced by corporate ‘environmentalist’ groupings like the World Business Council for Sustainable Development (WBCSD), governments and international institutions have embraced the idea that there is no contradiction between corporations pursuing profits and corporations solving environmental problems.¹¹⁷

According to this line of thinking, market liberalisation is good for the environment, as corporations are seen to know best how to solve ecological problems (through technological improvements). The dominance of market-based mechanisms in the UN climate talks consolidates this shift in the discussion away from technology transfer and the redistribution of public funding to assist climate efforts in Southern countries, and towards a reliance on another damaging neo-liberal trend of the 1990s— private capital flows.¹¹⁸

Industry lobbyists are now using the climate debate to call for further deregulation of barriers to foreign investments. For instance, the Organisation for Economic Cooperation and Development’s (OECD) Business Dialogue on Climate Change stated that a “framework which reduces political, economic, and regulatory uncertainty will increase capital flows and lead to the diffusion of technology,” specifying free capital flows and protection of intellectual property rights as key demands.¹¹⁹

Corporations try to sell the illusion that continued trade and investment liberalisation, such as embodied in the WTO agreements or the collapsed MAI, are a prerequisite to sustainable development. But their ideal deregulated economic framework only increases the global dependency upon a fossil fuel-based development path. WTO agreements serve to consolidate and globalise unfair and totally unsustainable agriculture, energy and transport models that rely on an ever-increasing use of resources and accelerate global climate change.

TNCs— efficiently organized in a complex web of national, regional and global groupings — have engaged in proactive lobbying to prevent what

¹¹⁷ Ibid

¹¹⁸ Ibid

¹¹⁹ Ibid

they consider to be the worst case scenario, i.e. binding government regulations to force businesses to reduce GHG emissions.¹²⁰

The US houses 162 TNCs among the global 500 TNCs, which in 2006 earned a total of US\$7,338,347.7 in revenues (35% of the total revenues of the global 500). It is no surprise then why the US has consistently tried to block climate action at every turn and water down measures aimed at mitigating climate change and its disastrous impact especially on developing countries.¹²¹

In fact most of the members of international business groups that have continually lobbied in international conventions on environment and sustainable development are TNCs based in the US. Much is at stake for those who export oil, coal and gas, especially the oil giants such as Shell, Exxon Mobil among others. These TNCs, the largest in the world, have huge investments in fossil fuel extraction and are in fact expanding their operations in new oil and gas fields across continents. Exxon Mobil for example, still has underdeveloped acreage totaling 105 million acres in 31 countries as of 2006.¹²²

From the early 1990s until the birth of the Kyoto Protocol in 1997, the main strategy pursued by US industry has been to pour millions of dollars into disinformation campaigns that deny the existence of climate change and confuse the public. These campaigns have made use of deceptive reports and the promotion of scientists skeptical of climate change to counter well-reviewed evidence.

To delay government action, US corporations have also insisted that any agreement without binding targets for Southern countries would be unbearable for the economy, while at the same time cynically lobbying these same countries to reject environmental obligations as a hindrance to development.¹²³

In the face of rising environmental consciousness, TNCs have devised ways to make themselves acceptable to communities and started their so-called greenwash campaign. TNCs have embraced the environment as their cause and co-opted terminology in advertisements and corporate policies.¹²⁴

¹²⁰ "Greenhouse Market Mania: UN Climate Talks Corrupted by Corporate Pseudo-solutions". (November 2000 briefing paper)

¹²¹ "2007 Global 500, The World's Largest Corporations". FORTUNE Magazine, Volume 156, No. 2, July 23, 2007.

¹²² UNEP GEO Team, Division of Early Warning and Assessment (DEWA) United Nations Environment Programme <http://www.unep.org/geo/contact.htm>

¹²³ Carbon Trading, A Critical Conversation on Climate Change, Privatization and Power, in Development Dialogue #48, September 2006; (www.thecornerhouse.org.uk)

¹²⁴ Greer, J. and Bruno, K. "Greenwash: The Reality Venid Corporate Environmentalism". (Copyright 1998, IBON Foundation, Incorporated and Third World Network. 258 pages)

Through sophisticated greenwash strategy, TNCs have worked to manipulate the definition of environmentalism and sustainable development and to ensure that trade and environment agreements are shaped, if not dictated, by the corporate agenda. The Business Council for Sustainable Development (BCSD), a TNC association, lobbied at the United Nations Conference on Environment and Development (UNCED) and promoted the idea that economic growth through free trade and equitable access to markets for all is an essential prerequisite both for sustainable development and the continuing prosperity of the more industrialized nations. They held up free trade as a “cure”, arguing that it will produce enough growth to end poverty and generate resources for environmental protection.¹²⁵

As a result UNCED Secretary-General Maurice Strong called for the UNCED to be made consistent with the General Agreement on Trade and Tariffs (GATT) that formed the WTO. UNCED itself may have been a preview to the subservience of environmental agreements to the priorities of free trade. As TNCs lobbied in the Uruguay Round of the GATT and other free trade negotiations to open more markets and eliminate regulations, they simultaneously joined with the US, EU and Japan to make UNCED consistent with the GATT thus forcing an undesirable marriage of the concepts of unrestricted free trade and sustainable development, with free trade as the dominant partner.¹²⁶

In fact, TNC influence in the Earth Summit undermined parts of Agenda 214 - the 800-page document intended to provide an action plan for future work on sustainable

development. TNC influence also rendered the UNFCCC toothless and weakened the Convention on Biodiversity, which was nonetheless rejected by the Bush administration.

Proposal to regulate or even monitor the practices of large corporations was removed from UNCED documents. The treatment of TNCs at the Earth Summit was based on the assumption that Northern-based corporations have the know-how and the capacity to spread environmentally sound sustainable technologies globally. The Earth Summit failed to alert the world of the root causes of environment and development problems.¹²⁷

¹²⁵ Ibid

¹²⁶ Ibid

¹²⁷ Ibid

F. CRITIQUE OF KYOTO PROTOCOL

What is the Kyoto Protocol?

The Kyoto Protocol is a protocol to the international United Nations Framework Convention on Climate Change (UNFCCC) with the objective of reducing greenhouse gases that cause climate change. It was adopted on 11 December 1997 by the 3rd Conference of the Parties (COP3), which was meeting in Kyoto, and it entered into force on 16 February 2005.

As of May 2008, 182 parties have ratified the protocol. Of these, 36 developed countries (plus the EU) are required to reduce greenhouse gas emissions to the levels specified for each of them in the treaty (representing over 61.6% of emissions from Annex I countries).

One hundred thirty-seven (137) developing countries have ratified the protocol, including Brazil, China and India, but have no obligation beyond monitoring and reporting emissions. The United States, the biggest emitter of greenhouse gases, has not ratified the treaty.

The Protocol also includes three international mechanisms to facilitate its implementation: International Emissions Trading, Joint Implementation and Clean Development Mechanism.

The US announced in early 2001 that they would not ratify the Protocol even though the abovementioned mechanisms were specifically set up to satisfy US concerns. Other countries were able to reach agreement on the implementation details of the Protocol in November 2001: the Marrakech Accords. Many considered these agreements as watered down versions of the original Kyoto Protocol commitments.

The reason given for making the amendments was that by relaxing the original targets and offering countries various escape routes, the Marrakech Accords would increase the possibility that the Protocol would be ratified by a sufficient number of countries to keep it alive. This would avoid the renegotiation of a different international climate change response framework, which would more likely take many years, if not decades.

According to the UNFCCC Secretariat, 126 countries had ratified the Kyoto Protocol by mid 2004, representing over 44 per cent of total global emissions in 1990. With the subsequent ratification in October 2004, by Russia (representing 17 per cent of emissions), the Kyoto Protocol took

effect in February 2005, despite absence of the USA. It is hoped that this will give further impetus to discussions about the next commitment period for more emissions reductions.

The Kyoto Protocol now covers 181 countries globally but only 60% of countries in terms of global greenhouse gas emissions. As of December 2007, the US and Kazakhstan are the only signatory nations not to have ratified the act. The first commitment period of the Kyoto Protocol ends in 2012, and international talks began in May 2007 on a subsequent commitment period.

What are the important provisions of the Kyoto Protocol?

Parties to the Protocol are separated into two general categories: developed countries, referred to as Annex I countries (who have greenhouse gas emission reduction obligations and must submit an annual greenhouse gas inventory), and developing countries, referred to as Non-Annex I countries (who have no greenhouse gas emission reduction obligations but may participate in the Clean Development Mechanism). Annex I countries are the following: Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, and the United States of America. The European Union is included as a Party in its own right.

Any Annex I country that fails to meet its Kyoto obligation will be penalized by having to submit 1.3 emission allowances in a second commitment period for every ton of greenhouse gas emissions they exceed their cap in the first commitment period (i.e., 2008-2012).

As of January 2008, and running through 2012, Annex I countries have to reduce their greenhouse gas emissions by a collective average of 5% below their 1990 levels. For many countries, this corresponds to some 15% below their expected greenhouse gas emissions in 2008. Reduction limitations expire in 2013.

Developing countries including China and India, referred to as Non-Annex I countries, were not included in any numerical limitation of the Kyoto Protocol because they were not the main contributors to the greenhouse

gas emissions during the pre-treaty industrialization period. However, even without the commitment to reduce according to the Kyoto target, developing countries do share the common responsibility that all countries have in reducing emissions.

Three flexibility mechanisms were introduced to the Protocol at the behest of industrialized countries led by the US: emissions trading, joint implementation and clean development mechanism. Two main reasons were given for introducing these mechanisms.

Firstly, there were fears that the cost of complying with Kyoto would be expensive for many Annex I countries, especially those countries with supposedly efficient, low greenhouse gas emitting industries, and high environmental standards.

Kyoto therefore allows these

countries to purchase (cheaper) carbon credits on the world market instead of reducing greenhouse gas emissions domestically. Secondly, this is seen as a means of encouraging Non-Annex I developing economies to reduce greenhouse gas emissions through sustainable development, since doing so is now economically viable because of the investment flows from the sale of carbon credits.

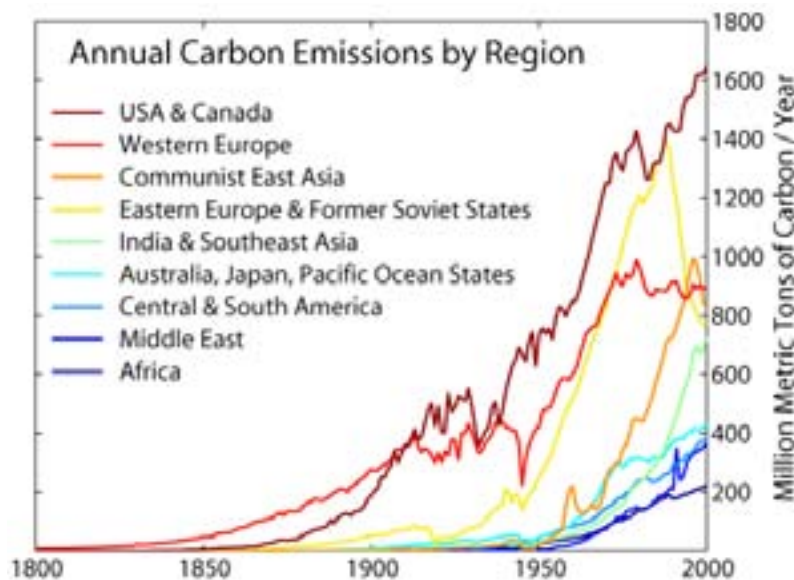
Kyoto is intended to cut global emissions of greenhouse gases. The objective is to achieve “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.”

The Protocol also reaffirms the principle that developed countries have to pay billions of dollars, and supply technology to other countries for climate-related studies and projects. This was originally agreed in the UNFCCC.

A Chinese example

China is the world's second largest consumer of coal – one of the main sources of carbon dioxide emissions. But China has taken the most dramatic steps to curb growth in coal use. Subsidies for coal fell from 37% to 29% between 1984 and 1995, and petrol subsidies were slashed from 55% to 2% between 1990 and 1995. Between 1998 and 1999, clean air legislation and energy efficiency measures reduced China's coal consumption by 16.8% and its overall fuel use by 10.7%, even though the economy was growing by 7-8% at the time. (Over the same period coal use was increasing in the US and in Russia, and US overall energy use increased by 1.6%). At the end of 1995, a quarter of China's national energy was coming from renewable sources.

Taken from: "Just a lot of hot air?", A close look at the climate change convention, PANOS London, November 2000



Carbon emissions from various global regions during the period 1800-2000 AD

The United States, although a signatory to the Kyoto Protocol, has neither ratified nor withdrawn from the Protocol. Before the Kyoto Protocol was finalized, the U.S. Senate unanimously passed the Byrd-Hagel Resolution (S. Res. 98), which stated the sense of the Senate that the United States should not be a signatory to any protocol that did not include binding targets and timetables for developing as well as industrialized nations or “would result in serious harm to the economy of the United States”.

What are the 3 “flexible mechanisms” in the Kyoto Protocol?

To encourage countries especially the industrialized countries to fulfill their commitments under the Kyoto Protocol, amendments were introduced among the most important of which are three mechanisms that countries can resort to: emissions trading, joint implementation and clean development mechanism. Critics have pointed out that the introduction of these market-based mechanisms have considerably watered down and weakened the Kyoto Protocol.

Emissions Trading

Under the Protocol, countries may buy and sell GHG emissions “units” and “credits”. The Protocol allows countries that have emissions units

to spare – emissions permitted them but not “used” – to sell this excess capacity to countries that are over their targets.¹²⁸

This so-called carbon market – so named because carbon dioxide is the most widely produced GHG, and because emissions of other GHGs will be recorded and counted in terms of their “carbon dioxide equivalents” – is both flexible and realistic. Countries not meeting their commitments will be able to “buy” compliance but the price may be steep. It is supposed that the higher the cost, the more pressure on countries to use energy more efficiently and to research and promote the development of alternative sources of energy that have low or no emissions.¹²⁹

More than actual emissions units will be involved in trades and sales. Countries can earn credits for reducing GHG totals by planting or expanding forests (“removal units”); for carrying out “joint implementation projects” with other developed countries, usually countries with “transition economies”; and for projects under the Protocol’s CDM, which involves funding activities to reduce emissions by developing nations. Credits earned this way may be bought and sold in the emissions market or “banked” for future use.¹³⁰

Joint Implementation

“Joint implementation” is a program under the Kyoto Protocol that allows industrialized countries to meet part of their required cuts in GHG emissions by paying for projects that reduce emissions in other non-industrialized countries. In practice, this could mean facilities built in the countries of Eastern Europe and the former Soviet Union – the so-called “transition economies” – paid for by Western European and North American countries. The sponsoring governments will receive credits that may be applied to their emissions targets; the recipient nations will gain foreign investment and advanced technology but not credit toward meeting their own emissions caps; they will have to do that themselves.¹³¹

Clean Development Mechanism (CDM)

The Protocol provides a system for financing emissions-reducing or emissions-avoiding projects in developing nations. Industrialized countries pay for projects that cut or avoid emissions in poorer nations, and are awarded credits that can be applied to meeting their own emissions targets. The recipient countries benefit from free infusions of advanced technology

¹²⁸ IBON FF SR on Climate Change, Feb. 2008

¹²⁹ Ibid

¹³⁰ Ibid

¹³¹ Ibid

that allow their factories or electrical generating plants to operate more efficiently and hence at lower costs and higher profits.¹³²

The CDM is considered cost-effective and offers a degree of flexibility to industrialized countries trying to meet their targets. It can be more efficient for them to carry out environmentally useful work in developing countries than at home where land, technology, and labor are generally more costly. The system also appeals to private companies and investors. The mechanism is meant to work bottom-up – to proceed from individual proposals to approval by donor and recipient governments to the allocation of “certified emissions reduction” credits. Countries earning the credits may apply them to meeting their emissions limits, may “bank” them for use later, or may sell them to other industrialized countries under the Protocol’s emissions-trading system. Private firms are interested in the mechanism because they may earn profits from proposing and carrying out such work and because they may develop good reputations for their technology which will lead to further sales.¹³³

Why is the Kyoto Protocol not working?

Despite broad public, scientific and political consensus about the need for urgent action to combat climate change, greenhouse gas emissions continue to be spewed into the atmosphere at an ever-increasing rate. Years of negotiations have resulted in a mere 39 industrialized countries agreeing to a pitifully low collective reduction of 5.2% by 2008-2012. In fact, a global reduction of at least 60 – 70% is needed in the first half of the 21st century in order to avoid cataclysmic climate change due to global warming, according to the UN’s own Intergovernmental Panel on Climate Change (IPCC).¹³⁴

But even with the already meager reduction target under the Kyoto Protocol, as of year-end 2006, the United Kingdom and Sweden were the only EU countries on pace to meet their Kyoto emissions commitments by 2010. While UN statistics indicate that, as a group, the 36 Kyoto signatory countries can meet the 5% reduction target by 2012, most of the progress in greenhouse gas reduction has come from the stark decline in Eastern European countries’ emissions.

A growing body of research warns that the rules for implementing the Protocol as promoted by an alliance of Northern governments and corporate lobby groups would result in a net increase of greenhouse

¹³² Ibid

¹³³ Ibid

¹³⁴ Ibid

gas emissions rather than the average reduction of 5.2% agreed upon in 1997. On top of that, many of the corporate activities that might become eligible for ‘carbon credits’— including nuclear energy as well as industrial and genetically-modified agriculture and tree plantations – have serious negative social and environmental impacts.¹³⁵

The introduction of market-based mechanisms by the US into the Kyoto Protocol was meant to ensure that the agreement did not threaten US corporate interests. This US stance has resulted in turning UN climate negotiations being completely dominated by technical discussions about these neo-liberal instruments. Corporate lobby groups have been quick to embrace greenhouse gas emissions trading because it is a perfect tool for pre-empting government regulation.

Corporations have engaged in proactive lobbying to prevent what they consider to be the worst case scenario— binding government regulations to force businesses to reduce greenhouse gas emissions. The large-scale global offensive launched by these industrial interests has been a key force behind the adoption of dubious market-based mechanisms to solve the climate crisis. These ‘solutions’ have served as the Trojan horse used by corporations in the climate talks to systematically weaken and distort the Kyoto Protocol from the inside.¹³⁶

After years of openly opposing measures on climate change, most transnational corporations (TNCs) have now adopted what they claim to be a more ‘constructive’ approach. Business, they say, will not block the negotiations nor prevent the implementation of the Kyoto Protocol. They are now focusing on ensuring an unlimited use of the Protocol’s market-based mechanisms.¹³⁷

The biotech and the nuclear energy sectors have their eye on the subsidies, carbon credits and new business opportunities that could emerge from the Kyoto mechanisms. Industry and countries including the United States hope to avoid the placement of any ceiling on the amount of their reductions that can be achieved ‘abroad’ through emissions trading. The market in global greenhouse gases could grow to trillions of US dollars over the next decades. Most corporations have discovered that huge profits lie ahead if they manage to shape the Kyoto mechanisms to their interests.¹³⁸

Corporations claim to have the climate situation under control. They argue that carbon and energy taxes and other effective regulations should be

¹³⁵ Greenhouse Market Mania, UN climate talks corrupted by corporate pseudo- solutions, Corporate Europe Observatory Briefing, November 2000.

¹³⁶ Ibid

¹³⁷ Ibid

¹³⁸ Ibid

avoided at all costs in the name of international competitiveness. They say that the solutions can be found in voluntary agreements between governments and industry and in an unimpeded free market permitting the development of new and improved technology. Market-obsessed governments and industry lobby groups have shifted the debate into a realm dominated by technocratic solutions and industrial concerns like securing profits and strengthening global corporate dominance.¹³⁹

What is truly wrong with the approach?

The 1997 Kyoto Protocol was celebrated by the nations of the world as the first legally-binding treaty to set limits to greenhouse gas emissions. The climate debate entered quieter waters after Kyoto, and the negotiations have since circled around the three market-based ‘solutions’ enshrined in the Protocol— emissions trading, joint implementation (JI) and the Clean Development Mechanism (CDM).

Emissions trading allows the 39 governments committed to collective reductions under the Protocol to trade the right to pollute among themselves. Under this scheme, due to start in 2008, a country might choose to buy emission credits from another country that managed to reduce its emissions below its Kyoto targets. Joint implementation and the Clean Development Mechanism grant Northern governments and corporations emission credits through special projects aimed at reducing greenhouse gas emissions in the host country. These projects can be carried out among industrialized countries and corporations (JI) or between one industrialized government or company and one Southern country (CDM).

Although the rules and procedures have not yet been agreed upon, hundreds of projects are already planned and many are even being implemented. A typical CDM project could be the Dutch government financing a factory producing energy-efficient light bulbs in Russia, or BP Amoco installing solar panels in Zimbabwe. The logic behind the market-based mechanisms is that it is less expensive for Northern countries to invest in reduction projects abroad than it is for them to reduce emissions domestically.¹⁴⁰

Critics point out that these market-based mechanisms enable industrialized countries and their corporations to buy the right to pollute and to escape even the meager commitments laid down in the Kyoto Protocol. It has

¹³⁹ Ibid

¹⁴⁰ Ibid

been argued that similar trading schemes, such as the US programme to reduce sulphur dioxide emissions to combat acid rain, have worked successfully. However, this argument does not take into account the negative health and economic impacts suffered by poor and disadvantaged communities in the US through these schemes— a phenomenon referred to as ‘environmental racism’. The hypothesis that such schemes will be efficient on the international level is also flawed. One must not forget the absolute impossibility of monitoring emissions from millions of sources spread all over the world, not to mention the lack of a binding regulatory system to enforce emissions limits.¹⁴¹

Not only will the market-based mechanisms fail to achieve the agreed reduction targets for greenhouse gas emissions, they could catalyze serious environmental and social catastrophe on a scale unimaginable. These mechanisms effectively turn greenhouse gases into commodities, locking-in existing North-South inequities in the use of the atmosphere and natural resources and opening-up many new and harmful profit-making opportunities for TNCs— essentially creating a new market out of thin air.

Through these schemes, TNCs and their Northern governments will be entitled to buy countless cheap emission credits from the South, through projects of an often exploitative nature, thereby imposing on the South what the India-based Centre for Science and Environment refers to as ‘carbon colonialism’. Furthermore, all of the ‘low-hanging fruit’, or cheap credits, will have been harvested by the North when time comes for Southern countries to reduce their own emissions, saddling them with only the most expensive options for any future reduction commitments they might make.¹⁴²

Since the introduction of these market-based solutions in 1997, subsequent international climate negotiations have been deadlocked around technical discussions about their scope and implementation, essentially paralysing the process. The political pressure to open the floodgates for these commercial escape mechanisms continues to intensify, further weakening an already anaemic Protocol and scuttling any hopes of securing the political agreement necessary to avert the climate crisis.¹⁴³

A recent study released by the German Federal Environment Agency clearly stated that current Kyoto Protocol emission reduction targets are hopelessly insufficient for the goals of climate stabilisation and prevention of serious damage. The report estimates that if industrialized countries do

¹⁴¹ Ibid

¹⁴² Ibid

¹⁴³ Ibid

not go beyond the 5.2% reduction by 2008-2012 as outlined in the Kyoto Protocol, average global temperatures will increase by 2.7 degrees Celsius by 2100. This would not only cause a dramatic 41 centimetre rise in sea levels, but it would also threaten agricultural production and up to 40% of natural vegetation around the globe. The report prescribes an emissions cut by industrialized countries to far less than half of 1990 levels by 2030 in order to avoid this nightmare scenario.

G. THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)

What is the UNFCCC?

In 1988, the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) established the Intergovernmental Panel on Climate Change (IPCC) to assess the scientific knowledge on global warming. The IPCC issued its first report in 1990 showing that there was broad international consensus that climate change was human-induced.

That report led to an international convention for climate change. It became the United Nations Framework Convention on Climate Change (UNFCCC), signed by over 150 countries at the Rio Earth Summit in 1992.

The UNFCCC came into force in 1994, and as of May 2004, 189 parties had ratified it. By 1995 negotiations had started on a protocol — an international agreement linked to the existing treaty, but standing on its own. This led to the Kyoto Protocol, adopted unanimously by all the countries present in 1997. The main purposes of this protocol was to:

- ▶ Set mandatory targets on greenhouse-gas emissions for the world's biggest economies;
- ▶ Provide flexibility in how countries can meet their targets;
- ▶ Recognize that commitments under the Protocol would vary from country to country.

In Article 2 of the UNFCCC, it is stated that the ultimate objective is 'stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic (read: human) interference with the climate system. Such a level should be achieved within a timeframe sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner.'

The UNFCCC also explicitly acknowledges a number of principles (Article 3), such as the precautionary principle, protection of the climate

system on the basis of equity, the need for developed countries to take the lead in combating climate change and its adverse effects, full consideration of the specific needs and special circumstances of developing countries, and the need for pursuance of sustainable development.

The UNFCCC also states that ‘where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost’.

As a general principle, it was also recognized that most of the greenhouse gas emissions contributing to climate change come from the industrialized “Northern” countries. These countries have been developing since the Industrial Revolution and have been emitting greenhouse gases (GHGs) in the atmosphere for years without any restrictions. Since GHG emissions accumulate in the atmosphere for decades and centuries, the industrialized countries’ emissions are still present in the earth’s atmosphere. Therefore, the North is responsible for the problem of global warming given their huge historical emissions. It owes its current prosperity to decades of overuse of the common atmospheric space and its limited capacity to absorb GHGs.¹⁴⁴

Developing countries, on the other hand, have taken the road to growth and development very recently. In countries like India, emissions have started growing but their per capita emissions are still significantly lower than that of industrialized countries. The difference in emissions between industrialized and developing countries is even starker when per capita emissions are taken into account. In 1996, for instance, the emission of 1 US citizen equalled that of 19 Indians.¹⁴⁵

This difference was recognized as a principle of common but differentiated responsibilities. When the United Nations Framework Convention on Climate Change was formulated and then signed and ratified in 1992 by most of the world’s countries (including the United States and other nations who would later back out of the subsequent Kyoto Protocol), this principle was acknowledged.

The principle recognized that:

- ▶ The largest share of historical and current global emissions of greenhouse gases has originated in developed countries;

¹⁴⁴ Background for COP 8, Center for Science and Environment, October 25, 2002

¹⁴⁵ Ibid

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- ▶ Per capita emissions in developing countries are still relatively low;
 - ▶ The share of global emissions originating in developing countries will grow to meet their social and development needs.¹⁴⁶

This means that it would be unfair to expect the developing countries to make emissions reductions especially because their development and consumption is for basic needs and for development to achieve those needs while for the rich, it has moved on to luxury consumption and life styles.

Furthermore, developing countries too were to reduce emissions ultimately, but in a different way: the rich were to help provide means for the developing world to transition to cleaner technologies while developing. And the extent to which developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology and will take fully into account that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties.

If the UNFCCC has become so weakened, why is it a good starting point?

In response to US threats to boycott the Rio conference should there be binding commitments to stabilize greenhouse gas emissions, the Convention was watered down and weakened. However, it still is a useful framework.

The Convention provides a framework to tackle a number of issues.

There is the recognition that a problem exists. Earlier in the 1980s and beginning of 1990s there was a huge amount of skepticism that human-induced climate change exists, because there are also natural cycles in the change of the climate that occurs over hundreds of years. However, now, the large body of research indicates that humans are a key factor in the current climate changes.

As a result, the ultimate objective, as described in Article 2, is to achieve “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic (human) interference with the climate system.”

¹⁴⁶ Taken from the text of the UNFCCC

The Convention encourages continued scientific research because the climate is a very complex issue and patterns are likely to continue changing.

The Convention recognizes that the current developed and industrialized nations have the largest current and historic emissions and that they should therefore take the lead and burden of helping reduce harmful effects and cut down emissions. During the Kyoto summit, this was hotly contested by the United States, which is the largest emitter of greenhouse gases in the world.

The Convention also recognizes that it is likely that the poorer nations will suffer the most, as there are less resources and capabilities to adapt to sudden changes of this magnitude.

It also recognizes that a more sustainable economy is needed as current consumptive patterns could be destructive.

The UNFCCC has served as the starting point for subsequent major actions taken by the global community to address the issue of climate change.

The following table is from a report from PANOS called “Just a lot of hot air?” with some revisions and updates.¹⁴⁷ It summarizes the major steps toward action on the issue of Climate Change.

¹⁴⁷ “Just a lot of hot air?”, A close look at the climate change convention, PANOS London, November 2000

Event	Date and place	Principal achievements
Intergovernmental Panel on Climate Change (IPCC) - First report	1990	Broad international scientific consensus that human actions are influencing the climate
UN Framework Convention on Climate Change (UNFCCC)	1992, Rio de Janeiro, Brazil. (Entered into force 1994)	Committed the global community to stabilising the level of greenhouse gases in the atmosphere Recognized the primary responsibility of industrialized countries, and the differentiated responsibilities of developing countries
IPCC - Second report	1995	Confirmed human influence on climate Stated that risk from climate change is severe enough to justify preventive actions (Governments which have signed the Convention have to accept the findings of the IPCC).
Conference of Parties (COP) 1	1995, Berlin, Germany	Established budget, secretariat and institutional mechanisms Established pilot phase of "Activities Implemented Jointly" to reduce greenhouse gas emissions Agreed timetable for setting specific reduction targets for industrialized countries
Conference of Parties (COP) 2	1996, Geneva, Switzerland	Endorsed IPCC2 and COP1 agreements US announced its commitment to binding targets "medium-term", with "flexibility, in implementation measures" OPEC dropped its opposition to action
Conference of Parties (COP) 3	1997, Kyoto, Japan	Agreed to the Kyoto Protocol, with targets for industrialized country greenhouse gas reductions
Conference of Parties (COP) 4	1998, Buenos Aires, Argentina	Agreed to a "Plan of Action" for following up on the Kyoto Protocol, including processes for stimulating technology transfer
Conference of Parties (COP) 5	1999, Bonn, Germany	Further progress on implementing the Kyoto Protocol
Conference of Parties (COP) 6	2000, The Hague, The Netherlands	After two weeks of negotiations, ministers and diplomats failed to make the Kyoto Protocol operational and strengthen financial and technical cooperation between developed and developing countries on climate-friendly policies and technologies.

Event	Date and place	Principal achievements
IPCC - Third report	2000/2001	Established climate change as "unequivocal" and human activity as major driver
Conference of Parties (COP) 7	2001, Marrakesh, Morocco	Many governments signified their readiness to ratify the Kyoto Protocol
"Rio plus Ten" Earth Summit	2002	Many people hoped the Kyoto Protocol would be ratified and enter into force by this time. This didn't happen. It finally came into force in February 2005.
Conference of Parties (COP) 8	2002, New Delhi	Stressed link between action on climate change and sustainable development
Conference of Parties (COP) 9	2003, Milan, Italy	Tackled (a) adaptation, mitigation and sustainable development; (b) Technology, including technology use and development and transfer of technologies.; (c) Assessment of progress at the national, regional and international levels to fulfill commitments on scientific, information, policy and financial aspects
Conference of Parties (COP) 10	2004, Buenos Aires, Argentina	The meeting succeeded in bringing adaptation into the mainstream of the intergovernmental process
Conference of Parties (COP) 11	2005, Montreal, Canada	Key decisions in implementing the Kyoto Protocol which took effect February 2005
Conference of Parties (COP) 13	2007, Bali, Indonesia	Adopted the Bali Road Map which charts the course for a new negotiating process designed to tackle climate change, with the aim of completing this by 2009, the launch of the Adaptation Fund, the scope and content of the Article 9 review of the Kyoto Protocol, as well as decisions on technology transfer and on reducing emissions from deforestation
Agreed cuts in greenhouse gases	2008-2012	This is the period in which emissions cuts agreed in the Kyoto Protocol have to be achieved and measured

H. THE PEOPLE'S PROTOCOL ON CLIMATE CHANGE

What is the People's Protocol on Climate Change?

The People's Protocol on Climate Change is a global campaign that aims to provide a venue for the people and their grassroots organizations, especially from the South – who are the worst-affected and yet are the least empowered to demand mitigation by Northern countries and to adapt to climate change - to participate in the process of drawing up a post-2012 climate change framework.

This is in light of the failure of the Kyoto Protocol in significantly addressing climate change and the failure of the COPMOP in expanding its process to include the concerns of the marginalized sectors. And in a situation wherein the commitment of representatives of governments to prioritize the welfare of the majority of their constituents is questioned, it is urgent more than ever, for the people and their grassroots organizations to unite and create their own spaces to raise their concerns and issues on climate change.

The People's Protocol on Climate Change is a framework agreement independently agreed upon by people's movements and their supporters both outside and inside governments to address in a comprehensive way the need for comprehensive and effective measures to mitigate climate change independently and through government action, as well as measures for effective adaptation and defense of people's rights and interests in the face of challenges brought about by climate change especially in the developing countries.

While it shall exist independent of official conventions and agreements, it is a challenge from global solidarity of peoples based on their situations, needs, analysis of the issue and demands to uphold their individual and collective human rights. As a challenge, the People's Protocol on Climate Change also becomes a tool for conscientization and for advocacy to governments, calling upon a serious, comprehensive and effective approach and mechanisms to address climate change on behalf of the people.

In particular, national and regional assemblies to be held through 2008-2009, to gather feedback on the situation and demands of the peoples,

address measures being floated in the international climate change talks and develop the People's Protocol. By reflecting the demands and aspirations of the people on climate change, the People's Protocol on Climate Change serves as an important tool by raising the major concerns of the grassroots that will place pressure on their governments to bring them to the climate change negotiating table.

All these activities will lead up to the climate change meetings in Copenhagen in December 2009.

How did it come about?

The call for a People's Protocol on Climate Change was one of the resolutions of the climate change workshop during the Asia Pacific Research Network's Conference on People's Sovereignty over Natural Resources in Bangkok, Thailand on October 2007. The body, composed of almost 170 participants from all over the Asia Pacific region, including representatives from North America, Europe, and Africa, unanimously supported the idea.

The aforementioned conference came to the following conclusions and resolutions:

- ▶ The needs of the people and planet must be placed above those of capital and the pursuit of profits.
 - ▶ There is a need for a paradigm shift away from growth-led 'development' models which perpetuate the exploitation of people and the planet by transnational companies, towards people's sovereignty over natural resources.
 - ▶ Humanity should not be misled into thinking that technological fixes will allow us to address the climate crisis whilst maintaining current levels of growth and consumption.
 - ▶ The pursuit of market growth and more profit is at the core of global warming, exploitation and structural poverty and as such we shouldn't be misled into thinking that market-led development is the solution to the poverty crisis or climate change.
 - ▶ Climate change cannot be seen simply as an environmental issue, but must be understood as a social justice issue which is rooted in the over-exploitation of resources by northern nations and transnational companies.
-

- ▶ The climate shifts to which we are already experiencing make adaptation funding for Southern countries urgent and necessary. The disproportionate role Northern countries have played in causing the climate crisis means they should also foot the Southern adaptation bill. This funding must be in addition to ODA and should not override the ultimate imperative to take immediate and far reaching steps to mitigate runaway climate change.
- ▶ There is a need to acknowledge the inherent conflict between FTAs and neoliberal policies and the need to curb emissions. Concurrently policy coherence is extremely important especially between international trade policy and the global drive to reduce emissions.
- ▶ The current targets and timelines proposed by Kyoto are not sufficiently in accordance with what science tells us is necessary to avoid runaway climate change. The Kyoto process does not allow sufficient voice for those communities which will be most impacted by climate change. The COPMOP process must be expanded to include the concerns of marginalized people who will be the worst effected by climate change.
- ▶ Although in the medium term Southern emissions must also be decreased, we must acknowledge the role that Northern consumption plays in driving rapidly increasing Southern emissions.

The resolutions arrived at during the APRN conference provided the basis for the initial draft of the People's Protocol. Workshops were held in different parts of Indonesia to gather feedback on the draft Protocol. During the United Nations Framework Convention on Climate Change in Bali, Indonesia, two more workshops were held -- in Denpasar Bali and the Indigenous People's Meeting in Sumber Klampok in East Java which came up with the Sumber Klampok Declaration. On December 10, 2007, International Human Rights Day, a total of five thousand rallyists supported the call for a People's Protocol on Climate Change and the need for sustainable development and people's sovereignty on natural resources.

A website has been set-up and a signature and online petition campaign started. Individuals and organizations are also encouraged to comment on the draft through this website: <http://www.peoplesclimateprotocol.aprnet.org/>.

What are the basic values and principles of the People's Protocol on Climate Change?

The core development values and principles of the People's Protocol are social justice and human rights, people's sovereignty, respect for the environment, and responsibility.

Social justice and human rights - Climate change is not merely an environmental but a social justice issue as it is the result of gross inequality exemplified by colonialism and perpetuates and enhances this gross inequality in terms of vulnerability, capacity to adapt and respond. As TNCs pollute and plunder resources, and as the narrow elite accumulate more profits, the human rights of the people in affected communities are violated and marginalized sectors -especially in the developing countries. Those who are most vulnerable to the effects of climate change are the least empowered to respond, to survive and to adapt.

Sovereignty - The genuine, longlasting response to climate change is through the assertion of people's sovereignty to achieve effective government and societal response, including community stewardship of natural resources and conservation. The people's sovereignty on the climate change issue must be asserted through their social movements and through genuine participatory structures, in light of their exclusion from governance participation and the greater influence of the powerful private elite over socioeconomic policy-making. As the foundation for national sovereignty, communities and the peoples have essential roles in defining, guiding and determining the work of any and all major conferences and summits in the economic, social and related fields at the local, national, regional and global levels. In this regard, civil society, social movements and people's organizations must be strengthened in struggling for the people's sovereignty over natural resources, which is the long-term solution to the climate crisis.

Respect for the environment - The needs of the people and the planet must take precedence over the pursuit of super profits. The people's equitable access to sufficient natural resources is vital for sustained economic growth and sustainable human development. The people's equitable access to natural resources ensures that related human rights such as the right to food, water and adequate standard of living, are upheld. Human rights and environmental protection are not at odds if we re-prioritize resources. While blind market and profit-dictated production

should be restructured to social need, consumption led production, sustainability must become an important concern not only in production development but also in lifestyles change.

Responsibility - Responsibility, which is expressed in the principle of common but differentiated responsibilities, requires a mechanism for globally inclusive equity. Northern countries share a disproportionate responsibility for historic emissions while the poor and the marginalized face greater vulnerability to the adverse effects of climate change. The elite segments of society whose current levels of consumption are excessive must bear the greatest responsibility for the climate crisis. The poor majority largely depend on their access and sustainable utilization of natural resources for survival. In this regard, adaptation efforts must stress and address the specific needs of farming communities, fisherfolk, pastoralists, forest dwellers and other marginalized, poor and rural producers. Adaptation efforts are necessary if only to provide temporary relief from the initial impacts of climate change until global mitigation efforts are sufficiently developed to halt global warming.

What are the statement of goals and principles?

We are committed to significantly reduce greenhouse gases, coordinate and support any international climate change agreement consistent with our core values and principles.

We assert that the Kyoto Protocol represents a false compromise and we commit to redressing the fundamental weaknesses of the Kyoto agreement and any new protocol or post 2012 agreement which proposes market-based mechanisms as solutions. We acknowledge that technological developments can play a role in addressing the climate change, but are grossly insufficient and are even used to divert from the need to address the root causes.

We believe that the long-term solutions for climate change are not adaptation and mitigation but changing the whole economic framework into one of eco-sufficiency and adaptability. An eco-sufficient and sustainable economic framework is socially just and democratic and will defend the livelihood, well-being and welfare of the people. This includes people-oriented agricultural and industrial development.

The people must have stewardship, access and control over the natural resources rather than TNCs, IFIs and even governments that represent the

interests of the global elite and their local collaborators. This means that the people's sovereignty over natural resources must be upheld to address climate change.

To this end, we shall work for the national ownership of resources and productive assets, community stewardship, responsible utilization of resources, research and development program on sustainable technologies, international cooperation on the public management of global commons, comprehensive national policy framework for economic diversification and education campaign on ecology and responsible consumption.

We affirm the importance of grassroots education, organizing and mobilizations to promote and realize our alternative vision and program for social transformation. We will be vigilant and hold governments accountable through popular participation and mobilization.

We commit to building on the powerful networks of movements for climate action that have emerged worldwide.

We acknowledge the supportive role of adaptation funding for Southern countries as a short-term solution to climate change, recognizing also that these funds are not forms of charity, but as ecological debt.

What do we hope to achieve with the People's Protocol on Climate Change?

The main objective of the People's Protocol on Climate Change is to meaningfully engage the grassroots sectors in the climate change debate by empowering them through information awareness and discussions to arrive at a common understanding and unified stand on the issue. The campaign involves information-education campaign that will help the grassroots understand the various issues behind climate change and take action for their interests.

The People's Protocol, in raising the key issues and concerns and in reflecting the demands of the grassroots, will provide a new and pro-poor and pro-South perspective which should be the fundamental starting point for governments, scientists and international bodies in the climate change debate. The Protocol hopes to be the main effective lobbying tool to pressure the governments and international bodies to put the grassroots perspective on the negotiating table leading up to Copenhagen 2009.

APPENDIX

People's Protocol on Climate Change (draft)

Preamble

The planet is experiencing a climate crisis of catastrophic proportions. Drastic action is required to reverse the situation. Global temperatures have increased twice as fast in the last 50 years as over the last century and will rise even faster in the coming decades. Eleven of the last twelve years (1995-2006) are among the 12 warmest years on record. This is disrupting weather patterns, severely damaging the environment, and destroying lives and livelihoods - especially of the poorest and most vulnerable.

This dangerous climatic change is driven by the unprecedented increase in human-generated greenhouse gases in the atmosphere. The most dangerous increase is in CO₂ emissions from the ever-mounting burning of fossil fuels for industry, commerce, transport and militarism. The planet's capacity to process these emissions has also been crippled by widespread deforestation. As a result, the concentration of CO₂ in the atmosphere is now far higher than its natural range over the last 650,000 years. Concentrations of methane and nitrous oxide, again caused by human industry and agriculture have also increased dramatically and are also implicated in causing global warming.

Climate Change will be universally adverse for the world's people with greater and more frequent extremes of heat and rainfall patterns as well as tropical cyclones, typhoons and hurricanes. Africa, Asia and Latin America face shorter growing seasons, lower yields, lost or deteriorated agricultural land, decreased agricultural production and freshwater shortages. Droughts in Africa will bring widespread hunger and famine. Asia is already confronting flooding, avalanches and landslides, which will increase illness and death. In Latin America, higher temperatures and reduced biodiversity in tropical forests will devastate indigenous communities. Globally, rising sea levels will flood low-lying areas, increased storm surges will threaten coastal communities, and warmer sea waters will diminish fish stocks.

The last centuries have been heralded for great strides in technology, production and human progress – but these advances have precipitated global ecological and development disasters. On one hand a privileged global elite engages in reckless profit-driven production and grossly excessive consumption. On the other hand, the mass of humanity is mired

in underdevelopment and poverty with merely survival and subsistence consumption, or even less. The world's largest transnational corporations (TNCs) based mainly in the Northern countries and with expanding operations in the South, have long been at the forefront of these excesses. Indeed the powerful industrialized nations of today were built on the severe exploitation of the human and natural resources of the global South. The pursuit of growth and profit is at the core of exploitation, structural poverty and global warming.

There have already been high-profile schemes for concerted action and co-operation to combat global warming. This includes the landmark 1992 Framework Convention on Climate Change (FCCC) and the succeeding Kyoto Agreement. Yet the problem has not been stemmed or much less reversed, indeed it has worsened as the limited targets and timelines set by the Kyoto Protocol have made no headway. Importantly, the Kyoto Protocol does not decisively acknowledge the real roots of climate change - globalization and the mad pursuit of TNCs for profits. Instead, Kyoto has diminished responsibility and accountability for the climate crisis through the marketization of energy resources and supply. The offsets and emissions trading system transfers adjustment costs from rich to poor, creates new dependencies, rewards corporations for polluting and increases their opportunities for profits. Northern TNCs and investors have sustained and even increased their energy intensive operations through relocation to Southern countries, capturing and co-opting local elites into the destructive process of capitalist-dominated production and consumption.

Significantly, the Kyoto Protocol does not truly involve grassroots communities and peoples who are worst-affected, especially in the South. It has grossly neglected the severe damage to their livelihoods, well-being and welfare. It does not consistently and coherently adhere to the vital developmental principles, especially people's sovereignty over natural resources.

The gravity, scope and depth of the problem demand the greatest collective effort and cooperation. No peoples or state can succeed alone in addressing the root causes of the problem. At the same time, stabilizing greenhouse gas emissions today will not immediately impact on rising global temperatures since climate processes involve long time scales and a global responsibility must be taken for the immediate and negative impacts that will be felt by the poor and marginalized.

This declaration articulates the values and principles that should guide international action and people's struggles against climate change and its associated ecological and socioeconomic destruction.

Statement of values and principles

We, the people, are united behind certain core development values and principles of social justice, democracy, equality and equity, gender fairness, respect for human rights and dignity, respect for the environment, sovereignty, freedom, liberation and self-determination, stewardship, social solidarity, participation and empowerment. This statement further articulates these principles in the context of the global climate crisis.

1. Social Justice must be guaranteed, acknowledging the systemic roots of the climate crisis, the disproportionate responsibility of a narrow elite, the disproportionate vulnerability of the majority to the adverse effects, the grossly uneven capacity to confront and respond, and the legitimate aspirations to development of the people apart from the crisis.
 - a) We emphasize that climate change must be understood not merely as an environmental issue but as a question of social justice, its causes are rooted in the current capitalist-dominated global economy which is principally driven by the relentless drive for private profits and accumulation.
 - b) We stress that the current global economic order, driven by the Global North and their transnational corporations is the fundamental origin of over-exploitation and depletion of resources, of the gratuitous use of energy resources and the excessive release of greenhouse gases into the atmosphere.
 - c) We thus condemn "free market" policies of "globalization", and its aggressive and intrusive expansion into every sector of the economy and into the global South, and the exploitation by TNCs of the people and the planet.
 - d) We firmly believe that these neoliberal policies are imposed particularly on the people of the global South by powerful foreign governments wielding influence through multilateral, regional and bilateral mechanisms such as World Trade Organization (WTO) agreements, regional and bilateral free trade agreements (FTAs), investment agreements and aid conditionalities.
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- e) We recognize that a very significant part of supposedly “Southern” emissions actually result from the energy-intensive operations of Northern TNCs located in the South for the purposes of exploiting local labor and natural resources. We further acknowledge that the severe deforestation across Latin America, Asia and Africa is most of all due to Northern TNC-driven commercial logging, plantation agriculture, mining activities and dam projects.
2. Sovereignty means asserting the power of the people through their social movements and genuinely participatory structures as the foundation of the global response to the climate change issue.
- a) We stress the vital importance and essential role of communities and peoples that will be most adversely affected by climate change in defining, guiding and determining the work of any and all major conferences and summits in the economic, social and related fields at the local, national, regional and global levels.
 - b) We commit to spare no efforts in strengthening civil society and social movements and, especially, the people’s organizations and struggles that are the indispensable foundations and most dynamic driving force of these. We affirm that people’s sovereignty of natural resources is indispensable to dealing with the problem of climate change and that this must be won in struggle.
 - c) We are aware that people in both the global North and, especially, the South are excluded from participation in governance with the unfortunate result that powerful private elite and corporate interests exert far greater influence over socioeconomic policy-making.
3. Respect for the environment means a rejection of market mechanisms that impose the cash nexus on ecological priorities. The needs of the planet and its people must take precedent over the push for growth and profits.
- a) We recognize that nature is vital for the survival of all and that natural resources and their use are essential for sustained economic growth, sustainable human development, and the elimination of poverty, ill-health and hunger. We are committed to building societies where the people enjoy all human rights and fundamental freedoms, and in a way that the world we create does not unjustly deny the same for future generations.
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- b) We assert that the needs of people and planet must be placed above those of global capital and the wholesale pursuit of private profits. The planet's resources must never be reduced to being assigned property rights that can be bought, sold, accumulated and monopolized by a few for the sake of private gain.
 - c) We believe that population growth increases humanity's demands on nature but that the resources of the planet are sufficient to meet these demands if only production, resource-use and consumption are organized to meet the needs of the people for life and not of a select few for profits.
4. Responsibility, expressed in the principle of common but differentiated responsibilities, requires a mechanism for globally-inclusive equity. Northern countries share a disproportionate responsibility for historic emissions.
- a) We acknowledge the greater vulnerability of poor and marginalized communities to the adverse effects of climate change.
 - b) We recognize that there are elite segments of society whose current levels of consumption are grossly excessive and cannot and should not be maintained, even as those large populations globally who are denied basic needs should have these met. These elite segments of society must bear the greatest responsibility for the climate crisis.
 - c) We recognize that there are large parts of humanity who are more dependent for their survival on their access to and use of natural resources, as well as on the state of the climate and the natural environment. We then stress that the specific needs of farming communities, indigenous peoples, coastal communities, fisherfolk, and other marginalized, poor and rural producers need to be given special attention in all adaptation efforts.
 - d) We acknowledge that adaptation is not acceptance of climate change but is necessary to provide temporary relief from the initial impacts of climate change until global mitigation efforts are sufficiently developed to halt global warming.

Statement of goals and purposes

1. We acknowledge climate change as a multifaceted issue and that the score of interlinked challenges and threats therefore need to
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be confronted in an integrated and coordinated manner if any real progress is to be achieved.

2. We declare our commitment to the significant and far-reaching reduction of greenhouse gas emissions in line with our core values and principles.
 3. We further declare our willingness to work for and support any international climate change agreement that is consistent with these essential foundations.
 4. We believe that the climate change crisis is not simply about adaptation and mitigation, but changing the whole economic framework into one of eco-sufficiency and sustainability.
 5. We assert that Kyoto represents a false compromise and commit to redressing the fundamental weaknesses of the Kyoto agreement in any new protocol or post 2012 agreement.
 - a) We reject market-based mechanisms to address climate change as diversionary and designed to perpetuate current levels of economic activity and profits, if not brazen maneuvering by corporations to pass on the burden of dealing with the negative effects of their greenhouse gas emissions to the people of the global south.
 - b) We acknowledge that technological developments can play a role in addressing the climate change issue but are conscious that technological fixes in themselves are not just grossly insufficient but even used to divert from the need to address root causes.
 6. We are convinced that human progress and the defense of the livelihoods, well-being and welfare of the people ultimately require an economic system that is socially just, democratic and ecologically sustainable. This includes people-oriented agricultural and industrial development.
 7. We declare that in order to address the climate crisis, the people must have real stewardship, access and control over the natural resources on which they depend rather than TNCs, international financial institutions or even governments which represent the narrow private interests of a global elite and their local collaborators. In so-doing we assert people's sovereignty over natural resources.
 8. To this end, we shall work for:
 - a) National ownership over the nation's resources and productive assets;
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- b) Community-level management and decision-making supported by national-level authority or public-community partnership in the utilization and conservation of these resources;
 - c) Transparency in decision-making and disposition of revenues raised from the extraction, processing and sale of products derived from nature;
 - d) A comprehensive national policy framework for economic diversification and for meeting the collective needs of the present and future generations, especially the poor and marginalized in society;
 - e) A national program for research and development on sustainable technologies including recycling methods, renewable energy and other alternatives to unsustainable means of production;
 - f) Education on ecology and socially responsible consumption; and
 - g) Cooperative arrangements with other countries in the stewardship of global commons or shared resources such as oceans, rivers, forests and the climate.
9. We affirm the importance of grassroots education, organizing and mobilizations to promote and realize our alternative vision and program for social transformation. We retain our vigilance even where governments have expressed support for a progressive agenda, and hold them accountable through popular participation and mobilization. We are ever critical of attempts to compromise the interests of the majority and the marginalized.
10. We commit to building on the powerful networks of movements for climate action that have emerged worldwide. Localized actions against greenhouse gas emissions have spread across the globe and deepened everyday development struggles.
11. We acknowledge the supportive role of adaptation funding for Southern countries to help deal with the problem climate change, affirm that the far greater responsibility of the North in the current climate crisis means that it must bear a far greater proportion of the funding responsibility. We decry the fiasco of the supposed global adaptation fund which was allotted insignificant funding, and criticize efforts such as those by the World Bank (WB) to use adaptation funding to distract from the overriding need to address the roots of the climate change problem. We stress that adaptation funding must
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be over and above traditional allotments for overseas development assistance (ODA).

12. We assert that restorative justice requires distribution of responsibility according to historical per capita emissions, not just on a by country basis but more significantly on a by polluter basis. The greatest burden of adjustment must be on the Northern countries and their TNCs (wherever these are located), as well as on Southern elites, who have caused and benefited the most from the damage. We further assert that this absolutely requires, at the very minimum, Northern commitments and concrete practice to:
 - a) Drastically reduce overall energy use and increase energy efficiency;
 - b) Increase unconditional financial compensation to directly address the climate crisis in the South; and
 - c) Overhaul international trade and investment rules towards sustainable development and improvements in the standard of living in the South, including also an end to the real or effective transfer of Northern polluting industries to the South.
 13. We recognize the need for significant global GHG emissions reductions in both the Northern and Southern countries. We assert that action on climate change can only succeed if it addresses southern emissions, and this requires mechanisms for large scale compensatory financing from the global north to global south. Specifically this should entail the creation of a global mitigation fund, contributed to by the global north, and in particular northern TNCs.
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