Yannis Stournaras: Climate change - challenges, risks and opportunities

Speech by Mr Yannis Stournaras, Governor of the Bank of Greece, at the 23rd Annual Conference of the European Association of Environmental and Resource Economists (EAERE) Dinner, Athens, 30 June 2017.

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It is a great pleasure for me to be with you today on this occasion and have the opportunity to share my thoughts on the environmental challenges that the world is facing. These challenges are now more important than ever before. In the World Economic Forum report[1] for 2017, three out of the five top risks, in terms of impact, are environmental and all three of them relate to climate change[2].

Climate change and global warming are associated with human activities and in particular the use of fossil fuels and carbon dioxide emissions. The current and projected implications for the society and for sustainable development are such that we cannot continue with the «business as usual» scenario – we need to mitigate and drastically reduce emissions by adopting energy efficiency practices, financing "green" energy, promoting energy saving investments, using energy saving techniques, conducting energy management and finally by boosting low carbon circle economy.

Yet, the character and severity of the impact from climate extremes depend not only on the extremes themselves, but also on exposure and vulnerability[3]. Therefore, apart from mitigating, we also need to manage risks and adapt to the changing climate.

Traditional environmental problems have been dealt with only locally[4]. In the case of climate change, the “mother of all externalities”[5], it is the emissions of all sources in all nations that determine the concentration of greenhouse gases in the atmosphere. Therefore, the problem is a public good one[6] and solutions need to be universal. This provides motivation for collective global action, yet, as no independent action will solve the issue, this situation creates free-riding incentives and difficulties with the compliance to international climate agreements, as currently demonstrated by the Trump administration.

As much of the impact of climate change fall on future generations, poverty, equity and justice are key issues for international climate change policy. Ethical issues are also raised as to how to allocate the remaining carbon budget[7], how “the polluter pays” principle is implemented, and how to commit the current generation to sustain the environment for the future one. As my colleague, the Governor of the Bank of England, Mark Carney stated in his 2016 speech on the climate paradox “climate change is a tragedy of the horizon which imposes a cost on future generations that the current one has no direct incentive to fix” [8].

In 2015 in Paris, countries committed themselves to cutting down carbon emissions and limit the rise in average global temperature[9]. The Paris Agreement that came into force in November 2016 brings nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects, with enhanced support to developing countries. To date, 148 countries have ratified the agreement and although there are no legally binding targets, countries have agreed on a monitoring and reporting process that is binding and a 5-year reassessment of the collective progress[10].

Yet, research shows that more effort and commitment is required[11]. There is a significant acceleration of climate action, however, current targets may not be enough to keep the temperature rise below the 2°C limit and the world needs timely revision of national contributions

within a global framework of deep decarbonisation of national energy systems.

There are definitely significant risks as well as opportunities along the way: Physical risks that arise from climate related events, and transition risks that arise from the decarbonisation process. In this process, companies might suffer costs, valuation losses and serious disruptions. But opportunities might also arise, related to the creation of new products of renewable energy and investment in energy saving and new infrastructure.

Hence, in the transition to a low carbon economy, disclosure and transparency are very important. These will allow markets to lead the transition[12], price the cost of doing business, price the risk that relates with climate change, as well as assess the value of new business opportunities.

Working towards a solution to the problem of climate change, the work of environmental economists is of utmost importance.

Environmental economics has had a major contribution towards understanding contemporary environmental and resource problems. Also, both theory and applied tools of environmental economics have been directing policies and informing decision-makers in addressing environmental challenges, such as the creation of markets for pollutants or the instruments for the conservation of ecosystem services.

Yet, there is still a lot to be done and the work of environmental economists will provide valuable guidance along the way.

It is this kind of guidance that we are also endorsing at the Bank of Greece, where we have set up an interdisciplinary committee of scientists to help us assess the impact of climate change and inform policy-makers.

Since 2009, working alongside climatologists, physicists, biologists, engineers and social scientists, environmental and energy economists have assessed the impact of climate change for the Greek economy and studied the economic, social and environmental implications of climate change in Greece. This work highlighted the wealth of Greece's natural resources but it mainly exhibited the risks to the country's natural and human environment, as the impact of climate change on all sectors of the national economy was found to be adverse and, in certain cases, extremely adverse.

In 2011, it was estimated that under a scenario of inaction regarding climate change, Greek GDP would drop by an annual 2% by 2050 and even more by 2100, while the total cumulative cost for the Greek economy over the period extending till 2100 would amount to €701 billion[13] [14].

Successful international mitigation policy was estimated to reduce the cost of inaction by 40%, while adaptation policy, necessary as a damage control measure, would total €67 billion. However, the adaptation measures do not fully eliminate, but merely contain the damage from climate change. Thus, the cumulative cost for the Greek economy of the residual damage from climate change was estimated at €510 billion[15] and as a result, the total cost for the Greek economy under the Adaptation Scenario is the sum of the cost incurred by the economy on account of the adaptation measures and the cost of the reduced damage from climate change; this sum was estimated at €577 billion[16].

According to a vulnerability assessment[17] which attempted to quantify and rank the anticipated climate risks for the Greek territory, agriculture is the sector expected to be most severely affected by climate change in Greece, while the impact on tourism and coastal systems will have major consequences on household income and the economy as a whole. Of particular significance is also the water reserves sector, given its implications for agriculture and water supply.

Our work to date has emphasized the need for a concrete adaptation policy that would cover all sectors and implemented in a timely manner so as to mitigate the likely adverse effects of climate change. It is for this reason that under a Memorandum of Cooperation signed with the Greek Ministry of Environment and Energy and the Academy of Athens, we have worked on Greece's National Climate Change Adaptation Strategy and we are currently developing a proposal specifying its implementation. This Strategy sets out the general objectives, guiding principles and implementation tools of an effective and growth-oriented adaptation strategy in line with EU directives and international experience. Furthermore, it is the first step of a continuous and flexible process for planning and implementing the necessary adjustment measures at national, regional and local levels and aspires to leverage the capabilities of Greece's public authorities, economy and society at large, with the ambition to address the impact of climate change in the coming years.

Research so far confirms that there needs to be a robust strategy and an action framework in order to address current environmental challenges, climate change and sustainability as a whole. I believe that the work you are presenting these days in Athens has already shed some new light on these challenges and I would like to congratulate the European Association of Environmental and Resource Economists and the organizers for a successful conference.

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1 reports.weforum.org/global-risks-2017/the-matrix-of-top-5-risks-from-2007-to-2017/

2 Ibid, the three risks are extreme weather events (1), major natural disasters (2) and failure of climate change mitigation and adaptation (3)

3 IPCC, 2012: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change (IPCC)

4 For example, the air pollution in a Chinese city had no direct impact on a European city.

5 Tol, R.S.J. (2009), The Economic Effects of Climate Change, in Journal of Economic Perspectives, Vol. 23, No 2, Spring 2009, pp. 29–51, www.ssc.wisc.edu/~walker/wp/wp-content/uploads/2012/09/Tol2009.pdf

6 IPCC (2001) Third Assessment Report: Climate Change, Working Group III: Mitigation, www.ipcc.ch/ipccreports/tar/wg3/index.php?idp=383

7 IPCC (2007), Climate Change 2007: Working Group I: The Physical Science Basis, 7.3.2.2 Uptake of CO2 by Natural Reservoirs and Global Carbon Budget, www.ipcc.ch/publications_and_data/ar4/wg1/en/ch7s7-3-2-2.html

8 www.bankofengland.co.uk/publications/Documents/speeches/2016/speech923.pdf

9 The Paris Agreement available at unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf

10 unfccc.int/paris_agreement/items/9485.php

11 Spencer, T., Pierfederici, R. (2015), Beyond the numbers: Understanding the transformation induced by INDCs, Studies N°05/2015, Iddri – MILES Project Consortium, available at: www.iddri.org/Publications/Beyond-the-numbers-Understanding-the-transformation-induced-by-INDCs

12 "…financial disclosure is essential to a market-based solution to climate change. A properly functioning market will price in the risks associated with climate change and reward firms that mitigate them. As its impact becomes more commonplace and public policy responses more active, climate change has become a material risk that isn't properly disclosed." in Carney, M., Bloomberg, M., (2016), How to make a profit from defeating climate change, The Guardian, 14/12/2016, available at www.theguardian.com/commentisfree/2016/dec/14/bloomberg-carney-profit-from-climate-change-right-information-investors-deliver-solutions

13 expressed as GDP loss relative to base year GDP, at constant prices of 2008

[14] CCISC (2011), The environmental, economic and social impacts of climate change in Greece, Bank of Greece, p.454 available at www.bankofgreece.gr/BogEkdoseis/ClimateChange_FullReport_bm.pdf

[15] at constant prices of 2008, over the period till 2100

[16] total cumulative cost through 2100, at constant prices of 2008

[17] the vulnerability assessment is presented on the CCISC (2015), National Climate Change Adaptation Strategy (NCCAS), Bank of Greece, pp. 9-13 available at www.bankofgreece.gr/BogDocumentEn/National_Adaptation_Strategy_Excerpts.pdf