UNIVERSITA' COMMERCIALE
LUIGI BOCCONI
MILANO

DOTTORATO DI RICERCA IN
DIRITTO INTERNAZIONALE
DELL'ECONOMIA
XVII CICLO

THE INTERNATIONAL LEGAL REGIME ON CLIMATE CHANGE: FROM PRINCIPLES TO IMPLEMENTATION

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Cum aliquis tormenta fortiter patitur,

omnibus virtutibus utitur.

Fortasse una in promptu sit

et maxime appareat,

patientia;

ceterum illic est fortitudo,

cuius patientia et perpessio et tolerantia rami sunt ;

illic est prudentia,

sine qua nullum initur consilium,

quae suadet

quod effugere non possis

quam fortissime ferre;

illic est constantia,

quae deici loco non potest

et propositum nulla vi extorquente dimittit;

illic est individuus ille comitatus virtutum.

Lucius Annaeus Seneca

Epistulae morales ad Lucilium

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INTRODUCTION

The international legal regime on climate change is the answer of the international community to one of the most significant problems that have recently emerged at the global level.

At the outset of this work we will briefly describe the scientific phenomenon of global warming: what is it? How is it evaluated? What has the international community done to deal with it, both at the scientific and at the political and legal levels? We will see the main results of the three assessments reports, prepared by the International Panel on Climate Change, an international body established to rearrange the researches on the matter and to study possible solutions.

Chapter two will focus on the principles of international environmental law enshrined in the United Nations Framework Convention on Climate Change (UNFCCC), the first legal instrument adopted at the multilateral level. We will analyse six different principles: common concern of humankind, common but differentiated responsibilities, the precautionary principle, no harm principle, sustainable development and liberalisation of international trade. For each of these principles the analysis of their presence in other international agreements, which is useful for the definition of their role and function, will be followed by the focus on the impacts on the climate change regime. We will see in fact that such general principles, when applied to the phenomenon of global warming, may have particular legal implications. Special attention will be paid to the broader context of the rules of public international law, which are of paramount importance in the interpretation of the exact content and limits of the legal regime on climate change. The concept of injured State, the possibility of invoking States' responsibility, the regime of responsibility, the notion of obligations *erga omnes* and *erga omnes partes*, as applicable in the climate change regime, will be placed in the general framework of public international law. At the end of the analysis, the results will be different for each principle: we will support the idea of a rule of customary international law

prohibiting the use of the common spaces without taking into consideration the rights of other States, but we will deny the possibility of inferring a general obligation not to emit GHGs in the atmosphere. These principles will not be considered as commitments prescribing precise behaviours, although for some of them (sustainable development and the precautionary principle) it is possible to identify a process which may lead to the crystallisation of rules of general international law.

After the analysis of the general principles, we will see how they have influenced the regime in shaping the various commitments (chapter 3). The principle of common but differentiated responsibilities informs the whole structure of obligations, which differ significantly according to the State involved. The different sets of commitments are analysed in relation to their specific area (mitigation, adaptation, finance, technology and capacity building), within which each State is subject to specific provisions, according to whether it is a developed Country, a developing Country, an economy in transition or a least developed Country.

Chapter 4 is devoted to one of the most innovative mechanisms established by the Kyoto Protocol to grant flexibility in the implementation of mitigation commitments. The clean development mechanism (CDM) is the result of a complex negotiation, and was designed in such a manner as to strike a balance between different needs: having more flexibility for developed Countries, attracting more investments in developing Counties with a view to further sustainable development and address adaptation. The outcome is the establishment of a CDM project cycle, a series of necessary steps, involving States, supranational institutions, private actors and public participation, at the end of which specific projects may be approved. As a result, the investing developed State will gain credits in order to help to achieve its targets of GHGs reduction, while the developing Country will attract an investment with additional resources, cleaner technology, and beneficial effects in accordance with the principle of sustainable development. We will try to answer some questions, such as: how to design a legal framework which may be accepted by all the negotiating blocs? Which

role for non-State actors? What about potential conflicts with international rules on investments?

In chapter 5 the focus will be on the concrete implementation of the obligations established by the UNFCCC and the Kyoto Protocol within the EC legal order. The particular position of the EC within the regime will be analysed, and the measures to address climate change will be placed in the right context, following the development of the community environmental policy. The actions undertaken by the EC are the best example of the multiplicity of possible approaches in dealing with climate change. Strict regulations, recourse to market-mechanisms, involvement of the private sector through voluntary measures, they are an integrated pool of options.

The most innovative instrument is of course emissions trading: what is it? How does it work? What are its potential benefits and drawbacks? We will try to answer these questions concerning such a controversial market-oriented solution to tackle the problem of global warming.

In the sixth chapter we will examine the provisions designed for the respect of the different obligations. Besides the traditional means of dispute settlement, non-compliance procedures are deployed, in order to better address the peculiarities of climate change.

After the evaluation of the general principles, their role in the shaping of the parties' commitments, the different and innovative mechanisms to help Countries meet their obligations, the potential interactions with the international trade regime, the procedures to grant compliance, a general appraisal of the climate change regime will follow, taking into account the actions that some Countries have recently undertaken outside the boundaries of the existing legal framework.

What are the effects of the rules on climate change on third Parties? Are there precise obligations deriving from customary international law? We will see that although the specific treaties are not flawless, even when States try to implement different measure in the fight against climate change, the conceptual framework resulting from the general principles that we have examined is still applied.

CHAPTER I:

THE INTERNATIONAL RELEVANCE OF CLIMATE CHANGE

1.1) CLIMATE CHANGE: THE SCIENTIFIC PHENOMENON

To be able to fully understand the scope and meaning of the international legal regime on climate change, it is fundamental to focus our attention on the scientific problem to which the legal texts want to find a solution, that is the global warming of the Earth.

Everything revolves around the concept of greenhouse effect. This is a non-technical expression to indicate the process of absorption and release of the solar energy by the terrestrial atmosphere. The energy coming from the Sun is in part absorbed by the Earth, and in part it flows back towards the original source. Inside the atmosphere though there are several gases, whose characteristic is to be able to trap part of the energy that has not been absorbed by the Earth.

This process is of paramount importance, since without this energy being kept in the atmosphere, the average temperature of the Earth would be around –18°, a level preventing human life. The warming deriving from this function of the atmosphere results in an increase in the temperature of about 33°. The average level of temperature of the soil is therefore around 15°[1].

An important concept to underline is the difference between concentration and emission. By the first we mean a stock, that is the actual presence of the various greenhouse gases (GHG) in the atmosphere, and that is directly influenced by the level of emissions, in terms of the fluxes of the gases into the atmosphere.

[1] The greenhouse effect is therefore a natural phenomenon, essential for the existence of human life on Earth, and it is not limited to our planet,within the solar system. The first studies and researches date back to the XIX century, with the contribution of such scientists as the French Fourier (1827) and the Swedish Arrhenius (1896). For an overview on the problem of global warming see Alessandro LANZA, *Il cambiamento climatico: Perché sale la temperatura del pianeta?Le strategie di intervento per contrastare l'effetto serra"*, Bologna, Il Mulino, 2000.

But the general idea of a relationship based on the stock-flux concepts is not enough to give a full idea of the complexity of the problem. The GHG are in fact of various kinds, and each of them has got its own peculiarities, in terms of the ability to trap the energy, of persistence in the atmosphere and consequently of the time it takes them to fall into decay[2].

The international legal regime on climate change has been established in order to combat the negative influence that human activities have on the earth's climate, in terms of increase in the emissions and consequently in the concentrations of GHG.

1.2) THE RESPONSE OF THE INTERNATIONAL COMMUNITY:

The international community started considering the problem of the changes in the patterns of the earth climate more than two decades ago.

The first World Climate Conference, in 1979, established the World Climate Research Programme, with the purpose of stimulating further research on the topic. Yet it was only in 1988 that a scientific body was established under the auspices of the United Nations Environmental Programme[3] (UNEP) and of the World

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[2] The most important GHGs are: -CARBON DIOXIDE (CO2): it is the main anthropogenic GHG, supposed to account for about 70% of the *radiative forcing* (that is the absorbing power of the energy in the atmposphere) of climate over the next century. The main anthropogenic sources are fossil fuel combustion and deforestation; -METHANE (CH4): it has more than doubled its concentration in the atmosphere, it is the second most important anthropogenic GHG, but has a much shorter atmoTspheric lifetime than carbon dioxide. The main anthropogenic sources are agriculture, waste disposal, fossil fuel (*in primis* natural gas) production and use, but natural emissions from wetlands account for a bout 1/5th of its total emissions; -NITROUS OXIDE (N2O): it has a long persistence in the atmosphere (about 120 years), which makes it particularly dangerous especially in the long run. The main anthropogenic sources (but natural sources are considered to be twice as large) are agriculture (especially the use of some kind of fertilisers) and certain industrial processes; -HALOCARBONS (CFCs and PFCs): these are mainly industrial chemicals, but some of them (such as CFC-12) are expected to fall due to the control imposed by the Montreal Protocol on the substances depleting the ozone layer.

[3] The United Nations Evironmental Programme, in Nairobi, Kenya, started to operate in 1972, and it works with an aim at encouraging sustainable development through eco-friendly practices and environmentally sounded projects, to be encouraged in every sector and in every place. Its activities range from atmosphere to terrestrial ecosystems, through the promotion and furtherance of information in the field of environmental protection. See the website www.unep.org for a list of current and past projects.

Meteorological Organisation (WMO)[4], the Intergovernmental Panel on Climate Change (IPCC).

Its mandate is not focused on the effort of making new and original researches, but rather on the tasks of organising and rearranging all the information on the topic of climate change, of assessing in a comprehensive, objective and transparent manner the most significant impacts and effects on the Earth, as well as of putting forward hypotheses to contrast the problem.

How is this panel composed, what are the procedures governing its work?

All the members of the IPCC act in their personal capacities, and are experts of different subjects, since the complexity of the phenomenon requires a wide range of expertise[5]. It is divided into three Working Groups:

-Working Group I on the science of climate change, including projections of future climate change;

-Working Group II on scientific-technical analyses of impacts of climate change, vulnerability and adaptation;

-Working Group III on mitigation options and their implications.[6]

The IPCC is therefore a body which tries to combine two different approaches: scientific and technical concerns on the one hand, and more broadly political considerations on the other hand[7].

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[4] The World Meteorological Organisation, in Geneva, was established by the World Meteorological Convention, adopted at the 12th Conference of the Directors of the International Meteorological Organisations, gathered in Washington in 1947. Despite the Convention itself entering into force in 1950, the World Meteorological Organisation became fully operational, as a successor to the International Meteorological Organisation, in 1951, when it obtained the status of a Specialised Agency of the United Nations as a consequence of an agreement between the United Nations and the World Meteorological Organisation (see the website www.wmo.org).

[5] For example, about 2,500 scientists from 100 different Countries participated in the IPCC Second Assessment Report; natural scientists, economists, lawyers, all try to contribute to the drafting and elaboration of such complex documents.

[6] The mandate of the Second Assessment Report's Working Groups were slightly different, with Working Group II dealing with impacts, adaptation and mitigation, and Working Group III with cross-cutting economic and social dimensions.

[7] All States that are members of the United Nations and of the WMO are therefore members of the IPCC and its three working groups.

It was considered important to inform both public opinion and policy-makers about the actual state and the progress regarding the phenomenon, with a view to studying precise international strategies and possibly implementing them domestically. The experts nominated by Governments are selected by the bureau of Governmental representatives to form writing teams within each of the three working groups[8]. All the various drafts are re-examined and further elaborated on by other experts, according a peer-reviewing process.

Of particular importance is the section of the work which is known as Summary for policymakers. It is the most sensitive part, in that "it represents a statement of what governments officially accept as a balanced account of the state of knowledge and reasoned judgement[9]". No wonders then on the intensive negotiations taking place between national delegations concerning its precise wording. Since its results are considered to be the basis upon which policymakers will decide what actions to undertake, and how to share the burdens among the various members of the international community, everybody is very concerned by the possibility its conclusions may be unbalanced[10], although they have clearly no legally binding force.

In fact the summaries for policymakers and the synthesis of the assessments are approved line by line, not only by the working groups, but also by the plenary, which includes the political representatives of the member States, while the full reports are accepted with no discussion.

The IPCC, besides this fundamental function of regularly re-examining the literature on the subject of climate change, may be asked to respond to precise

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[8] In this process of selection, concerns on the geographical balance of such teams are very likely to play a major role, besides the obvious requirements of professional and research expertise.

[9] See Michael GRUBB with Christiaan VROLIJK and Duncan BRACK, *The Kyoto Protocol: A Guide and Assessment*, London, 1999, p. 5.

[10] In academic opinion it has been underlined that the IPCC "aims to be policy-relevant but not policy-prescriptive, providing the best available information to help governments decide how to respond to climate change" (see Joanna DEPLEDGE, *Climate Change in Focus: the IPCC Third Assessment Report,* Briefing Paper New Series n° 29, The Royal Institute of International Affairs, Sustainable Development Programme, February 2002, easy to be found on the website www.riia.org).

technical requests, and furthermore it elaborates shorter reports on specific matters[11].

1.3) THE RESULTS OF THE THREE ASSESSMENT REPORTS OF THE INTERNATIONAL PANEL ON CLIMATE CHANGE:

1.3.1) THE FIRST ASSESSMENT REPORT:

The IPPC presented its first assessment report in 1990 to the Second World Climate Conference held in Geneva[12].

Working Group I, in charge of the scientific aspects, came to the conclusion that concentrations of carbon dioxide and other GHG were increasing, and that this phenomenon was a consequence of human activities. The temperatures would then rise globally, and the climatic patterns would change significantly, though with great differences from region to region. But the anthropogenic sources are not the only factor influencing the global climate.

Besides human-induced emissions and land-use change in fact, there is a series of other elements to take into consideration, such as the ocean current oscillations or sunspot changes, which are clearly natural, and therefore unrelated to human activities. The conclusion of the Group was that if GHG emissions continued to rise as projected, global average temperature would increase at the fastest rate seen in the past 10,000 years.

Yet, the experts could not push their conclusions further, and had to admit that the magnitude of global warming could not clearly be attributed to human activity. The uncertainties were even more significant in the researches of Working Group II, concerning the impacts of climate change.

[11] For all the different reports elaborated by the IPCC, see the website www.ipcc.ch .

[12] The texts of the three assessments reports can be found in the IPCC website (www.ipcc.ch), together with other documents and information concerning its work.

Notwithstanding the general agreement reached on some phenomena such as sea-level rise and changes in rainfall patterns, the other consequences of global warming could not be easily made out, especially in consideration of the different impacts it would have on various regions.

Firms conclusions on this subject could therefore not be reached.

As we shift to more political aspects, the debate becomes more controversial. Working Group III, dedicated to potential responses to climate change, showed for the first time the different approaches within the international community, on a subject that was there for the first time coped with.

The report was therefore carefully negotiated, and its major outcome was the concrete recommendation to start negotiations on a global international agreement on climate change. The Second World Climate Conference accepted these results, and called upon the UN to start the negotiation process, inviting at the same time the IPCC to submit further special reports, and in parallel, a new general Assessment Report.

All of this paved the way to the United Nations Framework Convention on Climate Change on the one hand[13], and to the more detailed analysis of the phenomenon by the IPCC on the other hand.

1.3.2) THE SECOND ASSESSMENT REPORT:

The Second Assessment Report was accepted in 1995 and published in June 1996[14]. Its importance results from the more detailed findings, compared to those reached by the First Assessment Report, supported by almost 2,000 pages of analysis.

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[13] The United Nations Framework Convention on Climate Change will be adopted at the end of the World Conference on Environment and Development, held in Rio de Janeiro in 1992.

[14] On the Second Assessment Report see in general Duncan BRACK and Micheal GRUBB, *Climate Change: A Summary of the Second Assessment Report of the IPCC,* The Royal Institute of International Affairs Briefing Paper n° 32, July 1996.

Working Group I on the science of climate change came to the fundamental conclusion that climate change could be detected[15]. The point was then assessing whether these alterations could be directly linked with human activities or not, and the expressions used by the working group clearly point in one direction: "the observed warming trend in unlikely to be entirely natural in origin", and "the balance of evidence suggests that there is a discernible human influence on global climate". The biggest limit of the First Assessment Report is therefore overstepped, with the acceptance of the idea of a link between the role of human-lead activities and the increase of the global warming of the Earth.

The step towards a fuller comprehension of the role of human activities is therefore significant, although an ample degree of uncertainty still remains, especially on some critical aspects such as the effects on storm intensity, West Antarctic ice sheet collapsing and consequent sea-level rising, as well as big ocean currents.

Working Group II on impacts and adaptation focused on the possible consequences of global warming, both from a physical-ecological point of view and a socio-economic one. The increase of the average temperature of the Earth would result, *inter alia*, in reduced biodiversity, increased desertification, disappearance of at least one-third of existing glacier mass, significant changes in the agricultural and fishing patterns. The consequences of course would vary from region to region, due to the particular climatic conditions and the different capability to face such phenomena. Changes in crop yields and productivity, increase in extreme events, particularly storms and floods could lead to economic losses up to 10% of GDP and forced migration towards rich Countries, while negative effects on human life and health are likely to result from reduction in fresh water supplies and heat waves.

[15] Clear evidence of this is shown by such factors as: the increase of global average surface temperature by 0.3-0.6°C since late XIX century; the exceptional heat of recent years, among the warmest since 1860; the rise of global sea level by 10-25 cm since late XIX century; the significant changes in the patterns of extreme weather events, especially in certain regions.

Possible responses to this situation were studied by Working Group III, with some emphasis on the economic aspects. The contribution to global warming vary from region to region, or even from Country to Country, not only in its level, but also in the economic sectors involved. In developed Countries, "the largest amount of GHG are caused by the combustion of fossil fuels to generate electricity and power cars, aircraft and other engines. In addition to the energy sector, other major contributing sectors include agriculture (CH4, N2O), waste (CH4) and industry (industrial processes: CO2,N2O)[16]". For developing Countries, the situation is slightly different: besides the significant increase in the CO2 emissions due to fossil fuel combustion, a direct consequence of the industrialisation process, a still important source of GHG is tropical deforestation[17]. Taking into account all the different situations, a set of "no regrets" measures, in the sense of measures that can contribute to the limitation of GHG at no net cost, has been elaborated.

In the IPCC Working Group III Policymakers' Summary we can therefore read that "a portfolio of actions [...] that Policymakers could consider [...] to implement low-cost and/or cost-effective measures" include:

-implementing energy efficiency (e.g. national and international energy efficiency standards)

-phasing out distortionary policies (e.g. subsidies on fossil fuels, distortions in transport pricing non-internalisation of environmental costs)

-enhance sinks or reservoires (e.g. improving forest management and land use practices)

-encouraging forms of international cooperation (e.g. actions implemented jointly, tradable quotas)

-planning and implementing measures to adapt to climate change

-conduct technological research and develop new techniques

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[16] See Sebastian OBERTHUR and Hermann E. OTT, *The Kyoto Protocol: International Climate Policy for the 21st century*, Berlin, 1999, p. 7.

[17] According to OBERTHUR and OTT, *cit. supra*, p. 9, "tropical deforestation has been a net source of CO2 in a number of developing countries. In the early 1990s, CO2 emissions from deforestation accounted for an estimated 15-25% of global CO2 emisssissions."

-promoting voluntary actions

-education and training, information and advisory measures for sustainable development and consumption patterns

-improving institutional arrangements (e.g. insurance arrangements to share the risks)

The core of the debate thus shifts from the scientific analysis to the economic assessment of the most cost-effective way to face the problem of global warming, partly due to the uncertainties concerning the actual impacts of the phenomenon. If the First Assessment Report called for a response by the international community paving the way to the negotiations of the Framework Convention on Climate Change, the consensus reached in the Second Assessment Report showed that time had come for States to make a further step in the elaboration of feasible and effective responses. The Kyoto Protocol to the Framework Convention will be the direct consequence of this enhanced awareness within the international community.

1.3.3) THE THIRD ASSESSMENT REPORT:

The Third Assessment Report was published in 2001, and up to now it is the most updated and detailed text constituting the scientific basis for the study of climate change[18]. It is the result of almost four years of work, involving some 450 natural scientists, social scientists and technical experts.

[18] The result is particularly voluminous: each working group alaborated about 750-900 pages, including 10-20 of the Summary for policymakers, that is the section particularly addressed to the most institutionalised subjects. Instead of a merely scientific reconstruction of the phenomenon, it provides a series of guidelines and suggestions to implement (see Bert METZ, Ogunlade DAVIDSON, Rob SWART and Jiahua PAN (eds.), *Summary for Policymakers and Technical Summary*,IPCC, Geneva, 2001).

They had to produce a report taking into account the work of over 800 contributors and comments from more than 1,000 reviewers, preparing drafts which were then analysed by the negotiators from more than 100 Countries.

A first difference from the previous reports of the IPCC concerns its general structure: the more political part is significantly increased, as one can easily notice by reading the *Synthesis Report*,[19] and the regional dimensions of climate change are addressed more in detail[20]. In addition, the IPPC had elaborated four guidance papers, to assist the three working groups, on cross-cutting issues, that is development, sustainability and equity; uncertainty; costing methodologies; and decision analysis frameworks[21].

Generally speaking, the negotiations leading to the adoption of the third assessment report were not as heated as the those concerning the second report. The state of art of the subject in fact saw climate change as already accepted by the international community, whose members had agreed upon an international treaty like the Kyoto Protocol, as a direct consequence of the findings of the IPCC in its second report.

However, one does not have to think that the results point towards a clear and indisputable prevision on the future developments of climate change. The final position of the authors is in fact that it is not possible to predict how the future range of emissions will unfold; as underlined in academic opinion, "this analysis challenged the notion that the future can be predicted and that there might exist an optimum development path"[22].

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[19] See R.T. WATSON and the Core Writing Team (eds.), *Climate Change 2001: Synthesis Report: A contribution of Working Groups I, II and III to the Third Assessment Report of the Intergovernmental Panel on Climate Change*, Geneva, IPCC, 2001.

[20] Among the most significant contribution on the Third Assessment Report of the IPCC see, besides Joanna DEPLEDGE, *cit. Supra*, R.T. WATSON and the Core Writing Team (eds.), *IPCC Third Assessment Report: Climate Change 2001*,Geneva, IPCC, 2001; James J. MCCARTHY, Osvaldo F. CANZIANI, Neil A. LEARY, David J. DOKKEN and KASE, *Climate Change 2001: Mitigation Contribution of Working Group III to the Third Assessment Report of the Intergovernmental Panel on Climate Change (IPCC)*, Geneva, IPCC, 2001.

[21] See R. PACHAURI et al., *Guidance Papers on the Cross-cutting Issues of the Third Assessment Report of the Intergovernmental Panel on Climate Change*, Geneva, 2000.

[22] See Joanna DEPLEDGE, *cit. supra*, p. 2.

Yet the importance of the results must not be minimised. The work is based on a series of four different storylines, which give rise to other future, possible scenarios[23], according to the influence of certain variable factors. These scenarios differ significantly, but they all assume economic growth (though the nature and rate of it vary) as a starting point; other factors taken into consideration are demographic change and technological development, but not climate mitigation policies[24]. It is important to highlight that all emission scenarios are equally valid, and it is therefore impossible to derive any sort of hierarchy among them[25].This reinforces the idea of the inherently unpredictability of the future, and was not welcomed by part of the governmental and scientific community, which wanted a clearer picture of the situation that is most likely to develop in the future years.

Working Group I, on the scientific basis of climate change, does not report any major breakthroughs since the previous report. It further strengthens the finding that the climate is changing, setting out a series of data supporting its conclusion:

-Global average surface temperature increased by about 0.6°C over the XXth century. The higher temperatures in the years 1995-2000 led this figure some 0.15°C higher than established by the second Assessment Report[26].

[23] Forty different scenarios were derived from these storylines, which gives you the idea of the complexity of any attempt to predict the future.

[24] This last point was strongly supported by the USA, while the need to give due consideration to economic growth was particularly expressed by developing countries.

[25] These are the profiles of the four main storylines: A1) The world is characterised by a fast economic growth, the introduction of new and more efficient technologies, and a substantial reduction of the income gaps among the various regions; A2) The world is very heterogenious, based principally on the preservation of local identities; economic development is mianly on a regional scale, and consequently both growth and technological changes are more fragmented and slower in their spread; B1) The world is open to globalisation as in scenario A1, but there is a rapid change in the economic structures towards a service-based economy; B2) The world is based on local solutions to economic, social and environmental sustainability. Global population is constantly increasing, but a slower rate than in scenario A2, and the economic development is at a medium level.

[26] According the figures elaborated by the World Meteorological Organisation, temperatures in 2001 were the second highest for 140 years, and nine of the ten warmest years in the last four decades have occurred since 1990. See "UN says 2001 temperatures second highest for 140 years", Associated Press, 19 December 2001.

-Precipitation patterns have changed over northern hemisphere land areas, with more rainfall in the mid to high latitudes, including more frequent heavy down pours, and less rainfall in the sub-tropics.

-Snow and ice cover has fallen almost worldwide, while sea levels have risen by 10-20 cm[27].

-No significant trends, however, have been detected in extreme weather events, such as tropical storms, tornadoes or hailstorms, with data on such events often lacking.

These trends that have been observed in the past 50 years allow the scientists of Working Group I to be stronger in the wording of their conclusions: "there is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities". The link between the warming up of the Earth and human activities is therefore undoubtedly established, since natural factors alone cannot explain such trends. What can we expect from the future then? In the absence of mitigation policies, the scenarios imply an increase in the concentration of GHG in the atmosphere, which will result in:

- A rise in the global average surface temperature by 1.4-5.8 °C, the greatest rate of change in the past 10,000 years[28].
- Land areas very likely more rapid warming than the global average, particularly in the northern high latitudes in winter. Warming in the northern regions of North America, for example, exceeds global mean warming in each model by over 40%.
- A global rise in precipitation, with more rainfall and larger annual variations in some regions, and less in others. The Asian summer monsoon is likely to become more variable.
- Sea-level rise of 9-88 cm.

The predictions which are supported with more emphasis and a greater degree of confidence relate therefore to higher maximum temperatures, more hot days,

[27] This is a slightly smaller rise than was reported in the Second Assessment Report.

[28] In the Second Assessment Report the predicted rise in the temperature was about 1-3.5°C.

higher minimum temperatures, fewer cold/frost days, over all land areas, as well as more intense rainfall, greater risk of drought and stronger tropical cyclones over particular areas. The increases in global temperatures will patently affect the world population in its daily life, yet the idea of climate change is immediately linked, in the public eye, with that of large-scale, catastrophic events. In this regard, the outcome of the IPPC' work is not clear: on the one hands it seems very unlikely that the most destructive examples of these phenomena will happen in the short run, but on the other hand a dismal and appalling future may be looming in the long run.

Working Group II on impacts, adaptation and vulnerability saw its importance enhanced, once accepted the basic idea of climate change as a reality. In spite of heated debate especially as for the Summary for policymakers, consensus was finally agreed upon the impacts of climate change already being felt. The scope of this working Group was to assess the potential impacts of global warming on the different parts of the world, including also the impacts of extreme weather events.

It is particularly worth noting that climate change in itself, besides negative effects, may bring about also beneficial situations, in particular areas, and given particular circumstances. Nonetheless, the negative impacts will be far worse and more likely to take place, and in particular the burden of this detrimental situation will have to be borne by developing countries, more vulnerable and with less capacity to face the problem. To be more precise, the Working Group projects certain impacts:

-Significant and irreversible damage to natural system (e.g. coral reefs, polar ecosystem) and greater risk of extinction of vulnerable plant and animal species.

-Worsening water stress in many arid and semi-arid areas.

-Varied impacts on crops yields. Productivity may rise in the mid to high latitudes for a temperature increase of a few degrees, but fall in the mid-latitudes for a higher increase. In the tropics and sub-tropics, however, yields are expected to fall even for small temperature increases.

-Wide-ranging and predominantly negative impacts on human health. Higher temperatures could broaden the geographic spread of malaria and dengue, while more extreme weather events could trigger loss of life, disease and malnutrition. Fewer cold-related deaths are expected, however.

-Greater risk to human settlements around the world from flooding and landslides, a problem accentuated by rapid urbanization in low-lying coastal areas worldwide. A 40 cm sea level rise by the 2080s would place 75 to 200 million more people at risk from storm surges.

-Potentially severe repercussions for the insurance sector[29] from more intense or frequent extreme events, although the sector as a whole is expected to cope[30].

This gives an idea of the complexity of the picture, and of the need for an accurate analysis taking into consideration the peculiarities of the different regions.

This was particularly supported by delegates from developing countries, who know how climatic problems are still seen as distant and not particularly threatening, compared to other domestic priorities such as poverty eradication[31].

The regional approach therefore needs further development, especially for such parts of the world as the African continent, where the geographical and socio-economic differences makes it blatantly evident how climate change can diversely affect different situations. Furthermore, the regional approach allows to spot the possible detrimental effects in areas of the world that are on average safer than the

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[29] The Third Assessment Report devotes a whole chapter to the possible negative consequences on the insurance sector due to unexpected climatic disasters.

[30] To synthesise its findings, Working Group II presents five "reasons for concern" about projected climate change impacts: 1) Risks to unique and threatened natural systems; 2) Risks from extreme weather events; 3) Distribution of climate change impacts; 4) Aggregate impacts of climate change; 5) Risks from future large-scale discontinuities (catastrophic events).

[31] See Joyeeta GUPTA, *The Climate Change Convention and Developing Countries: From Conflict to Consensus?*, Kluwer Academic Publishers, 1997, in which the authors claims that "climate change [...] is not perceived as a priority by domestic actors and hence even if it on the domestic agenda, it may not influence domestic policies", and lists a series of reasons for this situation, that is a) "the lack of domestic debate", b) "the lack of well-developed scientific communities on climate change and hence the resort to a historical perspective", c) "issue linkages and the different order of priorities", d) "ideological vacillation (or uncertainty)".

others[32]. Special emphasis, which cannot be found in the previous report, is therefore given to the concept of adaptation, as a valuable means to complement climate change mitigation[33].

Working Group III on mitigation had to face more directly the different approaches that the members of the international community have when it comes to what measures are the best to tackle the problem of climate change[34]. The overriding issue at stake was the cost of mitigating climate change, and the role of the economists was huge in this regard.

Two main approaches could be followed: the "bottom-up" and "top-down" models, both present already in the conclusions of the second assessment report[35].

The bottom-up approach starts from the evaluation of specific sectors and technologies to base on them a possible scheme of costs, and usually presents more optimistic results, maybe biased by an underestimation of the costs of implementation, while the top-down model draws its conclusions from macroeconomic relations, and results in more pessimistic scenarios, perhaps overestimating costs.

Even though the two approaches lead to different results, in the third assessment report consensus was finally reached on significant aspects:

- Technologies to tackle climate change in a cost-effective manner are already available;
- The widespread application of such technologies is hindered by economic, social and political barriers;
- Technical progress in climate-friendly technologies[36] has occurred faster than expected since the second assessment report[37];

[32] It is undoubted that the regions especially at risk are small islands and polar regions, but within safer regions, such as the USA, there are areas, like Florida and much of the Atlantic coast, running the risk of increased flooding.

[33] On the concepts of mitigation and adaptation, see more in detail the following pages.

[34] The work though was finalised in March 2001, at a time when the new US administration under George W. Bush had not yet repudiated the Kyoto Protocol officially, but it had not hidden its perplexities about it.

[35] See M. GRUBB, C. VROLIJK and D. BRACK, *cit. supra*, Appendix II: "Key themes in economic debates: insights from the SAR".

- Emissions trading can reduce costs[38];
- The economic costs and benefits deriving from climate change will be distributed unevenly among various countries;
- The phenomenon of "emission leakage", from regions implementing mitigation policies to others, may be offset by the global diffusion of cleaner technologies, which will be developed in industrialised countries to meet their mitigation obligations;
- Earlier actions permit a higher degree of flexibility in the attempt of stabilising GHG concentrations in the atmosphere, which would otherwise be jeopardised by excessive delays[39].

Other issues were not clarified, due to their political sensitivity, among which stands the debate over the costs of stabilising atmospheric concentrations of GHG at different levels[40].

The influence of political considerations often prevails over purely scientific assessments. For example, the rather self-evident point that an effective stabilisations of GHG concentrations cannot be achieved without involving

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[36] For examples in the field of alternative sources of energy, such as wind turbines, or in specific sectors like the fuell cell technology.

[37] The technical Summary, however, notes that rapid economic growth results in behavioural changes that may obstacle this techincal progress. For example, energy efficiency or renewable energy programmes were not implemented with the same intensity, and since the early 1990s funding for research and development on climate-friendly technologies has fallen.

[38] On the concept of emissions trading, that is the possibility to exchange rights to emit GHG in the atmosphere, freely in a market, see infra the pages of this work dedicated to the flexibility mechanisms introduced by the Kyoto Protocol. The important role that such mechanisms can play to abate the costs of implementation is an issue frequently debated. According to Joanna DEPLEDGE, *cit. supra*, p. 5, "An important consistent message among all models is that implementation matters- with smart, cost-effective implementation, including the use of the flexibility mechanisms, the Kyoto Protocol's target are achievable. Unsurprisingly, however, this key policy message is not explicitly stated by the IPCC."

[39] Working Group III maintains that "a gradual near-term transition from the world's present energy system towards a less carbon-emitting economy minimizes costs [...] on the other hand, more rapid near-term action would decrease environmental and human risks associated with rapid climatic changes".

[40] The Technical Summary finds that achievement of all stabilisation scenarios would involve a reduction in the annual GDP growth rate of only 0.003% per year, with a maximum reduction of 0.06% per year. Not all the delegations though agreed on including this point in the summary for policymakers, claiming that it did not give enough relevance to the higher short-term and regionally specific costs, to which policymakers devote most of their attention.

developing countries, although in less strict way and in a later stage, could not be introduced in the official text, due to the extreme sensitivity of the topic of possible future mitigation commitments by developing countries.

The synthesis report is the part of the IPCC's work which more directly reflects the political concerns of the negotiators.

The efforts to be more policy-relevant result in a particular structure, based on nine questions. They are complex, elaborated, divided in sub-issues, but they present the most up-to-date picture of the state of art of the climate change regime, its bases, its challenges, its possible future developments[41].

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[41] These questions are: **Question 1**: What can scientific, technical, and socio-economic analyses contribute to the determination of what constitutes dangerous anthropogenic interference with the climate system as referred to in Article 2 of the Framework Convention on Climate Change?
Question 2: What is the evidence for, causes of, and consequences of changes in the Earth's climate since the pre-industrial era? (a) Has the Earth's climate changed since the pre-industrial era at the regional and/or global scale? If so, what part, if any, of the observed changes can be attributed to human influence and what part, if any, can be attributed to natural phenomena? What is the basis for that attribution? (b) What is known about the environmental, social, and economic consequences of climate changes since the pre-industrial era with an emphasis on the last 50 years?
Question 3: What is known about the regional and global climatic, environmental, and socio-economic consequences in the next 25, 50, and 100 years associated with a range of greenhouse gas emissions arising from scenarios used in the TAR (projections which involve no climate policy intervention)? To the extent possible evaluate the: -Projected changes in atmospheric concentrations, climate, and sea level; -Impacts and economic costs and benefits of changes in climate and atmospheric composition on human health, diversity and productivity of ecological systems, and socio-economic sectors (particularly agriculture and water); -The range of options for adaptation, including the costs, benefits, and challenges; -Development, sustainability, and equity issues associated with impacts and adaptation at a regional and global level.
Question 4: What is known about the influence of the increasing atmospheric concentrations of greenhouse gases and aerosols, and the projected human-induced change in climate regionally and globally on: a) The frequency and magnitude of climate fluctuations, including daily, seasonal, inter-annual, and decadal variability, such as the El Niño Southern Oscillation cycles and others? b) The duration, location, frequency, and intensity of extreme events such as heat waves, droughts, floods, heavy precipitation, avalanches, storms, tornadoes, and tropical cyclones? c) The risk of abrupt/non-linear changes in, among others, the sources and sinks of greenhouse gases, ocean circulation, and the extent of polar ice and permafrost? If so, can the risk be quantified? d) The risk of abrupt or non-linear changes in ecological systems?
Question 5: What is known about the inertia and time scales associated with the changes in the climate system, ecological systems, and socio-economic sectors and their interactions?
Question 6:a) How does the extent and timing of the introduction of a range of emissions reduction actions determine and affect the rate, magnitude, and impacts of climate change, and affect the global and regional economy, taking into account the historical and current emissions? b) What is known from sensitivity studies about regional and global climatic, environmental, and socio-economic consequences of stabilizing the atmospheric concentrations of greenhouse gases

The general framework there contained is not new, but is presented in a more systematic manner, in such a way as to capture more easily the attention of the readers.

(in carbon dioxide equivalents), at a range of levels from today's to double that level or more, taking into account to the extent possible the effects of aerosols? For each stabilization scenario, including different pathways to stabilization, evaluate the range of costs and benefits, relative to the range of scenarios considered in Question 3, in terms of: -Projected changes in atmospheric concentrations, climate, and sea level, including changes beyond 100 years; -Impacts and economic costs and benefits of changes in climate and atmospheric composition on human health, diversity and productivity of ecological systems, and socio-economic sectors (particularly agriculture and water); -The range of options for adaptation, including the costs, benefits, and challenges; -The range of technologies, policies, and practices that could be used to achieve each of the stabilization levels, with an evaluation of the national and global costs and benefits, and an assessment of how these costs and benefits would compare, either qualitatively or quantitatively, to the avoided environmental harm that would be achieved by the emissions reductions; -Development, sustainability, and equity issues associated with impacts, adaptation, and mitigation at a regional and global level.

Question 7: What is known about the potential for, and costs and benefits of, and time frame for reducing greenhouse gas emissions? -What would be the economic and social costs and benefits and equity implications of options for policies and measures, and the mechanisms of the Kyoto Protocol, that might be considered to address climate change regionally and globally?; -What portfolios of options of research and development, investments, and other policies might be considered that would be most effective to enhance the development and deployment of technologies that address climate change?; -What kind of economic and other policy options might be considered to remove existing and potential barriers and to stimulate private and public sector technology transfer and deployment among countries, and what effect might these have on projected emissions?; -How does the timing of the options contained in the above affect associated economic costs and benefits, and the atmospheric concentrations of greenhouse gases over the next century and beyond?

Question 8: What is known about the interactions between projected human-induced changes in climate and other environmental issues (e.g., urban air pollution, regional acid deposition, loss of biological diversity, stratospheric ozone depletion, and desertification and land degradation)? What is known about environmental, social, and economic costs and benefits and implications of these interactions for integrating climate change response strategies in an equitable manner into broad sustainable development strategies at the local, regional, and global scales?

Question 9: What are the most robust findings and key uncertainties regarding attribution of climate change and regarding model projections of: -Future emissions of greenhouse gases and aerosols?; -Future concentrations of greenhouse gases and aerosols?; -Future changes in regional and global climate?; -Regional and global impacts of climate change?; -Costs and benefits of mitigation and adaptation options?

One very delicate point, necessary to progress with the decisions and concrete actions to undertake, relates to a clear definition of what "dangerous climate change" is. This means establishing thresholds and benchmarks to have a fuller vision of the timing and intensity of the actions required. An explicit clarification of this is not contained in the Synthesis Report, since the definition of the level of danger implied in climate change is not a sheer matter of scientific evaluation, but it is determined through socio-political processes and weighing.

If the level of danger in terms of consequences is not assessed, little controversy surrounds the basic conclusion that current global emission trends are unsustainable for the purpose of stabilisation of GHG in the atmosphere. The fact is that stabilisation can be achieved only if the quantity emitted in the atmosphere exceeds the quantity absorbed or dissolved through the so-called natural sinks and reservoirs, and the long process of decay of certain GHG makes it urgent to take early actions[42].

Policymakers now have to decide how to make the best possible use of this massive work; as we have already noted, the First Assessment Report gave a decisive input to the elaboration of the United Nations Framework Convention on Climate Change, while the Second Assessment Report paved the way to the negotiation of the Kyoto Protocol. In recent Conferences of the Parties[43], the agenda included a point on how to follow up the work of the ICCP, but its decision will be inevitably intertwined with the negotiations on the post-2012 commitment periods[44]. But at the time being one cannot but endorse the role played by the IPPC: to be fully aware of the scope and implications of such a complex matter, the idea of putting together a series of well-known and worldwide-appreciated

[42] Only the reduction of global GHG emissions to a small fraction of current emission could evenutally lead to a stabilisation of such gases in the atmosphere.

[43] The Conference of the Parties (COP) is the body established by the UNFCC which gathers every year to improve and make the regime develop further (for more details about COPs, see infra).

[44] The Kyoto Protocol in fact provides for a period of commitment from 2008 to 2012, after which new and probably different kind of obligations will have to be established.

scientists with different backgrounds, who have to interact with the political delegation of States turned out to be absolutely positive.

The consensus reached on some underpinning points of the problem provides the regime with a solid and undoubted basis, and allows policymakers to take decisions with the comfort of sound scientific assessments. Of course, as we have underlined, sometimes the political concerns tend to prevail over the pure scientific analysis, but generally speaking the interaction between the scientific community and the governmental delegations has given good results.

The IPPC has not run out its function: some questions are still without an answer, and we are sure that the Fourth Assessment Report, under preparation, will be of paramount importance for the shaping and further development of the legal regime[45].

1.4) THE ESTABLISHMENT OF THE INTERNATIONAL LEGAL REGIME ON CLIMATE CHANGE

1.4.1) THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC): THE FIRST INTERNATIONAL LEGAL INSTRUMENT TO COPE WITH CLIMATE CHANGE

The UNFCCC was negotiated during the UNCED in Rio, and it enjoyed a global support from both developed and developing Countries[46].

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[45] There is no doubt on the concrete influence of the IPCC reports for the establishment of the international climat echange regime. As underlined by academic opinion (see Joanna Depledge, cit. Supra, p.8) "after five more years of research, the scientific community has found no evidence to support the claims of sceptics that climate change is not a serious problem – quite the contrary. Notwithstanding the caveats and uncertainties, ther ecan be no mistake over the TAR's warning: climate change may be a long-term problem, but decisions taken in the next few years will be critical to determining whether or not its worst effects can be averted".

[46] On the UNFCCC, see Jill BARRETT, *The Negotiation and Drafting of the Climate Change Convention*, in Robin R. CHURCHILL & David FREESTONE, *International Law and Global Climate Change*, London, 1991; Patricia BIRNIE & Alan BOYLE, *International Law & the Environment, second edition*, Oxford, 2002; Daniel BODANSKY, *The United Nations Framework Convention on Climate Change: A Commentary*, "Yale Journal of International

Today is has been ratified by 189 Countries[47] and although its general character of a framework Convention results in vague obligations, it is nonetheless of paramount importance as the instrument establishing a legal regime on climate change, with *ad hoc* institutions, rules and procedures. In particular, a Secretariat is established, in Bonn, Germany, with a series of functions concerning the administration of the regime[48]. Each year, all the Parties to the UNFCCC meet at the Conference of the Parties (COP), which is defined as "the supreme body of this Convention"[49]. Its powers and functions are numerous, ranging from keeping

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Law", Vol. 18, 1993, pp. 451-558; Robin R. CHURCHILL, *Controlling Emissions of Greenhouse Gases*, in Robin R. CHURCHILL & David FREESTONE, *cit. supra*; Eilen CLAUSSEN, *Climate Change: Present and Future*, "Ecology Law Quarterly", vol. 28, 2001, pp. 1373- 1380; David FREESTONE, *The UN Framework Convention on Climate Change, the Kyoto Protocol, and the Kyoto Mechanisms*, in David FREESTONE and Charlotte STRECK, *Legal Aspects of Implementing the Kyoto Protocol Mechanisms: Making Kyoto Work*, New York, 2005; Joyeeta GUPTA, *cit. supra*; Jennifer L. MORGAN, *Global Climate: UN Framework Convention on Climate Change (FCCC)*, "Yearbook of International Environmental Law", 1995, vol. 6, pp. 223-233; Jean-François PULVENIS, *The Framework Convention on Climate Change*, in Luigi CAMPIGLIO, Laura PINESCHI, Domenico SINISCALCO, Tullio TREVES (Eds.), *The Environment After Rio*, London, 1994, pp. 71-110; Philippe SANDS, *Principles of International Environmental Law, vol. I: Frameworks, standards and implementation*, Manchester, 2003; Philippe SANDS, *The United Nations Framework Convention on Climate Change*, in "Review of European Community and International Environmental Law", 1(3), 1992, pp. 270-277; Farhana YAMIN and Joanna DEPLEDGE, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures*, Cambridge, 2004.

[47] For a list of signatories and ratification of the Convention Parties see the webpage http://unfccc.int/files/essential_background/convention/status_of_ratification/application/pdf/ratlist.pdf .

[48] See UNFCCC, Art. 8, which, in para. 2, sets out its functions: "a) To make arrangements for sessions of the Conference of the Parties and its subsidiary bodies established under the Convention and to provide them with services as required; b) To compile and transmit reports submitted to it; c) To facilitate assistance to the Parties, particularly developing country Parties, on request, in the compilation and communication of information required in accordance with the provisions of the Convention; d) To prepare reports on its activities and present them to the Conference of the Parties; e) To ensure the necessary coordination with the secretariats of other relevant international bodies; f) To enter, under the overall guidance of the Conference of the Parties, into such administrative and contractual arrangements as may be required for the effective discharge of its functions; and g) To perform the other secretariat functions specified in the Convention and in any of its protocols and such other functions as may be determined by the Conference of the Parties."

[49] See UNFCCC, art. 7.2. According to Art. 13.1 of the Kyoto Protocol, "the Conference of the Parties, the supreme body of the Convention, shall serve as the meeting of the Parties to this Protocol". On the role of COPs in itnernational environemntal law see Nikolaos LAVRANOS, *Decision Making in the Multilateral Environmental Agreements: Who Makes the Binding Decisions?*, "European Environmental Law Review", February 2002, pp. 44-50; Volker

under regular review the implementation of the Convention and its Protocols to adopting any legal instruments to promote the effective implementation of the Convention[50].

Two subsidiary bodies are also established, to help the COP in specific aspects of the regime: the subsidiary body for scientific and technological advice[51], whose scope covers the scientific and technological matters relating to the Convention, and the subsidiary body for implementation[52], to assist the COP in the assessment and review of the effective implementation of the Convention.

ROBEN, *Institutional Developments under Modern International Environmental Agreements*, "Max Planck Yearbook of United Nations Law", vol. 4, 2000, pp. 363-443.

[50] See UNFCCC, Art. 7.2,according to which the COP shall "a) Periodically examine the obligations of the Parties and the institutional arrangements under the Convention, in the light of the objective of the Convention, the experience gained in its implementation and the evolution of scientific and technological knowledge; (b) Promote and facilitate the exchange of information on measures adopted by the Parties to address climate change and its effects, taking into account the differing circumstances, responsibilities and capabilities of the Parties and their respective commitments under the Convention; (c) Facilitate, at the request of two or more Parties, the coordination of measures adopted by them to address climate change and its effects, taking into account the differing circumstances, responsibilities and capabilities of the Parties and their respective commitments under the Convention; (d) Promote and guide, in accordance with the objective and provisions of the Convention, the development and periodic refinement of comparable methodologies, to be agreed on by the Conference of the Parties, inter alia, for preparing inventories of greenhouse gas emissions by sources and removals by sinks, and for evaluating the effectiveness of measures to limit the emissions and enhance the removals of these gases; (e) Assess, on the basis of all information made available to it in accordance with the provisions of the Convention, the implementation of the Convention by the Parties, the overall effects of the measures taken pursuant to the Convention, in particular environmental, economic and social effects as well as their cumulative impacts and the extent to which progress towards the objective of the Convention is being achieved;(f) Consider and adopt regular reports on the implementation of the Convention and ensure their publication; (g) Make recommendations on any matters necessary for the implementation of the Convention; (h) Seek to mobilize financial resources in accordance with Article 4, paragraphs 3, 4 and 5, and Article 11; (i) Establish such subsidiary bodies as are deemed necessary for the implementation of the Convention; (j) Review reports submitted by its subsidiary bodies and provide guidance to them; (k) Agree upon and adopt, by consensus, rules of procedure and financial rules for itself and for any subsidiary bodies; (l) Seek and utilize, where appropriate, the services and cooperation of, and information provided by, competent international organizations and intergovernmental and non-governmental bodies; and (m) Exercise such other functions as are required for the achievement of the objective of the Convention as well as all other functions assigned to it under the Convention."

[51] See UNFCCC, Art. 9.

[52] See UNFCCC, Art. 10.

COPs are of paramount importance for the improvement of the regime[53]: for example, at the end of COP1, the so-called Berlin mandate was adopted. This decision of COP1 was a significant attempt to push forward the regime, launching the negotiations of a Protocol which would contain more specific commitments[54]. The principle of common but differentiated responsibilities was concretly applied: on the one hand the aim for developed Countries was to elaborate policies and measure and to set quantified limitation and reduction objectives within specified time-frames, while on the other hand the exemption from new commitments for developing Countries was confirmed.

1.4.2) THE KYOTO PROTOCOL TO THE UNFCCC: STRENGTHENING INTERNATIONAL EFFORTS WITH MORE SPECIFIC COMMITMENTS

The more specific commitments agreed upon in Berlin are to be found in the Kyoto Protocol, adopted at the end of COP3 in December 1997[55].

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[53] On particular COPs and their impact on the evolution of the climate change regime see: William C. BURNS, *The Second Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change: more heat than light?*, "Colorado Journal of International Environmental Law & Policy Yearbook", 1996, p.153; Anita Margrethe HALVORSSEN, *Climate Change Treaties - New Developments at the Buenos Aires Conference*, "Colorado Journal of International Environmental Law & Policy Yearbook", 1998, p. 1; Hermann E. OTT, *Air and Atmosphere : Global Climate*, "Yearbook of International Environmental Law", vol 8, 1997. pp. 174-186; Hermann E. OTT, *Global Climate*, "Yearbook of International Environmental Law", vol. 7, 1996, pp. 130-137.

[54] See Decision 1/CP.1("The Berlin Mandate: Review of the adequacy of Article 4, paragraph 2 (a) and (b) of the Conventon, including proposals related to a protocol and decisions on follow up".

[55] On the Kyoto Protocol see Joseph E. ALDY, Richard BARON and Laurence TUBIANA, *Addressing Cost: The Political Economy of Climate Change*, in Joseph E. ALDY et al., *Beyond Kyoto: Advancing the International Effort Against Climate Change*, Pew Center on Global Climate Change, Arlington, 2003; Rafael Leal ARCAS, *Is the Kyoto protocol an adequate environmental agreement to resolve the climate change problem?*, in "European Environmental Law Review", October 2001, pp. 282-293; Patricia BIRNIE & Alan BOYLE, *cit. supra*; Daniel BODANSKY, *Climate Commitments: Assessing the Options*, in Joseph E. ALDY et al., *Beyond Kyoto: Advancing the International Effort Against Climate Change*, Pew Center on Global Climate Change, Arlington, 2003; Laurence BOISSON de CHAZOURNES, *La gestion de l'Intéret Commun à l'Epreuve des Enjeux économiques – Le Protocol de Kyoto sur les Changements Climatiques*, in "Annuaire Francais de Droit International", vol. 43, 1997, pp. 700-715; Clare BREIDENICH, Daniel MAGRAW, Anne ROWLEY, James W. RUBIN, *The Kyoto*

A last-minute agreement on the underpinnings of the Protocol secured the adoption of the text, but then could not grant it support in the following steps. More detailed rules to operationalise the provisions of the Protocol were therefore needed. COP 6 at The Hague brought about a deadlock which could have jeopardised the future of the climate change regime. The different positions of the various negotiating blocs prevented the formation of consensus.

Protocol to the United Nations Framework Convention on Climate Change, in "American Journal of International Law", Vol. 92, Issue 2, Apr. 1998, pp. 315-331; James T. BRYCE, *Controlling the Temperature: an Analysis of the Kyoto Protocol*, in "Saskatchewan Law Review", vol. 62, 1999, 379, 401; William C. BURNS, *Global warming – The United Nations Framework Convention on Climate Change and the Future of Small Island States*, in "Dickinson Journal of Environmental Law & Policy", vol. 6, 1997, 147, pp. 165-ff.; Peter D. CAMERON, *From Principle to Practice: the Kyoto Protocol,* in "Journal of Energy and Natural Resources Law", vol. 18, 2000, p.1; Peter D. CAMERON & Donald ZILLMAN (Eds.), *Kyoto: from principles to practice*, 2001; Peter G. G. DAVIES, *Global warming and the Kyoto Protocol,* in "International and Comparative Law Quarterly", vol. 47, April 1998, pp. 446-461; Jeffrey A. FERGUSON, *The Kyoto Protocol: the Battle over Global warming heats up,* in "Journal of Transnational Law and Policy", vol. 8, 1999, p. 293; Duncan FRENCH, *1997 Kyoto Protocol to the 1992 UN Framework Convention on Climate Change,* in "Journal of Environmental Law, vol. 10, 1998, p. 227; Paolo GALIZZI, *La Terza Conferenza delle parti della Convenzione sul Cambiamento Climatico (Kyoto 1-10 dicembre 1997),* in "Rivista Giudica dell'Ambiente", 1998; Stephen M. GARDINER, *The Global Warming tragedy and the Dangerous Illusion of the Kyoto Protocol,* in "Ethics and International Affairs", 2004, vol. 18, number 1, pp. 23-39; Alexander GILLESPIE, *Playing with commitments: examples from the climate, ozone and air regimes*, in "Environmental Policy and Law", 2003, n. 33, 3/4, pp. 132-138; Michael GRUBB, Christian VROLIJK & Duncan BRACK, *cit. supra*; Foo Kim BOON, *The Third Session of the Conference of the parties to the United Nations Framework Convention on Climate Change, Kyoto, Japan 1-10 December 1997,* in "Singapore Journal of International & Comparative Law", vol. 2, 1998, p. 191; Monica S. MATHEWS, *The Kyoto Protocol to the United Nations Framework Convention on Climate Change: a Survey of its Deficiencies and Why the United States Should not Ratify this Treaty*, in "Dickinson Journal of Environmental Law & Policy", vol.9, 2000, 193, 215; Massimiliano MONTINI, *Implementing the Kyoto Protocol in Italy: Problems of Law and Policy*, in "Italian Yearbook of International Law", vol. IX, 1999, pp. 124-142; Frank H. MURKOWSKI, *The Kyoto Protocol is not the answer to Climate Change*, in "Harvard Journal on Legislation", vol. 37, 2000, 345, pp. 362-ff.; Sebastian OBERTHUR and Herman E. OTT, *cit. supra Century*; Philippe SANDS, *Principles..., cit. supra*; Anastasia TELESETSKY, *The Kyoto Protocol,* in "Ecology Law Quarterly", vol. 26, 1999, p. 797; John F. TEMPLE, *Note: The Kyoto Protocol: Will it Sneak up on the U.S.?*, in "Brooklin Journal of International Law", vol. 28, 2002, p. 213; Patricia THOMPSON, *The Third Conference of the Parties to the United Nations Framework Convention on Climate Change: The December 1997 Kyoto Protocol,* in "Colorado Journal of International Environmental Law & Policy Yearbook", 1997, p. 219; David G. VICTOR, *The Collapse of the Kyoto Protocol and the Struggle to Slow Global Warming,* 2001; Farhana YAMIN and Joanna DEPLEDGE, *cit. supra*; Farhana YAMIN, *The Kyoto Protocol: Origins, Assessment and Future Challenges,* in "Review of European Community & International Environmental Law", vol. 7, 1998, p. 113.

The US administration declared that they would not ratify the Protocol, and Australia followed shortly after.[56] A series of issues remained unsolved, and it was during COP 7 in Marrakesh that a comprehensive agreement was reached: the so-called Marrakesh agreements[57].

Great uncertainties emerged about the future of this international agreement, which needed, to enter into force, ratification from not less than 55 Parties which accounted for at least 55 per cent of the total carbon dioxide emissions for 1990[58]. This result was finally achieved when Russia joined the EC[59], Japan[60] and Canada[61], and deposited its instrument of ratification on 18th November 2004.

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[56] On the consequences of the decision by the US and Australia to reject the Kyoto Protocol see chapter 6.

[57] See the Decisions adopted at COP7 on the different issues. All the COP decisions can be easily found on the website www.unfccc.int . On the major COPs after the adoption of the Kyoto Protocol and their results see Corrado CLINI, *Riflessioni dopo la conclusione all'Aja della VI Conferenza delle Parti firmatarie della Convenzione Quadro sui cambiamenti climatici (COP 6)*, in "Rivista Giuridica dell'Ambiente", 2001, pp. 175-178; Michel den ELZEN & A.P.G. de MOOR, *Evaluating the Bonn-Marrakesh* Agreement, in "Climate Policy", 2002, 2, pp. 111-117; Uday DESAI, *Insitituzionalising the Kyoto Climate Accord*, in "Environmental Policy and Law", 29/4, 1999, pp. 159- ff.; Suraje DESSAI, *The Fifth Conference of the Parties to the United Nations Framework Convention on Climate Change: an Advancement or Derailment of the Process?*, in "Colorado Journal of International Environmental Law & Policy Yearbook", 1999, p.192; Michael GRUBB/ Farhana YAMIN, *Climate Collapse at The Hague: What Happened, why, and where do we go from here?*, in "International Affairs", vol. 77, 2001, p.261; Jon HOVI and Ivar AREKLETT, *Enforcing the Climate Regime: Game Theory and the Marrakesh Accords*, in "International Environmental Agreements", 2004, vol. 4, pp. 1-26; Henry D. JACOBY and David M. REINER, *Getting Climate Policy on Track after the Hague*, in "International Affairs", vol. 77, 2001, p. 297; Karsten NOWROT, *Saving the International Legal Regime on climate Change?: The 2001 Conferences of Bonn and Marrakesh*, in "German Yearbook of International Law", vol. 44, 2001, pp. 396-429; Hermann E. OTT, *The Bonn Agreement to the Kyoto Protocol-Paving the Way for Ratification*, "International Environmental Agreements: Politics, Law and Economics", vol. 1, 2001, pp. 469-476; Lavanya RAJAMANI, *Re-negotiating Kyoto: A Review of the Sixth Conference of Parties to the Framework Convention on Climate Change*, in "Colorado Journal of International Environmental Law & Policy Yearbook", 2000, 201; Christiaan VROLIJK, *A New Interpretation of the Kyoto Protocol: Outcomes from The Hague, Bonn and Marrakesh*, Briefing Paper n° 1, The Royal Institute of International Affairs, Sustainable Development Programme, April 2002; Suraje DESSAI, E. Lisa F. SCHIPPER, Esteve CORBERA, Bo KJELLEN, Maria GUTIERREZ and Alex HAXELTINE, *Challenges and Outcomes at the Ninth Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change*, in "International Environmental Agreements", Vol. 5, 2005, pp. 105-124.

[58] See Kyoto Protocol, Art. 25.1.

[59] The EC ratified on 31st May, 2002.

[60] Japan ratified on 4th June 2002.

[61] Canada ratified on 17th December 2002.

The Kyoto Protocol therefore entered into force 90 days after, on 16th February 2005,[62] and is now the most important legal text establishing binding commitments for parties to the climate change regime[63].

[62] See Kyoto Protocol, Art. 25.

[63] Today 155 States and Regional Economic Integration Organisations, accounting for 61.6% of Annex I Parties emissions, are parties to the Kyoto Protocol. For a list of these Parties, see the webpage http://unfccc.int/files/essential_background/kyoto_protocol/application/pdf/kpstats.pdf .

CHAPTER II:

THE PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW ENSHRINED IN THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

In this chapter we will focus on the principles of international environmental law that are contained in the international agreements on climate change, in particular the United Nations Framework Convention on Climate Change (UNFCCC)[1].

The expression principles of international environmental law may seem vague, but one has to consider that it is helpful in comprising different situations, from rules of customary international law to non-binding principles which are used in treaties and instruments of soft law, but which lack a clear normative content, or are not sufficiently rooted in States' practice.

For each principle we will try to construe its scope and content by reference to other international treaties for the protection of the environment, as well as in texts, the most important of which being the Rio Declaration on Environment and Development[2], which, despite the lack of a clear legally binding nature, are nonetheless important for their comprehensive scope and for the consensus that they are building around their fundamental notions[3].

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[1] See United Nations Framework Convention on Climate Change, New York, 9 May 1992.

[2] The Rio Declaration on Environment and Development was adopted by consensus at the UN Conference on Environment and Development in 1992. According to Patricia BIRNIE and Alan BOYLE, *International law and the Environment*, Oxford, 2002, p. 82, it "constitutes at present the most significant universally endorsed statement of general rights and obligations of states affecting the environment". See also Sergio MARCHISIO, *Gli atti di Rio nel diritto internazionale*, in "Rivista di Diritto internazionale", 1992, pp. 581-621.

[3] According to Patricia BIRNIE and Alan BOYLE, *cit. supra*, pp. 82-83, "Three factors give the Rio declaration significant authority and influence in the articulation and development of contemporary international law relating to the environment. First, unlike the Stockholm Declaration of 1972, it is expressed mainly in obligatory terms. Although some principles use the words 'states should...', most start with the injunction that 'states shall...'.[...] Secondly, its twenty-seven principles represent something of a 'package deal', negotiated by consensus, rather like the 1982 UNCLOS, and must be read as a whole. [...] Thirdly [...] the Declaration reflects a real consensus of developed and developing states on the need to identify agreed norms of international environmental protection."

Then we will analyse how it is deployed within the UNFCCC and the Kyoto Protocol, with a view to highlighting the peculiarities of global warming and identifying how each principle may influence the evolution of the climate change legal regime.

2.1) COMMON CONCERN OF HUMANKIND:

2.1.1) THE GLOBAL ATMOSPHERE: A POSSIBLE LEGAL NOTION?

The Preamble of the Convention opens with the declaration that "change in the Earth's climate and its adverse effects are a common concern of humankind"[4]. This concept is rather recent in international law, and can be found in other legal texts for the protection of the environment, such as the United Nations Convention on Biodiversity, whose Preamble qualifies the concept of biodiversity, similarly, as "a common concern of humankind."[5] It may be used to identify a legal notion of the atmosphere that will inform the whole regime on climate change, helping in establishing the rights and obligations of States.

Within the United Nations General Assembly a proposal was put forward by Malta to declare the atmosphere as part of the common heritage of mankind. A compromise was thus reached in Resolution 43/53, which defined for the first time climate change "the common concern of humankind"[6]. According to this resolution, as underlined also in academic opinion[7], the global atmosphere is not

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[4] See UNFCCC, Preamble, para. 1.

[5] See United Nations Convention on Biodiversity, adopted, together with the United Nations Framework Convention on Climate Change, at the end of the UN Conference on Environment and Development, held in Rio 1992. It is worthwhile highlighting that the Rio Declaration on Environment and Development itself does not use this expression. The first legal text deploying the concept of "common concern" was the 1949 Inter-American Tropical Tuna Convention, in its Preamble.

[6] See UNGA Resolution 43/53 of 1988, available on the United Nations website www.un.org .

[7] See ALAN Boyle, *International Law and the Protection of the Global Atmosphere: Concepts, Categories and Principles*, in Robin CHURCHILL, David FREESTONE, *International Law and Global Climate Change*, London, 1991, p. 9, according to whom this resolution "does not make the global atmosphere common property beyond the sovereignty of individual States, but like the

conceived as common property beyond the sovereignty of individual States, but rather as a global unity, with the recognition that global warming may have detrimental consequences not simply on one or few States, but on the community of States as a whole.

An important precedent in this approach towards the atmosphere, is the 1985 Vienna Convention for the Protection of the Ozone Layer, which defines that area, in art. 1.1, as "the layer of atmospheric ozone above the planetary boundary layer"[8]. The idea of treating the atmosphere as a global unit is necessary to pave the way to an effective legal framework for climate change.

The concept of spatial boundaries in fact does not allow to contrast in an effective manner this phenomenon, which exceeds the purely regional dimension within which common problems of transboundary pollution can be easily coped with.

Other international agreements for the protection of the environment deploy similar expressions, such as "common property" or "common heritage". To be able to understand the legal consequences of the concept of common concern it is therefore useful to see how all these expressions are used, and how their concrete scopes of application differ[9].

2.1.2) COMMON PROPERTY

The concept of common property (*res communis omnium*) is used in international law in basically two cases:

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ozone layer, it does treat it as a global unity in so far as injury in the form of global warming or climate change may affect the community of States as a whole".

[8] Convention on the Protection of the Ozone Layer, Vienna, 22 March 1985. According to Boyle, cit. supra, p. 9, "the Ozone Convention's significance in this context is that it provides a model for treating the atmosphere as a global unity, whose problems affect all states in common, and whose integrity all States are required to protect from harmful activities".

[9] See the New Delhi Declaration of Principles of International Law Relating to Sustainable Development, whose paragraph 1.3 makes this distinction: "1.3 The protection, preservation and enhancement of the natural environment, particularly the proper management of climate system, biological diversity and fauna and flora of the Earth, are the common concern of humankind. The resources of outer space and celestial bodies and of the sea-bed, ocean floor and subsoil thereof beyond the limits of national jurisdiction are the common heritage of humankind".

a) to refer to areas beyond national jurisdiction (e.g. the high seas and superjacent airspace);
b) to refer to living resources inhabiting in, or migrating through, these common areas (e.g. fish and mammals found in the high seas, as well as migrating birds and other species of wildlife).

The implications of the concept in the two cases are of course different, though strictly linked, due to the different way in which sovereignty unfolds in relation to the exploitation of spatial areas or of living resources.

As far as the first hypothesis is concerned, the concept of common property historically wanted to act as a limit for the national sovereignty of single States, at the same time allowing a reasonable and legitimate use to all the members of the international community. This idea, already present in the 1958 Geneva Convention on the high seas[10], was reaffirmed by the recent United Nations Convention on the Law of the Sea, signed in Montego Bay in 1982, which devotes the whole of Part VII to the provisions concerning the high seas.

Art. 87 of this Convention (Freedom in the high seas) establishes that "the high seas are open to all States, whether coastal or land-locked. Freedom of the high seas is exercised under the conditions laid down by this Convention and by other rules of international law"[11]. It is then followed by a series of activities, including freedom of navigation, of overflight, to lay submarine cables, to construct artificial islands, of fishing, of scientific research, and the second paragraph provides that "these freedoms shall be exercised by all States with due regard for the interests of other States in their exercise of the freedom of the high seas, and also with due regard for the rights under this Convention with respect to activities in the Area [12]".

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[10] See Geneva Convention on the high seas,29 April 1958, Arts. 1 and 2. Art. 2(1) states that "The high seas being open to all nations, no State may validly purport to subject any part of them to its sovereignty".

[11] See UNCLOS, Art. 87.

[12] See UNCLOS, Art. 89. This last provision refers to the norms included in Part XI of the Montego Bay Convention dedicated to the International Seabeds Area, on which see *infra*.

Art. 89 (Invalidity of claims of sovereignty over the high seas) is even more explicit, maintaining that "No State may validly purport to subject any part of the high seas to its sovereignty"[13].

The growing awareness of the necessity of collective efforts to preserve the environment in these spaces has resulted in a significant number of legal provisions enshrined in multilateral[14], regional[15] as well as bilateral treaties, in which the duty to take care of the marine environment is not conceived any longer only in relation to the exercise of sovereign rights over it. In this way, we can affirm that the principle of common property mainly acts as a negative limit, in particular to the claims of single States, but at the same time it engages all States to take concrete actions, which have to be specified more precisely, for the protection of the common space[16].

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[13] On the negotiations history of Art. 89 see Satya N. NANDAN C.B.E. and Shabtai ROSENNE, *UNCLOS 1982: A commentary, Vol. III*, Center for Oceans Law and Policy, University of Virginia School of Law, NORDQUIST (ed. in chief), p. 94, in which the authors highlights how "Art. 89 confirms the long-standing principle that no State may subject any part of the high seas to its sovereignty. This principle historically has been a counterpart to the freedom of the high seas and the rule that the high seas are open to all States." Art. 89 must be read in strict relation with Art. 87, and together they express a series of coherent principles on the regime of high seas (see Satya N. NANDAN C.B.E. and Shabtai ROSENNE, *cit. supra*, p. 96): "(i) that the high seas are open to the use of all States; (ii) that conditions are placed on the exercise of high seas freedoms by other provisions of the Convention and by other rules of international law; and (iii) the obligation to have due regard to the interests of other States in exercising the freedoms of the high seas, and to the rights of other states under the Convention with respect to the Area. However, article 89 serves as more than an underpinning for the freedom of the high seas set out in article 87. It emphasizes that, beyond the outer limit of the territorial sea, the principle of "no sovereignty" is an inherent part of the law of the sea as a whole."

[14] See UNCLOS, Part XII, devoted to the protection and preservation of the marine environment, subdivided in 11 sections, and including articles from 192 to 237. Other important multilateral agreements include, *inter alia*, the 1972 London Dumping Convention and the 1973/8 MARPOL Convention.

[15] See, *inter alia*, the 1992 Paris Convention for the Protection of the Marine Environment (OSPAR Convention, relating to the North Sea and North-East Atlantic, the 1974 Helsinki Convention for the Protection of the Marine Environment of the Baltic Sea Area, the 1976 Barcelona Convention for the Protection of the Mediterranean Sea against Pollution and subsequent Protocols and the 1992 Black Sea Convention.

[16] The provisions of UNCLOS, Part XII, are in this regard comprehensive: -section 1- art. 192: general obligation to protect and preserve marine environment; art. 194: measures to prevent, reduce and control the pollution of the marine environment, to be undertaken individually or jointly by States; art. 195: duty not to transfer the damage or risk, and not to transform one kind of pollution into another; Art. 196: control of the negative effects of the use of technology or the

The second case for which international law deploys the concept of common property relates to living resources.

It is outside the scope of this analysis giving a comprehensive history of the evolution of the legal regime over natural resources[17], but the idea of common property of natural resources is part of a trend which diverts from the original idea of permanent sovereignty[18]. The underpinning idea is that no single State can claim an exclusive right of exploitation over such resources, and therefore every member of the international community has the same opportunities of taking part in such exploitation activities[19]. The property is no longer common, of course, once such living resources have been captured.

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introduction of new species; -section 2- (Arts. 197-201): cooperation both at global and regional level, including prompt notification of damage, studies, research programmes and exchange of data and information; -section 3- (Arts.202-203): technical cooperation, with a particular attention to be paid to the needs and situation of developing Countries; -section 4- (Arts. 204-206): monitoring of risks and effects of pollution; -section 5- (Arts.207-212): international and domestic norms for the prevention, reduction and control of the pollution of the marine environment, from different sources such as land, dumping, ships or atmosphere; -section 6- (Arts. 213-222): application of domestic and international rules, and the powers of coastal States; -section 7- (Arts. 223-233): guarantees, especially towards foreign ships; -section 8- (Art. 234): the pollution of ice-covered areas; -section 9- (Art.235): international responsibility of States; -section 10- (Art.236): immunity of warships; -section 11- (Art. 237): coordination with duties deriving from other international agreements.

[17] For a comprehensive analysis of the evolution of th econcept of sovereignty over natural resources see Nico SCHRIJVER, *Sovereignty over Natural Resources: Balancing Rights and Duties,* Cambridge, 1997, and Marco GESTRI, *La gestione delle risorse naturali di interesse generale per la Comunità Internazionale*, Torino, Giappichelli, 1996.

[18] This idea was strongly supported especially by developing parties after World War II. The first Resolution of the UN General Assembly in this regards dates back to 1962 (Res. 1803/XVII), which proclaimed "the right of peoples and nations to permanent sovereignty over their natural wealth and resources", further recommending that "the sovereign right of every State to dispose of its natural wealth and resources should be respected [...] in accordance with their national interests". In the Seventies this idea became one of the most significant manifestation of the so-called New International Economic Order (UNGA Res. 3201 S-VI, 1974). The intention of such declarations however was primarily aimed at contesting the existing rules guaranteeing the protection of foreign investments against expropriations or nationalisations, and never prevented the international community from gaining awareness of the problems relating to the environmental protection.

[19] An intermediate step in this evolution can be the idea of shared resources. It stems from the basic acknowledgement that some resources can be better managed in a shared manner, due to the geographical contiguity to a small number of States (the most blatant example concerns international watercourses, but also migratory species may fall into this category).

The idea of common property over living resources in the high seas has developed in parallel with the claims of coastal States to push their sovereignty as far as possible from the coastal line. The actual extension of national jurisdiction over marine living resources has always been a controversial point in international relations, and some important legal proceedings were started before the International Court of Justice in order to decide on the rights and duties of States in this regard.

The most important case is the 1974 Fisheries Jurisdiction Case[20], which had to deal with the legitimacy of the claim of Iceland to expand its exclusive fishing rights far beyond the 12-mile limit recognised at that time as a rule of customary international law. The decision of the Court on the one hand recognised the high-seas rights of established fishing States beyond the limit of coastal State fisheries jurisdiction, but on the other hand it came to the conclusion that a coastal State, in certain circumstances, enjoyed preferential rights of access to the high-seas fishery resources in the waters adjacent to its coasts. However, in the Court's view, all the States had an obligation of reasonable use, as well as one to negotiate in good faith in order to find an equitable solution, giving due consideration to the needs of conservation.

This decision is important for two reasons concerning the scope of our analysis[21]. First, it supported a trend, which was already taking place in the international practice, of extension of coastal claims far beyond the traditional limit of the 12 miles. This new orientation, strongly supported by developing countries that wanted to exercise control over the foreign operators fishing their offshore waters, and possibly gain some financial revenue through license fees, as well as some sort of access to technological know-how, was finally crystallised in the regulation of the 200-mile exclusive economic zone (EEZ)[22].

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[20] See Fisheries Jurisdiction Case, ICJ, 1974, UK against Iceland, which can be read on the website of the International Court of Justice www.icj-cij.org.

[21] See Patricia BIRNIE and Alan BOYLE, *cit. supra*, p. 142.

[22] National claims up to 200 miles from the coast were advanced before the UNCLOS entered into force, and even while negotiations on this matter were still taking place.

If every Country in the world decided to declare a 200-mile EEZ, it has been calculated that only about ten per cent of commercial fishing would take place beyond the limits of the various EEZs[23]. The high-sea-common-property regime therefore does not involve a massive quantity of marine living resources, due to the process of expansion of coastal rights over resources, even though three significant exceptions can be identified:

a) highly migratory species[24];

b) straddling stocks[25];

c) surplus stocks within domestic jurisdiction but available for exploitation by other States[26].

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[23] See Robin R. CHURCHILL and A. Vaughan LOWE, *The Law of the Sea, Third Edition,* Manchester, 1999, p. 288, and Appendix I, pp. 463-472, for an exhaustive list of claims to maritime zones.

[24] See UNCLOS, Art. 64 (Highly migratory species)"1.The coastal State and other States whose nationals fish in the region for the highly migratory species listed in Annex I shall cooperate directly or through appropriate international organizations with a view to ensuring conservation and promoting the objective of optimum utilization of such species throughout the region, both within and beyond the exclusive economic zone. In regions for which no appropriate international organization exists, the coastal State and other States whose nationals harvest these species in the region shall cooperate to establish such an organization and participate in its work".

[25] See UNCLOS, Art. 63 (Stocks occurring within the exclusive economic zones of two or more coastal States or both within the exclusive economic zone and in an area beyond and adjacent to it) "1.Where the same stock or stocks of associated species occur within the exclusive economic zones of two or more coastal States, these States shall seek, either directly or through appropriate subregional or regional organizations, to agree upon the measures necessary to coordinate and ensure the conservation and development of such stocks without prejudice to the other provisions of this Part.2. Where the same stock or stocks of associated species occur both within the exclusive economic zone and in an area beyond and adjacent to the zone, the coastal State and the States fishing for such stocks in the adjacent area shall seek, either directly or through appropriate subregional or regional organizations, to agree upon the measures necessary for the conservation of these stocks in the adjacent area."

[26] See UNCLOS, Art. 62(2) (Utilization of the living resources): "2.The coastal State shall determine its capacity to harvest the living resources of the exclusive economic zone. Where the coastal State does not have the capacity to harvest the entire allowable catch, it shall, through agreements or other arrangements and pursuant to the terms, conditions, laws and regulations referred to in paragraph 4, give other States access to the surplus of the allowable catch, having particular regard to the provisions of articles 69 and 70, especially in relation to the developing States mentioned therein".

In these three cases, the rights of coastal States do not prevent other members of the international community from taking part, in different measures, in the exploitation of living resources.

Secondly, the International Court of Justice supported for the first time the existence of a duty, upon States, to manage common resources in en equitable manner, and furthermore to conserve them by means of a sustainable utilisation[27].

After this analysis of the scope and implications of the concept of common property, it clearly appears how different it is compared to that of common concern, which is relevant to the climate change regime. This conclusion results from the consideration that the concept of common property is used to define a particular area by exclusion from all the other areas of the sea which are under national sovereignty (more or less stringent according to the proximity to the domestic coasts). The situation we have to face while dealing with the problem of climate change is significantly different and the need to consider the atmosphere as a global unit, beyond national influences and spatial delimitations, must once again be emphasised.

The second case of application, relating to the natural resources, is also blatantly irrelevant to the climate change regime, where there are no resources which can be captured or extracted by the members of the international community. The atmosphere as a whole is the resource which must be preserved.

2.1.3) COMMON HERITAGE

Another expression used in international agreements dealing with the environment and with spaces beyond national jurisdiction is that of common heritage[28].

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[27] For this concept, see *infra*, 2.5, on sustainable development.

[28] See Alan BOYLE, *International Law and the Protection of Global Atmosphere: concepts, categories and principles*, *cit. supra*, pp. 9 ff., Patricia BIRNIE & Alan BOYLE, *cit. supra*, pp. 143 ff., Baslar, *The Concept of the Common Heritage of Mankind in International Law*, The Hague, 1998, Andrea GATTINI, *Il common heritage of mankind: una rivoluzione in diritto internazionale?*, in "Comunicazione e Studi", 1985, vol. XVII-XVIII, pp. 651-731.

Defining a resource as common heritage of humankind implies a regime which does not take national claims of sovereignty into consideration, and in which the exploitation and conservation activities are carried out in favour of mankind as a whole, according to the principle of non-discrimination.[29] As underlined in academic opinion[30], even though the expression is used rather frequently, it acquires its full legal meaning only in relation to two Conventions, the 1979 Moon Treaty and the 1982 UNCLOS[31], while a third example may be that of the Antarctic region, but this is rather controversial.

The 1979 Moon Treaty[32] applies to the moon and the celestial bodies other than the Earth, and establishes the idea of common heritage of mankind in providing that the use of the moon and its natural resources must be for peaceful purposes only[33]. This idea is expressly deployed in Art. 11, which furthermore specifies what it means more concretely.[34] In exploration and exploitation activities special

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[29] For a similar notion, province of all mankind, see the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Washington, London, Moscow, 27/01/1967, Art. 1: "1.The exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind. 2.Outer space, including the moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies. 3.There shall be freedom of scientific investigation in outer space, including the moon and other celestial bodies, and States shall facilitate and encourage international co-operation in such investigation."

[30] See Patricia BIRNIE & Alan BOYLE, *cit. supra*, p. 143: "Although the term common heritage is frequently used loosely by environmentalists to refer either to all the living and non-living resources of nature or to the global environment as an ecological entity, for legal purposes the term is currently confined to the narrow meaning attributed to it in two conventions, namely the 1979 Moon Treaty and the 1982 UNCLOS".

[31] Other treaties deploying this or similar expressions are the 1972 World Heritage Convention, which, in its Preamble, defines natural and cultural heritage as "part of the world heritage of mankind as a whole", as well as the 1983 FAO Plant Genetics Undertaking, which, in Art. 1, refers to plant genetic resources as "a heritage of mankind".

[32] Agreement governing the activities of States on the Moon and other Celestial Bodies, opened for signature at New York on 18 December 1979.

[33] See Moon Treaty, Art. 3(1).

[34] See Moon Treaty, Art. 11, para. 1:"The Moon and its natural resources are the common heritage of mankind, which finds its expression in the provisions of this Agreement, in particular in paragraph 5 of this article", as well as para. 5: "States Parties to this Agreement hereby undertake to establish an international regime, including appropriate procedures, to govern the

attention must be paid to the existing environmental balance[35], in the interest of present and future generations (as is evidently required by the idea of heritage)[36]. The underlying thought is that, in consideration of the difficulties of exploring and exploiting the moon, even though only few States can afford to take an active part in the regime, all the members of the international community must nonetheless be allowed to share in the rewards of such activities.

This concept, which is likely to remain rather abstract as far as the exploitation of celestial bodies is concerned, appeared to be more concretely implemented in the second case we have mentioned, that is the regulation of the activities to be carried out in the deep seabed beyond national jurisdictions (the so-called Area)[37]. Far before the adoption of the UNCLOS, it was the General Assembly that approved in 1970 a "Declaration of Principles Governing the Sea Bed and Ocean Floor, and the Subsoil Thereof, beyond the Limits of National Jurisdiction"[38].

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exploitation of the natural resources of the moon as such exploitation is about to become feasible."

[35] See Moon Treaty, Art. 7, according to which parties are required to "take measures to prevent the disruption of the existing balance of its environment whether by introducing adverse changes in that environment, by its harmful contamination through the introduction of extra-environmental matter or otherwise. States parties shall also take measures to avoid harmfully affecting the environment of the earth through the introduction of extraterritorial matter or otherwise".

[36] See Moon Treaty, Art. 4, maintaining that "1.The exploration and use of the moon shall be the province of all mankind and shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development. Due regard shall be paid to interests of present and future generations as well as to the need to promote higher standards of living conditions of economic and social progress and development in accordance with the Charter of the United Nations.2. States Parties shall be guided by the principle of co-operation and mutual assistance in all their activities concerning the exploration and use of the moon. International co-operation in pursuance of this Agreement should be as wide as possible and may take place on a multilateral basis, on a bilateral basis or through international intergovernmental organisations".

[37] On the exploitation of deep-sea-beds see Tullio TREVES (ed.), *Lo sfruttamento dei fondi marini internazionali,* MI, 1982, Felipe H. PAOLILLO, *The Insitutional Arrangements for the International Sea-bed and their Impact on the Evolution on International Organisations*, in "RC", 1984, I, pp. 246-ff., Tullio SCOVAZZI, *Fondi Marini e patriimonio comune dell'Umanità,* in "Rivista di Diritto Internazionale", 1984, pp. 249 ss., Alexandre KISS, *La notion de patrimoine commun de l'humanité*, in "RC", 1982, II, pp. 493 ff., Umberto LEANZA, Luigi SICO, *La Sovranità Territoriale: Il il mare,* TO, 2001.

[38] This Declaration was adopted as General Assembly Resolution 2749 by 108 votes to nil with 14 abstentions.

It declared, *inter alia*,[39]:

1) The sea bed and ocean floor, and the subsoil thereof, beyond the limits of national jurisdiction (hereinafter referred to as the Area), as well as the resources of the Area, are the common heritage of mankind.
2) The Area shall not be subject to appropriation by any means by States or persons, natural or juridical, and no State shall claim or exercise sovereignty or sovereign rights over any part thereof.
3) No State or person, natural or juridical, shall claim, exercise or acquire rights with respect to the Area or its resources incompatible with the international regime to be established and the principles of this Declaration.
4) All activities regarding the exploration and exploitation of the resources of the Area and other related activities shall be governed by the international regime to be established

Art. 136, Art. 137 and Art. 140 of UNCLOS lay down the fundamental principles governing this regime.

Art. 136 declares that "the Area and its resources are common heritage of humankind". But what kind of resources must be included in this definition? It is another article, Art. 133, which specifies that resources, for these purposes, are all solid, liquid or gaseous mineral resources *in situ* in the Area at or beneath the seabed, including polymetallic nodules.[40] This means that the concept of heritage of humankind is not comprehensive, since the regime does not include living resources of the Area as well as other non-mineral resources of the Area (e.g.: thermal energy).

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[39] See Robin R. CHURCHILL and A.Vaughan LOWE, *cit. supra*, p. 227, in which the authors maintain that "the main reason for its general acceptability was its delphic construction".

[40] See Art. 133(a); Art. 133(b) further specifies that these resources, once extracted, are called minerals. The first expeditions discovering the presence of nodules scattered across the seabed dates back to the second half of the XIX century. These nodules, which can be found at depths of around 3,500 metres, are normally composed of manganese (about one fourth), iron, nickel, copper and cobalt, though the precise percentage of course varies from area to area.

Both of these resources are subject to the different regime of the high seas[41]. Art. 137 specifies the legal status of the Area and its resources, whose basic characteristics are:

-impossibility of any claim or exercise of sovereignty or sovereign rights over any part of the Area or its resources;

-prohibition of appropriation by any State or natural or juridical person;

-declaration that the resources of the Area are vested in mankind as a whole, on whose behalf the Authority shall act;

-prohibition of alienation (alienation of minerals recovered from the Area must take place in accordance with the rules, regulations and procedures of the Authority).

Another fundamental aspect of the regime is stated by Art. 140 (Benefit of Mankind)[42], whose second paragraph maintains that "the Authority shall provide for the equitable sharing of financial and other economic benefits derived from activities in the Area through any appropriate mechanisms, on a non-discriminatory basis." This was fuelled by the idea, which would lately turn out to be quite wrong, of future great mineral wealth. The difficult task was then trying to translate this abstract definition into a workable regime, given due consideration to the opposite positions:

-developed countries did not want a structure too heavily bureaucratic, in favour of a supervising body which would not obstruct the activities of countries wishing to conduct mining[43];

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[41] See Art. 135 (Legal status of the superjacent water and air space):"Neither this Part nor any rights granted or exercised pursuant thereto shall affect the legal status of the waters superjacent to the Area or that of the airspace above those waters".

[42] Art. 140 (1) extends the concept of the benefit of humankind to the activities in the Area, which "shall be carried out for the benefit of mankind as a whole, irrespective of the geographical location of States, whether coastal or land-locked, and taking into particular consideration the interests and needs of developing States [...]".

[43] For a detailed analysis of the concept of common heritage as applied to the deep sea-bed, see Markus G. SCHMIDT, *Common heritage or common burden? The United States position on the development of a regime for deep sea-bed mining in the law of the sea convention*, Oxford, 1989.

-developing countries favoured a strong international mechanism, which would not depend on rich countries as for mining and other activities, but could act on its own and then share the proceeds among the international community as a whole, taking into particular account the needs of developing countries[44].

The balance was finally struck with the establishment of the International Sea Bed Authority, as the operational entity of the regime[45]. The idea of free exploration and exploitation is here replaced by the need to obtain a specific authorisation by the Authority[46]. The exploitation activities are based on the parallel system, also referred to as banking system.

According to this system, one or more Countries wishing to exploit a particular area, must submit to the Authority a plan of work, specifying two sites of equal commercial value (contiguity is not a prerequisite). The Authority will then choose one of the two sectors, which will be exploited by the Enterprise, a separate organ of the Authority, and representing the interests of the international community as a whole. The role and functions of such an entity were among the most controversial factors, leading developed Countries not to ratify the Convention.

A further international agreement was therefore necessary, and on 28 July 1994, after informal consultations and negotiations under the auspices of the UN Secretary General, the "Agreement Relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982" was

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[44] The position of developing countries was deeply influenced by the so-called Pardo's proposal, after the name of the Maltese Ambassador to the UN, who suggested in August 1967 that the sea-bed beyond national jurisdiction should be declared the Common Heritage of Mankind. His suggestion was based on the idea of internationalising the sea-bed beyond a narrow territorial sea, at the same time providing some sort of international management.

[45] As has been observed (see Robin R. CHURCHILL and A.Vaughan LOWE, *cit. supra*, pp. 239-240), "It would be wrong to say that the Area is 'governed' by the Authority, because many uses of the Area, such as pipeline and cable laying and scientific research unconnected with the exploitation of sea-bed resources, may be carried out without the need for the Authority's permission (LOSC arts 112, 143, 256). But the Authority is the body through which States Parties are to organise and control all activities concerned with sea-bed minerals beyond national jurisdiction (LOSC arts 156,157)".

[46] In contrast to this, the first stage of exploitation under this system, i.e. prospecting, is essentially free, requiring only notification to the Authority, as well as a written undertaking to observe the Convention rules on environmental protection and co-operation in programmes for training personnel from developing States.

adopted[47]. It created substantial modifications to the original regime, trying to meet the objections raised by developed Countries. The most bureaucratic aspects were made more market-oriented: the Authority was simplified in its structure, the Enterprise was forced to start joint ventures with western operators, the duty to transfer technology to developing States was turned into a vaguer duty of cooperation with the Authority in obtaining technology for the Enterprise and developing States, the obligation of financial transfer from developed Countries was made laxer.

After the entry into force of this further agreement, apart from the complex problems of treaty law raised by the Implementation Agreement[48], one may be led to wonder whether the idea of common heritage of humankind still informs the regime.

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[47] Many factors led to the positive conclusion of negotiations, including the concern that without such major contributors as the USA, the UK and the Federal Republic of Germany, the Authority would have serious difficulties in operating, the decline in world metal markets in the 1980s, which made sea-bed mining commercially unattractive, the collapse of the communist regimes, the desire to see the UNCLOS finally entering into force as a universally accepted regime for the marine spaces. The relationship between the Agreement and Part XI of UNCLOS is specified in Art. 2, according to which "The provisions of this Agreement and Part XI shall be interpreted and applied together as a single instrument. In the event of any inconsistency between this Agreement and Part XI, the provisions of this Agreement shall prevail." Art. 4 furthermore states that "1. After the adoption of this Agreement, any instrument of ratification or formal confirmation of or accession to the Convention shall also represent consent to be bound by this Agreement.
2. No State or entity may establish its consent to be bound by this Agreement unless it has previously established or establishes at the same time its consent to be bound by the Convention."

[48] As has been stressed by academic opinion (see Robin CHURCHILL and Vaughan LOWE, *cit. supra*, p. 20) "The 1994 Implementation Agreement is a curious creature. The 1982 LOSC does not permit reservations (Arts 309, 310), and the procedures for its amendments are both protracted and open only to States Parties (arts 311-317). Neither route was suitable for modifications of the Convention sought by the industrialised States that remained outside the Convention. Instead, the 1994 Implementation Agreement was made, its title disingenuously implying that it was concerned to put into effect the 1982 provisions rather than to change them. In fact, it stipulates that several provisions of Part XI of the LOSC 'shall not apply' and modifies the effect of others". Another problem relates to the situation of those States (more than twenty) that did not ratify the Agreement but are part of the UNCLOS. In theory those States could choose to remain bound by the regulation of the sea-bed regime as envisaged by the UNCLOS, but in practice, the difficulties in performing mining activities will make this hypothesis of little relevance.

First of all, it is important to stress that, in spite of the significant changes in the regime, the idea of the Area and its resources as common heritage of humankind is confirmed by the preamble of the Agreement[49], in line with the provision of the UNCLOS according to which "States Parties agree that there shall be no amendments to the basic principle relating to the common heritage of mankind set forth in article 136 and that they shall not be party to any agreement in derogation thereof.[50]" From the point of view of theoretic speculation therefore, the international community supports the idea of a regime in which the financial benefits deriving from the exploitation of certain areas must be shared among all States, and cannot be considered as a privilege for those happy few that can afford the most advanced technologies.

Of course, the idea of an international mining corporation (Enterprise) acting for the interests of the whole of the international community, an international institution (the Authority) allocating the payments made by the commercial operators among the States[51], as well as a system based on compulsory transfer of technology would have been more remarkable signs of the concept of common heritage of humankind, but one has to face the actual conditions in which international relations take place and develop. As emphasised by some authors[52], the incredible profits that States imagined to gain from the exploitation of the deep sea bed are very far from actually occurring, and therefore developed States felt the need of some concrete incentives to embark in such exploitation activities.

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[49] "Reaffirming that the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction (hereinafter referred to as "the Area"), as well as the resources of the Area, are the common heritage of mankind".

[50] See UNCLOS, Art. 311(6).

[51] The UNCLOS (art. 151.10, modified by the Agreement) requires the Authority to establish a system of financial support for those developing States suffering adverse effects on their export earnings or economies as a result of falls in mineral prices caused by sea bed mining.

[52] See Robin CHURCHILL and Vaughan LOWE, *cit. supra*, p. 253: "The claims made in the 1960s of unimaginable wealth seem unlikely ever to be realised. Certainly, for the foreseeable future the most concrete dividend from the deep sea bed is likely to be in the form of knowledge and expertise channelled through the databases and training programmes organised by the Authority and the mining companies".

If the core elements of a regime based on the principle of common heritage of humankind are to be found in the impossibility of appropriation by single States, a keen interest in the preservation as well as an institutional framework to manage the system for the benefit of the international community as whole, one cannot avoid wondering whether the Antarctic Treaty system falls within this scope or not. The problem stems from the difficulty in outlining the boundaries of this concept, which is not regarded as a norm of international law, and whose concrete application must take into account the peculiarities of the regime to which it may be applied.

The international treaties regulating the Antarctic region do not expressly mention this concept, even though the preamble to the Antarctic Treaty declares that "it is in the interest of all mankind that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord [...]"[53], and furthermore proclaims "the interests of science and the progress of all mankind[54]". Also in General Assembly Resolutions[55] it is possible to find some reference to this idea of commonality. In 1994, a resolution was adopted by consensus, without a formal vote, declaring that "the management, exploration and use of Antarctica should be conducted [...] in the interest of maintaining international peace and security and of promoting international co-operation for the benefit of mankind as a whole", at the same time welcoming "the increasing awareness of an interest in Antarctica shown by the international community, and convinced of the advantages to the whole of mankind of a better knowledge of Antarctica " and proclaiming "its conviction that, in the interest of all mankind, Antarctica should continue forever to be used exclusively for peaceful

[53] See Antarctic Treaty, Washington, 1 December 1959, Preamble, para. 2.
[54] See Antarctic Treaty, Washington, 1 December 1959, Preamble, para. 4.
[55] Cfr. Ris. Gen. NU n. 40/156 del 21.1.1985, as a first example. On the legal regime of the Antarctic continent see Francesco FRANCIONI and Tullio SCOVAZZI (eds.), *International Law for Antarctica, 2nd edition,* The Hague, London, Boston, 1996.

purposes and that it should not become the scene or object of international discord [...][56]".

It is rather evident how these texts, even without a specific mention of the principle of common heritage, nonetheless seem to go in the same direction. One cannot avoid noting on the other hand the vocal opposition coming from those States that claim territorial sovereignty over portions of Antarctica[57]. If we analyse the actual content of the legal provisions concerning the regime, many aspects are clearly derived from the idea that the interest of all States must be taken into consideration, such as:

-freezing of national claims[58];

-non-militarisation[59];

-non-nuclearisation[60];

-protection of the environment[61];

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[56] See UNGA Res. 49/80, 15 December 1994, Preamble, paras. 6, 14 and 15.

[57] Seven States advanced claims of sovereignty over Antarctica: Australia, New Zealand, Chile, Argentina, France, The United Kingdom and Norway.

[58] See The Antarctic Treaty, Washington, 1 December 1959,Art. IV.2 ("No acts or activities taking place while the present Treaty is in force shall constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in Antarctica or create any rights of sovereignty in Antarctica. No new claim, or enlargement of an existing claim, to territorial sovereignty in Antarctica shall be asserted while the present Treaty is in force"), as well as Art. VI ("The provisions of the present Treaty shall apply to the area south of 60° South Latitude, including all ice shelves, but nothing in the present Treaty shall prejudice or in any way affect the rights, or the exercise of the rights, of any State under international law with regard to the high seas within that area").

[59] See the 1959 Antarctic Treaty: Preamble (para. 2:"Recognizing that it is in the interest of all mankind that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord", as well as para. 5:"Convinced also that a treaty ensuring the use of Antarctica for peaceful purposes only and the continuance of international harmony in Antarctica will further the purposes and principles embodied in the Charter of the United Nations") and Art. I ("1. Antarctica shall be used for peaceful purposes only. There shall be prohibited, *inter alia*, any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military manoeuvres, as well as the testing of any type of weapons. 2.The present Treaty shall not prevent the use of military personnel or equipment for scientific research or for any other peaceful purpose".)

[60] See the 1959 Antarctic Treaty: Art. V ("1.Any nuclear explosions in Antarctica and the disposal there of radioactive waste material shall be prohibited. 2.In the event of the conclusion f international agreements concerning the use of nuclear energy, including nuclear explosions and the disposal of radioactive waste material, to which all of the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX are parties, the rules established under such agreements shall apply in Antarctica").

-regulation of mineral resource activities[62];

-freedom of scientific research[63].

Part of academic opinion[64] denies the possibility of construing the legal regime for Antarctica as common heritage of humankind, in consideration of the lack of both a substantial equality among all States in the decision-making process, and clear provisions on equitable sharing of potential financial benefits.

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[61] See the Convention for the Conservation of Antarctic Seals, London, 1 June 1972, requiring parties to limit annually the number of seals to kill or capture, at the same time granting complete protection to certain species (Art. 3, Art. 4 and Annex), the Convention on the Conservation of Antarctic Marine Living Resources, Canberra, 20 May 1980, whose objective is the conservation and rational use of the marine living resources in the area forming the Antarctic marine ecosystem, and the Protocol on Environmental Protection to the Antarctic Treaty, Madrid, 4 October 1991, with its five annexes, which introduced a comprehensive system including 1) environmental impact assessment (see Art. 8 and Annex I); 2) protection of fauna and flora inclusive of marine species (see Annex II, linking the permit to interfere with flora and fauna to scientific or educational activities); 3) waste management and disposal (see Annex III; 4) protection of the marine environment (see Annex IV, prohibiting or regulating the discharge of oil or oily and other mixtures into the sea -Art.3-, prohibiting the discharge of noxious liquid substances -Art.4-, certain garbage -Art.5- and certain sewage-Art.6-); 5) area protection and management (See Annex V, providing for the designation of Antarctic Specially Protected Areas -Art.3-, and Antarctic Specially Managed Areas –Art.4-).

[62]See Convention on the Regulation of Antarctic Mineral Resource Activities, Wellington, 2 June 1988, which faced the opposition of some Countries(namely France and Australia), and was then surpassed by the 1991 Environmental Protocol, which introduced a fifty-year moratorium on any mineral resource activities in the Antarctic area (Art. 7: Prohibition of mineral resource activities: Any activity relating to mineral resources, other than scientific research, shall be prohibited).

[63] See the Environmental Protocol, Art. 3.1 ("The protection of the Antarctic environment and dependent and associated eco-systems and the intrinsic value of Antarctica, including its wilderness and aesthetic values and its values as an area for the conduct of scientific research, in particular research essential to understanding the global environment, shall be fundamental considerations in the planning and conduct of all activities in the Antarctic Treaty area") and 3.3 ("Activities shall be planned and conducted in the Antarctic Treaty area so as to accord priority to scientific research and to preserve the value of Antarctica as an area for the conduct of such research, including research essential to understanding the global environment"). The definition of Antarctica as a "natural reserve devoted to peace and science" is significant, but disappointing for the supporter of the establishment of the Antarctci Continent as a "world park".

[64] See Jonathan I. CHARNEY, *The Antarctic System and Customary International Law*, in Francesco FRANCIONI and Tullio SCOVAZZI, *cit. supra*, p. 80: "the differences lie primarily with regard to questions of decision-making and perhaps equitable sharing of the benefits of potential Antarctic mineral resource exploitation", so that "one cannot conclude today that as a matter of international law Antarctica is the common heritage of mankind". The issue of the possibility of concretely benefitting from the common heritage is emphasised also by Andrea GATTINI, *cit. supra*, pp. 706-ff, who notes the difficulties of establishing a form of legal representation of the interests of humankind, beyond those of sovereign States.

Nonetheless, it is impossible to ignore the peculiarities of the regime, and the express provisions which make the Antarctic continent an area where individual States' needs cannot play a leading role, but the interests and concerns of the international community as a whole must be given full consideration. The aim of protecting Antarctica as the common heritage of humankind can be achieved also by decentralised applications by single States, without a clear and undisputed definition enshrined in an international agreement[65], and the concrete practice of States is demonstrating the collective efforts to protect the Antarctic region, for the benefit of the international community as a whole.

2.1.4) CLIMATE CHANGE AS A COMMON CONCERN OF HUMANKIND: LEGAL IMPLICATIONS

If terminology in itself must not be overestimated, one cannot but wonder whether the choice to refer to climate change as a common concern, and not as common property or common heritage of humankind, was a fully aware decision. We think that such a choice was inevitable, in consideration of the fundamental differences with the Seabed, the Moon or the Antarctic region. The atmosphere as a whole in fact cannot be conceived as an area to exploit, although for the benefit of the entire international community.

The focus is thus on preservation from polluting activities, which anyway are carried out by every State, although in different degrees and with different impacts. The reference to the concept of common concern of humankind should therefore be seen in relation to each State's interest in the conservation of a healthy

[65] See Francesco FRANCIONI, *Introduction: A Decade of Development in Antarctic International Law*, in Francesco FRANCIONI and Tullio SCOVAZZI, *cit. supra*, p. 9: "the Antarctic experience shows that in the international society, as much as in national societies, the general community interest can best be achieved by the spontaneous initiative of individual actors or groups motivated by their enlightened self-interest, rather than by the preordained determination of an assumed general interest by a centralized authority claiming a monopoly over the definition and administration of the common good".

atmosphere, and consequently to the possibility of invoking States' responsibility for damage to the climate[66].

According to classical rules on international responsibility of States for wrongful acts[67], a State is responsible for the violation of an international obligation, whether arising from customs or treaty provisions, which is attributable to its conduct (action or omission)[68]. Traditionally the regime of international responsibility revolved around the notion of injured State, as the State which was directly affected by the unlawful conduct and is therefore entitled to invoke the international responsibility of the wrong-doer[69]. Nonetheless, since international law includes not only bilateral obligations, but also obligations intended to protect common interests of a generic kind (such as peace and security, or the environment), also the possibility of invoking international responsibility is now broader, in order to reflect this evolution.[70] In the final work of the ILC we can find 2 different articles dealing with the concept of injured State as well as with the invocation of international responsibility: art. 42 and art. 48. Art. 42 provides for the definition of the concept of injured State, in a relatively narrow manner.[71]

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[66] According to Philippe SANDS, *cit. supra*, p. 287, considering climate change as a common concern of humankind brings about, besides the commitment of all States to take measures to combat it, also a legal responsibility to prevent damage to it.

[67] See the Draft Articles on Responsibility of States for Internationally Wrongful Acts, adopted by the International Law Commission (ILC) during its 53rd session, 2001, available from the website of the ILC http://www.un.org/law/ilc .

[68] See Draft Articles, art. 2: "There is an internationally wrongful act of a State when conduct consisting of an action or omission: a) Is attributable to the State under international law; and b) Constitutes a breach of an international obligation of the State".

[69] According to Art. 33 of the Draft Articles, the responsibility of States may be invoked by an injured party other than a State (for instance by an individual applicant to the European Court of Human Rights), but this is outside the scope of our work.

[70] See Jacqueline PEEL, *New State Responsibility Rules and Compliance with Multilateral Environmental Obligations: Some Case studies of How the New Rules Might Apply in the International Environmental Context*, in "Review of European Community and International Environmental Law", vol. 10(1), 2001, pp. 82-97.

[71] Art. 42 is closely modelled on art. 60 of the Vienna Convention on the Law of Treaties, which relates to material breach of treaties, and which has a narrower scope, being concerned with the invocation of the material breach by another party as a ground for its suspension or termination. The analogy basically rests on the identification of three possible cases for the invocation of responsibility.

Three different cases may be identified to justify the invocation, as an injured State, of the responsibility of another State:

a) the State has an individual right to the performance of an obligation (Art. 42.1.a);[72]
b) the State is specifically affected by the breach of an obligation to which it is a party, even if such an obligation is not owed to it individually (Art. 42.1.b.i);[73]
c) the performance of the obligation by the responsible State is a necessary condition of its performance by all the other States (Art. 42.1.b.ii).[74]

In cases of damage to the climate, it would be extremely difficult for a State to be considered as directly and individually injured pursuant to Art. 42.1.a, due to the peculiarities of climate change and its global dimension, and on the other hand climate change obligations cannot be construed as integral or interdependent obligations pursuant to Art. 42.1.b.ii. But the international regime established with the UNFCCC expressly recognises climate change as a common concern of humankind, and as a consequence all States parties to such a multilateral treaty have a legal interest in the performance of the relevant obligations.[75] However, for

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[72] See the ILC Commentary, art. 42, paras. 6-7, which identifies the cases of an obligation arising under a bilateral treaty between the two States parties to it, a unilateral commitment made by one State to another, a rule of general international law, a binding judgement of an international court or tribunal imposing obligations on one State party to the litigation for the benefit of the other party or a multilateral treaty where particular performance is incumbent under the treaty as between one State party and another ("for example, the obligation of the receiving State under article 22 of the Vienna Convention on Diplomatic Relations to protect the premises of a mission is owed to the sending State").

[73] See the ILC Commentary, art. 42, para. 12, for the identification of a concrete example, on which see *infra* footnote 10.

[74] This third case relates to the so-called integral or interdependent obligations, mentioned also in The Vienna Convention on the Law of Treaties, art. 60.2.b, such as those arising from art. IV of the 1959 Antarctic Treaty, prohibiting claims of sovereignty, or a disarmament treaty, a nuclear free zone treaty, or "any other treaty where each parties' performance is effectively conditioned upon and requires the performance of each of the others" (see ILC Commentary, Art. 42, para. 13).

[75] See the ILC Commentary, art. 42, para. 11, where it is explained how the situation pursuant to Art. 42.1.b.i refers to "a group of States, consisting of all or a considerable number of States in the world or in a given region, which have combined to achieve some collective purpose and which may be considered for that purpose as making up a community of States of a functional character".

a State to fit into the situation pursuant to Art. 42.1.b.i, it must be affected in a particularly adverse manner as compared to the other States bound by the same obligation.[76] Since there is no definition of the concept of a specifically affected State, the evaluation must take place on case-by-case basis, with a particular attention to the object and purpose of the obligation breached and the facts of the case[77]. In the climate change regime, in consideration of both the scientific evidence as reflected in the IPCC reports[78] and the specific references to the needs and situation of particular groups of States throughout the treaty provisions[79], one may come to the conclusion that some States may fall under this category. The situation of such States as small islands in fact is characterised by a particular vulnerability, to which the treaty provisions try to give appropriate answers. The consequences of climate change are going to be more severe upon them, and may even lead to their complete destruction due to the sea-level rise, unlike for the rest of the States.

But even if States cannot prove to be specifically affected by the breach, the new article 48 provides for a further enlargement of the possibility of invoking States' responsibility under international law. Two hypotheses are put forward, in which the invocation of responsibility is by a State other than an injured State:

a) The obligation breached is owed to a group of States including that State, and is established for the protection of the collective interest (obligations *erga omnes partes*) (Art. 48.1.a);

[76] The ILC Commentary, art. 42, para. 12, mentions the case of pollution of the high seas in breach of article 194 of the United Nations Convention on the Law of the Sea, which "may particularly impact on one or several States whose breaches may be polluted by toxic residues or whose coastal fisheries may be closed. In that case, independently of any general interest of the States parties to the 1982 Convention in the preservation of the marine environment, those coastal States parties should be considered as injured by the breach".

[77] See the ILC Commentary, art. 42, para. 12: "for a State to be considered injured it must be affected by the breach in a way which distinguishes it from the generality of other States to which the obligation is owed".

[78] See *supra*, at chapter 1.3.

[79] See *infra*, at 2.2 of this same chapter, on the influence of the principle of the common but differentiated responsibilities on the regime, as well as chapter 3 on the different sets of obligations according to different groups of States.

b) The obligation breached is owed to the international community as a whole (obligations *erga omnes*) (Art. 48.1.b).

Art. 48 moves beyond the traditional bilateral relationship wrong-doing Sate/injured State, so as to encompass those situations in which specific obligations are established for the protection of collective interests, whether of a group of States or of the international community as a whole. In such cases, responsibility may be invoked by States which are not themselves injured in the sense of art. 42.[80]

A State falls under the first situation, pursuant to Art, 48.1.a, if two conditions are met: the obligation is owed to a group to which the State invoking responsibility belongs, and the obligation is established for the protection of a collective interest, over and above any interests of the States concerned individually.[81] On the other hand, the second situation refers to the breach of those obligations that are owed to the international community as a whole.[82] The difference rests basically on the fact that since all States are members of the international community, there is no additional criteria to fulfil in order to invoke responsibility.

Nonetheless, the possibility of invoking the international responsibility of another State, granted by Art. 48 also to States which are not directly injured, entails more

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[80] There are cases in which two States enjoy certain rights, but may in practice be in a different position, because only one of those States has been prevented from enjoying such rights (for example the right of freedom of navigation beyond the limits of the territorial sea), and can be therefore considered as injured State. Since the rights established by the rule, whether customary or deriving from a treaty, are provided for the benefit of several States (the States parties to the Convention or the whole of the international community), in abstract two situations may be thought of: a) considering both States as injured States and differentiating the set of rights they can invoke against the State in breach, or b) considering only the first State as injured State at the same time granting the other State some rights vis-à-vis the State in breach. The ILC Draft Articles have moved from the first to the second approach. (See TREVES, *Diritto Internazionale: problemi fondamentali,* MI, 2005, pp. 559-560).

[81] See ILC Commentary, Art. 48, paras. 6-7, mentioning some examples such as a regional nuclear free zone treaty or a regional system for the protection of human rights

[82] According to the ILC Commentary, Art. 48, para. 8, "the provision intends to give effect to the International Court's statement in the Barcelona Traction case, where the Court drew 'an essential distinction' between obligations owed to particular States and those owed 'towards the international community as a whole'. With regard to the latter, the Court went on to state that 'in view of the importance of the rights involved, all States can be held to have a legal interest in their protection; they are obligations *erga omnes*".

limited consequences as compared to those available to injured States pursuant to Art. 42. According to the second paragraph of Art. 48 in fact, a State is entitled to request cessation of the wrongful act and assurances and guarantees of non-repetition under Art. 30, as well as reparation, in the forms established by the draft articles themselves. In such cases, the State invoking responsibility will seek reparation in the interest of the injured State, if any, or of the beneficiaries of the obligation breached.[83]

As far as the climate change regime is concerned, the express definition of common concern of humankind seems to recognise the global dimension of the problem, which involves all States parties to the regime in the protection of a collective interest. Although the legal status implied in this definition is different from the concepts of common property or common heritage of humankind, it is clearly recognised that global warming cannot be treated in the same way as transboundary air pollution, whose character is bilateral or regional. The main consequence is that, since injuries to climate change cannot be linked to a specific Country, the possibility of invoking international responsibility in this respect is not limited to the directly and individually injured State. The enforcement of the international obligations may thus be achieved more easily, but it is important to underline how States may play a more significant role, in the verification of the respect of the international obligations, through multilateral institutions, compared to the possibility of having legal standing before the International Court of Justice.[84] In the climate change regime, there is a provision of the UNFCCC providing that the COP will be empowered to promote the implementation of the obligations by States parties[85], and we will see in the rest of this work how the

[83] See Art. 48.2(b); see also, *infra*, chapter 6.1.1 on the possible recourse to countermeasures.

[84] In this sense see Patricia BIRNIE and Alan BOYLE, *cit. supra*, p. 100. This is a consequence of the cautious approach of the ICJ, which does not recognise the right of an *actio popularis* (ICJ, Northern Cameroon case, 02/12/1963, as well as ICJ, South West Africa, 18/07/1966).

[85] See UNFCCC, Art. 7:"The Conference of the Parties, as the supreme body of this Convention, shall keep under regular review the implementation of the Convention and any related legal instruments that the Conference of the Parties may adopt, and shall make, within its mandate, the decisions necessary to promote the effective implementation of the Convention".

regime can grant the respect of the obligation by States parties[86], through the actions of the COP and other *ad hoc* institutions, in light of the principle of common concern of humankind.

Once we acknowledge that the climate change regime has been established for the protection of a collective interest, the question arises whether climate change obligations should be construed as *erga omnes* or *erga omnes partes*. The difference will be that in the former case every State is entitled to invoke international responsibility for the violation of a norm of customary international law, while in the latter situation such a possibility rests only on those States that have decided to become parties to the treaty-based regime. The concept of *erga omnes* obligations[87], as recognised by the International Court of Justice, refers to specific situation such as the outlawing of acts of aggression, the outlawing of genocide, the protection from slavery, the protection from racial discrimination[88], and more recently, the right to self-determination.[89]

In academic opinion some attempts have been made to broaden this concept, and candidates range from human rights[90] to environmental protection[91]. In this respect in particular, the idea of obligations *erga omnes* may be strictly linked with the

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[86] See *infra*, chapter 6.1.

[87] On the concept of obligations *erga omnes* see André DE HOOGH, *Obligations Erga Omnes and International Crimes: A Theoretical Inquiry into the Implementation and Enforcement of the International Responsibility of States*, The Hague, London, Boston, 1996, Maurizio RAGAZZI, *The Concept of International Obligations Erga Omnes*, Oxford, 1997, Claudia ANNACKER, *The Legal Régime of Erga Omnes Obligations*, in "Austrian Journal of Public International Law", vol. 46, 1993-94, pp. 131-166, Giorgio GAJA, *In tema di reazione alle violazioni di obblighi erga omnes*, in Nerina BOSCHIERO (a cura di), *Ordine Internazionale e valori etici, VIII Convegno SIDI, Napoli,* 2004, pp. 43-46, Michael BYERS, *Conceptualising the Relationship between Jus Cogens and Erga Omnes Rules*, in "Nordic Journal of International Law, 1997, vol. 66, pp. 211-239, Christian DOMINICE', *The International Responsibility of States for Breach of Multilateral Obligations*, in "European Journal of International Law", 1999, vol. 10, No. 2, pp. 353-363, Linos-Alexander SICILIANOS, *The Classification of Obligations and the Multilateral Dimension of the Relations of International Responsibility,* in "European Journal of International Law", 2002, vol. 13, No. 5, pp. 1127-1145.

[88] See ICJ, *Barcelona Traction Light and Power Ltd.*, 05/02/1970, para. 32.

[89] See ICJ, *East Timor* , 30/06/1995, para. 29.

[90] See Silvia SANNA, *Diritti dei lavoratori e disciplina del commercio nel diritto internazionale,* Milano, 2004, pp. 160-168, in which the Author suggests that the notion of obligations *erga omnes* should apply also to the protection of core labour standards.

[91] See Maurizio RAGAZZI, *cit. supra*, pp. 154-163.

need to protect those common spaces beyond national jurisdiction.[92] Although the protection of the climate system is recognised as a common concern, and goes therefore beyond the traditional bilateral dimension, before construing international climate change obligations as *erga omnes*, it is fundamental to provide such presumed obligations with a concrete and meaningful content. We will see in the rest of this chapter whether general international law recognises a customary rule prohibiting GHG emissions in the atmosphere, and consequently whether such obligations are binding upon all the international community or only upon those States that have freely accepted specific commitments through international agreements.

2.2) COMMON BUT DIFFERENTIATED RESPONSIBILITIES:

2.2.1) DIFFERENTIAL TREATMENT IN INTERNATIONAL LAW

This principle, which is gaining more and more importance in international environmental law, departs from the general rule of sovereign equality of States and is strictly linked with the idea of equity, on the assumption that different situations among States need differential treatment[93]. It is deployed also in other

[92] In this sense, with a special emphasis on marine pollution, see Paolo PICONE, *Obblighi reciproci ed obblighi erga omnes degli Stati nel campo della protezione internazionale dell'ambiente marino dall'inquinamento*, in Vincenzo STARACE (cura di), *Diritto internazionale e protezione dell'ambiente marino*, Milano, 1983, pp. 15-135.

[93] On the concepts of differential treatment and of common but differentiated responsibility, see John ASHTON and Xueman WANG, *Equity and Climate: In Principle and in Practice*, in Elliot Diringer et al., *Beyond Kyoto: Advancing the International Effort Against Climate Change*, Pew Center on Global Climate Change, Arlington, 2003; Marie-Claire CORDONIER SEGGER, Ashfaq KHALFAN, Markus GEHRING and M TOERING, *Prospects for Principles of International Environmental Law after the WSSD: Common but Differentiated Resposibility, Precaution and Participation,* in "Review of European Community & International Environmental Law", vol. 12(1), 2003, pp. 54-68; Philippe CULLET, *Differential Treatment in International Law: Towards a New Paradigm of Inter-state Relations*, in "European Journal of International Law", 1999, vol. 10, N. 3, pp. 549-582; Philippe CULLET, *Equity and Flexibility Mechanisms in the Climate Change regime: Conceptual and Practical Issues,* "Review of European Community & International Environmental Law", vol. 8(2), 1999, pp. 168-179; Philippe CULLET, *Differential Treatment in International Environmental Law*, Ashgate, 2003;

areas of international law, particularly in international trade law, where the idea of special and differential treatment has always informed the regime of multilateral commercial exchanges[94].

In the Rio Declaration we can find two principles relating to the idea of common but differentiated responsibilities among the international community.

Principle 6: "The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given

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Duncan FRENCH, *Developing States and International Environmental Law: the Importance of Differentiated Responsibilities,* in "International and Comparative Law Quarterly", vol. 49, January 2000, pp. 35-60; P.G. HARRIS, *Common but Differentiated Responsibility: the Kyoto Protocol and United States Policy,* in "New York University Environmental Law Journal", 1999, Vol. 7, pp. 27-48; Paolo GALIZZI, *International Law and the Protection of the Environment: "Shared Universal" Rules or "Unethical" Imposition of a western Agenda?,* in Nerina BOSCHIERO (ed.), *Ordine Internazionale e Valori Etici,* VII convegno SIDI, Napoli, 2003; Sergio MARCHISIO, *La responsabilità comune ma differenziata degli Stati nella promozione dello sviluppo sostenibile,* in G.BATTAGLINI (ed.) *Problemi della protezione internazionale dell'ambiente,* Annali dell'Università di Ferrara, nuova serie, Sez. V, pp. 49-60, Yoshiro MATSUI, *Some Aspects of the Principle of "Common but Differentiated Responsibilities",* in "International Environmental Agreements: Politics, Law and Economics", 2002, vol. 2, pp. 151-171; Yoshiro MATSUI, *The Principle of "Common but Differentiated Responsibilities",* in Nico SCHRIJVER and Friedl WEISS (EDS.), *International Law and Sustainable Development. Principles and Practice,* Leiden, 2004; Eriika MELKAS, *Sovereignty and Equity within the Framework of the Climate Regime,* "Review of European Community and International Environmental Law", 11 (2), 2002, pp.115-128; Lavanya RAJAMANI, *The Principle of Common but Differentiated Responsibility and the Balance of Commitments under the Climate Change Regime,* "Review of European Community & International Environmental Law", vol. 9, 2000, pp. 120-131; Philippe SANDS, *Principles of International Environmental Law, vol. I: Frameworks, standards and implementation,* Manchester University Press, 2003; M. WEISSLITZ, *Rethinking the Equitable Principle of Common but Differentiated Responsibilities: Differential Versus Absolute Norms of Compliance and Contribution in the Climate Change Context,* in "Colorado Journal of Environmental Law and Policy", 2002, pp. 473-509, Christopher D. STONE, *Common but Differentiated Responsibilities in International Law,* in "American Journal of International Law", 2004, vol. 98, No. 2, pp. 276-301.

[94]The international trade system, after the establishment of the WTO with the Marrakesh Agreements of 1994, contains about 145 provisions of special and differential treatment in favour of developing Countries, 22 of which apply to least developed Countries. The WTO Committee on Trade and Development divided these special provisions in 6 categories (see WT/COMTD/W/77/Rev.1, 2001, available on the website www.wto.org): (i) provisions aimed at increasing the trade opportunities of developing country Members; (ii) provisions under which WTO Members should safeguard the interests of developing country Members; (iii) flexibility of commitments, of actions, and use of policy instruments; (iv) transitional time periods; (v) technical assistance; and (vi) provisions relating to least-developed country Members. On the evolution of the special and differential treatment in the international trade system see, *e multis,* Claudio DORDI, *La discriminazione commerciale nel diritto internazionale,* Milano, 2002, pp. 253-334.

special priority [...]" and Principle 7: "States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, *States have common but differentiated responsibilities*. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of technologies and financial resources they command"[95]. The principle therefore implies a double level: first of all it points to the past, with the acknowledgment of the historical share in the consumption of natural resources, and secondly it indicates the way for the future, by stressing the better and more abundant technological and financial resources commanded by developing Countries.

The justification for differential treatment does not lie merely on the difficulties of developing countries in meeting the requirements of legal standards or prescriptions, as commonly happens in international trade relations, but has got its roots also in the different contribution of different members of the international community to the degradation of the environment. Differentiated levels of commitment in international environmental agreements can furthermore serve the purpose of inducing hesitant States, especially developing States, to become parties and actively implement such multilateral treaties[96], as well as of

[95] See Rio Declaration on Environment and Development, Principles 6 and 7 (emphasis added).

[96] Duncan FRENCH, *Developing States and International Environmental Law: the Importance of differentiated Responsibilities*, *cit. supra*, p.46, identifies "a number of distinct but mutually related grounds for the existence of differentiated obligations in international environmental law", i.e. "the historical responsibility of the North for current environmental degradation", "its present capability to remedy such problems", the "recognition within the international community that international obligations must take into account the specific needs and circumstances of developing countries", "the emerging principle on States to assist each other in international relations to achieve sustainable development-the idea of a 'global partnership' ", and "an inducement to hesitant States to sign and then implement multilateral environmental agreements". Special stress on this point is given by Ximena FUENTES, *International Law-making in the Field of Sustainable Development: the Unequal Competition between Development and the Environment*, in Nico SCHRIJVER and Friedl WEISS, *International Law and Sustainable Development: Principles and Practice*, Leiden, 2004, p.26 ("There are good reasons to think that one of the principal aims of the inclusion of common but differentiated

overcoming the minimum common denominator approach to environmental problems.

The point of the past contribution of rich Countries to the degradation of the environment is always particularly emphasised by developing Countries, which tried to adopt, in Rio, a far more explicit text, in which the "pressures" of developed societies on the environment would have been "the unsustainable patterns of production and consumption", considered "the major cause of the continuing deterioration of the global environment", and the reference to the technology and financial resources would have turned into a more pregnant duty upon developed Countries to "provide adequate, new and additional financial resources and environmentally sound technologies on preferential and concessional terms to developing countries to enable them to achieve sustainable development". But of course developed Countries opposed such a blatant admission of responsibility for environmental damage[97]. In spite of this softened version, its content is rather self-evident, and is more and more often referred to in international agreements for the protection of the environment.

Even before the inclusion in the Rio Declaration, the need to take into account the specific situation of developing Countries was present, although the principle of common but differentiated responsibilities was not expressly mentioned as is now intended[98].

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responsibilities has been to secure ample participation by all States, which is considered essential to tackle global environmental problems effectively").

[97] On the different positions of States and their misgiving about the formulation of the principle see Duncan FRENCH, *cit. supra*, pp.35-38.

[98] See for example:1972 Stockholm Declaration: "the applicability of standards which are valid for the most advanced Countries but which may be inappropriate and of unwarranted social cost for the developing Countries"; the 1974 Charter of Economic Rights and Duties of States: "the environmental policies of all States should enhance and not adversely affect the present and future development potential of developing Countries"; 1982 UNCLOS: Preamble: "taking into account the interests and needs of mankind as a whole and, in particular, the special interests and needs of developing countries, whether coastal or land-locked", and Art. 207: "taking into account economic capacity and the need for economic development"; 1985 Vienna Convention on the Protection of the Ozone Layer: Preamble: "the circumstances and particular requirements of developing Countries", and Art. 4: "taking into account in particular the needs of the developing Countries" as for legal, scientific and technical cooperation; 1987 Montreal Protocol

2.2.2) COMMON BUT DIFFERENTIATED RESPONSIBILITIES WITHIN THE CLIMATE CHANGE LEGAL REGIME

In the climate change regime this principle acquires a central role.

Already in the Preamble on the UNFCCC the Parties note that "the largest share of historical and current global emissions of greenhouse gases has originated in developed Countries, that per capita emissions in developing Countries are still relatively low and that the share of global emissions originating in developing Countries will grow to meet their social and development needs", and furthermore acknowledge that "the global nature of climate change calls for the widest possible cooperation by all Countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions", and finally recognise that "States should enact effective environmental legislation, that environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply, and that standards applied by some Countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing Countries"[99].

In this way all the aspects of the principle are made explicit:

on Substances that Deplete the Ozone Layer: Preamble: "special provision is required to meet the needs of developing Countries ", and Art. 10 concerning a duty to cooperate in promoting technical assistance: "Take into account in particular the needs of developing Countries", and furthermore "shall pay special attention to the needs and circumstances of the developing countries; 1989 Basel Convention on Control of Transboundary Movements of Hazardous Wastes: Preamble: "taking into account the limited capabilities of the developing Countries to manage hazardous wastes" as well as "the need to promote the transfer of technology [...] particularly to developing Countries", and Art. 4.2(e): "take appropriate measures to not allow the export of hazardous wastes [...] to States belonging to an economic and/or political integration organisation [...] particularly developing Countries", and Art. 10.3: "employ appropriate means to cooperate in order to assist developing Countries";1992 Convention on Biological Diversity: various articles (5,7,8,9,10,11 and 14) impose obligations to implement "as far as possible and as appropriate"; 1994 Desertification Convention: art. 7: "Parties shall give priority to affected African country parties, in the light of the particular situation prevailing in that region, while not neglecting affected developing country Parties in other regions".

[99] See UNFCCC, Preamble, paragraphs 3, 6 and 10.

-the idea of the common responsibility towards the phenomenon, and the subsequent need to jointly cooperate to tackle its global implications;
-the acknowledgement of the historical burden of GHG emissions in the atmosphere, which involves the present as well as the past;
-the consideration of the developmental needs of poorer Countries, which cannot be required to apply the same environmental standards as the industrialised world;
-the recognition of different capabilities in terms of social and economic conditions.

But besides the Preamble, reference can be found also in Art. 3, devoted to principles.

Art. 3.1 states that "The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and *in accordance with their common but differentiated responsibilities and respective capabilities*. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof", and paragraph 2 further establishes that "the specific needs and special circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change, and of those Parties, especially developing country Parties, that would have to bear a disproportionate or abnormal burden under the Convention, should be given full consideration" [100].

In this way a general framework has been established, and the specification of more detailed obligations will have to apply, in some way or another, the general

[100] See UNFCCC, Art. 3(1) e 3(2), emphasis added.

principle in actual commitments[101], despite the absence of a clear prescriptive language[102].

Before setting out the commitments of the Parties to the Convention, Art. 4 recognises once again that all Parties, in carrying out their obligations, will take "into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances"[103]. But this article is not limited to the declaration of the principle in a general form; it also specifies all the cases of particular situations and needs that must be taken into consideration in the implementation of the Convention, besides providing for specific commitments for developed Countries[104]. Paragraph 6 is devoted to "Parties included in Annex I undergoing the process of transition to a market economy", which need "a certain degree of flexibility"[105]. Paragraph 7 puts a significant limit to the efforts of developing Countries, by stating that the extent to which they "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"[106].

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[101] Duncan FRENCH, *Developing States and International Environmental Law: the Importance of differentiated Responsibilities*, *cit. supra*, pp. 41-42, states that "Article 3 is an excellent example of how a treaty can not only guide the future implementation of its own provisions, but also the subsequent development of future protocols. In effect, the principles contained within article 3 provide a written constitution, which the Conference of the Parties is duty bound to apply when fulfilling its obligations under the Convention".

[102] See Lavanda RAJAMANI, *cit. supra*, p. 124: "Perhaps [...] the notion of common but differentiated responsibility within the FCCC cannot technically be termed a 'principle'; it is couched in discretionary and guiding rather than prescriptive language and applies only to parties in relation to the FCCC. While it is not legally binding it is still a significant force within the climate regime".

[103] See UNFCCC Art.4(1).

[104] See UNFCCC Art.4(2).

[105] See UNFCCC Art.4(6).

[106] See UNFCCC Art.4(7). This provision can be found also in the Biodiversity Convention (Art. 20 and Art. 21), and has sometimes resulted in a sort of arguing in a circle, with some developed Countries (notably the USA) unwilling to assume further obligations without a meaningful

But this general inclusion of developing Countries' needs was evidently not considered sufficient, and the subsequent paragraph sets out a comprehensive list of Countries, whose specific needs and concerns result from the adverse effects of climate change and/or the impact of the implementation of response measures, and shall therefore be given full consideration in the implementation of the commitments.

This list includes[107]:

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;
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.

As if this were not enough, paragraph 9 further underlines the "specific needs and special situations of the least developed countries in their actions with regard to funding and transfer of technology"[108]. All these plethoric references to special needs and situations cannot but raise some doubts as for its necessity and actual scope, especially in consideration of the fact that practically all developing Countries (and even some developed Countries!) can be subsumed under one or more of the categories under Art.4(8).

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participation of bigger developing Countries, and developing Countries refusing to discuss any sort of commitment before rich countries have delivered their own.

[107] See UNFCCC Art. 4(8).

[108] See UNFCCC Art. 4(9).

Do we have to infer that each condition listed in letters a) to i) entitles the State to further special treatment, besides that reserved to developing Countries in general? Was the intention of the legislator to create a sort of grid of rights and duties where each particular condition relating to the geography, the economy, the society of the State corresponds to an equally particular set of obligations or preferential treatment? Are we shaping a legal regime *à la carte*?

The impression is that every State or group of States tried to get as much as possible from their peculiarities, which sometimes gives rise to some misgiving, as in the case of the particular consideration to give to "Parties with economies that are highly dependent on income generated from the production, processing and export, and/or consumption of fossil fuels and associated energy-intensive products and/or the use of fossil fuels for which such Parties have serious difficulties in switching to alternatives"[109], which is an unnecessary repetition of the provision of Art. 4.8(h), and whose beneficiaries are probably not the most needy Countries taking part in the regime.[110]

The principle of common but differentiated responsibilities was not abandoned in subsequent negotiations: when Parties felt the need to review the balance of commitments as established in the UNFCCC, they agreed on a document usually referred to as the Berlin Mandate[111]. Without entering the details of such text, suffice it to say that it specifies that the process shall be guided by, *inter alia*, Article 3.1 (principle of common but differentiated responsibilities), entailing the need not to introduce any new commitments for developing Countries. This paved the way for the adoption of the Kyoto Protocol, which follows the same track,

[109] See Art. 4(10).

[110] These provisions were evidently introduced under pressure of OPEC Countries, in the attempt to pave the way for future financial transfers as a consequence of the possible reduced importance of fossil fuels in the world economy.

[111] See Decision 1/CP.1, The Berlin Mandate: Review of Adequacy of Articles 4, para 2, sub-paragraph (a) and (b), of the Convention, including proposals related to a Protocol and decisions on follow-up, contained in the Report of the Conference of Parties on its first session held at Berlin from 28 March to 7 April 1995, FCCC/CO/1995/7/Add.1, which can be read from the website www.unfccc.int, *supra*, in Chapter 1.

recalling, in its Preamble, both the Berlin Mandate and Art. 3 of the UNFCCC on principles[112].

Furthermore, Art. 10, devoted to the advancement of the implementation of existing commitments, provides that "All Parties, taking into account *their common but differentiated responsibilities* and their specific national and regional development priorities, objectives and circumstances" will continue their efforts to implement existing commitments pursuant to the UNFCCC without introducing any new commitments for developing Countries.[113]

If we try to assess the actual influence of the principle of common but differentiated responsibility on the climate change regime, we cannot ignore the trend that emerged since the very beginning. States are aware of the complexity of the problem of the concentration of GHGs in the atmosphere and recognise their common responsibility: this can be seen as a sort of buttress of the milder idea of common concern we have analysed in the previous pages. Yet they acknowledge that, for a series of reasons deriving from the past, unfolding in the present and projected onto the future, it is neither fair nor possible to ask for the same level of commitments from every Country.

This idea underpins the UNFCCC, is reinforced in the Kyoto Protocol, and is constantly relied upon since then, not only in the climate change regime, but also in other international *fora* dealing with environmental matters, as an equitable principle to assist States in the shaping of sustainable development patterns: the New Delhi Declaration of Principles on International Law[114], the Johannesburg

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[112] See Kyoto Protocol, Preamble, paragraph 4 ("being guided by Article 3 of the Convention") and paragraph 5 ("pursuant to the Berlin Mandate adopted by decision 1/CP.1 of the Conference of the Parties to the Convention at its first session").

[113] See Kyoto Protocol, Art. 10(1), (emphasis added).

[114] The Principle of common but differentiated responsibilities is mentioned in the ILA New Delhi Declaration of Principles of International Law relating to Sustainable Development: "3.1 States and other relevant actors have common but differentiated responsibilities. All States are under a duty to cooperate in the achievement of global sustainable development and the protection of the environment. International organisations, corporations (including in particular transnational corporations), non-governmental organizations and civil society should cooperate in and contribute to this global partnership. Industrial concerns have also responsibilities pursuant to the polluter pays principle. 3.2 Differentiation of responsibilities, whilst principally

Plan of Implementation (JPOI), adopted at the end of the World Summit on Sustainable Development, which directly mentions it six times[115]. Although these text cannot be construed as legally binding, they are nonetheless an important manifestation of the growing importance States acknowledge to this principle. We will see in the next chapter how this idea of differential treatment informs almost every part of the climate change regime, and we consider the common but differentiated responsibilities as an appropriate guiding principle for the advancement and amelioration of the regime, in a dynamic manner, which should take into consideration the concrete situation of the different Parties involved, when it comes to determining the different levels of commitment.

Now it is the duty of developed Countries to take the lead in significantly combating the phenomenon, but time will come also for developing countries to be embarked in some sorts of commitments, which will of course take into account their common but differentiated responsibilities[116].

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based on the contribution that a State has made to the emergence of environmental problems, must also take into account the economic and developmental situation of the State [...].3.3 The special needs and interests of developing Countries and of Countries with economies in transition, with particular regard to least developed countries and those affected adversely by environmental, social and developmental considerations, should be recognised. 3.4 Developed countries bear a special burden of responsibilities in reducing and eliminating unsustainable patterns of production and consumption and in contributing to capacity-building in developing countries, *inter alia* by providing financial assistance and access to environmentally sound technology. In particular, developed countries should play a leading role and assume primary responsibility in matters of relevance to sustainable development."

[115] See JPOI, for example at para. 2, where States commit "to undertaking concrete actions and measures at all levels and to enhancing international cooperation, taking into account the Rio principles, including the principle of common but differentiated responsibilities as set out in Principle 7 of the Rio Declaration on Environment and Development", or also in the chapter on finance, as well as more specifically in para 20 for energy and para 38 for climate change.

[116] We therefore support the view expressed by Lavanda Rajamani, cit. supra, p. 130, who maintains that "however a certain latitude in time in undertaking commitments similar to the ones taken on by industrial countries under the regime is clearly required under the principle of common but differentiated responsibility, given the emphasis on 'respective capabilities' of developing countries. Indeed the FCCC itself endorses the value of time-dependent commitments. The first commitment period for Annex I countries was set for 2008-2012, a period of 10 years after the adoption of the Kyoto Protocol. It is perhaps appropriate then that developing countries be given such, if not more, latitude when the time arrives for them to take on mitigation commitments".

2.3) THE PRECAUTIONARY PRINCIPLE:

2.3.1) PRECAUTION AND THE ROLE OF SCIENCE IN DECISION-MAKING

The precautionary principle, otherwise referred to as precautionary approach or just precaution, is a manifestation of a preventive approach to the protection of the environment, from which, nonetheless, it is clearly distinguishable at the conceptual level[117]. If the preventive action requires to take all the necessary measures to prevent some damage to the environment whose causes and effects are well established, the precautionary principle requires a further step, that is acting in a pre-emptive manner even when scientific certainty on the merits is lacking.
Principle 15 of the Rio Declaration states that "in order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full

[117] On the precautionary principle see: Alessandro FODELLA, *Il movimento transfrontaliero di rifiuti pericolosi nel diritto internazionale*, TO, 2004, pp. 40-47. Patricia BIRNIE & Alan BOYLE, *cit. supra*, pp. 115-121; Marie-Claire CORDONIER SEGGER and Ashfaq KHALFAN, *cit. supra*, pp. 143-155; Pierre-Marie DUPUY, *Où en est le droit international de l'environnement à la fin du siècle ?*, in "Revue Générale de Droit International Public ", 1997-4, pp. 888-891 ; David FREESTONE, *The Precautionary Principle*, in Robin R. CHURCHILL & David FREESTONE, *cit. supra*, pp. 21-39; James L. HUFFMAN, *The Past and Future of Environmental Law*, "Environmental Law", vol. 30, winter 2000, n° 1, pp. 23-33; Mary Ellen O'CONNEL, *Enforcing the New International Law of the Environment*, "German Yearbook of International Law", vol. 35, 1992, p. 293; Christopher PINTO, *Some thoughts on the Making of International Environmental Law: A Cautionary Tale*, in Nico SCHRIJVER and Friedl WEISS (EDS.), *cit. supra*; Marthe TORRE-SCHAUB, *Le principe de précaution dans la lutte contre le réchauffement climatique : entre croissance économique et protection durable*, in "Revue européenne de droit de l'environnement", 2003, vol. 2, pp. 151-170 ; Max VALVERDE SOTO, *General Principles of International Environmental Law*, in "ILSA Journal of International and Comparative Law", 3, Fall 1996, pp. 193-ff ; Farhana YAMIN and Joanna DEPLEDGE, *cit. supra*; Philippe SANDS, *cit. supra*; Andre NOLLKAEMPER, *The precautionary Principle in International Environmental Law: What's New Under the Sun?*, in ""Marine Pollution Bulletin", 1991, vol. 22, pp. 3-ff; James CAMERON and J. ABOUCHAR, *The Precautionary Principle: A fundamental Principle of Law and Policy for the Protection of the Global Environment*, in "Boston College International and Comparative Law Review", 1991, vol. 14, pp. 1-ff; David FREESTONE and H. HEY (eds.), *The Precautionary Principle and International Law. The Challenge of Implementation*, The Hague, 1996; Tullio SCOVAZZI, *Sul principio precauzionale nel diritto internazionale dell'ambiente*, in "Rivista di Diritto Internazionale", 1992, pp. 699-ff.; A. TROUWBORST, *Evolution and Status of the Precautionary Principle in International Law*, The Hague, 2002.

scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation".

The importance of the principle emerges therefore in the relationship between science and policy-making. In the environmental field, if some form of scientific evidence must be used as a basis to take decisions, the problem is centred on the identification of the level of such evidence that can be considered as sufficient. Adopting a precautionary approach means altering the balance in favour of environmental concerns: in view of the difficulties of establishing the exact level of risks and damage, the irreversibility of detrimental acts against the environment entitles the policy-makers to take all the necessary measures to prevent serious consequences on natural resources.

The idea of precaution is widely spread in international agreements for the protection of the environment, whether as a principle (especially in European treaties and EC law[118]) or more generally as an approach (notably in global instruments[119]). The different terminology however reflects the uncertainty of the

[118] See e.g.:1992 Paris Convention for the Protection of the Marine Environment of the North-East Atlantic (Art.2); 1992 ECE Convention for the Protection of Transboundary Watercourses and Lakes (Art. 2.5); 1992 Maastricht Treaty on European Union (Art.174); 1994 Danube Convention (Art. 2.4); 1999 Rhine Convention (Art.4).

[119] See e.g.; (besides the UNFCCC, on which see infra): 1992 Biological Diversity Convention (Preamble), as well as its 2000 Cartagena Protocol on Biosafety; 1979 Convention on Long-Range Transboundary Air Pollution, as well as its 1994 Sulphur Protocol, 1998 Heavy Metals Protocol and 1998 Persistent Organic Pollutants Protocol; 1996 Protocol to the London Dumping Convention, (Art. 3);1987 Montreal Protocol on substances that deplete the ozone layer (Preamble: parties are "determined to protect the ozone layer by taking precautionary measures to control equitably total global emissions of substances that deplete it, with the ultimate objective of their elimination on the basis of developments in scientific knowledge, taking into account technical and economic considerations"); 1991 Bamako Convention on the ban of import into Africa and the control of Transboudary Movement and Management of Hazardous Wastes within Africa (Art. 4.3.f: Each Party shall strive to adopt and implement the preventive, precautionary approach to pollution problems which entails, *inter alia*, preventing the release into the environment of substances which may cause harm to humans or the environment without waiting for scientific proof regarding such harm. The parties shall cooperate with each other in taking the appropriate measures to implement the precautionary principle to pollution through the application of clean production methods, rather than the pursuit of a permissible emissions approach based on the assimilative capacity assumptions");1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes; 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10

legal status of precaution, which, however, was relied on, at least by some parties, in certain cases before important international tribunals.

2.3.2) THE PRECAUTIONARY PRINCIPLE IN THE CASE-LAW OF INTERNATIONAL COURTS AND TRIBUNAL:

-International Court of Justice: in the Nuclear tests case[120] and in the Gabcikovo-Nagymaros case[121] the precautionary principle has been invoked respectively by New Zealand and Hungary. The Court, however, never expressed its view on the issue of the legal status of such principle[122].

-International Tribunal for the Law of the Sea: in the Southern Bluefin tuna cases[123] New Zealand and Australia relied on the precautionary principle, and although the Tribunal did not expressly mention it, it nonetheless adopted a precautionary approach, in granting provisional measures for the conservation of tuna stocks, pending the final solution of the dispute, even without scientific certainty[124]. More recently, in the MOX case[125], Ireland expressly maintained the

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December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (Art.6).

[120] See ICJ, Request for an Examination of the Situation in accordance with para. 63 of the Court's judgement of 20 December 1974 in the nuclear tests (new Zealand v. France) case, Order of 22ndSeptember 1995, which can be read from the website www.icj-cij.org.

[121] See ICJ, Case Concerning the Gabcikovo-Nagymaros Project, Hungary/Slovakia, Judgement of 25th September 1997, which can be read form the website www.icj-cij.org.

[122] Only Judge Weeramantry, in his dissenting opinion to the Gabcikovo-Nagymaros case, approves of it.

[123] See ITLOS, Southern Bluefin Tuna cases (New Zealand v. Japan, Australia v. Japan) Order of 27 August 1999, which can be read from the website www.itlos.org.

[124] It has nonetheless been observed (by Patricia BIRNIE and Alan BOYLE, *cit. supra*, p.119) that "this has been regarded as an application of the precautionary approach, but it can be explained on the basis that the 1982 UN Convention on the Law of the Sea in effect requires a precautionary approach to fisheries conservation, or alternatively that a precautionary approach is inherent in the award of provisional measures." On this last point see the separate opinions of Judge Treves (para 9: "in my opinion, in order to resort to the precautionary approach for assessing the urgency of the measures to be prescribed in the present case, it is not necessary to hold the view that this approach is dictated by a rule of customary international law. The precautionary approach can be seen as a logical consequence of the need to ensure that, when the arbitral tribunal decides on the merits, the factual situation has not changed. In other words, a

customary nature of the precautionary principle. Similarly to what happened for the Southern Bluefin Tuna, the Tribunal did not refer directly to the principle, but underlined how "prudence and caution" required the parties to cooperate.[126]

-Appellate Body of the World Trade Organisation: in the Hormones case[127] the Appellate Body explicitly discussed the relationship of the precautionary principle to the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS agreement), which provides, in Art. 5.7: "In cases where relevant scientific evidence is insufficient, a Member may provisionally adopt sanitary or phytosanitary measures on the basis of available pertinent information, including that from the relevant international organisations as well as from sanitary or phytosanitary measures applied by other Members. In such circumstances, Members shall seek to obtain the additional information necessary fro a more objective assessment of risk and review the sanitary or phytosanitary measures accordingly within a reasonable period of time". While the EC supported the idea that the precautionary principle had reached the status of a generally accepted principle of international law, Canada and the USA denied this. The Appellate Body declined to apply the precautionary principle, without making a general pronouncement on the point, but observing that it is "less than clear whether the precautionary principle was a principle of general or customary international law"[128]. A more open attitude can clearly be noticed in the Asbestos case[129]: without expressly mentioning it, the Appellate Body used precautionary reasoning

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precautionary approach seems to me inherent in the very notion of provisional measures") and of Judge Laing, paras 16-19.

[125] See ITLOS, the MOX Plant Case, (Ireland v. United Kingdom), Request for Provisional Measures, Order of 3 December 2001, which can be read from the website www.itlos.org.

[126] For the different application of the principle in the two cases, see Alessandro FODELLA, *cit. supra*, p. 46, footnote 77, with the reference to the separate opinions of Judges Wolfrum and Treves.

[127] See Appellate Body Report, EC - Measures Concerning Meat and Meat Products (Hormones), WT/DS26/AB/R, adopted 13 February 1998, which can be read, like al the WTO cases quoted in this work, from the website www.wto.org.

[128] See Appellate Body Report, EC - Measures Concerning Meat and Meat Products (Hormones), WT/DS26/AB/R, para. 123.

[129] See Appellate Body Report, EC - Measures Affecting Asbestos and Asbestos-Containing Products, WT/DS135/AB/R, adopted 5 April 2001.

upholding France's ban on chrysotile asbestos due to its supposed carcinogenic effect. The Appellate Body expressly stated that each member has a right to impose its own domestic level of protection of human health, taking all the necessary measures to achieve it, and other members can only argue that a specific measure is not necessary to pursue that level of protection.[130]

The precautionary principle may clearly play a fundamental role in identifying such levels of protection. This analysis of the international case-law provides us with little help in the attempt of construing the exact legal value of precaution, which nonetheless is gaining more and more importance in international relations[131].

[130] An important decision, which is now pending in the WTO system, will be that relating to the GMOs-case, where the idea of precaution is at the heart of the EC decision to restrict the free circulation of products containing GMOs.

[131] The New Delhi Declaration of Principles of International Law Relating to Sustainable Development devotes a part to "The principle of the precautionary approach to human health, natural resources and ecosystems": "4.1:A precautionary approach is central to sustainable development in that it commits States, international organizations and the civil society, particularly the scientific and business communities, to avoid human activity which may cause significant harm to human health, natural resources or ecosystems, including in the light of scientific uncertainty. 4.2: Sustainable development requires that a precautionary approach with regard to human health, environmental protection and sustainable utilization of natural resources should include: a) accountability for harm caused (including, where appropriate, State responsibility); b) planning based on clear criteria and well-defined goals; c) consideration in an environmental impact assessment of all possible means to achieve an objective (including, in certain instances, not proceeding with an envisaged activity); and d)in respect of activities which may cause serious long-term or irreversible harm, establishing an appropriate burden of proof on the person or persons carrying out (or intending to carry out) the activity. 4.3 Decision-making processes should always endorse a precautionary approach to risk management and in particular should include the adoption of appropriate precautionary measures. 4.4: Precautionary measures should be based on up-to-date and independent scientific judgement and be transparent. They should not result in economic protectionism. Transparent structures should be established which involve all interested parties, including non-state actors, in the consultation process. Appropriate review by a judicial or administrative body should be available." Mention of precaution is made as well in the Johannesburg Plan of Implementation, as part of a commitment to improve "policy and decision-making at all levels through, *inter alia*, improved collaboration between natural and social scientists, and between scientists and policy makers".

2.3.3) THE PRECAUTIONARY PRINCIPLE IN THE CLIMATE CHANGE REGIME

Article 3 of the UNFCCC uses similar expressions to those of the Rio Declaration, establishing, in paragraph 3, that "the Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. 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. To achieve this, such policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors. Efforts to address climate change may be carried out cooperatively by interested Parties".

It has been underlined that the formulation contained in the UNFCCC is "slightly stronger" than the Rio version, in that cost-effectiveness limitations are only to be taken into consideration , and are not directly introduced in the principle[132]. The last part of Art. 3.3 does not concern directly the precautionary principle, but was influenced by energy exporting Parties, in an effort to soften mitigation commitments, with the explicit reference to sinks and to cooperation among Countries.

A precautionary approach was fundamental to involve the international community in the adoption of a multilateral treaty dealing with climate change, but its actual impact remains controversial. Part of academic opinion has long expressed a view

[132] See Farhana YAMIN and Joanna DEPLEDGE, *cit. supra.*

in favour of its acknowledgement as a principle of customary law[133], while others support a more cautious opinion[134].

There are in fact significant differences in the meaning (a more general approach or a more legally pregnant principle?), in its application (what is the exact threshold of risk before it becomes applicable?), and in its implications (is there a shift of the burden of proof, requiring the person who wishes to carry out an activity to prove that it will not cause harm to the environment?). Its importance, however, as a principle that can influence the choice of policymakers cannot be doubted[135], and in the climate change regime it was fundamental in triggering the process that resulted in the stipulation of international agreements to reduce GHGs.

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[133] See for instance Philippe SANDS, *Principles cit. supra*, already in its first edition, 1995, p. 213.

[134] See for instance Patricia BIRNIE and Alan BOYLE, *cit. supra*, p. 120, as well as Alessandro FODELLA, *cit. supra,*: "Appare condivisibile l'idea che sia troppo semplicistico porre la questione in termini di natura consuetudinaria o meno del principio precauzionale in quanto tale, considerando le incertezze sul suo contenuto multiforme e sulle sue implicazioni pratiche: si può probabilmente parlare della sua affermazione come principio interpretativo e criterio-guida, nella sua accezione più vicina al Principio 15 della Dichiarazione di Rio, ma come obbligo preciso e precetto sanzionabile per gli Stati esso appare ancora in evoluzione."

[135] See Patricia BIRNIE and Alan BOYLE, *cit. supra*, p. 120, according to whom "use by national and international courts, by international organisations, and in treaties, shows that the precautionary principle does have a legally important core on which there is international consensus –that in performing their obligations of environmental protection and sustainable use of natural resources states cannot rely on scientific uncertainty to justify inaction when there is enough evidence to establish the possibility of a risk of a serious harm, even if there is as yet no proof of harm. In this sense the precautionary principle is a principle of international law on which decision makers and courts may rely in the same way that they may be influenced by the principle of sustainable development". For one of the most radical views against the precautionary principle *see* the economist Jagdish BHAGWATI, *In Defense of Globalization*, New York, 2004, p. 152: "This is no principle, of course; it merely states that if I have a fear about anything but no respectable scientists will put their signatures to its credibility, then I should still be allowed to indulge it".

2.4) NO HARM PRINCIPLE: INTERNATIONAL RESPONSIBILITY FOR CLIMATE CHANGE HARM?

Principle 2 of the Rio Declaration, which reformulated Principle 21 of the Stockholm Declaration, is considered one of the most important rules concerning the protection of the environment. It establishes that "States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction."[136] It is therefore a direct application of the no-harm principle, and it recognises that national sovereignty must face some limits for the preservation of goods and spaces whose enjoyment is not a prerogative of a single State.

Academic opinion is almost unanimous in supporting the status of such principle as a norm of customary international law[137], on the basis of its presence in

[136] See Rio Declaration, Principle 2, whose formulation is very similar to that contained in the New Delhi Declaration of Principles of International Law Relating to Sustainable Development (1.1:"It is a well-established principle that, in accordance with international law, all States have the sovereign right to manage their own natural resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause significant damage to the environment of other States or of areas beyond the limits of national jurisdiction").

[137] See for example Patricia BIRNIE and Alan BOYLE, *cit. supra*, p. 89 ("it is beyond serious argument that States are required by international law to take adequate steps to control and regulate sources of serious global environmental pollution or transboundary harm within their territory or subject to their jurisdiction"); Philippe SANDS, *Principles, cit .supra*, p.186 ("Principle 21 is the cornerstone of international environmental law, [...] the sovereign right of states to exploit their own natural resources, and the responsibility, or obligation, not to cause damage to the environment of other states or of areas beyond the limits of national jurisdiction [...] they establish the basic obligation underlying international environmental law"), as well as p. 190 ("the responsibility not to cause damage to the environment of other states or of areas beyond national jurisdiction has been accepted as an obligation by all states [...] principle 21 is widely recognised to reflect a rule of customary international law"), Pierre-Marie DUPUY, *Où en est, cit. supra*, p. 880 ("Ce principe central a fait l'objet, à plusieurs reprises, d'une réitération par la Cour international de justice, qui l'a désigné comme une règle de droit international coutumier d'une importance déterminante"), Tullio TREVES, *Diritto Internazionale, cit. supra*, p. 567 ("La tendenza del diritto internazionale [...] sembra ormai indicare l'avvenuta formazione

numerous binding multilateral treaties[138] as well as by reference to some important decisions of international *fora*[139].

The UNFCCC refers to this principle in the Preamble, in which it recalls that "States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of

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di una regola generale che pone a carico degli Stati l'obbligo di evitare i danni o i rischi di danni derivati dalle attività in questione"), Peter MALANCZUK, *Akehurst's Modern Introduction to International Law*, 7th revised edition, London and New York, 1997, p. 251 ("Principle 2 confirms the prohibition of transboundary environmental harm laid down in Principle 21 of the Stockholm Declaration which is now recognized as customary law reflecting the principle of limited territorial sovereignty and integrity, but only as far as 'substantial' transboundary harm is involved"). See contra, Benedetto CONFORTI, *Diritto internazionale*, cit. p. 223 ("è assai azzardato ricostruire norme di diritto generale che impongono allo Stato obblighi precisi relativamente agli usi nocivi del territorio").

[138] See 1982 UNCLOS (Art. 192: "States have the obligation to protect and preserve the marine environment"; art. 193: "States have the sovereign right to exploit their natural resources pursuant to their environmental policies and in accordance with their duty to protect and preserve the marine environment"; art. 194.2: "States shall take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights in accordance with this Convention"); 1979 Convention on Long-Range Transboundary Air Pollution (Preamble); 1985 Convention for the Protection of the Ozone Layer (Preamble); UN Convention on Biodiversity (Art.3); 1997 Convention on the Law of the Non-Navigational Uses of International Watercourses (Arts. 7, 20, 21 and 23).

[139] See the Trail Smelter Case, USA/Canada, Decision of 16th April 1938 & 11th March 1941, in UN-RIAA, III, p. 1965: ("Under the principles of international law [...] no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the property of persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence"; the Lake Lanoux Arbitration, France/Spain, Decision of 16th November 1957, in ILR, 1957, p. 129: ("[...] there is a principle which prohibits the upstream State from altering the waters of a river in such a fashion as seriously to prejudicate the downstream State"); ICJ, Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion of 8th July 1996, in ICJ Reports, 1996, pp. 241-242, para. 29: ("the environment is not an abstraction but represents the living space, the quality of life and the very health of human beings, including generations unborn. The existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment").

national jurisdiction"[140]. Quite significantly though, this principle is not contained in Art. 3, devoted to the general principles informing the regime.

If we accept the existence of a norm of general international law on environmental protection, we have to wonder what kind of regime of responsibility it entails, as well as whether it is possible to apply it also to the fight against global warming. In other words, is it possible to construe a rule of general international law prohibiting climate change harm?

According to international law there is an internationally wrongful act in case two conditions are met: a conduct (action or omission) which is attributable to a State (the subjective element) resulting in the violation of an international obligation of the State (the objective element).[141] This scheme of course applies also to responsibility for environmental harm, but the peculiarities of the situations involved give rise to specific problems.[142]

First of all one has to wonder which regime of responsibility for a wrongful act is the most suitable to environmental harm. We will limit our analysis to customary international law, without considering the specific hypotheses established by multilateral environmental agreements[143], which in any case do not include those on climate change.

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[140] See UNFCCC, Preamble, para. 8.

[141] See ILC Draft Articles, art. 2. The violation is relevant irrespective of its nature (obligation of means or of results), or of its source (custom or convention).

[142] On responsibility for environmental harm and its peculiarities see Alexander KISS, *Present Limits to the Enforcement of State Responsibility for Environmental Damage,* in Francesco FRANCIONI and Tullio SCOVAZZI (Eds.), *International Responsibility for Environmental Harm*, London, 1991, Riccardo PISILLO MAZZESCHI, *Forms of International Responsibility for Environmental Harm,* in Francesco FRANCIONI and Tullio SCOVAZZI (Eds.), *International Responsibility for Environmental Harm*, London, 1991, Tullio SCOVAZZI, *La responsabilità internazionale in caso di inquinamento transfrontaliero*, in "Rivista Giuridica dell'Ambiente", 1986, pp. 272-ff, Patricia BIRNIE and Alan BOYLE, *cit. supra*, pp. 139-ff, Philippe SANDS, *cit. supra*, pp. 629-ff, Alessandro FODELLA, *cit. supra,* pp. 313-ff, Phoebe OKOWA, *State Responsibility for Transboundary Air Pollution in International Law, Oxford, 2000,* Michael BOWMAN and Alan BOYLE (eds.), *Environmental Damage in International and Comparative Law. Problems of Definition and Evaluation*, Oxford, 2002, Brian JONES and Neil PARPWORTH, *Environmental Liabilities,* Crayford, 2004.

[143] See for example the 1982 UN Convention on the Law of the Sea, or the Protocol to the 1989 Basel Convention on Transboundary Movement of Hazardous Waste.

Different hypotheses may be put forward in this respect, and the focus should be on the identification of the precise content of the general obligation for the protection of the environment.[144] We share the view expressed in academic opinion[145] that the general prohibition to cause massive pollution is not to be considered as violated for every single environmental damage, but it is applicable only in case of lack of due diligence by the State involved.

This norm was born in relation to phenomena of transboundary pollution, but it has further developed in such a manner as to encompass also those spaces not subject to the sovereignty of any States. And the atmosphere as a whole is a good example of one of the global commons, for which a different approach is needed, based on multilateral cooperation. We have seen how the express recognition of climate change as a common concern of humankind means overcoming the traditional bilateral dimension of international responsibility, centred on the notion of injured State. One has therefore to wonder whether in general international law it is possible to invoke the responsibility of a State for breach of climate change obligations. Many difficulties arise: even if we resort to the broader possibilities offered by art. 42 and art. 48 of the ILC draft articles on State responsibility, other issues remain controversial.

Firstly, the State responsible of the breach cannot be easily identified. Unlike other cases of pollution, such as dumping of waste in the ocean or transboundary

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[144] See Riccardo PISILLO MAZZESCHI, *cit. supra,* p. 23: "One must, in particolar, find out what are the substantive rules of general international law in force in the environmental sector, in order to determine whether there are general obligations of the States, what is possibly the content of such obligations (that is, whether they are due diligence obligations or obligations of result), and whether, therefore, their breach results in forms of responsibility for fault (or for lack of due diligence) or in forms of objective responsibility (relative or absolute)."

[145] See Riccardo PISILLO MAZZESCHI, *cit. supra,* p. 28: "International practice shows that a customary rule on environmental protection is now accepted in international law; but that such rule places only a general obligation on the States to prevent substantial pollution, an obligation which is limited by the due diligence rule, and only a responsibility for wrongful act for breach of such obligation. On the contrary, it does not seem to us, still from the point of view of customary international law, that there have been accepted either strict obligations not to pollute (obligations of results) and a corresponding objective responsibility of forms of liability without a wrongful act", Tullio TREVES, *Diritto Internazionale, cit. supra,* p. 568, Pierre-Mary DUPUY, *Où en est, cit. supra*, p.883, Alessandro FODELLA, *cit. supra*, p. 346.

emissions of particularly noxious substances, the peculiarity of climate change as a global phenomenon emerges. Every State in fact emits GHGs in the atmosphere, and therefore all the schemes based on a clear identification of the source-State patently show their limits, since every State should be deemed as responsible, *pro quota*, of the total amount of GHGs in the atmosphere.

Secondly, as far as climate change is concerned one has to consider that the international community, in its efforts to tackle the problem, has never had the aim of completely eliminating GHG emissions in the atmosphere. The objective of the UNFCCC is the stabilisation of such emissions at a level that would prevent dangerous anthropogenic interference with the climate system[146], and the emphasis is on the need to foster sustainable development. Only with the Kyoto Protocol States have established a set of specific commitments, different for each Country, which permits a clearer identification of the threshold of GHGs above which international responsibility may be invoked. But the Kyoto Protocol is an international treaty which does not seem to reflect customary rules of international law,[147] and is therefore binding only on those parties that have freely accepted it[148]. In the lack of clear provisions limiting the amount of GHGs that every State is allowed to emit in the atmosphere, the prohibition of environmental damage according to general international law seems to be an empty declaration, when applied to climate change.

If it does not seem to be possible to construe a regime of responsibility, under customary international law, for climate change damage, the activities which result in GHG emissions in the atmosphere might be included in those lawful activities

[146] See UNFCCC, art. 2.

[147] See Patricia BIRNIE and Alan BOYLE, *cit. supra*, p. 517: "Without dismissing the relevance of customary law as a basis for negotiation, it seems clear that, as in the case of ozone depletion, legally binding standards for the abatement of greenhouse gas emissions can only come through agreement on detailed commitments and international supervisory mechanisms".

[148] In this sense, as an application of the principle *pacta sunt servanda*, see Paolo FOIS, *Il consenso degli Stati ad obbligarsi e il principio pacta sunt servanda*, in "Rivista di Diritto Internazionale", 2001, n°1, pp. 5-32. On the limits of international treaties in the field of the environment, see Ugo VILLANI, *Gli strumenti giuridici internazionali di tutela dell'ambiente*, Napoli, 2001. On the effects of the principles and rules of the climate change regime on third States, see, *infra*, chapter 6.

which may bring about liability of a State in terms of the obligation to pay compensation. In such cases, concerning harmful or dangerous activities, equity considerations lead to the conclusion that the potential costs incurred by the victim of such dangerous operations should be borne by that same State enjoying its benefits.

The most important case is provided by the Convention on international liability for damage caused by space objects[149], which establishes two different forms of responsibility: absolute liability without a wrongful act for damage caused on the surface of the earth or to aircraft in flight[150], as well as fault responsibility for other kinds of damage.[151] But due to the particular situation involved, it represents a special regime, and cannot be considered as reflecting a rule of customary international law.[152]

Also the ILC Draft Articles on prevention of transboundary harm from hazardous activities[153] could not go beyond the elaboration of such concepts as the obligations to assess the risk[154], to inform the public, to notify to potentially affected States[155], all centred on the need of cooperation. They all relate to the prevention, and do not deal with liability and compensation. However, since GHG emissions in the atmosphere are the inevitable outcome of fundamental economic activities ranging from the energy sector, to agriculture, through transportation, rather than the result of dangerous activities, we do not think that such schemes of liability are the right approach to climate change.

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[149] See Convention on International Liability for Damage Caused by Space Objects, London, Moscow, Washington, 29 March 1972.

[150] See Art. 2. In this case, the injured State does not need to prove the fault of the launching State, and the causality link between the spatial object and the consequent damage is enough for the recognition of liability.

[151] See Art. 3.

[152] For a comprehensive reconstruction of the regimes of responsibilities of the Convention see Marco PEDRAZZI, *Danni causati da attività spaziali e responsabilità internazionale*, Milano, 1996, where the Author, at p. 338, underlines the specificity of the case, after a thorough analyses of States attitudes, denying it can reflect a rule of customary international law.

[153] See Draft articles on Prevention of Transboundary Harm from Hazardous Activities, adopted by the ILC at its fifty-third session, November 2001.

[154] See Art. 7.

[155] See Art. 8.

To conclude, it is not possible to construe a norm of general international law prohibiting the emissions of GHGs in the atmosphere. Customary international law recognises the existence of a rule to prevent substantial environmental damage, but with the limit of the due diligence rule. Although the recognition of climate change as a common concern of humankind allows the possibility of invoking international responsibility outside the strict boundaries of the directly and individually injured State, the impossibility of determining both the source-State and the exact content of such an obligation leads us to the conclusion that there are no rules of general international law prohibiting the emissions of GHGs.[156] Even though it is not possible to invoke obligations *erga omnes,* the collective interest for which the regime has been established allows the definition of climate change obligations as *erga omnes partes*. All States, recognising it as a common concern, seem to have accepted the duty to strive towards the reduction of GHGs in the atmosphere, but the specific commitments to achieve this goal need to be agreed upon through specific international legal instruments.

2.5) SUSTAINABLE DEVELOPMENT:

2.5.1) RECONCILING ECONOMIC GROWTH WITH ENVIRONMENTAL PROTECTION AND SOCIAL CONCERNS

The principle of sustainable development is gaining more and more importance in international relations, in that it touches upon various fields of international law[157]:

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[156] This view stems also from the analysis of State practice, as will emerge *infra* in chapter 3, from which it is possible to infer that the majority of States do not feel obliged to reduce their GHGs in the atmosphere, and when they agree to take on commitments in this regard, they make sure a great deal of flexibility is granted.

[157] John ASHTON and Xueman WANG,*cit. supra*; Jill BARRETT, *The Negotiation and Drafting of the Climate Change Convention,* in Robin R. CHURCHILL & David FREESTONE, *cit. supra*; Patricia BIRNIE & Alan BOYLE, *cit. supra*; Daniel BODANSKY, *The United Nations Framework Convention on Climate Change: A Commentary,* "Yale Journal of International Law", Vol. 18, 1993, pp. 451-558; Alan BOYLE and David FREESTONE (EDS.), *International Law and Sustainable Development. Past Achievements and Future Challenges,* Oxford, 2001;

It is construed as a point of balance among different needs, and three sectors can be identified: economic development, environmental protection and social concerns. The first organic definition dates back to 1987 report of the World Commission on Environment and Development (Our Common Future)[158].

It defines sustainable development as development "that meets the needs of the present without compromising the ability of future generations to meet their own needs", further noting that "ecology and economy are becoming ever more interwoven –locally, regionally, nationally, and globally- into a seamless net of causes and effects", and therefore "the key element of sustainable development is the recognition that economic and environmental goals are inextricably linked".

Robin R. CHURCHILL & David FREESTONE, *cit. supra*; Marie-Claire CORDONIER SEGGER and Ashfaq KHALFAN, *cit. supra*; Pierre-Marie DUPUY, *cit. supra* ; David FREESTONE, *The UN Framework Convention on Climate Change, the Kyoto Protocol, and the Kyoto Mechanisms*, in David FREESTONE and Charlotte STRECK, *Legal Aspects of Implementing the Kyoto Protocol Mechanisms: Making Kyoto Work*, New York, 2005; Ximena FUENTES, *International Law-making in the Field of Sustainable Development: The unequal Competition between Development and the Environment*, in Nico SCHRIJVER and Friedl WEISS (EDS.),*cit. supra*; Sanford E. GAINES, *International Trade, Environmental Protection and Development as a Sustainable Development Triangle*, in "Review of European Community and International Environmental Law", 11 (3), 2002, pp. 259-274; Vaughan LOWE, *Sustainable Development and Unsustainable Arguments*, in Alan BOYLE and David FREESTONE (EDS.), *cit. supra*; Gerhard LOIBL, *The Evolving Regime on Climate Change and Sustainable Development*, in Nico SCHRIJVER and Friedl WEISS (EDS.), *cit. supra*; Eriika MELKAS, *Sovereignty and Equity within the Framework of the Climate Regime*, "Review of European Community and International Environmental Law", 11 (2), 2002, pp.115-128; M. MUNASINGHE, "Development, Equity and Sustainability (DES) in the Context of Climate Change" , Geneva, 1999; Lluìs PARADELL-TRIUS, *Principles of International Environmental Law: an Overview*, in "Review of European Community & International Environmental Law", vol. 9, 2000, pp. 93-99; Catherine REDGWELL, *Intergenerational Equity and Global Warming*, in Robin R. CHURCHILL & David FREESTONE, *cit. supra*; Philippe SANDS, *Sustainable Development: Treaty, Custom and the Cross-fertilization of International Law*, in Alan BOYLE and David FREESTONE (EDS.), *cit. supra*; Philippe SANDS, *Principles of International Environmental Law, cit. supra*; Philippe SANDS, *International Law in the Field of Sustainable Development, cit. supra*; Nico SCHRIJVER and Friedl WEISS (EDS.), *cit. supra*; Arjun Sengupta, *Implementing the Right to Development*, in Nico SCHRIJVER and Friedl WEISS (EDS.), *cit. supra*; Peter SLINN, *Development Issues: The International Law of Development and Global Climate Change*, in Robin R. CHURCHILL & David FREESTONE, *cit. supra*; James C. WOOD, *Intergenerational Equity and Climate Change*, "Georgetown International Environmental Law Review", vol. 8, 1996, 293, pp. 299-ff.; Farhana YAMIN and Joanna DEPLEDGE, *cit. supra*.

[158] This is usually referred to as "the Brundtland report", after the name of the former Norwegian prime minister who led it.

Few years later, the Rio Declaration on Environment and Development recognises this element of integration of developmental and environmental concerns, especially in Principles 3 and 4, with some emphasis on equity concerns[159].

The express mention of sustainable development, however, can be found in other principles, like in the last one, Principle 27, indicating that "States and people shall cooperate in good faith and in a spirit of partnership in the fulfilment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development"[160].

We will see how the different elements which give shape to this principle are reflected in the Rio Declaration, clearly a cornerstone for the study of the idea of sustainable development. Since Rio it has had a significant impact also on international treaties[161], and the attention of commentators has focused on the legal status and concrete content of this expression.

According to part of the literature on the subject, sustainable development cannot be construed as a customary rule of international law, mainly because of the lack of normative certainty, which makes it difficult trying to impose on national States specific standards of sustainability against their consent[162]. This of course does not

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[159] See Rio Declaration, Principle 3: "The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations", and Principle 4: "In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it".

[160] See Rio Declaration, Principle 27.

[161] See 1994 Tropical Timber Agreement; 1994 Convention to Combat Desertification in those Countries Experiencing Drought and /or Desertification; 1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River between Cambodia, Laos, Thailand and Vietnam; 1995 Protocol on Shared Watercourse Systems in the Southern African Development Community (Art. 2.3); 1995 Agreement Relating to the Conservation and Management of Straddling and Highly Migratory Fish Stocks (Arts. 5 and 6); 1997 UN Convention on the Non-Navigational Uses of International Watercourses (Arts.5 and 24); Marrakesh Agreement establishing the World Trade Organization (Preamble); NAFTA (preamble);even before the Rio Declaration however, reference can be found in: 1985 ASEAN Agreement on the Conservation of Nature and Natural Resources (Art.1.1); 1991 European Energy Charter (Art. 19.1).

[162] See BOYLE and FREESTONE, *cit. supra*, p.16: "normative uncertainty, coupled with the absence of justiciable standards for review, strongly suggest that there is as yet no international legal obligation that development must be sustainable, and that decisions on what constitutes sustainability rest primarily with individual governments", as well as BIRNIE and BOYLE, *cit. supra*, p. 96. According to Vaughan LOWE, *Sustainable Development, cit. supra,* p. 30, "the

mean depriving the concept of any legal implications, in so far as it is not disputed that it is possible to refer to international law "in the field of sustainable development"[163].

No States would openly deny the necessity for economic development to be environmentally and socially sustainable, but the very essence of public international law, with the absence of a superior body entitled to settle precise thresholds and standards accepted by the international community, results in States inevitably enjoying a high degree of discretion in this respect. The concept of sustainable development comprises a whole set of sub-principles, of both substantial and procedural nature[164]: some authors identify four main elements within the concept[165].

2.5.2) THE MAIN ELEMENTS OF SUSTAINABLE DEVELOPMENT

2.5.2.1) INTER-GENERATIONAL EQUITY

Inter-generational equity[166] is the idea that the present exploitation of natural resources must take into account the needs of generations to come, and it is clearly expressed in the Brundtland report.

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argument that sustainable development is a norm of customary international law, binding on and directing the conduct of states, and which can be applied by tribunals, is not sustainable".

[163] See Philippe SANDS, *cit. supra*.

[164] See Vaughan Lowe, *Sustainable Development, cit. supra*, p. 26, according to whom "at best, sustainable development looks like a convenient umbrella term to label a group of congruent norms, much as we might seek a single term to label the set of disparate rights and obligations of coastal states in relation to the living resources and the environment in their exclusive economic zones. Whatever the label might be, it is itself not a norm; it can be no more than a name for a set of norms. Indeed, it may not even be that."

[165] See Sands, *Principles of International Environmental Law, cit. supra*, p. 504.

[166] For this principle in general and applied to the climate change regime see Edith BROWN WEISS, *Intergenerational Equity in International Law*, in "Proceeding of the American Society of International Law", 81st Meeting, p. 127, James C. WOOD, *Intergenerational Equity and Climate Change*, "Georgetown International Environmental Law Review", vol. 8, 1996, 293, pp. 299-ff., Catherine REDGWELL, *Intergenerational equity and global warming*, in Robin R. CHURCHILL & David FREESTONE, *cit. supra*.

This is not a new idea in international law, since it has been directly and indirectly referred to in various treaties[167].

In 1994, the Philippines Supreme Court, in the *Minors Oposa* case, concerning the destruction of the rain forests of that Country, in some ways recognised the idea that the plaintiffs represented their generations as well as generations unborn[168]. This rather unique case though does not seem able to form a solid basis for construing the principle as a binding norm of international law.

Many aspects still remain unclear, concerning the actual content of the obligation (what is precisely the limit of consumption that can be deemed as reflecting equity?), the difficulties of granting a *locus standi* (shall we consider this as sort of trust? Then how would it be possible to clearly determe the parties, their rights and obligations?), the phase of implementation (this is always a sensitive aspect in international law, but particular problems must be confronted in case the party with an interest in implementation is so undetermined). Even if in academic opinion rather negative views have been expressed on this point[169], the importance of the principle cannot be denied[170], at least as a reference point to grant due consideration to the concerns of future generations[171].

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[167] See 1946 International Convention for the Regulation of Whaling; 1968 African Convention on the Conservation of Nature and Natural Resources; 1985 Ozone Convention; 1992 Convention on Biological Diversity; 1995 Agreement on the Conservation of Straddling and Highly Migratory Fish Stocks; 1972 London Dumping Convention.

[168] See 33 ILM, 1994, p. 173. In the words of the Court, "the plaintiffs [...] are numerous enough and representative enough to censure the protection of all concerned interests", and "the minors' assertion of their right to a sound environment constitutes, at the same time, the performance of their obligation to ensure the protection of that right for generations to come".

[169] See Vaughan LOWE, *Sustainable Development cit. supra*, p. 27 ("The principle of inter-generational equity is, in normative terms, a chimera. It is hard to see what legal content inter-generational equity could have, as equity is by definition a technique for ameliorating in the name of justice the impact of legal rules upon the existing legal rights and duties of legal persons. By definition, most "other" generations could not appear to secure the enforcement of their own rights, even if 'generations' had *locus standi* in international law").

[170] A certain emphasis on this principle is put in the New Delhi Declaration, which devotes its second paragraph to the concept of equity, both in its inter and intra-generational aspect: ("2. The Principle of equity and the eradication of poverty: 2.1 The principle of equity is central to the attainment of sustainable development. It refers to both inter-generational equity (the right of future generations to enjoy a fair level of the common patrimony) and intra-generational equity (the right of all peoples within the current generation of fair access to the current generation's entitlement to the Earth's natural resources). 2.2 The present generation has a right to use and

In the climate change regime, the idea of inter-generational equity is reflected both in the Preamble ("determined to protect the climate system for present and future generations"[172]) and in Art. 3.1("the Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity [...]"[173]), thus implying that it cannot be ignored by policymakers in their efforts to improve and implement rules[174].

2.5.2.2) SUSTAINABLE USE OF NATURAL RESOURCES

The principle of sustainable use implies recognising the need to use and conserve natural resources in such a way as to prevent them from total depletion.

Principle 8 of the Rio declaration mentions the need to reduce and eliminate unsustainable patterns of production and consumption[175], and although it may be

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enjoy the resources of the Earth but is under an obligation to take into account the long-term impact of its activities and to sustain the resource base and the global environment for the benefit of future generations of humankind. "benefit" in this context is to be understood in its broadest meaning as including, *inter alia*, economic, environmental, social and intrinsic benefit.")

[171] In this sense, see BIRNIE and BOYLE, *cit. supra,* p. 91.

[172] See UNFCCC, Preamble, para. 23.

[173] See UNFCCC, Art. 3.1.

[174] According to Catherine REDGWELL, *cit. supra*, pp. 51-53, "the application of intergenerational equity to the phenomenon of global warming is apposite for three reasons. First, the United Nations General Assembly has recognised that climate change is 'a common concern of mankind' and that the global climate must be protected for present and future generations of humankind. Second, environmental concerns have heretofore been treated primarily as raising issues of national sovereignty in appropriating natural resources and controlling transfrontier pollution [...]. Third, global warming satisfies all the criteria for a case study in the application of intergenerational equity, namely: -seriousness and urgency of the problem,-potential for irreversible damage, -need for new ways of thinking about the issues, - possibility for developing acceptable measures of accountability, - degree to which the problem serves as a useful prototype for analysis of crises that occur in other contexts. In particular, the intergenerational aspects of global warming which arise in respect of its causes, particularly the consumption of non-renewable fossil fuels, and in its effects, such as radical changes in global climate and reduction in biodiversity, enhance the usefulness of global warming as a prototype for the application of new international legal principles".

[175] See Rio Declaration, Principle 8, as well as Principle 7 ("States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem"[...]), and Principle 12 ("States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation"[...]).

expressed in different wording, the idea of sustainability is present in many international agreements[176], as well as non-binding texts[177]. This concept has already crystallised in the practice concerning common property resources in the high seas, which calls for proactive cooperation in their exploitation. Even if it is not expressly mentioned, the idea of sustainability permeates the whole climate change regime: the global atmosphere is in fact under threat due to the often unsustainable patterns of production and consumption on which the international community will have to impose some forms of constraints, if we want to achieve the objective of GHG stabilisation in the atmosphere.

2.5.2.3) INTRA-GENERATIONAL EQUITY

The very essence of the principle of intra-generational equity is trying to redress the imbalance in wealth between developing and developed Countries. If the concept of inter-generational equity is directed towards the future, the intra-generational equity refers to present times, and addresses the geographical dimension of inequality[178].

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[176] See 1992 Convention on Biological Diversity (Preamble and Arts. 1,8,11,12,16,17,18); 1994 Desertification Convention (Arts. 2 and 3); 1982 UNCLOS (Art. 61);1972 World Heritage Convention; 1982 North Atlantic Salmon Convention;(Preamble); 1973 Convention on International Trade in Endangered Species;1978 Amazonian Treaty (Art.V); 1991 Protocol to the Antarctic Treaty on Environmental Protection; 1992 OSPAR Convention (Preamble).

[177] See for example the New Delhi Declaration, paragraph 1 (The duty of States to ensure sustainable use of natural resources), in particular 1.2, in which it is clear how the concept of sustainable use of natural resources is strictly linked with that of inter-generational equity: ("1.2 States are under a duty to manage natural resources, including natural resources within their own territory or jurisdiction, in a rational, sustainable and safe way so as to contribute to the development of their peoples, with particular regard for the rights of indigenous peoples, and to the conservation and sustainable use of natural resources and the protection of the environment, including ecosystems. States must take into account the needs of future generations in determining the rate of use of natural resources. All relevant actors (including States, industrial concerns and other components of civil society) are under a duty to avoid wasteful use of natural resources and promote waste minimization policies").

[178] See new Delhi Declaration, paragraph 2 (The principle of equity and the eradication of poverty), cit. supra, para. 2.1, as well as para. 2.3 ("The right to development must be implemented so as to meet developmental and environmental needs of present and future generations in a sustainable and equitable manner. This includes the duty to co-operate for the eradication of poverty in accordance with Chapter IX on International Economic and Social Co-

The Rio declaration does not directly use this expression, which nonetheless underlies many of its provisions, particularly relating to poverty eradication (like Principle 5: "All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world").

The same applies to the climate change regime, as well as to other regimes (such as biodiversity and ozone layer regimes): although nowhere in the text can we find such an expression[179], it is nonetheless possible to see how the idea of intra-generational equity is present, notably in the provisions concerning the need to give special consideration to developing Countries, financial assistance and capacity building.

2.5.2.4) INTEGRATION OF ENVIRONMENTAL PROTECTION AND DEVELOPMENT

This fourth element of sustainable development concerns the interlinkages between economic development and environmental considerations, which should be mutually supportive and not considered in isolation from each other[180].

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operation of the Charter of the United Nations and the Rio declaration on Environment and Development as well as the duty to co-operate for global sustainable development and the attainment of equity in the development opportunities of developed and developing countries."), and para. 2.4 ("Whilst it is the primary responsibility of the State to aim for conditions of equity within its own population and to ensure, as a minimum, the eradication of poverty, all States which are in apposition to do so have a further responsibility, as recognised by the Charter of the United Nations and the Millennium Declaration of the United Nations, to assist States in achieving this objective").

[179] But see for examples UNFCCC Art. 3(1): ("The Parties should protect the climate system [...] on the basis of equity [...]"), and Art. 4(2)(a), which talks of "the need for equitable and appropriate contributions by each [...] Parties".

[180] See SANDS, *Principles, cit. supra*, p. 205, describes this principle as "the commitment to integrate environmental considerations into economic and other development, and to take into account the needs of economic and other social development in crafting, applying and interpreting environmental obligations".

Principle 4 of the Rio declaration proclaims that in order to achieve sustainable development, the protection of the environment shall constitute an integral part of the development process, and it must be read jointly with Principle 3, stating that "the right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations".[181] The integration of environment and development is supported in numerous treaties, both regional[182] and global[183], as well as in non-binding texts[184].

These considerations are reflected in Art. 3.4 of the UNFCCC, declaring that the Parties have a right to, and should promote sustainable development. Policies and measures to protect the climate system should be appropriate for the specific conditions of each Party and should be integrated with national development programmes, since economic development is essential for adopting measures to address climate change[185].

The first part is a compromise between those developing States maintaining the existence of a real right to development, and developed Countries (led by the USA), which on the other side reject this construction of development as a right.

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[181] See Rio Declaration, Principles 3 and 4. The USA strongly opposed the idea of recognising a "right to development", and declared that it considered development as a goal that all States hold.

[182] See 1974 Paris Convention (Art. 6.2.d), calling for an "integrated planning policy consistent with the requirement of environmental protection; 1978 Kuwait Convention (Preamble); 1978 Amazonian Treaty (Preamble); 1985 ASEAN Convention (Art.2.1).

[183] See 1992 Biodiversity Convention (Art. 6.b); 1994 Convention to combat Desertification (Art.4.2),.

[184] See the New Delhi Declaration, para. 7 (7. The principle of integration and interrelationship, in particular in relation to human rights and social, economic and environmental objectives: 7.1 The principle of integration reflects the interdependence of social, economic, financial, environmental and human rights aspects of principles and rules of international law relating to sustainable development as well as of the interdependence of the needs of current and future generations of humankind. 7.2 All levels of governance -global, regional, national, sub-national and local- and all sectors of society should implement the integration principle, which is essential to the achievement of sustainable development. 7.3 States should strive to resolve apparent conflicts between competing economic, financial, social and environmental considerations, whether through existing institutions or through the establishment of appropriate new institutions. 7.4 In their interpretation and application, the above principles are interrelated and each of them should be construed in the context of the other principles of this Declaration. Nothing in this Declaration shall be construed as prejudicing in any manner the provisions of the Charter of the United Nations and the rights of peoples under that Charter".

[185] See UNFCCC, Art. 3.4.

The final balance was therefore found proclaiming the right to *promote* sustainable development.

The second part of this article must be read jointly with paragraph 10 of the Preamble, which recognises that "States should enact effective environmental legislation", that "environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply" and that "standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries"[186]. This idea, reflecting almost word by word Principle 11 of the Rio Declaration[187], is supported by both developed and developing Countries, in favour of a certain degree of flexibility in the determination of the commitments, and against a set of fix standards which would inevitably ignore the peculiarities and different level of economic development of the parties to the climate change regime.

2.5.2.5) FURTHER ELEMENTS OF THE PRINCIPLE OF SUSTAINABLE DEVELOPMENT AND ITS ROLE IN THE CLIMATE CHANGE REGIME

Besides these four main elements, according to some authors the concept of sustainable development comprises also other factors[188]. Some of these have already been examined in the previous pages as autonomous principles, such as common but differentiated responsibility or precaution, while some others relate to the procedural side of sustainable development, such as environmental impact assessment, access to information and public participation in decision-making.

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[186] See UNFCCC, Preamble, para. 10.

[187] See Rio Declaration, Principle 11 ("States shall enact effective environmental legislation. Environmental standards, management objectives and priorities should reflect the environmental and development context to which they apply. Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries").

[188] See BIRNIE and BOYLE, *cit. supra*, pp. 84-95, and Marie-Claire CORDONIER SEGGER and Ashfaq KHALFAN, *cit. supra*, pp. 95-171.

It is thus evident how multifaceted this concept is; referring to sustainable development may therefore imply a lot of different situations, which are however strictly linked, as we have said from the beginning , in view of trying to integrate environmental, economic and social concerns in actual coherent policies.

The Kyoto Protocol refers to sustainable development in Art. 2 ("Each Party included in Annex I, in achieving its quantified emission limitation and reduction commitments under Article 3, *in order to promote sustainable development*, shall [...]"[189]), Art. 10 ("All Parties, [...] reaffirming existing commitments under Art. 4, para. 1 of the Convention, and continuing to advance the implementation of these commitments *in order to achieve sustainable development*, [...], shall [...]"[190]) and Art. 12 ("The purpose of the clean development mechanism shall be to assist Parties not included in Annex I *in achieving sustainable development* and in contributing to the ultimate objective of the Convention [...]"[191]).

The idea of patterns of economic development which can be environmentally and socially-friendly informs the very essence of the climate change regime[192]. As we will see in the rest of this work, quantified emission limitation and reduction commitments are the contribution of developed Countries to the regime, as well as the most demanding commitments provided for by either the UNFCC or the Kyoto Protocol.

Secondly, the clean development mechanism is one of the most innovative creation of the Kyoto Protocol, and will be of paramount importance in the involvement of developing Countries as well. The fact that in both cases sustainable development is taken as a guiding principle and an objective means that it was considered by the negotiators as the most suitable to tackle such an environmental problem, as

[189] See Kyoto Protocol, Art. 2.1 (emphasis added).
[190] See Kyoto Protocol, Art. 10.1 (emphasis added).
[191] See Kyoto Protocol, Art. 12.2 (emphasis added).
[192] See also UNFCCC, Preamble, para. 21, according to which "responses to climate change should be coordinated with social and economic development in an integrated manner with a view to avoiding adverse impacts on the latter, taking into account the legitimate priority needs of developing countries for the achievement of sustained economic growth and the eradication of poverty".

climate change, with significant impacts both on the economies and the societies of all States.

2.6) LIBERALISATION OF INTERNATIONAL TRADE:

2.6.1) HOW MAY THE FIGHT AGAINST CLIMATE CHANGE AFFECT INTERNATIONAL TRADE?

Last paragraph of Art. 3 of the UNFCCC, dedicated to general principles, takes into consideration the process of liberalisation of international trade, although in rather vague terms, especially where it declares that "the Parties should cooperate to promote a supportive and open international economic system that would lead to sustainable economic growth and development in all Parties, particularly developing country Parties, thus enabling them better to address the problems of climate change."[193]

The second part of the paragraph deploys expressions that can be found in previous international texts, such as the GATT[194] or Principle 11 of the Rio Declaration[195], neither of which of course refers specifically to climate: "measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade". The idea of a harmonisation between the international trade and the climate change regimes is confirmed by the Kyoto Protocol, which includes an obligation on parties to strive to implement policies and measures so as to minimise adverse effects on international trade.[196]

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[193] See UNFCCC, Art. 3.5.

[194] See GATT (General Agreement on Trade and Tariffs), art. XX, chapeau.

[195] See Rio Declaration, Principle 12: "[...] Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade [...]".

[196] See Kyoto Protocol, Art. 2.3, which refers also to the social, environmental and economic impacts on other Parties, especially developing Countries.

According to a Note by the Secretariat of the WTO, out of 238 international environmental agreements, the UNFCCC and the Kyoto Protocol are among the 32 which contain trade-related measures or whose parties adopted trade measures in implementing them, or which could have consequences for trade in their implementation.[197]

We will try to identify possible situations of conflict between trade and climate, in the light of the relevant provisions of the WTO regime. Besides those specific aspects concerning the so-called flexible mechanisms, which will be discussed in the following chapters[198], the implementation of the international obligations on climate change may impact on international trade law in different ways.[199]

In this chapter we will focus on two relevant issues, subsidies and trade-measures, which may give rise to international disputes, as well as on possible ways of harmonisation and cooperation, also in consideration of the present debate in the WTO negotiations according to the Doha Declaration.[200]

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[197] See World Trade Organisation, Committee on Trade and Environment. Note by the Secretariat, *Matrix on Trade Measures Pursuamt to Selected MEAs* Geneva, WTO, 2001.

[198] See for example the possible contrasts between the rules designed for the Clean Development Mechanism and those regulating international investments, addressed *infra* in Chapter 4, or the debate on the legal status of the emission allowances, *infra* in Chapter 6.

[199] For the possible interactions between the climate change and the international trade regimes see Duncan BRACK, with Michael GRUBB and Craig WINDRAM, *International Trade and Climate Change Policies*, London, 2000, Thomas BREWER, *The Trade Regime and the Climate Regime: Institutional Evolution and Adaptation,* in "Climate Policy", vol. 3, 2003, Matthias BUCK and Roda VERHEYEN *International Trade Law and Climate Change: A Positive Way Forward*, FES-Analyse Ökologische Marktwirtschaft, 2001, Steve CHARNOVITZ, *Trade and Climate: Potential Conflicts and Synergies*, in Joseph E. ALDY et al., *Beyond Kyoto: Advancing the International Effort against Climate Change*, 2003, pp.141-167, Marzio GALEOTTI and Claudia KEMFERT, *Interactions between Climate Change and Trade Policies: a Survey*, in "Journal of World Trade", Vol. 38, August 2004, n° 4, pp. 701-724, Shinya MURASE, *WTO/GATT and MEAs: Kyoto Protocol and Beyond*, available at http://www.gets.org/pages/harmony/Murase.doc, Annie PETSONK, *The Kyoto Protocol and the WTO: Integrating Greenhouse Gas Emissions Allowance Trading into the Global Marketplace*, in "Duke Environmental Law and Policy Forum, vol. 10, 1999, p. 185-210, Olav Schram STOKKE, *Trade Measures and Climate Compliance: Institutional Interplay Between WTO and the Marrakesh Accords*, in "International Environmental Agreements", 2004, vol. 4, pp. 339-357, Zhong Xiang ZHANG and Lucas ASSUNCAO, *Domestic Climate Policies and the WTO*, in "The World Economy", vol. 27, Issue 3, March 2004, pp. 359-386.

[200] The recent Sixth WTO Ministerial Conference which took place in Hong Kong, 13-18 December 2005, did not result in any significant advancement concerning the relationship

2.6.2) CLIMATE MEASURES AND WTO RULES ON SUBSIDIES

2.6.2.1) DIFFERENT TYPES OF POTENTIAL CLIMATE-SUBSIDIES

The implementation of climate measures at the domestic level may require a significant intervention to encourage fuel and energy efficiency to limit GHG emissions. The Kyoto Protocol itself, in the list of potential policies and measures[201] that Countries should adopt in achieving their GHG emissions reduction objectives, expressly refers to the progressive reduction or phasing out of subsidies in those sectors with a high level of GHG emissions that runs counter to the objective of the UNFCCC, that is the stabilisation of human-induced emissions in the atmosphere.[202]

The interlinkages with the issue of subsidies concern the possibility on the one hand of maintaining carbon-intensive subsidies and on the other hand of applying climate-friendly subsidies.[203] According to the Climate Change Secretariat[204] States have already designed, at the domestic level, instruments to encourage for example fuel and energy efficiency, which could be deemed as subsidies.

Another important problem relates to the specific mechanisms established in the Kyoto Protocol to help Parties achieve their targets. In particular, the idea of creating a global carbon market, with the initial allocation of emission allowances,

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between the liberalisation of international trade and the protection of the environment. Work on this issue will therefore continue within the WTO Committee on Trade and Environment.

[201] On the issue of policies and measures see *infra* Chapter 3.

[202] See Kyoto Protocol, Art. 2.1(a)(v).

[203] According to part of academic opinion (see Meinhard DOELLE, *Climate Change and the WTO: Opportunities to Motivate State Action on Climate Change through the World Trade Organization* in "Review of European Community and International Environmental Law", vol. 13(1), 2004, pp. 85-103), the failure to internalise climate change impacts into the costs of products may amount to a subsidy, but in the absence of any case law on this point the Author comes to the conclusion, which we share, that "there is no indication to date that the WTO is ready to consider a failure to internalize the environmental cost of producing a product to be a subsidy" (at p. 100).

[204] See Climate Change Secretariat, *"Good Practices" in Policies and Measures among Parties included in Annex I to the Convention*, Report by the Secretariat (FCCC/SBSTA/2002/INF.13, 9 October 2002), which analysed the policies and measures adopted by Annex I States as reported in their third national communications.

which will then be freely exchanged, has raised a debate on whether it may amount to a subsidy or not. We will analyse this point at the end of this work[205], after describing the functioning of such mechanisms.

Now we will focus on Governmental subsidies which may be applied for climate purposes, in the light of the specific provisions of the Agreement on Subsidies and Countervailing Measures.[206]

2.6.2.2) THE AGREEMENT ON SUBSIDIES AND COUNTERVAILING MEASURES

According the Agreement on Subsidies and Countervailing Measures (SCM) a subsidy is a financial contribution by a government that confers benefits.[207] The three constituting elements are therefore a) a financial contribution, b) by a government or any public body and c) conferring a right.[208]

Art. 1.1 of the SCM Agreement provides for an exhaustive list of types of financial contributions, including not only direct transfers of funds, but also indirect contributions in terms for example of provision by a government of goods or services other than general infrastructure or the non-collection of revenues

[205] See *infra* Chapter 6.

[206] See Magnus LODEFALK and Mark STOREY, *Climate Measures and WTO Rules on Subsidies*, in "Journal of World Trade", vol. 39(1), 2005, pp. 23-44, who identify four examples of climate subsidies (at pp. 32-33): "1. Subsidies for climate-friendly production of goods, through the use of renewable energy sources or climate-friendly other input, such as intermediaries; the subsidy adjusts for inputs that are more expensive than others. 2. Subsidies for climate-friendly production of goods, in the form of investment grants to assist in changing to climate-friendly production technologies; the subsidy only helps the production entity with additional costs, while adjusting for possible additional gains captured in the new technologies. 3. Subsidies for investment in renewable energy production, such as wind power or biomass-fuelled power; the price to consumers, industry, etc. is only adjusted to the equivalent of fossil fuelled or nuclear energy. 4. Subsidies for public or private research and development (R&D) on climate-friendly technologies, renewable energy sources, etc."

[207] See Subsidies and Countervailing Measures Agreement (SCM), art. 1.1.

[208] See Peter VAN DEN BOSSCHE, *The Law and Policy of the World Trade Organization: Text, Cases and Materials*, Cambridge, 2005, pp. 555-ff.

otherwise due[209]. This financial contribution must be made by a government or a public body, including regional and local authorities, as well as State-owned companies[210], and it must also confer a benefit. According to the pertinent case-law, the idea of benefit is strictly linked with the advantage that the recipient receives in comparison to other operators in the market.[211]

But these three elements are not enough to make a subsidies fall within the scope of the WTO rules on subsidies. The requirement of specificity is needed.

A subsidy is specific when it has been specifically provided to an enterprise, an industry or a group of enterprises or industries [212]. The criteria to take into consideration to deem a subsidy as specific relate to the conditions governing the eligibility and its amount, which have to be objective and automatic in their application. Both *de iure* and *de facto* specific subsidies are covered, since the underpinning idea is granting equal opportunities and therefore not favouring certain enterprises over others. The specificity is therefore relevant in its actual operation.

According to the SCM Agreement, subsidies can be prohibited or actionable.[213]

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[209] The list includes: direct transfers of funds, such as grants, loans and equity infusions; potential direct transfers of funds or liabilities, such as loan guarantees; the purchase by a government of goods -Art. 1.1(a)(1)(i)-; government revenue, otherwise due, that is foregone or not collected -Art. 1.1(a)(1)(ii)-; the provision by a government of goods or services other than general infrastructure - Art. 1.1(a)(1)(iii)-; government payments to a funding mechanism or entrustment or direction of a private body -Art. 1.1(a)(1)(iv)-.

[210] According to SCM, Art. 1.1(a)(1)(iv), even a financial contribution by a private body may be considered as a financial contribution by a government if the government entrusts or directs the private body to carry out one or more of the type of functions ex Art. 1.1(a)(1)(i) to (iii).

[211] See AB Report, Canada- Measures Affecting the Export of Civilian Aircraft, WT/DS70/AB/R, 20 August 1999, para. 154: "the word 'benefit', as used in Article 1.1(b) implies some kind of comparison. This must be so, for there can be no 'benefit' to the recipient unless the ' financial contribution' makes the recipient 'better off' than it would otherwise have been, absent that contribution." For a review of relevant WTO jurisprudence on subsidies see Mark CLOUGH, *Subsidies and the WTO Jurisprudence*, in "International Trade Law Review", 2002, pp. 109-117.

[212] See SCM Art. 2, which identifies four types of specificity: enterprise specificity, industry specificity, regional specificity and prohibited subsidies.

[213] The SCM provides for a third kind of subsidies, which are allowed: non actionable. These are particularly relevant for our purposes, including environmental subsidies. As from 1 January 2000, however, these subsidies, provided that they are specific, have been actionable.

Prohibited subsidies are export subsidies and import substitution subsidy[214], and if a Panel or the Appellate Body find they are maintained by a State, they must be withdrawn.[215]

Finally, actionable subsidies are not prohibited as such, but can be challenged in case they cause adverse effects to the interest of another member.

For the purposes of the SCM Agreement, adverse effects may be: injury to the domestic industry of another member[216], nullification or impairment of benefits accruing directly or indirectly to other members under the GATT 1994[217], and serious prejudice, including a threat thereof, to the interests of another member[218]. Serious prejudice may occur when another member's like-products are discriminated against, whether at home, or in the subsidising Country or even in a third Country.

In case a Panel or the Appellate Body conclude that a subsidies causes adverse effects to the interests of another member, the subsidising State must take appropriate steps to remove the adverse effect or withdraw the subsidy.[219] In both cases of prohibited and actionable subsidies which cause injury to the domestic industry, a State can challenge it multilaterally, according to Art. 4 or Art. 7 of the SCM Agreement, or unilaterally impose countervailing duties on the subsidised imports, in order to offset the effects of the subsidy.[220]

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[214] See SCM, Art. 2. Import substitution subsidies are also referred to as "local content subsidies", since they are dependent on the use of domestic over imported goods.
[215] See SCM, Art. 4.7.
[216] See SCM, Art. 5(a).
[217] See SCM, Art. 5(b).
[218] See SCM, Art. 5(c).
[219] See SCM, Art. 7.8.
[220] See Art. VI of GATT 1994 and Art. 10 of the SCM Agreement.

2.6.2.3) ENSURING COMPATIBILITY WITH WTO RULES ON SUBSIDIES

If a State may resort to subsidies in order to promote emission reductions policies and therefore to meet its international obligation, one should wonder whether climate subsidies are prohibited as such under the SCM Agreement. Given the requirements in terms of specificity and of adverse effects on other members' economic interests, it is possible to identify climate subsidy schemes which would prevent them from being challenged by another Country.

First, climate subsidies should not be considered either specific or export subsidies if they are designed and applied in an objective manner, without discriminating between the home and foreign markets.

Secondly, it is important to verify the *de facto* specificity, rather than the non-specificity in legal terms. Some authors[221] have emphasised the role of objective conditions and their transparent application, as a way to ensure climate change should not be deemed as specific. Nonetheless we share the more cautious view[222] according to which climate subsidies scheme designed to protect domestic industries with high levels of carbon and energy intensity may be considered as *de facto* specific.

Another type of climate subsidies may be taken action against: subsidies based on the so-called PPMs (non-product related process and production methods).[223] A climate-friendly production may bring about State financial support of domestic production, as an incentive to enhance GHG emission reductions, and eventually result in a lower price compared to imported products. But if such subsidies are designed and applied in a transparent and objective manner, and they do not result in adverse effects on other members' economic interests, we maintain that they

[221] See Zhong Xiang ZHANG and Lucas ASSUNCAO, *cit. supra*, p.3.
[222] See Magnus LODEFALK and Mark STOREY, *cit. supra*, p. 33.
[223] See Zhong Xiang ZHANG and Lucas ASSUNCAO, *cit. supra*, p. 5, Magnus LODEFALK and Mark STOREY, *cit. supra*, p.34 and Meinhard DOELLE, *cit. supra*, pp. 98-ff.

should be deemed as *de facto* non specific, and therefore admissible under the SCM Agreement.[224]

2.6.3) TRADE MEASURES AND THEIR COMPATIBILITY WITH WTO LAW

2.6.3.1) LIMITING THE FREE EXCHANGE OF GOODS FOR CLIMATE PURPOSES

Trade measures[225] are expressly provided for by some multilateral environmental agreements (MEAs) as a means to favour compliance or to nullify undue benefits

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[224] The idea that climate subsidies should not be deemed *per se* as violating the SCM Agreement is shared by the relevant academic opinion (for instance Zhong Xiang ZHANG and Lucas ASSUNCAO, *cit. supra,* Meinhard DOELLE, *cit. supra,* Matthias BUCK and Roda VERHEYEN, *cit. supra,* Steve CHARNOVITZ, *cit. supra*). See in particular Magnus LODEFALK and Mark STOREY, *cit. supra*, p.34: "To conclude, it seems as if the SCM Agreement is not likely to pose a threat to climate subsidies based on PPMs. Rather, the Agreement ensures a level playing field for Members' industries. More importantly, our discussion as well as this conclusion also applies to climate subsidies not based on PPMs, that is, it applies to all climate subsidies".

[225] On trade measures, and more generally on the relationship between international trade and the environment, see Duncan BRACK, *Reconciling the GATT and Multilateral Environmental Agreements With Trade Provisions: The Latest Debate*, in "Review of European Community and International Environmental Law", 1997, pp. 112-ff., Alessandro FODELLA, *Il movimento transfrontaliero di rifiuti pericolosi nel diritto internazionale*, Torino, 2004, Francesco FRANCIONI (Ed.), *Environment, Human Rights and International Trade*, Oxford, 2001, Sanford E. GAINES, *International Trade, Environmental Protection and Development as a Sustainable Development Triangle*, in "Review of European Community and International Environmental Law", 11 (3), 2002, pp. 259-274, Alexandra GONZÀLEZ-CALATAYUD and Gabrielle MARCEAU, *The Relationship between the Dispute-Settlement Mechanisms of MEAs and those of the WTO*, in "Review of European Community & International Environmental Law", 2002, 11(3), pp. 275-286, Gabrielle MARCEAU, *A Call for Coherence in International Law. Praises for the Prohibition Against 'Clinical Isolation' in WTO Dispute Settlement*, in "Journal of World Trade", 1999, pp. 87-ff., Gabrielle MARCEAU, *Conflicts of Norms and Conflicts of Jurisdictions. The Relationship Between the WTO Agreement and MEAs and Other Treaties*, in "Journal of World Trade", 2001, pp. 1081-ff., Doaa Abdel MOTAAL, *Trade and Environment in the World Trade Organization: Dispelling Misconceptions*, in "Review of European Community & International Environmental Law", 1999, 8(3), pp. 330-335, Francesco MUNARI, *La libertà degli scambi internazionali e la tutela dell'ambiente,* in "Rivista di Diritto Internazionale", 1994, pp. 389-ff., Sabrin SHAW and Risa SCHWARTZ, *Trade and Environment in the WTO: State of Play*, in "Journal of World Trade", vol. 36(1), February 2002, pp. 129-154, Risa SCHWARTZ, *Trade Measures Pursuant to Multilateral Environmental Agreements: Developments from Singapore to Seattle*, in "Review of European Community and International Environmental Law", vol. 9(1), 2000, pp. 63-70, Olav Schram STOKKE, *cit.*

of free-riding, but both the UNFCCC and the Kyoto Protocol are silent in this regard.[226]

Trade measures may have different impacts on the international exchange of goods, the most trade-restrictive measure being the complete ban on trade with non-parties.[227] Although this measure may be effective when specific products are concerned, as in the cases of the Montreal Protocol on ozone-depleting substances or of the Basel Convention on hazardous waste, for the climate change purposes, the list of goods in question would be too large, since almost everything seems to be produced with the use of energy, which causes GHG emissions in the atmosphere. Such a complete ban would therefore seem to be both highly impracticable to apply and very likely to violate basic WTO rules on non-discrimination. But besides such an extreme hypothesis, States may adopt, in their effort to curb GHG emissions, domestic policies which may raise some doubts as for their compatibility with WTO rules.

For example, taxation may be considered as an appropriate instrument to address climate change, as an incentive to shift towards more climate-friendly practices in the energy sector. Many types of domestic taxes on consumption or on the carbon content of fuels may be identified[228], and the way they concretely impact on

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supra, Richard TARASOFSKY, *Ensuring Compatibility Between Multilateral Environmental Agreements and GATT/WTO*, in "Yearbook of International Environmental Law", 1996, pp. 52-ff.

[226] We will analyse the possible role of trade-measures as a consequence of non-compliance *infra*, in chapter 6.

[227] According to Dale ANDREW, *Trade Measures in Multilateral Environmental Agreements: Synthesis Report of Three Case Studies*, Paris, OECD document COM/ENV/TD(98) 127, 1998, para. 10, trade measures mean "any policy instrument that attaches requirements, conditions or restrictions on imported or exported products or services themselves, or the process of their importation or exportation. So trade measures can range from trade bans to product standards, from notification procedures to labelling requirements".

[228] See Steve CHARNOVITZ, *cit. supra*, p. 146, presenting some hypotheticals such as gasoline tax, automotive fuel economy tax, fuel carbon tax, processed-based electricity tax and tax on energy used.

domestic and imported products may lead to a *de facto* discrimination against the latter, and therefore to a violation of Art. III GATT on national treatment.[229]

Another set of measures which may amount to a violation of WTO rules relates to the establishment of product regulations and standards. Some examples may be regulations or standards on automobile fuel economy, emissions reduction in manufacturing, and energy efficiency in homes.[230]

In all these cases the rules of the WTO Agreement on Technical Barriers to Trade (TBT) may be involved.[231] Under the TBT Agreement, in cases when a State relies on an international standard in developing its technical regulation, there is a presumption of consistency with Art. I and Art. III of GATT.[232] In this respect however, neither the UNFCCC nor the Kyoto Protocol includes provisions which could be deemed as indicating technical regulations or standards.

But the existence of international standards is not necessary, and member States may impose internal technical regulations, provided they are not more trade-restrictive than necessary to fulfil a legitimate objective, they take into account the risks of non-fulfilment[233], they do not have the effect of discriminating between or against imported products[234], they do not have the purpose or effect of creating unnecessary obstacles to international trade and they respect a number of detailed transparency and notification obligations.[235]

While we have to wait for the evolution of the climate change legal regime, which at present does not include any sort of international technical regulation or standard, it is worthwhile highlighting how the Appellate Body interpreted the

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[229] For a concrete case of a domestic process-based electricity tax and how it has been considered by the European Court of Justice, see *infra*, chapter 5.

[230] See Steve CHARNOVITZ, *cit. supra*, p. 149.

[231] According to Annex 1.1 to the TBT Agreement, a measure is a technical regulation if it applies to an identifiable product or group of products, it lays down product characteristics and compliance with the product characteristics laid down in the measure is mandatory. In case compliance is not mandatory, we are dealing with a standard, according to Annex 1.2 to the TBT Agreement.

[232] In this sense, see Meinhard DOELLE, *cit. supra*, p. 95.

[233] See TBT Agreement, Art. 2.2.

[234] See TBT Agreement, Art. 2.1.

[235] See TBT Agreement, Art. 2.9-2.12.

possibility for a State to develop its own standard even when an international one has already been elaborated.

In the Sardines Case[236] the Appellate Body stated that it is for the complainant to demonstrate that the international standard is both effective, meaning it has the capacity to accomplish all objectives pursued, and appropriate, in the sense of suitable for the fulfilment of all objectives pursued.[237] If the international standard meets this requirements, then it would not be possible for members to develop more stringent domestic technical regulations or standards.

2.6.3.2) APPLYING GATT ART. XX ON GENERAL EXCEPTIONS

In case a Member adopts a policy or measure which violates a provision of the WTO Agreements, we have to consider whether it may be justified in accordance with GATT Art. XX on general exceptions. According to Art. XX(g) a State may lawfully adopt or enforce measures "relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption".[238] In this way, a State may justify a GATT-inconsistent measure in view of the protection of other non-trade values, such as environmental protection.

Some requirements are to be met for a measure to be justified under Art. XX(g).

Firstly, the measure must relate to the conservation of exhaustible natural resources. In the Reformulated Gasoline Case[239], the Appellate Body found that measures that were primarily aimed at the conservation of clean air , an exhaustible resource, met the requirements. We therefore foresee that in the case of

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[236] See Appellate Body Report, European Communities – Trade Description of Sardines, WT/DS231/AB/R, adopted 23 October 2002.

[237] See Appellate Body Report, European Communities – Trade Description of Sardines, para. 288.

[238] See GATT, Art. XX(g).

[239] See Appellate Body Report, USA – Standards for Reformulated and Conventional Gasoline, WT/DS2/AB/R, 1996.

domestic policies with a close and real relationship with the policy objective of GHGs reductions the finding of the AB would not be different.

Another requirement is the so-called even-handedness in the imposition of restrictions on imported and domestic products. If such measures were applicable only to imported goods and not to domestic products, it would be easy to argue that the real aim is the protection of domestic industry rather than of the environment. But the most stringent requirements are set out in the *chapeau* of Art. XX, according to which the measures must not be applied "in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade".[240]

The purpose of this provision is avoiding the possibility that the application of provisionally justified measures might constitute a misuse or abuse of the exceptions under Art. XX. The Appellate Body has cast some light in the interpretation of the meaning of the chapeau of Art. XX, stating for example that we are dealing with an arbitrary or unjustifiable discrimination if the discrimination from the measure is deliberate, and not unavoidable[241], or if the measure is applied without any regard for the different conditions, in a rigid and inflexible manner.[242]

A Member that wanted to apply climate measures resulting in a violation of GATT could therefore hope to have such a measure justified under Art. XX provided it is specifically and primarily aimed at the protection of the atmosphere, applied in a non-discriminatory manner between and against imported goods, designed and structured in order to pursue the legitimate policy objective of GHGs reductions, and not resulting in a trade-restrictive, protectionist measure. We therefore think that it is not possible to give an *a priori* evaluation of the GATT-consistency or not of domestic policies and measures for the reduction of GHGs. We highlight the

[240] See GATT, Art. XX, chapeau.
[241] See Appellate Body Report, USA – Standards for Reformulated and Conventional Gasoline.
[242] See Appellate Body Report, USA – Import Prohibition of Certain Shrimp and Shrimp Products, WT/DS58/AB/R, adopted 6 November 1998.

possibility for such measures to be fully compatible, or justifiable under Art. XX, but a final judgement will be possible only considering their actual structure and concrete implementation.

2.6.4) FAVOURING INTERNATIONAL COOPERATION AND HARMONISATION

2.6.4.1) THE MULTILATERAL APPROACH TO HARMONISE TRADE AND ENVIRONMENT

The rules on the liberalisation of trade, as we have seen, should not be considered as necessarily conflicting with the GHG reduction objective. There is room to develop policies and measures that can benefit the global climate without unnecessarily restricting free flows of products, with a view to the promotion of sustainable development, which is common to both regimes.[243]

The Appellate Body itself, while deciding on the GATT inconsistency of domestic measures for the protection of the environment, felt the need to underline that it was not the measure as such incompatible, but its concrete discriminatory application. The possibility for a member to adopt national policies and measures to implement the provisions of a multilateral agreement for the protection of the environment is therefore undisputable.[244]

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[243] See WTO Agreement Preamble: "[...]while allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development". According to the AB Report in the Shrimp case, at para. 153, the language of the Preamble to the WTO Agreement "demonstrates a recognition by WTO negotiators that optimal use of the world's resources should be made in accordance with the objective of sustainable development. As this preambular language reflects the intentions of negotiators of the WTO Agreement, we believe it must add colour, texture and shading to our interpretation of the agreements annexed to the WTO Agreement, in this case, the GATT 1994. We have already observed that Article XX(g) of the GATT 1994 is appropriately read with the perspective embodies in the above preamble".

[244] In the Gasoline case, at para. 29, the Appellate Body stated: "It is of some importance that the AB point out what this dos *not* mean. It does not mean, or imply, that the ability of any WTO Member to take measures to control air pollution or, more generally, to protect the environment,

The WTO case-law has shown that a trade-restrictive measure must be interpreted within its context, following a multilateral approach based on international consensus[245]. In academic opinion the idea of modifying the GATT has been put forward, in terms of either a formal amendment including an exhaustive list of admissible measures adopted in conformity with MEAs, or of an explicit waiver according to Art. IX of the WTO Agreement.[246]

Both of these hypotheses however, do not seem to be able to solve the problem: an amendment would be binding also for States not Parties to the MEAs included in the lists, and may therefore be difficult to agree upon in practice, while explicit waivers are by definition granted only for a limited period of time.

The harmonisation for the two regimes may then take place in the light of the law of treaties as enshrined in the Vienna Convention. [247] The key point seems to be an interpretation of the rights and obligation of parties in accordance with the customary rules of international law on treaty interpretation, and particularly Art.

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is at issue. That would be to ignore the fact that Article XX of the GATT contains provisions designed to permit important State interests –including the protection of human health, as well as the conservation of exhaustible natural resources- to find expression". In the Shrimp-Turtle case, at para. 185, the AB further explained: "In reaching these conclusions, we wish to underscore what we have *not* decided in this appeal. We have *not* decided that the protection and preservation of the environment is of no significance to the Members of the WTO. Clearly it is. We have *not* decided that the sovereign nations that are Members of the WTO cannot adopt effective measures to protect endangered species, such as sea turtles. Clearly, they can and should. And we have *not* decided that sovereign States should not act together bilaterally or multilaterally , either within the WTO or in other international for a, to protect endangered species or to otherwise protect the environment. Clearly they should and do."

[245] See Shrimp case, AB report, para. 174, where Principle 12 of the Rio Declaration is mentioned ("[...] Environmental measures addressing transboundary or global environmental problems should, as far as possible, be based on international consensus").

[246] For a discussion on the different solutions to harmonise the systems see Alessandro FODELLA; *cit. supra*, pp. 306-ff.

[247] The principle of *lex posterior*, according to Art. 30.3 of the Vienna Convention on the Law of Treaties, 23 May 1969, ("When all the parties to the earlier treaty are parties also to the later treaty but the earlier treaty is not terminated or suspended in operation under article 59, the earlier treaty applies only to the extent that its provisions are compatible with those of the later treaty") does not seem to grant certainty, while the principle of *lex specialis* may be of difficult application specially in the establishment of the link of speciality between the international trade and the cliamte change regimes.

31.3(c) of the Vienna Convention.[248] As a consequence of taking into consideration any relevant rules of international law applicable in the relations between the parties, trade restrictions adopted by a State should be justified as applications of provisions of MEAs. This would of course apply also to trade restrictions adopted by members to implement their climate obligations, but of course it all remains at a purely speculative level, in the absence of any concrete case up to now.

2.6.4.2) POSSIBLE DEVELOPMENTS: THE DOHA DEVELOPMENT ROUND

The relationship between the WTO system and MEAs is addressed also by the mandate of the Doha Development Round launched in Doha in 2001 at the WTO Ministerial Conference[249].

Paragraph 31 of the Doha Declaration expressly addresses the MEA-WTO relationship, while paragraph 32 adds some general principles[250]. After a common preamble ("With a view to enhancing the mutual supportiveness of trade and environment, we agree to negotiations, without prejudging their outcome"), paragraph 31 identifies three different issues.

-a) "the relationship between existing WTO rules and specific trade obligations set out in multilateral environmental agreements (MEAs). The negotiations shall be limited in scope to the applicability of such existing WTO rules as among parties

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[248] See DSU, Art. 3.2, which refers to "customary rules of interpretation of public international law".

[249] The November 2001 Declaration of the Fourth Ministerial Conference in Doha, Qatar, provides the mandate for negotiations on a range of subjects and other works, including issues concerning the implementation of the present agreements. It can be read on the website http://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.htm. On the Doha Declaration and its potential impacts on the realtionship trade/environment see Laurence Boisson de Chazournes and Makane Moise Mbengue, *La Déclaration de Doha de la Conférence Ministérielle de l'Organisation Mondiale du Commerce et sa portée dans les relations commerce/environment*, in "Revue Generale de Droit International Public", tome CVI, 2002, 4, pp. 855-892.

[250] See Doha declaration, paragraphs 31 and 32, easily available from the website www.wto.org. According to the original timetable, negotiations were to be concluded by 1 January 2005, but the complexity of the issues and the different positions among the international community led to the need of some further time.

to the MEA in question. The negotiations shall not prejudice the WTO rights on any Member that is not a Party to the MEA in question"[251].

The scope of the negotiations is rather narrow (it refers to existing WTO rules, and specific obligations), particularly in that it excludes the non-party issue, that is the case of trade measures applicable to third State Parties, which are members of the WTO but not of the MEA in question. This is in line with the well-established rule of international law according to which *pacta tertiis neque nocere neque prodesse possunt*, contained also in the Vienna Convention on the law of treaties[252]. Nonetheless, the evolution of the WTO jurisprudence may embrace a different approach: in the Shrimp-Turtle case, for instance, the Appellate Body took into considerations MEAs, such as the Convention on International Trade in Endangered Species and the Convention on Biological Diversity, in the interpretation of GATT Article XX general exceptions[253].

This issue is particularly relevant to the climate change regime, with the decision of some developed Countries (namely the USA and Australia) not to become parties to the Kyoto Protocol. As a result, such Countries may, for instance, "benefit from subsidising environmentally unsustainable activity that defeats MEA objectives, or from free-riding, enjoying the benefits of the MEA without incurring any of the costs."[254] The implications may therefore be significant, but more time is needed before some sort of assessment can be made.

-b) "Procedures for regular information exchange between MEA Secretariats and the relevant WTO Committees, and the criteria for the granting of observer status"[255].

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[251] See Doha declaration, para. 31(I).

[252] See 1969 Vienna Convention on the Law of Treaties, Art.34 (General rule regarding third States): "A treaty does not create obligations or rights for a third State without its consent".

[253] See WTO Appellate Body: 12/10/1998, United States- Import Prohibition of certain Shrimp and Shrimp Product.

[254] See Duncan Brack and Kevin Gray, *Multilateral Environmental Agreements and the WTO*, Report, The Royal Institute of International Affairs, London, September 2003, p. 32.

[255] See Doha Declaration, para. 31(II).

The possibility for experts from the UNFCCC Secretariat to attend the meeting and take part in the work of the Trade and Environment Committee of the WTO has meant granting climate concerns better chances to be taken into consideration, but it cannot be seen as a solution for the general issue of the relationship between trade and climate[256]. The need for a more proactive cooperation between the WTO and the climate change regimes (but this applies of course also to other MEAs) has nonetheless to face political opposition, based on the fear that trade issue might be excessively influenced by environmental concerns.

-c) "The reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services"[257].

The impact of this provision for the climate change regime should not be underestimated. Curbing GHG emissions in the atmosphere is only possible with advanced technology, which often suffers from high trade barriers. An easier circulation of climate-friendly technology therefore must be welcome[258].

Paragraph 32 of the Doha Declaration further focuses its attention on "the effect of environmental measures on market access, especially in relation to developing countries, in particular the least-developed among them, and those situations in which the elimination or reduction of trade restrictions and distortions would benefit trade, the environment and development"[259].

The interactions between trade and climate policies will likely play an important role as the implementation of the UNFCCC and the Kyoto Protocol unfolds. Possible win-win-win situations are clearly to be taken into consideration as benchmarks, with the adoption of policies which can bring about beneficial effects

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[256] The UNFCCC was granted the status of observer in the Trade and Environment Committee in 1995.

[257] See Doha Declaration, para. 31(III).

[258] On this topic, see Beatrice Chaytor, *Negotiating Further Liberalization on Environmental Goods and Services: An Exploration of the Terms of Art*, in "Review of European Community & International Environmental Law", 2002, 11(3), pp. 287-297.

[259] See Doha Declaration, Para. 32(I). Other points of this same paragraph are devoted to "the relevant provisions of the Agreement on Trade-Related Aspects of Intellectual Property Rights" (32(II)), and to "labelling requirements for environmental purposes" (32(III)), both of which seem to be of little relevance to the climate change regime.

on the economic development of Countries but at the same time be climate friendly and grant protection to the societies involved (for instance in the agriculture, energy and forestry sectors) or on the contrary with the elimination of trade distortions with negative impacts on the environmental and social spheres (like subsidies of fossil fuels, still a reality in many Countries).

The need for joint efforts by the whole international community is particularly felt, and in line with Principle 12 of the Rio Declaration, according to which "unilateral actions to deal with environmental challenges outside the jurisdiction of the importing Country should be avoided. Environmental Measures addressing transboundary or global environmental problems should, as far as possible, be based on an international consensus"[260].

2.7) CONCLUDING REMARKS

After analysing the main principles enshrined in the UNFCCC, one must wonder what actual legal status they may have. We will see in the next chapter how they have influenced the shaping of the regime, but some general considerations should be made in advance.

During the negotiations of the UNFCCC the issue of whether including a set of general principles was a controversial one, with developing Countries in favour of a specific article, and on the other hand developed Countries[261] questioning the utility of such a choice. A compromise solution was therefore agreed upon, with the formulation of a specific article of the convention on general principles, which are therefore not limited to the Preamble. As we have seen, the list includes the idea of climate change as a common concern of humankind, the principles of common but differentiated responsibilities, precaution, no harm, sustainable development and trade liberalisation.

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[260] See Rio Declaration, Principle 12.

[261] This position was particularly supported by the USA, which succeeded in obtaining a weakened version, as we will see.

The list itself was a compromise, in that it excluded some other principles invoked by developing Countries[262], and to weaken the influence of the article, a *chapeau* was added, including some sort of limitations.

-The term "States" is replaced by "Parties", which lacks the universal dimension of the former, and narrows the scope to the Convention only.

-The verb "to guide" is inserted to specify that such principles will have softer legal status.

-The expression "*inter alia*" suggests that Parties may take into consideration principles other than those set out in Art. 3.

The idea itself of the "Principles" title to this article led to the adoption of a footnote to Article 1 on definition, stating that "titles of articles are included solely to assist the reader", whose legal implications though have been questioned in academic opinion[263].

What is the outcome of the process leading to this carefully-drafted article in terms of the actual function of the principles in the climate change regime?

They are patently not commitments, implying an immediate and direct obligation upon States, but they are more than just declamatory statements, confined to the Preamble of the text.[264] They serve as necessary means for the interpretation and

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[262] For instance the right to development, the right for developing Countries to increase their GHG, the principle that no environmental conditions should be imposed on aid, a clearer definition of the responsibilities of developed Countries including liability and compensation, the principle that States have an equal right to ocean sinks.

[263] See Sands, *The United Nations Framework Convention on Climate Change,* in "Review of European Community and International Environmental Law", 1(3), 1992, p. 272 ("This footnote was inserted by the U.S. delegation in a last-minute attempt to weaken the legal effect of the whole of Article 3(on Principles). Commercial and contract lawyers will immediately recognise that the intended purpose of the footnote is unlikely to be achieved since it omits the most important part of the traditional language of commercial contracts, namely that titles and other such matters are 'not intended to have any legal effects'").

[264] According to Daniel Bodansky, *The United Nations Framework Convention on Climate Change: A Commentary,* "Yale Journal of International Law", Vol. 18, 1993, p. 501, "principles may serve a third function, different from those of either preambles or commitments: unlike preambular paragraphs, principles embody legal standards, but the standards they contain are more general than commitments and do not specify particular actions".

implementation of the Convention and its protocols[265], and define a framework of needs and concerns that cannot be ignored by Parties when taking formal decisions on the development and headway of the climate change regime. Each of the principles set out in the UNFCCC and analysed in this chapter contributes to the establishment of the climate change regime.

The recognition of climate change as a common concern of humankind expressly identifies the global nature of the problem, and engages all States parties in the efforts to curb GHG emissions. Furthermore, it enlarges the possibilities of invoking international responsibility, in accordance with the new draft articles on State responsibilities. Climate change is clearly a situation where the obligation is established for the protection of a collective interest, over and above any interests of the States concerned individually. This character of an obligation *erga omnes partes* will be reflected also in the provisions on the non-compliance procedure.[266]

The principle of common but differentiated responsibilities is of paramount importance, as we will see in the next chapter, in the shaping of the sets of commitments, centred on the idea of differential treatment in favour of developing Countries. Although some States may argue on the inclusion of specific Countries in one or another of the categories to which specific commitments attach, there is no opposition to the basic ideas that developed Countries must take the lead in the fight against global warming and on the other hand that LDCs and most of developing Countries cannot be asked to assume obligations or to invest financial resources to curb their GHGs.

The precautionary principle cannot but play an important role in a field, like global warming, in which scientific evidence is lacking in some relevant aspects. The establishment of a multilateral regime to engage the international community in efforts beyond the threshold of consensus among the scientific community is a clear example of a precautionary approach in dealing with global problems.

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[265] In the light of Article 31(2) of the 1969 Vienna Convention on the Law of Treaties the Preamble is clearly to be considered as part of context for interpreting the Kyoto Protocol and any subsequent Protocols to the UNFCCC.

[266] See infra, chapter 6.1.

The no harm principle, the only one which can be considered as reflecting a rule of customary international law, has the crucial meaning of prohibiting State conducts, concerning the global atmosphere, which completely ignore the rights of other States. Nonetheless we have seen the difficulties that such a rule faces while confronted with the problem of climate change, in consideration of its global character, which lead us to the conclusion that it is not possible to recognise a rule of general international law prohibiting the emission of GHGs in the atmosphere.

Sustainable development is gaining more and more importance in international law, as a guiding principle for the attainment of economic growth integrated with environmental and social concerns. Although at present the concept of sustainable development seems unlikely to create precise duties upon States, the members of the international community are nonetheless required, while taking development decisions, to engage in a process with a view to the promotion of sustainability.[267] Climate change seems in this regard to be a good field for the full unfolding of this principle, in consideration of the strict link with the economic and social dimensions. The best policies to curb climate change will not be accepted at the international level unless they are integrated into, and not opposed to, the overriding need of economic growth. We will see in the rest of this work that it is possible to create legal frameworks within which the various factors can find the best level of integration, for the benefit of both the economic development and the global atmosphere.

Finally, the implementation of climate-friendly policies should not have trade-restrictive effects. We have seen how there are various ways in which the international trade and the climate change regimes might collide, but we support the view that such hypotheses should not be over-estimated. If both legal regimes

[267] See Patricia BIRNIE and Alan BOYLE, *cit. supra*, pp. 96-97: "Whether or not sustainable development is a legal obligation, and [...] this seems unlikely, it does represent a goal which can influence the outcome of cases, the interpretation of treaties, and the practice of states and international organizations, and it may lead to significant changes and developments in the existing law. In that very important sense, international law does appear to require states and international bodies to take account of the objective of sustainable development, and to establish appropriate processes for doing so".

are not treated in isolation, in conformity with what they expressly establish, they could even be mutually supportive, with the implementation of win-win policies, which are beneficial to both the global climate and the international exchange of goods and services.

If each principle has a role within the system, even if it is not possible to construe them as specific commitments, one may wonder whether, from the general framework which they establish, some kind of customary rule concerning climate change may be recognised. We have already seen how the only generally-accepted rule of customary international law[268], establishing an obligation to prevent significant damage to the environment of other States or to areas beyond national jurisdiction, is not able to provide for specific obligations in the climate change field, unless specified through international agreements.

The process towards the recognition of a norm as reflecting customary international law requires two elements[269]: "a general practice" by States (objective element, or *diuturnitas*), and "accepted as law" (subjective element, or *opinion juris sive necessitatis*). Although it is not necessary for each member of the international community to have expressly consented to the creation of an international custom, some sort of general consent is nonetheless required. We do not want here to analyse the process of deciding what has become customary law, which involves examination of States practice as expressed through official statements, declarations, agreements, legislative acts, court decisions, as well as actions in international organisations.[270]

In the famous case concerning the delimitation of the continental shelf in the Northern Sea[271], the International Court of Justice identified three different situations concerning the relationship between customary rules and a convention

[268] Together with the duty of notification and cooperation in cases of dangerous activities, which does not seem to be relevant as for climate change.

[269] See the ICJ Statute, art. 38.1.b.

[270] See Tullio TREVES, *Diritto Internazionale, cit. supra*, pp.279-290, and more specifically in the field of the environment, Philippe SANDS, *Principles, cit. supra*, pp. 118-122 and Patricia BIRNIE and Alan BOYLE, *cit. supra*, pp. 16-18.

[271] See ICJ, North Sea Continental Shelf, 20/02/1969.

which aims at the codification of international law: codification of a previously existent norm of international law, crystallisation of an emerging rule of customary international law and finally generating factor of a new customary rule. Although this scheme was applied to international conventions of codification, we think that the general support from the international community to the UNFCCC allows this approach even as far as the climate change regime is concerned. Of course we do not want to say that the UNFCCC is a codification of norms of customary international law already accepted and recognised at the international level, but it is rather a starting point to engage the international community to take serious measures to tackle climate change. When it is possible to identify a convergent practice of several States in relation to the adoption of precise actions regarding the fight against global warming, the process may lead to the crystallisation of the principle contained in the Convention. If we do not believe that some initiatives, like the one promoted by the Inuit in order to bring a claim against the USA before the Interamerican Human Rights Commission[272], may have any chances of success, we nonetheless think that some principles enshrined in the UNFCCC, such as that of sustainable development as well as precaution, when they are supported, and provided with a more precise content, by a coherent and constant practice by State, may be considered as undergoing the process of crystallisation of emerging rules of customary international law.

[272] See http://www.repubblica.it/2005/l/sezioni/esteri/eschiusa/eschiusa/eschiusa.html

CHAPTER III:
THE IMPACT OF GENERAL PRINCIPLES ON THE PARTIES' COMMITMENTS

This chapter focuses on the different sets of commitments upon Parties to the climate change regime, which are contained in two main legal texts: the UNFCCC and the Kyoto Protocol, and in some relevant COP decisions.
We will try to analyse such obligations in the light of the principles of international environmental law enshrined in the UNFCCC, to assess their impacts on the shaping of the regime.
We will therefore see how different principles play different roles in guiding member States in the implementation of their commitments.

3.1: THE PARTIES OF THE CLIMATE CHANGE REGIME:

Curbing GHG emissions in the atmosphere is a particularly challenging task, in consideration of the fundamental economic sectors it involves: energy production and consumptions, transports, agriculture, forestry, industrial processes, waste management.
Within the international community, single States have different interests to protect, and this situation has resulted in a variegated range of political and negotiating positions. Some Countries, whose economies largely rely on fossil-fuel burning, oppose the establishment of strict binding commitments in terms of GHGs reduction; this is the case, for instance, of the USA and the OPEC Countries. At the other side of the spectrum, the Alliance of Small Islands Countries[1] emphasises its particularly vulnerable situation, and therefore supports the idea of

[1] This is a negotiating alliance, comprising 42 States, mainly developing or least-developed Countries.

serious commitments, both in terms of mitigation of GHGs and in term of financial transfers to allow meaningful adaptation policies.

In between the two extremes, a variety of interests and need can be easily identified: leading developing Countries (China, India) fear that environmental protection might hinder their increasing economic development; Countries with massive extensions of forests (Brazil, Malaysia) oppose rigid commitments in the forestry management as a sort of encroachment on their national sovereignty; Eastern European Countries (led by Russia) tend to gain financial resources in consideration of their economic collapse, resulting in a significant reduction of GHG emissions; EU Countries (led by Germany, the Netherlands and Scandinavian Countries) want to focus on certain sectors, like renewables, in which they are world leaders.

The results are on the one hand an extremely difficult negotiating process, in which alliances among States vary significantly for different issues, and on the other hand the inadequacy of the classical distinction between developed and developing Countries. Within the climate change regime, four different categories of States can be identified:

1) Developed States: they are included in Annex II of the UNFCCC and they basically correspond to OECD members[2]. They have the most stringent obligations, particularly in term of reduction of GHG emissions in the atmosphere. Other commitments relate to financial assistance, transfer of technology, capacity building and adaptation.

2) States with economies in Transition: they are included in Annex I of the UNFCCC and in Annex B of the Kyoto Protocol, together with developed States.

[2] Annex II of the UNFCCC includes: Australia, Austria, Belgium, Canada, Denmark, European Economic Community, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom of Great Britain and Northern Ireland, United States of America.

They were part of the former soviet-bloc[3] and opposed their inclusion in the developed country group. According to the Kyoto Protocol, they have undertaken obligations in terms of reduction of GHGs emissions, but unlike developing Countries, they have no financial commitments.

3) Developing states: they are usually referred to as non-annex I Countries, and include all the remaining States. They have no specific obligations of emissions reduction, but are bound by the very general commitments concerning long-term national planning and international review of national actions, national inventories, research and systematic observation. As we have already noticed, "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 [...][4]".

4) Least-developed Countries: this is a sub-group within developing Countries. There is a list, prepared by UNCTAD in 1971, which takes into consideration different factors to grant a State the qualification as least-developed Country, such as population, literacy, role of manufacturing industries in the GDP, etc. It has been amended and now it includes many elements concerning economy, society, nutrition, energy consumption. Today the number of least-developed Countries amounts to 50.[5] Their situation is similar to that of developing Countries, but they enjoy further facilitations, in terms of laxer time costraints, increased level of assistance from the Secretariat and Developed States.[6]

These four groups are amendable, with a view to granting a certain degree of flexibility for the whole regime. Art. 4.2(g) of UNFCCC in fact establishes that "any Party non included in Annex I may, in its instrument of ratification,

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[3] Annex B of the Kyoto Protocol, which is almost identical to Annex I of the UNFCCC includes, besides the Annex II Countries: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russian Federation, Slovakia.

[4] See UNFCCC, Art. 4(7).

[5] For the list of LDCs, only two of which (Somalia and Timor-Lestè) are not parties to the UNFCCC,see the webpage http://unfccc.int/files/cooperation_and_support/ldc/application/pdf/ldcbyregion.pdf

[6] Such assistance may take the form of financial aid, technology and capacity building.

acceptance, approval or accession, or at any time thereafter, notify the Depositary that it intends to be bound [...]" by more stringent mitigation commitments[7]. In this manner, no formal amendments to the UNFCCC are needed. Some Countries made such notification, which resulted in an amendment to Annex I that entered into force in 1998[8].

The general classification of the members of the regime is therefore a concrete application of the principle of common but differentiated responsibilities. Given the fact that climate change is a common concern of humankind, each single participant is required to give its contribution for the tackling of the problem, but in consideration of the different situations of different States[9], a range of specific commitments was established, so that developing States could "take the lead in combating climate change and the adverse effects thereof"[10].

Also the provisions establishing the possibility of updating the lists of Countries can be considered as an example of attention towards the actual and real capabilities of single Countries, which may vary in time.

3.2) MITIGATION: REDUCING THE AMOUNT OF GHG EMISSIONS IN THE ATMOSPHERE

The ultimate objective of the UNFCCC is "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to

[7] See UNFCCC, Art. 4.2(g).

[8] See COP 3 decision 4/CP.3. The amendment entered into force on 13 August 1998,and added to Annex I such Countries as Croatia, Czech Republic, Liechtenstein, Monaco, Slovakia and Slovenia.

[9] As we have seen, the differentiation is based both on the past contribution to the phenomenon and on the present and future capabilities to face it.

[10] See UNFCCC Art. 3.1.

climate change, to ensure that food production in not threatened and to enable economic development to proceed in a sustainable manner[11]".

The language is clearly watered down:

-the objective is "ultimate", suggesting the idea of a long process, whose intermediate steps have to be interpreted in the light of the eventual goal, and may therefore diverge for it in the short run[12];

-stabilization at a certain threshold means recognising that some level of climate change cannot be avoided. The point is how to clearly define the "dangerous interference". In the need this task lies primarily on the political actors, and goes beyond the scientific inputs that can be obtained by the work of the IPCC.

-time-frame: the scientific findings suggest that the sooner the better in terms of reductions of GHGs, and the last part of this sentence draws the attention on further elements. Mitigation options must therefore be considered on the basis not only of cost-effectiveness, but also of the actual capability of ecosystems to adapt to changes, of the impacts on a crucial sector, especially in developing Countries, such as agriculture, and of the integration with developmental concerns, in a clear reference to the principle of sustainable development.

The general idea of the necessity of reducing GHG emissions is therefore framed in a rather declamatory manner, but the specific articles of the UNFCCC (to a lesser extent) and particularly of the Kyoto Protocol, demonstrate that mitigation commitments are the centre of the climate change regime.[13]

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[11] See UNFCCC Art. 2.

[12] According to Daniel BODANSKY, *The United Nations Framework Convention on Climate Change: A Commentary,* "Yale Journal of International Law", Vol. 18, 1993, p. 500, the qualification of the objective as ultimate may be seen as "an attempt to prevent 'objective' from being equated with 'objective and purpose'", according to the Vienna Convention on the Law of Treaties.

[13] All commentators analysing the international agreements on climate change usually focus, more or less in depth, on mitigation commitments. We therefore refer to the academic opinion we have already mentioned in footnotes 46, 53 and 55 of chapter 1, *supra*.

3.2.1) DEVELOPING COUNTRIES' COMMITMENTS:

Describing developing Countries' commitments means describing the obligations upon all the members of the climate change regime.

The limited set of obligations for developing States in fact applies also to developed Countries, is usually referred to as general commitments and mainly comprises procedural rather than substantive obligations. According to the UNFCCC and the Kyoto Protocol, all States, according to "their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances[14]", have a set of obligations:

a)National Inventories:

The main commitment for all Parties is preparing national inventories of anthropogenic emissions by sources and removals by sinks of all GHGs. The obligation is provided for by the UNFCCC[15], and is somehow confirmed by the Kyoto Protocol, which tries to help the implementation of UNFCCC provision by highlighting the different socio-economic conditions of different members[16].

The rationale of this commitment is clearly having a sound basis to allow policy-makers to choose the best options. Detailed information is needed concerning activities with a deep impact on the climate: fossil fuel combustion, methane emissions from agriculture and waste management, emissions from forests as well as from industrial processes.

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[14] See UNFCCC, Art. 4.1, chapeau.

[15] See UNFCCC, Art. 4.1(a): "develop, periodically update, publish and make available to the Conference of the Parties, in accordance with Article 12, national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, using comparable methodologies to be agreed upon by the conference of the Parties".

[16] See Kyoto Protocol, Art. 10(a), according to which Parties shall "formulate, where relevant and to the extent possible, cost-effective national and, where appropriate, regional programmes to improve the quality of local emission factors, activity data and /or models which reflect the socio-economic conditions of each Party for the preparation and periodic updating of national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, using comparable methodologies to be agreed upon by the Conference of the Parties, and consistent with the guidelines for the preparation of national communications adopted by the Conference of the Parties".

There are of course differences in the way different Parties are required to carry out this commitment. Developing Countries' national inventories are included in the so-called national communication, are not submitted on an annual basis nor subject to an individual review (unlike what is required for developed Countries in these cases) .

A further application of the principle of differentiated responsibilities is the fact that non-Annex I Parties' obligation is strictly linked with the actual transfer of financial resources, while least-developed Countries have the maximum of discretionary power in choosing when to submit their national communication, according to Art. 12.5 of UNFCCC[17].

b) National and Regional Programmes Containing Measures to Mitigate Climate Change:

Formulating national and, where appropriate, regional programmes containing measures to mitigate climate change is an obligation of paramount importance for the process of implementation of the regime. It is established by Art. 4.1(b) of UNFCCC and reinforced by Art. 10 (b) chapeau of the Kyoto Protocol.

This commitment, which involves both mitigation and adaptation, can be defined as a qualitative one, in that it does not require the achievement of any particular level of emission reductions. In formulating these programmes containing mitigation measures, Parties are bound by Art. 3.4 UNFCC, which stresses the need to consider the specific conditions of each Country, as well as the objective of sustainable development[18].

The Kyoto Protocol tries to specify this commitment, and in Subparagraph (i) of Art. 10 (b) sets out a list of sectors which "would" be included in national

[17] See UNFCCC, Art. 12(5): "Each developed country Party and each other Party included in Annex I shall make its initial communication within six months of the entry into force of the Convention for that Party. Each Party not so listed shall make its initial communication within three years of the entry into force of the Convention for that Party, or of the availability of financial resources in accordance with Article 4, paragraph 3. Parties that are least developed countries may make their initial communication at their discretion. The frequency of subsequent communications by all Parties shall be determined by the Conference of the Parties [...]".

[18] See UNFCCC, Art. 3.4.

programmes, that is the energy, transport and industry sectors as well as agriculture, forestry and waste management[19].

Subparagraph (ii) of that same article, on the one hand introduces some kind of reporting obligation for developed Countries, and on the other hand establishes that "other Parties shall seek to include in their national communications, as appropriate, information on programmes which contain measures that the Party believes contribute to addressing climate change and its adverse impacts, including the abatement of increases in greenhouse gas emission, and enhancement of and removals by sinks, capacity building and adaptation measures[20]". Although it does not seem that the language deployed in these two subparagraphs ("would", "shall seek to") may be construed as implying further commitments, it is nonetheless important to stress the attempt to guide the Parties in the process of implementation. Formulating national programmes means defining a clear picture of the situation of each Country's emissions, which is fundamental to design the best policies and institutional arrangements to seriously tackle the problem of climate change.

c) **Integrating Climate Change Concerns in Order To Achieve Sustainable Development:**

This commitment is usually referred to as "mainstreaming", and it requires, according to Art. 4.1(f) of the UNFCCC to take climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions, and employ appropriate methods, for example impact assessments, formulated and determined nationally, with a view to minimizing adverse effects on the economy, on public health and on the quality of the environment, of projects or measures undertaken by them to mitigate or adapt to climate change.

[19] See Kyoto Protocol, Art. 10(b)(i).
[20] See Kyoto Protocol, Art. 10(b)(ii).

It is worth noting the explicit mention of environmental impact assessments, which are a procedural aspect of the concept of sustainable development, although there is nothing suggesting a duty to deploy these tools[21].

The Kyoto Protocol stresses the importance of the impact of response measures in the process of mainstreaming that every State should carry out[22]. Even though the actual implementation will occur at the domestic level and the lack of legally binding provisions will result in possible problems of coordination, it is undisputable how the regime, in this regard, is deeply informed by the idea of sustainable development, in many of its multifaceted aspects (integration, special and differential treatment, environmental impact assessment).

d) **Research and Systematic Observation**:

For such a complex matter as climate change, scientific cooperation, as well as regular exchange of sound and reliable scientific information are crucial factors for an up-to-date and effective regime. In this regard the UNFCCC establishes that all Parties shall promote and cooperate in scientific, technological, technical, socio-economic and other research, systematic observation and development of data archives related to the climate system.

This should help to further the understanding and to reduce or eliminate the remaining uncertainties regarding the causes, effects, magnitude and timing of climate change as well as the consequences of various responses strategies, especially on economic growth and local societies[23].

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[21] We will see in the following chapters the role that environmental impact assessments can play in the implementation, for instance, of the clean development mechanism established in Art. 12 of the Kyoto Protocol.

[22] See Kyoto Protocol, Art10(g), recalling Art. 4.8 of UNFCCC, as well as Kyoto Protocol, Art. 2.3, applying only to Annex I Parties, according to which "The Parties included in Annex I shall strive to implement policies and measures under this Article in such a way as to minimize adverse effects, including the adverse effects of climate change, effects on international trade, and social, environmental and economic impacts on other Parties, especially developing Country Parties and in particular those identified in Article 4, paragraphs 8 and 9, of the Convention, taking into account Article 3 of the Convention. The Conference of the Parties serving as the meeting of the Parties to this Protocol ma take further action, as appropriate, to promote the implementation of the provisions of this paragraph."

[23] See UNFCCC, Art.4.1(g).

The clear understanding of the scientific dynamics is evidently necessary to be able to make coherent and practicable choices in terms of mitigation policies[24]. Aware of this, the negotiators of the UNFCC introduced a specific article dedicated to research and systematic observation, which gives further guidance in carrying out the commitments pursuant to Art. 4.1 (g)(h).

In particular, parties shall:[25]

a) support and further develop, as appropriate, international and intergovernmental programmes and networks or organisations aimed at defining, conducting, assessing and financing research, data collection and systematic observation, taking into account the need to minimize duplication of effort;

b) support international and intergovernmental efforts to strengthen systematic observation and national scientific and technical research capacities and capabilities, particularly in developing countries, and to promote access to, and the exchange of, data and analysis thereof obtained from areas beyond national jurisdiction; and

c) take into account the particular concerns and needs of developing countries and cooperate in improving their endogenous capacities and capabilities to participate in the efforts referred to in subparagraphs (a) and (b) above.

These basic ideas are reinforced by the Kyoto Protocol, which restates the provisions of the UNFCCC in its Art. 10(d)[26].

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[24] See UNFCCC, Art.4.1(h), further establishing that all Parties shall "promote and cooperate in the full, open and prompt exchange of relevant scientific, technological, technical, socio-economic and legal information related to the climate system and climate change, and to the economic and social consequences of various response strategies".

[25] See UNFCCC; Art.5.

[26] See Kyoto Protocol, Art. 10(d), according to which all Parties shall "cooperate in scientific and technical research and promote the maintenance and the development of systematic observation systems and development of data archives to reduce uncertainties related to the climate system, the adverse impacts of climate change and the economic and social consequences of various response strategies, and promote the development and strengthening of endogenous capacities and capabilities to participate in international and intergovernmental efforts, programmes and networks on research and systematic observation, taking into account Art. 5 of the Convention".

e)Reporting on Implementation:

Art. 12 of UNFCCC is dedicated to the communication of information related to implementation. Each Party, in accordance with art. 4.1 of UNFCCC, shall submit a series of information, including:

-a national inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, to the extent its capacities permit, using comparable methodologies to be promoted and agreed upon by the Conference of the Parties;

-a general description of steps taken or envisaged by the Party to implement the Convention;

-any other information that the Party considers relevant to the achievement of the objective of the Convention and suitable for inclusion in its communication, including, if feasible, material relevant for calculation of global emission trends.[27]

The Kyoto Protocol basically confirms the framework established in the UNFCCC, without any explicit reference to developing Countries[28]. As we have seen, the commitments of developing Countries are not particularly significant, and result from a concrete application of the concept of common but differentiated responsibilities. All the obligations are generally referred to all parties, and not specifically to the developing Countries, which are exempted from the stringent commitments relating to emissions reduction.

3.2.2) DEVELOPED COUNTRIES' FURTHER COMMITMENTS:

a)Policies and measures:

If developed Countries must take the lead in combating climate change, as a consequence of both their historical contribution to the phenomenon and of the

[27] See UNFCCC, Art. 12.1(a)(b)(c).

[28] See Kyoto Protocol, Art. 10(f), according to which all Parties shall "include in their national communications information on programmes and activities undertaken pursuant to this Article in accordance with relevant decisions of the Conference of the Parties."

financial and technical resources they command, a more stringent set of commitments had to be established.[29]

Climate change has impacts on various and significant aspects of domestic economies, and the challenge is to identify those sectors which allow coherent and efficient policies. But the peculiarities of each Country's situation require a flexible approach, since what may be considered as the best policy for one case could be of insignificant benefit in another case, or entail excessive costs.

According to the UNFCCC therefore, developed Countries shall adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its GHG emissions and protecting and enhancing its sinks and reservoirs[30]. This provisions clearly implies a legal obligation to limit GHG emissions, by adopting policies and measures, but this duty is neither defined in quantitative terms, nor temporally scheduled in a precise manner.

The choice itself of such a word as "limiting" may suggest a laxer approach compared for instance to other verbs such as "reducing" or stabilising"[31]. In any case, it is undisputable that some sort of constraint on GHG emissions is to be exercised, and that business as usual would amount to a breach of the obligation. But it is only with the Kyoto Protocol that the concept of policy and measures, of which no definition is provided, acquires a content.

Article 2 in fact establishes the duty to implement and/or further elaborate policies and measures, with the aim of achieving the limitation or reduction commitment imposed by the Protocol, in accordance with national circumstances, and in order to promote sustainable development.

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[29] On policies and measures see Sebastian OBERTHUR and Hermann E. OTT, *The Kyoto Protocol: International Climate Policy for the 21st century*, Berlin, 1999, pp. 103-114, and Michael GRUBB with Christiaan VROLIJK and Duncan BRACK, *The Kyoto Protocol: A Guide and Assessment*, London, 1999, pp. 65-68 and 124-128.

[30] See UNFCCC, Art.4.2(a).

[31] According to Farhana YAMIN and Joanna DEPLEDGE, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures*, Cambridge, 2004, chapter 5, "the word 'limiting' was used in preference to 'reducing' or 'stabilisation' because 'limiting' did not imply an obligation to reduce emissions below current levels or to maintain a downward trend into the future".

There is a list of such policies and measures, which cannot be construed as mandatory[32] but which comprises many economic sectors, such as:

-energy:

(i)Enhancement of energy efficiency in relevant sectors of the national economy;[33]

(iv)Research on, and promotion, development and increased use of, new and renewable forms of energy, of carbon dioxide sequestration technologies and of advanced and innovative environmentally sound technologies;[34]

-forestry and agriculture:

(ii)Protection and enhancement of sinks and reservoirs of greenhouse gases not controlled by the Montreal Protocol, taking into account its commitments under relevant international environmental agreements; promotion of sustainable forest management practices, afforestation and reforestation;[35]

(iii)Promotion of sustainable forms of agriculture in light of climate change considerations;[36]

-transport:

(vii)Measures to limit and/or reduce emissions of greenhouse gases not controlled by the Montreal Protocol in the transport sector;[37]

-waste management:

(viii)Limitation and/or reduction of methane emissions through recovery and use in waste management, as well as in the production, transport and distribution of energy;[38]

-trade policies and reforms:

(v)Progressive reduction or phasing out of market imperfections, fiscal incentives, tax and duty exemptions and subsidies in all greenhouse gas emitting sectors that

[32] Besides referring to each State's national circumstances, the Protocol uses the words "such as", suggesting that other policies and measures may be implemented by Countries.
[33] See Kyoto Protocol, Art. 2.1(a)(i).
[34] See Kyoto Protocol, Art. 2.1(a)(iv).
[35] See Kyoto Protocol, Art. 2.1(a)(ii).
[36] See Kyoto Protocol, Art. 2.1(a)(iii).
[37] See Kyoto Protocol, Art. 2.1(a)(vii).
[38] See Kyoto Protocol, Art. 2.1(a)(viii).

run counter to the objective of the Convention and application of market instruments;[39]

(vi)Encouragement of appropriate reforms in relevant sectors aimed at promoting policies and measures which limit or reduce emissions of greenhouse gases not controlled by the Montreal Protocol.[40]

The main problem then becomes granting a certain degree of coordination among different parties, for example in terms of common standards, in order to make such policies more effective, as well as avoiding or minimising distortions in competition.[41] To tackle this global problem, common efforts will always have better chances than isolated, domestic initiatives. The idea of establishing common policies and measures though, remains of fundamental relevance for the definition of a framework in the long run, without which the limitation and reduction commitments risk turning out to be nothing more than casual outcomes of external situations not entailing any serious climate strategy[42].

b)Quantified Emissions Limitation And Reduction Commitments:

The most obvious alternative to a series of different standards to apply in GHG-intensive sectors is establishing legally binding targets in terms of emissions reduction (quantified emission limitation or reduction commitments, or

[39] See Kyoto Protocol, Art. 2.1(a)(v).

[40] See Kyoto Protocol, Art. 2.1(a)(vi).

[41] See Sebastian OBERTHUR and Hermann E. OTT, *cit. supra,* p. 109, where a distinction is identified between "common" PAMs, which generally refers to the harmonisation of policies, such as the introduction of common technical standards for several countries, and "co-ordination of" PAMs, which is less stringent as it requires the introduction of similar policy instruments without harmonisation of the tax level.

[42] A rather negative evaluation of Art. 2 on policies and measures is expressed by Micheal GRUBB, Christiaan VROLIJK and Duncan BRACK, *cit. supra,* p. 127 ("Overall, Article 2 is the outcome of the unsatisfactory and incomplete debate which took place during the negotiations; [...] attention at Kyoto had to be focused on the targets and timetables debate rather than policies and measures. Nevertheless, the Protocol commitments require domestic action to limit emissions, and Article 2 provides the ground for a future assault on Parties showing reluctance to take such action. More positively, it also provides the framework, particularly in paragraph 2 on bunker fuels, for a revived attempt to coordinate policies and measures where it would make sense to do so. Whether and how rapidly this happens is probably dependent on the willingness of the EU to do battle on policies and measures once more, this time with greater sophistication regarding what is and is not desirable and feasible".

QELRCs)[43]. The UNFCCC contains only an extremely vague aim at returning to 1990 levels[44], due to the many difficulties in agreeing upon such an ambitious objective. The complexity of the issue can be fully understood if one considers the various options for the different aspects involved:

-Gas coverage: in consideration of the different GHGs contributing to climate change in different manners, are targets to be defined on a gas-by-gas basis or with the so-called basket-of-gas approach?

-Time: are these targets to be achieved over a single year or over a multi-year period?

-Participation: are the targets to be the same for all Countries or should they be a direct application of the principle of common but differentiated responsibilities? And in this case, what kind of differentiation is the best? Only between developed and developing Countries or also within each group?

-Flexibility: is it necessary or advisable to establish some sort of mechanisms to grant the maximum flexibility for Parties in the achievement of their targets? In other words, will Parties be able to cooperate or shall all the burden be carried domestically?

-Sinks[45]: the science of climate change demonstrates that there are natural elements (the forests, the ground, the oceans) which can act as carbon-sequestrator (sinks and reservoirs), thus reducing the level of GHGs in the atmosphere. Are such sinks and reservoirs to be considered in setting the emissions targets?

-Are such targets to be subject to compliance procedures? And of what kind?

The UNFCCC does not cope with any of these aspects, and it will be only with the Kyoto Protocol and subsequent COP decisions that a comprehensive regulation has been agreed upon.

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[43] Quantified Emissions Limitation and Reduction Obligations (QELROs) is an expression, with the same meaning, we may use as well.

[44] See UNFCCC, Art. 4.2 (a)(b).

[45] According to UNFCCC, "reservoir means a component or components of the climate system where a greenhouse gas or a precursor of a greenhouse gas is stored" (Art. 1.7), while "sink means any process, activity or mechanism which removes a greenhouse gas, an aerosol or a precursor of a greenhouse gas from the atmosphere" (Art. 1.8).

Art. 3 of the Kyoto Protocol in fact establishes that "the Parties included in Annex I shall, individually or jointly, ensure that their aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A do not exceed their assigned amounts, calculated pursuant to their quantified emission limitation and reduction commitments inscribed in Annex B and in accordance with the provisions of this Article, with a view to reducing their overall emissions of such gases by at least 5 per cent below 1990 levels in the commitment period 2008 to 2012."[46] This article provides an answer to some of the questions we have set out. For example, in terms of coverage, the basket-of-gas approach has been chosen, which comprises six main GHGs, whose limitations will be achieved over a 5-year period (2008-2012). In this way the uncertainties connected with linking the outcome to a single year gave way to a more balanced situation, in which Parties could compensate annual fluctuations.[47]

The different level of commitments reflects the idea of differentiated responsibilities: as we have noted, only developed Countries and Countries with economies in transition are bound to limit their GHG emissions, but the choice to adopt individual targets gives rise to a further differentiation among the group.

In particular, Parties with QELRCs may be divided into three groups:

-Parties with reduction targets: this group includes most of developed Countries, which have a legally binding commitment to reduce their GHG emissions in the atmosphere, although with different targets. We therefore range from -8% for the European Community and Switzerland, -7% for the USA, to -6% for Canada and Japan among developed Countries.

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[46] See Kyoto Protocol, Art. 3.1.

[47] See Micheal GRUBB, Christiaan VROLIJK and Duncan BRACK, *cit. supra*, p. 69 ("A single year would be arbitrary and unstable; rather it would make sense to average emissions over a longer 'budget period'. Three years was felt to be too short to even out fluctuations, and four years would lock the commitment cycle into the US political cycle; as this was not necessarily desirable, the United States proposed a five-year averaging period. The EU and Japan accepted the logic of the argument at the final pre-Kyoto negotiating session. The developing countries remained opposed, apparently in part because of semantic misunderstandings about the implications of term 'budget' and its monetary overtones; in Kyoto they accepted the principle, recast as a 'commitment period'").

But in this group we find also eleven Countries with economies in transition: Estonia (-8%), Slovenia (-8%), Lithuania (-8%), Latvia (-8%), Romania (-8%), Bulgaria (-8%), Czech Republic (-8%), Slovakia (-8%), Hungary (-6%), Poland (-6%) and Croatia (-5%).

-Parties with stabilisation targets: these Countries are not required to reduce their emissions in the atmosphere, but rather to stabilise them at the same levels of 1990. This group includes three Parties: Ukraine, Russia and New Zealand.

-Parties with controlled increase targets: Countries in this last group are allowed to increase their GHG emissions compared to 1990 levels. Norway can increase by 1%, Australia by 8% and Iceland by 10%.

This scheme is the result of bitter negotiations among Parties: at one side some Countries, led by the EU, strongly argued in favour of identical flat-rate reductions across all the industrialised Countries, compared to 1990 base year emissions, on the ground of its simplicity. But other Countries, in particular Australia, New Zealand, Japan and Iceland, opposed such a hypothesis, which would ignore the different abatements costs, and would penalise Countries which undertook massive strides in energy efficiency prior to 1990. In the end the principle of differentiation prevailed[48], as an expression of the need to take into consideration the different situations of different Countries, as well as a way to grant more flexibility.

And in this same direction goes the possibility of choosing a different baseline. According to Art. 3.5 of the Kyoto Protocol, a Party with economy in transition may notify that, for the implementation of its commitments, it intends to use an historical base year or period different from 1990[49]. Although it is not a unilateral act, and it is the Conference of the Parties serving as the meeting of the Parties to

[48] For the negotiations on this point, see Micheal GRUBB, Christiaan VROLIJK and Duncan BRACK, *cit. supra*, pp. 81-87, where the authors underlines the ambiguities of the EC's policy, pretending that other Countries applied a flat rate, while within its members differentiation is the rule, as we will see in the chapter devoted to the implementation in the EC..

[49] See Kyoto Protocol, Art. 3.5.

decide on its acceptance, it is clear that the choice will fall upon the year which will allow a greater increase in emissions and therefore credits to sell[50].

A second hypothesis of different baseline is provided for by Art. 3.8, which allows Annex I Parties to use 1995 as the base year for other GHGs[51]. These possible changes of the baseline may be therefore seen a limitation on the commitments, as well as the exclusion of fuels from marine and aviation bunkering, in relation to which Parties shall pursue limitation or reduction of emissions working through the International Civil Aviation Organisation and the International Maritime Organisation[52], and of emissions resulting from multilateral operations pursuant to the UN Charter[53].

The developed Countries' commitments concerning mitigation, however focused on policies and measures and QELROs, are to be carried out taking into consideration the specific needs and circumstances of developing countries, as expressly stated by both the UNFCCC[54] and the Kyoto Protocol[55].

3.2.3) ALTERNATIVE WAYS TO ACHIEVE MITIGATION COMMITMENTS:

The application of policies and measures to obtain GHG emission reductions was considered too costly by most developed Countries, which therefore asked for some alternatives, in consideration of the peculiarities of climate change. GHGs in fact can be absorbed by forests, and their flux in the atmosphere can therefore be reduced as a consequence of sound forestry management.

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[50] On the basis of Art. 4.6, the COP has allowed five Countries to use alternatives to 1990 as the base year: Bulgaria (1988), Hungary (average of years 1985-1987), Poland (1988), Romania (1989) and Slovenia (1986). See decisions 9/CP.2 and 11/CP.4, from the website www.unfccc.int .

[51] See Kyoto Protocol, Art. 3.8 ("Any Party included in Annex I may use 1995 as its base year for hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride, for the purposes of the calculation referred to in paragraph 7 above").

[52] See Kyoto Protocol, Art. 2.2.

[53] See Decision 2/CP.3, supported particularly by the USA.

[54] See UNFCCC, Art. 4.8 and 4.9.

[55] See Kyoto Protocol, Art. 10(g).

Secondly, climate change is the global result of GHG emissions in the atmosphere irrespective of the place where they are released, and consequently any reduction contributes to the curbing of total levels, regardless of the location of the sources. The climate change regimes therefore allows Parties to achieve their mitigation targets in a flexible way, resorting also to the management of sinks, to cooperation among Countries (joint implementation, clean development mechanism, bubble), to the exchange of credits for emission reductions (emissions trading), and to time flexibility (carry-over, or banking).

3.2.3.1) SINKS

The UNFCCC expressly provides that Parties shall adopt national policies and measures to mitigate climate change by limiting their GHG emissions and protecting and enhancing their sinks and reservoirs[56].

The issue of carbon sequestration is probably the most complicated in a technical sense[57], and it has raised serious doubts[58]. Scientific data are difficult to collect and compare, the capacity of forests to absorb GHGs decreases as they get older,

[56] See UNFCCC, Art. 4.2(a).

[57] See Sebastian OBERTHUR and Hermann E. OTT, *cit. supra*, p. 131: "Carbon is stored globally in different living biotic and abiotic "systems", namely the atmosphere, the oceans, the terrestrial system and the fossil fuels deposits. [...] Systems exchange –i.e. store and release- carbon on a more or less continuous level. The transfer from one system to another is called a 'carbon flux'. A system that stores more carbon than it emits is labelled a 'sink'".

[58] On sinks and forest, see Ian FRY, *Twists and Turns in the Jungle: Exploring the Evolution of Land Use, Land-Use Change and Forestry Decisions within the Kyoto Protocol,* in "Review of European Community and International Environmental Law", 11 (2), 2002, pp. 159-168; Alexander GILLESPIE, *Sinks and the Climate Change Regime: the State of Play,* in "Duke Environmental law and policy forum", 2003, n. 13, 2, pp. 279-301; Steven A. KENNETT, *Carbon Sinks and the Kyoto Protocol: Legal and Policy Mechanisms for Domestic Implementation*, in "Journal of Energy and Natural Resources Law", 2003, vol. 21, 3, pp. 252-276; Concetta Maria PONTECORVO, *Interdependence between Global Environmental Regimes: The Kyoto Protocol on Climate Change and Forest Protection,* in "ZaoRV", vol. 59, 1999, pp. 709-716, Sebastian OBERTHUR and Hermann E. OTT, *cit. supra*, pp. 130-136, Michael GRUBB, Christiaan VROLIJK and Duncan BRACK, *cit. supra*, pp. 68-80 and 186-191, and Suraje DESSAI, E. Lisa F. SCHIPPER, Esteve CORBERA, Bo KJELLEN, Maria GUTIERREZ and Alex HAXELTINE, *Challenges and Outcomes at the Ninth Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change*, in "International Environmental Agreements", Vol. 5, 2005, pp. 106-110.

States may be tempted to replace local plants with monocultures with greater absorbing capacities, thus bringing about serious damage to biodiversity, and an excessive emphasis on sinks may result in a lower commitment in terms of mitigation policies.

Before the Kyoto negotiations, the majority of Parties argued against the inclusion of sinks, at least for the first commitment period (EU, Japan and developing Countries), while the rest of OECD Countries were in favour of it (USA, Canada, Australia, New Zealand)[59]. An agreement was finally found, according to which land-use and land-use change and forestry (LULUCF) was excluded from determining the emissions of the base year, but taken into consideration when calculating emissions in the first commitment period, although limited to afforestation, reforestation and deforestation[60]. Furthermore, a process was established to add further categories of human induced activities resulting in the absorption of GHGs[61].

Two apparently insignificant clauses, hidden in the article, may result in greater uncertainties: the decision to add new forms of LULUCF was due to be applied in the second and subsequent commitment-periods, but each Party may choose to apply it for its first commitment period, provided that these activities have taken

[59] One of the toughest positions was that of Australia. Due to the land-clearing policy there in place, the forestry sector since 1990 was a net source of emissions. The Australian delegation therefore argued in favour of a so-called net-net approach, which would take into consideration sinks both for the baseline and for the commitment period, with the result of significantly diminishing the efforts required in terms of mitigation.

[60] See Kyoto Protocol, Art. 3.3: "The net changes in greenhouse gas emissions by sources and removals by sinks resulting from direct human-induced land-use change and forestry activities, limited to afforestation, reforestation and deforestation since 1990, measured as verifiable changes in carbon stocks in each commitment period, shall be used to meet the commitments under this Article of each Party included in Annex I. The greenhouse gas emissions by sources and removals by sinks associated with those activities shall be reported in a transparent and verifiable manner and reviewed in accordance with Articles 7 and 8".

[61] See Kyoto Protocol, Art. 3.4: "[...] The Conference of the Parties serving as the meeting of the Parties to this Protocol shall [...] decide upon modalities, rules and guidelines as to how, and which, additional human-induced activities related to changes in greenhouse gas emissions by sources and removals by sinks in the agricultural soils and the land-use change and forestry categories shall be added to, or subtracted from, the assigned amounts for Parties included in Annex I [...]".

place since 1990[62]. Secondly, upon the insistence of Australia, Art. 3.7 allows a Party to add the net LULUCF emissions to its baseline for 1990, if those emissions were positive[63]. This is usually referred to as the Australia clause, and will result in reduced efforts for achieving the mitigation targets. The outcome of the Kyoto Protocol was considered unsatisfactory[64], in particular as far as the lack of clarity of key-terms was concerned.

It was only at COP7 in Marrakesh that a series of principles was agreed upon[65], including clear definitions of such terms as afforestation, reforestation and deforestation[66], which are the activities that contribute to the achievement of the Parties' commitments.

These principles, clearly inspired by the concept of sustainable development, have a double aim: on the one hand preventing situations that may otherwise result in negative impacts on environmental standards (implementation of LULUCF activities are to contribute to the conservation of biodiversity and sustainable use of natural resources and based on sound science[67]), and on the other hand ensuring that mitigation commitments are not weakened (the aim of Art. 3.1 is not to be changed by the inclusion of LULUCF activities, no transfer of commitments to a future commitment period is to be implied[68]).

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[62] See Kyoto Protocol, Art. 3.4.

[63] See Kyoto Protocol, Art. 3.7: "[...] Those Parties included in Annex I for whom land-use change and forestry constituted a net source of GHG emissions in 1990 shall include in their 1990 emissions base year or period the aggregate anthropogenic carbon dioxide equivalent emissions by sources minus removals by sinks in 1990 from land-use change for the purposes of calculating their assigned amount."

[64] See Ian Fry, *Twists and Turns..., cit. supra.*

[65] See decisions 11/CP7 and 12/CP7.

[66] According to decision 11/CP7, afforestation is "the direct human-induced conversion of land that has not been forested for a period of at least 50 years to forested land through planting, seeding and/or the human-induced promotion of natural seed sources", reforestation is "the direct human-induced conversion of non-forested land to forested land through planting, seeding and/or the human-induced promotion of natural seed sources, on land that was forested but that has been converted to non-forested land", and deforestation is "the direct human-induced conversion of forested land to non-forested land".

[67] See Decision 11/CP7, annex, paras 1(b) and 1(e).

[68] See Decision 11/CP7, annex, paras 1(c) and 1(f).

3.2.3.2) BANKING

Banking, or carry-over, is the possibility of having some flexibility over time to achieve the targets. According to the Kyoto Protocol, if the emissions of a Party included in Annex I in a commitment period are less than its assigned amount, this difference shall, on request of that Party, be added to the assigned amount for that Party for subsequent commitment periods.[69] The rationale for this kind of flexibility may be seen in the encouragement of mitigation efforts, which could lead to overachievement of targets[70].

Although it has been somehow limited by the Marrakesh accords[71], we do not share completely this idea that banking is environmentally sound. If carrying over triggers overachievement of targets, the possibility of banking them may result in a relaxation of the commitment, and eventually run counter to the objective of stabilisation of GHGs enshrined in the UNFCCC.

As a paradox, it would be better to establish the opposite manner of flexibility over time, that is the possibility of borrowing from future targets. If today one Party cannot reach its reduction target, it commits itself to overachieve in the subsequent period. In this way the trend would downward, and from a climate point of view we guess it is better to follow a decreasing trend more slowly rather than not being able to define any such reduction trend.

But the idea of borrowing has the shortcoming of risking putting off indefinitely verification of the commitment, and it was therefore discarded by the negotiators.[72]

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[69] See Kyoto Protocol, Art. 3.13.

[70] See Farhana Yamin and Joanna Depledge, *cit.supra,* para.5.3.8, where the Authors consider banking as "environmentally sound because it encourages, rather than penalizes, overachievement of targets"

[71] See decision 19/CP.7, which limits the possibility of banking credits from the flexibility mechanisms to 2.5% of a Party's assigned amount, and prohibits it in relation to credits from LULUCF.

[72] On borrowing as a consequence of a State non-compliance see *infra*, chapter 6.

3.2.3.3) FLEXIBILITY MECHANISMS

The most innovative provisions of the Kyoto Protocol concerns the so-called flexibility mechanisms, which were designed to help Parties achieving their targets in a cost-effective manner[73].

The flexibility here lies in geography, and it results from the irrelevance of the place where the abatement measures occur. If mitigation costs are lower in developing Countries, why not allowing developed Countries to take measures there? If international cooperation brings about some reduction on expenses, why not enhancing it? If it is possible to design a global market of credits of GHG emissions, why not exploring this possibility?

The UNFCCC somehow refers to the principle of cooperation between Parties[74], but it was only with the Kyoto Protocol that three innovative mechanisms were introduced: joint implementation (Art. 6)[75], clean development mechanism (Art. 12)[76] and emissions trading (Art. 17)[77].

A fourth way to grant flexibility to the regime is provided for in Art. 4 (Joint fulfilment of commitments); it was designed to meet the needs of Regional

[73] On the concept of joint implementation in general see Sean CONATY, *The Potential Utility of Joint Implementation Mechanisms in the Kyoto Protocol*, in "Asia Pacific Journal of Environmental Law", vol. 3, 1998, p. 363; Alex HANAFI, *Joint Implementation: legal and institutional issues for an effective international program to combat climate change*, in "Harvard Environmental Law Review", 1998, pp. 441-508; Onno KUIK, Paul PETERS & Nico SCHRIJVER, *Joint Implementation to Curb Climate Change*, Kluwer Academic Publishers, 1994; Charlotte STRECK, *Joint Implementation: History, Requirements, and Challenges*, in David FREESTONE and Charlotte STRECK,, *Legal Aspects of Implementing the Kyoto Protocol Mechanisms: Making Kyoto Work*, New York, 2005; Glenn WISER, *Joint Implementation: Incentives for Private Sector Mitigation of Global Climate Change*, in "Georgetown International Environmental Law Review", vol. 9, 1997, pp. 747-ff, Sebastian OBERTHUR and Hermann E. OTT, *cit. supra*, pp. 141-207, Michael GRUBB, Christiaan VROLIJK and Duncan BRACK, *cit. supra*, pp. 87-96.

[74] See UNFCCC, Art. 3.3 ("[...] Efforts to address climate change may be carried out cooperatively by interested Parties"), and Art. 4.2(a) ("[...] Parties may implement such policies and measures jointly with other Parties and may assist other Parties in contributing to the achievement of the objective of the Convention [...]").

[75] See Kyoto Protocol, Art. 6.

[76] See Kyoto Protocol, Art. 12.

[77] See Kyoto Protocol, Art. 17.

Economic Integrations like the European Community, and we will therefore analyse it more in detail in the chapter devoted to the implementation of climate change obligations within the community legal order[78].

We will examine the specific rules on the clean development mechanisms and on emissions trading in the next chapters, while now we focus on some issues of relevance to the flexibility mechanisms in general. The complexity of these mechanisms and the problems they entail have brought about long negotiations, and only at COP 7 five main decisions were reached to operationalise them[79]. We can identify some issues that have been resolved, concerning in general the idea of flexibility within the climate change regime.

-The concrete modalities, rules and procedures are to be determined by the COP/MOP[80];

-To address some equity concerns, the following sentence was included in the preamble of a decision[81]: "the Kyoto Protocol has not created or bestowed any rights, title or entitlement to emissions of any kind on Parties included in Annex I". The fear was that industrialised Countries could seek to crystallise their share of global emissions by resorting to flexibility mechanisms, which was of course opposed by developing Countries.

-The issue of supplementarity is of paramount importance to fully understand the functioning and scope of the flexibility mechanisms. The Kyoto protocol, in each article concerning such mechanisms, describes them as "supplemental" [82] or just "a part"[83] of the overall commitment.

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[78] See *infra*, Chapter 5.

[79] Decision 15/CP.7 covers matters relevant to all three mechanisms; decision 16/CP.7 covers joint implementation; decision 17/CP.7 covers the clean development mechanism; decision 18/CP.7 deals with emissions trading and decision 19/CP.7defines accounting modalities. All of these decisions contain annexes with the draft decisions for COP/MOP 1.

[80] Due to the distinct legal authority of the COP and the COP/MOP, the modalities for the mechanisms have been shaped as an annex attached to draft decisions that the COP/MOP is recommended by the COP to adopt.

[81] See decision 15/CP.7, preamble, paragraph 6.

[82] See Kyoto Protocol, Art. 6.1(d) ("The acquisition of emission reduction units shall be supplemental to domestic actions for the purposes of meeting commitments under Article 3")

The rationale of the idea of supplementarity is avoiding that developed Countries meet their requirements simply by buying credits from other Countries or by investing in developing Countries, without serious domestic mitigation actions. The point is how to give a quantitative dimension to the concept of supplementarity.

The Marrakesh accords provide that the domestic effort shall constitute a significant element of the total effort.[84] The word significant was preferred to other adjective such as principal and primary, which may entail a more stringent quantitative connotation. But the general principle that flexibility mechanisms must not be the principal way to achieve mitigation targets was eventually clearly established.

-The fungibility of the credits accruing from the different mechanisms is provided for by a COP decision[85]. This makes them interchangeable in all respects but for the banking activity, as we have noted above.

-The idea of involving stakeholders in the process of the various mechanisms was felt by the negotiators. It is an application of the principle of sustainable development in its procedural aspects, and its purpose is to make the whole process more transparent.

-The Parties are of course not obliged to resort to the flexibility mechanisms, but can do it only if they are Parties of the Kyoto Protocol, since the mechanisms may be used to achieve the assigned amounts resulting from Art. 3 of the Protocol. These mechanisms have been designed to help Parties that accepted to be bound by a precise target, and therefore should not be available for those States that have not become a Party of the international treaty establishing them. This is going to have

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and Art. 17 ("[...]any such trading shall be supplemental to domestic actions for the purpose of meeting quantified emission limitation and reduction commitments under that Article.").

[83] See Kyoto Protocol, Art. 12.3(b) ("Parties included in Annex I may use the certified emission reductions accruing from such project activities to contribute to compliance with part of their quantified emission limitation and reduction commitments under Article 3, as determined by the Conference of the Parties serving as the meeting of the Parties to this Protocol").

[84] See the following chapters for the application of the concept of supplementarity to each flexibility mechanism.

[85] See Decision 19/CP.7.

particular importance in consideration of the refusal by some developed Countries to ratify the Kyoto Protocol.[86]

3.3) ADAPTATION: ADJUSTING TO CLIMATE-INDUCED CHANGES

If the main obligation concerns mitigation of GHG emissions in the atmosphere, the scientific evidence suggests that a certain degree of change in climate patterns cannot be avoided. The consequence is that Parties are to consider ways also to adapt their situations and conditions to the foreseeable changes due to global warming[87].

The obligations concerning adaptation are equally applied to all Parties, although developed Countries are further requested to take the special needs of particular kinds of Countries into account in order to minimise the negative impacts of both climate change and response measures[88].

-National programmes: Adaptation measures.

Art. 4.1 of UNFCCC establishes the most important adaptation commitment, by stating that all Parties shall formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change. These national programmes shall also contain measures to facilitate adequate adaptation to climate change[89]. The concept of adequate adaptation is left to the discretion of the various Parties, because of course the concrete situations and consequences of climate change vary from Country to Country.

But a pivotal guiding principle in this respect is without any doubt that of sustainable development, and in particular the integration of environmental, social

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[86] We will address some specific issues concerning the participation to the flexible mechanisms of non-Parties entities in the next chapters.

[87] On the concept of adaptation see Roda VERHEYEN, *Adaptation to the Impacts of Anthropogenic Climate Change –The International Legal Framework,* in "Review of European Community and International Environmental Law", 11 (2), 2002, pp. 129-143.

[88] See UNFCCC, Art. 4.8 and art. 4.9,analysedin the previous chapter.

[89] See UNFCCC, Art. 4.1(b).

and economic aspects. Even though there is no such thing as a list of mandatory or possible policies, article 12 of UNFCCC concerning reporting obligation covers also Art. 4.1, through national communications.

The Kyoto Protocol confirms the importance of adaptation, by establishing that Parties shall formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to facilitate adequate adaptation to climate change[90]. Subparagraph (i) specifies, besides the sectors involved (energy, transport, industry, agriculture, forestry and waste management), which anyway apply also to mitigation, that "adaptation technologies and methods for improving spatial planning would improve adaptation to climate change"[91]. The problem of course lies in the implementation, with the Parties engaged in organising within their legal order all the instruments, both legal and institutional, to be able to develop sound adaptation policies.

3.4) FINANCE: ADDRESSING THE COSTS OF CLIMATE CHANGE

As we have underlined in the previous paragraphs, the basic commitments of developed Countries concern mitigation, in the attempt to show that they are taking the lead in curbing GHGs in the atmosphere. But even if the targets set by the Kyoto Protocol are met, a certain degree of climate change cannot be avoided, and the problem of adapting to it arises.

Adaptation is a particular area of the regime which needs financial resources to be dealt with. The most vulnerable parties are the least developed Countries, which of course lack the capacities to organise and develop serious and coherent adaptation policies. Thus the problem of funding adaptation emerges, as a clear expression of those needs of developing Countries that rich States are to take into consideration

[90] See Kyoto Protocol, art. 10(b).
[91] See Kyoto Protocol, art. 10(b)(i).

in implementing the provisions of the UNFCCC and the Kyoto Protocol[92]. The UNFCCC devotes three different provisions to the issue of financing the regime.

-Art. 4.3 provides that the developed country Parties shall provide new and additional financial resources to meet the costs incurred by developing country Parties in complying with their obligations[93], in terms of communication of information related to implementation, including transfer of technology.

-Art. 4.4 relates more specifically to the need to help poor Countries to fund their adaptation to climate change[94].

-Art. 4.5 is focused on the promotion, facilitation and financing, as appropriate, of the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention[95].

A whole article of the UNFCCC defines a financial mechanism[96], which appears as essential to grant a sort of coordination and guidance. It specifies that "its operations shall be entrusted to one or more existing international entities"[97], as well as that it shall have an equitable and balanced representation of all Parties within a transparent system of governance[98].

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[92] For the finance-related aspects of the regime see Farhana YAMIN and Joanna DEPLEDGE, *cit. supra,* chapter 10, Saleemul HUQ, *The Bonn-Marrakesh agreements on funding*, in "Climate Policy", 2002, vol. 2, pp. 243-246, Saleemul HUQ, *Funding Adaptation to Climate Change: What, who and how to fund?*, Sustainable Development Opinion, 2003, and Suraje DESSAI, E. Lisa F. SCHIPPER, Esteve CORBERA, Bo KJELLEN, Maria GUTIERREZ and Alex HAXELTINE, *Challenges and Outcomes at the Ninth Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change*, in "International Environmental Agreements", Vol. 5, 2005, pp. 110-114.

[93] See UNFCCC, Art. 4.3, which further specifies that "the implementation of these commitments shall take into account the need for adequacy and predictability in the flow of funds and the importance of appropriate burden sharing among the developed country Parties".

[94] See UNFCCC, Art. 4.4 ("The developed country Parties and other developed Parties included in Annex II shall also assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects").

[95] See UNFCCC, Art. 4.5, which further states that "in this process, the developed country Parties shall support the development and enhancement of endogenous capacities and technologies of developing country Parties".

[96] See UNFCCC, Art.11.

[97] See UNFCCC, Art. 11.1.

[98] See UNFCCC, Art. 11.2.

The most important role is played by the Global Environmental Facility[99], which is an independent body from the climate change regime, and whose activities have a broader scope. The Kyoto Protocol confirms the provisions set out in the UNFCCC, and it was only with the Marrakesh agreements that more clarity was finally given to the whole financing system.

Three new funds were created[100]:

a) a Special Climate Change Fund, whose function is to support various activities, including adaptation[101], technology transfer[102], energy, transport, industry, forestry and waste management[103] as well as activities to assist developing country parties in diversifying their economies[104]. This is a Convention fund, and it is the GEF that is in charge of operationalising it[105].

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[99] The Global Environmental Facility was established in 1991 to help developing Countries fund projects and programs that protect the global environment. GEF grants support projects related to biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants. Since 1991, the GEF has provided $4.5 billion in grants and generated $14.5 billion in co-financing from other partners for projects in developing countries and countries with economies in transition. GEF funds are contributed by donor countries. In 2002, 32 donor countries pledged $3 billion to fund operations between 2002 and 2006. GEF projects are managed by GEF Implementing Agencies: the United Nations Environment Programme, the United Nations Development Programme, the World Bank. For further information on the GEF, see the website www.gefweb.org. On the role of financial international organisation, particularly in the climate change regime see Laurence BOISSON de CHAZOURNES, *The Global Environment Facility Galaxy : On Linkages among Institutions,* "Max Planck UNYB", vol. 3, 1999, p. 243; Peter H. SAND, *Carrots without Sticks? New Financial Mechanisms for Global Environmental Agreements,* "Max Planck UNYB", vol. 3, 1999, p. 363-369; Wen-chen SHIH, *The World Bank and Climate Change*, in "Journal of International Economic Law", vol. 3, number 4, December 2000, pp. 633-653.

[100] See Decision 7/CP.7: Funding under the Convention.

[101] See Decision 7/CP.7, para.2(a): ("Adaptation, in accordance with paragraph 8 of decision 5/CP.7").

[102] See Decision 7/CP.7, para. 2(b): ("Transfer of technologies, in accordance with decision 4/CP.7").

[103] See Decision 7/CP.7, para. 2(c).

[104] See Decision 7/CP.7, para. 2(d): ("Activities to assist developing country Parties referred to under Article 4, paragrah 8(h), in diversifying their economies, in accordance with decision 5/CP.7").

[105] See Decision 7/CP.7, para. 3, deciding further that "Parties included in Annex II, and other Parties included in Annex I that are in a position to do so, shall be invited to contribute to the fund, which shall be operated by an entity entrusted with the operation of the financial mechanism, under the guidance of the Conference of the Parties".

b) a Least Developed Countries (LDCs) Fund, which will support a work programme for the Least developed countries.[106] This program involves different activities, including, *inter alia*:

-establishing or strengthening national climate change secretariats or focal points, as instruments of effective implementation of the UNFCCC and the Kyoto Protocol.

-training in negotiation skills to develop capacity of LDC negotiators to participate effectively in the climate change process;

-preparation of national programmes of actions (NAPAs) to give a clear picture of the situation and needs of LDCs.

Also this second fund is derived from the UNFCCC, and it involves the GEF in the same way as the special climate change fund;

c) a Kyoto Protocol Adaptation Fund, which is, unlike the previous ones, a Protocol fund. According to Art. 12.8 of the Kyoto Protocol, a share of the proceeds from the clean development mechanism is used to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation[107]. The Marrakesh agreements then specified which activities are to be supported, although not exclusively, by the fund. They include:

-starting to implement adaptation activities promptly where sufficient information is available to warrant such activities, *inter alia*, in the areas of water resources management, land management, agriculture, health, infrastructure development, fragile ecosystems, including mountainous ecosystems, and integrated coastal zone management;[108]

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[106] See Decision 7/CP.7, para. 6.

[107] See Kyoto Protocol, Art 12.8.

[108] See 5/CP.7, para. 8(a).

-improving the monitoring of diseases and vectors affected by climate change, and related forecasting and early-warning systems, and in this context improving disease control and prevention;[109]

-supporting capacity building, including institutional capacity, for preventive measures, planning, preparedness and management of disasters relating to climate change, including contingency planning, in particular, for droughts and floods in areas prone to extreme weather events;[110]

-strengthening existing and, where needed, establishing national and regional centres and information networks for rapid response to extreme weather events, utilizing information technology as much as possible.[111]

3.5: TECHNOLOGY AND CAPACITY BUILDING

The UNFCCC sets out some obligations concerning technology, which is pivotal for the effective working of the regime[112]. Art. 4.1(c) is applicable to all Parties, non only developed Countries, mandating the promotion and cooperation in the "development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases [...] in all relevant sectors, including the energy, transport, industry, agriculture, forestry and waste management sectors".[113]

But in application of the different responsibilities of States, developed Countries have additional obligations. Art. 4.3 in fact provides that new and additional

[109] See 5/CP.7, para. 8(b).
[110] See 5/CP.7, para. 8(c).
[111] See 5/CP.7, para. 8(d).
[112] On transfer of technology and capacity building see: Ulrich BEYERLIN, *State Community Interests and Institution-Building in International Environmental Law*, in "ZAORV", 1996, 56, pp. 603-627; Lothar GUNDLING, *Compliance Assistance in International Environmental Law: Capacity-Building Through Financial and Technology Transfer*, in "ZAORV", 1996, 56, pp. 796-809; Daniel NAVID, *Compliance Assistance in International Environmental Law: Capacity-Building, Transfer of Finance and Technology*, in "ZAORV", 1996, 56, pp. 810- 819; Peter H. SAND, *Institution-Building to Assist Compliance with International Environmental Law: Perspectives*, in "ZAORV", 1996, 56, pp. 774-795.
[113] See UNFCCC, Art. 4.1(c).

finances must be provided by developing countries, so that developing countries can promptly implement Art. 4.1(c). Art. 4.5 is more precise, by establishing that rich Countries "shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention. In this process, the developed country Parties shall support the development and enhancement of endogenous capacities ad technologies of developing country Parties. Other Parties and organisations in a position to do so may also assist in facilitating the transfer of such technologies".[114]

The Kyoto Protocol makes a further step in the direction of cooperation and furtherance of technology , in Art. 10 and Art.11.

First of all, technology is linked not only to mitigation but also to adaptation[115]; this is important, since the differential treatment leads to an exemption for developing Countries from mitigation commitments. They have to focus on adaptation, and in this way their need of advanced technology may be met.

Secondly, the word *technology* is replaced by the expression *environmentally sound technologies* (ESTs), which clearly denotes win-win situations. Developed Countries therefore have to commit themselves to transfer technologies that are both an incentive to economic development and at the same time protect the environment. In this way, the integration aspect of the principle of sustainable development is fully taken into consideration.

Thirdly, the distinction is drawn between public and privately owned technologies. If the first are managed directly by developed Countries' governments, in the private sectors a major role is to be played by developing Countries themselves, with the creation of the conditions to favour foreign direct investments.

The gap between developed and developing Countries lies not only in technology and financial capacities, but also in the lack of human resources as well as proper

[114] See UNFCCC, Art.4.5.

[115] See Kyoto Protocol, Art. 10(c).

institutions and organisation. Therefore the need to help non-Annex I Parties through the so-called capacity building. No definition of capacity building can be found in either the UNFCCC or the Kyoto Protocol; this expression implies a series of actions and activities to enhance the instruments of participation of developing Countries to the regime, and it involves a number of actors including national States, international organisations as well as non-governmental organisations[116].

Another area in which capacity building is to unfold concerns the elaboration of sustainable development programmes in which climate change concerns could play a significant role. The purpose is thus to create societies in which the environment in general and climate change in particular are recognised as shared priorities, and in which policy-makers do have the institutional and personal capacities to actively participate to the decision-making process of the regime.

The UNFCCC emphasises the need to support and enhance endogenous capacities of developing Countries, in relation to both technology transfer[117] and research and systematic observation[118], also through the work of the subsidiary body for scintific and technological advice[119].

Like the UNFCCC also the Kyoto Protocol lacks a specific article on capacity building, and the most important references to this issues are contained in Art. 10 (continuing to advance the implementation of existing commitments). Art. 10(d)

[116] On the role of NGOs in the climate change regime see David TOLBERT, *Global Climate Change and the Role of International Non-Governmental Organisations,* in Robin R. CHURCHILL & David FREESTONE, *International Law and Global Climate Change*, London, 1991; Chad CARPENTER, *Business, Green Groups and the Media: The Role of Non-Governmental Organizations in the Climate Change Debate*, in "International Affairs", vol. 77, 2001, pp. 313-ff; Chiara GIORGETTI, *The Role of Nongovernmental Organizations in the Climate Change Negotiations,* in "Colorado Journal of International Environmental Law & Policy", vol. 9, 1998, pp. 115-ff; Clair GOUGH & Simon SHACKLEY, *The respectable politics of Climate Change: The Epistemic Communities and NGOs,* in "International Affairs", vol. 77, 2001, pp. 329-ff.

[117] See UNFCCC, Art. 4.5.

[118] See UNFCCC, Art. 5(c).

[119] See UNFCCC, Art. 9.2(d), according to which the subsidiary body for scientific and technological advice shall "provide advice on scientific programmes, international cooperation in research and development related to climate change, as well as on ways and means of supporting endogenous capacity-building in developing countries".

reaffirms the need to promote the development and strengthening of endogenous capacities and capabilities to participate in international and intergovernmental efforts, programmes and networks on research and systematic observation[120], and in paragraph (e) of the same article the human and institutional aspects are stressed, with a view to facilitating public awareness and public access[121].

A clearer definition of principles, scope and purposes of capacity building can be found in relevant COP decisions[122]. Decision 2/CP.7 in particular provides for a framework for capacity building in developing countries, and sets out some guiding principles and approaches[123].

Some pivotal guiding principles may therefore be identified for the implementation of capacity building activities:

-Capacity building aims to promote sustainable development, integrating environmental and climate concerns with development goals and social protection.

-The specific needs and conditions of developing Countries must be taken into consideration, since there is no "one size fits all" formula for capacity building[124]. The differential treatment implies focusing on each Country's situation, with *ad hoc* projects, trying to "build on existing processes and endogenous capacities"[125].

-A significant level of cooperation is needed, both with international organisations and with national entities.

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[120]See Kyoto Protocol, Art. 10(d).

[121] See Kyoto Protocol, Art. 10(e), according to which parties shall "cooperate in and promote at the international level, and, where appropriate, using existing bodies, the development and implementation of education and training programmes, including the strengthening of national capacity building, in particular human and institutional capacities and the exchange or secondment of personnel to train experts in this field, in particular for developing countries, and facilitate at the national level public awareness of, and public access to information on, climate change[...]".

[122] Capacity building is the object of some important COP decisions, such as Decision 2/CP.7 and Decision 3/CP.7.

[123] See Decision 2/CP.7,annex, paras 2-13.

[124] See Decision 2/CP.7,annex, para. 5.

[125] See Decision 2/CP.7,annex, para. 11.

3.6) CONCLUDING REMARKS

The analysis of the various obligations upon States allows the conclusion that the whole regime is centred on the concept of sustainable development, in its different aspects[126]. According to part of academic opinion, the evolution itself of the regime denotes a more intense focus on the environmental and social aspects of sustainability, which are not seen in contrast with economic development[127].

The Delhi Ministerial Declaration on Climate Change and Sustainable Development adopted at COP8[128] clearly aims to put sustainable development at the heart of efforts to tackle climate change. By stating that "in order to respond to the challenges faced now and in the future, climate change and its adverse effects should be addressed while meeting the requirements of sustainable developments"[129], it expressly recognises the role of sustainable development as a guiding principle, and implicitly acknowledges that there are ways to face the problem which may not be deemed as sustainable[130].

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[126] See Gerhard LOIBL, *The Evolving Regime on Climate Change and Sustainable Development,* in Nico SCHRIJVER and Friedl WEISS (EDS.), *International Law and Sustainable Development. Principles and Practice,* Leiden, 2004, p.107 ("As the evolution of the climate change regime demonstrates, the concept of sustainable development stands at the heart of efforts to combat global climate change").

[127] See Karin ARTS and Joyeeta GUPTA, *Climate Change and Hazardous Waste Law: Developing International Law of Sustainable Development,* in Nico SCHRIJVER and Friedl WEISS (EDS.), *cit.* supra, p.533, where the authors welcome the Kyoto Protocol as "a refreshing change" compared to the "remarkable ambiguity of the text of the Climate Change Convention", accused of supporting view that considers economic growth as an essential precondition to sustainable development : "some innovative elements of sustainable development have been articulated in the Kyoto Protocol too. Firstly, there is the idea that, especially in poor countries, sustainable development can be achieved partly by exploring the synergies between the FCCC, the Biodiversity and Desertification Conventions, and partly by capacity building programmes. Secondly, the sustainable development concept is also elaborated in terms of the cost-effectiveness principle which is mentioned in the article on Principles of the FCCC and Article 10 of the Kyoto Protocol."

[128] See Decision 1/CP.8.

[129] See Decision 1/CP.8, para. 1.

[130] Such as, for instance, the possibly negative impacts of sinks rules on biodiversity, or the issue of nuclear energy, on which see OECD(ed.), *Nuclear Energy and the Kyoto Protocol,* Paris, 2002 and Timothy J. V. WALSH, *Turning our backs: Kyoto's mistaken nuclear exclusion*, in "Georgetown International Environmental Law Review", 2003, vol. 16, 1, pp. 147-170.

As we have seen in the previous pages, the commitments of the parties of the climate change regime result from the particular status of each Country. In a direct application of the principle of common but differentiated responsibilities in fact, the distinction between developed and developing Countries is constantly present, although embedded in a classification based on the inclusion or not in certain Annexes. Rich Countries have to implement policies and measures to reduce their emissions of GHGs, to achieve specific targets in a temporal framework, to assist developing Countries with transfers of financial resources, technology and concrete assistance to enhance their awareness of the problem, as well as the possibility of becoming more active players in the negotiating process. Parties with economy in transitions committed themselves to achieve emissions reductions, but due to their economic problems are not requested to contribute to financial or technical assistance. Developing Countries take part in the regime by developing their institutional framework and human resources, with the help of developed Countries, and by preparing the general instruments which will be necessary to unfold adaptation policies. Every activity and action is to be taken giving due consideration to the specific needs and vulnerability of developing Countries, especially LDCs.

This is clearly the first step of a continuous process, and it is determined by the consideration of the historical contribution to the phenomenon of climate change on the one hand, and of the financial and technical capacities available to parties on the other hand. When the situation evolves, with a decrease in emissions from developed Countries, an increase from developing Countries, an easier access to environmentally sound technologies and to financial resources, together with a better understanding of the possibilities for win-win situations, the balance of commitments will very likely be struck in a different manner. But now it is time for developed Countries to take the lead, and to show that actions to curb dangerous emissions in the atmosphere can be achieved without jeopardising the economic growth and welfare of poorer Countries.

The legal instruments of the regime establish a framework for a system in which economic, social and environmental concerns are intertwined and are not seen as pulling in different directions.

In academic opinion all the general elements of sustainable development law, in a rather broad definition, have been identified in the UNFCCC and Kyoto Protocol[131]: principles of international economic relations, duty to cooperate, right to development, integration principle, precautionary principle, inter and intra-generational equity, common but differentiated obligations, duty not to cause harm, sovereignty over natural resources, common heritage and the common concern of humankind, environmental impact assessment, public participation and access to information.

We do not believe that all of these aspects are equally significant, but we cannot avoid underlying and welcoming the underpinnings of the regime as they emerge from the set of commitments: each Country can do something, each Country is required to contribute according to its capacities, climate change in not an isolated issue, but it impacts on very sensitive sectors of national economies, and in dealing with it Parties should promote sustainable patterns of development, for the benefit of the environment and the welfare of populations.

[131] See Karin ARTS and Joyeeta GUPTA, *Climate Change and Hazardous Waste Law: Developing International Law of Sustainable Development,* in Nico SCHRIJVER and Friedl WEISS (EDS.), *International Law and Sustainable Development. Principles and Practice,* Leiden, 2004, pp. 546-549, in which the authors cannot find reference only to human rights, polluter pays principle and good governance including democratic accountability.

CHAPTER IV:
THE CLEAN DEVELOPMENT MECHANISM: ESTABLISHING A REGULATORY FRAMEWORK TO FAVOUR CLIMATE-FRIENDLY INVESTMENTS IN DEVELOPING COUNTRIES

In this chapter we will analyse one of the most innovative mechanisms established by the Kyoto Protocol, that is the Clean Development Mechanisms (CDM).

The history of the negotiations is necessary to understand the different positions and concerns among the international community.

The agreement reached in Kyoto though was not enough to make the system fully operational: we will try to describe the more detailed rules adopted in this regard, with particular attention to the various actors involved and to the different steps of the so-called project-cycle, that is the institutional stages designed to get a formal approval of CDM projects. What are the actors that are called to play a role? Do only national States have a function? How can every entity participate in the single phases of the project cycle?

Once that these aspects have been clarified, we will try to identify possible contrasts with some substantial rules of international investments law, namely the prohibition of discrimination and of performance requirements.

We will finally try to assess how the detailed regulation of the whole system has addressed and to what extend has solved some problems and concerns that emerged during the negotiations, as well as to draw some conclusion from the first practice which took place up to date.

4.1) A BRIEF NEGOTIATING HISTORY: FROM JOINT IMPLEMENTATION TO CDM

The negotiating history of Art. 12 of the Kyoto Protocol, which defines the clean development mechanism, is strictly linked with that of Art. 6 on joint implementation[1].

The starting point is the necessity to provide for some kind of flexibility, in order to incentive developed Countries in meeting their mitigation commitments. According to classic economic theory, measures to limit GHG emissions should preferably be taken where they are cheapest, or even profitable: the beneficial effects on climate are equally achieved, and at the same time economic development is not hindered. But the idea of joint implementation brings about a series of questions and concerns, particularly on the potentially negative environmental outcome, the participation of developing Countries and their sovereign rights.

At COP 1 Parties agreed to establish a pilot phase of "activities implemented jointly"(AIJ), which would not grant credits to developed Countries, but could help in understanding the actual potentials of international cooperation in dealing with climate change. Such projects were subject to certain requirements:

-voluntary participation, and formal approval by participating governments;

-compatibility with national environmental and developmental priorities;

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[1] On joint implementation in general, see: Sean CONATY, *The Potential Utility of Joint Implementation Mechanisms in the Kyoto Protocol,* "Asia Pacific Journal of Environmental Law", vol. 3, 1998, p. 363; Alex HANAFI, *Joint Implementation: legal and institutional issues for an effective international program to combat climate change,* "Harvard Environmental Law Review", 1998, pp. 441-508; Thomas HELLER, *Joint Implementation and the Path to a Climate Change Regime* , Jean Monnet Chair Paper, n. 23, EUI, Florence, 1995; Onno KUIK, Paul PETERS & Nico SCHRIJVER, *Joint Implementation to curb Climate Change,* Kluwer Academic Publishers, 1994; Charlotte STRECK, *Joint Implementation: History, Requirements, and Challenges,* in David FREESTONE and Charlotte STRECK, *Legal Aspects of Implementing the Kyoto Protocol Mechanisms: Making Kyoto Work,* New York, 2005; Glenn WISER, *Joint Implementation: Incentives for Private Sector Mitigation of Global Climate Change,* "Georgetown International Environmental Law Review", vol. 9, 1997, pp. 747-ff.

-environmental additionality: real, measurable and long-term benefit that would not have occurred otherwise;

-financial additionality: financial resources for these projects should not be diverted from official development assistance.

These criteria were the basis for Art. 6 of the Kyoto Protocol, which sets out four conditions on Parties engaged in joint implementation activities:

-approval of the Parties involved[2];

-environmental additionality[3];

-compliance with the obligations pursuant to Art. 5 (establishment of national systems for the estimation of GHG emissions) and Art. 7 (reporting obligations)[4];

-supplementarity against domestic actions[5].

Some other issues remained still unclear, and the different positions of various negotiating groups resulted in a deadlock: some developed Countries wanted to involve developing Countries, and enlarge geographical flexibility opportunities, while developing Countries asked for additional financial resources, with AOSIS delegation focusing particularly on adaptation.

At a late stage of the Kyoto process, Brazil proposed a Clean Development Fund, based on a clear architecture: defining emissions ceilings to individual industrialised countries, and establishing a fund financed by non-compliant developed States at a fixed rate per ton of carbon equivalent above the level of assigned amounts[6]. In such a way, financial resources would be available for both mitigation and adaptation projects in developing Countries. Of course Brazil, being one of the biggest emitters of GHGs, proposed a system in which each Country would be eligible for a share of the overall amounts available according to the level

[2] See Kyoto Protocol, Art. 6.1(a).

[3] See Kyoto Protocol, Art. 6.1(b), according to which "any such project provides a reduction in emissions by sources, or an enhancement of removals by sinks, that is additional to any that would otherwise occur".

[4] See Kyoto Protocol, Art. 6.1(c).

[5] See Kyoto Protocol, Art. 6.1(d), according to which credits from JI "shall be supplemental to domestic actions for the purposes of meeting commitments under Article 3".

[6] See FCCC/AGBM/1997/MISC.1/Add.3.

of its emissions. The occasion was grasped by the USA in particular, which were interested in fully exploiting geographical flexibility. They started working on the Brazilian proposal, of which they could not accept the punitive dimension of contributions to the fund, which could otherwise be seen as a means of avoiding non-compliance and therefore meeting the mitigation obligations through climate friendly investment in developing Countries.

The final result, the definition of a clean development mechanism according to Art. 12 of the Kyoto protocol[7], is an elaborated compromise, in which the USA and other developed Countries obtained the possibility of engaging developing Countries and taking advantage of geographical flexibility, developing Countries managed to ensure additional financial resources to fund sustainable development, and accepted the idea of generating and trading emissions reduction credits in exchange for the deletion of a specific article on voluntary commitments, and finally AOSIS countries were satisfied with the provision of additional money for adaptation.

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[7] On the CDM in general see: Nathalie EDDY, *Public Participation in CDM and JI Projects*, in David FREESTONE and Charlotte STRECK, *Legal Aspects of Implementing the Kyoto Protocol Mechanisms: Making Kyoto Work*, New York, 2005; Michael GRUBB, Christian VROLIJK & Duncan BRACK, *The Kyoto Protocol. A Guide and Assessment*, London, 1999; Ernestine MEIJER and Jacob WERKSMAN, *Keeping it Clean: Safeguarding the Environmental Integrity of the Clean Development Mechanism*, in David FREESTONE and Charlotte STRECK, *cit. supra*; Sean Michael NEAL, *Bringing Developing nations on Board the Climate Change Protocol: Using Debt-for-Nature Swaps to Implement the Clean Development Mechanism*, "Georgetown International Environmental Law Review", vol. 11, 1998, pp. 163-ff.; Sebastian OBERTHUR and Herman E. OTT, *The Kyoto Protocol: International Climate Policy for the 21st Century*, Berlin, 1999, pp.165-186; Jyoti Prasad PAINULY, *Baselines for Clean Development Mechanism Projects: The Marrakesh Accords and Beyond*, in "International Environmental Agreements", 2003, vol. 3, pp. 323-348; Jacob WERKSMAN, *The Clean Development Mechanism: Unwrapping the "Kyoto Surprise"*, "Review of European Community & International Environmental Law", vol. 7, 1998, p. 147; Martijn WILDER and Paul CURNOW, *The Clean Development Mechanism*, in "The University of South Wales Law Journal", vol. 24, n. 2, 2001, pp. 577-582; Hugh WILKINS, *What's New in the CDM?*, "Review of European Community and International Environmental Law", 11 (2), 2002, pp. 144-158; Glenn WISER, *The Clean Development Mechanism versus the World Trade Organization: Can Free-Market Greenhouse Gas Emissions Abatement Survive Free Trade?*, "Georgetown International Environmental Law Review", vol. 11, 1999, pp. 531-ff.; Farhana YAMIN and Joanna DEPLEDGE, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures*, Cambridge, 2004, chapter 6.

Article 12 of the Kyoto Protocol is made up of 10 paragraphs, establishing the basic normative framework for the CDM, which is "defined", according to the words deployed in para. 1[8]. The CDM is a synthesis of expectations from both developed and developing Countries. Rich States need such a mechanism to achieve compliance with their quantified emission limitation and reduction commitments under Article 3[9], while developing States will be assisted "in achieving sustainable development and in contributing to the ultimate objective of the Convention"[10].

The principle of sustainable development should therefore underpin the whole mechanism, which is not obvious, since there are climate-friendly projects, in the field of energy production or forestry management, which can have negative impacts on the environment (for instance safe disposal of nuclear waste or risks for biodiversity).

The core issue is therefore how to grant effective implementation of the principle of sustainable development? How to create an institutional framework, and how to distribute competences among various possible actors in order to put sustainability at the centre of the whole mechanism? According to para. 4 of Art. 12, it is the COP/MOP to elaborate further rules for the implementation of the CDM[11], under the supervision of a new institution, called executive board of the clean development mechanism[12].

At Marrakesh consensus was reached on the so-called CDM project cycle, a series of steps necessary to have the project formally approved of and thus able to generate credits. In fact the aim of this kind of investment is generating credits

[8] See Kyoto Protocol, Art. 12.1; according to Sebastian OBERTHUR and Hermann E. OTT, *cit. supra*, p. 168, this language is a compromise and conceals the different positions: developed Countries opposed to creating a new financial institution, while developing Countries did not trust GEF.

[9] See Kyoto Protocol, Art.12.2, as well as Art.12.3(b).

[10] See Kyoto Protocol, Art. 12.2, as well as Art. 12.3(a).

[11] See Kyoto Protocol, Art. 12.4.

[12] On the role of the executive board of the clean development mechanism see next paragraph.

(certified emissions reductions or CERs) that certify the reduction in GHG emissions.

Art 12.5 defines three fundamental characteristics of emissions reduction from CDM projects, which do not differ significantly from those we have seen concerning JI:

-Voluntary participation approved by each Party involved: we will see in the cycle how concerns regarding sovereignty were addressed[13];

-Environmental outcome, in terms of real, measurable and long-term benefits related to mitigation of climate change[14];

-Additionality: emissions reductions obtained through CDM projects must be additional to any that would occur in the absence of such activities[15].

Other principles which should guide the implementation of the CDM are "transparency, efficiency and accountability" in the verification of the projects, which cannot be left to Parties involved, but are to be subject to some sort of independent auditing[16]. Another fundamental issue concerns the financial resources to devote to adaptation, which Art. 12 leaves unclear, stressing however the need "to assist country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation[17]".

4.2) THE ACTORS INVOLVED

The CDM project cycle, as we will see in the next paragraph, is an innovative procedure which has been designed to strike a balance between the different and somehow diverging needs and concerns of States parties involved. In this respect, the subjects involved are not those that are traditionally considered in the theory of public international law (States, international organisations and their institutions) ,

[13] See Kyoto Protocol, Art. 12.5(a).
[14] See Kyoto Protocol, Art. 12.5(b).
[15] See Kyoto Protocol, Art. 12.5(c).
[16] See Kyoto Protocol, Art. 12.7.
[17] See Kyoto Protocol, Art. 12.8.

but include emergent players in the international arena, such as private entities, non-governmental organisations, as representatives of the so-called civil society. Different actors play various roles during the steps of the cycle, and we will try to examine what their contribution can be for an effective implementation of the CDM.

4.2.1) CONFERENCE OF THE PARTIES SERVING AS THE MEETING OF THE PARTIES

The Conference of the Parties serving as the meeting of the parties (COP/MOP) has a fundamental role in the management of the CDM. It consists of all the Parties to the Kyoto Protocol and is the overall guidance to the whole mechanism.

Before the entry into force of the Kyoto Protocol a fundamental question arose: if we want to prompt start the CDM, how can we deal with the fact that the COP/MOP does not exist yet? The solution was found by allowing the COP, that is the governing body of the UNFCCC, to perform all the functions reserved to the COP/MOP competence[18].

The most relevant competence of the COP/MOP is the role of guidance to the Executive Board, in particular by taking decisions on its rules of procedures[19], by reviewing its annual reports[20], as well as the regional and subregional distribution

[18] See Decision 17/CP.7, paras 1 and 2.

[19] See Decision 17/CP.7, annex on modalities and procedures for a clean development mechanism, B (role of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol), para. 3(a).

[20] See Decision 17/CP.7, annex on modalities and procedures for a clean development mechanism, B (role of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol), para. 4(a).

of CDM project activities, with a view to granting more equity[21], and by assisting in arranging funding of CDM project activities, as necessary[22].

4.2.2) EXECUTIVE BOARD:

A new and autonomous institution was considered as necessary to govern the whole system; the Kyoto Protocol itself[23] mentions the establishment of an executive board, leaving it to following COPs to decide its precise composition and functions. Such detailed rules were adopted at COP8, in New Delhi, in 2002[24]. We will examine these aspects in the two subparagraph, trying to assess whether the actual shape of this institution can grant the impartiality and efficiency that are necessary for the future of the CDM.

4.2.2.1) COMPOSITION:

The Executive Board consists of ten members and ten alternate members, from the same regional groups, who differ from the former in that they do not enjoy the right to vote, and help them in attending all the meetings and actively taking part in the activities[25].

One very delicate question was how to grant an equitable representation of all different Parties involved in the regime? We have seen in the previous chapter how the traditional distinction between developed and developing Countries is not always capable to picture the multifaceted interests and concerns of States Parties.

[21] See Decision 17/CP.7, annex on modalities and procedures for a clean development mechanism, B (role of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol), para. 3(c).

[22] See Decision 17/CP.7, annex on modalities and procedures for a clean development mechanism, B (role of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol), para. 3(d).

[23] See Kyoto Protocol, Art. 12(4).

[24] See Decision 21/CP.8, "Guidance to the Executive Board of the clean development mechanism".

[25] See Decision 21/CP.8, rule 5 (3), according to which "in the absence of a member from a meeting of the Board, his/her alternate shall serve as the member for that meeting".

The basis is the United Nations regional Groups, which indicate one member each; furthermore, two other members are from Parties included in Annex I, two other members from the Parties not included in Annex I, and one representative of the island developing States[26]. The outcome is a composition in which developing Countries are significantly represented.

Apart from the geographical balance, what are the guarantees for the independent working of the institution and its members? They are elected for a period of two years, can be confirmed for a second term[27], and must possess appropriate technical and/ or policy expertise[28]. Once they are nominated, they must act in their personal capacity, and the fact they are not bound by the needs and concerns of their national governments, unlike in other parts of the climate change regime, should grant the apolitical and professional nature of their work.

Further guarantees and safeguards are prescribed, including the necessity to take a written oath of service declaring that on the one hand they have no pecuniary or financial interest in any aspect of a CDM project activity or any designated operational entity [29], and on the other hand that they will not disclose , even after the termination of their functions, any confidential or proprietary information they may come across during their term of office[30].

All these provisions are reinforced, together with the active role of NGOs, which we will analyse in the next paragraph, by the indication of a sanction, that is the possibility of suspending and recommending to the COP/MOP the termination of the membership of a particular member for breach of the conflict of interest or of

[26] See Decision 21/CP.8, rule 3.

[27] See Decision 21/CP.8, rule 4. To grant the continuity of the work of the EB, according to rule 4.1(b) "five members and five alternate members shall be elected initially for a term of three years and five members and five alternate members for a term of two years". This is to grant that no more than half of the board is newly elected at the same time, which is a common concern of international bodies.

[28] See Decision 21/CP.8, rule 4.1(c).

[29] See Decision 21/CP.8, rule 9 and rule 10.

[30] See Decision 21/CP.8, rule 10 and rule 11.

confidentiality provisions or failure to attend two consecutive meetings of the Executive Board without proper justification[31].

The rules concerning the composition of the Executive Board should therefore grant its independence and authoritativeness, and prevent the development of what has been called a culture of approval[32]. The risk in fact is that of an informal *modus vivendi*, for which none of the members contests the environmental soundness of projects in other Countries for fears of retaliatory approaches when a project in their own State is to be approved of.

Only the actual practice of the Executive Boards will demonstrate whether this concern is well-founded or not, but a whole series of provisions, concerning the modality of voting (a quorum of at least two-thirds of the members[33], decisions based on consensus, or, whenever it is not possible, a qualified majority of three-fourths of the members present and voting at the meeting[34]), transparency (including the use of the website to further information[35]) and attendance of the meetings (which are open to all Parties and accredited observers[36]), seems to point in the direction of a transparent system, in which stakeholders can play a significant role.

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[31] See Decision 21/CP.8, rule 7.

[32] On this point see Ernestine MEIJER and Jacob WERKSMAN, *cit. supra,* p. 205. The authors raise some doubts concerning the election to the interim EB, during its pilot phase, of members who were at the same time involved in the negotiations on the design of the CDM as government representatives: "while these individuals are undoubtedly experts in the treaty texts they themselves designed, it is open to question whether it is reasonable to expect them to wear both hats, of independent decision-maker in the CDM, and diplomatic representative in the COP, comfortably".

[33] See Decision 21/CP.8, rule 28.

[34] See Decision 21/CP.8, rule 29. According to para. 2 of this rule, "the Chair shall ascertain whether consensus has been reached. The Chair shall declare that a consensus does not exist if there is a stated objection to the proposed decision under consideration by a member of the Executive Board or by an alternate member acting for a member."

[35] See Decision 21/CP.8, rule 26.

[36] See Decision 21/CP.8, rule 27.

4.2.2.2) FUNCTIONS

The Kyoto Protocol itself provides for some functions of the Executive Board: it has to supervise the CDM[37], as well as to guide the involvement of private and/ or public entities[38]. A comprehensive list of the functions of the CDM has been agreed upon during COP7[39]: we will try to group them according to the activity involved.

-Recommendations to the COP/MOP, concerning further modalities and procedures for the CDM[40], amendments or addition to rules of procedures for the EB[41], as well as procedures to facilitate consideration of information from Parties, stakeholders and UNFCCC accredited observers[42], and designation of operational entities, for whose accreditation it is responsible[43].

-Reporting to the COP/MOP, on its activities in general[44], and more specifically on other issues such as the regional and subregional distribution of CDM project activities, with a view to their equitable distribution[45],and the observance of modalities and procedures for the CDM by project participants and/or operational entities[46].

-Methodological issues, including reviewing provisions with regard to simplified modalities, procedures and the definitions of small scale project activities[47] and approving new methodologies related to, *inter alia*, baselines, monitoring plans and project boundaries[48].

[37] See Kyoto Protocol, Art. 12(4).
[38] See Kyoto Protocol, Art. 12(9).
[39] See Decision 17/CP.7, paras. 5(a) to 5(p).
[40] See Decision 17/CP.7, para. 5(a).
[41] See Decision 17/CP.7, para. 5(b).
[42] See Decision 17/CP.7, para. 5(o).
[43] See Decision 17/CP.7, para. 5(f) and (g).
[44] See Decision 17/CP.7, para. 5(c).
[45] See Decision 17/CP.7, para. 5(h).
[46] See Decision 17/CP.7, para. 5(n).
[47] See Decision 17/CP.7, para. 5(e).
[48] See Decision 17/CP.7, para. 5(d).

-Publicity: the need to develop a transparent system is reflected in some provisions concerning the establishment of a publicly available database of CDM project activities with information, comments on verification reports, decisions, etc.[49], a depository of approved rules, procedures, methodologies and standards[50],as well as a period of at least eight weeks for public comments on draft methodologies and guidance before documents are finalised[51] and also the need to make publicly available relevant information on proposed CDM project activities, in order for them to gather the attention of possible funders.

-Registration of Certified Emissions Reductions through a CDM registry. We will see in the next paragraph how this is the very core of the whole CDM.

Due to the technical questions that the EB is often required to work on, "it may establish committees, panels or working groups to assist it in the performance of its functions. The Executive Board shall draw on the expertise necessary to perform its functions including from the UNFCCC roster of experts. In this context, it shall take fully into account the consideration of regional balance."[52]

In this first years of experience, panels have been created both for *ad hoc* and temporary tasks[53] and for more general functions[54].

Panels, which operate according to guidelines and specific terms of reference and guidance developed by the Board[55], consist of members who act in their individual capacity, and their work is made publicly available to stakeholders.

[49] See Decision 17/CP.7, para. 5(m).
[50] See Decision 17/CP.7, para. 5(p).
[51] See Decision 17/CP.7, para. 5(j).
[52] See Decision 17/CP.7, para. 18.
[53] See for instance the panel to develop reccomendations on simplified modalities and procedures for small-scale CDM project activities.
[54] See for instance the panels on accreditation and methodologies.
[55] For these and other documents see the CDM websites, http://cdm.unfccc.int.

4.2.3) STATES PARTIES

Since the CDM was designed to help parties to the Kyoto Protocol meet their commitments and achieve sustainable development, it is important to focus on the role of national States. The basic question which needs an answer is what requirements are to be considered necessary to allow a State to participate in the CDM?

The situation of course differs in case of Annex I and non-Annex I Countries, since the former are supposed to provide for the technical and financial resources to invest in the latter. All Countries involved in CDM projects are to be Parties of the Kyoto Protocol, the rationale being that you can resort to the flexibility mechanisms only if you have previously accepted the commitments listed in the Protocol. Non-annex I Parties have the only further requirement to designate a National Authority for the CDM.

As we will see in the next paragraph, the two main functions of a Designated National Authority (DNA)[56] in the project cycle are to provide written approval of the voluntary participation of each Party involved in the Project and to confirm (by the host Country) that the project activity assists it in achieving sustainable development[57].

It is therefore of paramount importance to address the issue of sovereignty and to overcome the concerns of developing Countries on the risks of possible impositions from developed States. A formal approval, for each project, means granting developing Countries they are the only responsible for the choice of those activities which can spread sustainability, and that no compulsory participation is required.

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[56] See Robert O'SULLIVAN and Charles CORMIER, *Meeting Participating Country Responsibilities under the CDM: Designating a National Authority*, in David FREESTONE and Charlotte STRECK (Eds), *cit. supra*, pp. 214-216, where the authors stress the lack of competence of the DNA as far as financial, technical aspect are concerned, which leads to the fact that "the DNA is not liable if it approves a project that fails to be registered by the CDM EB, or encounters financial difficulties".

[57] See Decision 17/CP.7, para. 40(a).

One may wonder whether it would have been better to subordinate the participation to the CDM to a more stringent involvement in the regime, for example in terms of participation to the AIJ pilot phase or of accurate and updated national communications. In the end, the necessity of winning developing Countries' resistances to the CDM resulted in a somewhat laxer approach, and is reflected by the stress on voluntary participation.

The idea that a Country cannot be obliged to accept or to be involved in projects it does not deem as necessary to its development goals is deeply rooted in the principle of national sovereignty. One could wonder whether considering climate change as a common concern of humankind implies that choices made by those Countries technologically more advanced should be accepted also by others, in the name of joint efforts to tackle the problem.

This would evidently be an unacceptable reconstruction of the principle, which therefore must be read together with that of national sovereignty over natural resources. In other words, even if certain kinds of investments bring about so-called win-win situations, in terms of both environmental protection and economic development, yet the developing Country can refuse to take part.

Does this run counter to the basic principles of international environmental law informing the climate change regime? Is this a denial of the idea of climate change as a common concern of humankind, and of the principle of common but differentiated responsibilities? Do not we risk jeopardising the aim of sustainable development and the ultimate objective of the UNFCCC?

Developing Countries are very determined in this regard, refusing any kind of obligation that would encroach on their national sovereignty rights. They point to the historical contribution to the phenomenon and do not accept a balance of commitments in which developed Countries discharge their obligation onto the poorer part of the world, where they can achieve mitigation at cheaper prices.

We support this view, and consider the idea of voluntary participation a direct application of the special consideration for the needs and situations of developing

Countries, which have a right to unfold their development and environmental policies in the way they consider as the most suitable to their peculiarities.

For Annex I Countries the participation requirements are more detailed, and besides the ratification of the Kyoto Protocol and the establishment of a DNA, include a series of obligation concerning the prodromal steps which are necessary to gain CERs. Developed Countries with an assigned amount of emissions reductions are therefore required to put in place a national system of anthropogenic emissions by sources and removals by sinks of all GHGs[58], as well as a national registry[59], pursuant to Art. 5 of the Kyoto Protocol[60]. Additionally, the submission of the annual national inventory, in accordance with Art. 5(2) and Art. 7(1) of the Kyoto Protocol is required, together with possible supplementary information on assigned amounts pursuant to Art. 7(1) of the Kyoto Protocol[61].

All these further requirements, which basically relate to the exact calculation of the initial domestic cap on emissions, are necessary to grant the correct functioning of the CDM, preventing for instance emissions reduction from being double counted as they move from one Country to another[62].

4.2.4) PRIVATE ACTORS (PROJECT DEVELOPERS, DOEs,)

The Kyoto Protocol provides for the participation in the CDM of private and/or public entities, subject to guidance from the Executive Board[63]. With the evolution of CDM rules, private actors have begun to play two important roles: as project participants/developers and as designated operational entities (DOEs).

[58] See Decision 17/CP.7, para. 31(c).

[59] On the importance of national registries for GHG emissions trading see Anthony HOBLEY and Peter HAWKES, *GHG Emissions Trading Registries*, in David FREESTONE and Charlotte STRECK (Eds.), *cit. supra*, pp. 127-154.

[60] See Decision 17/CP.7, para. 31(d).

[61] See Decision 17/CP.7, paras. 31(e) and 31(f).

[62] See Ernestine MEIJER and Jacob WERKSMAN, *cit. supra*, p. 204.

[63] See Kyoto Protocol, Art. 12.9.

We will see in this paragraph how these roles can contribute to the functioning of the CDM as a whole.

a)Project participants/developers:

The modalities and procedures for a CDM refer to the expression "project participants", without giving a definition. A project developer can either be a Party involved, and in the case of the host Country we can have a so-called unilateral CDM, which is supposedly the best way for a developing State to unfold its domestic policies, or a private and/or public entity, which participate in CDM activities after authorisation from, and under responsibility of the State Party.

The impossibility for a private entity to play a wholly autonomous role is reflected also in the regulation of the acquisition and transfer of CERs, as well as in the position of its national State. A private entity taking part in the CDM in fact may only acquire or transfer CERs if the State authorising it is a Party to the Kyoto Protocol and meets the other participation requirements, and the responsibility for the fulfilment of the obligations rests on the State Party[64].

The position of private entities in the CDM system, although presenting some innovative features, including the possibility of proposing to the Board new baseline and monitoring methodologies to account for emission reductions (the so-called bottom-up approach[65]), is still to be seen within the framework of international relations, where the overriding importance is attached to national States' actions, and where the legitimation for such private actors derives from the authority of a sovereign State.

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[64] See Decision 17/CP.7, para. 33, according to which "a Party that authorizes private and/or public entities to participate in Article 12 project activities shall remain responsible for the fulfilment of its obligations under the Kyoto Protocol and shall ensure that such participation is consistent with the present annex. Private and/or public entities may only transfer and acquire CERs if the authorizing Party is eligible to do so at that time".

[65] On the importance of the bottom-up approach see Maria NETTO and Kai-Uwe BARANI SCHMIDT, *CDM Project Cycle and the Role of the UNFCCC Secretariat*, in in David FREESTONE and Charlotte STRECK, *cit. supra*, p. 190.

In academic opinion[66] the question of the exact legal nature of this relationship has been raised, in particular on the accountability for the actions performed by the private entity. Could it be possible to construe such legal relationship as one of principal (the States giving authorisation) and agent (the private entity acting by virtue of such authorisation), so that the sponsoring State may be held liable for breaches of contract or other rules (domestic law, bilateral treaties) by the private entity?

We agree with the position denying such reconstruction, since the roles of private entities in the CDM cycle, as we will see in the next chapter, cannot be attributed to the domestic government granting authorisation. For instance, a private entity acting as a DOE, in charge of the validation of a project, acts as a private subject, without involving the authority of the sovereign State. The opposite solution would not be understandable in international law.

The authorisation is therefore a requirement for participation of a private entity, but does not involve the national State's responsibility, since the source of the legal obligations and rights is the contract which is signed by the private company. And in all cases of breaches or disputes, it would be natural to resort to the remedies offered by the CDM rules, or the domestic legal system, leaving to the State the possibility of acting in diplomatic protection.

b) Designated Operational Entities:

This important role, played by private entities, is essential for the correct working of the whole CDM. DOEs shall validate proposed CDM project activities, as well as verify and certify reductions in anthropogenic emissions by sources of GHGs[67]. Granting the impartiality of the work of DOEs is vital for the credibility of the CDM cycle, since the EB will issue CERs according to DOEs' findings. A long list of requirements must be met for a private entity to be eligible as a DOE: be a legal entity (domestic or an international organisation), employ a

[66] See Ernestine MEIJER and Jacob WERKSMAN, *cit. supra*, p. 207.
[67] See Decision 17/CP.7, para. 27.

sufficient number of persons, have financial stability, insurance coverage and resources required for its activities, as well as internal procedures for the allocation of responsibility within the organisation and for handling complaints[68].

Apart from these requirements concerning the structure and competence of the entity, others are of paramount importance to ensure transparency and reliability[69]: no real or potential conflict of interest with the participants in the CDM project activities; involvement in only one of the functions related to each CDM project: either validation or verification and certification[70]; a publicly available list of all CDM project activities for which it has carried out validation, verification and certification; an annual activity report to the EB; publicity for information obtained from CDM project participants.

Furthermore, DOEs accountability is achieved in two manners: first of all with the possibility of suspension or withdrawal, decided by the COP/MOP, upon the input from the EB[71], and secondly through the provision of financial penalties. In other words, the DOEs will have to pay for the quantity of CERs it has certified in excess.

If all these requirements are to be hailed as guarantees for the correct and impartial development of the system, one cannot avoid wondering whether the difficulty in meeting all these requirements may hinder accreditations of DOEs from developing Countries. The COP/MOP in fact, when formally designating the DOEs, will have to ensure a sufficient regional and subregional distribution, and up to now, among the thirty private entities that have entered the accreditation process, only six come from developing Countries[72].

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[68] See Decision 17/CP.7, Appendix A, para. 1.

[69] See Decision 17/CP.7, Appendix E, para. 27.

[70] According to Decision 17/CP.7, Appendix E, para. 1(e), "upon request, the executive board may, however, allow a single designated operational entity to perform all these functions within a single project activity".

[71] See Decision 17/CP.7, Appendix A, paras. 21 and 22. It is worthile noting that a DOE, in such cases, has no possibility of challenging or appealing against the decision of suspension or withdrawal.

[72] According to the CDM website, the 6 DOEs from non-Annex I Parties are distributed in Asia, Pacific, Latin America and Caribbean.

4.2.5) PUBLIC PARTICIPATION:

During the project cycle public participation plays an important role: as we will see in the following chapter, both when designing a project activity and before validating it, public comments are sought from local stakeholders, Parties, and International NGOs[73].

In the climate change system the idea of granting participation to those entities that may carry different views than those expressed by national States, is well-established[74]. In the CDM project cycle, NGOs and other stakeholders are requested to submit their opinion on the proposed project, basically to shed some light on the environmental and social implications that may run counter to the fundamental objective of sustainable development.

It is important to underline that the CDM rules prescribe that such comments be taken into consideration, and a report be prepared explaining how this has concretely happened[75].

If the role of NGOs as the expression of the so-called civil society, as opposed to national Governments, is potentially significant, some doubts may be cast on the actual possibility of performing their functions, within legal domestic frameworks which may lack specific reference to their participatory rights.

Although at the global level there are no commonly-shared sets of rules embodied in international treaties concerning public participation, at the regional level some legal instruments on this topic have been agreed upon. Thus, at the European level, more or less generally accepted rules and standards for public participation in

[73] According to Decision 17/CP.7, Annex A, para 1(e), "stakeholders means the public, including individuals, groups or communities affected, or likely to be affected, by the proposed clean development mechanism project activity".

[74] The UNFCCC Secretariat offers five categories from which an NGO applying for UNFCCC observer accreditation may select: 1) business and industry non-governmental organisation (BINGO); 2) environmental non-governmental organisation (ENGO); 3) indigenous peoples organisation (IPO); 4) local government and municipal authority (LGMA); 5) research-oriented and independent organisation (RINGO). On the role of NGOs in the climate change regime in general and in the flexibility mechanisms in particular see Nathalie EDDY, *cit. supra,* pp. 71-104.

[75] See Decision 17/CP.7, para. 37(b).

decision making processes[76] permit a valuable contribution from NGOs and other stakeholders. It would be beneficial for the integrity and transparency of the CDM as a whole the introduction of more specific rules on public participation, to prevent project-developers from racing towards those legal systems where public participation is only nominally permitted[77].

4.3) THE CDM PROJECT CYCLE:

Since the CDM is a project-based mechanism, it implies a series of steps: first of all the project is to be designed in order to meet some specific requirements, then it is implemented and monitored, a further phase relates to the verification of the outcome in relation to the designed performance, and eventually it is confirmed, through the emission of an official document.

4.3.1)IDENTIFICATION OF THE PROJECT AND DEVELOPMENT OF PROJECT DESIGN DOCUMENT

A potential CDM project can be identified by the host Country, according to its domestic environmental and development policies and goals, but ample degrees of participation are granted also to other entities, particularly in the private sector.
First of all private companies, which can be incentived to pursue climate-friendly investments, but also NGOs, as well as international organisations or international investors. The projects is to meet the eligibility requirements under the CDM rules, which may be set out as follows:

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[76] See the UN/ECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environment Matters (Aarhus, 25 June 1998), as well as Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information and repealing Council Directive 90/313/EEC (2003) OJ L41/26.
[77] On this point see See Ernestine MEIJER and Jacob WERKSMAN, cit., p. 210.

-Category of projects: not all the investments are eligible to generate CERs. A series of categories may be identified, relating to the most GHG-intensive economic sectors: energy efficiency, renewables, agriculture, transport, waste-management, forestry[78].

-Technology: if one of the main objective of CDM is enhancing transfer of technology from developed to developing Countries, it is clear that the project is to be based on a proven, established and commercially feasible and replicable technology, which may effectively be transferred to the host Country[79].

-Host Country: as we have underlined, the CDM is open only to Parties to the Kyoto Protocol, and furthermore, the host Country is subject to other requirements: a national authority must be established for approving the projects, as well as a CDM office.

-Environmental outcome: the emissions reduction of the project must be additional to any that would occur in its absence[80]. This must be read in the light of the aim of CDM, that is promoting sustainable development.

In this phase stakeholders' participation and public meetings are vital to ensure transparency in the CDM process. Therefore project developers are requested to invite local stakeholders for comments on the impacts on the surrounding environment and society. A publicly available report is then to be prepared, explaining how such comments have been taken into consideration.

One characteristic which distinguishes CDM from JI or emissions trading is that in case of a project in a developing Country, the total amount of GHG reduction

[78] A complete list of eligible categories would include: a project using a renewable energy sources (wind, solar, biomass, small hydro, etc); a project switching from a high carbon fuel to a lower carbon intensive fuel; an energy efficiency project on the supply side (for example, a project improving electricity transmission and distribution systems or updating district heating networks, etc.); an energy efficiency project on the demand side; a combined heat and power generation project; an agricultural sector project (other than land-use change); a project in the transport sector; a project reducing methane emissions from landfills and other waste-handling activities; a reforestation/afforestation project.

[79] See Decision 17/CP.7, Appendix B, para 2.

[80] See Decision 17/CP.7, para.43, according to which "a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity".

achieved is subtracted from the quantity of one Party, but is not added to the quantity of another, for the simple reason that developing Countries have no mitigation commitments in terms of quantified emission reductions.

The risk is clearly nullifying the domestic efforts, and eventually increase, instead of reducing, the total of GHGs emitted in the atmosphere. That's why on the one hand precise and shared methodologies to calculate additionality are fundamental, and on the other hand the quantity of emission reductions achievable through the CDM must be limited.

-Financial additionality: if the project has been financed by public sources, it must be confirmed that they are not counted towards the official development assistance and GEF financial obligations of Annex I Countries.

This may be seen as running counter to the commitment to transfer financial resources, because developed Countries would simply rename monetary fluxes already devoted to poorer States.

4.3.2)HOST COUNTRY APPROVAL (by national authority)

The formal approval from the host Country, as we have tried to highlight, was intended to overcome some sovereignty concerns raised by developing Countries. What does it imply concretely? Project developers cannot expect a developing Country to accept their project just as a consequence of its environmental benefits. The assessment of the eligibility under the CDM rules is in fact carried out at first by developed Countries' investors through the project design document. Even if projects are identified that would be climate-friendly, a lever to economic development and a means of social improvement, a formal act of acceptance must be obtained from the developing State involved, which in the end remains the only judge of the best ways to achieve sustainable development domestically[81].

[81] But how do Countries concretely assess whether a CDM project help achieve sustainable development or not? Different approaches have been followed, which include compliance with domestic environmental laws, specific, project criteria, with a more or less degree of details

Some institutional framework is needed, and the actual implementation in different Countries shows that the designated national authority is identified within the domestic ministerial system. The project developers are therefore requested to make sure that the host Country is a party to both the UNFCCC and the Kyoto Protocol, and has established the designated national authority, which is in charge of issuing an official letter of approval[82].

4.3.3)VALIDATION OF PROJECT (by a designated operational entity)

Both the project developers and the host Country have a keen interest in the project being approved of; some kind of third-party supervision is therefore needed to grant the environmental outcome expected. This important task is carried out by the so-called designated operational entities (DOEs), which are mainly international non-governmental organisation as listed and accredited by the Executive Board. The project developer is to identify one of such actors, arrange a contract and pay for the services provided.

The DOE gathers all the documentation available[83], and evaluates all relevant information against the CDM requirements set out in the Kyoto Protocol and COP decisions.

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required. On this aspect and actual reference to specific Countries, see Robert O'SULLIVAN and Charles CORMIER, *cit. supra*, pp. 217-219.

[82] Some debate may arise on the content of the letter of approval, being it the official document issued by the host Country's authority. According to Robert O'SULLIVAN and Charles CORMIER, *cit. supra*, pp. 223-224, some CDM investors request additional statements including "(i) the establishment of one of the project participants as the focal point for the project with respect to all communications for the purpose of the UNFCCC, in particular with regard to instructions regarding allocation of CERs at issuance; (ii) the DNA acknowledges the project participants' rights, title and interest in and to all of the GHG emission reductions generated by the Project (and any CERs which are created out of the Project); (iii) the DNA will cooperate to facilitate the CDM process and give assistance, where necessary, for the issuance and transfer of CERs to the Project Participants; and (iv) any public funding of the Project does not result in a diversion of official development assistance (if applicable)".

[83] That is the project design document and the confirmation from the host government that the project meets host country requirements, fosters sustainable development and has been approved.

A fundamental step in this process is the involvement of all interested Parties. Comments from local stakeholders are requested and taken into consideration by the project developers in the identification of the possible impacts on the surrounding society and environment. Here the procedural aspects of sustainable development impose a certain degree of publicity at the international level, beyond merely local concerns. This is aimed at granting more transparency to the whole process, allowing international NGOs and other interested actors, within 30 days from the date when the project is made publicly available, to raise doubts on the feasibility and opportunity of CDM projects[84]. The DOE will have to explain how it has taken into consideration such concerns, in a public report.

4.3.4)REGISTRATION (by CDM Executive Board)

After its validation, the project has to be registered, that is formally accepted by the CDM Executive Board. This is probably the most important function of this institution, and it is a mandatory requirement for the generation of CERs.

The EB has to analyse the documentation provided by the DOE, including the PDD, the formal approval by the NDA of the host Country, and the validation report prepared by the DOE. The idea of such an international and independent institution was necessary to grant impartiality and to ensure that environmental concerns were the overriding priority.

Having a project registered is in the interest of both developed and developing Countries, while for instance economies in transition may fear too lax an approach in this matter could jeopardise other flexibility mechanisms in which they are directly involved, unlike the CDM.

[84] See Decision 17/CP.7, para.40 (c).

A further guarantee for an accurate evaluation of all the possible implications of CDM projects is the period of time: the EB can take up to eight weeks to issue the official registration, before which the project cannot start generating CERs[85].
We will see in the future if this time extension will turn out to be an obstacle for the operationalisation of the CDM, or if it is necessary for all the relevant aspects to be taken into consideration and assessed in the proper way.

4.3.5)IMPLEMENTATION AND MONITORING (by project developer)

After registration is completed, the project can start its actual life. The project developers have to make sure it is consistent with the features resulting from the documentation, since this is a prerequisite to generate CERs.
In the PDD a series of procedures was established, in the form of a monitoring plan, validated by the DOE[86], which provides for the collection and archiving of all relevant data for estimating or measuring anthropogenic emissions of GHGs.
It is of course of paramount importance for the project to guarantee that its performance is not limited to the initial phase, but continues with time.
Such procedures are therefore necessary for a complete monitoring of the operationalisation of the project, and the results will be submitted for verification and certification.
This phase is the basis for the calculation of the exact amount of CERs; in other words, the GHGs reductions derives from the specific time period for which the monitoring results are provided[87].

4.3.6)VERIFICATION AND CERTIFICATION (by designated operational entity)

[85] See Decision 17/CP.7, para. 41.
[86] See Decision 17/CP.7, para. 53.
[87] See Decision 17/CP.7, paras. 58-60.

Verification is the periodic review and ex-post determination of the monitored greenhouse gas emission reductions that have occurred as a result of the CDM project[88].

Some questions may arise concerning this phase: if the system wants to be administered in an independent and transparent manner, can the DOE in charge of verification be the same that already validated the initial project? Would it be better to establish a fixed schedule for verification or leave it to the project developers? With what consequences?

The rule is that these two different steps (validation and verification) should be carried out by two different DOEs, among those indicated in the list provided by the CDM executive board. This should result in a stronger guarantee of independence and impartiality in the evaluation of the data collected by the project developer. But there are two exceptions: in the case of small-case projects (when contracting two different DOEs may excessively increase costs) or when specific approval has been granted by the CDM executive board.

The frequency of verification is left to the discretion of the project developer, of course with the consent of the DOE. More frequent verifications result in increased transaction costs, but also in more frequent transfer of CERs, whose total number deriving from CDM projects during a specific period of time is confirmed at this stage.

One final requirement is the publicity to which the monitoring report must be subject. Once again the idea of transparency and access to information is concretely applied, beyond the institutional boundaries, for which a verification report is submitted to the executive board.

Certification is the written assurance by a designated operational entity that during the specified time period a project activity achieved the reductions in GHG emissions as stated and verified, in compliance with all relevant criteria[89].

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[88] See Decision 17/CP.7, para. 61.

[89] See Decision 17/CP.7, para. 61.

Some questions concerning liability may arise in this regard, especially in cases of mistakes, frauds, or underperformances of the CDM. With the certification, it is the DOE which will be held responsible, according to normal rules of contractual responsibility. The certification report is eventually transmitted to the executive board for the final step of this whole process.

4.3.7)ISSUANCE OF CERs TO PROJECT DEVELOPER (by CDM Executive Board)

At this point the CDM executive board has all the information that is necessary to assess the project and its relevance from the climate point of view, and can issue the CERs corresponding to the quantity of GHG reductions obtained[90]. Particularly important for the regime as a whole is the 2% share that will be devoted to the adaptation fund[91].

The cycle may be seen as a cumbersome series of steps, involving different actors, but other goals were considered more important than a quick approval of projects: accurate description of the project, with an assessment of all the possible environmentally negative consequences and an effective involvement of local communities, formal approval by the host Country, to reassure that nothing is imposed by the developed world, validation form an independent and impartial entity, registration with an international body as the executive board, concrete implementation and monitoring, verified by another independent entity, which certifies the results actually obtained.

Only at the end of this cycle the CDM executive board can issue the credits, as a consequence of a serious project which promotes sustainable development and reduces GHG emissions in the atmosphere.

[90] See Decision 17/CP.7, para. 64.
[91] See Decision 17/CP.7, para. 15(a).

4.4) POTENTIAL CONFLICTS WITH INTERNATIONAL INVESTMENT LAW:

The CDM could result in massive flows of climate-friendly investments from developed to developing Countries. Therefore the specific rules established by the Parties of the regime cannot be considered in isolation from all the relevant provisions in the field of international investments.

International investment law derives from both customary international law and treaties, bilateral or multilateral[92].

If one wanted to identify a core of commonly-shared rules governing international investments, some basic principles would immediately emerge: non-discrimination and prohibition of performance requirements.

We will try to assess how these basic principles of investment law may interfere with the CDM rules, considering that investors may be involved in the CDM-related projects, but also in emissions credits from such projects, as well as project cycle-related services[93].

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[92] Nowadays over 1,700 bilateral investment treaties (BITs) are in force. At the regional level, provisions on the protection of foreign investors from discriminatory treatment are also common (such as in the European Community legal order, or in the North American Free Trade Agreement –NAFTA-), while within the WTO legal order the treatment of foreign products, services and services providers are disciplined by such agreements as the Agreement on Trade-Related Investment Measures(TRIMs) and the General Agreement on Trade in Services (GATS). The attempt to conclude a comprehensive Multilateral Agreement on Investment (MAI), undertaken in the 90s under the auspices of the OECD, eventually failed.

[93] For the identification of possibile contrasts between CDM rules and international investment law see Jacob WERKSMAN, Kevin A. BAUMERT and Navroz K. DUBASH, *Will International Investment Rules Obstruct Climate Protection Policies?*, "World Resources Institute Climate Notes", April 2001, Jacob WERKSMAN, Claudia SANTORO, *Investing in Sustainable Development: the Potential Interaction between the Kyoto Protocol and the Multilateral Agreement on Investment* in W. Bradnee CHAMBERS, *Inter-Linkages: the Kyoto Protocol and the International Trade and Investment Regimes*, Tokyo, New York, 2001; Glenn WISER, *cit. supra*, pp. 531-ff.

4.4.1) NON DISCRIMINATION:

The principle of non-discrimination is two-folded: at the external level, the principle of the most-favoured nation requires the host Country to treat all foreign investors equally, regardless of their Country of origin, while at the internal level, the principle of national treatment prevents the host Country from applying to foreign investors a worse treatment than the one granted to domestic investors. Even if nobody doubts that once a State admits foreign investors, a certain standard of treatment must be granted[94], yet the exact content of this duty is not undisputed. An analysis of the practice concerning BITs underlines the frequency of both national treatment and most-favoured-nation treatment clauses, as concrete aspects of the international minimum standard to be granted to foreign investments[95]. But as we have seen in the previous pages, the climate change regime is based on the idea of special and differential treatment, that is on discrimination between Countries.

The concept of common but differentiated responsibilities results both from the historical contribution to the phenomenon and from the concrete technical and financial capacities to deal with it. All Countries are required to do something, but their obligations differ significantly. The CDM itself may be seen as a direct

[94] See for example the decision of the ICJ,Case concerning the Barcelona Traction, Light and Power Company Limited (Belgium v. Spain), 1970, para. 33: "When a State admits into its territory foreign investments or foreign nationals, whether natural or juristic persons, it is bound to extend to them the protection of the law and assumes obligations concerning the treatment to be afforded them. These obligations, however, are neither absolute nor unqualified".

[95] See Giorgio SACERDOTI, *Bilateral Treaties and Multilateral Instruments on Investment Protection*, Recueil des Cours, vol. 269, 1997 , pp. p.251-460, at page 343, where the author maintains that the most-favoured-nation treatment "is a conventional standard and not one which would be prescribed by general international law, since States are under no obligation to treat all foreign nationals equally. However, differential treatment without justification (i.e. discrimination) by a host country of the nationals of one country in comparison with those of another country in a like situation could be considered a violation of the minimum international standard whenever this would cause them prejudice".

implementation of this idea of differential treatment[96], and the different roles of Countries may give birth to a series of discriminations upon investors according to their nationality.

In academic opinion different ways of discriminating within the CDM system have been identified[97], which may result from the fact that Countries are included in Annexes for the purposes of the climate change regime, and their rights and duties vary as a consequence of such an inclusion. Now that the CDM system has been regulated in more detail, it is possible to reconsider the potential contrasts with specific rules of international investment law.

We will therefore try to consider separately the two faces of the principle of non-discrimination.

i) Most-favoured nation treatment: the possibility of a discrimination based on the nationality of the foreign investor seems to be at the core of the CDM rules.

If the CDM has been designed to help Parties to the Kyoto Protocol fulfil their obligations in a more cost-effective way, the participation requirements appear as an undisputable condition.

After important developed Countries, such as the USA and Australia, have rejected the Kyoto Protocol and clearly stated they do not intend to become Parties, the issue of participation of non-parties' private companies has become a hot one. Reasons have been put forward both in favour and against a positive discrimination versus non-Parties and their businesses. What do the CDM rules suggest in this regard?

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[96] In this sense see Paolo GALIZZI, *International Law and the Protection of the Environment: "Shared Universal" Rules or "Unethical" Imposition of a Western Agenda?*, in Nerina BOSCHIERO (Ed.), Ordine Internazionale e Valori Etici, VII convegno SIDI, Napoli, 2003.

[97] Jacob WERKSMAN, Kevin A. BAUMERT and Navroz K. DUBASH, *cit. supra*, p. 9, where the authors identifies these 5 ways: Party v. Non-Party, Complying v. Non-complying Party, Foreign Investor from Annex I v. Foreign Investor from Non-Annex I Parties, Foreign versus Domestic Investor, and Discrimination and the Trade in CDM Credits.

-According to the Kyoto Protocol, CERs accruing from CDM projects may be used by Annex I Parties to contribute to compliance with part of their quantified emission limitation and reduction commitments[98].

-According to the Marrakesh Agreements, a Country may participate in a CDM project activity if it s a Party to the Kyoto Protocol.[99]

These provisions clearly exclude States which are not Parties to the Protocol from the CDM system, but as we have seen in the analysis of the project cycle, also private entities may be authorised. In the relevant legal texts there is not an express prohibition excluding participation by non-Party companies in the CDM[100]. Does this mean that the system implicitly intended to allow the direct involvement of businesses irrespective of their Country of origin, also in consideration of the present situation of globalised economy, in which multinational corporations may easily circumvent the prohibition by creating an *ad hoc* subsidiary in a State Party?

We think that answering to this question requires a harder look at the structure, scope and objectives of the CDM. The CDM has been established to help Parties to the Kyoto Protocol meet their obligations, and cannot be seen in isolation from such specific mitigation commitments.

The participation of private businesses in the system, expressly allowed by the Kyoto Protocol[101], is just a way to offset the basic obligations undertaken by the State at the international level, but mostly borne by the private sector domestically. We should not forget that we are still dealing with international law, and the creation of a new legal right (a CER) is valid only within the framework established in the relevant international agreements and domestic implementation.

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[98] See Kyoto Protocol, Art. 12.3(b).

[99] See Decision 15/CP.7, paras 30 and 31.

[100] On this point see Martijn WILDER, *Can Companies or Entities from a Non-Party to the Kyoto Protocol Participate in the Flexible Mechanisms?*, in David FREESTONE and Charlotte STRECK, *cit. supra*, p. 250.

[101] See Kyoto Protcol, Art. 12.9.

A treaty, under customary international law, cannot create rights or duties upon a third Party, without its consent[102]. An exception is when the provision is a codification of a rule of customary international law[103], but this is clearly not our case.

In the case of participation to the CDM, the international agreements establish a procedure, with rights and obligations, which is open to all interested Parties. The acquisition of CERs is an economic incentive to favour investment flows from developed to developing Countries, which is to be seen in connection with the stringent mitigation obligations imposed on Parties and their businesses.

Granting the possibility of gaining financial profits from CERs to businesses which are not bound to limit their GHG emissions would nullify the underpinnings of the CDM system and of the whole climate change regime, that is the principles of common concern of humankind, of common and differentiated responsibilities, of sustainable development.

Nothing prevents Non-parties investors from putting their money into climate-related projects in developing Countries: in this regard there is no discrimination. But taking part in the CDM means freely accepting a series of rights of duties, and one cannot expect to enjoy the benefits without being subject to the obligations. If you commit to reducing GHGs domestically, the system tries to help you allowing the enjoyment of CERs, which can make your obligation less onerous from an economic point of view.

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[102] See the 1969 Vienna Convention on the Law of Treaties, art. 34, according to which "A treaty does not create either obligations or rights for a third state without its consent". Art. 36, concerning treaties providing for rights for third States, establishes that "1. A right arises for a third State from a provision of a treaty if the Parties to the treaty intend the provision to accord that right either to the third state, ot to a group of States to which it belongs, or to all States, and the third State assents thereto. Its assent shall presumed so long as the contrary is not indicated, unless the treaty otherwise provides. 2. A State exercising a right in accordance with paragraph 1 shall comply with the conditions for its exercise provided for in the treaty or established in conformity with the treaty".

[103] See the 1969 Vienna Convention on the Law of Treaties, art. 38, according to which "Nothing in Articles 34 to 37 precludes a rule set forth in a treaty from becoming binding upon a third State as a customary rule of international law, recognized as such".

One could argue that it is not upon the single companies to accept the legal obligations at the international level, and that they cannot oblige their government to sign any agreement. But this is exactly the point, since under international law private entities do not enjoy rights and duties outside the action of a national State. Just as a private company could not expect particular standards of protection in a Country with which its national State had no agreements concerning the treatment to grant to investments, a project developer investing in climate-related activities cannot expect to have those further specific benefits which are granted only to the regime participants.

ii) National Treatment: how could CDM rules conflict with the prohibition to discriminate between foreign and home investors? A couple of hypotheses may be identified.

Firstly, the possibility of unilateral CDM projects, in which all the steps relating to the development of the project are carried out within the developing Country, without any contribution from Annex I Parties, eliminates the possible discrimination against domestic operators.

This discrimination, however, allowing investments in CDM projects from foreign operators and prohibiting the same activities to domestic investors, would have not amounted to a violation of the national treatment, in consideration of the fact that no worse conditions would have been applied to foreign investors. But with the Marrakesh agreements this hot issue was resolved in favour of developing Countries' desire to play an even more active role in designing their developmental and environmental policies. Now the domestic investors can develop their projects, and go through the various steps of the CDM project cycle, have it registered by the EB, and then sell it to those showing interest in the CERs thus generated.

The second case concerns the hypothesis of a Party Government allowing subsidiary companies from non-Parties to the Protocol to have sub-accounts within its main national registry, on the same basis as domestic companies.

The impossibility for Non-Parties' businesses to hold a registry for CERs generated by CDM projects would thus be overcome, and the possibility of acquiring and trading CERs consequently granted. This may be justified under the national treatment principle, in the sense that a discrimination should not be based on the mere ownership or location of a company. Such a hypothesis would of course be objected to by local companies, on the ground that a sort of *a contrario* discrimination would take place, since domestic businesses would be subject to the limitations imposed by the mitigation commitments, while foreign operators could just act as free-riders within the system[104].

From a legal point of view, the principle of national treatment has been construed as allowing States to grant to foreign investors a better treatment than that reserved to national ones, and therefore the possibility for a State allowing subsidiaries from non-Parties to hold sub-accounts within the national registry is in theory admissible. Apart from the political opposition which a State may face from domestic economic sectors involved in the mitigation efforts, the same legal considerations concerning the participation in a regime with rights and duties apply also in this case.

For the coherence of the CDM system, as well as an incentive to become parties to the climate change regime in general, the competent institution (the EB) should directly cope with the issue, and for instance expressly prohibit participation from non-Parties' companies. This would prevent devising *escamotages* to circumvent the present provisions, and would ultimately add to the transparency and integrity of the CDM system.

[104] On this situation, with the declarations of Canada and the reactions to its proposals to allow American subsidiary there located to hold such sub-accounts, see Martijn WILDER, *cit. supra*, p. 255.

4.4.2) PROHIBITIONS OF PERFORMANCE REQUIREMENTS

Requiring certain performances to the foreign investors is prohibited by many BITs and by the TRIMs agreement (Trade-Related Investment Measures) under the WTO. The TRIMs agreement does not aim to regulate the subject of foreign investments in a comprehensive manner, but is rather limited to their trade implications. Thus such important aspects as the guarantees for the investors, or the developmental needs of host Countries and the transfer of technology are not addressed. In other words, this agreement was basically designed to ensure that, even when foreign investors are involved, goods coming from other member States be granted a treatment which is not less favourable than that applicable to domestic goods and be not subject to undue restrictions.

As an annex to the TRIMs agreement, we can find an illustrative list of measures which are incompatible with the principles of national treatment (Art. III of GATT) and of prohibition of quantitative restrictions (Art. XI GATT):

(i) there may be legal provisions or administrative decisions prescribing to foreign enterprises particular conditions, such as the obligation to buy or deploy a certain amount of local products (*local content requirements*)[105], or the limitation to buy and deploy imported products over an amount related to the volume or value of local products that it exports (*trade balancing requirements*)[106].

These kinds of performance requirements are a patent violation of the national treatment principle, since they discriminate against imported goods just because of their origin.

(ii) there may be legal provisions or administrative decisions restricting the importation of products , generally or to an amount related to the volume or values of local production that the company involved exports

[105] See TRIMs Agreement, annex, para 1(a), specifying that such prohibition may be in terms of particular products, in terms of volume or value of products, or in terms of a proportion of volume or value of its local production.

[106] See TRIMs Agreement, annex, para. 1(b).

(*maximum import limitations*)[107], or the access to foreign exchange (which is necessary to pay for imports) to an amount related to the foreign exchange inflows (deriving from exports) attributable to the enterprise (*foreign exchange balancing requirements*)[108], or the exportation or sale for exports of products, in order to satisfy domestic demand (*domestic sales requirements*)[109].

These measures are inconsistent with the obligation of general elimination of quantitative restrictions, and may cause trade-restrictive and distorting effects. In academic opinion the view has been expressed that the prohibition of performance requirements may undermine a core objective of the CDM, that is sustainable development for host Countries[110].

We do not think that such hypotheses should be overemphasised, and maintain that they should rather be seen in the general context of WTO law. According to the TRIMs agreement in fact, measures imposing performance requirements are incompatible with the obligation of national treatment or of general elimination of quantitative restrictions only when they are mandatory or enforceable under domestic law or under administrative rulings, or when compliance with them is necessary to obtain an advantage[111], and furthermore, all exceptions under GATT 1994 shall apply[112].

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[107] See TRIMs Agreement, annex, para. 2(a).

[108] See TRIMs Agreement, annex, para. 2(b).

[109] See TRIMs Agreement, annex, para. 2(c), specifying that such restriction may be in terms of particular products, in terms of volume or value of products, or in terms of a proportion of volume or value of its local production.

[110] See Jacob WERKSMAN, Kevin A. BAUMERT and Navroz K. DUBASH, *cit. supra*, p. 11, maintaining that achieving sustainable development "could require a CDM project activity to use locally produced goods or services, build domestic capcity by employing local citizens, or require the transfer of technology to a local firm".

[111] See TRIMs Agreement, annex, paras 1 and 2.

[112] See TRIMs Agreement, art. 3.

In the Indonesia-Autos case[113], the panel established according to the WTO dispute settlement understanding explained how to conduct the legal analysis of whether a domestic measure violates the TRIMs agreement or not.

First, the contested measure is to fall within the category of an "investment measure". The panel observed that it is important to examine the manner in which the measure relates to investment, regardless of the formal definition of the measure as an investment measure by the State[114].

Secondly, the measure must be "trade-related", and in this respect the panel concluded that local content requirements are necessarily trade-related, in that they always favour the use of domestic products over imported products, thus affecting trade.

Thirdly, the advantage for local companies must be evident for the measure to be incompatible with the TRIMs agreement.

Finally, any such measure may be accepted as an exception according to GATT 1994.

If we consider that the objective of sustainable development is common to both the climate change and the WTO regimes, which includes it in its preamble[115], although there are spaces for concrete disputes between Countries, only the evolution of practice will be able to show us whether the system needs more specific rules to address these issues. It is not obvious that such performance requirements be imposed by host Countries: the objective of sustainable development in fact can be better achieved through transfer of technology, which developing Countries have a keen interest to favour and not to hinder by creating trade barriers.

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[113] See Panel Report, Indonesia – Certain Measures affecting the Automobile industry, WT/DS54/R, adopted 23/07/1998, available on the website www.wto.org.

[114] The panel thus rejected Indonesia's view that a measure cannot be considered as an investment measure simply because it was not explicitly adopted as an investment regulation by investment bodies.

[115] See *supra*, chapter 2, with reference to the Preamble of the WTO Agreement and to its interpretation by the AB in the Shrimps case.

4.5) CONCLUDING REMARKS:

We have tried to analyse the development of the CDM system, from the negotiations up to the decisions on concrete modalities. Have the problems which were feared when this new mechanism was first designed been solved by the subsequent, more detailed rules?

Developing Countries[116] in particular expressed a series of concerns regarding the possible limits to their sovereign rights, the environmental outcome in terms of additionality, both environmental and financial, and the supplementarity of the resort to the CDM by developed Countries. How have these concerns been addressed?

Although developed Countries deemed the necessity of a formal approval of each individual project as too laborious, the idea that host Countries should be the only responsible for the choice of CDM projects, in accordance with their developmental and environmental policies, prevailed.

The fear that too lax an approach might be followed in identifying the relevant projects should be overcome by the independence and authoritativeness of the other subjects involved, in particular the EB, as well as by the involvement of NGOs and local stakeholders and by the use of such tools as the environmental impact assessment[117].

The rules on the project cycle is in our opinion a positive point of balance between the different needs and concerns: developing Countries do not have to suffer any kind of encroachment on their sovereign rights, private investors have to go

[116] In these claims they were supported by environmenatl NGOs.

[117] This may be seen as a concrete application of Principle 10 of the Rio Declaration, recognising that "environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available", as well as of Principle 17, according to which "environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority".

through a process which should grant approval to those projects really granting sustainable development benefits, and NGOs have a significant role in assessing the sustainability of projects, as well as in denouncing potential negative impacts on local societies or environment. The difficulty now may rest on the necessity for each host Country to determine precise sustainable development criteria. We cannot but share the views that emphasise the role of DNAs on the one hand and of a learning-by-doing approach on the other hand[118]. Without a commonly-shared list of criteria at the international level, each Country should strive to focus on the particular aspects which better meet its local priorities, and the positive experiences in other developing States will of course be particularly useful.

As far as the question of supplementarity is concerned, the fear that developed Countries would lay all the burden at the door of developing States, substituting domestic efforts with CDM investments had already been addressed by the Kyoto Protocol, which indicates how CERs can be used only to meet a part of their mitigation commitments[119].

Although the word "part" does not carry a precise quantitative connotation, the guiding principle that developed Countries should first develop serious and coherent mitigation policies at the domestic level is clearly established.

The problems of environmental and financial additionality seem to be more controversial. In order to evaluate the environmental outcome of the CDM projects in a proper manner, the establishment of credible baselines is crucial. While only the concrete practice will tell us more in this regard, we think that the technical expertise to which the EB can resort should grant that appropriate measurement of GHG reductions be obtained.

The financial aspects of CDM projects are of course a fundamental issue: in particular, it is subject to debate whether industrialised Countries should be

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[118] See Saleemul HUQ and Hannah REID, *Benefit Sharing under the Clean Development Mechanism*, in David FREESTONE and Charlotte STRECK, *cit. supra*, pp. 229-247, in which the authors review a number of CDM projects in different parts of the developing world, trying to stress the benefits in terms of social, environmental and economic aspects of sustainability.

[119] See Kyoto Protocol, Art. 12.3(b).

allowed to use their development aid to directly finance these projects[120]. The concrete practice of CDM up to now can be useful in this regard: the possibility of the so-called unilateral CDM projects, in which all the steps of the project cycle are carried out by the host Country (private companies or local authorities) has led to a particular situation. Investors from developed States fear that their project may not successfully go through the cycle and obtain the final approval, and on the other hand some big developing Countries have all the technical expertise which is required to develop a CDM project. Following the example of the World Bank, which established a Prototype Carbon Fund (PCF)[121] in order to help gather funding for sustainable development projects, also some Annex I Countries adopted similar approaches: the Netherlands Ministry of Housing, Spatial Planning and the Environment (VROM) proposed the establishment of a Netherlands Clean Development Facility within the Bank to purchase CERs on behalf of the Netherlands, and the Government of Italy created an Italian Carbon Fund for the same purposes[122].

We raise some doubts about this situation, with non-Annex I Countries' private companies developing CDM projects, having them approved by the EB and selling them to international funds sponsored by Annex I Countries' Governments. Is this what the Kyoto Protocol negotiators had in mind when they created the CDM?

We think that the original idea was to generate financial and technical flows from developed Countries' private companies to developing States' Government. The risk is that instead of having the industrialised private sectors financing sustainable development in developing Countries, we will have Annex I Countries' Governments paying for CERs generated by local, non-Annex I private companies.

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[120] On this issue see Nancy KETE, Ruchi BHANDARI and Kevin A. BAUMERT, *Should Development Aid Be Used to Finance The Clean Development Mechanism?*, World Resources Institute Climate Notes, April 2001, pp. 1-12.

[121] The Prototipe Carbon Fund was approved by the Executive Directors of the Bank on 20 July 1999. On the role of the World Bank see David FREESTONE, *The UN Framework Convention on Climate Change, the Kyoto Protocol, and the Kyoto Mechanisms, cit. supra,* pp. 15-24, and Wen-chen SHIH, *The World Bank and Climate Change, cit. supra*, pp. 633-654.

[122] See Decreto del Ministero dell'ambiente e della tutela del territorio, 11 February 2005, Art.1.

If this may be a further lever for channelling developing Countries' private resources into sustainable projects, which is of course encouraging, one may wonder, in the absence of any sort of financial transfer from the private sector to the national authorities, if we risk losing an opportunity to benefit developing Countries' populations.

It is too early to give a definite assessment on the CDM as a whole: up to date[123], 77 projects have been registered by the EB, and this number is rapidly increasing. Maybe the procedure is time-consuming, maybe States wanted to wait for the Protocol's entry into force, but it seems that Countries are getting more and more acquainted with the rules of the CDM.

Nonetheless we cannot but raise some concerns about the geographical distribution of CDM projects. More than 50% of the total number relates to just 5 big developing States: India with 20 projects, Brazil with 7, Chile with 6, Mexico with 5, China with 3. Furthermore, only 4 projects are in the least developed Countries: 2 in Nepal, 1 in Bangladesh and 1 in Buthan, and a whole continent, like Africa, seems to benefit only marginally from CDM projects, since only 3 are located in African Countries: 2 in Morocco and 1 in South Africa.

In view of this first concrete experiences, it seems that granting an equitable geographical distribution of CDM projects will be one of the challenges of the immediate future.

[123] January, 23th, 2006.

CHAPTER V: THE IMPLEMENTATION OF THE OBLIGATIONS ACCORDING TO THE UNFCCC AND THE KYOTO PROTOCOL IN THE EC LEGAL ORDER: EMISSIONS TRADING AND BEYOND

This chapter will focus on the role of the EC in the climate regime. At the international level, the efforts of EC delegations are always directed at the enhancement and improvement of the rules, for the benefit of the climate and of environment as a whole.

Being an international organisation composed by Member States, the EC has a particular status within the regime, which takes into consideration the issue of the distribution of competences between the Community itself and Member States.

In these years within the EC legal system, climate change has gained a prominent role, and today it stands on top of the environmental agenda.

After a brief history of the six action programmes for the environment, which constitute the general framework for climate-related measures, the focus will be on the implementation of the obligations set out in the UNFCCC and Kyoto Protocol.

Among the various measures adopted or proposed at the community level, due attention must be paid to the emissions trading scheme (EU ETS), which is the first transnational attempt to create a carbon market.

The concept of emissions trading is new in EC environmental law, and it stresses the acceptance, besides the usual command-and-control approach, of market-based instruments, in which it is not the central authority to set standards or limit and to verify the compliance of Member States, but in which the market should allow the best allocation of resources and therefore the protection of the climate at the lowest price for operators.

The aim of this chapter is trying to understand whether the EC, with the directive on emissions trading and the other measures mentioned has taken the lead in combating climate change, and should be considered by other participant of the climate regime as a good example to follow.

5.1) THE PARTICIPATION OF THE EC IN THE INTERNATIONAL CLIMATE CHANGE REGIME

5.1.1) THE COMPETENCE OF THE EC:

The competence of the Community to become a party to international treaties concerning the protection of the environment is expressly stated in the TEC.[1]

Article 174, para. 4 , in fact provides that:

"Within their respective spheres of competence, the Community and the Member States shall cooperate with third countries and with the competent international organizations . The arrangement for Community cooperation may be the subject of agreements between the Community and the third parties concerned, which shall be negotiated and concluded in accordance with Article 300.

The previous subparagraph shall be without prejudice to Member States' competence to negotiate in international bodies and conclude international agreements"[2].

The provisions of the XIX Title of TEC were introduced by the Single European Act (SEA), when it was clear that the internal market that was at that time taking shape could not be separated from broader policies affecting the non purely economic aspects of the European integration. Nonetheless, the Community had not remained inactive as far as international treaties for the protection of the environment are concerned even before the entry into force of the SEA.

The competence of signing agreements with third states derived from a legal construction developed by the European Court of Justice[3].

This jurisprudence is usually referred to as "parallel competences", and it is based on the idea that in certain cases, the external competence of the Community can

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[1] For a comprehensive analysis of the EU in international relations see Enzo CANNIZZARO (ed.), *The European Union as Actor in International Relations*, The Hague, 2002.

[2] See TEC, Art. 174.4.

[3] See Jan JANS, *European Environmental Law*, 1995, pp. 67 ff.

follow, in parallel, an already existing similar internal competence. This can happen, in the view of the Court, in two circumstances:

a) The Community has an internal competence, and used it as the legal basis to implement internal measures[4]. In this case the Court found it rather obvious to deem as appropriate the actions taken by the Community to address these problems also outside the boundaries of the Community itself. An example of this first case can be seen in the participation of the Community in the Convention on long-range transboundary air pollution[5], as well as in the Rhine-Chemical pollution Convention[6].

The Community became a party to these international agreements, together with its member States, deriving its competence from the fact that it had already established legal instruments for the protection from pollution of both air[7] and waters[8]. The external competence is therefore a consequence of the internal competence, which has been previously exercised by the adoption of regulations and directives: expanding that same competence, in the same field, although at the international level, is thus the natural consequence.

b) The Community has not yet implemented internal measures in the field involved, but the exercise of external powers is necessary for the attainment of Community objectives.

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[4] See Case 22/70 ERTA (1971) ECR 273.

[5] See Geneva Convention on Long-range Transboundary Air Pollution, 13 November 1979

[6] See Bonn Convention on the Protection of the Rhine against chemical pollution, 3 December 1976.

[7] See Council Decision 81/642, on the conclusion of the convention on long-range transboundary air pollution, which was based on Article 235 of the Treaty, known as the "implied powers" article, and in whose preamble the participation of the Community is considered as "resulting from the existing common rules as well as those acquired as a result of future acts adopted by the Council". According to Jan JANS, *cit. supra*, p. 78, "the competence, at least according to the Council, thus flows from the internal competence to lay down rules to prevent air pollution, in so far as this competence is or will in the future be exercised by means of internal legislation".

[8] The Community had already exercised its internal powers by adopting the directive on the discharge of dangerous substances (76/464, OJ L129, 18 May 1976), the Directive on Drinking Water (75/440, OJ L194 25 July 1975) and the Directive on Bathing Water Quality (76/106, OJ L31, 5 February 1976).

This second case is more controversial and it can be derived from a joint assessment of the conclusions of the Court in the so-called *Kramer* case and in Opinion 1/76[9]. The concrete result is that, as underlined in academic opinion, "the external powers are not dependent upon the prior coming into force of internal rules[10]".

If we consider the practice before the conclusion of the SEA, we can give only one example of this second case, relating to the conclusion of the Paris Convention concerning land-based pollution[11]. In this case, the conclusion of the Convention by the Community in a field where no internal measures had previously been adopted, took place even before the Court of Justice had supported this *modus operandi*, and the sharing of competences between the Community and member States was rather clear: the Community as a Contracting Party, the member States as the competent subjects for the implementation.

As we will see, the paramount problems in fact relate to the coordination of the different powers (Community vs. Member States), in cases where the Community has already exercised its internal competence.

After the entry into force of the SEA, however, the competence of the Community to expand its powers also at the international level was expressly stated. The paragraph providing that the external competence of the Community should be "without prejudice to member States' competence to negotiate in international bodies and conclude international agreements[12]" may be misread in the sense of granting national States the possibility of acting at the international level even after the Community has already adopted internal measures.

To prevent this misconstruction of the legal provision, it must be read in accordance with the Declaration in the Final Act of the SEA, more or less repeated

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[9] See Joined cases 3, 4 and 6/67 *Kramer* (1976) ECR 1279 and Opinion 1/76 *Laying-up fund* (1977) ECR 754.

[10] See Andre NOLLKAEMPER, *The European Community and International Environmental Co-operation: legal aspects of external community powers*, in "LIEI", 1987, vol. 2, p.64.

[11] See Paris Convention for the Protection of Marine Pollution from Land-based Sources, 1975.

[12] See Art. 174.5 TEC.

in the Maastricht Treaty, according to which " the Conference considers that the provisions of [...] Art. 130r(4), second paragraph, [...] do not affect the principles resulting from the judgement handed down by the Court of Justice in the AETR case". We have therefore come to a point where both the treaty and the jurisprudence of the European Court of Justice agree on the fact that the Community has the competence to reach environmental objectives also at the international level, keeping in mind that these kind of agreements are mixed, and as such do not exclude completely the role of national States.

5.1.2) THE LEGAL STATUS OF THE EC IN THE CLIMATE CHANGE REGIME:

When referring to the participation of the Community in the international climate change regime, the expression "European Bubble" is often used to indicate the possibility for the member States to act jointly in the fulfilment of their obligations. There are legal provisions, both in the UNFCCC and in the Kyoto Protocol about the joint-fulfilment of the obligations, especially intended for the Regional Economic Integration Organisations (REIOs).[13]

Art. 4.2 (a) of the UNFCCC provides that Annex I Parties may implement policies and measures jointly with other Parties, as well as assist other Parties in contributing to the achievement of the objective of the Convention, that is the stabilisation of GHGs in the atmosphere.[14] Furthermore, Art. 12.8, relating to the implementation, expressly establishes the possibility for any group of Parties to make a joint communication concerning the fulfilment of their obligations, which would include information on the fulfilment by each of these Parties of its individual obligations under the Convention. This communication has to be previously notified to the Conference of the Parties.[15]

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[13] See Stéphan LECLERC, *La Communauté Européenne et le Protocolle de Kyoto sur les Changements Climatiques*, in "Revue Juridique de l'Environment", vol. I, 2001, pp. 31-46.
[14] See UNFCCC, Art. 4.2(a).
[15] See UNFCCC, Art. 12.8.

The European Union, in the act of ratification of the UNFCCC[16], has submitted a declaration, reaffirming that the commitment to limit GHG emissions set out in Article 4(2) of the Convention will be fulfilled in the Community as a whole through action by the Community and its Member States, within the respective competence of each. The Community and its Member States continues therefore their common efforts to stabilise their GHG emissions in the atmosphere, with the elaboration of a coherent strategy in order to attain this objective.

The Kyoto Protocol went further in this idea of joint-fulfilment, applying it to the most important obligation, which is the reduction of GHGs according to precise targets, in a peculiar way. Art. 4 of the Protocol in fact allows a group of Parties that want to fulfil their reductions commitment jointly to do so by forming a "bubble"[17]. In this manner it is possible to sum up all the collective targets of reductions and then re-allocate them among the Countries forming the bubble, but in a different proportion.

The aim of this provision is clearly to grant more flexibility, even though academic opinion is divided as whether to consider the bubble a flexible mechanism like the Emissions Trading, the Joint Implementation and the Clean Development Mechanism[18]. In this way it is possible for the Community to have a single global target at the international level, while at the domestic level every State enjoys a special and differential treatment, according to its particular situation.

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[16] See Council Decision 94/96/CE of 15 December 1993, in OJ L 033 of 07/02/1994.

[17] See Kyoto Protocol, Art. 4.1: "Any Parties [...] that have reached agreement to fulfil their commitments under Article 3 jointly [...] shall be deemed to have met those commitments [...] provided that their total combined aggregate [...] emissions [...] do not exceed their assigned amounts [...] calculated in accordance with Article 3. The respective emission levels allocated to each of the Parties [...] shall be set out in that agreement".

[18] See, on the concept of joint fulfilment, Sebastian OBERTHUR and Hermann E. OTT, *The Kyoto Protocol: International Climate Policy for the 21st Century,* Berlin, 1999, pp. 141-150, and for the idea that the bubble is different from the flexible mechanisms, Farhana YAMIN and Johanna DEPLEDGE, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures,* 2004, "Article 3.1 uses the term individually or jointly to allow groups of Annex I Parties to fulfil their QELRCs jointly. In the Protocol this term is clearly distinguished from the project-based mechanisms under Article 6 and 12 and from emissions trading pursuant to Article 17".

It is thus clear that the concept of common but differentiated responsibilities can apply not only to developing Countries, but also within the group of developed Countries, since for them as well the single situations deserve particular attention and *ad hoc* policies.

We support the inclusion in the Protocol of the possibility of joint fulfilment of commitments, not only as an application of the principle of common but differentiated responsibilities, but also as a feasible way to grant more flexibility[19]. The idea of forming a bubble to allow Parties involved to reallocate the obligation in such a way as to achieve compliance in a more cost-efficient manner is taken from national environmental laws, where, for instance, emissions limits are established for all company sites, and not for each single factory. As a consequence it is possible for the overall commercial group to comply with the regulation in the most cost-effective way by choosing to reduce emissions in those factories where it entails lower costs. The other industrialised Countries did not want this possibility to be open only to REIOs, like the EU, and the final draft of the text allows every group of State to form a bubble, and before the process of ratifications started, the idea of other "bubbles" was not to be discarded in theory[20].

But to date, only the Community has resorted to this possibility, and with Council Decision 358 of 25 April 2002[21] it established the so-called burden-sharing agreement. This was possible because when the Protocol was signed in New York

[19] In academic opinion the possibility of more flexibility which bubbling allows has been underlined for instance by Jacob WERKSMAN, *Greenhouse Gas Emissions Trading and the WTO*, in "Review of European Community and International Environmental Law", vol. 8(3), 1999, pp. 252-253, where the author defines emissions trading as "a more dynamic version of re-allocation of assigned amount contemplated under Article 4 of the Protocol, which entitles Parties to renegotiate their assigned amount prior to the start of the commitment period".

[20] See for example GRUBB with VROLIJK and BRACK, *The Kyoto Protocol: A Guide and Assessment*, London, 1999, p.123 ("In many respects, offering the possibility of "bubbling" to any group of countries represents a capitulation of the EU position that it should be entitled to unique treatment. The UE offered the provision in the belief that in practice it would be the only group of countries to utilize it. It is, however, a general provision, and a brief storm arose at Kyoto with the rumour that the JUSSCANNZ countries – most of the OECD outside the EU- might form a bubble with Russia and Ukraine. This was probably a negotiating ploy to counter EU insistence on flat-rate reductions for all other countries, but the theoretical possibility of redistributing targets remains as countries approach ratification".)

[21] See OJ L 130/1 of 15/05/2002.

on 29 April 1998, the Community declared that it and its Member States would fulfil their respective commitments under Article 3(1) of the Protocol jointly in accordance with Article 4, providing for the possibility of a bubble[22].

The core of the Decision is to be found in Annex II, that is the "Table of Quantified Limitation or Reduction Commitments for the Purpose of Determining the Respective Emission Levels Allocated to the European Community and its Member States in Accordance with Article 4 of the Kyoto Protocol"[23]. According to this table, the different Member States have different targets to meet, and they could be easily divided into three categories:

a) Country with stabilisation objectives: these Countries (France and Finland) have to stabilise their GHG emissions at the same level of 1990.
b) Country with reduction commitments: these Countries, the majority of EU members, have to reduce their level of emissions of GHG gases in various percentages compared to the 1990 level: Luxembourg: -28%; Denmark: -21%; Germany: -21%; Austria: -13%; United Kingdom: -12.5%; Belgium: -7.5%; Italy: -6.5%; Netherlands: -6%;.
c) Country with controlled increase objectives: this last group of Countries is allowed to increase GHG emissions compared to their 1990 level, in different percentages: Portugal: +27%; Greece: +25%; Spain: +15%; Ireland: +13%; Sweden: +4%.

It is therefore rather evident how the single commitments differ a lot, ranging from –28 of Luxembourg and, more significantly, –21 of Austria and Germany, to +25 of Greece and +27 of Portugal.

There are two main problems resulting from the establishment of bubbles:

1) In case the REIO expands the number of its Member States, how are the various commitments going to be met?

[22] See Council Decision of 25 April 2002, paragraph 9.
[23] See Council Decision of 25 April 2002, annex II.

2) In case the targets are not met, how is it possible to clearly distinguish the different responsibilities?

As far as the first problem is concerned, many Countries, during the negotiations, feared that the EU could very easily meet its commitments by simply granting membership to the Countries of Central and Eastern Europe whose emissions had declined steadily and substantially through economic transition. It this case we would have dealt with the phenomenon of hot air, and each European Country would have very easily met its targets, without any serious climate-policy being implemented.

The solution can be found Art. 4 of the Protocol: paragraph 3 addresses the problem of the temporal extension of the bubble, linking it strictly with the first commitment period[24]. Paragraph 4 of Art. 4 on the other hand deals with the composition of the bubble, establishing that any modification in the composition of the organisation[25] will be absolutely irrelevant and will not modify the level of commitments undertaken by Parties[26]. In this case it is clear that the agreement to operate jointly, once it has been concluded, cannot be changed during the period involved, nor be modified in order to allow new parties to take part in it.

The second question is linked with the actual nature of the environmental international agreements signed by the Community, that is the fact that they are mixed agreements. This means that while a specific role is granted to the Community, the member States do not give up their sovereignty *in toto*. In academic opinion there have been lively discussions about the legitimacy of this type of agreements under the EC law[27], the main concerns being identified in the

[24] That is from 2008 to 2012; according to Art.4.3, the bubble agreement shall remain in operation for the duration of such period.

[25] In theory this applies also to a hypothetical decrease in membership, but it was clearly devised to cope with the enlargement of the EU towards former-socialist Countries.

[26] See Kyoto Protocol, Art. 4.4. "If Parties acting jointly do so in the framework of, and together with, a regional economic integration organisation, any alteration in the composition of the organisation after adoption of this Protocol shall not affect existing commitments under this Protocol."

[27] See *inter alias* TIMMERMANS and VOLKER (eds), *Division of Powers between the European Communities and their Member States in the Field of External Relations*, Deventer,

risk of a distortion of the idea of the Community acting as a single international actor[28], as well as in the uncertainty they generate[29].

Third Parties need a sort of guarantee about the sharing of the competences between the Community and its Member States, in order to have a clear picture of how and by whom the implementation activities will be developed. But it is now undoubted that mixed agreements are the most obvious way to transpose at the international level the shared competences between the Community and the member States.

In order to reassure the other participants in the climate change regime on the concrete distribution of responsibilities between the Community and the member States, paragraph 6 of article 4 was added, stating that "if Parties acting jointly do so in the framework of, and together with, a regional economic integration organization which is itself a Party to this Protocol, each member State of that regional economic integration organization individually, and together with the regional economic integration organization acting in accordance with Article 24, shall, in the event of failure to achieve the total combined level of emission reductions, be responsible for its level of emissions as notified in accordance with this Article.[30]" In this case we can see how the system entails a peculiar situation for which on the one hand the single State has given up part of its sovereignty and the target is set at the community level, but on the other hand the responsibility does not rest only on the international organisation to which the State is a party.

1981; CREMONA, *The Doctrine of Exclusivity and the Position of Mixed Agreements in the External Relations of the European Community"(1982)* "2 OJLS", 393-428; O'KEEFFE and SCHERMERS (eds), *Mixed Agreements*, Dordrecht, 1983; DOLMANS, *Problems of Mixed Agreements*, The Hague, 1985; NEUWHAL, *Joint Participation in International Treaties and the exercise of power by the EEC and its Member States: Mixed Agreements* (1991), 28 "CMLRev", 717-40; MCGOLDRICK, *International Relations Law of the European Union*, 1997.

[28] See MCGOLDRICK, *cit. supra*, p. 80.

[29] See CREMONA, *cit. supra*, p. 428.

[30] See Kyoto Protocol, Art. 4.6. Article 4.5 on the other hand deals with the cases in which the bubble is formed outside a REIO, establishing that "In the event of failure by the Parties to such an agreement to achieve their total combined level of emission reductions, each Party to that agreement shall be responsible for its own level of emissions set out in the agreement".

In the community case law concerning mixed agreement, it is generally accepted that either the spheres of competence and liabilities are clearly stated in the agreement, or both the Community and Member States are jointly liable[31].

In the climate change regime, compliance is at a first level verified by summing up all the single GHG emissions of Member States and comparing the total amount with the quantity which have been allocated to the Community. In case of non-compliance then, each States will be responsible, together with the Community, for its own share of as established by the burden-sharing agreement.

This may lead to the situation for which a Member State may fail to meet its own target under the bubble but, as long as the Community's overall target is reached, it will not be held to account internationally[32]. This of course will still leave ground for the Community to act within the EC legal order against the Member that is not in compliance, according to the procedures established in the EC Treaty[33].

We have therefore a two-fold regime of responsibility, because it is true that the community has the powers to engage all its member States at the international level, but still a significant part of sovereignty in the sectors involved falls within the national states' competences.

The system of the fight against global warming, within the EC legal order, is therefore based on the principle of common but differentiated responsibilities and on the recognition of the different levels of action of the actors involved, with the Community engaged in the outline of the general legal framework, leading the international negotiations, determining the policies of the member States and being responsible at the international level for the overall target of all the members, and the single governments able to deploy a strategy that takes into consideration their

[31] See decision 2 March 1994, Parliament vs. Council, which accepted the conclusion of the Attorney General Jacobs, according to whom "under a mixed agreement the Community and the Member States are jointly liable unless the provision of the agreement point to the opposite conclusion".

[32] See Peter G.G. DAVIES, *Climate Change and the European Community*, in Peter D. CAMERON and Donald ZILLMAN (Eds.), *Kyoto: From Principles to Practice*, The Hague, London, New York, 2001, p.29.

[33] There is no doubt that in such cases the Commission could start an infraction proceudre according to Artt. 226 and 227 of the EC Treaty.

peculiarities and needs, and called to respond for their singular target in case the EC as a whole is not in compliance with the general target.

5.2) CLIMATE CHANGE IN THE EC ENVIRONMENTAL LAW:

5.2.1) THE ROLE OF THE ACTION PROGRAMMES FOR THE ENVIRONMENT IN THE EC LEGAL ORDER

The first concrete steps taken by the Community for the protection of the environment date back to the Seventies, that is a decade before any express provision was included in the Treaty.[34] In the lack of a legal basis though, it was not possible to deploy directives or regulations: the choice was therefore to elaborate documents called Environmental Action Programmes[35].

Such Community acts have some peculiarities:

-They are not provided for by the Treaty (legally, they are communications by the Commission to other Community institutions);

-They are not legally binding[36];

-They establish the general purposes, aims and priorities of Community environmental policy;

-They cover a period of usually 4-5 years or even more;

These common features, as we will see, have been modified by the sixth Environmental Action Programme. These acts can be seen as a path towards a more efficient and coherent environmental policy. With the express provision of the Treaty conferring to the Community the competence in the field of the environment, the importance of the Action Programmes has not decreased.

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[34] On the EC environmental policy see Paolo FOIS, *Il diritto ambientale nell'ordinamento dell'Unione Europea,* in Giovanni CORDINI, Paolo FOIS and Sergio MARCHISIO, *Diritto Ambientale. Profili internazionali, europei e comparati,* Torino, 2005.

[35] On the function of the action programmes in the range of legal and political instruments of the Community see KRAMER, *EC Environmental Law, Fifth Edition*, London, 2003, pp. 55-56.

[36] This has been confirmed by the ECJ , i.e. in Case C-142/95P *Rovigo* [1996] E.C.R. I-6669.

All the specific legislative acts in fact must be seen in the light of the general framework provided for by the Action Plans, which are not limited to a particular sector or source of pollution. The ambit of the community competence ranges from air to waters, from climate to waste management, and the number of regulations and directive approved of by the Community acquires coherence within the broader scope of the Action Plans. Furthermore they are important to realise how the community environmental policy has unfolded, from a system exclusively based on a command-and-control approach, to a more market-oriented one, in which the business community is considered as an active player that can give its contribution, and not merely the passive addressee of rules imposed by the central authority[37]. This evolution is of paramount importance for a fuller understanding of the mechanism of emissions trading.

5.2.2) THE SIX ACTION PROGRAMMES FOR THE ENVIRONMENT: WHICH RELEVANCE FOR CLIMATE CHANGE?

Up to date, the Community has elaborated six Action Programmes:

-First Environmental Action Programme: 1973-1976[38]; the main concerns of this first programme are related to waste management and air pollution, even though in this latter sector, as underlined by academic opinion[39], actions were not coherent, but limited to specific pollution sources, in particular to emissions from passenger cars, which however important, is clearly not the only source. For the first time the idea of using economic instruments is taken into account, although shaped in rather vague terms[40].

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[37] See Atle C. CHRISTIANSEN, *The Role of Flexibility Mechanisms in EU Climate Strategy: Lessons Learned and Future Challenges?*, in "International Environmental Agreements: Politics, Law and Economics", 2004, vol. 4, pp. 27-46.

[38] See O.J. [1973] C112/1.

[39] See KRAMER, *EC Environmental Law, Fifth Edition*, London, 2003, p. 271.

[40] See First Environmental Action Programme, p. 31: "careful analysis should be made of the economic instruments which can be used in the context of an environmental policy, their various

-Second Environmental Action Programme: 1977-1982[41]; the focus of this second programme is on waste management. On the basis of the discussions that followed the First programme, it is then declared that a comprehensive waste management policy was necessary.

-Third Environmental Action Programme: 1982-1986[42]; this third programme is directly linked to the previous one, in its attempt to give form to an effective policy on waste management, ranging from prevention to disposal.

-Fourth Environmental Action Programme: 1987-1992[43]; for the first time, in the fourth programme the concept of economic instruments is developed. It is thus stated that besides legal command and control provisions, also such instruments as taxes, charges and tradable pollution permits can be used as viable means of improving the quality of the environment[44]. Other innovative aspects of this programme are the mention of consideration of animals' health[45], which nonetheless has not subsequently been pushed so far as to involve a coherent policy on animal welfare, and climate change. The role of climate change in the framework of community environmental law and policies though was not so important yet. In the programme we have the identification of the problem, as well as the commitment to deepen the studies and address the problem in more details[46].

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functions, the advantages and drawbacks of using them, their relative effectiveness with regard to the objectives in view and their compatibility with the rules of cost allocation".

[41] See O.J. [1977] C139/1.

[42] See O.J. [1983] C46/1.

[43] See O.J. [1987] C328/1.

[44] See Fourth Environmental Action Programme, n. 2.5.1.

[45] See Fourth Environmental Action Programme, n. 5.1.9: "An improvement in the quality of life also entails respect for animals in the Member States and in the Member States' dealings with the rest of the world".

[46] See Fourth Environmental Action Programme, para. 2.3.20: "Looking further ahead into the future it is clear that difficult problems could arise from the use of fossil fuels if the build-up of atmospheric carbon dioxide levels and the Greenhouse effect are shown (as certain scientists fear) to have serious impacts on climate and agricultural productivity worldwide. In case further scientific research should confirm the likelihood of such impacts, the Community should already be thinking about possible responses and alternative energy strategies. The Commission will continue its studies in this context".

-Fifth Environmental Action Programme: 1993-2000[47]; this programme is broader than the previous ones, including new aspects of the European environmental policies. For instance it establishes new actors in the community environmental regime: the "European Network for the Implementation and Enforcement of Environmental Law" (IMPEL) by Member States, and the "Environmental Policy Review Group". IMPEL has been created with the aim of facilitating the "exchange of information and experiences and the development of common approaches at practical level, under the supervision of the Commission"[48], while the Environmental Policy Review Group serves as discussion forum for the shaping of the Community's environmental strategies and initiatives. It is formed by the Director-Generals from national central environmental administrations and high officials from the Directorate-General Environment of the Commission. Both of these bodies are informal and have no particular or binding powers, but they tend to enlarge the cooperation among Member States and between Member States and the Commission. Other relevant aspects of this Programme concern access to justice and the attempt to enhance the integration of environmental aspects in EC policies.

As far as climate change is concerned, with the Fifth Programme we can observe an increase in the attention and in the strategies of the Community: global warming is identified as a crucial sector, with an autonomous relevance. With the UNFCCC signed and supported by the majority of Countries, and the Community actively working for the development of international strategies to curb GHG emissions, climate change is addressed in a whole section. For the first time the Community tries to fix objectives (not exceeding the natural absorbing capacity of planet earth and no emissions of ozone layer depleting substances) as well as targets, and prepares a more comprehensive strategy[49].

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[47] See O.J. [1993] C138/5.
[48] See Fifth Environmental Action Programme, ch. 9.
[49] See KRAMER, *EC Environmental Law, Fifth Edition*, London, 2003, p. 300.

-Sixth Environmental Action Programme : 2001-2010[50];

The Sixth Environmental Action Programme is in some regards innovative, compared to the previous ones.

First of all it has been adopted as a decision of the European Parliament and of the Council, which makes it more stringent from a legal point of view[51], being at least in theory a possible ground for action in front of the European Court of Justice. How this is in concrete going to influence the behaviour of States and the level of implementation of environmental legislation is still unclear, given the vague formulation of most of the legal prescriptions set out in the Programme. If we have given a juridical framework, the point is now to fill it with legally binding rules.

Secondly it covers a time range which is longer than usual: 10 years. This choice gives the opportunity to embrace policies in the long run, which is seen as an essential point in the struggle to protect the environment.

Finally, there are some important features also in the actual provisions, to be considered in the broader framework of the EC legislation and policy, *in primis* environmental, but not only. Throughout the text renovated importance is attached to the attempt to insert the Sixth Programme in the track established by the previous ones, especially the Fifth. In this view, two aspects are of paramount importance:

-the need to integrate environmental objectives in the other EC policies[52], especially transport, industry and agriculture, according to Art 6 of the Treaty[53];

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[50] See Decision 1600/2002/EC of 22 July 2002, in O.J. [2002] L 242/1 of 10/09/2002.

[51] According to Art. 249 of the EC Treaty, a decision is "binding in its entirety upon those to whom it is addressed".

[52] See Fifth Action Programme, art. 2.4: "The Programme shall promote the full integration of environmental protection requirements into all Community policies and actions by establishing environmental objectives and, where appropriate, targets and timetables to be taken into account in relevant policy areas".

[53] See EC Treaty, Art. 6: "Environmental protection requirements must be integrated into the definition and implementation of Community policies and activities referred to in Art. 3, in particular with a view to promoting sustainable development".

-the recognition of further instruments, beyond the traditional command and control rules, so as to include market instruments, sensibilizations campaigns and territory planning[54].

These two aspects must be taken into account for a better understanding of the Community climate change legislation and policies.

The global threaten that the concentration of GHGs in the atmosphere represents needs in fact a response that cannot be too narrow in terms of both the sectors involved and the instruments deployed.

The resort to market, business and consumers is clearly an innovative way of dealing with environmental issues, which may be hard to fully understand if one keeps moving within the limits of a typical command-and-control type of legislation. This is reflected in the preamble of the Programme, where the primary focus is on legislation[55], which is detailed and covered many sectors, but which needs full and correct implementation to be more effective.

Only in the subsequent subparagraphs[56] the scope is made broader, since other options for achieving environmental objectives are taken into consideration, in a comprehensive approach involving, together with the institutions, also the market actors and the citizens, with a view to further sustainability.

Coming more in detail to the provisions concerning climate change, Art. 1 identifies it as one of the four areas on which the action of the community will be focused (climate change, nature and biodiversity, environment and health and quality of life, natural resources and wastes).

In Art. 2, on the principles and overall aims of the programme we can read that it aims at "emphasising climate change as an outstanding challenge of the next 10

[54] See the report of the Commission on the Sixth Environmental Action Programme, available from the website of the European Union, at 2.3, pp. 15 ff.

[55] See Sixth Environmental Programme, Preamble, para. 12, where legislation is deemed as "central to meeting environmental challenges".

[56] See Sixth Environmental Programme, Preamble, para. 14, stating that "a strategic integrated approach, incorporating new ways of working with the market, involving citizens, enterprises and other stakeholders is needed in order to induce necessary changes in both production and public and private consumption patterns that influence negatively the state of, and trends in, the environment. This approach should encourage sustainable use and management of land and sea".

years and beyond"[57]. The long term objective is clearly taken from Art. 2 of the UNFCCC: stabilising greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system[58]. In the long run, the Community declares a very ambitious goal, requiring a global reduction in emissions of greenhouse gases by 70 % as compared to 1990 as identified by the Intergovernmental Panel on Climate Change (IPCC). But the hard-core of the European policy concerning climate change is to be found in Art. 5, which provides for "objectives and priority areas for action on tackling climate change".

The objectives are clearly stated in the first paragraph of this article:

-Ratification of the Kyoto Protocol[59];

-Entry into force of the Kyoto Protocol[60];

-Realisation by 2005 of demonstrable progress in achieving the commitments under the Kyoto Protocol[61];

-Placing the Community in a credible position to advocate an international agreement on more stringent reduction targets for the second commitment period provided for by the Kyoto Protocol[62].

With the achievement of the first two objectives, this last one is certainly more ambitious, and the Community sets some guidelines for the possible draft of a future international agreement[63]:

a) It should contain further significant reductions in the GHG emissions;
b) It should take into account the results of the Third Assessment Report of the International Panel on Climate Change;

[57] See Sixth Environmental Programme, art. 2.2.
[58] See Sixth Environmental Programme, art. 2.2 , as well as UNFCCC, Art. 2.
[59] See Sixth Environmental Programme, art. 5.1, first alinea.
[60] See Sixth Environmental Programme, art. 5.1, first alinea.
[61] See Sixth Environmental Programme, art. 5.1, second alinea.
[62] See Sixth Environmental Programme, art. 5.1, third alinea.
[63] See the annual stakeholders' conference on developing a post-2012 climate policy, available on the webpage http://www.europa.eu.int/comm/environment/climat/eccp.htm.

c) It should take into account the necessity of moving towards a global equitable distribution of GHG emissions.

One may wonder whether the Community is really willing and able to put forward at the international level such a demanding position, but at least in theory it presents itself as the major supporter of global efforts to curb GHG emissions[64]. To shift these objectives from the theoretical to the practical level, the Community has set out a list of priority areas for comprehensive interventions.

-Implementing international commitments including the Kyoto Protocol[65]:

The Community intends to create a framework for "effective common and coordinated policies and measures[66]", thus trying to give effect to the relevant provisions of both the UNFCCC and the Kyoto Protocol[67]. The further steps are the establishment of effective CO2 emissions trading[68] and the enhancement of the monitoring system[69].

-Reducing GHG in the energy sector[70]:

This is probably the key field of action for a climate change policy that wants to be effective and meaningful. The actions are basically centred on three big issues: increasing the use of renewable sources of energy[71], improving energy efficiency[72], rethinking the complex structure of public subsidies in the sector, with a view to shifting them to cleaner ways of energy production[73].

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[64] According to part of academic opinion, there is a sort of "credibility gap" between on the one hand the EC's positions at the international level, and on the other hand its actual practice in implementing its international obligations at home (see for instance Peter G.G. DAVIES, *cit. supra*, p. 27).

[65] See Sixth Environmental Action Programme, Art. 5.2(i).

[66] See Sixth Environmental Action Programme, Art. 5.2(i)(a).

[67] See UNFCCC Art. 4.2(a), as well as Kyoto Protocol Art. 2.1(a).

[68] See Sixth Environmental Action Programme, Art. 5.2(i)(b).

[69] See Sixth Environmental Action Programme, Art. 5.2(i)(c).

[70] See Sixth Environmental Action Programme, Art. 5.2(ii).

[71] See Sixth Environmental Action Programme, Art.5.2(ii)(c), aiming at the encouragement in the use of renewable energy sources, "with a view to meeting the indicative target of 12% of total energy use by 2010."

[72] See Sixth Environmental Action Programme, Art. 5.2(ii)(f).

[73] See Sixth Environmental Action Programme, Art. 5.2(ii)(a), expressing the need to undertake "as soon as possible an inventory and review of subsidies that counteract an efficient and sustainable use of energy with a view to gradually phasing them out".

-Reducing GHG in the transport sector[74]:

This is the second most important area of action, and probably the most delicate to handle , due to the massive implications on everyday life. The actions set out are more in number but less in specificity[75]. The strategy is to take actions in the different sub-sectors (aviation, marine shipping[76]), to try to increase the efficiency, organization and logistics of the transport system in order to make it cleaner, as well as to promote the development and use of alternative fuels and of low-fuel-consuming vehicles.

-Reducing GHG in industrial production[77]:

The key point here is to assist companies, especially small-medium enterprise, to explore paths of innovation, in order to make the production system more environmentally friendly.

-Reducing GHG in other sectors[78]:

The purpose of these measures is to integrate climate change concerns in other policies, especially agriculture and waste management, as well as to increase the contribution from the individuals, in such daily activities as heating.

-Using other appropriate tools[79]:

This last area is cross-cutting, in that it provides for instruments that could be applied to each of the previous sectors. The three tools that are mentioned are: fiscal measures[80], with the ultimate aim of creating an energy taxation system, environmental agreements with industries[81] and research and development[82]. All of these previsions clearly relate only to one aspect of a possible climate change policy, that is mitigation (the effort to reduce human-induced GHG emissions), and

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[74] See Sixth Environmental Action Programme, Art. 5.2(iii).
[75] They are listed in Art. 5.2(iii), letters (a) to (h).
[76] These actions are to be taken in coordination with the work of such international organizations as the International Civil Aviation and the International Maritime Organisation.
[77] See Sixth Environmental Action Programme, Art. 5.2(iv).
[78] See Sixth Environmental Action Programme, Art. 5.2(v).
[79] See Sixth Environmental Action Programme, Art. 5.2(vi).
[80] See Sixth Environmental Action Programme, Art. 5.2(vi)(a).
[81] See Sixth Environmental Action Programme, Art. 5.2(vi)(b).
[82] See Sixth Environmental Action Programme, Art. 5.2(vi)(c).

they try to combine the more traditional command-and-control system with a more innovative market-oriented approach. But the high level concentrations of GHG in the atmosphere and the objective difficulties that some Countries are facing in their efforts (or lack of efforts) makes it necessary to consider also the way in which to face the changes that cannot be prevented.

The Community tries to address the challenges of adaptation in a double way[83]. First of all, trying to consider adaptation concerns as far as investments are concerned, and secondly acting at the regional level[84], with the involvement of citizens and businesses as well.

But a comprehensive climate change policy must also take into account external relations. That's why the last provisions are dedicated to the accessions of new Countries[85], and to the role that the Community has to play at the international level.

It is claimed that climate change will constitute one of the priorities of the Community sustainable development policy. This of course entails a whole series of commitments towards the rest of the international community, especially to developing countries, in term of financial assistance, capacity building and technology transfer, which are all part of the set of obligation we have analysed concerning developed Countries[86].

[83] See Sixth Environmental Action Programme, Art. 5.3.

[84] Regional adaptation measures, according to Art. 5.3, should include water resources management, conservation of biodiversity, desertification and flooding prevention.

[85] See Sixth Environmental Action Programme, Art. 5.4.

[86] See Sixth Environmental Action Programme, Art. 5.5, which includes "encouraging projects in connection with the Clean Development Mechanism".

5.3) IMPLEMENTING EMISSIONS TRADING WITHIN THE EC LEGAL ORDER:

5.3.1) WHAT IS EMISSIONS TRADING?

The most important and innovative legislative act elaborated at the Community level is by no means Directive 2003/87/EC establishing a scheme for greenhouse gas emissions allowance trading within the Community[87]. The possibility for such an initiative is to be found in Art. 17 of the Kyoto Protocol[88], and it is due to the necessity of complying with the targets in a cost-effective way.

The global dimension of climate change in fact makes it absolutely irrelevant where the emissions are produced, and in the same way a reduction in GHG emissions in Asia, or in Europe or in America will have exactly the same result from an environmental point of view.

Considering the great difficulties that Countries will have to face in their efforts to reduce the emissions that are harmful for the climate stability, especially in crucial sectors of economies such as energy and transports, the Kyoto negotiators designed some mechanisms to meet the needs of reducing the emissions in a less expensive way.

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[87] See OJ L275/32 of 25/10/2003. On this directive see Robert DORNAU, *The Emissions Trading Scheme of the European Union*, in David FREESTONE and Charlotte STRECK, *Legal Aspects of Implementing the Kyoto Protocol Mechanisms*, pp. 417-430, Bent Ole Gram MORTENSEN, *The EU Emission Trading Directive*, in "European Environmental Law Review", October 2004, pp. 275-284, Jurgen LEFEVERE, *Greenhouse Gas Emission Allowance Trading in the EU: A Background*, in "Yearbook of European Environmental Law", vol. 3, 2004, and Barbara POZZO (ed.), *La nuova direttiva sullo scambio di quote di emissione. La prima attuazione europea dei meccanismi previsti dal Protocollo di Kyoto*, Milano, 2003, Valentina DI MILLA, *La disciplina comunitaria per lo scambio di quote di emissione dei gas ad effetto serra*, in "Diritto Comunitario e degli Scambi Internazionali", vol. 3, 2004, pp. 575-585.

[88] "The Conference of the Parties shall define the relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability for emissions trading. The Parties included in Annex B may participate in emissions trading for the purposes of fulfilling their commitments under Article 3. Any such trading shall be supplemental to domestic actions for the purpose of meeting quantified emission limitation and reduction commitments under that Article."

These flexible mechanisms include project-based mechanisms, as in the case of joint implementation and the CDM, but also the more controversial idea of emission trading. The underpinning idea is to create a free market in which the possibility of emitting GHG is traded by the different actors as any other good[89].

The economic benefit for enterprises were made clear by the Commission with a practical example in a paper published online with the aim of clarifying the main issues concerning emissions trading,[90].

Let's consider the case of 2 companies, A and B, which both emit 100.000 tonnes of CO2 per year. The government gives each of them 95.000 emission allowances. Since one allowance represents the right to emit 1 tonne of CO2, it is clear that Companies A and B both have to cover 5.000 tonnes of CO2, and they have two ways of doing this:

a) they can reduce their emissions by 5.000 tonnes, or
b) they can purchase 5.000 allowances in the market.

In order to decide which option to pursue, they will compare the costs of reducing their emissions by 5.000 tonnes with the market price for allowances, and then choose the cheaper option.

We can imagine a market price for allowance at € 10 per tonne of CO2; if Company A's reduction costs are € 5 (i.e. lower than the market price), then it will reduce its emissions, because it is cheaper than buying allowances. In this situation, Company A may even reduce its emissions by more than 5.000 tonnes, for instance 10.000 tonnes. For company B, on the other side, the situation may be the opposite: its reduction costs are € 15 (i.e. higher than the market price) and its policy would likely be buying allowances instead of reducing emissions.

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[89] See Jurgen LEFEVERE, *Greenhouse Gas Emission, cit. supra,* p. 151, warns us that "the term emission trading, although most commonly used, does in fact not properly describe the instrument. It is not the emissions that are being traded, but the right to emit a particular quantity of greenhouse gases, laid down in a permit, credit or allowance." He therefore welcomes the title of the European Directive , "which refers to greenhouse gas emission allowance trading".

[90] See Questions & Answers on Emissions Trading and National Allocation Plans, paper available on the webpage http://europa.eu.int/rapid/pressReleasesAction.do?reference=MEMO/04/44&format=HTML&aged=0&language=EN&guiLanguage=en .

How can we concretely calculate the effective gain for the two companies involved, as a consequence of the establishment of a market in which emissions allowances are freely traded?

We can further imagine that Company A spends € 50.000 on reducing 10.000 tonnes at a cost of € 5 per tonne and receives € 50.000 from selling 5.000 tonnes at a price of € 10. So Company A fully offsets its emission reduction costs by selling allowances, whereas without the Emissions Trading Scheme it would have had a net cost of € 25.000 to bear. Company B spends € 50.000 on buying 5.000 tonnes at a price of € 10, while in the absence of the flexibility provided by the emissions trading scheme, company B would have had to spend € 75.000.

The economic benefits for the actors involved are therefore clear, at least in theory; nonetheless it is fundamental to underline that a regime of emissions trading will not make costs disappear.[91]

5.3.1.1) GOOD REASONS IN FAVOUR OF EMISSIONS TRADING?:

The key idea of an emissions trading scheme is that it allows all the sources of emissions the flexibility to find and apply the lowest-costs methods for reducing pollution.

A massive effort to curb GHG emissions is of course still necessary, but the advantage will be the possibility of investing in the sectors that will have better outcomes with fewer costs. But the economic impact, in terms of reduction of compliance costs, is not the only reason put forward by the supporters of emissions trading.

It is also seen as an incentive for research and development in environmentally sound fields. Finding the cheapest way to reduce GHG emissions will be beneficial for the environment but at the same time could become a source of economic profits, in that all the surplus of reductions obtained in such way might be sold in

[91] For an analysis on how emissions trading can reduce implementation costs, see *An emerging market for the environment: a Guide to Emissions Trading,* published by UNEP and UNCTAD.

the market to those emissions sources that would otherwise have to face higher costs.

As underlined in academic opinion[92], the greatest opportunities are in the developing countries, which could therefore benefit from the development and distribution of new technologies, resulting in a win-win situation, in which the environment is protected and the economic development enhanced.

Another reason in support of the establishment of an emissions trading regime relates to the environmental outcome. If we compare it with another market instrument such as energy taxation, it is rather evident that this latter cannot guarantee a predictable reduction of emissions. It is very likely to imagine that the increase in the costs of energy will ultimately result in a reduction of GHG emissions, but the concrete amount of this reduction cannot be established *a priori*. On the other hand, with a cap and trade system, the policy makers will fix the total amount of emissions that are considered acceptable, and the market will allocate this quantity among the sources.

And although at the beginning the limits may seem to be rather loose, one has to bear in mind that an emissions trading scheme has a first effect of stopping uncontrolled increases in the emissions. It is thus possible to guide the total level of emissions, and proceed with further limitations of the cap whenever the conditions of the market will make it possible.

Of course a series of *ad hoc* measures must be designed in order to create a comprehensive system, covering all the relevant sources; otherwise, control over certain pollution sources may be outweighed by the unlimited increase in others. We do not have to forget that as far as costs are concerned, the more differences among countries the better chances for an emissions trading scheme to work in an effective way, and the climate change regime seems to present a great variety of options and costs for mitigation purposes in different Countries and regions.

[92] See LEFEVRE, above, pp. 166-167.

From the concrete experience of national emissions trading schemes implemented in the US[93], climate change has some peculiarities that make it an eligible sector for such an instrument.

The first stems form a scientific evaluation of the phenomenon of GHG in the atmosphere. These gases, unlike others, mix uniformly and remain in the atmosphere for a long time. Their effects are therefore the same regardless of where the source is based and when the emissions occur. This bears the consequence, as we have said before, that the reductions can be achieved everywhere, with the same beneficial effect on the environment, and thus the way is paved to the research of the most cost-effective manners to reach the goal.

The other consequence is the irrelevance of the temporal dimension, in the sense that the flexibility should operate also in relation to time. Reducing less today with the duty to reduce more in the future should therefore be acceptable, but this kind of situations may be used by States to simply postpone their mitigation efforts, and negotiations on their inclusion in a scheme of emissions trading are never easy[94].

Cost-effective compliance, incentives for environmentally sound research, opportunities for sustainable paths of development in developing Countries, certainty in terms of control of pollutants; these are all positive outcomes resulting

[93] For the diverse programs constituting the primary U.S. experience with air emissions trading, *See* ELLERMAN, JOSKOW, HARRISON, *Emissions Trading in the U.S.: Experience, Lessons and Considerations for Greenhouse Gases*, Pew Centre on global climate change, May 2003. The Authors analyse six emissions trading programmes implemented in the US, i.e.: the early Environmental Protection Agency (EPA) Emissions Trading programmes that began in the late 1970s; the Lead Trading programme for gasoline that was implemented in the 1980s; the Acid Rain program for electric industry sulfur dioxide (SO2) emissions (mid-1990s); the Los Angeles air basin (RECLAIM) programs for both nitrogen oxides (Nox) and SO2 emissions (mid-1990s); the federal mobile source averaging, banking and trading (ABT) programs that began in the early 1990s; the Northeast NOx Budget trading program, which began operations in the late 1990s.

[94] The idea that one source can benefit in the future from the efforts undertaken today (i.e. State A has to reduce 5 in a first period and 5 in a second; it manages to reduce 7 in the first period) is commonly referred to as banking, for which see Chapter 3 *supra*.

from an emissions trading scheme, but would it be consistent with the principles governing the climate change regime, as enshrined in Art. 3 of UNFCCC?[95]

The idea that I can pollute more than my due just as a consequence of my buying allowances form another polluter may be seen as running counter to the basic principles informing the climate change regime, that is the idea that global warming is a common concern, that every Country has to give its contribution according to its actual possibilities and capabilities, emphasizing on the other hand the economic implication of the phenomenon.

The fight against global warming nonetheless needs a set of actions and instruments due to its complexity, and the idea of establishing an emissions trading scheme should probably deserve at least the possibility to unfold in its potential beneficial effects. Creating opportunities to involve developing Countries must not be underestimated, especially in the combination with the other important flexible mechanism established by the Kyoto Protocol, that is the CDM.

Sustainable development cannot be imposed by any legislative act: finding new paths to spread it, resorting to the forces of the free market and the business sector, which would otherwise be ignored, may turn out to be a very sensible option.

5.3.1.2) GOOD REASONS AGAINST EMISSIONS TRADING?:

On the other hand emissions trading regimes can have some drawbacks.

First of all there is the, so to speak, moral issue, that is the idea that allowing the trade of emissions is not acceptable from an ethical point of view. Considering the damaging fumes in the air in the same way as any other good can be seen as an incentive to pollution rather than a way to contrast it[96].

[95] As we have seen in chapter 2, these principles are: common concern of humankind, common but differentiated responsibilities, precaution, no harm principle, sustainable development and liberalisation of international trade.

[96] See SANDEL, *It is immoral to buy the right to pollute,* in "New York Times", 15 Dec. 1997, stating that emissions trading "turns pollution into a commodity to be bought and sold" and therefore it "removes the moral stigma that is properly associated with it".

In academic opinion a certain emphasis has been put on this issue, leading also to the comparison between allowances to emit GHG and permits to inflict injury, in the sense that emissions trading paves the way to justification of morally unacceptable behaviours just because of the payment of a fee[97].

This is of course a radicalization of the issue, and it does not take into consideration the basic fact that pollution is unavoidable.

It can and must be limited and regulated, but it is impossible to eliminate it completely, as long as human beings live and move and work.

A refusal of the possibilities of emissions trading based just on such ideological assumptions does not lead anywhere, and certainly does not help the environment, since it does not provide for any viable alternative.

Another ethical question relates to the attribution of such emissions allowances: how to allocate the total amount of pollution which is considered as acceptable within the various Countries? What should be the principles regulating this aspect of emissions trading?

On the one hand, one could consider the idea of distributing permissions to emit in the atmosphere on a per capita basis: if climate change is a common concern of humankind, and if the atmosphere is a common good over which no State can claim its sovereign rights, allowing each individual living on the planet Earth the same amount of GHG emissions would seem to be the natural consequence.

But of course this option would have unbearable consequences on the world economy, since the disproportion between developed and developing Countries' levels of emission is still significant, even if it can be predicted that in the next years major developing Countries (China, India, Brazil) will become the first global GHGs emitters. The alternative is an allocation based on the historical trend of emissions, which is usually referred to as "grandfathering". This would result in rich Countries maintaining the possibility of emitting the same levels of GHGs they used to in the past. From an economic point of view, it would not jeopardise

[97] See LEFEVRE, above, at pp. 167 ff, where he discusses the issue of the moral acceptability of emissions trading.

the established business system in the developed world, but some developing Countries contest it as a sort of crystallisation of the polluting habits of a part of the world at the expenses of the rest of the international community.[98]

The effort should be in finding the best way to reduce GHG emissions, without jeopardizing the economic progress, especially of developing countries.

If the establishment of a regime for the free circulation of allowances can be helpful in achieving this dual goal, attention should be paid to how to make it work efficiently.

If we shift the focus on the concrete mechanisms of a scheme of emissions trading, there are some risks that the outcome may not be so good for the environment. The most blatant problem is usually referred to as *hot air*, and in the climate change regime is strictly linked to the situations of such countries as those resulting from the dissolution of the former Soviet Union.

In all of these countries, the so-called economies in transition, the baseline was fixed in relation to a year when their industrial apparatus were still powerful. Because of the severe economic recession they have been facing in the last decade, they will be able to meet their reduction targets even without any actual policy in favour of the environment.

This will lead to a situation in which Country A (a Country with economy in transition) reduces its emissions compared to 1990 levels without any policy or strategy for the benefit of the climate, and will at the same time be able to sell the surplus of allowances to Country B, which could not otherwise meet its obligations.

[98] On the issue of an "ethical" allocation of emissions among Countries see Benito MUELLER, "Fair Compromise in a Morally Complex World: the Allocation of Greenhouse Gas Emission Permits Between Industrialised and Developing Countries", Oxford Institute for Energy Studies, 2001; on how allocation can increase disparities between regions and income groups within nations see Jiahua PAN, *Emissions Rights and Their Transferability: Equity Concerns over Climate Change Mitigation,* in "International Environmental Agreements: Politics, Law and Economics, 2003, vol. 3, pp. 1-16. See also Emily RICHMAN, *Emissions Trading and the Development Critique: Exposing the Threat to Developing Countries,* in "New York University Journal of International Law and Politics", vol. 36, Fall 2003, n. 1, pp. 133-176.

In such cases, both countries will meet their targets and therefore fulfil their obligations under the Kyoto Protocol, but neither of them has acted in an environmentally sound way, and consequently the benefit for the fight against global warming will be insignificant.[99]

This possible scenario highlights the importance of a stringent cap, to prevent the whole system from being environmentally neutral or even damaging[100].

If we see the possible consequences of a global scheme of emissions trading on international relations among States, one may wonder whether it will be equitable or not.

The main concern is that industrialized countries will simply buy on the market the allowances they need to comply with their obligations, without adopting a serious strategy against global warming. In this way there would be no need to change the patterns of consumptions and life habits of the rich part of the world, because it will be sufficient to buy allowances from developing countries, always in need for money to boost their economic growth.

Is this the idea of common but differentiated responsibilities that we want to inform the climate change regime?

To cope with this problem some Countries[101], in the climate change negotiations, insisted on the concept on supplementarity. The Kyoto Protocol states that "any such trading shall be supplemental to domestic action" for meeting the emissions reduction commitments.[102]

Each emissions trading regime has therefore to develop specific rules which can prevent it from simply becoming the instruments used by rich Countries to avoid non-compliance.

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[99] On the concept of hot air, see for instance Michael GRUBB, *International Emissions Trading under the Kyoto Protocol: Core Issues in Implementation*, in "Review of European Community and International Environmental Law", vol. 7(2), 1998, p.142.

[100] In Michael GRUBB, Christiaan VROLIJK and Duncan BRACK, *cit. supra*, p.216, the authors identify a "review and assessment approach to tackling hot air trading", based on the fundamental idea of limiting the possibility of trading allowances which would not turn out to be policy-driven as compared with business as usual emissions trends.

[101] The EU and a number of developing countries.

[102] See Kyoto Protocol, Art. 17.

If the establishment of a free market for the exchange of GHG allowances turned out to be an incentive for developed Countries to refuse any serious effort in terms of implementation of domestic policies and measures for the limitation of GHGs, it would then challenge the ultimate objective of the climate change regime, and the detrimental effect for the environment would be the definite outcome.

5.3.2) EMISSIONS TRADING IN THE KYOTO PROTOCOL:

One of the flexibility mechanisms introduced by the Kyoto Protocol in order to help Parties meet their mitigation commitments is emissions trading, which nonetheless must be seen in relation to the project-based mechanisms (JI and CDM), as converging instruments to achieve substantial reductions in GHGs emissions in a cost-effective manner.

The form of emissions trading designed is based on the cap-and-trade principle[103]. This means that the regulator establishes an overall limit on emissions (the emission cap), that is the total amount of a pollutant that the participants in the programme are allowed to emit in a given period. A number of allowances equal to all of the emissions permitted under the cap are then distributed[104], and then they may be traded.

[103] On emissions trading in the Kyoto Protocol see Michael GRUBB with Christiaan VROLIJK and Duncan BRACK, *The Kyoto Protocol: A Guide and Assessment,* London, 2001, pp. 206-225, Sebastian OBERTHUR and Hermann E. OTT, *The Kyoto Protocol: International Climate Policy for the 21th Century,* Berlin, 1999, pp. 187-206, Farhan YAMIN and Joanna DEPLEDGE, *The International Climate Change Regime: A guide to Rules, Institutions and Procedures,* 2003, chapter 6, and Rutger de WITT WIJNEN, *Emissions Trading under Article 17 of the Kyoto Protocol,* in David FREESTONE and Charlotte STRECK, *Legal Aspects of Implementing the Kyoto Protocol Mechanisms,* New York, 2005, pp.403-416, David M. DRIESEN, *Free Lunch or Cheap Fix?: The Emission Trading Idea and the Climate Change Convention,* in "Boston College Environmental Affairs Law Review", vol. 26, 1998, p. 1, A. Denny ELLERMAN, *A Note on Tradable Permits,* in "Environmental and Resource Econommics", 2005, vol. 31, pp. 123-131, Sikina JINNAH, *Emissions Trading under the Kyoto Protocol: Legal and Policy Mechanisms for Domestic Implementation,* in "Journal of Energy and Natural Resources Law", 2003, vol. 21(3), pp. 252-276, David G. VICTOR, *The Collapse of the Kyoto Protocol and the Struggle to Slow Global Warming,* Princeton, 2001, pp. 3-54.

[104] The two basic alternative in this regard are: free distribution or distribution by auction.

An alternative to this system is the baseline and credit approach, in which an emission baseline is defined for each participant by the regulator, and is then used at the end of the compliance period to calculate the increase or decrease in emissions. If participants can demonstrate that their emissions are below the baseline level, then they can earn credits equal to the difference to be traded in the market.

This second approach underpins the project-based mechanisms of the Kyoto Protocol, and the interaction between the different flexible mechanisms results in a combination of the two approaches.

But what are the basic characteristics of the emissions trading scheme provided for by Art. 17 of the Kyoto Protocol?

The article itself does not say much, mandating to the COP the definition of the "relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability"[105]. We will therefore try to outline the basic features of the emissions trading scheme according to the Kyoto Protocol by answering some basic questions:

-a) Who can trade?

-b) What can be traded?

-c) What is the admissible level of trade?

a)Who can trade?

As we have seen while describing the common features of the flexibility mechanisms[106], there are some eligibility requirements, which in the case of emissions trading are set out in Decision 18/CP.7:

i) it is a Party to the Kyoto Protocol;[107]

ii) its assigned amount has been calculated and recorded;[108]

iii) it has in place a national system for the estimation of GHG emissions;[109]

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[105] See Kyoto Protocol Art. 17.

[106] See 3.2.3.3 *supra*.

[107] See Decision 18/CP.7, para. 2(a).

[108] See Decision 18/CP.7, para. 2(b).

[109] See Decision 18/CP.7, para. 2(c).

iv) it has in place a national registry;[110]

v) it has submitted annually the most recent required inventory;[111]

vi) it submits the supplementary information on assigned amount.[112]

These eligibility requirements are fundamental to grant transparency to the system, and are verifiable through the publicly accessible list of Parties meeting such requirements maintained by the UNFCCC Secretariat.[113] In such market-oriented mechanisms though, a major role is likely to be played by non-State actors, especially private corporations, just as in the CDM.

Unlike Art. 12 on the CDM, however, Art. 17 on emissions trading does not expressly refer to legal entities[114], but Decision 18/COP.7 devotes a paragraph to this issue. Legal entities can consequently transfer or acquire under Art. 17 upon authorisation by the State Party, which shall remain responsible for the fulfilment of its obligation under the Kyoto Protocol[115].

The State shall maintain an up-to-date list of such entities, which in any case cannot transfer or acquire during the time in which the authorising Party does not meet the eligibility requirements.

This is of course a clear reaffirmation of the legal predominance of national States in international relations. Even though the economic interests are significant, we cannot but recognise that the role of non-State actors under international law is not an autonomous one: legal entities can enjoy the benefits of a system of emissions trading, but only within a State-driven framework.

b) What can be traded?

While Art. 17 of the Kyoto Protocol refers to *trading*, Decision 18/CP.7 deploys the verbs *transfer and/or acquire*[116].

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[110] See Decision 18/CP.7, para. 2(d).
[111] See Decision 18/CP.7, para. 2(e).
[112] See Decision 18/CP.7, para. 2(f).
[113] See Decision 18/CP.7, para. 4.
[114] Utger DE WITT WIJNEN, cit. supra, p.411, defines this lack of reference as "an oversight".
[115] See Decision 18/CP.7, para. 5.
[116] See Decision 18/CP.7, para. 2.

In this way due emphasis is posed on the final act of the trade, that is the delivery or acceptance of the asset involved[117].

But what is the asset involved? Decision 18/CP.7 sets out the units which represents one metric tonne of CO2 equivalent and which have different names according to the specific rules of the Kyoto Protocol or of COP decisions describing their functioning in the regime.

We have therefore AAUs (assigned amount units), which are the basic units constituting the amount assigned to each Country, ERUs (emission reduction units), which are gained through joint implementation, CERs (certified emissions reductions), which are the credits accruing from CDM projects, and RMUs (removal units), which can be issued to reflect a removal of GHGs by sinks on the basis of Art. 3(3) of the Kyoto Protocol.

The plurality of definition aims to stress the different origin of the single tradable unit: although exchanging one or the other will be exactly the same from a quantitative point of view, it will still be possible to verify whether the credit results from a project of JI or of CDM of enhancement of sinks.

All of these names, which do not help in clarity, are usually referred to as "Kyoto Units" and identify the object of the transfer or acquisition, or, in other terms, the exchangeable asset.

c) What is the admissible level of trade?

The concerns of the NGOs' community relate to the environmental outcome: in other words, they fear that the establishment of an allowance market could be of little benefit for the atmosphere, turning out to be simply a device to postpone or even avoid serious mitigation policies.

How to make sure that emissions trading does not become an instrument to circumvent the mitigation obligations set out in the UNFCCC and Kyoto Protocol?

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[117] According to Rutger DE WITT WIJNEN, *cit. supra*, p. 410, the two moments of transfer/acquisition and trade are separate, and not every trade results in a transfer ("If a buyer B buys an asset, B generally has the right to require the seller A to transfer the asset to B. However, if B resells the asset to a third Party C before it has been transferred to B, B may instruct A to transfer the asset to C directly".

The answer to this question focuses on the concept of supplementarity, that is shaping the ET system in such a way as to reduce the amount of units that can be transferred. This should result in Parties giving priority to the implementation of domestic policies, and resorting to emissions trading only as a complementary means to achieve cost-effective reductions in specific economic sectors in which compliance is more expensive.

One option could have been setting a percentage of the total amount of the units of a Country which could be traded, but the Kyoto Protocol, in art. 17, states that "trading shall be supplemental to domestic action" for the attainment of the reduction commitments under the Protocol.[118] It is rather clear how such a word as supplemental carries no quantitative connotations[119].

In the post-Kyoto negotiations attention was paid to how making this concept meaningful. On the one hand, the EU strongly favoured the establishment of some sort of overall cap in the use of emissions trading, while on the other hand the other industrialized countries, led by the US, opposed to such an idea, with the majority of developing countries living the dilemma of supporting from an ethical point of view the proposal of the EU but at the same time fearing this could reduce the demand of credits to buy abroad, and ultimately jeopardize the prospect of attracting investments from rich countries.

During the COP 7 in Marrakesh, agreement was found, based on the repetition of the concept expressed in the Kyoto Protocol (that use of the mechanisms shall be supplemental to domestic actions), further reinforced by the statement that domestic action shall constitute a significant element of the effort made by countries with targets of emissions reduction.

One may notice how the word significant is less pregnant, from a quantitative point of view, than other words that have been discarded, such as principal or primary.

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[118] See Kyoto Protocol, Art. 17.

[119] See YAMIN and DEPLEDGE, *The International Climate Change Regime: A guide to Rules, Institutions and Procedures*, Cambridge, 2004, at chapter 6, para 3.3.

How is it then possible to assess the effective respect by member States of the supplementarity condition?

The compromise upon which the parties agreed is based on the role of reporting and review mechanisms. Each Country in fact will have to submit detailed information about the use of mechanisms and their relation with domestic action[120], as well as an additional report on the demonstrable progress in carrying out their obligations. This means that buying credits from other countries must not be the main instrument to fulfil the obligations set out in the Kyoto Protocol[121].

A serious limit to the possibility of exchanging units results from the commitment period reserve. This expression is used to identify that part of each Country's assigned amount that cannot be traded.

Decision 18/CP.7 in fact states that each Country with reductions commitments shall maintain, in its national registry, a commitment period reserve which should not drop below 90% of the Party's Assigned Amount, or 100% of five times its most recently reviewed inventory, whichever is the lower[122]. In case of violation of this rule, the transfer of units cannot proceed.

What does this provision imply for the actors involved in emissions trading?

The idea that the level of the commitment period reserve may vary according to the increase or decrease in a Country's emissions as shown by the most recently reviewed inventory may create uncertainty in the economic operators involved[123]. This basically stems from the fact that a single legal entity cannot predict the emissions trend of the Country as a whole, and therefore the transfer of units may be jeopardised by the climate-unfriendly behaviours of other actors, in other economic sectors.

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[120] This information will be reviewed according to art. 8 of the Kyoto Protocol.

[121] In this sense see point 19 of the preamble of the directive 2003/87/CE of 13 October 2003, where it is stated that "in accordance with the relevant provisions of the Kyoto Protocol and Marrakesh Accords, the use of the mechanisms should be supplemental to domestic action and domestic action will thus constitute a significant element of the effort made."

[122] See Decision 18/CP.7, para. 6.

[123] Rutger DE WITT WIJNEN, *cit. supra*, pp. 413-414, shows a fictional example which clearly demonstrates the degree of unpredictability of such system of calculation.

In fact a seller of Kyoto Units may have sufficient units in its account to transfer a certain amount to a buyer in another jurisdiction, but such transnational transfers could not be completed in case they would decrease the national level of Kyoto units below the threshold of the Commitment Period Reserve.

This would eventually frustrate the behaviour of those operators which decided to reduce more than their legal obligation with the purpose of selling the rest of the surplus on the market.

Only the actual working of the emissions trading system will be able to show whether the rules agreed upon in Marrakesh may on the one hand guarantee a beneficial environmental outcome but at the same time not constitute an obstacle for legal entities involved in the market.

5.3.3) DIRECTIVE 2003/87/EC OF 13 OCTOBER 2003 ESTABLISHING A SCHEME FOR GREENHOUSE GAS EMISSION ALLOWANCE TRADING WITHIN THE COMMUNITY:

5.3.3.1) A BRIEF NEGOTIATING AND LEGISLATIVE HISTORY:

The Directive 2003/87/EC of 13 October 2003 is the last step of a long process to give birth to a scheme of emissions trading within member States[124], and it is made up of 33 articles and 5 annexes[125].

The starting point of the process leading to the adoption of the directive dates back to March 2000, when the Commission published a Green Book on the subject[126]. The negotiation turned out to be troublesome, because despite the general

[124] The Commission presented a Green Book on this topic on 8 March 2000,

[125] Annex I: categories of activities referred to in Articles 2(1), 3, 4, 14(1), 28 and 30; Annex II: greenhouse gases referred to in Articles 3 and 30; Annex III: criteria for national allocation plans referred to in articles 9, 22 and 30; Annex IV: principles for monitoring and reporting referred to in Article 14(1), and Annex V: criteria for verification referred to in article 15.

[126] See European Commission, 2000, Green Paper on greenhouse gas emissions trading within the European Union COM (2000) 87, available on the webpage http://europa.eu.int/comm/environment/docum/0087_en.htm .

acceptance of emissions trading as a useful instrument for the fight against GHG emissions, the various actors involved had different objectives.

Environmental NGOs favoured the establishment of a system which would grant a positive environmental outcome, focused on strict targets, monitoring, verification and compliance functions, to be exercised a the community level[127]. On the other side, business groups were concerned about the possible competitive disadvantage that European industries could suffer as a consequence of too strict targets and too high compliance costs, and expressed their view in favour of voluntary agreements rather than on a cap-and-trade system[128].

The first proposal of the Commission was published in October 2001, with a view to creating a community scheme that would minimise competition distortions[129].

In September 2002 it passed a first reading in the European Parliament, and in December of that same year the Council of Environment Ministers approved it.

The Parliament proposed 73 amendments in its first reading, 23 of which were incorporated in the common position developed in March 2003, concerning, *inter alia,* the establishment of the fixed amount of allowances to be granted for free, as well as the broadening of the scope of the directive.

Then the Council and the Parliament worked together in the elaboration of the directive, which was approved by Parliament in a second reading on 2 July 2003, and finally approved by the Council on 22 July 2003.

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[127] A system centred on community institutions is seen as a guarantee of efficiency and equal treatment for all participants.

[128] See David POCKLINGTON, *European emissions trading – the business perspective*, in "European Environmental Law Review", July 2002, pp. 209-218.

[129] See Proposal for a Directive of the European Parliament and of the Council establishing a framework for greenhouse gas emissions trading within the European Community and amending Council Directive 96/61/EC, COM (2001) 581 of 23 October 2001.

5.3.3.2): AIM AND SCOPE OF THE DIRECTIVE:

The first 3 articles help us to clearly define the scope and aim of the directive: the GHG allowance trading scheme in fact must help to reduce emissions in a cost-effective and economically efficient manner[130].

The scope of the directive is very important, because of the consequences of the choice whether to include or not an economic sector within the scheme, as well as of the kind of gases on which to put limits[131].

Art. 2 refers to the activities listed in Annex I, which include energy activities[132], production and processing of ferrous metals[133], mineral industry[134] and other activities relating to the paper industry[135]. It is worthwhile noting that in case of an operator carrying out several activities falling within the categories set out in Annex I in the same installation[136] or in the same site, the single capacities are to be added together.

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[130] See Art. 1: subject matter.

[131] The difficulties on the negotiations on the economic activities to insert in the list is reflected also in the preamble. At point 16 it is stated that "this directive should not prevent any Member state from maintaining or establishing national trading schemes regulating emissions of greenhouse gases from activities other than those listed in Annex I or included in the Community scheme, or from installations temporarily excluded from the Community scheme."

[132] See Annex I, which lists under energy activities: combustion installations with a rated thermal input exceeding 20 MW (except hazardous or municipal waste installations), mineral oil refineries and coke ovens.

[133] See Annex I, which lists under production and processing of ferrous metals: metal ore (including sulphide ore) roasting or sintering installations, and installations for the production of pig iron or steel (primary or secondary fusion) including continuous casting, with a capacity exceeding 2,5 tonnes per hour.

[134] See Annex I, which lists under mineral industry: installations for the production of cement clinker in rotary kilns with a production exceeding a certain amount of tonnes per day, or in other furnaces, installations for the manifacture of glass and of ceramic products by firing, in particular roofing tiles, bricks, tiles or porcelain.

[135] See Annex I, which lists under other activities: industrial plants for the production of pulp from timber or other fibrous materials and paper and board with a production capacity exceeding a certain threshold.

[136] According to Art. 3(e) of the directive, installation "means a stationary technical unit where one or more activities listed in Annex I are carried out and any other directly associated activities which have a technical connection with the activities carried out on that site and which could have an effect on emissions and pollution".

If they exceed the threshold, a permit to emit is required, and the activities fall within the scope of the emissions trading scheme.

The gas covered are the six GHGs set out in Annex II, i.e. carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6), but for the first period the scheme will be limited to CO2, as described in Annex I.

The limited scope in both sectors and GHGs covered is not set in stone, and the directive allows member States to unilaterally apply emission allowance trading to activities, installations and GHGs not listed in Annex I, upon formal approval by the Commission[137].

The directive goes further, expressly indicating some sectors, such as the chemicals, aluminium and transport ones[138]. This can be seen as a compromise between the idea of including right from the start all the six GHGs and the chemical sectors, and the opposite view to limit the scheme as more as more possible. But the concrete application of the legal provisions of the directive may lead to an increase in the actors involved, particularly in the chemical and aluminium sectors, because of the presence of more combustion activities which overshoot the threshold of applicability[139].

5.3.3.3) PERMITS AND ALLOWANCES:

The two central concepts of the regime are permit and allowance. The basic idea is that every economic operators falling within the scope of the directive shall hold a GHG emission permit from 1 January 2005[140].

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[137] The Commission shall follow the procedure established in Art. 23(2), taking into account such criteria as the effects on the internal market, the potential distortion of competition, the environmental integrity of the system and the reliability of the reporting and monitoring scheme.

[138] See Directive, Art. 30.1(a).

[139] See Robert DORNAU, *cit. supra*, pp. 420-421.

[140] See Art. 4 of the Directive.

An application shall be presented to the domestic competent authority[141], specifying such data as the installation, its activities, the technologies deployed, the raw and auxiliary materials, the sources of GHG emissions, the monitoring and reporting measures[142].

The competent authority then, after verifying that the operator is capable of monitoring and reporting emissions, issues a GHG emissions permit, which grants authorisation to emit such gases from all or part of the installation.

A permit contains a series of data, which clearly identifies the operator and the activities of the installation[143], and specifies the monitoring methodologies and frequency[144]. It can be updated by the competent authority, in case of changes relating to the installation[145]. The issuance of such a permit may create some problems of coordination with the provisions of the so called IPPC directive[146], which are resolved by Art. 8, providing for an integration of the relevant procedures[147]. It is of course not tradable and implies an obligation to surrender allowances equal to the total emissions of the installation in each calendar year, by April 30th [148].

An allowance authorises the emission of one tonne of carbon dioxide equivalent during a specified period, which shall be valid only for the purposes of meeting the requirements of the directive and shall be transferable, thereby creating the possibility of emission allowance trading[149].

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[141] According to Art. 18 of the Directive, "Member States shall make the appropriate administrative arrangements, including the designation of the appropriate competent authority or authorities, for the implementation of the rules of this Directive. When more than one competent authority is designated, the work of these authorities undertaken pursuant to this Directive must be coordinated."

[142] See Art. 5 of the Directive.

[143] See Art. 6(a) and (b) of the Directive.

[144] See Art. 6(c) of the Directive.

[145] See Art. 7 of the Directive, mentioning the hypotheses of changes planned in the nature or functioning, or an extension, of the installation.

[146] See Directive 96/61/EC.

[147] See Art. 8 of the Directive.

[148] See Art. 6(e) of the Directive.

[149] For a definition of the concept of allowance, see Art. 3(a) of the directive.

The trade will involve the allowances that will be held by the various emissions sources. When the regime is fully operative, it will impossible for companies of the sectors listed in Annex I and operating within the community to emit GHG in the atmosphere unless they hold a GHG emissions permit issued by a competent authority, unless the installation is temporary excluded from the community scheme[150].

Starting from 2008, such allowances and their trade will be an instrument to achieve the targets set out in the Kyoto Protocol.

5.3.3.4): TWO COMMITMENT PERIODS, ONE COMMON OBJECTIVE: MEETING THE KYOTO TARGETS.

The idea is to have the regime start working properly as soon as possible, without waiting for the first commitment period agreed upon at the international level, i.e. 2008-2012. But of course such a complex mechanism needs time to be fully operational, especially in a legal context like the community one, in which market-based instruments to fight pollution are not developed.

The choice was then to establish a double time period: a first period of three years starting from 2005, and a second period in coincidence with the Kyoto obligations. This approach results in a differentiated regime, which starts in a softer manner and develops with more stringent provisions.

This is particularly evident in two aspects of the regime, i.e. the method of allocation and the penalties in case of non-compliance. As far as the former aspect is concerned, while in the first period the amount of allowances free of charge is at least 95%, during the years 2008-2012 this quantity will decrease by 5%, as set out in Art. 10[151].

[150] See Art. 4 Directive, referring to Art. 27 on temporary exclusion of certain installations.

[151] See Art. 10: Method of allocation: For the three-year period beginning 1 January 2005 Member States shall allocate at least 95% of the allowances free of charge. For the five-year period beginning 1 January 2008, Member States shall allocate at least 90% of the allowances free of charge.

A differential treatment is provided for also in Art. 16, dealing with penalties.

For each commitment period (the first of three years, the second and subsequent of five years) each Member State shall decide in advance upon the total amount of allowances it will allocate. By 30 April each year at the latest, the operators of the installations involved will have to surrender a number of allowances equal to the total verified emissions for the installation during the previous calendar year[152].

Greater flexibility is granted through the possibilities of banking and borrowing. As we have already specified, banking means using allowances that have not been deployed for compliance of the year for which they have been issued in order to meet compliance for the subsequent years, at least in the first commitment period (2005-2007)[153].

On the other hand, borrowing means using the allowance of a year for compliance of the directly preceding year[154].

For such a system to work effectively, some kind of penalties is required, in terms of a certain amount of Euros for each tonne of CO2 in surplus.

In the first period the penalty is fixed at the rate of €40 per tonne, while from 2008 it will amount to €100 per tonne. In any case, the payment of such penalties will not exempt companies to surrender a compensating amount of allowances in the subsequent year[155].

In fact the legislator did not want the penalty to act as a device to buy out of the reduction commitments. In both these cases, the underpinning idea is that a certain amount of time is needed before the European industrial system can get used to this new policy instrument, and therefore a series of tight provisions cannot be introduced *ex abrupto* without detrimental consequences on the performances of European companies.

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[152] See Directive, art. 12(4).

[153] See Directive, Art. 13.2(2).

[154] This is possible since, according to Art. 11(4), allowances for the current year are issued at the latest by 28 February whereas the deadline for compliance for the previous year is 30 April.

[155] See Directive, art. 16.

The idea of setting up two different periods ruled by legal provisions that get more and more stringent may be therefore deemed as an intelligent way to deal with a new legal instrument, designed to help operators in their mitigation efforts.
The first commitment period may therefore be seen as a learning-by-doing phase, with a view to preparing a fully-operational system for 2008, the starting year of Kyoto commitments.
One must have clearly set in mind that once established the emissions trading regime will hopefully become a major instrument of European environmental policies, and consequently it is far better paving a smooth way to it rather than imposing it to the industrial system in a rushed way.

5.3.3.5) NATIONAL ALLOCATION PLANS:

The first important step is the preparation of the so-called national allocation plan. If the aim of the trading regime is establishing a cap of emissions and letting the allowances move from one source to another according to economic advantages, it is of paramount importance the concrete determination of this cap.
If it is too loose in fact, the risk is that it will result in gross quantities of hot air, while on the other hand setting a limit that is too stringent could make it impossible to comply in a cost effective way.
Special attention must therefore be paid to the provisions set out in Art. 9, according to which, for each of the two periods we have mentioned before, each Member State shall develop a national plan with the total quantity of allowances that it intends to allocate for that period and how it proposes to allocate them[156]. Objective and transparent criteria should guide States in the preparation of these documents, taking due account of comments from the public.

[156] See Directive, Art. 9.

The involvement of the public is fundamental in order to grant relevance to stakeholders' concerns, which can be useful for the spread of sustainable development.

Art. 9 refers to some guiding criteria set out in Annex III. The Commission has later intervened on this list of 11 criteria for national allocation plans with a Communication[157] whose aim was to guide and assist member states in their implementation[158].

The first important guidance on the concrete application of the criteria is the so-called categorization, on the basis of whether their implementation is mandatory or optional. The Commission thus identifies 4 criteria as mandatory, i.e. assessment of emissions development, non-discrimination between companies or sectors, involvement of the public and list of installations, 3 criteria as partially mandatory, i.e. Kyoto commitments, potentials to reduce emissions and consistency with other legislation, and 4 as optional, i.e. new entrants, early actions, clean technology and competition from outside the Union[159].

So how did the Commission help Member States to concretely apply these criteria?

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[157] See Communication from the Commission COM(2003) 830, of 7/1/2004, on guidance to assist Member States in the implementation of the criteria listed in Annex III to Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC, and on the circumstances under which force majeure is demonstrated.

[158] See Communication, introduction, para 2., p.2 : "The purpose of this guidance document is three-fold: -First, to assist Member States in drawing up their national allocation plans, by indicating the scope of interpretation of the Annex III criteria that the Commission deems acceptable; -Second, to support the Commission assessment of notified national allocation plans, pursuant to Article 9(3); -Third, to describe the circumstances under which *force majeure* is demonstrated.

[159] Another way of categorising the criteria is to distinguish between them depending on whether they are applicable to allowance allocation at the level of all covered installations, at activity or sector level, or at installation level. According to this second categorization, the criterion of non discrimination between companies or sectors is the only one applying at all three levels, while two other criteria (potential to reduce emissions and consistency with other legislation) involve both the total level and the activity/sector level. Two criteria (Kyoto commitments and assessment of emissions development) are applicable to the total level, four criteria (new entrants, early action, clean technology and list of installations) relate to the installation level, just one (competition from outside the Union) is applicable only to the activity/sector level, and one last criterion (involvement of the public) does not relate to any of the three levels.

-a) *Kyoto Commitments*: the total quantity of allowances that each State allocate must keep into consideration the reductions commitments set out in the Kyoto Protocol, in the light of the burden-sharing agreement among the EU members. The Directive in fact does not cover all the possible sources of emissions, and each country has then to assess how to strike a balance, also in the light of national energy policies[160], which will inevitably have a huge impact on the total amount of emissions[161]. The first three-year period shall be considered as a path to get to the Kyoto targets, which cannot be easily met unless States begin to pave the way to serious programs of reductions, according to the obligation set out in Art. 3(2) of the Kyoto Protocol to make "demonstrable progress". Each State shall therefore give full account of what policies they are to implement, as well as to what extent they intend to make use of the flexible mechanisms to meet their targets.

-b) *Assessment of Emissions Development*: This mandatory criterion requires all member States to work together with the Commission in the establishment of the total quantity of allowances. This has to be done taking into consideration the provisions of Decision 2004/280/CE of 11/02/2004[162], which establishes a mechanism to monitor all the GHG emissions due to human activities, amending the previous legislation[163].

-c) *Potential to Reduce Emissions*: the concept of potential must be interpreted both in its technological and economic dimension. Since different activities have different technical options, achievable at different prices, to reduce GHG emissions, taking the potentials into account means exactly expecting a stronger

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[160] One must keep in mind the provisions of Directive 2001/77/EC (OJ L 283, 27/10/2001, p.33) on the promotion of electricity produced from renewable energy sources in the internal electricity market, according to which all Member States have committed themselves to increase the share of electricity from renewable energy sources.

[161] See for example the Communication, at p. 5, where the commission gives an example about the impacts of possible changes in national energy production. "If a Member State has committed itself to gradually phase-out nuclear installations on its territory, measures will have to be taken to provide the required levels of electricity. A nuclear phase-out might lead to an increase in greenhouse gas emissions, but would not justify that a Member State does not fulfil its obligations under Decision 2002/358/EC".

[162] See OJ l 049 of 19/02/2004, p.1.

[163] This decision abrogates decision 93/389/CEE, as expressly stated in Art. 11.

effort from those sectors with better chances to do more in a more efficient manner. This paves the way to a sort of benchmarking approach, and therefore allowances could be granted in relation to emissions per unit of output of the various activities. Such an idea will be further considered by the Community, as set out in Art. 30.2(k), and it was not deemed as viable for the first national allocation plans.

This criterion is mandatory in part. It has to be applied in determining the total quantity of allowances and it may be applied in determining the quantity per activity.

d) *Consistency With Other Legislation*: this criterion is necessary to guarantee the unity and coherence of the community environmental action, within the framework of the Environmental Action Plan.

Climate change is a cross-border issue, and therefore it is of paramount importance not to deal with it in isolation. A Member State shall therefore list all the Community legislative acts and policy measures which can affect the allocation of allowances.

In principle, no allowances should be allocated in cases where other legislation implies that covered emissions had or will have to be reduced as a consequence of a community policy, even without the introduction of the emission trading scheme. Similarly, consistency implies that if other legislation results in increased emissions or limits the scope for decreasing emissions covered by the Directive account should be taken of this increase[164].

e) *Non-Discrimination Between Companies or Sectors*: This criterion is quickly dealt with by the Commission in the Communication: "normal state aid rules will apply"[165]. This criterion is of course mandatory, as the necessity of providing for equal conditions and opportunities for all the actors involved is at the very heart of the EC legal order.

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[164] See Communication, above, at p.10, 2.1.4.1.
[165] See Communication, above, at p.11, 2.1.5.

-f) *New Entrants*: one of the problems an emissions trading regime has to face relates to the situation of installations starting operation on the course of a trading period, for which therefore no GHG emissions permit has been issued by the date the national allocation plan is notified to the Commission[166]. From the definition given by Art. 3 of the Directive[167] we can infer that the situation of new entrants is equal to that of existing installations that need extending their capacity.

There are basically three options available to Member States: 1)the allowances may be sold in the free market, 2)the State may set aside a reserve to issue allowances to new entrants free of charge, or 3)the State may provide for a periodic auction procedure[168].

1)This mechanism may be seen as contrasting with the principle of equal treatment, since the expiry of a deadline will change significantly the rules for actors considered "new entrants". In fact they will have to pay on the market what their competitors got for free from the State, and in theory they could even fail in their search.

The Commission however refuses this argument, setting out three main reasons why it does not consider this hypothesis as unequal towards new entrants.

a) New entrants will have all the opportunities to get the allowances, given the size of the EU market and its consequent liquidity.
b) New entrants can minimize their carbon costs thanks to the already established carbon market, unlike their predecessors.

[166] The issue of new entrants is temporary by nature, in that once the new installation gets the GHG emissions permit, it will not be considered as "new entrant" for the subsequent trading period, for which the national allocation plan will have taken into consideration the new situation.

[167] See Directive, Art. 3(h): "new entrant" means any installation carrying out one or more of the activities indicated in Annex I, which has obtained a greenhouse gas emissions permit or an update of its greenhouse gas emissions permit because of a change in the nature or functioning or an extension of the installation, subsequent to the notification to the Commission of the national allocation plan.

[168] The three options are discussed by the Commissions in the Communication, at pp. 13-14.

c) New installations will be considered as new entrants only for a limited period of time[169], and therefore a sound investment policy will be able to face this without excessive problems.

2)The idea to create a reserve of allowances for new entrants stems from the consideration that it is probably more equitable to grant all the emissions sources the same starting position. Nonetheless some drawbacks have to be taken into consideration:

First of all establishing such a reserve, with all the necessary rules and procedures for an impartial allocation, will definitely result in higher administrative costs as well as in increased complexity of the whole scheme.

Secondly, importance should be placed on the rules and procedures to grant those allowances. The Commission "recommends a Member State not to create several reserves dedicated to separate activities, technologies or specific purposes, since they could result in unequal treatment between new entrants"[170].

Furthermore each State shall clearly indicate in its national allocation plan the size of this reserve, with reference to an "informed estimate of the expected number of new entrants", as well as describe the methodology to grant an impartial and transparent allocation of the allowances.

One last point concerns the use of any allowances remaining in the reserve until the end of the period. Two basic options are available: the State can either auction them[171] , or cancel them and reissuing a corresponding quantity of allowances into a reserve for the following period[172].

[169] The Commission states that for the first period it will be less than two years.
[170] See Communication, above, at p.14, para 60.
[171] This must be done in accordance with the limits set in Art. 10 of the Directive.
[172] In this second case the Commission notes that at the end of the first period this second option is available only if a member State's national legislation provides for such re-issue (i.e. banking) of allowances in accordance with Art. 13(2) subpara. 2.

3)The idea of establishing a periodic auction procedure must be in accordance with the Community internal market rules, besides respecting the limits set in Art. 10 of the Directive[173].

This means that a Member State has to allow any person in the Community to participate in such an auctioning process. On the one hand, the possibility for NGOs to buy allowances and keep them unused might be hailed as an opening to the role of civil society, but on the other hand one might wonder whether in this way the existing sources enjoyed an unjustifiable privileged position or not (free allowances from the State, exclusion of any role of civil society). The Commission rebuts this point with the same arguments we have mentioned before.

-g) *Early Actions*: The idea of considering early actions stems from fairness and equity reasons. If an installation has already reduced GHG emissions in the absence or even beyond legal mandates, it is fundamental that the emissions trading regime does not disadvantage it vis-à-vis other installations which remained idle in this respect.

The problem is how to define in a clear way what can be considered as an early action, and in this sense neither the directive nor the guidelines provides any help whatsoever. One point though is crystal clear: what a State has done to comply with existing community environmental legislation and standards cannot be considered as an early action. This idea is perfectly in line with the community guidelines on State aid for environmental protection, where it is stated that "The Commission takes the view that aid is not justified in the case of investments designed merely to bring companies into line with new or existing Community technical standards"[174]. Also in this case, there are three possible options for a Member State to apply this criterion.

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[173] The problem of the use of the allowances left unsold can be solved in the light of the options we have mentioned above.

[174] See Community guidelines on State aid for environmental protection (OJ 2001/C 37/03), para. 20.

a) *Choosing an early base period*: in this way operators would be allocated a number of allowances in proportion with the historical emissions, in such a way as to reward those sources that actually made concrete efforts in reducing GHG emissions. This approach has a couple of drawbacks: first of all it may be difficult to have reliable and comparable data for emissions in the past, and secondly the reduction in the emissions may be the result of simple compliance to legislation already in force.

b) *Making a two-round allocation at installation level*: this approach is based on the idea of setting aside a share of the total quantity of allowances determined. This reserve would then be used as a bonus to those sources that undertook early actions. Even in this case a clear pre-established definition of early action is of paramount importance.

c) *Using benchmarks*: a Member State may choose to derive benchmarks from reference documents concerning the best available techniques. The difference with the use of benchmark possible under criterion 3 above is that in this case it would apply to installations and not to activities. This imply that Member States group homogenous installations as for input or output characteristics[175]. The use of benchmarking may present particular difficulties in the case of an *ex-ante* decision as the one pursuant to Art 11(1) of the directive. A simplified way to use benchmark would be to base the allocation on a base period scheme, and then deploy benchmarks as correction-factors, at installation level. Even in this case though, the performances that are better than average and therefore would get an increase in the allocation must be due to actual early actions, and not just to compliance to legal requirements.

h) *Clean Technology:* this criterion is optional, and may be applied to determine the allowances allocated at installation levels.

[175] The Commission (see communication above, at p.17, para. 77) recommends, in case of energy activities, "to group installations by input fuels and to apply separate input-derived benchmarks".

The Commission suggests that this criterion be considered as an extension of criterion 3 (potential to reduce emissions) to the installation level. In fact, if an industrial plant has already invested to improve its energy system and now uses a clean or energy-efficient technology, it is clear that it will have lower margins of reduction compared to sources not having such technologies[176].

The assessment of clean technologies is strictly linked with another criterion, i.e. early actions. It is very likely in fact that an early action may include investments in the energy efficiency of the installation. The Member State shall therefore pay attention not to apply both criteria 7 and 8 to the same source[177].

Not all kinds of clean technology must be taken into account under this criterion: only those already in use before the national allocation plan is published and those resulting in emissions of GHG covered by the directive are eligible.

Also for this criterion a reference to the Community guidelines on State aid for environmental protection must be made.

In case the Commission has approved State aid for certain technologies in the consideration of their beneficial impact on the environment, these technologies will of course be accepted as clean or energy-efficient technologies. The Commission furthermore gives a list, which is not exhaustive, of such technologies[178], including:

-High efficiency combined heat and power production. Member States may apply national definitions of "high efficiency" cogeneration production, unless such a definition has been adopted in Community law;

-District heating, other than high efficiency combined heat and power.

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[176] The suggestion of the Commission is therefore that "the use of a clean energy or energy-efficient technology should not be rewarded under this criterion with respect to an installation belonging to an activity which has a relatively low technological reduction potential. The reduced technological reduction potential of such an installation would already have been covered in the implementation of criterion 3".See Communication above, at p.18, para.86.

[177] These two criteria could of course be applied to the same installation in case the early action was not an investment in a clean or energy efficient technology.

[178] See Communication, above, at p. 19, para. 90.

Apart from energy production, this criterion may of course be applied by Member States also to other technologies, but in this case some requirements must be met. First of all, due consideration must be paid to Council Directive 96/61/EC of 24 September 1996[179]. This directive concerns integrated pollution prevention and control and it provides a definition of best available technology that shall be used also in assessing whether a technology can be eligible under this criterion. Best available technology is the one which is "most effective in achieving a high general level of protection of the environment as a whole"[180].

It will be therefore necessary to demonstrate the benefits both for the environment as a whole and for the reduction of the GHG covered by the directive in particular. Finally the technology that is likely to be deemed as clean for the purposes of the emissions trading scheme must have been in use by the industrial plant at the date of submission of the national allocation plan[181].

-i) *Involvement of The Public*: this criterion, which is of a mandatory nature, reflects the need of transparency of the Member States' decisions.

The whole process involves a double round of consultation of the public, starting from the draft plan. After paying due attention to these comments, Member State should integrate them, where appropriate, into the national allocation plan before its notification. The idea is to coordinate the intervention of the public with the concrete steps in the development of the national allocation plans, in order for such comments to be taken into due account.

Member States shall furthermore inform the Commission of any intended modifications subsequent to the publication and notification of the national

[179] Directive

[180] See Directive 96/61/CE, art.

[181] There are various types of technology that can be considered eligible under this criterion. The commission, in its communication (p. 19, para.92) mentions the example "where a waste gas from a production process is used a fuel by another operator". In stressing the discretion that is granted to Member states in this regards, it furthermore notices that "a Member State may choose to allocate allowances to the operator of the installation transferring the waste gas, provided this is done on the basis of a pre- established criterion, compatible with the existing criteria of Annex III and the Treaty".

allocation plan before completing the process with the final decision on the national allocation plan.

-j) *List Of Installations*: for this criterion to be fulfilled, each Member State shall list all the installations covered by the Directive. This means that some variations are possible according to Art. 24 (Procedures for unilateral inclusion of additional activities and gases[182]) and to Art. 27 (Temporary exclusion of certain installations[183]) of the Directive, which provides for a higher degree of flexibility on the States, provided it does not result in a distortion of internal market.

-k) *Competition from outside the Union:* this criterion, which is optional derives from the general objective of a gradual transition to a carbon-constrained global economy. In this perspective, carbon efficiency may be an important source of competitive advantage in the future, but in the short run it may imply increased costs for some operators.

This criterion should only be applicable to cases in which major differences in climate policies between the EU and Countries outside the EU result in a direct significant alteration of competition to the detriment of installations belonging to a specific activity.

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[182] See Art. 24 of the Directive: Procedures for unilateral inclusion of additional activities and gases. 1. From 2008, Member States may apply emission allowances trading in accordance with this Directive to activities, installations and GHG which are not listed in Annex I, provided that inclusion of such activities, installations and GHG is approved by the Commission in accordance with the procedure referred to in Art. 23(2), taking into account all relevant criteria, in particular effects on the internal market, potential distortions of competition, the environmental integrity of the scheme and reliability of the planned monitoring and reporting system. [...]

[183] See Art. 27 of the Directive: Temporary exclusion of certain installations. 1. Member States may apply to the Commission for installations to be temporarily excluded until 31 December 2007 at the latest from the Community scheme. Any such application shall list each such installation and shall be published. 2. If, having considered any comments made by the public on that application, the Commission decides, in accordance with the procedure referred to in Art. 23(2), that the installations will: a)as a result of national policies, limit their emissions as much as would be the case if they were subject to the provisions of this Directive; b) be subject to monitoring, reporting and verification requirements which are equivalent to those provided for pursuant to Articles 14 and 15; and c) be subject to penalties at least equivalent to those referred to in Article 16(1) and (4) in the case of non-fulfilment of national requirements; it shall provide for the temporary exclusion of those installations from the Community scheme. It must be ensured that there will be no distortion of the internal market.

The comparison should not be made on the basis of the existence or not of QELRs according to the Kyoto Protocol[184], but due attention should be paid to any relevant measures that non-EU competitors are subject to, including voluntary initiatives, technical regulation, taxes and emissions trading.

The incorrect application of this criterion may constitute export aid, which is prohibited by the EC Treaty.

5.3.3.6) MONITORING, REPORTING AND VERIFICATION:

An effective system of monitoring and reporting is crucial for the proper working of the scheme.

Annex IV of the directive therefore provides for some principles which should guide this phase: emissions shall be monitored either by calculation or on the basis of measurement[185]. Each report for an installation shall include, according to Annex IV, a series of data, identifying *inter alia* the installation, the type of activity carried out, and the total emissions.

Annex V is devoted to verification criteria, with a view to addressing the reliability, credibility and accuracy of monitoring systems and the reported data and information relating to emissions[186]. All of this can of course be granted through the accreditation of competent organisations performing the verification.

Art. 17 grants access to information relating to both the decisions on the allocation of allowances and the reports of emissions, in accordance with the relevant EC legislation[187].

[184] Doing this would automatically single out the position of developing Countries, which have no reductions obligations under the Kyoto Protocol.

[185] See Annex IV of the Directive: principles for monitoring and reporting referred to in article 14(1).

[186] See Annex V of the Directive: criteria for verification referred to in Article 15.

[187] Reference is made to Directive 2003/4/EC, in particular to Art. 3(3) and Art. 4.

5.3.3.7) THE ACTORS INVOLVED

Like in every emissions trading scheme, it is important to define the role of the various actors involved. Who can trade emissions allowances under the EC system?

We have two different situations: in the first case the transfer and acquisition is between natural or legal persons within the EC, while in the second hypothesis it takes place between persons within the EC on the one hand and persons in Countries listed in Annex B to the Kyoto Protocol on the other hand[188]. Such Countries must obviously have ratified the Protocol as well as entered an agreement with the Community on the mutual recognition of their allowance trading schemes[189].

The possibility for persons to engage in the allowance market can have significant impacts on the scheme: the market may be driven by such liquidity providers, and a certain role may be played also by environmental NGOs, which could buy allowances and keep them frozen, thus tightening the total cap of GHG emissions.

5.3.3.8) LOOSENING THE SCHEME: OPT-OUT, POOLING AND FORCE MAJEUR

The directive includes some provisions whose purpose is granting even more flexibility to the system, in some ways loosening its stringency. We can identify three such hypotheses:

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[188] See Directive, Art. 12.

[189] See Directive, Art. 25, which specifies that the mutual recognition of allowances shall be done in accordance with the rules set out in Article 300 of the Treaty. According to this article the Commission makes recommendations to the Council of the European Union, which authorises the Commission to open the negotiations. The negotiations are conducted by the Commission in consultation with Council Committees, and the final agreement is approved by Council by qualified majority.

-a) *Temporary exclusion (opt-out)*: according to Art. 27 Member States can exclude certain installations from the scheme until the end of the first period at the latest.

There are of course some requirements for such exclusions to be accepted. First of all, the Commission is the competent institution to take this decision, which will be based also on the comments made by the public. As far as substantial conditions are concerned, installations may be excluded only in case they limit their GHG emissions as much as if they were subject to the directive[190], they have monitoring, reporting and verification requirements equivalent to those provided for by the directive[191], and are subject to penalties equivalent to those established in case of non fulfilment of national requirements[192].

All of this procedure shall not result in a distortion of the internal market.[193]

-b) *Pooling:* this other way to grant flexibility may be compared, from a purely speculative point of view, to the possibility of bubbling under Art. 4 of the Kyoto Protocol.

According to Art. 27 of the Directive, operators of installations may pool their emission allowances both in the first and in the second commitment period[194]. The installations forming the pool shall nominate a trustee, whose role will be receiving the total allowances of the pool. As far as responsibility is concerned, the trustee will be liable to surrender sufficient amounts of allowances for compliance, but in case of non-compliance, individual installations forming the pool will be responsible for their own installations.

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[190] See Directive, Art. 27.2(a).

[191] See Directive, Art. 27.2(b).

[192] See Directive, Art. 27.2(c).

[193] The possibility of opting-out was supported especially by Germany, because in this Country some industry sectors are reducing emissions according to voluntary agreements with the Government. In any case, the directive allows for temporary exclusion of certain installations, and not entire industrial sectors.

[194] We can construe the provision of Art. 28(1) as excluding the possibility of pooling for the subsequent periods.

Even in this case, the Commission has the crucial role of approving the proposals[195].

-c) *Force Majeur*: a third way to loosen the system is in reality a well-established concept in legal theory. In case of *force majeure*, to be demonstrated on an installation and case-by-case basis, member States may apply to the Commission for certain installations to be issued with additional allowances.

But what can be considered as constituting *force majeur*?

As a derogation from the general principle of the trading scheme, according to which allowances are allocated by Member States before the beginning of the relevant trading period, we support the view that it should be construed in a narrow way, in order not to alterate the conditions within the market.

Therefore we shall exclude circumstances that could have been insured, as well as situation that could have been avoided if all due care had been exercised. The concept of *force majeur* should thus be limited to such exceptional and unforeseeable circumstances as natural disasters, war, terrorist acts, revolution, riot, sabotage or acts of vandalism.[196]

5.3.4) LINKING THE EC EMISSIONS TRADING SCHEME WITH THE KYOTO PROTOCOL PROJECT MECHANISMS: DIRECTIVE 2004/101/EC

5.3.4.1) WHAT IS LINKING AND HOW CAN IT BENEFIT CLIMATE?

As we have seen, under the Kyoto Protocol Parties may resort to flexible mechanisms in order to meet their mitigation targets. Specific projects may generate credits through JI and CDM, and emissions trading allows the free transfer and acquisition of GHG allowances in the market.

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[195] The directive gives no examples of possible reasons to reject a Member State's application for pooling, but Robert DORNAU, *cit. Supra,* p. 428, identifies some hypotheses, mentioned in discussions and presentations: "the pooling system may not be too large, as large groups will limit the liquidity of the market and the pooling system should be transparent".

[196] In this sense see also the Communication, para. 114.

It is rather intuitive that these two different approaches could be linked in a profitable way, thus creating a liquid market which can help reduce compliance costs for private companies and States. Nonetheless, such linking cannot take place automatically, since the mechanisms work in a different manner.

The UE ETS is based on a cap and trade mechanisms, while CDM and JI are project-based: the former is based on an *ex ante* allocation of allowances operated by the domestic authorities, while the latter generates credits from an *ex post* verification (baseline and credit system).

Other differences involve the regulatory framework and the institutions involved, as well as the units of trade, but after the entry into force of the Kyoto Protocol and the establishment of a community scheme of emissions trading, the link between these two system may be achieved through the recognition of JI and CDM credits as units that operators can use to fulfil their obligations under the EU ETS. In this case, the system provides operators engaged in GHGs mitigation with different options, which can significantly reduce compliance costs.

Private companies could then work on specific climate-projects in other Countries, gain credits according to the specific rules set out for the mechanism involved, and then use them in the community carbon market, transferring and acquiring them. In this way economic operators could meet their targets with lower costs, and more options, the EU emissions trading market would increase liquidity, an incentive would be created for expanding the scope of the directive, sustainable development would be promoted in developing and economy-in-transition Countries, together with environmentally sound technologies, and environmental concerns would be fully integrated also in EU external policies.

But reasons against such linking have been put forward, especially by environmental NGOs[197]: the main concern is that allowing operators to directly

[197] For the opportunities and threats of such linking, see Jurgen LEFEVERE, *Linking Emissions Trading Schemes: The EU ETS and the "Linking Directive"*, in David FREESTONE and Charlotte STRECK, *cit. supra,* pp.511-533, on the linking directive see laos Valentina JACOMETTI, *La direttiva Linking: il collegamento tra il sistema comunitario di scambio di*

achieve reduction targets by buying sufficient credits from elsewhere will reduce the need for infra-EU reductions. Since the EU ETS is limited both in GHGs and sectors coverage, opening it to the full global CDM and JI market could be disproportionate and result in a decrease of allowances price on the market.
Finally, buying these credits would normally be an alternative to serious domestic measures: the risk would clearly be that operators in the covered sectors would prefer resorting to project-based credits rather than engage in GHG reductions.
If such projects were not significantly additional, in terms of real GHG reductions compared to a business-as-usual scenario, then the environmental outcome would be negative. These threats can only be addressed and possibly solved by designing specific rules and procedures, which could make such linking an opportunity of both environmental and economic benefits.

5.3.4.2) A BRIEF NEGOTIATING AND LEGISLATIVE HISTORY:

The proposal of a "linking" directive was issued by the Commission on 23 July 2003.[198] Some fundamental principles were established from the very beginning of the process: all JI and CDM credits can be converted into allowances except for those resulting from sinks and nuclear projects.
This was strongly supported by environmental NGOs, who fear the spread of activities and practices which may be beneficial for the reduction of GHGs but have negative impacts on other environmental fields.

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quote di emissione e i meccanismi flessibili del Protocollo di Kyoto in "Rivista Giuridica dell'Ambiente", 2005, vol. 1, pp. 43-56.

[198] See European Commission Proposal of 23 July 2003 for a Directive of the European Parliament and of the Council amending the Directive establishing a scheme for greenhouse gas emission allowance trading within the Community, in respect of th eKyoto Protocol's project mechanisms, COM (2003) 403.

A negotiating process between the different EC institutions unfolded through almost all year 2004, with the final approval of the directive on 27 October 2004[199], which modifies the Commission's proposal in significant aspects.
It formally amends the directive establishing the emissions trading scheme, and tries to strike a balance between the need to favour the project-based mechanisms and the necessity to preserve the environmental integrity of the system as a whole.

5.3.4.3) THE SCOPE OF THE DIRECTIVE: TEMPORAL FRAMEWORK AND PROJECTS COVERAGE

The first problem to address is the coordination of the different time schedules of the EU ETS on the one hand and the Kyoto Protocol project-based mechanisms on the other. As we have seen, the community scheme has two different periods, and while the second (2008-2012) is coincident with the Kyoto Protocol first commitment period, the years 2005-2008 are not covered by international agreements.
Credits from JI (ERUs) cannot be issued for projects before 2008, while for CDM, the Marrakesh accords provided for the possibility of generating credits from 2000; but even if such CERs are issued before 2008, they can be used for compliance purposes only from the start of the commitment period. How to fit these temporal differences into a coherent scheme?
The Commission's original proposal opted for the use of project-based credits only from 2008, but in reaction to pressure from Member States and Parliament, the final compromise allows credits from CDM projects to be utilised in the community scheme from the very beginning[200]. This provision was welcome by business groups as a means for further reducing compliance costs in the short run.

[199] See Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004, amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community, in respect of the Kyoto Protocol's mechanisms.
[200] See Art. 11(a).2 of Directive 2003/87/CE, as amended by Directive 2004/101/CE.

This could lead to the problem of the legal value of CERs once they have been surrendered by an operator to meet its targets in the pre-2008 period. From a logical point of view, they should be deleted, because they have already been utilised to compensate emissions[201], and because otherwise this double use would lead to each CER being able to offset two tonnes of GHG emissions[202].

But how does this linking take place and which projects does it cover?

In theory, two different approaches were possible: converting project-based credits into newly issued allowances to use in the community market, or directly recognising credits from Kyoto Protocol Mechanisms as acceptable and fungible within the EU emissions trading scheme[203].

Although the Commission's proposal was in favour of the conversion in a newly issued allowance, the majority of Member States insisted on allowing the direct use of project-based mechanisms in the Community scheme. According to the directive therefore Member States may allow operators to surrender credits from JI and CDM activities for compliance with their obligations under the Community scheme.

But not all kinds of credits thus generated may be used under the EU ETS: the directive expressly excludes two types of projects, which may be implemented according to the Kyoto Protocol mechanisms, but which cannot be used to comply with obligations set out at the community level: nuclear facilities and land use, land use change and forestry activities[204]. The Community has therefore chosen a negative list approach, which however does not prevent completely a later consideration of such projects[205].

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[201] See Art. 11(a).2 of Directive 2003/87/CE, as amended by Directive 2004/101/CE, stating that "member States shall cancel CERs that have been used by operators during the period referred to in Article 11(1)".

[202] See Jurgen LEFEVRE, *Linking Emissions... cit. Supra*, p. 523.

[203] On the different implications of such approaches see Jurgen LEFEVERE, *Linking Emissions... cit. Supra*, p. 524.

[204] See Art. 11(a).3(a) and Art. 11(a).3(b) of Directive 2003/87/CE, as amended by Directive 2004/101/CE.

[205] See Art. 11(a).3(a) of Directive 2003/87/CE, as amended by Directive 2004/101/CE, which specifies that the exclusion of CERs generated from nuclear activities is for the first and second

But other provisions of the linking directive aim at restricting the possibility for certain projects to generate credits which can later freely circulate within the community carbon market.

For example, in case of projects of hydroelectric power production exceeding a certain capacity, Member states shall ensure that relevant international criteria and guidelines will be respected during the development of such project activities[206].

All these limits must be seen in the light of the principle of sustainable development: granting more flexibility to operators engaged in GHG emissions reductions in fact shall not result in a weakened attention for other environmental aspects. In this respect one has to consider the provisions granting access to information[207]: in other words, the Community, while not refusing the idea of market-based mechanisms, is always aiming at granting the overall environmental integrity.

One last exclusion relates to domestic projects, on the ground that allowing sectors not covered by the scheme to participate through domestic project would have resulted in an incentive to never join the cap-and-trade system. The Commission thinks that the best way to enlarge the scope of the emissions trading scheme is through the opt-in clause provided for by Directive 2003/87/CE[208].

We still believe that allowing domestic projects could have beneficial effects on the system as a whole, generating interest for the carbon market in those operators which might otherwise just ignore this instrument to achieve compliance.

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periods, and "in accordance with the UNFCCC and the Kyoto Protocol and subsequent decisions adopted there under", which can be interpreted as a refusal to exclude nuclear projects in a categorical and indefinite manner, as well as Preamble of Directive 2004/101/CE, para. 9, according to which "the Commission should consider, in its review of Directive 2003/87/EC in 2006, technical provisions relating to the temporary nature of credits and the limit of 1% for eligibility for land use, land-use change and forestry project activities as established in Decision 17/CP.7".

[206] Reference is made in particular to the criteria and guidelines contained in the World Commission on Dams November 2000 Report "Dams and Development: A New Framework for Decision-Making". Another example relates to projects undertaken in Countries having signed a Treaty of Accession with the Union, whose baseline ust fully comply with the *acquis communautaire*.

[207] See the amendments to Directive 2003/87/CE introduced by Directive 2004/101/CE, para. 3.

[208] See Art. 24 Directive 2003/87/CE.

5.3.4.4) GRANTING THE ENVIRONMENTAL INTEGRITY OF THE COMMUNITY EMISSIONS TRADING SCHEME:

A fundamental issue concerns the possible negative impacts of the linking to the Kyoto Protocol project-based mechanisms on the environmental integrity of the Community scheme.

Firstly, it is important to determine the quantity of such credits that should be allowed within the European carbon market. In international negotiations on climate change, the EU has always strongly supported the view that supplementarity should be a guiding principle of flexible mechanisms. In other words, the resort to these flexibility mechanisms should only be an instrument to help Countries in meeting their reduction targets, while the most significant efforts should concentrate on domestic policies and measures. How to grant that also with the Community scheme the use of project-based credits will not postpone mitigation effort within the EU?

The directive leaves the decision on the quantity to Member States, as a percentage of the allocation of the allowances to each installation[209]. The harmonisation at the community level did not take place, and the directive refers to the vague expressions we have seen also in the Kyoto Protocol and COP decisions.[210] However, the Commissions shall make legislative or other proposals to make sure that use of the mechanisms is supplemental to domestic action within the Community[211].

Secondly, due attention should be paid in order to avoid the so-called double counting of credits. With this expression, we refer to a situation where credits from CDM or JI projects are issued as a result of a GHG reduction, which at the same time resulted in a reduction also from an installation under the scope of the EU ETS.

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[209] See Directive 2003/87/CE, Annex III, as modified by Directive 2004/101/CE.

[210] Such expressions as "significant element of the efforts undertaken at national level", "the extent to which use of the project mechanisms is actually supplemental to domestic action".

[211] See Directive 2003/87/CE,Art. 30, as modified by Directive 2004/101/CE .

A simple example of this situation may be the case of an operator deciding to move power generation off-site and buying electricity generated by renewable energy. In this case, stopping power generation frees up allowances to sell in the market, and if at the same time the generation of renewable electricity to replace it gets a reward in terms of JI or CDM credits, the reduction of each tonne of GHGs will be credited twice[212].

The solution designed by the directive is to prohibit the issuance of credits for GHG reductions from installations falling within the scope of the Directive.[213] The prohibition is particularly effective since it covers the issuance, and not simply the use, of such credits, thus stopping them right at the source.

Linking the project-based mechanisms with the community trading scheme did not mean simply creating a bridge between two different systems, but entailed coping with some specific issues, which needed to be solved for the benefit of the general environmental outcome.

We think the EC institutions managed to address the specific climate-related concerns without forgetting that the climate change regime is deeply informed by the principle of sustainable development. Whenever a choice is to be taken, due consideration must be paid to the possible implications, in terms of negative impacts of the environment in general. We therefore support the attempt to design rules to favour market-based mechanisms, which can help reduce GHG emissions, having always in mind that the general environmental outcome must be preserved.

[212] See Jurgen LEFEVRE, *Linking Emissions... cit. Supra*, p. 531.

[213] See Directive 2003/87/CE,Art. 11(b).2, as introduced by Directive 2004/101/CE .

5.4) OTHER MEASURES TO IMPLEMENT THE CLIMATE CHANGE OBLIGATIONS WITHIN THE EUROPEAN COMMUNITY LEGAL ORDER

5.4.1) DECISION 280/2004/EC CONCERNING A MECHANISM FOR MONITORING COMMUNITY GREENHOUSE GAS EMISSIONS AND FOR IMPLEMENTING THE KYOTO PROTOCOL

The whole set of mitigation commitments to combat climate change could not work properly without an efficient and transparent mechanism for monitoring GHGs. The Community understood the importance of a monitoring mechanism, and adopted a decision in 1993[214] as part of a package of climate measures.
This decision set out the basic data that national programmes had to contain, and was conceived as a useful instrument for Members in the light of the UNFCCC[215].
But with the entry into force of the Kyoto Protocol and the establishment of the Community scheme of emissions trading, some amendments were needed, and in February 2004 the new decision was adopted[216].
The decision establishes e mechanism designed to monitor in all Member States relevant GHG emissions, to evaluate progress made in this field to ensure compliance with the Community's commitments concerning emissions, as well as to ensure that information reported by the Community to the UNFCCC Secretariat is complete, accurate, consistent, transparent and comparable.
Pursuant to the emissions trading directive[217], Member States must ensure that the provisions of the monitoring guidelines are applied in the monitoring and annual

[214] Council Decision 93/389/EEC of 24 June 1993 for a monitoring Mechanism of Community CO2 and Other GHG Emissions.
[215] See Joy HYVARINEN, *The European Community's Monitoring Mechanis for CO2 and other Greenhouse Gases: the Kyoto Protocol and other Recent Developments*, in "Review of European Community and International Environmental Law", vol. 8(2), 1999, pp. 191-197.
[216] Decision 280/2004/EC of the European Parliament and of the Council of 11 February 2004 concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol [OJ L 49 of 19/02/2004].

reporting of GHG emissions of each of the installations included in the Community scheme. The guidelines for monitoring and reporting of GHG thus provide for the legally binding rules for the monitoring and reporting of GHG emissions within the EU ETS,

Furthermore, both Member States and the Community must devise, publish and implement national programmes and a Community Programme for limiting their GHG emissions. The national programmes must include information on the effect of policies and national measures on emissions, national projections for emissions and measures already taken or planned for the implementation of relevant Community policies.

Besides national programmes, also national inventory systems must be prepared, for the estimation of GHG emissions, and the Community itself will ensure the comparability, consistency, completeness, accuracy and timeliness of national inventories with regard to the Community GHG inventory.

A fundamental role will be played by national and community registries[218], accounting for the issue, holding, transfer, cancellation and withdrawal of units[219], and incorporating registries established under the Community scheme of emissions trading[220].

The Commission has an important role of coordination, and it will submit an annual report to the European Parliament and the Council to describe the annual headway, focusing on information on projected emissions and removals, and on policies and measures taken to reduce emissions.

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[217] See Art. 14 of Directive 2003/87/CE.

[218] See Art. 6 of the Decision.

[219] For the functions of different types of GHG registries see Anthony HOBLEY and Peter HAWKES, *GHG Emissions Trading Registries*, in David FREESTONE and Charlotte STRECK, *cit. supra*, pp. 127-154.

[220] See Art. 19 and Art. 20 of Directive 2003/87/EC.

5.4.2) MEASURES IN THE ENERGY SECTOR: IS A UNIFORM TAXATION SYSTEM ON ENERGY FEASIBLE?

Fiscal measures are considered a market instrument, in that their aim is modifying and addressing consumers' behaviour towards desirable behaviours.

In the case of climate change, taxes may be considered as efficient instruments especially in the energy sector. Given the relevant impact of energy production and consumption on global warming, the general objectives of the Community are a more rational and efficient use of energy as well as an increase, within the EC market, of the amount of energy produced by renewable sources.

Devising particular taxation levels in order to favour the use of renewables, according to the objective of doubling the share of renewable energy in domestic energy consumption in the EU by 2010 from 6 to 12%, is a possible way to operate, but a series of circumstances must be taken into consideration. Various proposals at the Community level failed, since the decision-making process requires unanimity, and some Countries, led by the United Kingdom, fiercely oppose any transfer of sovereign rights in the fiscal sector[221].

The focus should therefore be on national systems, and in 1998 a case was brought before the EC Court of Justice, concerning different levels of taxation on electricity depending on how it was generated[222].

This kind of legislation was applied in Finland, and while it did not create problems as far as locally produced energy was concerned, the question was how to treat imported energy in terms of level of taxation. The fungibility of electricity and the fact that only some of the foreign electrical generator's production is exported led Finland to apply to imported energy a flat rate determined as an average of the domestic rates.

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[221] See the relevant parts of the Sixth Environmental Action Plan, *supra*, as well as Silvia BERTAZZO, *La definiczione e l'attuazione di una politica sui cambiamenti climatici in ambito internazionale e comunitario*, in "Rivista Italiana di Diritto Pubblico Comunitario", 2003, vol. 5, pp. 1141-1189.

[222] See *Outokumpu Oy*, C-213/96 (Apr. 2, 1998).

Importers maintained that this kind of treatment was in breach of the EC law concerning the prohibition of direct and indirect discrimination against imported products. The Court supported this view, in that Finland's law did not allow the importer to show how its energy was produced, and therefore to apply for the same level of taxation as that applicable to domestic electricity produced in the same way.

If tax harmonisation is still too sensitive an issue to be pursued at the Community level, domestic systems may diversify levels of taxation according to the way electricity is produced, but they must be designed in such a way as to grant equal treatment to foreign producers which want to export, and secondly possible distortions of the market must be avoided.

5.4.3) MEASURES IN THE TRANSPORT SECTOR: MAY VOLUNTARISM BE THE ANSWER?

Together with the energy sector, transports are the biggest contributors to global warming. The Community focus is on the reduction of emissions from vehicles through the use of more climate-friendly fuels, as well the incentive of less polluting ways of transport, that is railway and maritime compared to road and air transport[223]. In this field the Community has explored another market instrument, which departs from the traditional command-and-control approach.

A series of voluntary agreements has been in fact concluded with the associations of car producers. These agreements cover a significant part of the cars present in the European market.[224]

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[223] The Community strategy is contained in adocument (a Communication from the Commission, COM(2001) 580) called European Climate Change Programme (ECCP), available on the webpage http://www.europa.eu.int/comm/environment/climat/eccpl.htm. More recently, the Commission has launched a new phase, in the form of a new European Climate Change Programme (ECCP II), which started with a stakeholders' conference on 24 October 2005.

[224] The agreements were concluded with the European (ACEA, see Recommendation 1999/125/CE, in OJ L 40 1999), Japanese (JAMA, see Recommendation 2000/304/CE, in OJ L

This kind of agreements are based on a mutual effort: the car manufacturers are engaged in reducing the average CO2 levels emitted by their cars in the next years[225], through technological developments, and the Commission, for the whole duration of the agreements, will not adopt any kind of legislative or fiscal measures aimed at a reduction in the fuel consumption.

5.5) CONCLUDING REMARKS:

After analysing the measures adopted at the Community level it is possible to draw some conclusion regarding the approach towards climate change.

If the Community is undoubtedly an active player at the international level, is this emphasis on climate issues followed when it comes to implementing the international obligations within the EC legal order?

Of course we cannot value here the effective level of GHG emissions reduction achieved or likely to be achieved as a consequence of the European climate policies, but it is undisputed that climate change is on top of the community environmental agenda.

The strongest supporter at the international level of the enhancement of policies and measures to curb GHG emissions, the EC has been able to combine its well-established tradition of setting environmental standards and verify their compliance, with the new market instruments.

The establishment of a European carbon market will be an example for all the other parties of the climate change regime, and the attention paid, while designing its concrete rules and linking it with project-based mechanisms, to the general environmental impacts, with a view to promoting sustainable development, is certainly a serious and coherent way to unfold a strategy against global warming.

100, 2000) and Korean (KAMA, see Recommendation 2000/303/CE, in OJ L 100, 2000) associations of car manufacturers.

[225] By the year 2008 (European car-manufacturers) or 2009 (Korean and Japanese car-manufacturers).

Finally, the use of other market instruments, such as voluntary agreements with producers, and the attempts to introduce uniform patterns of taxation, shows that an effective policy to combat climate change cannot be developed without the contribution of such actors as the business community and the private citizens as well.

We therefore think that the best measures are the ones which can adapt to the particular situations involved: giving a rigorous legal framework and allowing players to benefit from the market may be the way to follow in order to fight global warming without hindering economic growth and at the same time furthering sustainable development.

CHAPTER VI:
MAKING THE REGIME MORE EFFECTIVE

6.1) GRANTING THE RESPECT OF THE OBLIGATIONS BY STATES PARTIES

6.1.1) DISPUTE RESOLUTION AND NON-COMPLIANCE PROCEDURES: ADDRESSING THE PECULIARITIES OF CLIMATE CHANGE IN RELATION TO THE RULES ON INTERNATIONAL RESPONSIBILITY:

The establishment of a dispute settlement system is essential for a legal regime to work in a credible manner. In such a delicate field as the protection of the environment[1] and natural resources furthermore, it is crucial to demonstrate that efforts at the international level are carried out collectively. Besides the environmental damage in fact, significant or persistent non-compliance with commitments would result in a lack of confidence for the legal instruments involved.

Furthermore, in such cases, as the climate change regime, based on the differentiation of obligations, a smaller group of Countries has to show they are taking the lead in combating global warming, thus paving the way to a fuller participation of the rest of the international community. The rules to address cases of disputes between Parties and in general non-compliance with the climate change obligations are to be designed in an effective way, in order to grant coherence to the system as a whole, with special consideration for the peculiarities of global warming.[2]

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[1] For an analysis of the different means of peaceful settlement of international environmental disputes, see Cesare P. R. ROMANO, *The Peaceful Settlement of International Environmental Disputes: A Pragmatic Approach*, The Hague, London, Boston, 2000.

[2] On the complexity of international environmental dispute resolutions in general see Francesco FRANCIONI, *Dispute Avoidance in International Environmental Law*, in Alexandre KISS, Dinah SHELTON and Kanami ISHIBASHI, *Economic Globalization and Compliance with*

The traditional, bilateral dispute settlement is not fully capable of addressing the problems that the phenomenon of climate change implies.

Firstly, the issue of the injured State arises. In a traditional adversarial system of dispute resolution, it is the State suffering the wrongful act that can start the procedure leading to the adjudication. We have already noted that GHG emissions negatively affect the atmosphere as a whole, regardless of the place where the source is located, and therefore the damage *in toto* results from the total quantity of such gases in the air. Therefore, non-compliance impacts on all the parties collectively, not simply on the Country invoking responsibility of another one. This non reciprocal character, which is common to many environmental obligations, requires a different approach.

As we have already highlighted, the obligations resulting from the climate change regime may be considered as *erga omnes partes* obligations[3], as set out in Art. 48.1(a) of the ILC articles on State responsibility[4]. The underpinning idea is that the breach of the rules of law does not affect a single Country, but the group of Members of the regime, which consequently are entitled to invoke responsibility.[5]

If the possibility of invoking responsibility is stretched beyond the boundaries of directly injured States, the set of consequences arising from these cases is limited.

International Environmental Agreements, The Hague/London/New York, 2003, pp. 229-243, in which the Author identifies some special features of international environmental disputes, that is the involvement of public interests of the international community beyond the national interest of the States Parties, the frequent factual complexity, the increasingly important role of science, the linkages with economic and trade aspects of international law, and finally the need of dynamic and forward-looking analysis.

[3] See chapter 2.

[4] See ILC Articles on State Responsibility, Art. 48.1(a): ("the obligation breached is owed to a group of states including that State, and is established for the protection of a collective interest of the group").

[5] On the impacts of these rules on multilateral environmental agreements see Jacqueline PEEL, *New State Responsibility Rules and Compliance with Multilateral Environmental Obligations: Some Case studies of How the New Rules Might Apply in the International Environmental Context*, in "Review of European Community and International Environmental Law", 10(1), 2001, pp. 82-97.

In other words, the general situation of the injured States is different from the specific situation of the State acting in conformity with Art. 48.1(a)[6]. Art. 48.2 in fact further specifies the consequences of such violations, which include cessation of the internationally wrongful act[7], assurances and guarantees of non-repetition[8], as well as performance of the obligation of reparation, in the interest of the injured State or of the beneficiaries of the obligation breached[9]. The limit is clearly identifiable in the lack of mention of countermeasures, which are therefore not admissible under Art. 48. Nonetheless, Art. 54 recognises the right of a State invoking responsibility in accordance with Art. 48.1 to take "lawful measures" against the State in breach, in order to ensure the cessation of the violation and the reparation in the interest of the injured State or of the beneficiaries of the obligation breached[10].

If the situation concerning State responsibility has evolved towards patterns which better suit the situation of environmental obligations in general, and climate change commitments in particular, yet one has to wonder whether the kind of legal remedies available under such traditional schemes are effective.

If a State obtains a positive decision from an international Court, it will have the legal consequences of ordering the cessation of the wrongful activity on the one hand and the payment of some sort of reparation on the other hand. It is rather clear how these remedies are not the best way to help the improvement of the environment: problems of correct implementation, as well as the necessity of reducing as much and as soon as possible emissions in the atmosphere require a different approach.[11]

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[6] See Tullio TREVES, *Diritto Internazionale: problemi fondamentali*, Milano, 2005, pp. 557-565.

[7] See ILC Articles on State Responsibility, Art. 48.2(a).

[8] See ILC Articles on State Responsibility, Art. 48.2(a).

[9] See ILC Articles on State Responsibility, Art. 48.2(b).

[10] See ILC Articles on State Responsibility, Art. 54. The commentary, under Art. 54 specifies that "at present there appears to be no clearly recognized entitlement of States referred to in article 48 to take countermeasures in the collective interest."

[11] Another legal remedy in case of a material breach of treaty obligation is the termination or suspension of the effects of the treaty *vis-à-vis* the non-compliant-Party, according to Art. 60 of

Therefore the need to establish other ways to encourage States to comply with their treaty obligations, based on non-adversarial, forward-looking, preventive and facilitative procedures.

Non-compliance procedures are common in multilateral environmental agreements, and may be seen as an effective and complementary instrument besides more traditional dispute settlement systems[12]. The objective of such non-compliance procedures is encouraging States to comply with their obligations, assist them in case of difficulties, and guide them in a soft way to return to compliance[13].

There is a whole range of methods to favour compliance, from assistance in reporting and monitoring obligations to coactive sanctions, through various degrees which can be modelled according to the specific situation involved[14], but broadly speaking the emphasis is on prevention and return to compliance rather than sanctions for breaches of obligations. These two instruments, traditional bilateral dispute settlement systems and non-compliance procedures, are not mutually exclusive but supportive, and the climate change regime includes them both.

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the Vienna Convention on the Law of Treaties ("termination or suspension of the operation of a treaty as a consequence of its breach"). However, this extreme sanctions has been applied very rarely, and it does not seem to be the best solution in case of multilateral environmental treaties (in this sense see Massimiliano MONTINI, *Il sistema di risoluzione delle controversie previsto per il Protocollo di Kyoto*, in "Rivista Giuridica dell'Ambiente", 2005, n. 1, pp. 27-40).

[12] For examples of multilateral environmental treaties providing for a non-compliance procedure see the 1987 Montreal Protocol to the 1985 Vienna Convention on the Protection of the Ozone Layer, the 1991 VOC and 1994 Sulphur Protocols to the 1979 Long-Range Transboundary Air Pollution Treaty, the 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic.

[13] On environmental non-compliance procedures and their relationship with rules on dispute settlement, state responsibility and law of treaties see Malgosia FITZMAURICE and Catherine REDGEWELL, *Environmental non-Compliance Procedures and International Law*, in "Netherlands Yearbook of International Law", vol. XXXI, 2000, pp. 35-65.

[14] According to Malgosia FITZMAURICE and Catherine REDGEWELL, *cit. supra*, p. 41, "the distinctive character of certain multilateral environmental treaty obligations arises from a number of factors: the pace, magnitude and irreversibility of environmental problems which renders enforcement *inter partes* ineffective; the ability accurately to measure compliance against quantifiable targets; and the necessity for national implementation to render international environmental obligations effective".

6.1.2) THE DOUBLE APPROACH ESTABLISHED BY THE UNFCCC:

In consideration of the peculiarities of climate change that we have set out, negotiators of the UNFCCC thought that a traditional adversarial procedure to address a Party's compliance with the Convention would be inappropriate. The advantages of a non-adjudicative forward-looking mechanism were clearly identified in the possibility of promoting cooperation with member States, as well as of being able to cope with difficulties in implementation in their early stages[15]. From a speculative point of view, several options were available: *ad hoc* panels established by the COP, or automatic panels, the creation of a specific Committee, the establishment of a semi-adjudicative body[16].

The result was the compromise formula enshrined in Art. 13 of the UNFCCC, which postpones every sort of decisions, mandating the COP to consider the establishment of a multilateral consultative process[17].

The COP has started the complex negotiations to find a multilateral consultative process which could gain the approval of the various parties. The impasse was on the representation of Countries within the proposed Consultative Committee, but some general feature of the process saw no opposition[18].

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[15] On the compliance regime under the UNFCCC see Xueman WANG and Glenn WISER, *The Implementation and Compliance Regimes under the Climate Change Convention and its Kyoto Protocol*, in "Review of European Community and International Environmental Law", 11(2), 2002, pp. 181-198 and Gilbert M. BANKOBEZA, *The Ozone Protection Non-Compliance Mechanism: A Model for Implementation of Climate Change Convention and the Kyoto Protocol*, in R.K. DIXIT and C. JAYARAJ, *Dynamics of International Law in the New Millennium*, New Delhi, 2004, pp. 346-360.

[16] See Daniel BODANSKY, *The United Nations Framework Convention on Climate Change: a Commentary*, in "Yale Journal of International Law", vol. 18, 451, 1993, pp. 451-558, at pp. 547-548, where the author focuses on the negotiating history of Art. 13 of the UNFCCC.

[17] See UNFCCC, Art. 13 (Resolution of questions regarding implementation): "The Conference of the Parties shall, at its first session, consider the establishment of a multilateral consultative process, available to Parties on their request, for the resolution of questions regarding the implementation of the Convention".

[18] On the development of the Multilateral Consultative Process see Farhana YAMIN and Joanna DEPLEDGE, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures*, 2003, chapter 12.

As a result, such process should be facilitative, cooperative, non-confrontational, transparent, timely and non-judicial, triggered by the Party involved or by any other Party, assisted by a Multilateral Consultative Committee with the objective of providing advice and assistance, and resulting in recommendations for the Party to consider, which could include measures for effective implementation. This softer approach to non-compliance is to be considered together with the more traditional bilateral dispute settlement system, provided for by Art. 14 of the UNFCCC. Also in this case, different solutions were available, ranging from voluntary, non-binding diplomatic means to mandatory judicial procedures[19].

Art. 14 tries to combine these different approaches: at first Parties are required to settle the dispute through negotiations or any other diplomatic means[20].

Secondly, the Parties are requested to accept in advance the jurisdiction of the ICJ[21] or compulsory arbitration, following a scheme which is not uncommon in multilateral treaties[22].

But a third possibility is granted to States, in case the negotiation is unsuccessful and they did not accept the jurisdiction of the ICJ or the compulsory arbitration: the creation of a conciliation commission, with the authority to make recommendations, which parties are to consider in good faith[23].

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[19] See Daniel BODANSKY, *The United Nations Framework Convention on Climate Change: a Commentary*, in "Yale Journal of International Law", vol. 18, 451, 1993, pp. 548-549.

[20] See UNFCCC, Art. 14(1). Although not expressly mentioned, see Art. 33 of the UN Charter, listing "negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means of their own choice".

[21] The possibilities of requesting advisory opinions from the ICJ would have raised the issue of the necessary previous authorisation by the UNGA according to Art. 96(1) of the UN Charter.

[22] See for example the system established by the 1982 Montego Bay Convention on the Law of the Sea, Art. 287(1), according to which "When signing, ratifying or acceding to this Convention or at any time thereafter, a State shall be free to choose, by means of a written declaration, one or more of the following means for the settlement of disputes concerning the interpretation or application of this Convention: a) the International Tribunal for the Law of the Sea established in accordance with Annex VI; b) the International Court of Justice; c) an arbitral tribunal constituted in accordance with Annex VII; d) a special arbitral tribunal constituted in accordance with Annex VIII for one or more of the categories of disputes specified therein."

[23] See UNFCCC, Art. 14(6): "A conciliation commission shall be created upon the request of one of the parties to the dispute. The commission shall be composed of an equal number of members appointed by each party concerned and a chairman chosen jointly by the members appointed by

The system established by the UNFCCC is therefore based on a double approach: traditional means of dispute settlement, which begin with negotiations, and provides for optional recourse to a binding decision by the ICJ or award by an arbitration, as well as a mandatory recourse, if one party so requests, to a conciliation procedure, which is non-binding, and a multilateral consultative process providing a non-confrontational, softer way to address non compliance.
This solution is likely to turn out to be effective, but one should consider the vague content of obligations under the UNFCCC. The real test of effectiveness of the climate change regime is therefore the design of compliance and dispute resolutions systems for the Kyoto Protocol and its quantified target objectives.

6.1.3) STRENGTHENING THE COMPLIANCE SYSTEM: THE KYOTO PROTOCOL:

The Kyoto Protocol, unlike the UNFCCC, provides for stringent commitments, in terms of QELROs, which can be measured and verified, as well as for some innovative mechanisms to grant flexibility to Parties in the fulfilment of such obligations. Furthermore the principle of common but differentiated responsibilities permeates the whole regime, and results in a different sets of commitments for different Parties involved, which may require different approaches.
The necessity of the establishment of a serious and robust system to address compliance by the Parties had to take in consideration the differences between the two international agreements. The system is influenced by that devised in the UNFCCC, and it tries to combine a traditional approach with particular non-compliance procedures which can better address the peculiarities of climate change.

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each party. The commission shall render a recommendatory award, which the parties shall consider in good faith".

Art. 19 of the Kyoto Protocol recalls the provisions of the UNFCCC on settlement of disputes, making them applicable also to the Protocol itself, *mutatis mutandis*.[24] But the most challenging issue was evidently trying to develop a non-compliance system, similar to those already established by other MEAs, yet capable of addressing the particular situation of the Protocol, in terms of commitments of the Parties and mechanisms to grant flexibilities, thus ensuring credibility and accountability of the regime as a whole.[25]

Some basic principles guided the negotiators in their work, including the differentiation of commitments and of the response in case of non compliance, the combination of enforcement and assistance to non-complying parties, the need to ensure participation also to non-State actors, the efficiency of the procedures, the respect of sovereignty concerns[26]. Some of these principles can be found in the articles of the Kyoto Protocol[27] mandating the COP to approve appropriate and effective procedures and mechanisms to determine and to address cases of non-compliance[28].

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[24] See Kyoto Protocol, Art. 19

[25] On non-compliance procedures established by the Kyoto Protocol see Xueman WANG and Glenn WISER, *cit. supra,* pp. 181-198, Gilbert M. BANKOBEZA, *cit. supra*, pp. 346-360, Jutta BRUNNEE, *A Fine Balance: Facilitation and Enforcement in the Design of a Compliance Regime for the Kyoto Protocol,* "Tulane Environmental Law Journal", vol. 13, 2000, pp. 223-241, Massimiliano MONTINI, *Improving Compliance with Multilateral Environmental Agreements through Positive Measures: The Case of the Kyoto Protocol on Climate Change*, in Alexandre KISS, Dinah SHELTON and Kanami ISHIBASHI, *Economic Globalization and Compliance with International Environmental Agreements*, The Hague/London/New York, 2003, pp. 157-179, Peggy RODGERS KALAS and Alexia HERWIG, *Dispute Resolution Under the Kyoto Protocol*, in "Ecology Law Quarterly", vol. 27, No.1, 2000, pp. 53-134, Michael GRUBB, Christiaan Vrolijk and Duncan BRACK, *cit. supra,* pp. 142-152 and Sebastian OBERTHUR and Hermann E. OTT, *cit. supra,* pp. 207-224.

[26] See Xueman WANG and Glenn WISER, *cit. supra*, p. 191-192, who identify the following guiding principles for designing the compliance procedures and mechanisms: differentiation of commitments, facilitation versus enforcement, efficiency and timeliness, transparency and reasonable certainty, due process and proportionality.

[27] See Kyoto Protocol, art. 16 and art. 18.

[28] See Kyoto Protocol, art. 18specifying that such procedures and mechanism would include "an indicative list of consequences, taking into account the cause, type, degree and frequency of non-compliance".

The process took time and long negotiations before agreement was reached at COP 7[29]. The objective of such procedures and mechanisms is clearly indicated in the facilitation, promotion and enforcement of compliance with the commitments under the Protocol[30].

One of the most significant innovation concerns the establishment of a new institution, the Compliance Committee, composed of four bodies (Plenary, Bureau, Facilitative Branch, Enforcement Branch), with the authority to take a range of decisions applicable to Members, and consequences for cases of non-compliance. A whole set of rules applies to the Committee, which is rather similar to that concerning the Executive Board of the CDM. It consists of 20 members, elected by the COP, ten for each of the two Branches, accompanied by alternates, all serving in their individual capacities, and chosen due to their recognised competence relating to climate change.[31]

The most controversial issues concerning the Compliance Committee related to the composition and the voting rules. A similar solution to that of the Executive Board of the CDM was agreed upon, allocating membership according to geographical groups. This results in developing Countries having the majority within the Committee: although one might wonder whether the body in charge of verifying compliance should be reserved only to Parties with specific commitments, and therefore only developed Countries, the idea of climate change as a common concern of humankind, creating *erga omnes partes* obligations leads us to support

[29] See Decision 24/CP.7: Procedures and mechanisms relating to compliance under the Kyoto Protocol.

[30] See Decision 24/CP.7, art. I (objective): "The objective of these procedures and mechanisms is to facilitate, promote and enforce compliance with the commitments under the Protocol". According to Farhana YAMIN and Joanna DEPLEDGE, *cit. supra*,12.5.2, "the use of the word 'under' is highly significant because it is intended to legally capture rules pursuant to commitments defined in the Protocol by way of COP decisions, such as those set out in the Marrakesh Accords".

[31] See Decision 24/CP.7, art. II (Compliance Committee). Para. 6 specifies that relevant fields in which the Members have shown their competence range from the scientific and technical to the socio-economic and legal one. According to Art. V.3, "in electing the members of the enforcement branch, the Conference of the Parties serving as the meeting of the Parties to the Protocol shall be satisfied that the members have legal experience". This is of course to be seen in the light of the quasi judicial character of the Enforcement Brach.

this choice, according to which all Countries are entitled to be represented in bodies assessing compliance. The rules on voting may be viewed as balancing this provision: first of all consensus should be reached, but in case this is not possible, a three fourths majority is required, including majorities from each bloc of Branch members (Annex I and non-Annex I).[32] The concrete outcome is the impossibility to take decisions against developed Countries as a whole.

While the Plenary has more general competences, in terms of reporting[33] and submitting proposals on administrative and budgetary matters to the COP[34], applying the general policy guidance by the COP[35], as well as developing any further rules of procedure[36] and performing other functions, upon request of the COP, for the effective functioning of the Committee[37], the very core of the system rests in the two Branches.

The mandate of the Facilitative Branch comprises several hypotheses, and covers the situations not expressly assigned to the Enforcement Branch. The general competence of the Facilitative Branch is providing advice and facilitation to Parties in implementing the Kyoto Protocol, as well as promoting compliance by Parties with their commitments under the Protocol.[38]

In carrying out these functions, it shall take into consideration the principle of common but differentiated responsibilities, whose application in the designing of

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[32] See Decision 24/CP.7, art. II.9.

[33] See Decision 24/CP.7, art III.2(a): "report on the activities of the Committee, including a list of decisions taken by the branches, to each ordinary session of the Conference of the Parties serving as the meeting of the Parties to the Protocol".

[34] See Decision 24/CP.7, art. III.2(c): "to submit proposals on administrative and budgetary matters to the Conference of the Parties serving as the meeting of the Parties to the Protocol for the effective functioning of the Committee".

[35] See Decision 24/CP.7, art. III.2(b): "to apply the general policy guidance referred to in section XII(c) below, received from the Conference of the Parties serving as the meeting of the Parties to the Protocol".

[36] See Decision 24/CP.7, art. III.2(d): "to develop any further rules of procedure that may be needed, including rules non confidentiality, conflict of interest, submission of information by intergovernmental and non-governmental organizations, and translation, for adoption by the Conference of the Parties serving as the meeting of the Parties to the Protocol by consensus".

[37] See Decision 24/CP.7, art. III.2(e): "to perform such other functions as may be requested by the Conference of the Parties serving as the meeting of the Parties to the Protocol for the effective functioning of the Committee".

[38] See Decision 24/CP.7, art. IV.4.

Parties' obligations has brought about a multi-faceted situation, with different levels of commitments, as well as the circumstances pertaining to the questions before it[39]. The Facilitative Branch is responsible for addressing questions of implementation concerning impacts on response measures pursuant to Art. 3.14 of the Kyoto Protocol[40], information demonstrating supplementarity in relation to the use of the Kyoto Mechanisms[41].

These two situations are particularly sensitive, especially the verification of the supplemental character of the recourse to flexible mechanisms, and evidently Members preferred having them assessed by the Facilitative Branch, which lacks coercive powers.

In accordance with its functions of promoting compliance and providing for early warning of potential non-compliance, other situations can be addressed by the Facilitative Branch: the commitments relating to QERLOs, according to Art. 3(1) of the Kyoto Protocol[42], national systems for estimation of GHGs, according to Art. 5(1)(2) of the Kyoto Protocol[43], and communication of information, according to Art. 7(1)(4) of the Kyoto Protocol[44].

In all these cases, the responsibility of the Facilitative Branch to provide advice and facilitation for compliance is limited to the time prior to the beginning of the first commitment period, or during that period in case of QELROs. The ratio is rather evident: the Facilitative Branch can provide all the assistance Members may need in the process towards the achievement of their goals, but once the period has elapsed, non-compliance will be addressed by the Enforcement Branch.

[39] See Decision 24/CP.7, art. IV.4.
[40] See Decision 24/CP.7, art. IV.5(b), which expressly includes this hypothesis.
[41] See Decision 24/CP.7, art. IV.5(b).
[42] See Decision 24/CP.7, art. IV.6(a).
[43] See Decision 24/CP.7, art. IV.6(b).
[44] See Decision 24/CP.7, art. IV.6(c).

The consequences that the Facilitative Branch may apply[45] are not coercive, and basically include the provision of advice and assistance[46], facilitation of financial and technical assistance[47] and formulation of recommendations[48].

In the light of the experience gained under the Montreal Protocol, it is very likely to foresee that a great deal of the Facilitative Branch's work will focus on ensuring that Annex I Parties, and especially Countries with economies in transition, are able to meet their review and reporting requirements.

It is clear how in this cases non-compliance is basically related to capacity and resource constraints rather than to wilful intention to ignore international obligations, and therefore we support the decision to centre the intervention of the Facilitative Branch on assistance rather than on punishment, in the view of the principle of common but differentiated responsibility[49].

The situation is different for the Enforcement Branch, which has been conceived as a quasi-judicial body, responsible for ensuring legal certainty to the regime. It is mandated to apply consequences if the stricter commitments for Annex I Countries are not fulfilled, in cases of non compliance with the individual quantified reduction targets pursuant to Art. 3.1 of the Kyoto Protocol[50], with the methodological and reporting requirements[51] and with the eligibility requirements for the flexible mechanisms[52].

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[45] One may wonder whether the choice of the term consequence to describe the results of a facilitative branch proceeding may seem appropriate. This decision seems to be better understandable in consideration of the fact that the Facilitative Branch is not empowered to make determinations of non-compliance, but, according to Decision 24/CP.7, art. IV.4, it can only promote compliance by "providing advice and facilitation".

[46] See Decision 24/CP.7, art. XIV(a).

[47] See Decision 24/CP.7, art. XIV(b)and(c).

[48] See Decision 24/CP.7, art. XIV(d).

[49] The principle of common but differentiated responsibility is expressly recalled by Decision 24/CP.7, art. XIV, as a principle to take into consideration in deciding on the application of one or more of the possible consequences.

[50] See Decision 24/CP.7, art. V.4(a).

[51] See Decision 24/CP.7, art. V.4(b), mentioning the provisions of Art. 5(1) and (2) and Art. 7 (1) and (4) of the Kyoto Protocol.

[52] See Decision 24/CP.7, art. V.4(c), referring to all three flexible mechanisms: joint implementation (Art. 6), clean development mechanism (Art. 12) and emissions trading (Art. 17).

Its competence therefore relates to the most significant aspects of the climate change regime and its role is to grant a reliable report of data concerning GHGs, a strict fulfilment of the crucial mitigation commitments, and an appropriate resort to the flexible mechanisms, in order to prevent misuses or abuses.

The principle of differentiation is concretely applied also in the actions that the Enforcement Branch may require from non-compliant States. Each of the three cases identified above in fact brings about different consequences, which, in case of non compliance with reduction targets, "shall be aimed at the restoration of compliance to ensure environmental integrity, and shall provide for an incentive to comply"[53].

In case of non-compliance with the monitoring and reporting requirements, the Enforcement Branch will declare the non-compliance of the party concerned[54], and require this party to submit an action plan[55]. The purpose of this plan, which will be reviewed and assessed by the Enforcement Branch, is to commit the Party to returning to compliance, and it shall include an analysis of the causes of non-compliance of the Party[56], the measures that the Party intends to implement in order to remedy the non-compliance[57], and a timetable for implementing such measures, within a specific time frame, in order to assess the progress in the implementation[58].

More stringent consequences will result from non-compliance with the eligibility requirements for the flexible mechanisms. In such cases in fact, the eligibility of non-compliant Parties will be suspended in accordance with the relevant provision of each mechanism[59]. We have seen in the previous chapters the importance of the respect of eligibility requirements for flexible mechanisms to work efficiently and transparently.

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[53] See Decision 24/CP.7, art. V.6.
[54] See Decision 24/CP.7, art. XV.1(a).
[55] See Decision 24/CP.7, art. XV.1(b).
[56] See Decision 24/CP.7, art. XV.2(a).
[57] See Decision 24/CP.7, art. XV.2(b).
[58] See Decision 24/CP.7, art. XV.2(c), setting a time limit of twelve months.
[59] See Decision 24/CP.7, art. XV.4.

The sanction of the suspension from this possibility seems therefore to be the most appropriate guarantee for the integrity of the system. The underpinning idea is not punishing, but ensuring the correct application of the flexibility mechanisms, and therefore the suspension will cease in case the Party involved has returned to compliance with the eligibility requirements, according to a procedure of reinstatement[60].

This procedure involves an active participation of Expert-Review Teams according to Art. 8 of the Kyoto Protocol[61], which will submit the request of reinstatement of the eligibility of the Party to the Enforcement Branch, the institutional body upon which the final decision rests. But the basic principle informing the problem of the suspension of a Member from participating in the flexible mechanisms is to strictly link such participation to the concrete existence of the eligibility requirements: once these eligibility requirements are met again, no obstacles should be posed on the possibility for a Member to resort to flexible mechanisms in the achievement of its mitigation commitments.

The possibility of actively taking part in the emissions trading is affected also in case of non-compliance with the mitigation commitments expressed in binding targets. If a State fails to meet its QELROs, it will face a series of consequences.

-First of all, the quantity exceeding the targets will be a basis for establishing stricter mitigation obligations for the second commitment period. This will happen through the deduction, in the second commitment period, of a number of tonnes equal to 1.3 times the amount of tonnes in excess[62]. The idea of this kind of "borrowing" from the subsequent commitment period has given rise to a series of doubts as to whether it should be considered as a possible option[63].

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[60] See Decision 24/CP.7, art. X.2.

[61] See Kyoto Protocol, art. 8, establishing Expert-Review Teams of technical, independent experts, with the competence of identifying questions of implementation relating to individual Parties.

[62] See Decision 24/CP.7, art. XV.5(a).

[63] On the various positions expressed on this point see Xueman WANG and Glenn WISER, *cit. supra*, p. 196.

The main concerns relate to the possibility that the "restoration of tonnes" may result in non-complying States simply postponing their commitments from each commitment period to the subsequent, in the lack of other means for ensuring compliance.

Secondly, since the various commitment periods are to be negotiated separately and individually, each State will be able to foresee its possible non-compliance and therefore will try to negotiate a looser target, to take into consideration this future deduction of emissions. On the other hand, the idea of deducting excess emissions from future assigned amounts, with the increased costs and difficulties it will imply for non-complying Parties, should result in a strong incentive for States to meet their targets during the first commitment period[64].

-Secondly, non-compliant Parties shall develop a compliance action plan to submit to the Enforcement Branch, within three months[65].

It will include an analysis of the causes of non-compliance[66], the actions, especially domestic policies and measures, that the Party intends to implement in order to meet its mitigation commitments in the subsequent period[67], and a timetable for implementing such actions, in order to enable the assessment of annual progress in the implementation[68]. Such compliance action plans will be reviewed and assessed by the Enforcement Branch. The words were accurately chosen, and the idea of a formal approval by the Enforcement Branch was discarded.

Once again concerns over national sovereignty prevailed, especially the fear that this plan would be subject to a decision of the Enforcement Branch ordering the specific instruments for a Party to adopt to return to compliance.

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[64] The choice of the ratio 1 to 1.3 was itself a compromise between those who claimed for a higher penalty and those who preferred a one-to-one deduction.

[65] See Decision 24/CP.7, art. XV.5(b) and art. XV.6.

[66] See Decision 24/CP.7, art. XV.6(a).

[67] See Decision 24/CP.7, art. XV.6(b).

[68] See Decision 24/CP.7, art. XV.6(c), indicating a time frame that does not exceed three years or up to the end of the subsequent commitment period.

States could not accept an independent body to prescribe, for example, the adoption of certain domestic policies and measures, or to prohibit the use of flexible mechanisms.[69]

-Thirdly, the eligibility of the non-compliant Party to participate in the emissions trading system shall be suspended[70].

In this case, unlike in the situation of non-compliance with the eligibility criteria, the suspension relates only to emissions trading. This prevision clearly results from the role of emissions trading as an instrument for facilitating Parties in the fulfilment of their obligations. The prospect of losing this opportunity should act as an incentive to be in compliance or to return to compliance as soon as possible.

The integrity of emissions trading itself is furthermore based on the idea that a Party shall not transfer credits that it needs for its own compliance, but surplus transfers which are brought about by more intensive efforts in mitigation[71].

This could not but result in the prohibition of transfer and acquisition of credits for a Party failing to demonstrate compliance with its current emissions targets.

6.1.4) TRYING TO ASSESS THE DISPUTE RESOLUTION AND NON-COMPLIANCE PROCEDURES OF THE CLIMATE CHANGE REGIME

After analysing the different consequences in the various cases of non-compliance, one has to wonder whether the rules established by Parties are efficient and able to grant the climate change regime full credibility.

First of all, some disappointment may be brought about by the consideration that the last paragraph of art. 18 of the Kyoto Protocol, prescribing that the compliance procedures and mechanisms "entailing binding consequences shall be adopted by

[69] This hypothesis had already been discussed and rejected during the negotiations for the adoption of Kyoto Protocol.

[70] See Decision 24/CP.7, art. XV.6(c).

[71] On this point see Xueman WANG and Glenn WISER, *cit. supra*, p.197.

means of an amendment to this protocol"[72], has not been respected. The weaker legal force of a COP decision may be compensated by the immediate applicability of the rules. Although a formal amendment of the Kyoto Protocol would have granted more certainty upon the consequences of non-compliance, the procedure established by the Kyoto Protocol to adopt amendments would have jeopardised the uniformity of the regime.

According to Art. 20 of the Kyoto Protocol in fact the text of a proposed amendment shall be communicated to the Parties by the Secretariat at least six months before the meeting of the COP/MOP at which it is proposed for adoption[73]. Parties should at first make every effort to find a solution based on consensus, and as a last resort it may be adopted by a three-fourths majority vote of the Parties present and voting at the meeting[74].

The entry into force would take place on the ninetieth day after the date of receipt by the Depositary of an instrument of acceptance by at least three fourths of the Parties to the Kyoto Protocol[75]. This may lead to a situation that has already been experienced in the field of international trade law before the establishment of the World Trade Organisation, and that was referred to as "GATT à la carte".

In other words, we would accept a regime in which legal obligations differ as a consequence not only of the application of the principle of common but differentiated responsibilities, but also of the acceptance or not of a specific legal instrument, expressed in the form of ratification of the amendment[76].

This would clearly ingenerate a situation of legal uncertainty and eventually damage the credibility of the regime as a whole.

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[72] See Kyoto Protocol, Art. 18, which reflects the inability of parties to agree on this topic during the Kyoto negotiations.

[73] See Kyoto Protocol, Art. 20(2).

[74] See Kyoto Protocol, Art. 20(3).

[75] See Kyoto Protocol, Art. 20(4).

[76] One has to keep in mind the political sensitivity of the issues involved, which strongly conditioned the entry into force of the Kyoto Protocol itself. Agreed upon in 1997, it eventually entered into force only in February 2005. Such a temporal dilution could not be accepted when relating to specific but fundamental aspects of the regime.

An aspect of the compliance system which is not completely satisfactory and which, unlikely the case of the legal instrument to adopt the rules, may have been shaped in a more efficient manner, concerns the entitlement to trigger actions before the Compliance Committee.

Questions of implementation may be indicated in reports of Expert Review Teams[77] or submitted by any part with respect to itself[78] or any part with respect to another Party, provided they are supported by corroborating information[79]. The lack of a role for both NGOs and the UNFCCC Secretariat immediately emerges. Allowing a *locus standi* to NGOs before the Committee would have been an important recognition of the role of non-State actors at the international level, at the same time creating a great deal of pressure on national Governments.

Evidently the system is not mature enough to expressly permit that an NGO may challenge directly the compliance of a State Party, but we do not have to infer from this exclusion a negative assessment on the role of non-State actors within the climate change regime. Besides the fundamental role NGOs can play in the CDM project-cycle, they can give an active contribution as far as questions of compliance are concerned. In fact their role of providing each Branch of the Compliance Committee with relevant information allows a meaningful participation, at the same time reassuring States about possible encroachments on their sovereignty.

The exclusion of the Secretariat on the other hand may raise some further doubts, considering its more active role in the non-compliance procedures established under the Montreal Protocol.[80]

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[77] See Decision 24/CP.7, art. VI(1).

[78] See Decision 24/CP.7, art. VI(1)(a).

[79] See Decision 24/CP.7, art. VI(1)(b). In this second case, the risk of politically biased submissions is coped with the requirements a submission from another Party has to meet. According to Art. VII in fact it has to be supported by sufficient information, not *de minimis* or ill-founded, and based on the requirements of the Protocol.

[80] According to Art. 8 of the Montreal Protocol, the Meeting of the Parties adopted a non-compliance procedure, which can be triggered either by written complaints by other parties, by the non-compliant party itself or by the Secretariat. Similar provisions may be found in the CITES non-compliance procedure.

In this case some States feared the Secretariat would lose its role of impartial administrator of the regime, but we do not think this was a sufficiently founded reason to limit its functions.

We will see in the future whether this double exclusion will negatively affect the effectiveness of the compliance mechanism.

A positive feature of the rules established at COP 7 concerns the expedited procedures, especially for those situations before the Enforcement Branch.[81] More specific time-limits have been designed for questions concerning eligibility requirements of the flexible mechanisms[82]: here the need is to reduce the negative impacts the exclusion from such mechanisms may have on a Party, and consequently to facilitate its subsequent restoration.

One last point to be taken into consideration for an appraisal of the non-compliance procedure is the effectiveness of the consequences in cases of non compliance: We have seen how they vary according to type of non-compliance, and they range from facilitation and financial assistance to suspension of the possibility of using the flexibility mechanisms, deduction of tonnes from the subsequent period, and the presentation of a compliance action plan to engage the defaulting State in a process towards compliance.

The most punitive options have been discarded, in accordance with the principles of prevention and facilitation informing the system. No financial consequences, in terms of a penalty or of a contribution to an international fund, and no trade measures are therefore possible.

We think these two different hypotheses deserve a separate evaluation, starting from a general consideration.

The idea of climate change as a common concern of humankind, creating *erga omnes partes* obligations, should shape also the consequences in cases of non-compliance.

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[81] See Decision 24/CP.7, art. IX.

[82] See Decision 24/CP.7, art. X.

If a failure to meet the targets established in the Kyoto Protocol carries detrimental effects for the atmosphere as a whole, and a singular injured State cannot be identified, collective countermeasures, also in the light of the articles on State responsibility, do not appear as the most appropriate instrument.

For instance, applying trade-measures to the non-compliant Party will not help a return to compliance of the defaulting State, and at the same time will not have beneficial effects on climate change. They will have negative impacts on the domestic economy, and no State in particular will have a concrete benefit.

One of the principles that should guide in the implementation of the climate change regime is the liberalisation of trade: applying trade sanctions to non-compliant States appear to be a disproportionate measure.

It is not easy to identify the specific products that should be the object of trade restrictions. If failure to meet mitigation targets results from unsound energy policies for examples, all the goods should be restricted in trade, since for all products some kind of energy consumption is required.

How would this situation help to reach the objective of the regime as established by the UNFCCC, that is the stabilisation of GHGs concentrations in the atmosphere? To summarise, if we applied trade measures to non-compliant parties, for a situation in which there is not a single or group of injured States, but in which the international community as a whole suffers the consequences of non-compliance, we would not assist defaulting State in returning to compliance, we would not benefit the atmosphere, we would not help to achieve the objective of the climate change regime, and we would probably cause economic damage to the Party involved and very likely to other States as well.[83]

We confront a different situation in cases of financial consequences, the main difference being the possibility to gain benefits for the fight against climate change.

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[83] For a view that trade-sanctions are ineffective, see Matthias BUCK and Roda VERHEYEN *International Trade Law and Climate Change: A Positive Way Forward*, FES-Analyse Ökologische Marktwirtschaft, 2001, p. 43.

If we consider the international community as a global entity, which is injured by the non-compliance of the Party, we should provide for the possibility of a global redress. The establishment of an international fund, managed by an international, *ad hoc* or already existing, institution, financed by transfers from non-compliant States, and devoted to the implementation of adaptation projects in developing Countries, may be the most appropriate and feasible solution. It would not be punitive for the defaulting State, whose non-compliance may depend on various circumstances, including economic difficulties, it would help those Parties more vulnerable to the effects of climate change, it would be in line with the basic principles informing the regime, especially the common concern of humankind, the common but differentiated responsibilities, the sustainable development, it would favour the ultimate objective of GHGs stabilisation, and it would create a transfer, at the global level, from rich non-compliant States to poorer States, administered in an impartial and transparent way.

6.2) THE ROLE OF FLEXIBLE MECHANISMS IN THE IMPLEMENTATION OF CLIMATE CHANGE OBLIGATIONS: THE LEGAL NATURE OF KYOTO UNITS AND POSSIBLE INTERACTIONS WITH INTERNATIONAL TRADE LAW

We have seen how flexible mechanisms will play a fundamental role in helping Parties to fulfil their mitigation commitments under the Kyoto Protocol. While some time is still required for an assessment of their concrete working, the debate on the legal status of the units which can be transferred and acquired through the three mechanisms has already begun[84].

[84] Given the interchangeability of the various units accruing from joint implementation, CDM, sink projects and emission trading, we will refer to all of them as to the Kyoto units. It is nonetheless important to underline the difference between allowances, which derive from a governmental allocation among the operators involved, and emissions credits, which are generated privately as a consequence of investment project-activities and are not distributed by governments (on this difference see Matthieu WEMAERE and Charlotte STRECK, *Legal Ownership and Nature of Kyoto Units and EU Allowances*, in David FREESTONE and

This is relevant to establish how the climate change regime can impact on international trade, and more specifically to determine which of the WTO provisions may be applicable.

One has therefore to answer some basic questions: may Kyoto units be conceived as goods, and therefore subject to GATT and other relevant WTO agreements? As services, and therefore subject to GATS? As anything else?

Since the expression emission trading broadly speaking recalls the idea of trade, and emission allowances will have a market value, from a merely economic point of view one could argue in favour of classifying Kyoto units as commodities. But nothing in the GATT agreement, which does not provide a definition of what a product is, seems to allow a broader construction of the concept of good.[85] In fact, it is not the emission as such the object of trade, but rather the allowance, that is the right to emit GHGs in the atmosphere. Furthermore such Kyoto units will be inscribed in registries by a unique serial number indicating their origin, year of creation, and project of origin in case they accrue from JI or CDM. This unique identification system will not easily fall within the scope of a like-product approach.[86] The idea of considering the Kyoto units as products for GATT purposes, has therefore never seriously been taken into consideration.[87]

Charlotte STRECK (Eds.), *Legal Aspects of Implementing the Kyoto Protocol Mechanisms: Making Kyoto Work*, 2005, pp. 35-53).

[85] Also the Harmonised Commodity Description and Coding System, elaborated by the World Custom Organisation, which helps in the identifications of products, has no entry for emissions allowances, or more in general certifications.

[86] In this sense see Annie PETSONK, *The Kyoto Protocol and the WTO: Integrating Greenhouse Gas Emissions Allowance Trading into the Global Marketplace*, in "Duke Environmental Law and Policy Forum, vol. 10, 1999, p. 185-210. The author refers to a non-adopted 1985 GATT Panel Report on "Canada- Measures Affecting the Sale of Gold Coins", which found that two different kinds of gold coins, when traded as investment goods, were "like products" while in case they were utilised as legal tender they were rather means of payment than products. The Kyoto units may well be considered as forms of legal tender or means of payment in satisfaction of sovereign obligations.

[87] See for instance Jacob WERKSMAN, *Greenhouse Gas Emissions Trading and the WTO*, in "Review of Community and International Environmental Law", vol. 8(3), 1999, pp. 251-264, maintaining, at p. 255, that "indeed, many forms of financial instruments, including currency, have been traded internationally for decades, but none have been considered to be 'products' for GATT purposes", as well as Matthias BUCK and Roda VERHEYEN, *cit. supra*, p. 26 ("it seems to be consensus amongst legal experts that emission permits cannot be regarded as 'goods' or

The possibility of Kyoto units falling under the definition of services for GATS purposes deserves more attention. The GATS does not provide a definition of service, but WTO members distinguish twelve broad service sectors, which are further divided into more than 150 sub-sectors.[88] The only sector expressly excluded relates to services supplied in the exercise of governmental authority.[89]

The sectoral approach is essential also for the precise identification of the commitments. Under GATS in fact commitments can either be general, that is applying to all sectors, or specific, that is applying only to those sectors expressly indicated by members in their schedules of commitments.

Since no Party has expressly listed emission allowances in their schedule of commitments, the specific commitments should be excluded, and consequently no obligations in terms of national treatment of market access should arise.[90]

But the general commitments, concerning the most favoured-nation principle and transparency, are to be granted to all services, unless expressly exempted through the inclusion in the list of exemptions.

'products' and thus will not be covered by the GATT 1994. Emission permits can rather be compared to currencies and other financial instruments which have never been regarded as covered by the GATT disciplines").

[88] The twelve broad sectors are: business services, communication services, construction and related engineering services, distribution services, educational services, environmental services, financial services, health-related and social services, tourism and travel-related services, recreational, cultural and sporting services, transport services and other services not included elsewhere.

[89] See GATS Art. 1.3(c), according to which "a service supplied in the exercise of governmental authority" means "any service which is supplied neither on a commercial basis, nor in competition with one or more service suppliers". According to Matthias BUCK and Roda VERHEYEN, *cit. supra*, p. 26, "the initial allocation of emission permits to legal entities is at best a government service and would thus be exempt from the GATS altogether").

[90] See Annie PETSONK, *cit. supra*, p. 192, stating that "while members have identified a range of services that could be involved in generating greenhouse gas emissions reductions (e.g. engineering) and services that could be involved in emissions trading (e.g. accountants), no member has identified emissions trading in particular as a service covered by the GATS", and Steve CHARNOVITZ, *Trade and climate: Potential conflicts and synergies*, in Joseph E. ALDY and others, *Beyond Kyoto: Advancing the International Effort Against Climate Change*, 2003, pp.141-170, who maintain, at p. 152 that "so far, governments have not suggested that trade in rights created by a government are within the purview of the WTO. For example, regulations on the transborder sale of a land title, a license, a patent, sovereign debt, and currency are not covered by WTO rules".

The peculiar features of the emission allowances, which exist only as a consequence of a sovereign State's commitment, at the international level, to reduce its GHG emissions, and whose only purpose is helping this State to fulfil its obligation, make them something which is different from both a product and a service, and which rather resembles governmental licenses created within the framework of an international agreement, to perform specific functions according to the rules established in that agreement.[91]

Even if emission allowances are unlikely to be considered as services, GATS provisions may indirectly govern the exchange of such units. In fact, Kyoto units, once internationally traded, will have a financial value, and may be considered as a negotiable instrument according to GATS annex on financial services.[92]

Those States that have committed to the liberalisation of the financial service sector may be bound to grant market access, and therefore prevented from limiting access of other Members' emissions allowances to its market. But what would the concrete obligations in terms of market access amount to?

The establishment of an international carbon market might require the possibility for brokers and other financial service providers to freely transfer Kyoto units

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[91] In this sense see Annie PETSONK, *cit. supra*, according to whom the Kyoto units "exist only because the Protocol has created them. They cannot be produced by any other means, [...] are only legally cognisable in the Kyoto Protocol context if produced under the legal structures established by the Protocol .[...] They are issued by means of agreement among sovereign states, and their sole use is for the purpose of meeting sovereign obligations under international treaty. In this respect, they resemble other transactable sovereign obligations. And in some respects, they can be considered to represent sovereign debt –debt to the atmosphere", Jacob WERKSMAN, *cit. supra*, p. 255, in whose view "it can be concluded with some confidence that internationally traded emissions allowances are themselves neither goods nor services under the WTO. They are, instead, licenses or permits issued by a government authority and entitling (under specific conditions) the holder to carry out a regulated activity within its territory). For the opposite view, considering CDM offset credits as services, see Glenn M. WISER, *The Clean Development Mechanism Versus the World Trade Organisation: Can Free-market Greenhouse Gas Emissions Abatement Survive Free Trade?*, in "Georgetown International Environmental Law Review", vol. 11, Spring 1999, pp. 558-559: "CDM offsets, as 'signifiers of property rights' (i.e. signifiers of the right to produce a given amount of greenhouse gas emissions), represent the outcome of the CDM 'decarbonization service' for which an investor pays". This decarbonization service would be provided through the second mode of supply (consumption abroad) according to GATS.

[92] Para. 5(a)(x)(F) of GATS Annex on Financial Services, on definitions, states that negotiable instruments are included within the notion of financial services.

within the Country undertaking liberalisation of the sector.[93] But the possibility of transfer and acquisition of such credits does not mean the recognition of their legal value.

In other words, the State, once it has granted market access to the operators involved, is completely free to decide whether to accept or refuse the different Kyoto units for the purpose of offsetting its emissions[94]. The specific rules of each mechanism will be the regulatory framework allowing each Sovereign State the possibility of discriminating among different Kyoto units. It will therefore be possible to refuse allowances from non-compliant Parties, in accordance with specific rules designed to grant supplementarity and environmental additionality, as well as from particular CDM projects, as provided for example by the European ETS[95].

These types of discrimination are in our opinion admissible, although part of academic opinion seems to hold a different view[96], since they stem from a different

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[93] A similar hypothesis concerns the liberalisation of CDM-related services, such as verification and validation of projects by Designated Operational Entities. Although in academic opinion some authors (see Matthias BUCK and Roda VERHEYEN, *cit. supra*, p. 27) have not excluded that a prohibition for DOEs from non-Parties be legitimate, if decided by CDM competent institutional bodies in order to preserve the environmental integrity of the mechanism, we think that such prohibition would infringe basic GATS rules, without a proper justification. In our view in fact, these service-providers are employed because of their specific competences, and do not gain further benefits in terms of CERs; they should not therefore be discriminated against as happens in case of investors from non-parties.

[94] See Jacob WERKSMAN, *cit. supra*, p. 256, identifying the analogy to the trade in government-issued currency: "currency is not itself a 'service' or a 'product', but the provision of financial services, such as currency exchange, would fall within the scope of the GATS. Depending on Country A's specific GATS commitments, it may be required to guarantee market access to bureaux de change registered in Country B, and it may be prohibited from limiting the volume of currency exchanged through these services. Country A would not, however, under GATS rules, be required to recognize as legal tender for use within its domestic market, currency issued in Country B".

[95] As we have seen in the previous chapter, CERs accruing from sink or nuclear projects are considered in a less favourable manner within the European ETS.

[96] See for example Steve CHARNOVITZ, *cit. supra*, p. 152, identifying hypotheses of indirect effects on trade that may lead to a violation of WTO rules: "For example, suppose that Country A has a GHG trading system that does not recognize emission units originating in countries outside the Kyoto Protocol. Such a requirement might make it harder to import energy products from non-Parties because fuel producers therein might not have emission units to accompany sales. That could infringe the GATT Article III national treatment rules because it would destabilize competition between imported and domestic products, giving less favourable

set of legal norms, providing for specific rights and duties a State may freely decide to accept.[97]

If the exchange of emissions at the international level can be viewed as a sovereign to sovereign exchange of commitments[98], the situation may be different when it comes to trade in emission allowances between private entities. The allocation process may have distorting effects on international competitiveness of products and services. The most controversial issue relates to the possibility of considering emission allowances allocation as a subsidy according to the WTO Subsidies and Countervailing Measures Agreement. We have seen in the previous chapters the requirements in terms of specificity for a measure to be deemed as a subsidy. In this case, the problem focuses on the construction of emissions allowances as financial contributions or income or price supports.

In academic opinion[99] attention has been paid to a recent case in the WTO, in which the panel enlarged the notion of financial contribution, which does not cover only a money-transferring action, but encompasses also a transfer of resources that can be valued, such as the right to harvest public trees.[100]

Of course the case of emission allowances is substantially different, in that while lumber can be directly traded itself, the economic value of an emission allowance is more indirect. In fact, if emission allowances on the one hand permit the release in the atmosphere of a certain amount of GHGs, for a determined period of time[101],

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treatment to the foreign product". In this case, however, the Author considers the possibility of a defence based on GATT Art. XX general exceptions.

[97] The fact that emissions allowances are subject to the specific rules of the climate change regime and not to those of the WTO system is confirmed by the consequences in case of non compliance of a Party, which, as we have seen in the previous paragraph, may include the suspension from the participation in the flexibility mechanisms.

[98] For this definition see Matthieu WEMAERE and Charlotte STRECK, *cit.* supra, p.46 ("government to government trading of Kyoto Units [...] corresponds to a sovereign to sovereign exchange of commitments").

[99] See for example Steve CHARNOVITZ, *cit. supra*, pp. 152-153.

[100] See United States- Preliminary Determinations with Respect to Certain Softwood Lumber from Canada, Report of the Panel, WT/DS236/R, paras 7.17-7.29.

[101] We have to consider that according to Decision 15/CP.7 on principle, nature and scope of the mechanisms pursuant to Arts. 6, 12 and 17 of the Kyoto Protocol, "the Kyoto Protocol has not

on the other hand they imply an obligation of reducing GHG emissions to the level permitted by the total amount of allowances held.

Seeing them as a financial contribution which might amount to a subsidy for the SCM Agreement's purposes does not take into consideration the complex legal nature of emission allowances, and the argument that if the total cap is generous the obligation may be an empty one[102] does not change the regulatory framework under which it must be considered, that is a sovereign State's obligation created between governments.

The complexity of the legal nature of Kyoto Units has led part of academic opinion to define them as regulatory rights, whose boundaries are not clearly defined, which results in a peculiar legal status, between an administrative grant and private property.[103]

We think it would therefore be reductive to conceive emission allowances as financial benefits or income or price supports, and we consequently exclude that the allocation of such allowances may be construed as actionable subsidies under the SCM Agreement, even in consideration of the lack of specificity, since they are designed as a general instrument to help Country fulfil their GHG mitigation commitments under the Kyoto Protocol.[104]

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created or bestowed any rights, title or entitlement to emissions of any kind on Parties included in Annex I".

[102] See Magnus LODEFALK and Mark STOREY, *Climate Measures and WTO Rules on Subsidies*, in "Journal of World Trade", vol. 39(1), 2005, pp. 23-44.

[103] In this sense see Matthieu WEMAERE and Charlotte STRECK, *cit. supra*, p. 53, where the authors, after focusing on the hybrid nature of emissions rights, and defining them as regulatory rights, further elaborates on this point ("The right is transferable and enforceable against other private parties, however, it enjoys limited enforceability against the State, which wishes to retain the overall control over the allowances it has created. As a result, holders of tradable emissions rights generally have the exclusive right to hold, transfer, and use these rights and the administrative agency should refrain from arbitrary confiscation of discounting of these rights").

[104] In this sense see Magnus LODEFALK and Mark STOREY, *cit. supra*, p. 43, Matthieu WEMAERE and Charlotte STRECK, *cit. supra*, p. 47, Matthias BUCK and Roda VERHEYEN, *cit. supra*, p. 27, and Annie PETSONK, *cit. supra*, p. 209.

6.3) A TENTATIVE APPRAISAL OF THE INTERNATIONAL LEGAL REGIME ON CLIMATE CHANGE: THE ROLE OF THE GENERAL PRINCIPLES ENSHRINED IN THE UNFCCC IN SHAPING THE SYSTEM AND POSSIBLE WAYS TO IMPROVE IT

We have analysed the fundamental principles enshrined in the UNFCCC, and tried to assess their impact on the evolution of the international legal regime towards implementation.

The institutional architecture of the regime, based on the idea of transparency, independence and international cooperation among Countries, has been designed in such a way as to grant each State the possibility of playing an active role.

Even non-State actors, especially environmental NGOs, are allowed to participate in the advancement of the regime: they are not exactly at the same level as national sovereign States, but they can give their important contribution in terms of providing information, assisting developing Countries, making pressure on governments. This reflects the idea of the necessary involvement of public participation, which may be considered as an aspect of the broader principle of sustainable development.

The very core of the regime, that is the system of States' obligations, is deeply rooted in the recognition of differential responsibilities among participating Countries. The starting point is the recognition of climate change as a common concern, and the consequent reconstruction of the obligations to reduce GHGs in the atmosphere as *erga omnes partes* obligations.

There is not a single injured State as such, but different levels of exposure to the detrimental consequences of global warming, which are very likely to afflict more adversely just those Countries with fewer possibilities to cope with the situation. Therefore the different kinds of actions Countries are required to take to contribute to the global effort against climate change range from general reporting

obligations to more stringent mitigation commitments, from technical and financial assistance and capacity building to adaptation strategies.

This idea of differentiating States' obligations as a consequence of the historical contribution to the phenomenon and in consideration of the technological and financial gaps between developed and developing Countries should in our view be preserved also for the subsequent commitment periods. This does not mean developing Countries should not be asked to undertake more stringent commitments, because for the international efforts to be more effective, those big developing Countries whose emissions are dramatically increasing cannot eternally postpone their active involvement. In other words, differential treatment should be applied also within the broad group of non-Annex Countries, in line with the already existing recognition of a sub-group of least-developed Countries, which on the other side cannot be asked to consider the fight against climate change as an overriding domestic priority.

The dispute resolution and non-compliance procedures are the most advanced and elaborated under international environmental law, and we think they will be able to grant coherence to the regime, at the same time taking into consideration the individual situation of each State involved. The possibility of different consequences for different breaches, together with the facilitative approach, should encourage Countries in the respect of their obligations. Since these procedures will start showing their capacity to address the problem of the respect of the commitments only in about 10 years, we need some time to assess whether the exclusion of the UNFCCC and the Secretariat from the possibility of directly triggering a non-compliance procedure will limit its effectiveness or not.

Other two important principles are enshrined in the UNFCCC: the precautionary principle and the liberalisation of international trade.

A precautionary approach towards climate change is needed, in consideration of the uncertainty still surrounding important aspects of the scientific phenomenon,

especially concerning the exact level of danger. We believe that while years may be needed before the scientific community agrees on commonly-shared results, the international community should not postpone all the possible global and individual actions which can benefit climate and more generally the environment.

Such actions should furthermore be carried out in such a way as to be trade-supportive. We have minimised, in this work, the possible contrasts between climate change policies and WTO rules. There is ample room for the implementation of policies and measures with a minimum impact on international trade, provided they are not used for merely protectionist purposes. In this sense, we consider the exclusion of trade-sanctions in cases of non-compliance as a solution which can grant the harmonisation of the two regimes. In case such measures should be deemed as necessary to instil confidence in the regime, more specific rules may be designed for subsequent commitment periods.

The great uncertainty concerning the Kyoto Protocol was about the flexible mechanisms, their actual role, their ability to grant flexibility without jeopardising the environmental integrity of the regime, their possible contrasts with international trade and investment rules. The text negotiated at Kyoto needed further implementation, in terms of more detailed rules for the operationalisation of such mechanisms, as well as for the designing of dispute resolution and non-compliance procedures in order to make the climate change regime as transparent and reliable as possible. We are strongly in favour of the inclusion of the flexible mechanisms, as fundamental instruments to help Parties fulfil their commitments, at the same time contributing to the furtherance of sustainable development.

Even in this case we have minimised the possible negative impacts on international trade and investment law. Although there are some concerns about the actual unfolding of theses mechanisms, which we will be able to assess only with time, we maintain that the rules agreed upon should grant the usefulness of flexibility mechanisms in the fight against climate change.

But for the regime to be really effective, the highest level of participation is required, especially from the most polluting States. In this respect the decision not to ratify the Kyoto Protocol, taken by some important developed Countries such as the USA and Australia, has raised the question of the effects of the provisions contained in the UNFCCC and the Kyoto Protocol *vis-à-vis* such States. In this work we have come to the conclusion that, under general international law, it is not possible to clearly identify a specific rule prohibiting the emission of GHGs in the atmosphere. States' practice, in this sense, is very fragmented: some developed Countries (USA and Australia) refuse to be bound by specific targets derived from a baseline, big developing Countries (India and China) fear that the implementation of domestic climate policies may slow down their fast-growing economies, States with big forests (Brazil and Malaysia) do not want international agreements to encroach on their sovereign rights to exploit their natural resources, oil-exporting Countries (led by Saudi Arabia) oppose to the shifting towards a low-carbon economy without adequate compensation for the losses they would suffer as a consequence of a reduction in the consumption of oil, and economies in transition (led by Russia) seem willing to accept to join the regime only if flexibility mechanisms such as emissions trading can grant them massive financial resources, regardless of the implementation of any serious climate policy.

In this framework, only the AOSIS Countries and the EU seem to be really supportive of the need to provide for specific mitigation commitments, but in the latter case, the differentiation granted by the burden-sharing agreement casts some doubts. Some important Countries, such as France and Spain, do not have to limit their GHG emissions, and one may wonder whether their support for the regime would be the same in case they had to respect specific mitigation targets.

The differentiation of commitments is one of the reasons that led the USA, under the Bush administration, to reject the Kyoto Protocol. The position of the USA, however, has always been different from that of the EU or AOSIS: emphasis has always been placed on flexibility mechanisms, as the only instruments which

could help US economy limit the costs it would otherwise have suffered.[105] Already in 1997, the U.S. Senate approved by a vote of 95 to 0 the so-called Byrd-Hagel resolution which urged the Administration not to agree to a treaty that would not include big developing countries and that could harm the U.S. economy.[106]

If the USA are by far the largest source of GHG emissions, accounting for approximately 25% of the world total, the emissions from big developing Countries, such as China, India and Brazil, are increasing at a really fast rate, and in the next decades they will for sure exceed those from developed Countries. Since global warming is a long-term problem, in the US view, the efforts should be extended also to such big developing Countries. Although also the Clinton Administration was aware of the internal opposition to the Kyoto Protocol, it was only with the Bush administration that the rejection of the Protocol became clear.[107] With the decision not to ratify the Protocol, academic opinion started to

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[105] For the debate on the Kyoto Protocol and climate change policies in the USA see Amy ROYDEN, *U.S. Climate Change Policy Under President Clinton: A Look Back*, in "Golden Gate University Law Review", 2002, vol. 32, No. 4, pp. 415-478, Armin ROSENCRANZ, *U.S. Climate Change Policy Under G.W. Bush*, in "Golden Gate University Law Review", 2002, vol. 32, No. 4, pp. 479-491, Cristina MORAN SINCLAIR, *Global Warming or Not: The Global Climate is Changing and the United States Should Too,* in "Georgia Journal of International and Comparative Law", 2000, vol. 28, No. 3, pp. 555-593, John F. TEMPLE, *Note: The Kyoto Protocol: Will It Sneak Up On the U.S.?*, in "Brooklyn Journal of International Law", 2002, vol. 28, pp. 213-ff, David G. VICTOR, *The Collapse of the Kyoto Protocol and the Struggle to Slow Global Warming*, Princeton, 2001, A.P.G. de MOOR, M.M. BERK, Michel den ELZEN and Detlef van VUUREN, *An evaluation of the level of ambition and implications of the Bush Climate Change Initiative* , in "Climate Policy", 2002, 2-4, pp. 293-301, Rafael LEAL ARCAS, *Is the Kyoto Protocol an Adequate Environmental Agreement to resolve the climate change problem?,* in "European Environmental Law Review", 2001, pp. 282-293.

[106] S. Res. 98, 105th Cong., 1997. The legal effect of this resolution is unclear. The Constitution provides that the President has the power to make treaties with the advice and consent of the Senate, provided two-thirds of those present concur (see Art. II, section 2).

[107] See the 13 March 2001 response Letter from the U.S. President to Senators Hagel, Helms, Graig and Roberts to their letter of 6 March 2001, asking for the administration's view on global climate change (in Rafael LEAL ARCAS, *cit. supra*, p. 289): "As you know, I oppose the Kyoto Protocol because it exempts 80 per cent of the world, including major population centres such as China and India, from compliance, and would cause serious harm to the U.S. economy. The Senate's vote, 95-0, shows that there is a clear consensus that the Kyoto Protocol is an unfair and ineffective means of addressing global change concerns. As you also know, I support a comprehensive and balanced national energy policy that takes into account the importance of improving air quality."

wonder what to do with the Protocol. According to the provision of Art. 25 in fact, without the USA, and Australia, that immediately followed, the entry into force was jeopardised. The idea to amend the Protocol creating a two-speed Protocol with a dual timetable, requiring different levels of reductions for developed and developing Countries, was put forward in academic opinion.[108] But eventually, the rest of the international community, led by European Countries, managed to keep the Protocol alive, and it finally entered into force in February 2005.

What about the USA then? They signed the Protocol in 1998, but then declared they would not ratify it. Is it possible, under general international law, to derive some kind of obligations from this situation? According to Art. 18 of the 1969 Vienna Convention on the Law of Treaties a State is obliged to refrain from acts which would defeat the object and purpose of a treaty when it has signed the treaty.[109] But since the USA are not a party to the Vienna Convention on the law of treaties[110], the rule could be invoked only if it reflects customary international law. In academic opinion an interesting hypothesis has been put forward, which considers this provision as deriving from the concept of good faith, and as amounting to a version, at the international level, of the rule of *culpa in contrahendo*, which is common to many domestic legal orders.[111] It would therefore be possible to expect from a Country that has signed a treaty a concrete behaviour, not contrasting with the object and purpose of such a treaty in the process leading to its entry into force.

The issue acquired relevance because the USA decided not to become a party to another international treaty they had previously signed, the Rome Statute of the

[108] See Rafael LEAL ARCAS, *cit. supra*, p. 292.

[109] See Vienna Convention on the Law of Treaties, Art. 18 (Obligation not to defeat the object and purpose of a treaty prior to its entry into force).

[110] See *Interpretation of Treaties: Absence of U.S. ratification of Vienna Convention*, in "American Journal of International Law, Contemporary Practice of the United States", vol. 75, 1981, p. 147.

[111] See Talitha VASSALLI di DACHENHAUSEN, *La culpa in contraendo nel diritto internazionale*, Napoli, 1983.

International Criminal Court[112]. In this respect, it is interesting to note that when the USA notified to the UN Secretary General their intention not to become a Party to the Rome Statute, they added that they did not have any legal obligations resulting from their signature.[113]

As far as the climate change regime is concerned, although officially the US Government has always confirmed its commitment to the UNFCCC and its ultimate objective,[114] some concrete actions undertaken in this regard have cast some doubts on its willingness to support the regime as is now established. In particular, the initiative to create an Asia-Pacific Partnership on Clean Development and Climate[115] has raised huge interest at the international level. It is the result of an international, voluntary, non-legally binding agreement among six Countries of the Asia-Pacific region, two of which are not Parties of the Kyoto Protocol (USA and Australia) while four have ratified it (China, India, Japan, Republic of Korea). The purpose is to enhance cooperation in order to meet both "increased energy needs and associated challenges, including those related to air pollution, energy security, and greenhouse gas intensities, in accordance with national circumstances".[116] The emphasis is on the "development, diffusion, deployment and transfer of existing, emerging and longer term cost-effective, cleaner, more efficient technologies and practices".[117] Even if it is too early to try to evaluate this initiative, it is nonetheless possible to highlight some differences, in comparison to the Kyoto Protocol, in the approach towards global warming. Instead of fixed, legally binding targets to be achieved within a precise time-

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[112] See http://www.icc-cpi.int/library/about/officialjournal/Rome_Statute_120704-EN.pdf.

[113] See *U.S. Notification of Intent Not to Become a Party to the Rome Statute* in "American Journal of International Law, Contemporary Practice of the United States", 2002, vol. 96, No. 3 p. 724.

[114] See *U.S. Rejection of Kyoto Protocol Process,* in "American Journal of International Law, Contemporary Practice of the United States", vol. 95, 2001, pp. 647-650.

[115] See http://www.dfat.gov.au/environment/climate/ap6/index.html.

[116] See Charter for the Asia-Pacific Partnership on Clean Development and Climate, at http://www.dfat.gov.au/environment/climate/ap6/charter.html, para. 1 (Shared Vision).

[117] See Charter for the Asia-Pacific Partnership on Clean Development and Climate, para. 2.1.1 (Purposes).

framework, the focus is on finding new technologies in specific areas, through cooperation and the engagement of the private sector.[118]

One may wonder whether this will turn out to be an obstacle for the actual working and future development of the climate change regime, in consideration of the fact that, among the 6 Partners, only Japan has specific mitigation commitments under the Kyoto Protocol. In our view it is important to stress the commitment, by the Parties, to act in a manner which is "consistent with the principles of the UNFCCC".[119] And throughout the text it is possible to find references to specific principles underpinning the regime, such as sustainable development, the need to consider the specific situations of each Country, as well as to enhance cooperation. In accordance with the view that we support in this work, that is the lack of clear norms, under general international law, prohibiting the emissions of GHGs in the atmosphere, we maintain that such an initiative should be given the possibility to unfold, since there are some positive aspects to highlight. First of all, it engages some big Countries which are exempted from any mitigation commitments under the Kyoto Protocol, but whose GHG emissions are rapidly growing, and secondly it may bring about fundamental long-term results, provided it will be able to spread new and clean technologies.

This attempt should therefore not be condemned before it has shown its effects, since it may be a useful integration to the already existing international instruments. In this sense the Charter expressly provides that "the partnership will be consistent with and contribute to our efforts under the UNFCCC and will complement, but not replace, the Kyoto Protocol".[120] In our view this is exactly the

[118] In Annex I to the Charter (Vision Statement), we can read: "Areas for collaboration may include, but not be limited to: energy efficiency, clean coal, integrated gasification combined cycle, liquefied natural gas, carbon capture and storage, combined heat and power, methane capture and use, civilian nuclear power, geothermal, rural/village energy systems, advanced transportation, building and home construction and operation, bioenergy, agriculture and forestry, hydropower, wind power, solar power, and other renewables. [...] Areas for mid-to long-term collaboration may include, but not be limited to: hydrogen, nanotechnologies, advanced biotechnologies, next-generation nuclear fission, and fusion energy".

[119] See Annex I.

[120] See Charter, para. 8.

key-point: the possibility of enhancing the global efforts against climate change, without opposing to, or creating obstacles, to the already-existing legal instruments.

This differential approach may have positive results in the fight against global warming, since we do not want to hide some weaknesses of the legal regime on climate change, such as the central role of fixed binding targets in relation to a baseline. As a consequence of this approach, a State may turn out to be in compliance with its mitigation obligations just as a consequence of external, non climate-related situations, which resulted in an inflated baseline.

It is clear that GHGs reductions not corresponding to serious and coherent policies and measures will not be useful in the fight against climate change in the long run. On the other side, other States may find themselves in non-compliance despite the implementation of precise policies and measures to curb GHG emissions; this may happen for example, if certain standards in terms of energy efficiency had already been reached in 1990, the baseline year, leaving little room for further headway. In such cases, the attention should be focused on the relative improvement of each Country rather than on the absolute outcome, in the context of a long process which will commit States for years.

The final outcome may even contrast with the ultimate objective of the UNFCCC, that is the stabilisation of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, if we do not try to grant permanent GHG reductions. These permanent reductions, in our view, can be better achieved using relative standards, which would allocate the GHG emissions in a more equitable manner, compared to the baseline approach. Although we maintain that a *per capita* allocation of GHG emissions would not be a feasible option yet, we could link more strictly GHG emissions to such parameters as GDP, energy efficiency or per unit of product.

We furthermore think that in future commitment periods adaptation will be of paramount importance, as a way to involve developing Countries' participation but

also as a possible alternative way for developed Countries to fulfil their obligations. If for a series of reasons, which may include objective economic difficulties, a State cannot meet its mitigation objectives, it should be asked to engage in further financing of adaptation in developing Countries. In this way we would encourage good practices in developing Countries, spreading patterns of sustainability in their economic growth, and would shift towards a more integrated way to cope with climate change.

We do not have to forget that the process is long, and the legal regime may be subject to future modifications and adjustments. We can try to evaluate the implementation so far, but we acknowledge the importance of the concrete results that will be achieved in the first commitment period for the shaping of the future obligations.

In this regard it is useful to consider the outcome of the recent works of the COP11/MOP1, the first Conference of the Parties after the entry into force of the Kyoto Protocol, which took place in Montreal, 28 November-9 December 2005[121]. Besides the formal adoption, by the MOP, of the Marrakesh Accords (flexibility mechanisms and compliance system in particular) the fundamental issue of post-2012 commitments has gained a central role. States are requested to submit to the Secretariat their proposals for the subsequent commitment-period, and some important aspects have been underlined. For instance, the need to realise the full potential of both technology and market-based opportunities, in order to achieve long-term results, as well as the focus on adaptation, which we think will be the centre of the efforts for the implementation of the regime. Finally, the emphasis on sustainable development as a fundamental guiding principle[122], as a sort of acknowledgment of the role of the principles enshrined in the UNFCCC in the long

[121] See http://unfccc.int/meetings/cop_11/items/3394.php.

[122] See Consideration of commitments for subsequent periods for Parties included in Annex I to the Convention under Article 3, paragraph 9, of the Kyoto Protocol, at http://unfccc.int/files/meetings/cop_11/application/pdf/cmp1_00_consideration_of_commitments_under_3.9.pdf.

way leading to an effective legal regime to fight climate change, within or beyond the boundaries of the Kyoto Protocol.

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