Framework for reporting identified practices

Partner: Epirus

	Section	Indication of Content
1	Title of the practice	**'Cost Benefit Analysis'- A study for the environmental, economic and social impacts of climate change in Greece**
2	Precise theme/ issue tackled by the practice	The procedure of setting the strategic frame for the actions that should be taken in order to mitigate environmental, economic and social impacts of climate change in Greece. The general procedure is presented through a study of Bank of Greece for the mitigation of the above mentioned impacts.
3	Objectives of the practice	• Setting a strategic frame for the actions that should be taken in order to mitigate environmental, economic and social impacts of climate change • Give feedback for the creation of the "energy road map" of the country
4	Location	Greece
5	Detailed description of the practice	**- Bodies involved** • Bank of Greece • Climate Change Impacts Study Committee • Scientists from various fields (experts in physics of the atmosphere, climatologists, geophysicists, experts in agriculture, experts in forestry, experts in fisheries, experts in water resources, experts in built environment, experts in tourism, experts in energy, economists, sociologists) **- Description of the practice:** • The cost benefit analysis for environmental, economic and social impacts of climate change was drafted by the Bank of Greece • The study is a first comprehensive attempt to study the effects of climate change in Greece. More specifically, the focus was centered on the cost of climate change for the Greek economy, on the cost of mitigation measures to a changing climate and on the costs of transition to a low emission of greenhouse gases economy, according to the global effort to mitigate climate change. • Specific cases were examined and mathematical models were used in order to scale the cost/benefit of a single action to national level. • The chapters of the study are:

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		CHAPTER I: **Climate of East Mediterranean and Greece: past, present and future** In this chapter the factors that influence and the consequences of raising temperature in Greece due to climate change phenomenon in the next 80 years are examined. CHAPTER II: **Risks and impacts of climate change by sector** In this chapter, they are examined: • Impacts on water resources and proposed mitigation measures • Impacts on fisheries/aquacultures and mitigation measures • Impacts on agriculture and mitigation measures • Impacts on forests/ecosystems/biodiversity and mitigation measures • Impacts on tourism and mitigation measures • Impacts on built environment and mitigation measures • Impacts on transportation and mitigation measures • Impacts on society and mitigation measures • Impacts on health and mitigation measures • Impacts of excavation industry and mitigation measures CHAPTER III: **Economic features of climate change in Greece** In this chapter three different scenarios for the future evolution of emissions are presented in order to estimate the intensity of climate change and its impacts. Also, in this chapter a comparative study on cost scenarios for Greek economy and society is conducted. • Cost of Non-Action Scenario • Cost of Mitigation Scenario • Cost of Adjustment Scenario CHAPTER IV: **Towards a low carbon economy** In this chapter the alternative ways of reducing greenhouse gas

		emissions and the cost for Greek economy due to investments and expenses for succeeding the decrease of greenhouse gas emissions is examined. It is also calculated the total result if we compare the cost of the reduction of greenhouse gas emissions and the cost of the consequences of the climate change. CHAPTER V: **Conclusions and strategy to address climate change in Greece** In the last chapter a summary about the results of whole study referring to cost – benefit analysis on climate change in Greece is presented while future directions have been set up for the strategy on climate change.
6	Mitigation instruments	**Water resources** **-**Campaigns for the awareness of the people, in order to reduce consumption and motives to that direction -Prohibitions for high-consuming water uses (e.g. swimming pools) -New water supply networks in order to reduce leaks -New underground irrigation systems that minimise possible losses -Works for the enrichment of water resources (e.g dams) -Establishment and protection of an ecological safe minimum amount of water in the case of lakes, rivers and underground waters -Creation of a legal frame about the use of water resources **Fisheries/aquacultures** -Measures that protect marine life (e.g. about the methods used for fishing) -Creation of sea parks -Relocation of aquacultures -New species, able to live in warmer climates, in aquacultures **Agriculture** -Change the kinds of crops depending on the climate conditions of each area / introduction of new kinds of crops -Change the periods of sowing and harvest -Introduction of environmental friendly techniques in order to keep the soil fertile -Better use of the available water resources -Works for the protection/enrichment of water resources **Forests/ecosystems/biodiversity** -Policies mitigating forest fires -Precise marking of forest areas (preventing the change in the use of land in the future) -Reforestation (use of trees tolerant to climate change) -Works against soil corruption

		-Works that help the procedure of enriching underground water resources -Creation of “banks of seeds” -Regulations for the use of water of lakes/rivers -Protection of local species from “intruders” -Works for the protection of the ecosystems near the coastline **Tourism** -New target groups (able to travel during spring and autumn) -New strategy in the promotion of the “Greek Touristic Product” -Develop touristic facilities in the North/promote alternative activities -New approach in the creation of new touristic facilities and improvements in the old ones in order to save energy. **Built environment** -Creation of better insulation shells in new buildings (15 cm thick), improvement of the insulation in old buildings -Systems that make the buildings autonomous from the aspect of energy (e.g. photovoltaic) -Works that prevent floods in inhabited areas -Measures for the protection from forest fires -Generally, the proposed strategies against the rise of sea level are retreat, accommodation and protection. **Transportation** -Not constructing transport infrastructure to areas vulnerable to the rise of sea level -Taking into consideration climate change to constructions (e.g higher waves for ports) -Assess the vulnerability of the transport network and set priorities for the actions that should be taken -Development of mechanisms and systems for tackling cases of emergencies due to extreme weather conditions -Increase the use of sea and railway transports for goods/decrease the use of road network **Society** -Initiation of a policy for the “environmental refugees” -Prevent a situation where the weakest are put to the margin of the society -Provisions for poor households and enabling them to have access to technology/measures against climate change -Involvement of the state for access of all people to electricity and water **Health** -Measures that prevent floods, fires etc. -Awareness of the people for their actions in cases of emergency due to natural disasters/heat waves

		-Access of all citizens to the health system -Preparedness of the health system for more incidents during summer -Creation of “emergency plans” in the hospitals -Awareness of the staff in the system of health for the new diseases that appear in the country -Measures for the population of mosquitoes/rats -Works for the quality of water **- Possible success factors:** • The cooperation of all involved bodies, creation of synergies in regional, national and European level • Appropriate information flow • Continuous update of data and useful instruments for measuring the cost and benefits of mitigation measures for climate change consequences. **- Difficulties encountered:** • Difficulties in gathering the information needed by some areas especially regarding the multidisciplinary approach adopted by the project.
7	Evaluation	**Evaluation of the produced results** The results of the study should be evaluated in an ongoing process and according to the measures that shall be finally adopted by the political authorities as advised by the study. Although covering multiple disciplines in a unprecedented level and coming to a final conclusion of whether a mitigation policy regarding climate change is urgent or not there are still things that should be done: - The social dimension of climate change should be studied more, related to the increase of poverty and migration. Moreover more studies are needed on how the climate change affects biodiversity and ecosystems. - Many issues about the long-term energy strategy (e.g. creation of technologies that produce no gas emissions) are field of thorough research that should be done. These issues are linked directly to the efforts of mitigating the impacts of climate change. - There should be more sectional studies which should deepen the research in each geographical area and focus in the most vulnerable regions and social groups.
8	Lessons learnt from the practice	The project consists of the first attempt in Greece to assess the economic impact of climate change. It has been a really innovative effort as for the first time and for two years different groups of scientists from different disciplines included those of atmosphere physics, climate experts, geophysics, agriculture forestry and

		fisheries experts, tourist and energy experts, economists and sociologists have cooperated for combining the individual results and converting them to a cost-benefit tool, in a time frame till 2050 and 2100. **The overall result of the analysis suggests (after the cost-benefit calculations) with clarity the supremacy of a mitigation policy than taking no action and also profit from a policy of adaptation to the exigencies of low carbon emissions strategy.** In this context, this study wishes to be a watermark for conducting in the near future a more complete and detailed investigation for supporting the national strategy for tackling climate change.
9	Contact information	Batzias Nikolaos Region of Epirus Regional Unit of Thesprotia Email: nimpatzi@thesprotia.gr Tel : +30 26650 99 863
10	Other possible interesting information	-The official website of the Bank of Greece where you can find the cost benefit study on climate change http://www.bankofgreece.gr/Pages/el/klima/results.aspx