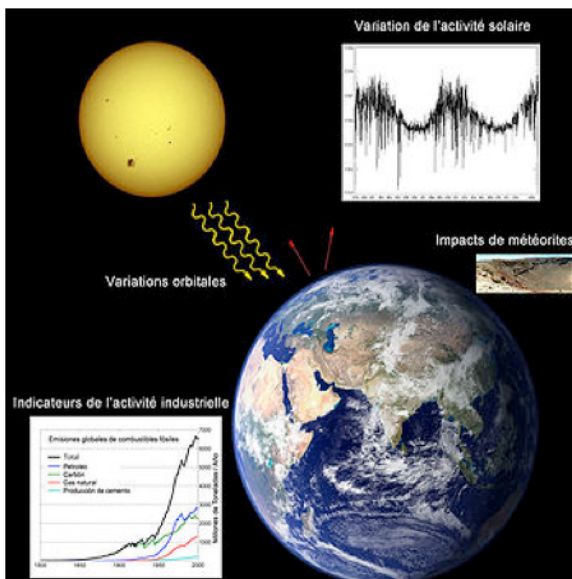




CLIMATE CHANGE BROCHURE (CC)

CLIMATE CHANGE (CC)

A global problem that calls for international response
Through the AME Project



Although climate change has different local effects depending on the geography of the affected region, the increasing concentration of greenhouse gases through mixtures of air mass affect the planet and all the ecosystems in just a few months; it is thus a global problem that calls for clear answers and international engagement.

Source : Wikipedia the free encyclopedia: Recognized key factors of CC

I. CHRONOLOGICAL CONCEPTS AND ELEMENTS OF CLIMATE CHANGE (CC)

Adaptation: adjustment of natural and human systems to reduce damage caused by climate change or to harness the benefits.

Mitigation: Actions to reduce emissions of green house gases and increase carbon sinks to mitigate climate change. Adaptation and mitigation are

complementary. The first concerns the consequences of CC while the second focuses on the causes. From the perspective of climate change, mitigation means implementing policies to reduce greenhouse gas emissions and enhance sinks.

Climate Change(CC) -The term “climate change” means change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable periods(UNFCCC, 1992).

Anthropogenic climate change is caused by emissions of green house gases generated by human activities thus changing the composition of the earth’s atmosphere. This is compounded by variations of natural climate. Global warming is a phenomenon of rising average temperature of the oceans and the atmosphere on a global scale over several years. In its common sense, it is applied to a global warming trend observed in recent decades of the twentieth century.

Degradation - The term “forest degradation”: FAO refers to it as “changes in the forest which negatively affect the structure or function of the forest ecosystem or site, thus reducing the ability to provide products and/or services”

Sustainable development - “development model that meets the needs of a generation, beginning with those of the poor without compromising the ability of future generations to meet theirs.” (UN Definition) Fairness (equity) - As stated in article3 (1)of the Convention: “The Parties should protect the climate system for the benefit of present and future generations, on the basis of equity

and in accordance with their capabilities. It is, accordingly, that developed countries should take the forefront in the fight against climate change.”



**Climate is disrupted
and we have to act**

Greenhouse gas (sometimes abbreviated GHG) is a gas in an atmosphere both natural and anthropogenic, that absorbs and emits radiation within the thermal infrared range (UNFCCC, 1992). Many

greenhouse gases are involved in global warming, which mainly include six greenhouse gases on the list of the Kyoto Protocol (1998). The greenhouse gases considered in the negotiations on CC are listed in Annex A of the Kyoto Protocol: Carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydro fluoro carbons (HFCs), per fluoro carbons (PFCs) and sulfur hexafluoride (SF₆). Both in quantity and because of its long life time in the atmosphere, carbon dioxide is the main greenhouse gas, so GHG emissions are calculated in “CO₂ equivalents”.

Intergovernmental Panel on Climate Change (IPCC) Established in 1988 by the World Meteorological Organization and United Nations Environment Program, IPCC plays a central role in international negotiations on CC. Its mission is to provide comprehensive scientific assessments, technical and socio-economic information about the risks of CC caused by human activities. It must also formulate and evaluate possible strategies for prevention and adaptation. It published its first report in 1990. Updated in 1992, this report provided the basis for negotiation of the UNFCCC Convention adopted in Rio de Janeiro in June 1992.

Precaution (precautionary principle), Article 3 (3) of the UNFCCC: “It is expected of the Parties to take precautionary measures to anticipate, prevent or mitigate the causes of CC and limit its adverse effects. Where there are threats of serious or irreversible disturbance, lack of full scientific certainty should not be an excuse for postponing such measures ...”

In the Panel's work (IPCC), the term “climate change” refers to any change in time, whether due to natural variability or human activity. On the contrary, in the United Nations Framework Convention on Climate Change, the term refers only to changes due to human activities. The Framework Convention uses the term “climate variability” to refer to naturally occurring climate change.

Sink or source (“carbon sinks”), (Article 1 (9)) -In the Framework Convention of 1992, the “source” is defined as “any process or activity which releases into the atmosphere a greenhouse gas, an aerosol or a precursor greenhouse gas, “while the” sink “is any process, activity or mechanism, natural or artificial, which removes from the atmosphere a greenhouse gas, an aerosol or a precursor greenhouse gas emissions”.

Reservoir (of carbon), Article 1 (8) – “One or more components of the climate system that retain a greenhouse gas or a precursor of greenhouse gas emissions”.

Vulnerability, (Article 1 (7) of the UNFCCC): The extent to which a system is sensitive, or unable to cope with the adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of nature, the extent and pace of climate variation to which the system is exposed, the sensitivity of this system or its ability to adapt.

II. UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)

Adopted in Rio de Janeiro in June 1992, the UNFCCC sets an overall framework for intergovernmental efforts to tackle the challenge posed by climate change. It recognizes that the climate system is a shared resource of which its stability can be affected by industrial emissions of carbon dioxide and other gases that trap heat. Under the UNFCCC, governments: a) are expected to collect and share information on greenhouse gas emissions, implement national policies and best practices; b) launch national strategies to address greenhouse gas emissions and adapt to the expected impacts, including the provision of financial and technological support to developing countries; c) cooperate in preparing for adaptation to climate change impacts.

The objective of the UNFCCC is to “stabilize concentrations of greenhouse gases in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system”. And by agreeing “to reach that level in a time frame sufficient to allow ecosystems to adapt naturally to climate change, that food production is not threatened and to enable economic development to proceed in a sustainable manner.” The UNFCCC entered into force in March 1994. Developed countries, countries in transition to a market economy and the European Union pledged to stabilize their GHG emissions in the year 2000 at the 1990 level. Moreover, developed countries and the European Community listed in Annex II of the Convention will support developing countries financially and technologically.

Thus, according to the UNFCCC, governments are expected: a) to collect and share information on greenhouse gas emissions, and also implement national policies and best practices b) launch national strategies to address greenhouse gas emissions and adapt to expected impacts, including the provision of financial and technological support to developing countries; c) cooperate in preparing for adaptation to climate change impacts. This reveals the importance given to effects of climate change to all fields that are included under the concept of sustainable development.

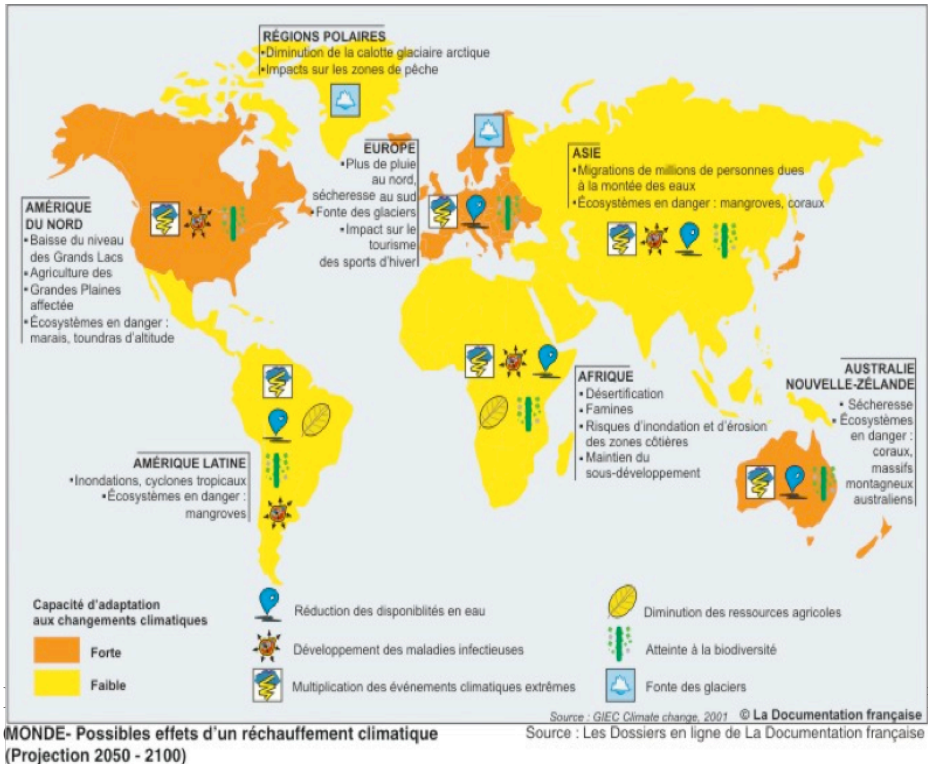
In 1997, governments agreed to make an addition to this treaty, referred to as the Kyoto Protocol, which contains stronger measures (legally binding). The Protocol entered into force on 16 February 2005. And, since 1988, an Intergovernmental Panel on Climate Change reviews the scientific research and provides governments with summaries and advice on climate problems.

III. THE KYOTO PROTOCOL: Speculative International Context

The Kyoto Protocol (KP) which takes from the United Nations Framework Convention on Climate Change (UNFCCC) is one of the most important international legal instruments to fight against CC. It contains commitments by industrialized countries to reduce their emissions of certain green house gases that cause global warming. Developed countries are expected to reduce total emissions at least by 5% of the 1990 levels over the period 2008-2012.

Compliance with the Kyoto commitments. With the goal of international environmental law in view, the issue of compliance of all parties with their commitments and sanctions for non-compliance come into play.. This issue also surrounds the Kyoto Protocol in its “compliance” mechanism, that is to say, “monitoring compliance with commitments and sanction for non-compliance.” This new mechanism is also accompanied by a willingness to resolve conflicts through diplomatic channels or, ultimately, in the International Court of Justice. It represents a major step forward in the fight against global warming because it contains binding targets and quantified emission limitation as well as reducing greenhouse gas emissions.

However, are States committed or not to the Kyoto Protocol?



The adjacent map “**Kyoto Vision: Projection 2010**” gives some hints of response, it presents:

- A distinction between countries “committed” (Annex B) / countries “uncommitted”.
- Differences between commitments undertaken by States in Kyoto: some have agreed to reduce their emissions from the 1990 or 1995 levels, others only to slow their progression.
- A comparison for each State in Annex B, between the Kyoto target and the amount of emissions projected for 2010.

Theoretically, the mechanisms under the Kyoto Protocol are mechanisms of subsidiary, which are used as supplements to national policies in fighting against emissions in order to ensure flexibility at the whole system.

1) Mechanism of tradable permit: This is a market permit for emission. It is the main mechanism in the Kyoto Protocol, the mechanism of tradable permit seeks to encourage as quickly as possible the improvement of the most polluting and least effective production systems. Several markets in emission permit have been implemented across businesses, business groups, or States. The European Trading Scheme began on 1 January 2005 and it is the first and largest system of trading carbon dioxide emissions in the world, covering about 11,500 European installations alone and it is responsible for nearly half of the CO₂ emissions of the European Union (EU).

2) The other two flexibility mechanisms: a) “Joint Implementation” (JI) is a funding mechanism for projects with primary objective of carbon sequestration or reducing emissions of greenhouse gases. It covers industrial and forestry projects to fight against the greenhouse effect and was launched specially by Russia and the countries of Central and Eastern Europe. These projects can generate carbon credits used by investors. b) Clean Development Mechanism (CDM) is the response to financial mechanism requests of developing countries which supports economic development by adopting cleaner methods of production. Unlike the JI, which gives priority to initiate projects for carbon sequestration or reducing emissions, CDM focuses on the needs of finance for development.

The Kyoto Protocol: strengths and weaknesses

“Its strength lies in the reduction targets of greenhouse gas emissions, which give it strong political backing. Nevertheless, the failure to take into account national circumstances and undifferentiated treatment to sectors subjected to international competition is its main Achilles heels. Yet it is important to remember that the Kyoto Protocol is a first solution certainly imperfect, but it was part of a learning process and took place in a context where scientific uncertainties were still relatively numerous. It was built so that it can develop, which is why the first commitment period was valid for only five years (2008-2012).

The content of the protocol. The Kyoto Protocol tackles emissions of six greenhouse gases: a) carbon dioxide (CO₂), b) Methane (CH₄), c) nitrous oxide (N₂O), d) hydrofluorocarbons (HFCs), e) perfluorocarbons (PFCs), f) sulfur hexafluoride (SF₆).

The entry into force of the Kyoto Protocol (2005). The success of the Bonn negotiations, which were finalized in Marrakesh in November 2001, led to the ratification of the Protocol by many countries in 2002: the European Union and its 15 member states on May 31, 2002, Japan on June 4 finally, the Protocol ratification by Russia on 22 October 2004 paved the way for the entry into force of the Kyoto Protocol on 16 February 2005.

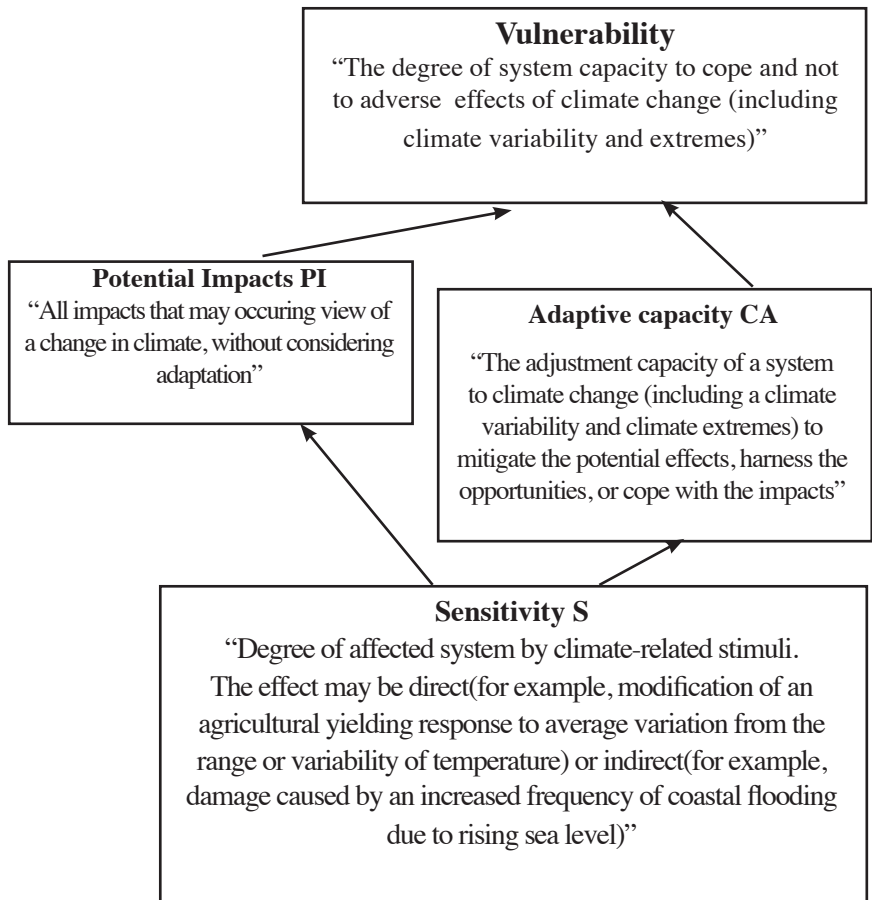
Status of ratification: a) **Countries that have ratified:** By November 18, 2005, 182 countries out of 192 independent countries had ratified, accepted, acceded to or approved the Protocol. November 28, 2005 is the historic date of the first Meeting of parties to the Protocol (MOP) in Montreal and the Eleventh Conference of the Parties (COP). The Kyoto Protocol is applicable in all these countries, except the most recent signatories, where the Protocol entered into force recently: Nepal, Guinea-Bissau, Kazakhstan, Angola, Southern Africa, Bahrain, Brunei, etc. b) **Countries that have signed but not ratified the protocol.** By 19 June 2009, only one country in the world, the U.S., had signed but had not ratified the protocol. This country is nevertheless a party in Annexes I and II of the UNFCCC; c) **Other countries that have not ratified or even signed the protocol:** a) Andorra, Afghanistan, San Marino, Somalia, Taiwan, Chad, Vatican, b) However, Iraq and Afghanistan, are still partially occupied and being in a zone of armed conflict, do not yet have stable governments to decide independently on an international treaty. c) **Notes:** 1) Western Sahara does not have the possibility of ratifying the protocol, due to its conflict with Morocco, but the latter, has ratified. 2) Taiwan cannot be party either, because it is not recognized as independent from China (which ratified the protocol), but has announced plans to implement it; 3) Similarly the Palestinian Authority cannot yet be party, its territory is not independent from Israel (which ratified the protocol).

IV. COMPONENTS OF ADAPTATION: VULNERABILITY AND DOUBLE SPEED MITIGATION

Adaptation to climate change or climate disruptions refers to strategies, initiatives and measures taken by individuals or by a group (companies, associations, communities, etc.) to reduce the vulnerability of natural and human systems against actual or expected climatic changes. This strategy is complementary to the mitigation strategy, designed to emit fewer greenhouse gases and protect or restore the capacity of carbon sinks ecosystems or agro ecosystems (with, for example, CARBOFOR project in France).

Two forms of adaptation exist, which are both complementary and necessary: reactive adaptation (e.g. ex post response to adverse impacts of climate change, when they occur) and anticipatory adaptation, which in reality are often handled together and at times as an emergency for example, (Climate Plan adopted in France after the 2003 heat wave can be interpreted both as a response to the events of 2003, and as a way to anticipate similar events in the future).

Thus, no industry and no technology can on its own address the entire mitigation challenge. All sectors, including Construction industries, Energy production, Agriculture, Transport, forest and waste management could contribute to the general mitigation effort, by, for example, through a more efficient use of energy. Many technologies and processes emitting less greenhouse gases are already available on the market or will be available in the decades ahead.



**AFRICAN UNION COMMISSION
DEPARTMENT OF RURAL ECONOMY AND AGRICULTURE
MULTILATERAL ENVIRONMENTAL AGREEMENTS (MEAS)
PROJECT
AFRICA HUB**

Tel: +251 115 511968 / +251 115 502305
+251 115 517700/+251 115 526373

Fax: +251 115 517844

Site web: <http://www.au.int/SP/MEAS/>
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