

## **BOARD OF EXECUTIVE DIRECTORS OF THE WORLD BANK**

Esteemed officials,

UFRGSMUN simulated last year, for the first time, the Board of Executive Directors of the World Bank. The inspiration for diverging from the traditional UN bodies came from the opportunity of giving a new challenge and a unique experience to our delegates. The simulation of this World Bank's committee was a success at the fifth edition of UFRGSMUN, what encouraged a re-edition at this year.

Bearing in mind the concept of dealing with an economic issue interconnected with other areas of study, in this year mainly the environment and international politics, the World Bank simulation aims at discussing international issues with a wide-ranging approach, breaking the rigidity of the traditional committees by creating a stimulating and dynamic environment. The Board of Executive Directors of the World Bank staff would like to invite all the delegates to of this unique MUN experience at UFRGSMUN 2008.

The committee staff is composed by five members which have worked together to provide some background on principles of international trade and its climate change linkages so as to allow the officials to perform an updated and high level debate. To conclude this opening letter, we would like to introduce ourselves:

Marcelo Cardoso Fonseca has just concluded his graduation in International Relations at the UFRGS and has international politics, economic integration and the new international agenda among his main areas of interest. The remarkable experience as an assistant director in the World Bank 2007 staff has convinced him to work again in order to build a new edition of the committee. Regarding model United Nations, Marcelo participated twice as a delegate in the UNCTAD committee at UFRGMUN 2005 and 2006. Finally, he represented the United States of America in the Organization of American States (OAS) at AMUN 2008.

Caio Mascarello Teixeira is an UFRGSMUN enthusiast. This sixth semester Business Administration student from UFRGS was also a World Bank assistant director last year and has always stressed the need of having the committee back this year. Caio's areas of interest range from Conflict Management to Sustainable Development. He has participated two times as a delegate in models UN: in the UFRGSMUN 2006 representing Mozambique at UNCTAD, and in the AMUN 2007 as a British ambassador at the ECOFIN.

Eduarda Figueiredo Scheibe is an International Relations student from UFRGS currently at her last semester. Foreign Policy decision-making and Sustainable Development

are the areas she more closely focuses her studies. She represented Brazil at the CSD in UFRGSMUN 2005 and Italy at the UN Conference on the Arctic in this year's AMUN edition. As a staff member, Eduarda supported the CCPCJ in the UFRGSMUN 2007.

Carolina Rigotti Coutinho is having this year her first experience in the staff. She is now attending to the sixth semester of International Relations at UFRGS and decided to become part of UFRGSMUN staff after participating in the 2006 UFRGSMUN edition when represented Slovakia at the United Nations Security Council. Her major fields of interest are International Politics and International Economics.

Finally, Felipe Chaves Keller is a former World Bank official. He participated in the committee last year defending the office led by India. Felipe is now at the fourth semester of Economics at UFRGS and volunteered to the task of using his experience as an official to make as many improvements as possible at the Board of Executive Directors of the World Bank in UFRGSMUN 2008.

We hope you enjoy the study guide, see you all in November!

**Marcelo Fonseca**

**Director**

**Caio Teixeira**

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**Eduarda Scheibe**  
**Assistant-Director**

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## INTRODUCTION

### The World Bank

The World Bank Group encompasses several institutions. Two of them – the International Bank for Reconstruction and Development (IBRD) and the International Development Agency (IDA) - act directly by providing financial aid for governments, and compose what we commonly recognize as the World Bank. The IBRD formerly designed for helping post-war reconstruction, has, nowadays, the function of improving conditions in poor and middle-income countries using loans as its main tool, complementing it with advisory assistance. The IDA is the Bank’s institution directed to *“reduce poverty by providing interest-free credits and grants for programs that boost economic growth, reduce inequalities and improve people’s living condition”*(WHAT IS IDA?, 2008).

The main decision instance in the World Bank is the Board of Governors, which congregates in a general assembly all the institution’s 185 shareholders. This body meets once a year and defines the guidelines for all the Bank’s policies. The Board of Executive Directors is responsible for taking practical decisions and formulating the IBRD and IDA operations. The Board is composed of 24 officials who represent a constituency in the Bank. There are single constituencies - representing only one country - such as the United States and the Russian Federation ones - and there are constituencies that represent a group of countries as the one led by India, which includes also Bangladesh, Bhutan and Sri Lanka.

This World Bank was created in 1945 in the scope of the Bretton Woods system – resulting from the post-Second World War reality –, to foster the reconstruction of war-torn countries, recovering the international economic potential harmed by the conflict. In addition, the Bank has, throughout its history, always operated to build a solid path to the establishment an open and liberal international economy. Accordingly, the practical actions of the World Bank always focused at supporting economic growth and development by means of a *“liberalizing outward-looking strategy”* (EINHORN, 2006, p. 18).

Notwithstanding, the international scenario has substantially changed from sixty years ago to these days, and so did the World Bank. The stability experienced after the Berlin Wall fall has engendered a new international agenda marked by transboundary concerns. Lately, the world’s leading challenges have to be dealt with a more comprehensive approach, which gained strength with the globalization phenomenon. In this sense, the pivotal obstacles of the

world progress as a whole lie usually on the development constraints that several countries face. Then, alleviating poverty and reducing inequalities have become a requisite to create a more homogeneous world and, consequently, have become the central task of the World Bank's from the 1990s on.

Under the presidency of James Wolfensohn has made the crucial shift from post-war reconstruction to poverty reduction, beginning to focus on projects embracing matters as *“building institutions, improving governance, enhancing the voice and participation of the poor, strengthening the rule of law, and stamping out corruption”* (EINHORN, 2006, p. 17). However, acting under usual twentieth century development process patterns, the Bank has, in this new stage, given incentives for several projects that unintentionally contributed to damage the earth's environment. This usually happened when supporting, for instance, infrastructural projects in developing countries by financing the installation of energy industries with no regards to their environmental impact. International trade, historically defended by the Bank, is another example of an activity of high pollution potential, especially due to the transportation carbon emissions. During the presidency of Paul Wolfowitz and the current mandate of Robert Zoellick, the World Bank has emphasized environmental protection, mainly by tackling climate change. Through mitigation and adaptation, the Bank has created an institutional framework to curb the impact of the greenhouse gases (GHGs) on the environment. Now, the World Bank tries to handle together with international trade and climate change to take advantage of the positive linkages on this relationship.

## TRADE POLICIES ADDRESSING CLIMATE CHANGE

*By Marcelo Fonseca, Caio Mascarello Teixeira, Eduarda Figueiredo Scheibe, Carolina Rigotti Countinho and Felipe Chaves Keller*

### 1. HISTORICAL BACKGROUND

#### 1.1. Climate Change: from the Industrial Revolution to the XX Century

The multiple activities of human race and its evolution have been the most ordinary way of telling the world history. Even before the Industrial Revolution of the late 18<sup>th</sup> century, the human evolution has usually been identified by the world's political organization, but also - and specially - by its economical progress.

Back in the 18<sup>th</sup> century, expressive changes on the socioeconomic sphere, resulting from the Industrial Revolution in the United Kingdom, brought into the political discussion the first environment-related concerns. Reports about the pollution created by mining and industry activities and its effects on the workers health introduced the subject to some local governments. In this sense, the spread of the industrialization process throughout Europe and North America led to several adverse consequences, however, the social and cultural conditions at the first half of the 18<sup>th</sup> century did not encourage the debate on environmental issues, which started to take place only after the mid-1800s.

In 1864, the American diplomat George Perkins Marsh published "Man and Nature". This book is known as the first far-reaching effort to state the costs of humankind action to the environmental preservation. The recognition of the consequences of people's actions on the environment has recently taken place, but the author's ideas, formulated in the 1800s, already stressed what became a consensus only with the Intergovernmental Panel on Climate Change (IPCC) recent reports. Alongside, academics and scientists, as well as some other groups – the newcomer ecologists – started to push the discussion on local environmental problems. Notwithstanding, the environmental concern was approached as a geographically limited issue at that time.

A hundred more years would be necessary for the enlargement of this debate. Meanwhile, the economic paradigm focused on the market liberalization as an effective path to foster social welfare. Thus, only scarce goods were considered a real constraint to economic growth and development. However, despite the fact that Marsh tried to attract some attention to the increase of natural resources degradation by the middle of the 19<sup>th</sup> century, they were still viewed as a sort of everlasting assets.

The foremost environmental concern in the beginning of the 1900s was about some species of world's flora and fauna, which were threatened by human activities. The remarkable increase of this kind of regulation was noticed only in the beginning of the last century; however, there were already some trade policies regarding living beings in Europe and in the United States since the mid-1800s – as some restrictions of particular products' imports that were proved to cause damage to the nature. One example of these policies would be the North American legislation approved in 1897, prohibiting the import of seal derived products (MCCORMICK, 1989).

The situation was profoundly modified with the contemporary standpoint that prevailed in the 20<sup>th</sup> century scenario. The improvement of the studies about the environmental impact of human activity and the scientific discoveries on this issue, the environmental disasters and, especially, the widening acknowledgement of all these events by the mass media, elevated the ecological concern to an international category.

Therefore, social movements rose in some countries contesting the capitalist economic paradigm in the mid-1900s. The mass media promotion and the governance legitimacy crisis – which occurred even in the most developed regions of the world – enabled the spread of alternative thoughts, such as the counterculture social movement and feminism. Thus, the 1960s turned also the ecological theme into a substantive political matter.

The controversial “The Silent Spring”, published by Rachel Carson in 1962, is just a famous example of an attempt to reveal the existence of consequences of the technological progress for the environmental safety and its connection with human life conditions. For the first time, the environment was analyzed within the development process scope. As a milestone for building an environmental consciousness, the natural resources became to be considered non-renewable assets with Carson's contribution (CHANT, MCFETRIDGE, and SMITH, 1990).

Ten years after Carson's denounce, the Club of Rome published a report entitled “The Limits to Growth” (MEADOWS et al., 1972), that has also influenced the public opinion and pointed out to the necessity of thinking about the future when planning natural resources exploitation. This study predicted that the population growth and the indiscriminate use of natural resources would lead the world to face environmental constraints by the end of the 20th century (SIMMONS, 2000). The book's authors have recently published a 30 years update in which they stress that “*over the years, Limits was attacked by many who didn't understand or misrepresented its assertions, dismissing it as Malthusian hyperbole. But*

*nothing that has happened in the last 30 years has invalidated the book's warnings"* (MEADOWS et al., 2004).

Additionally, around the year of 1972, the governments of OECD Member countries have exposed their distress through the announcement of "Guiding Principles concerning International Economic Aspects of Environmental Policies" which related environment deterioration with international trade, emphasizing the "polluter pays principle"<sup>1</sup>, procedures of control and the harmonization of environmental policies in order to prevent from trade distortions. At that time, the international community had already noticed how environmental questions could interact with global trade. This awareness led to a more accurate research on gases emissions, green house effect and climate change consequences, updating the discussions.

Despite the increase of environmental advertising, it is interesting to notice that, in parallel, global warming was increasing its pace in the 1970s. Notwithstanding, it is also known that because the raise of energy prices during the two oil crisis in the decade, pollution has decreased, together with the influence of ecological movements. A similar trend, connecting oil prices and pollution, was noticeable in the 1960s and the 1980s, when the decline of oil price has encouraged the increase of pollution rates, driving the public opinion to anxiety concerning environmental problems (CAIRNCROSS, 1991).

Discussions about the mode of production and its connection to the natural environment degradation have reached by the 1980s a new outline. The concept of sustainable development was beginning to be constructed. The expression was officially used for the first time by the International Union for the Conservation of Nature in the "World Conservation Strategy"<sup>2</sup>, published in 1980. In 1987, the World Commission on Environment and Development published the report "Our Common Future"<sup>3</sup>, which established the most accepted concept of sustainable development nowadays (PEARCE and TURNER, 1990).

The climate change debate of the 1980s had advanced and it was then about "whether or not and to what extent human emissions of greenhouse gases (most notably carbon dioxide) may lead to changes in future climatic conditions". This was mostly a political debate about

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<sup>1</sup> "This principle means that the polluter should bear the expenses of carrying out the abovementioned measures decided by public authorities to ensure that the environment is in an acceptable state. In other -words, the cost of these measures should be reflected in the cost of goods and services which cause pollution in production and/or consumption. Such measures should not be accompanied by subsidies that would create significant distortions in international trade and investment" (OECD, 1972).

<sup>2</sup> For further information see: <http://stats.oecd.org/glossary/detail.asp?ID=2941>. Last accessed at August 2008.

<sup>3</sup> The full report is available at: <http://www.un-documents.net/wced-ocf.htm> . Last accessed at August 2008.

the “position for and against regulations of greenhouse gases” (PIELKE JR and SAREWITZ, 2005, 225 and 256).

Although the greenhouse effect is natural and a natural condition of the Earth, from pre-industrial times to 1990, it has raised around 50 percent. Experts acknowledge that there is a natural variability of climate change occurring during the millennia; nonetheless, there is also an evidence of an abnormal variability recently. This trend is attributed to the increasing emissions of gases that cause the effect throughout the referred period: I) the carbon dioxide concentration in the atmosphere has increased 26 percent until the 1990s, mostly because deforestation and combustion of fossil fuels; II) the methane’s concentration in the same period has approximately doubled due to rice production, biomass burning, among other factors; III) nitrous oxide concentration has increased 8 percent because of human action (HOUGHTON *apud* JAGER and FERGUSON, 1991).

According to Soon and Baliunas (2003), there has been an increasing concern that climate changes noticed in the last three centuries have been caused caused by human activities. To clarify this approach, many studies have been done to measure the damage and to predict the potential impacts of the humankind in the world climate.

Nowadays, there are evidences pointing out that man’s activity has an enormous impact on the environment. One example could be the paper consumption, which has increased substantially over the last centuries. According to the Worldwatch Institute, “19 percent of the world’s total wood harvest and 42 percent of wood harvest for “industrial” uses (everything but fuel wood)” are dedicated to paper production. (GERDNER, ASSADOURIAN, SARIN, 2004, p.11). The waste of material during the production of goods, forcing these goods to become more expensive, is another similar problem. Indeed, some scholars stress that our model of society - of mass consumption - encourages people to consume without a sustainable consciousness (GERDNER, ASSADOURIAN, SARIN, 2004).

As a result of human activities, the probability of extreme events to occur has become higher. As a result, losses due to natural catastrophes tend to grow, leading to negative economic consequences, especially in fragile and dependent economies. If a region is extremely dependent of agriculture exports and an extreme event occurs – affecting productivity -, this region is prone to suffer complications such as a massive unemployment (SINHA *apud* JAGER and FERGUSON, 1991).

A key element to understand some of the extreme events caused by the climate change is the sea surface temperature and the fluxes occurred in the sea. They can influence the

weather and, combined with the air circulation, cause hurricanes, which may produce vast damages (BAKER *apud* JAGER and FERGUSON, 1991). Related to this subject is the pattern of water fluxes on Earth. The species are adapted to this flux, and if it is changed by increasing temperature or other factors, they would have to readapt, and not all would be capable to do so (STATE OF THE WORLD, 2004).

Moreover, the inefficient use of resources contributes to climate change and deforestation. Before the first oil crisis (1973), it was thought that the greater the use of energy resources, the more the economy would grow. As informed by the Worldwatch Institute, “between 1970 and 1997, global energy intensity declined 28 percent as economic output continued to rise” (SAWIN, 2004, 26). This kind of statistic shows exactly the contrary, the importance of being more efficient in producing goods.

## **1.2. An Updated Environmental Debate**

The speeding up of the globalization process in the 1990s made even more apparent the links between environment and development. The inclusion of new concerns and social issues into the international agenda, associated with the increasing participation of organized civil society in the political and economical discussion, besides some combined actions promoted by the private sector around the globe, made possible a clearer perception of the connections involving both themes. In addition, both the environmental question and the issue of inequitable distribution of wealth within different countries have been associated. The natural resources were already seen as relevant assets to economic growth; therefore, the defense of the sustainable exploitation of the local ecosystem could be a successful approach to poverty reduction worldwide.

Once again, the human condition and the stage of economic and social development have proved to be really important in order to flourish environment-friendly projects and enterprises. It is argued by Pielke and Sarewitz (2005) that the societal changes are a key factor to understand the climate change impacts on populations. Due to this reason, the spread of the ecological theme has not only been interconnected to an economic topic, but also turned out to become fundamental to both political and economic analysis. Also known as the

co-evolutionary<sup>4</sup> paradigm (PEARCE and TURNER, 1990), the contemporary discussion set both economic and environmental matters as inseparables if a reasonable solution is intended.

Since the mid 1990s, a group called Climate Solutions<sup>5</sup> is working to stop global warming. Their strategy is transforming “barriers into drivers”. The idea is that the two principal barriers are business leadership and rural communities and that they can be changed by clean energy. The most important examples of clean energy are wind energy, that is constantly growing, and biofuels, like ethanol and biodiesel. Mazza (2002) argues that the production of these energies predominates in rural areas, benefiting rural communities.

Another point focused by Mazza is the potential to emphasize the regional and the local roles, but with a different approach of that seen in the 19<sup>th</sup> century. The point at this time is that

*“a focus on place helps leap over the challenge and built impetus for action by connecting climate change with matters close to home, such as beloved local wildlife and ecosystems; the health of family and friends; local opposition to highway expansion, power plant construction and oil and gas drilling; and the economic health of climate-related industries such as recreation, agriculture, forestry, and hydro power” (MAZZA, 2002, p. 160).*

Furthermore, the local level has a key role on energy policy, on the matter of transportation and on the innovation and technology development.

This local role is also linked with the populations’ view about climate change. Nowadays, it is even easier to the masses to get information about climate change and they show to be more concerned about the issue. As Kellstedt, Zahran and Vedlitz (2008, 114) pointed out,

*“providing information about global warming - in effect, taking the scientific consensus and popularizing it - will lead to increased public concern about risks of global warming. [...]. The more people know about global warming, the thinking seems to go, the more they will feel personally responsible for it, and also be concerned about it”.*

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<sup>4</sup> “The co-evolutionary perspective has been designed to provide a link between ecological and economic analysis. Co-evolution refers to any on-going feedback process between two evolving systems.” (PEARCE and TURNER, 1990. p. 25) The co-evolutionary economic paradigm points out the interaction between environment management and economic growth and its importance as a mechanism to achieve a real socioeconomic development.

<sup>5</sup> For further information: <http://www.climatesolutions.org/>. Last accessed at august, 2008.

Regarding this debate, an important issue is how more participant actors, people that make decisions and write about the theme, react to the risk of climate change. According to Stedman (2004, 1399), using a sample from Canada, still “*environmentalists and university scientists perceive significantly higher risk from global climate change than do either industry or government actors*”.

Nowadays, many enterprises are concerned about production impacts on climate change. In this sense, they are trying to use renewable energy, recycled materials and cut energy and water consumption. An example of this new way of thinking is that the cost of recycled paper in Europe is almost the same as that of virgin paper. This happened mostly due to the increased demand, which indicates that populations are more concerned about the issue (RENNER and MACTNY, 2004).

The current thought is that climate change is a fact, which can be seen with the creation of the Intergovernmental Panel on Climate Change, the conference in Rio de Janeiro in 1992, the Kyoto Protocol and the proliferation of non-governmental organizations and documentaries about the issue, such as *An Inconvenient Truth*, produced by the former vice president of United States, Al Gore, and children movies, as *Ice Age: the meltdown* (KELLSTEDT, ZAHARAN and VEDLITZ, 2008). Climate change is now accepted as a real phenomenon and is widely recognized that its implications are changing the Earth. The current debate is about how to formulate and achieve climate change policies. The general idea is that the consequences of these policies will be noted in a hundred of years and it is impossible to predict them. So, the solution would be what is called “learning by doing” or “path dependence”<sup>6</sup>, which means that regarding a decision made today, twenty years later it would be possible to see some of the results and make another decision based on this (KEENEY and MCDANIELS). According to Hulme (2005), the policies should not only be formulated to diminish the climate change problem, but also to be flexible to respond to future fast changes.

Considering the international trade as an important mechanism for economic progress, there has also been an improvement on the debate regarding the connections between trade activities and climate change since the last two decades. The World Bank understands that the

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<sup>6</sup> According to Paul A. David (2000), the economic approach in which “history matters” is the foundation of the path dependence. “*The concept of path dependence refers to a property of contingent, non-reversible dynamical processes, including a wide array of biological and social processes that can properly be described as ‘evolutionary’*”.

lack of a universal agreement on the environmental issue creates a potential conflict scenario, since the natural resources are considered “public goods” and therefore environmental degradation could represent a constraint to economical development. The Bank also considers that environmental regulations should be in accordance with free trade practices in order to accomplish the sustainable development goal (THE WORLD BANK, 2008).

## 2. STATEMENT OF THE ISSUE

*“Climate Change is a development, economic, and investment challenge. It offers an opportunity for economic and social transformation that can lead to an inclusive and sustainable globalization. That is why addressing climate change is a critical pillar of the development agenda.”* Robert Zoellick<sup>7</sup>

### 2.1. An Introduction to Climate Change

It is now widely recognized that the environment faces several constraints within our current consumption model. There is also a consensus that if the emerging developing world – mainly China and India – would follow the North-American or European model of consumption, there will be a clash on the global environmental conditions. In response to this reality, the international community now begins to acknowledge that the solution for these menaces will come through a joint effort, by means of cooperation and solidarity among both developed and developing countries (STERN REVIEW, 2006).

These assumptions arrived on the international debate mainly due to recent climate change experiences uncovered on environment dysfunctions such as prolonged warming temperatures and iterant natural disasters. The reason for these environmental reactions is largely attributed to the high levels of greenhouse gases (GHGs) and aerosols emissions brought mainly by an indiscriminate combustion of fossil fuels and land-use changes caused by human activities in the pursuit of economic development (STERN REVIEW, 2006). The gases responsible for causing the greenhouse effect vary from carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>) to halocarbons and nitrous oxide (N<sub>2</sub>O). One of the initial signs of an

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<sup>7</sup> World Bank Group President, at the United Nations Climate Change Conference in Bali, Indonesia (December 2007)

abnormal environmental situation can be understood by mid-term predictions which estimate an increasing temperature ranging from 1.5 to 4 degrees Celsius over this century if the mitigation efforts do not act as deeply as it is required (NOBLE, 2007).

The definition of the term climate change and its usage in the scope of the United Nations Framework Convention on Climate Change (UNFCCC) would be “*a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods*” (IPCC Glossary, 1995, p. 5). This concept leads to three basic interpretations: i) climate change is indubitably related to the human action; ii) the referred action has altered the climate despite of the natural variability; iii) the alterations affect the entire world due to their feature to act in the composition of the global atmosphere.

The IPCC has a milder employment of the term climate change, which is referred by this body as a product of “*internal changes within the climate system or in the interaction between its components, or because of changes in external forcing either for natural reasons or because of human activities*”. Although, the Intergovernmental Panel has also pointed out that the “*projections of future climate change reported by IPCC generally consider only the influence on climate of anthropogenic increases in greenhouse gases and other human-related factors*” (IPCC Glossary, 1995, p. 5). Even considering that, the Panel defends a more restricted and moderated approach for the term climate change and highlighting the IPCC’s recent conclusions stated on its reports, both concepts lead to the same three premises described in the analyses of the UNFCCC’s term usage.

Indeed, the environment alterations could be noticed if we took a detained look, for instance, at the levels of precipitation and evaporation at the current days. The IPCC’s reports stress that there has been a drought tendency over the last century, especially in the food main producer areas, such as the Australian cereal belt and the Mediterranean basin. Some regions will begin to face higher levels of evaporation and - as a counterpart - fewer rainfall episodes with higher precipitation intensity. This trend shall have two direct effects: the first is the precipitation shortages or dry spells and in parallel the occurrence of dangerous flooding problems (NOBLE, Ian, 2007). These changes affect directly the developing countries and their capacity to adapt to the new environmental conditions. Basically, the poor countries’ adaptation challenge lies on dealing with their lack of infrastructure to curb the climate adversities and with their dependency on commodities exports.

Following the IPCC approach, the World Bank reinforces the efforts to tackle climate change, having its measures bounded by two concepts adaptation and mitigation. The Bank addresses this as a socioeconomic matter, considering climate change as an obstacle to achieve some of its main objectives – poverty reduction and the Millennium Development Goals (MDGs) – especially in developing countries.

The first mainstream concept would be the **adaptation**, which consists in measures aiming at curbing the possible impacts of climate changes. As mentioned above, the developing countries are more vulnerable to these impacts due to their lower development conditions. This reality makes this kind of strategy directly intended to deal with countries where weak and, therefore, climate-sensitive economies prevail, making these poor nations more likely to be affected by the climate variability. Consequently, achievements on the adaptation path require capital to be invested in technology and institutional improvements that must be integrated in a broader development plan<sup>8</sup>.

The second mainstream framework, named **mitigation**, is not restricted to getting the world prepared for the consequences of the climate variability, but acts preventively, addressing the causes of these changes. Efforts under this concept encompass every sort of tools to reduce GHGs' emissions, such as changing in lifestyle and behavior patterns, investing and trading climate-friendly products, taxing carbon emissions, stimulating local and regional suppliers and investing in efficient and renewable energy. According to the IPCC, there is a *“high agreement and much evidence of substantial economic potential for the mitigation of global GHG emissions over the coming decades that could offset the projected growth of global emissions or reduce emissions below current levels”* (IPCC, 2007). The dilemma stressed by the World Bank discussions is how to create reasonable mitigation tools that will mutually sustain development fostering, providing all economic induction assets needed for growing, including energy supply, and lead to a “low-carbon path”. The answer for this controversial equation, following the World Bank approach, copes with progresses in technology and environmental management<sup>9</sup>.

## 2.2. Sustainable Development and Climate Change

According to the 1987's report “Our Common Future”, *“sustainable development is development that meets the needs of the present without compromising the ability of future*

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<sup>8</sup> WORLD BANK. <http://go.worldbank.org/VRETHAGHE0>. Last accessed on August 2008.

<sup>9</sup> WORLD BANK. <http://go.worldbank.org/VRETHAGHE0>. Last accessed on August 2008.

*generations to meet their own needs*”<sup>10</sup>. Moreover, the sustainable development paradigm emphasizes the responsibility of all countries, either developed or developing, on the nature preservation and calls for adaptation of consumption, financing and trading patterns to accomplish this goal. Indeed, sustainable development is directly linked to tackling climate change and is usually addressed as a requirement for the latter.

Since the Earth Summit in 1992, the concept of sustainable development has integrated the economic, social and environmental perspectives. Furthermore, the environment protection was linked with poverty reduction within the scope of the Millennium Development Goals (MDGs). Social, political and cultural factors are now beginning to be more closely addressed, as well as the linkages with climate change policies (IPCC, 2007).

The climate change mitigation and the sustainable development have a dual-way relationship that is not always mutually beneficial. Reed (1996 *apud* IPCC, 2007, p. 696) defines the requirements for sustainable development:

*“For a development path to be sustainable over a long period, wealth, resources, and opportunity must be shared so that all citizens have access to minimum standards of security, human rights, and social benefits, such as food, health, education, shelter, and opportunity for self-development”.*

However, it does not automatically encompass GHGs emissions reduction and, therefore, climate change mitigation. Strategies seeking sustainable development shall include climate change actions in order to turn active the synergies of this relationship. According to the Chapter 12 of the Fourth Assessment Report of the IPCC (1997), *“there is a close connection between mitigative and adaptive capacities and the underlying socio-economic and technological development paths that give rise to those capacities”*, although the challenge relies on how to transform this efforts into a regional and local development.

The new role taken by non-governmental actors, private sector and civil society, besides the governmental actions, can substantially contribute by internalizing climate change policies into the society, mainstreaming its benefits on a sustainable development path. Sectors as waste management, deforestation and energy efficiency could be addressed in the scope of using climate change as an ancillary pillar for sustainable development (IPCC, 2007).

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<sup>10</sup> Full report available at: <http://www.un-documents.net/wced-ocf.htm>. Last accessed on September 2008.

### 2.3. International Trade and Liberalization

Since the establishment of the General Agreement on Tariffs and Trade (GATT)<sup>11</sup>, countries have started a collaborative action on international trade issues and, most recently, its liberalization. As stated in a World Bank study (2007, p. 4): “*Integration into the world economy has proved to be a powerful mean for countries to promote economic growth, development and poverty reduction.*” Some reports toward the matter have pointed out that trade liberalization could positively affect global warming mitigation. It is argued that liberalization would allow countries to trade environment-friendly goods more efficiently, transferring technologies and, in this way, as an important tool for reducing poverty worldwide.

“*Trade can benefit everyone in society because it allows people to specialize in activities in which they have a comparative advantage*” (MANKIW, 2005, p.55). In this perspective it is relevant to stress that many authors have addressed the benefits from trade in the last two centuries. David Ricardo has set the most important theory on the issue in his book *The Principles of Political Economy and Taxation*, from 1817: the Comparative Advantages theory. According to this theory, it is understood that a country has a comparative advantage in a good over other country, when the opportunity cost<sup>12</sup> in producing this good is lower. As stated by Mankiw, it is defended that the gains from trade come because people, business and countries have different opportunity costs in producing a good or service and, so, comparative advantages. The principle of comparative advantages is one of the most important points called by economists to support free trade among countries.

Bearing in mind the climate change, trade liberalization on some currently issues under the World Trade Organization (WTO) negotiations could be extremely interesting to the mitigations efforts. For instance, the World Bank (2007, p. 8) cites the “*multilateral liberalization of renewable energy sources or an agreement to remove fossil fuel subsidies*” as contributive to the climate change objectives. Therefore, some see the WTO negotiations on environmental goods and services as pivotal for increasing the trade in cleaner technology and, in doing so, assisting developing nations to adapt and reduce their greenhouse gas (GHG)

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<sup>11</sup> The GATT was established in 1947. Its main purpose was to provide an international forum that encouraged free trade between member states by regulating and reducing tariffs on traded goods and by providing a common mechanism for resolving trade disputes. <http://www.ciesin.org/TG/PI/TRADE/gatt.html>

<sup>12</sup> The opportunity cost is define by MANKIW (2005) as whatever must be given up to obtain some item.

emissions. The Stern Review (apud WORLD BANK, 2007, p. 7) observes that “*the reduction of tariff and nontariff barriers for low-carbon goods and services, including within the Doha Development Round of international trade negotiation, could provide further opportunities to accelerate the diffusion of key technologies*”. Indeed, to be effective, those negotiations must face several challenges. Trade liberalization on climate-friendly goods and technologies, reduction of tariff and nontariff barriers are just one part of the issue. On the other side, there are costs of mitigation efforts, the definition of relevant products for liberalization, changes in technology, impacts on domestic industries, and access to technologies.

Most recently, at the ongoing WTO Doha round, for the first time, trade liberalization on environmental goods and services has become a subject on the agenda. At the current point, WTO members are focused on identifying which environmental goods and services should be liberalized<sup>13</sup>. The debate has brought up the complexity of defining what products are environment-friendly and how to liberalize these items. Concerns about what to liberalize include issues as “(i) *dealing with single versus dual-use goods; (ii) the relative environmental friendliness of goods; (iii) dealing with constantly evolving technologies; (iv) assessing implications for domestic industries, especially in developing countries; (v) dealing with nontariff barriers; (vi) enhancing opportunities for developing country exports; and (vii) dealing with agricultural environmental issues*” (WORLD BANK 2007, p. 75). According to the Chatam House (2007, p. 27), in that perspective, countries already have an agreement on goods and services whose use is for environmentally beneficial purposes, however, it was not possible to reach a decision on process and production methods and “environmentally preferable products” due to its broad definition.

Thus, countries diverge on how to liberalize environment-friendly goods and services, trying to find a way to converge the developed and developing nations’ objectives. At this discussion, opinions are divided between liberalizing by the “list” approach and or the “project” approach. Liberalization on environment-friendly goods by the list approach is mostly defended by industrialized nations. In this method, a specific list of items is identified and submitted, being then settled the elimination or reduction of barriers permanently and on

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<sup>13</sup> Liberalization of trade on environmental goods is being discussed on special sessions of the WTO Committee on Trade and Environment, while environmental services negotiations are taking part separately, within the Council for Trade in Services.

a most-favored-nation<sup>14</sup> basis. On the other hand, developing nations defend the project approach, in which liberalization would last temporarily and exclusively during an environmental project, gaining from liberalization of import goods and services.

Even though trade liberalization seems an effective way to address the environmental question, some studies defend that it is not possible to affirm that such policies will be either good or bad for it. On one hand, liberalization implies the idea of a more efficient use of resources, on the other hand, it must also be implied that “*trade reforms undertaken in the presence of existing market, policy, or institutional imperfections in the environment or natural resource sector may lead to adverse environmental impacts*” (WORLD BANK, 2008, p. 9). Therefore, the first point to be considered is that, in developing countries, which usually lack proper environmental legislation, the reduction of barriers might strengthen the countries’ tendency to export commodities and the use of resource-intensive production. It must also be noticed that, in order to increase domestic firms’ competitiveness in the global market and attract investments, governments may lower environmental standards, intensifying the competition and the use of resources. Finally, as a response, other governments may enforce “environmental tariffs” to protect their firms against trade partners that have inadequate environmental standards. Despite this dramatic scenario, a World Trade Organization (2004, *apud* WORLD BANK 2007) study bares that, actually, countries with greater openness to trade become more likely to adopt cleaner technologies and, in these countries, the real increase of income is often associated with increased demand for environmental quality. For example, according to Jawahar (2004, *apud* RANGANATHAN 2004), in India, during the post-liberalization period of the 1990s, sugar factories could import efficient and competitively priced boilers, which resulted in great improvement in their environmental and economic performances.

It is also important to emphasize the challenge for the international community to pursue the WTO negotiations and the Kyoto Protocol objectives in a way that its synergy is exploited in the best manner, avoiding conflicts arising from unilateral discriminatory trade measures (ASSUNCAO 2000, p.3). Even though polices that enforce the international trade

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<sup>14</sup> The most-favored-nation is a principle of the international trade system that may be basically defined as treating all countries equally. This principle is enforced on the article I of the GATT and it requires WTO member States to accord the same treatment to not discriminate among similar products of different member states. WTO website. The Principle of trading system. [http://www.wto.org/english/thewto\\_e/whatis\\_e/tif\\_e/fact2\\_e.htm](http://www.wto.org/english/thewto_e/whatis_e/tif_e/fact2_e.htm). Last accessed on August 2008.

are defended as a principle on the Article 3.5<sup>15</sup> of the Climate Convention and restated in the Article 2.3<sup>16</sup> of the Kyoto Protocol, for Assuncao, in practice, “*there is a clear gap in the analysis of potentially very costly trade implications of, and responses (sanctions) to, measures such as subsidies, fiscal incentives and energy efficiency standards for climate change purposes*” (UNITED NATIONS, 2000, p.4). Other examples cited as measures for international trade, considered to be applied by the industrialized nations parties to the Annex I<sup>17</sup> of the Kyoto Regime perspective are: government procurement policies, eco-labelling<sup>18</sup> and border tax adjustments associated with a carbon or energy tax. Therefore, Assuncao defends the necessity of actions to make consonant international trade, climate change and development policies, suggesting the establishment of a joint WTO/UNFCCC work group in order to maximize synergies and minimize the conflicts between international trade and climate change measures.

#### **2.4. Energy Issues**

Clean energy technology is claimed to be one of the most important subjects on climate change mitigation. During decades economic growth and development have been associated with intensive energy use, however, the Kyoto regime era calls upon the necessity to adequate the energy assets through a more environmentally committed path. In that sense, the Human Development Report (2007, p.133) stresses that power generation is the main source of CO<sub>2</sub> emissions, thus the adaptation of countries’ energy paths regarding this issue is fundamental to climate change mitigation. As stated by the Stern Review (2006, *apud* WORLD BANK 2007) “*Development is likely to lead to increasing demand for energy, and*

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<sup>15</sup> Article 3.5: “The Parties should co-operate 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. 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.” (UNITED NATIONS, 1998)

<sup>16</sup> Article 2.3: “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 on international trade, and social, environmental and economic impacts on other Parties, especially developing country Parties and in particular those identified in Articles 4.8 and 4.9 of FCCC. The Conference of the Parties may take further action, as appropriate, to promote the implementation of the provisions of this paragraph.” (UNITED NATIONS, 1998)

<sup>17</sup> The annex I encompasses the developed countries, which have the highest commitments to reduce the GHGs emissions under the Kyoto Protocol. For further information consult the Kyoto Protocol’s full text (UNITED NATIONS, 1998).

<sup>18</sup> Eco-label is defined by the Global Ecolabelling Network as “*a label which identifies overall environmental preference of a product or service within a specific product/service category based on life cycle considerations;*” (*What is Ecolabelling?*, 2008) that is, a label system which products are made in a way to avoid detrimental effects on the environment.

*without adequate climate policies in developing countries, producers and consumers in those countries will not modify their behavior to reduce climate change risks.”*

As stated by the World Bank (2007, p. 3) it is very likely that developing nations will exceed the GHG emissions due to energy use from those of developed countries by 2020 or 2030 and this growth of carbon emission will probably be supported by the same energy development path traced by their rich counterparts. Therefore, in order to answer the growth of GHG emissions in developing countries, actions must be taken to improve energy efficiency on the demand side and investments in technology on the supply side (e.g. electricity generation) to increase efficiency and reduce emissions (WORLD BANK 2007, p. 48).

The reduction of barriers for clean energy technology would be pivotal for its diffusion in developing nations. Differently from the industrialized nations parties to Annex I of the Kyoto protocol, developing countries are not subject in the GHG emissions reduction targets set by the protocol, thus making clean energy technology available is especially important for their future commitments on a post-Kyoto regime. In a study of 2007, the World Bank (2007, p. 13) states that *“a removal of tariff and nontariff barriers for four basic clean energy technologies (wind, solar, clean coal, and efficient lighting) in 18 of the high-GHG-emitting developing countries will result in trade gains up to 13 percent”*. The study shows the important gains that would be achieved by trade liberalization and, even though applied for a selected group of countries and few clean energy technologies, it has appointed substantial results.

In addition to that, the mandatory carbon reduction targets are seen by some nations as harmful to their economies and by others as an ineffective measure. Some advocate that, once developing countries have been exempted from emission limits, energy-intensive industries would simply move their operations to these countries. Such relocation of carbon-intensive industries, also known as “carbon leakage,” *“would not only undercut the environmental benefits of the Kyoto Protocol”*, but it is also suggested that *“the competitiveness of industrialized-world industries could also suffer”* (WORLD BANK 2007, p.30). In that way, through the carbon leakage, industrialized nations would be outsourcing their CO<sub>2</sub> emissions and masking the consumer behavior, once the scheme set by the Kyoto protocol focuses on the producer side when emissions are accounted.

It has also been suggested that base production shifting to developing and emerging countries would cause losses in CO<sub>2</sub> emission efficiency, in addition to an increase of absolute

emission levels, because of the lack of carbon efficiency in the technology and energy systems of developing nations (EU 2007, p. 4). According to the IPCC (2001, *apud* WORLD BANK 2007) under the Kyoto regime, the carbon leakage, in the worst scenario, would cause a loss of 1 percent in each 5 percent emission reduction achieved by the industrialized world, which means that 1 of those 5 percent would not disappear, but would be done in developing countries due to shifted energy-intensive industries. Even though the carbon leakage has not been conclusively confirmed, some studies already show the gradual shifting of energy-intensive production from developed countries to developing ones, because of several factors, including climate change measures.

## 2.5. Transportation

It has been pointed out that CO<sub>2</sub> emissions related to transportation and international trade are constantly increasing worldwide. For instance, in Europe “*the GHG emissions from transport increased by 20% between 1990 and 2001 in the EEA-31<sup>19</sup> countries*” (EU 2007, p.4). Thus, many organizations suggest people to buy their products from the local farmers instead of big markets<sup>20</sup>. A fact that supports this argument is that many market companies purchase their products in the cheapest producer, wherever it is. What initially seems profitable for the customers actually has several uncounted costs for human life, such as the pollution and heavy environmental impact from production and transportation of these goods. A European Union report on climate change and international trade has shown that, taking into account the costs of CO<sub>2</sub> emissions at the EU territory, importing from European countries is more cost-effective than importing overseas in most agricultural and industrialized goods analyzed, especially due to the CO<sub>2</sub> emissions originated by long distance transportation (EU, 2007, p.12). Therefore, an IPCC report defends measures that provide a real or implicit price of carbon (IPCC, 2007, p.19). A carbon price “*is a tax on the carbon content of fuels (principally coal, oil, and natural gas)*” (WORLD BANK, 2007, p. 20). The implications of applying this kind of tax are reflected on private agents’ choices since it affects the productions costs.. Such policies would incentive producers and

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<sup>19</sup> EEA–31 are: Belgium, France, Italy, Luxemburg, Netherland, Germany, Denmark, Ireland, United Kingdom, Greece, Portugal, Spain, Austria, Finland, Sweden, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia, Bulgaria, Romania, Turkey, Iceland, Liechtenstein and Norway.

<sup>20</sup> This is also one of the main principles of the *locavore* movement, which stands for the consumption of products produced locally and of organic food. For more information: <http://www.locavores.com/how/> Last Accessed: 6/30/08

consumers, now conscious of the carbon weight, to invest in low-GHG products, technologies and processes. They would be encouraged to find more efficient ways to generate the energy needed for their business and by doing so they would be adapting their productive structure to climate change mitigation goals. There are also some controversial discussions condemning carbon taxation for harming competitiveness and causing the energy intensive industries leakage; however, this instrument is still considered one of the most effective ways to meet environmental objectives (WORLD BANK, 2007).

## **2.6. Competitiveness, Efficiency and Synergy**

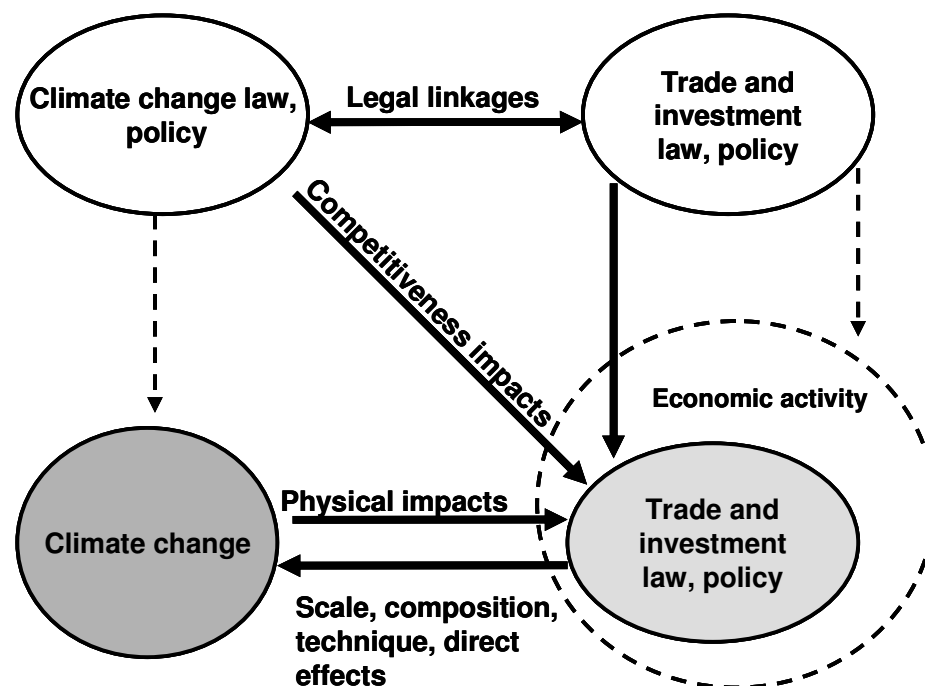
The recent discussions on the implementation of mitigation measures have drawn the international community's attention to the possible impacts on competitiveness, especially on the carbon-intensive industry, since the adoption of the UNFCCC. This claimed side effect of tackling climate change has been used by major emitters, such as the United States of America and Canada, to neglect the implementation of mitigation tools on the scope of the Kyoto Protocol (COSBEY and TARASOFSKY, 2007; CATHAM HOUSE, 2005). On the other hand, some scholars have defended that there are possible synergies brought by trade measures addressing climate change that foster sustainable development, considering those as mutually supportive matters (WORLD BANK, 2007).

The Annex I parties, mainly the developed countries, argue that the Kyoto Protocol measures applying different responsibilities for developed and developing countries regarding the limits of carbon emissions, can generate a distortion on competitiveness. Developing countries would be benefited from the emissions restrictions in the developed world, leading to an unfair competition due to the developed countries companies' need to adjust their operations so as to meet Kyoto standards. According to this view, the International Trade is a zero-sum game where the competitive advantages of one country will be the disadvantages of other country. The environmental policies would create trade diversion, transferring activities such as the energy-intensive industry from developed countries to developing ones that do not face carbon emission constraints – which is commonly named carbon-leakage (CATHAM HOUSE, 2005).

The prior understanding does not take into consideration the possible technological advances and economic improvements that will be made by implementing the Kyoto standards. The Catham House (2005) has stressed that *“Porter and others have found evidence that strong environmental regulation leads to improvements in technology and*

*know-how that may in and of themselves drive improved ability to meet Kyoto obligations at low cost”.*

The most recent approach regarding that emphasizes the linkages between trade and investment and climate change mitigation (figure 1). This line of thought defends that is possible to improve world’s production efficiency and consumption through environment-friendly measures. The synergies can come by fostering scale, composition, technique and direct effects of trade liberalization, taking advantage from market-based instruments.



**Figure 1 - Trade, investments and climate change linkages (COSBEY, 2007).**

The benefits can be drawn also from the production adaptation in order to achieve Kyoto’s targets. This strategy works within the Schumpeterian concept of “creative destruction” and innovation (SCHUMPETER, 2006), which means - in the climate change issue - that promoting reallocation and adaptation of some sort of production or opening new markets for climate-friendly goods would, for instance, raise the levels of trade and investment in the economy, inducing it to grow by addressing climate change (COSBEY, 2007).

There are also legal linkages that can be exploited from bilateral or multilateral agreements such as the Kyoto Protocol and the WTO regime. The interactions between these two legal systems can lead to two opposite side: conflict or synergy. Possible conflicts could

come, for example, from WTO's restrictions when applying processes and production methods (PPMs) barriers as an environment protection measure, which is denied by the World Trade Organization according to Assunção (2000). However, there are several contradictions that can be solved when dealing simultaneously with climate change policies and development. For instance, the WTO only allows tariffs at the most-favored nation (MFN) basis when they are used to foster development in developing countries – called Enabling Cause. Such tool could be extended to countries that make efforts to tackle climate change, stimulating them of doing so. Opportunities for synergies can also be found on bilateral and multilateral agreements focusing environmental standards, investments and government procurements (COSBEY, 2007).

### 3. PREVIOUS INTERNATIONAL ACTIONS

#### 3.1. The United Nations (UN)

The environmental debate within the UN organs reflects its growth and the increased concern in the international community.<sup>21</sup> Until 1968, none of the UN bodies raised the issue in terms of preservation of natural resources. During the UN Scientific Conference on the conservation and utilization of resources of 1949, for example, the central concern was the possibility of socio-economic development through the exploitation of these resources. Only after the later 1960s and the beginning of the 1970s, the Economic and Social Council has included environmental protection as a topic on the agenda.

The circumstance in which occurred the United Nations Conference on the Human Environment (Stockholm 1972) was the political impact raised by publications as "The Limits of Growth", published by the Club of Rome. The Conference, also known as the First Earth Summit, was suggested by the Economic and Social Council and endorsed by the General Assembly (A/RES/24/2581)<sup>22</sup>. The main outcomes of the UN Conference on the Human Environment, besides the consolidation of the environmental theme in the international agenda, were the creation of the UN Environment Program<sup>23</sup> and the support to the establishment of national organisms to supervise the environmental task.

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<sup>21</sup> For further information: <http://www.un.org/climatechange/index.shtml>. Last accessed on September 2008.

<sup>22</sup> UNITED NATIONS, doc. A/RES/24/2581, "United Nations Conference on the Human Environment". Available at: <http://www.un.org/documents/ga/res/24/ares24.htm>. Last accessed on September 2008.

<sup>23</sup> For further information: [www.unep.org/](http://www.unep.org/) Last accessed on September 2008.

Another result of Stockholm 1972 was the increased visibility achieved by the environmental issue among civil society. That made the United Nations Conference on Environment and Development (Rio de Janeiro 1992), also known as Earth Summit, an episode widely noticed by public opinion that congregated delegations from 172 countries (UNITED NATIONS, 1997). Although at the time the Rio Conference has been widely criticized, especially by anti-globalization groups, for its abstract rhetorical speeches, the Rio Declaration<sup>24</sup> was considered then a fundamental instrument of consensus among the countries on the importance of cooperation in order to avoid the degradation of environmental resources.

Besides the Rio Declaration on Environment and Development, which defined the duties of each State on the world environment protection, on May 1992, the delegations in attendance to the UNCED agreed to the Statement of Forest Principles<sup>25</sup> and to the Agenda 21<sup>26</sup>, a plan of action to promote sustainable principles for development, combining economic, social and environmental means.

Also, a relevant episode of the UNCED was the opening for signature of the United Nations Framework Convention on Climate Change (UNFCCC)<sup>27</sup>. The UNFCCC is the major legally binding instrument regarding climate change and sets the overall framework for intergovernmental efforts to address the issue. It establishes an objective, to achieve “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.”, and principles, commitments for different groups of countries, as well as a set of institutions to enable governments to monitor the Convention’s implementation and continue their discussion on how best to tackle the problem.

The Convention was signed by a great number of countries, being ratified by 192 and entering into force in March 1994. The first accomplishment of the UNFCCC is the

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<sup>24</sup> UNITED NATIONS, doc. A/CONF.151/26 (Vol. I) “Report of the United Nations Conference On Environment And Development.” Available at: <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm>. Last accessed on September 2008.

<sup>25</sup> UNITED NATIONS, doc. A/CONF.151/26 (Vol. III), “Report of the United Nations Conference On Environment And Development.” <http://www.un.org/documents/ga/conf151/aconf15126-3annex3.htm>. Last accessed on September 2008.

<sup>26</sup> For further information see the full text of “Agenda 21” at: <http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21toc.htm>. Last accessed on September 2008.

<sup>27</sup> Full document available at: <http://www.un-documents.net/unfccc.htm>. Last access: September 2008.

recognition of the climate change acceleration as a problem requiring global consciousness and cooperation. One more feature of the Convention is the division of responsibilities among the Parties to the agreement, with bigger tasks to industrialized countries and economies in transition, listed in the Annex I to the text of the Convention.

The UNFCCC, as a framework document, admits the inclusion of updated provisions, called “protocols”. The most important of those protocols, which became even more famous than the convention, was the Kyoto Protocol<sup>28</sup>, adopted in December 1997.

“The Kyoto Protocol supplements and strengthens the Convention” (UNFCCC, 2002, p. 21). Based on the original Framework established by the Convention, the Kyoto Protocol shares its objective and principles. The main difference is that this Protocol determined the “legally-binding emissions targets” and all Parties to it were subject to a set of general commitments. In order to achieve the Protocol’s targets, Parties will need to implement climate change mitigation policies and measures “at home”. The Protocol does not oblige governments to implement any particular policy, but gives an indicative list of them:

- Enhancing energy efficiency;
- Protecting and enhancing greenhouse gas sinks;
- Promoting sustainable agriculture;
- Promoting renewable energy, carbon sequestration and other environmentally-friendly technologies;
- Removing subsidies and other market imperfections for environmentally-damaging technologies;
- Encouraging reforms in relevant sectors to promote emission reductions;
- Tackling transport sector emissions; and
- Controlling methane emissions through recovery and use in waste management.

The Kyoto Protocol also presents three mechanisms in order to aid the Parties to cope with their commitments. The carbon market is probably the most notorious of these mechanisms and deals with emissions trading, consenting to countries below their established targets to sell their emission units to those countries that have excessive greenhouse gases production, in accordance to the Protocol. The other two instruments are the Clean

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<sup>28</sup> Full document available at: [http://unfccc.int/essential\\_background/kyoto\\_protocol/items/1678.php](http://unfccc.int/essential_background/kyoto_protocol/items/1678.php). Last access: September 2008.

Development Mechanism and the Joint Implementation, both offering the opportunity to countries with an emission reduction commitment under Kyoto Protocol to reach their targets cooperating with other Parties.

Only a few months before the adoption of Kyoto Protocol, in June 1997, the UN General Assembly called for a special session in order to review the implementation of the Agenda 21. Five years later, the World Summit on Sustainable Development<sup>29</sup> (Johannesburg 2002) had a similar proposal. Furthermore, the Johannesburg Summit intended to recommend practical procedures to achieve the propositions and commitments made by countries in conformity to the Agenda 21. The main source of criticism especially to the Johannesburg meeting, although it is also mentioned regarding the UNCED in Rio, is the enduring complexity of dealing with the environmental issue alongside to economic interests.

### **3.2. The World Trade Organization (WTO)**

Since its foundation, the World Trade Organization addresses the theme of sustainable development, to be achieved through the balance between market liberalization and social objectives<sup>30</sup>. The current discussions in the WTO forums elucidate much of the connection between trade and climate change issues, although the issue of climate change is not specifically predicted by the WTO rules.

By liberalizing environmental goods and services, the WTO rules aim at the facilitation of the access to products and technologies that can, for example, upgrade energy efficiency or natural resource protection. *“A successful outcome of the negotiations on environmental goods and services could deliver a triple-win for WTO members: a win for the environment, a win for trade and a win for development.”* (WTO, 2008) With regard to services, members of the WTO established, during the Uruguay Round, a Services Sectoral Classification List<sup>31</sup> (MTN.GNG/W/120) to establish parameters for evaluation and adjustment of the domestic policies aimed at climate change mitigation.

Moreover, the WTO understands the significance of exchanging information between national governments and international organizations to improve cooperation and coordination in climate change mitigation and adaptation measures. For that reason, there is a

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<sup>29</sup> For further information see the “Johannesburg Declaration on Sustainable Development” available at: <http://www.un-documents.net/jburgdec.htm>. Last access: September 2008.

<sup>30</sup> For further information on the establishment of the World Trade Organization see the “Marrakesh Agreement” available at: [http://www.wto.org/english/docs\\_e/legal\\_e/04-wto\\_e.htm](http://www.wto.org/english/docs_e/legal_e/04-wto_e.htm). Last access: September 2008.

<sup>31</sup> Available at: [www.wto.org/english/tratop\\_e/serv\\_e/mtn\\_gns\\_w\\_120\\_e.doc](http://www.wto.org/english/tratop_e/serv_e/mtn_gns_w_120_e.doc)

consensus that both the UNFCCC and the WTO rules are complementary in trade and environmental related discussions.

Additionally, the WTO has been looking for mechanisms to cooperate in the negotiation process of multilateral environmental agreements, although its most noticeable contribution to climate change issue is associated to negotiations on agriculture<sup>32</sup> and market access for non-agricultural goods<sup>33</sup>. Also, with regards to the agricultural goods, a central WTO debate at the moment concerns the biofuels sector.

The main topics of trade and climate change agenda discussed within WTO scope are examined by Committee on Trade and Environment and the Committee on Technical Barriers to Trade. Once the better allocation of resources, provided by free market performance, is believed as a way to increase developing countries' opportunities of access to necessary instruments and resources to their ecosystems protection, both WTO committees are concerned to ensure the balance between environmental and trade measures, to not pose unwarranted constraints one to another.

### **3.3. The World Bank (WB)**

Since the creation of the carbon market, the Bank has worked on the vanguard, by the establishment, in 1999, of the US\$ 180 million Prototype Carbon Fund, as the Kyoto Protocol was ratified. In 2006, the Bank became the first multilateral development bank to be carbon neutral and nowadays it manages over US\$ 2 billion in carbon funds. In December 2007, the World Bank launched two additional services, the Forest Carbon Partnership Facility (FCPF) and the Carbon Partnership Facility (CPF). The FCPF aims at reducing deforestation and forest degradation by compensating developing countries for carbon dioxide reductions realized by maintaining their forests, while the CPF predicts financial and technological return for developing countries that reduce greenhouse gases emission in exchange for carbon credits. Still, there is the proposition of a multilateral clean technology fund, initiated by Japan, the United States and the United Kingdom and managed by the World Bank that would support the adoption of clean technology in developing economies, which aims to garner US\$ 10 billion.

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<sup>32</sup> For further information: [http://www.wto.org/english/tratop\\_e/agric\\_e/negoti\\_e.htm](http://www.wto.org/english/tratop_e/agric_e/negoti_e.htm)

<sup>33</sup> For further information: [http://www.wto.org/english/tratop\\_e/markacc\\_e/markacc\\_negoti\\_e.htm](http://www.wto.org/english/tratop_e/markacc_e/markacc_negoti_e.htm)

However, before the carbon credit markets, the Bank has already shown its concern about the environmental issue through the creation of the Global Environment Facility (GEF), in 1991. The GEF<sup>34</sup> is a partnership gathering 178 countries, international institutions, non-governmental organizations and the private sector, which aims to assist countries in the accomplishment of their international commitments with environment protection. Hence, the GEF is nominated as the financial mechanism of a range of conventions and multilateral environmental agreements, such as United Nations Framework Convention on Climate Change (UNFCCC), the Stockholm Convention on Persistent Organic Pollutants (POPs) and the UN Convention to Combat Desertification (UNCCD).

In 2001, the Board of Executive Directors of the Bank approved, as a central strategy to the development and poverty reduction agenda, the document “Making Sustainable Commitments: An Environment Strategy for the World Bank”<sup>35</sup> The Strategy states three essential objectives to be pursued by national policies in order to accomplish the sustainable development goal: improving people's quality of life, improving the prospects for and the quality of growth and protecting the quality of the regional and global environmental commons.

Another example of World Bank’s previous action addressing climate change is the Clean Energy Investment Framework (CEIF). In 2005, at the G8 Summit in Scotland, the Bank was put in charge of a group of international institutions aiming at the development of a roadmap for accelerating investments in clean energy. This roadmap was named the Clean Energy Investment Framework and had its outlines published in April 2006 at the document “Clean Energy and Development: Towards an Investment Framework”. In September 2007 the World Bank Group presented an update on the execution of the CEIF Action Plan, the “Clean Energy for Development Investment Framework: Progress Report on the World Bank Group Action Plan”, regarding the three pillars of the CEIF: “(i) support for the energy sector, with an emphasis on the Sub-Saharan Africa energy scale-up plan; (ii) support for transitioning to a low-carbon economy; and (iii) support for countries to adapt to climate variability and change.” (WORLD BANK, 2007, p. 4)

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<sup>34</sup> For further information see: <http://www.gefweb.org/> Last accessed on September 2008.

<sup>35</sup> Document available at: <http://go.worldbank.org/FG6N5KLXP0> Last accessed on September 2008.

Given the magnitude of the climate change issue, the World Bank Group has understood that all the initiatives already put into practice were not sufficient. As the necessity for a multi-sectoral perception remains, the Bank has launched the Strategic Framework on Climate Change and Development (SFCCD)<sup>36</sup>, which is expected to be widely discussed in the next Board of Directors Meeting.

The SFCCD will focus on concrete actions within different sectors, as energy, transport, urban development, water, agriculture, forestry, industry, economic policy, and social protection. In order to reach its objectives, the SFCCD will take into account the specific requirements and priorities of each country. In addition, the partnerships and cooperation programs must be encouraged to facilitate the achievement of global effects.

The entire World Bank structure is committed in the operation of the SFCCD, including all the regional representations. The collaboration between a range of instances and World Bank institutions allows an effective information exchange and, therefore, raises the expectation for more tangible outcomes.

#### 4. BLOC POSITIONS

Considering the relations between international trade and climate change a recent issue on the international agenda, many countries have not yet defined policies on this specific matter. However, as stated by Murase (2003, *apud* RANGANATHAN 2004): “*both regimes are still evolving and are attentive of the differentiated interests and obligations of developed and developing countries.*”

##### 4.1. Developed Countries

As the World Bank’s largest shareholder, the **United States of America** has an essential role on key international development issues. The World Bank “*recognizes the United States as both a significant financial contributor and a steadfast partner in the effort to achieve the organization's overarching mission of poverty reduction in developing countries*”<sup>37</sup>. The United States, world’s largest GHG emitter, has not ratified the Kyoto Protocol and “*has conditioned its entry on further engagement of major developing country emitters, such as China and India*” (WORLD BANK 2008, p.3). The American withdrawal of

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<sup>36</sup> For further information: <http://go.worldbank.org/B9X9UXG100>. Last accessed on September 2008.

<sup>37</sup> WORLD BANK. <http://go.worldbank.org/4C9X0UE3X0>. Last Access: 08/07/2008

the Kyoto process finds its prime motivation on competitiveness issues due to the disparity of commitments on the Kyoto regime. However, in the last years, the United States position on climate change matters is slowly becoming more committed to the global concerns. The country, together with the United Kingdom and Japan, has launched the Clean Technology Fund to provide financial assistance to developing countries to deploy clean technology and reduce their GHG emissions. Recently, it was announced by the US treasury that the Clean Technology Fund would aim to garner up to US\$ 10 billion over the next three years<sup>38</sup>.

The World Bank's second largest shareholder, **Japan** has demonstrated an outstanding position towards climate change. Since the 1990s, the country has developed several actions to tackle the problem, such as the Action Program to Arrest Global Warming (1990), the Basic Policy on Measures to Tackle Global Warming (1999), and the Outline for Promotion of Efforts to Prevent Global Warming (1998, 2002). However, most of the Japanese initiatives to reduce GHG emissions are voluntary, due to the lower institutional obstacles. In April 2005, as part of the Kyoto Protocol commitments, a Kyoto Protocol Target Achievement Plan, which sets the policies to effectively respond to the problem and accomplish the reduction target of 6 percent in GHG emissions, has been adopted. Through this plan, Japan has adopted market-based instruments to combat climate change, as the voluntary emission-trading scheme (ETS) that *“seeks to implement measures to promote cost-efficient emission reductions and to accumulate knowledge and experience in domestic ETS”* (WORLD BANK 2008, p. 22t). The Japanese government also subsidizes companies that wish to improve their facilities in a way that reduces GHG emissions. Furthermore, the government has also implemented studies to apply fiscal measures such as a carbon tax, in order to compensate disparities from the Kyoto regime.

**European countries** have an important role in the Bank's decision, being represented among the largest shareholders by **France, Germany and the United Kingdom**. Moreover, at the Board of Executive Directors, other European nations represent their constituencies, such as **Italy, Norway, Belgium, the Netherlands and Switzerland**. Regarding the present matter, the European Union is fully committed to climate change mitigation. At the domestic level, since 2000, *“a comprehensive package of policy measures to reduce greenhouse gas emissions has been initiated through the European Climate Change Programme (ECCP)”* (EC, 2006, p.5). As stated by the European Commission about post-Kyoto regimes (2007, p.

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<sup>38</sup> WORLD BANK. <http://go.worldbank.org/RT764ZXDW0>. Last Access: 08/07/2008

5): *“The EU is ready to cut its emissions to 30% below 1990 levels by 2020 if other industrialized countries agree to do likewise under a new agreement. Pending an agreement, and to set an example to its partners, the EU has committed to reduce emissions by at least 20% in any case.”*

As part of the European Union’s measures to tackle climate change, the EU Emission Trading Scheme became operational in 2005, limiting CO<sub>2</sub> emissions from 11,500 facilities in its 25 member States through the allocation of emission allowance by members; allowances are tradable in a way that reduces compliance costs. Despite such mechanisms, member states are also encouraged to develop domestic actions that complement the ECCP efforts. For instance, the United Kingdom has introduced, as part of the United Kingdom Climate Change Programme, a climate change levy on energy to nondomestic use and set the U.K. Emission Trading Scheme, the first economy-wide greenhouse gas emission trade scheme.

Regarding climate-trade issues, the European Trade Commissioner, Peter Mandelson, proposed, in December 2006, negotiations in order to lower tariff and nontariff barriers on climate friendly manufactured goods (BREWER, 2008). Almost one year later, the European Union and the United States made the same proposal, suggesting a list of 43 manufactured goods for trade liberalization. Nonetheless, *“the E.U. - U.S. proposal for negotiating zero-level tariffs on climate friendly goods in the WTO was greeted with hostility - at least on the part of the Brazilian and Indian governments”*<sup>39</sup> (BREWER 2008, p.12). Concerning the European Union relations with the United States on that matter, it is relevant to add that it is increasing the domestic industry pressures to the Union sanction the United States exports with a Kyoto tariff, in order to compensate losses in competitiveness. The World Bank (2008, p. 12) pointed out that the *“EU ‘Kyoto tariff’ may hurt the United States trade balance”*, resulting in a general loss of 7 percent in U.S. exports to the European Union; and, on energy-intensive industries, such tax may cause losses up to 30 percent.

#### **4.2. Developing Countries**

Developing countries have much more constraints in dealing with environmental issues than developed ones. Not only because of the costs of repairing eventual damages caused by the climate change effects, but mainly due the dependence of its national economies on the exploitation of natural resources. A stricter regulation for pollution,

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<sup>39</sup> The Brazilian Government opposition to the proposal is most based in the omission of biofuels from the E.U. – U.S. list.

deforestation or certification of products, for example, is also embarrassed by the economical vulnerability of these countries.

The BRICs, group of countries that includes Brazil, Russia, India and China, assume an outstanding role when the question is on the demands for international support to the developing countries. These four countries are thought at present as the main emergent nations by their demographic and productive potential power (O'NEILL, 2001). In spite of the notable differences between the necessities and the national projects of the BRICs, they are all signatories of the Kyoto Protocol and of the United Nations Framework Convention on Climate Change.

**Russia**, the country with higher GNP per capita within the BRICs, is reinforcing its favorable position on trade liberalization, in spite of some internal divergence inside the Russian government, since it became an official member of the G8, in 1997. Like any other member of the G8, the country is also target of protests and popular manifestations against practices that increase global warming. At present, the main issue for the country, which also concerns other European countries and especially the United States, is the impact of the climate change in the Arctic and the potential of the energetic resources existent there. The Deputy Minister of Foreign Affairs Alexander Yakovenko declared during a meeting with the Executive Director of the United Nations Environment Program (UNEP) that Russia is interested in *“building up international cooperation under the aegis of UNEP”* and additionally that *“Russian side also supports bolstering UNEP ties with other organizations of the UN system and continuing the policy to expand and strengthen the Program’s regional presence”* (RUSSIAN FEDERATION, 2008).

**India**, on the other hand, is the country with the lower per capita income of the group. The country has a national program of Clean Development Mechanisms and more recently launched a National Climate Change Plan, which focuses specially in the energy resources, by aiming at the increase of solar energy usage and facilitating trade in energy saving certificates. Together with China, India sees in the cooperation with Russia and Brazil as an opportunity for guaranteeing its energy supply, once both China and India are two major importers of this kind of resources, and Russia and Brazil have capacity to fill out a significant part of this demand.

**The Chinese government**, similarly, focuses on the coordination of BRIC countries speeches to strengthen the position of the emergent economies at the international forums. According to the Trade Policy Review of WTO: China 2008, *“the country is deepening its*

*trade liberalization since 2006, which resulted in annual real GDP growth rates in excess of 10 percent over the past four years, rising per-capita income and poverty reduction”* (WTO, 2008). China has also launched a national climate change plan, in 2007, in which the Chinese government announces its will to cooperate with sustainable development, by investing in clean energies exploitation. At the same time, despite being one of the top greenhouse gases producers, China has refused to accept the restraint to its carbon emissions rate, while claiming that this is a responsibility of the developed countries.

**Brazil** also proposes “*to set differentiated emission reduction targets for Parties according to the impact of their historic emissions on temperature rise*”<sup>40</sup> since 1997, during the negotiations on the Kyoto Protocol (UNFCCC, 1997). Like other integrants of the BRICs, Brazilian policy-makers understand that the viability of sustainable development depends on the investment in sustainable energies. According to the Brazilian Minister of Foreign Affairs, the ethanol fuel could be the answer not only to reduce the vulnerability on the external accounts of developing countries, but also to prevent the deepening of the global warming and all the consequences produced by this phenomenon. The Brazilian government further affirms that the production of the fuel using sugar cane will not increase the deforestation and must not be associated to the recent boost on the food prices – having this last position been recognized by the UN in the beginning of this year. The Brazilian government believes that trade liberalization on biofuels is fundamental to the progress of climate change mitigation.

**Latin American** leaders in general are concerned with climate change effects and the constraints that might be produced by environmental disorders. The region is a concern to the international organizations, especially because it is one of the richest territories in terms of natural resources. As in the other regions, the World Bank (2008) considers that investments in mitigation and adaptation mechanisms are not only more reasonable in terms of guaranteeing the regional growth and development, but also a preventive action, which is assumed to cost less to the world economy.

Once the power supply or vulnerability is considered to be one of the main constraints to development and economic growth, the energetic resources are expected to be the central distress to the developing world. Therefore, the **OPEC members**<sup>41</sup> emphasized during the Third OPEC Summit of Heads of State the protection of the planet’s environment as a primary theme to be discussed by this group. The Organization of Petroleum Exporting Countries considers the developed countries as the main responsible for global warming progress, since their industries’ evolution is the origin of the increase of greenhouse gas

emissions. The path to protect the environment without compromising the economic growth of developing countries, according to Abdalla Salem El-Badri, OPEC Secretary General, would be investing in technology cooperation (OPEC, 2007). The technological solution must aim at cleaner procedures to fossil fuels exploitation, since these are expected to maintain a central role on the world's energy supply. The Organization believes that investing in technology might be worthy also to increase energy access to the poorest.

Several specialists point out the **African continent** as the most vulnerable region of the globe if confronted with an increase of climate changes. The African countries' contributions to generate the greenhouse effect are minimal, due to its low carbon emission levels; however, they are more prone than any other region to suffer with the implications of the changes in climate regimes. The impacts of climate change in Africa will be related to the following matters: food security, water resources, human health, settlements and infrastructure and desertification (TRADE UNION AFRICAN CONFERENCE ON LABOUR AND THE ENVIRONMENT, 2006; IPCC, 2001). This is caused by three basic assumptions: the first is their limited capacities for adaptation due to the countries low levels of development and weak institutions; the second is their dependency on climate-sensitive sectors such as agriculture (one third of the national income in Africa comes from agriculture), forestry and tourism; and the third is their geographic condition which tends to facilitate droughts, floods and extreme weather events in Africa (IMF, 2008).

The possible impacts of climate change can easily create a food crisis in southern Africa, which already suffers of food shortages (UNFCC, 2007). Trade liberalization is often viewed by African countries as a way to reduce rural population income, contributing for perpetuating famine in the region. The World Bank and the International Monetary Fund programs are also seen with skepticism by some governments and members of the civil society as imperialistic impositions aiming at supporting foreign businessmen (FRIENDS OF THE EARTH, 2002). African governments have tried to link tackling climate change in the scope of the development progress. The African Union has approved the declaration Assembly/AU/Decl.4(VIII) in 2007 that recognizes its members limitations and vulnerabilities, then urging them *“to ratify the Kyoto Protocol, to undertake awareness of sustainable development initiatives, to encourage the transfer of technology among developing countries, to integrate climate change adaptation strategies into sub-regional development policies”*, among other more specific guidelines (AFRICAN UNION, 2007).

Most of the climate change debate placed within the developing countries governments regards to the importance of adapting their development goals to sustainable mechanisms. They are also concerned with keeping the national growth process despite the need for adaptation. Nevertheless, several developing countries have already addressed sustainability as a main topic of their national and international agendas. Given that the impact of climate change will have an effect on all the regions of the planet, developing and developed countries included, the World Bank is convinced that international collaboration will be required to overcome this challenge.

## **5. QUESTIONS TO PONDER**

1. How do climate change and trade liberalization relate to the World Bank scope? In which way can the Bank get engaged in such matters? What kind of projects or loans should the Bank approve to reinforce this relationship?
2. Is trade liberalization a good approach to climate change mitigation? How can trade liberalization affect poverty reduction worldwide? How does that affect climate change adaptation and mitigation? What kind of linkages can be identified on this relationship?
3. Why are the disparities between the developed world and the developing world so harmful for addressing climate change? The Kyoto concept of “common but differentiated responsibility” should be reinforced in this context?
4. What are the main points concerning competitiveness issues under the Kyoto Regime and the WTO/GATT interaction? Are the efforts to combat climate change harming the international economic competition?
5. Would measures such as carbon taxation be adequate to tackle climate change or the side effects of this kind of policy would impede the implementation of this mitigation strategy? What else could be addressed to combat climate change?
6. How can environment-friendly products be stimulated in order to contribute for climate change adaptation and mitigation substantially?
7. What should countries do to improve their efficiency in order to reduce carbon emissions? How could technology transfer spread the benefits of efficiency to the

developing world? Are there positive consequences of this transference for developed countries?

8. Should the post-Kyoto regime consider trade issues in its objectives? How can the World Bank help to increase the dialogue and synergies between trade liberalization and climate change agendas?
9. Are there international trade policies that can benefit both developed and developing countries within the framework of climate change mitigation? What kind of policies should be taken into account?

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