The Effect of Climate Change in the Case of Cyprus

In recent years, global warming and climate change are becoming more and more serious and the environment protection is one of the most important problems in the countries' sustainable development. But what is climate change? What are its impacts? And how can we control it? To more clarify the issue this brief report wants to answer these questions in the case of Cyprus island.

According to the United Nations Intergovernmental Panel on Climate Change (IPCC), "climate change is a change in the state of the climate that can be empirically identified by changes in the mean and/or the variability of climate properties and that persists for an extended period, typically decades or longer" (Zachariadis, 2012). It points out any kind of changes in climate over time, whether with a source of natural variation or due to human activities. As anthropogenic emissions of greenhouse are known as initial reasons of climate changes, it seems that controlling these emissions specially in CO2 part can meaningfully help stabilize the earth's climates. Thus, today, the United Nations Framework Convention on Climate Change (UNFCCC) mostly concentrates on anthropogenic climate change (Zachariadis, 2012).

In Europe, the Mediterranean region is anticipated to endure the most adverse climate change effects. Thereby, as Cyprus is situated in a hot and humid spot, it is projected to face a substantial temperature rise and a decline in rainfall levels. New research confirms that the Europe has warmed more than the global average (1.0 and 1.2°C, respectively), (EEA, 2008) and a rate of increase in the annual average temperature in Cyprus, has been 0.01°C per year (Fig. 1) (Shoukri & Zachariadis, 2012). So, the outcome will be a serious negative effects of climate change in various sectors, in the coming decades. In other words, adverse effects will be demonstrated on the nature, water availability, agricultural production, energy needs human health, tourist inflows and so on.

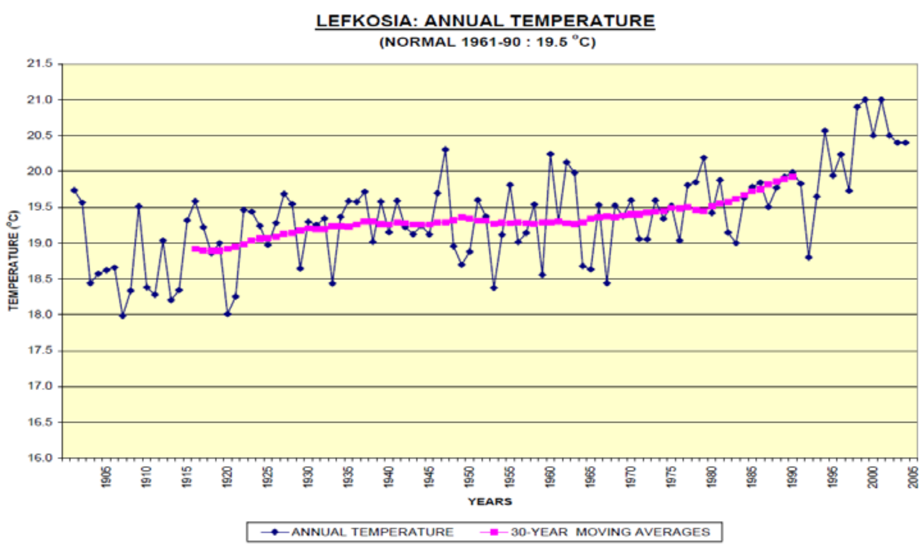

Figure 1: Lefkosia (Nicosia) annual temperature

Critical water rareness is truly highlighted by the Water Exploitation Index, which reaches about 45%, showing severe stress on water resources and unsustainable water use of Cyprus (Eurostat, 2010). Furthermore, this country possesses the lowest amount of annual freshwater resources per capita among the EU (European Commission, 2007). So, as a result of climate change, the island has already experienced severe droughts and water rareness, and the most pronounced recent one was in 2008, where it had to import water from Greece. Moreover, in 2007, “it extracted more than 100% of the groundwater available for annual abstraction” (Eurostat, 2010).

Over-exploitation of natural resources, bad land use practices and unsustainable development have rendered ecosystems more vulnerable to climate change. The impact of climate change on our ecosystems, create chain effects which can intensify global warming, since ecosystems play a significant role in climate regulation. Therefore, the severe summer droughts lead to decrease productivity, more extensive forest fires and, finally, desertification in some parts of the island. Meanwhile, water rareness and heat stress in the country are expected to cause an intensified number of forest mortality events that will unfortunately affect forest diversity (Zachariadis, 2012).

Consequently, as mentioned, such effects are not inevitable. Deal with climate change is possible, provided that proactive actions are taken by both the public and the private sector. On the other hand, adaptation to climate change will include both private and public expenditures which, if carefully put into effect, might help the society avoid larger costs of serious climate change induced damages in the future.

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