Kyoto in the Mediterranean: Climatic Risks, International Agreements and Economic Opportunities

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On the 16th February 2005 the Kyoto Protocol came into effect, after seven years of finalizing negotiations and thirteen years after adopting the United Nations Framework Convention on Climate Change in Rio de Janeiro. Finally, an international treaty sets objectives so that developed countries reduce or limit their greenhouse gas emissions (GHG). The fulfilment of this objective, pursued for a long time by the European Union, will have some interesting implications on the Mediterranean.

The Mediterranean's Exposure to Climate Change

Although the scientific consensus on the existence of climate change impelled by human activity is already very strong (IPCC, 2001), the regional studies on the climate change's impact still contains a significant level of uncertainty. However, it seems well established that the Mediterranean climate could suffer important changes, even under intermediate or conservative scenarios of an increase in GHG emissions and of the average global temperature (Giannakopoulos *et al*., 2005). In this way, for the years 2031-2060 the average temperature may increase between 1 and 3 °C, the increase being more intense inland than on the coast. Similarly, there will be a substantial increase in the number of extremely hot days as well as an increase in heat waves, especially on the southern shore. Also, a general rainfall shortage is expected, which will be more noticeable during the summer and in the southern Mediterranean countries. On the other hand, on the northern shores, an increase in torrential rain is predicted.

The south Mediterranean, together with the Iberian Peninsula, Italy and the Balkans, will also be affected by an increase in the risk of fires. With regards to biodiversity, it is likely that the climate change will provoke a large increase in the risk of extinction of certain species. Likewise, a general reduction in agricultural yield is to be expected, which could be more acute due to the reduction in water availability. Finally, it has also been foreseen that the climate change may modify northern European tourist habits and that the increase in sea level, although moderate in the Mediterranean, may particularly affect the highly populated Nile Delta. To resume, the effects of climate change in the region can be serious and damage very significant economic sectors, such as tourism and agriculture, as well as important human settlements.

The Developed Countries Agreements

The Kyoto Protocol obliges industrialized countries to globally reduce their GHG emissions by 5% between the base year (1990 for the main gases) and the period 2008-2012. However, this is a differential agreement, in the way that the percentages vary from country to country (Grubb, Vrolijk and Brack, 1999). In order to concentrate on this yearbook's topic of interest, the EU15 group has to reduce its emissions by 8%, which is the same as Bulgaria, Slovakia, Slovenia, Estonia, Latvia, Lithuania, Czech Republic and Romania; Hungary and Poland have to reduce them by 6%; and Croatia by 5%. During the so-called *Agreement on Emissions Trading,* adopted in June 1998, the Fifteen Member States Union distributed the emission units' quota unevenly amongst its Member States. In this way, Luxemburg will have to reduce its emissions by 28%, Germany and Denmark by 21%, Austria by 13%, United Kingdom by 12.5%, Belgium by 7.5%, Italy by 6.5% and the Netherlands by 6%. Finland and France have agreed to not increase their emissions, Sweden will limit its growth by 4%, Ireland has to do the same by 13%, Spain by 15%, Greece by 25% and Portugal by 27%.

On the other hand, the rest of the Mediterranean countries emissions (mainly the southern and eastern coasts) are not subject to any international agreement to reduce or limit their emissions, and therefore, can develop freely. It is worth pointing out that neither Cyprus or Malta have any obligation to reduce emissions, as they do not form part of the OECD they are not considered developed, nor Turkey, which states that its membership to this organization should not be interpreted as an indicator of its level of development.

It is turning out to be complicated to fulfil Kyoto's objectives, in particular for Spain, Portugal, Italy, Ireland and Greece, although not only for these countries. According to the European Environment Agency (EEA, 2005), in the year 2003 the EU15's GHG emissions were 1.7% less than in 1990, still far from the reductions according to the Protocol. The future projections are not very optimistic either. The policies that are already being implemented will only be able to reduce the EU15's emissions by 1.6% between 1990 y 2010. If we add the measures that are in the planning phase to the ones in place now, the reduction will reach 6.8%. Upon fulfilling the EU15's agreements, the acquisition of rights of emission will be obtained. On the other hand, emissions have been reduced substantially in almost all of the new member states, which have experienced restructuring or the disappearance of very contaminating industries and with very high levels of energy consumption. According to the report mentioned before, in 2003 these emissions were 32% less than in the base year, although it is expected that there will be a substantial increase leading up to 2010.

In order to fulfil its objectives, the Kyoto Protocol has established three *Flexible Mechanisms*. In the first place, the Rights of Emissions Trading Scheme will allow those states which exceed their agreement to sell excess GHG emissions to those states which do not reach their targets. It is expected that this exchange is particularly intense between the EU15 countries and central and western European countries. Secondly, by means of "Joint Implementation", the developed countries (or other agents that are authorized by the developed countries) will have the possibility to invest in other northern countries and in this way acquire the emissions which they have been allowed to save. This formula is called the Clean Development Mechanism (CDM) when the investing country is from the north and the receiving country from the south. One would have to expect that this last option would give rise to a certain exchange of emission rights projects between both Mediterranean shores.

Economic Opportunities: The Clean Development Mechanism and its Funding

Unlike the other two mechanisms, which will not begin to function fully until 2008, the CDM projects are already being currently developed. In this way, the northern countries are conforming to the *Memorandum of Understanding* with the southern countries and as a result of this agreement the first experiences are beginning to unfold, normally after overcoming numerous controls and national and international administrative procedures. This is a sector in expansion and therefore it is very changeable: there are hundreds of projects being negotiated, but there are only a few that are being implemented already.

However, judging by the information supplied by the CDM Executive Committee, in the report elaborated during 2005's second semester by the EU's British Presidency, and by the specialized CDM Watch NGO, it appears that those European states which are committed to limiting their quota of emissions are not prioritizing the CDM implementation with the southern or eastern Mediterranean countries. The main bulk of this type of investment is assigned to the big southern countries in process of industrialization (Brazil, India, China and South Africa) and Latin American countries, although this tendency is not so marked in the cases of Italy (which develops projects in the Balkans), Spain (which has signed a memorandum with Morocco) and France (which has projects in Morocco and Tunisia). In general, then, the Mediterranean states which are disposed to receive CDM are focused on a small number of projects.

Finally, we tackle the question of finance, which for the time being displays a similar pattern to the one which was pointed out above. The large industrialized southern countries and the Latin American countries absorb a significant part of the funds associated with the international regime for the struggle against climate change and southern and eastern Mediterranean countries do not receive funds on the same scale. The regime is financed by three funds, managed at this time by the Global Environment Facility (GEF), which is at the same time administered by the World Bank. They are the Special Climate Change Fund, the Least Developed Countries Fund and the Adaptation Fund. At the time of writing this document, and according to the information given by the GEF, the Popular Republic of China has received around a fifth of the funds allocated to individual countries, Brazil, Argentina and Mexico together have received more than 15%, and India close to 7%. On the other hand, the amount for Mauritius, Morocco, Algeria, Tunisia and Libya added together did not exceed 4%; neither did Egypt, Jordan, Syria and Lebanon together. Albania, Serbia-Montenegro, Croatia and Macedonia hardly exceeded 2%; and those countries which joined the EU in 2004, together with Romania and Bulgaria, did not reach 6%.

As a conclusion, the enforcement of the Kyoto Protocol imposes on those regions susceptible to climate change a set of obligations which are difficult to fulfil, and offers them opportunities which appear to not be fully taken advantage of.

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Additional information

Clean Development Mechanism Watch: www.cdmwatch.org

Report from the EU Council Presidency, second semester of 2005: *EU Investment in the Kyoto Mechanisms*, http://europa.eu.int/comm/environment/climat/pdf/eu_mechanisms_kyoto.pdf

United Nations Framework Convention on Climate Change: www.unfccc.int