Climate change: the cost of Inaction and the Cost of Adaption

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1 Introduction

Global climate change is an anthropogenic induced phenomenon that threatens to disrupt the natural and environmental equilibrium of our planet. Significant changes in climate are already visible globally, and are expected to become more pronounced in the future. These will lead to wide ranging impacts on the natural and man-made environment across different sectors and regions, which in turn will lead to economic costs. These costs are known as 'costs of inaction' and are used to inform public as well as politicians about the economic implication that climate change might cause in the near and far future. Considering the importance of climate change, European Union and other parts of the world have started developing new strategies and policies in order to adapt to this new situation. Obviously, adaptation (and mitigation) has several economic aspects that need to be taken seriously in mind.

This report aims to present as much of the work, that is being done concerning the economic effects of the climate change cost of inaction and adaptation, as possible. Special emphasis will be given to the case of Cyprus, which is a small island in the Mediterranean Sea and it is expected that it will face significant problems because of the climate change.

2 Institutional Infrastructure

2.1 The problem worldwide

Global climate change is a worldwide problem. For this reason, many international organisms have conducted research regarding its impact on many sectors including the economy and the costs of adaptation, mitigation and inaction to Climate Change.

The Intergovernmental Panel on Climate Change (IPCC) is a scientific intergovernmental body set up by the World Meteorological Organization (WMO) and by the United Nations Environment Program (UNEP). The IPCC was established to provide the decision-makers and others interested in climate change with an objective source of information about climate change. In 2007, three IPCC working groups published three reports regarding several aspects of global climate change. The Working Group II published a report called "Impacts, Adaptation and Vulnerability". This report, among others, provides a complete assessment of the impacts of climate change on major regions of the world (Africa, Asia, Australia/New Zealand, Europe, Latin America, North America, polar regions and small islands), considers responses through adaptation and explores the synergies and trade-offs between adaptation and mitigation. The Working Group III published a report called "Mitigation of Climate Change". This report presents an analysis of costs, policies and technologies that could be used to limit and prevent emissions of greenhouse gases, along with a range of activities to remove these gases from the atmosphere.

UNEP is another international organism that had done some serious work regarding adaptation and mitigation to climate change activities. UNEP's work includes training workshops, international meetings and training support to countries.

United Nations Development Programme (UNDP) has a special department working on adaptation to climate change. UNDP is uniquely positioned to help developing countries better cope with climate change by supporting adaptation efforts in several ways like integrating climate change risks into UN programming, integrating climate change risks into national development policies, plans and strategies and identifying financing for adaptation initiatives.

United Nations Framework Convention on Climate Change (UNFCCC) is an international treaty, which focuses on ways to reduce global warming and to cope with whatever temperature increases are inevitable. UNFCCC characterizes adaptation to climate change as vital in order to reduce the impacts of climate change that are happening now and increase resilience to future impacts. The UNFCCC web pages on adaptation highlight the negotiations and action being carried out on adaptation by governments and stakeholders as guided by the Convention.

European Union had always been very sensitive regarding environmental issues. European Commission, in particular, has published several articles papers concerning the economic impacts of climate change.

The World Bank is a vital source of financial and technical assistance to developing countries around the world. World Bank has a special website about environmental issues and gives lots of attention to global climate change. World Bank has a department, which coordinates the efforts on adaption to climate change.

2.2 The problem in Cyprus

In Cyprus, unfortunately, not many people are working on the problem of identifying the costs that the island will have to pay in order to adapt to the climate change. Even though Cyprus was among the countries that signed the Kyoto protocol, still not much has been in the island in terms of adapting and mitigating to climate change.

Theodoros Zachariadis, who is an assistant professor at the Department of Agricultural Sciences, Biotechnology and Food Science of the Cyprus University of Technology, is the representative of the Ministry of Finance of Cyprus, for matters regarding the economic impacts of climate change, in the European Union. He conducted a study, which provides a long-term forecast of electricity consumption in Cyprus up to the year 2030. Using an econometrically estimated model, he calculated that electricity consumption in Cyprus will be 2.9% higher in 2030 than in the reference scenario. This will lead to a welfare loss because of higher electricity costs faced by both households and enterprises. These costs are estimated at 15 million Euros in 2020 and 45 million Euros in 2030; for the entire period 2008-2030 the present value of costs may exceed 200 million Euros (all amounts expressed in constant Euros of 2007).

Several ministries and authorities should be responsible for assessing the climate change economic effects for Cyprus. These are the Ministry of Agriculture, Natural Resources and Environment, the Ministry of Finance, the Ministry of Labor and Social Insurance, the Ministry of Commerce, Industry and Tourism and the Cyprus Tourist Organization.

3 Bibliography

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4 Research that needs to be done in Cyprus

As stated in previous sections of this report, Cyprus' economic sector will probably be strongly affected by the climate change. Moreover, the fact that basically nothing has been done in order to assess these economic implication is undeniable. For this reason, government, non-governmental organizations, media and the scientific community of the island must act as quickly as possible in the direction of identifying, on the one hand, the economic implications of the island in case of inaction and, on the other hand, in case of adaption and mitigation for climate change.

As far as I am concerned, a big conference, which will give the opportunity to every national authority, ministry, organization or individual to contribute to the research that should be done concerning the economic impacts of climate change in Cyprus, should be organized. However, before this happens, the politicians should take immediate actions in the direction of making the problem of climate change and its economic effects known to the public. I have the impression that people in Cyprus have not realized yet that our island is and probably will be very much affected by global warming and climate change. Cyprus' economy cannot handle very easily a situation where sea level rise will destroy the island's tourist infrastructure and everybody must realize this.

The European Environmental Agency (EEA) has published a technical report called "Climate change: the cost of inaction and the cost of adaptation". A conclusion that this report has come up to is that "*Non-market damages, indirect effects, horizontal inter-linkages, and the socio-political implications of climate change are also still poorly understood. There is a particular gap on methodological issues for the economic costs and benefits of biodiversity*". The same problem exists in Cyprus and national authorities should conduct some research on this subject. In the same report it is also stated that "*However, the linkage between costs of adaptation versus residual damage and costs of mitigation is very weak. There is little information in fact that shows (a) how adaptation costs compare to the potential damages of not adapting and (b) how the adaptation costs would change if there were more mitigation".* In Cyprus, both the cost of adaptation and the cost of non adaptation are unknown. In my opinion, every financial authority in Cyprus-and especially the Ministry of Finance- should conduct studies assessing these costs as soon as possible.