

## RESEARCH ARTICLE

(Open Access)

**Climate change impacts: Public policies and perception in Albania**ELONA POJANI<sup>1\*</sup>, PERSETA GRABOVA<sup>1</sup> AND MIMOZA KODHELAI<sup>2</sup><sup>1</sup>University of Tirana, Department of Finance / Tirana<sup>2</sup>Albania Competition Authority / Tirana**Abstract**

The purpose of this paper is to discuss some of the main impacts of climate change in Albania. More specifically the paper will try to analyze the public response toward these new challenges. This analysis will be preceded by a brief review of the international literature regarding climate change consequences. In addition, the paper will discuss public perception and awareness toward climate change. This discussion will be based on a survey which has involved a wide range of population. The main results of the survey show that the level of awareness of the study group (which consisted mainly on high educated participants) about climate change and its relationship with the development is very low. Therefore more emphasis should be put to information regarding environmental issues, through education system and awareness campaigns.

Key words: environment; climate change; public policies; public perception; Albania

**1. Introduction**

Climate change is the mother of all externalities: larger, more complex, and more uncertain than any other environmental problem. The causes and consequences of climate change are very diverse, and those in low-income countries, who contribute least to climate change, are most vulnerable to its effects. Climate change is also a long-term problem. Some greenhouse gases have an atmospheric life-time measured in tens of thousands of years [1].

The purpose of this paper is to discuss some of the main impacts of climate change in Albania. This analysis will be preceded by a brief review of the international literature regarding the origins of climate change discussions, its impacts and consequences, and public responses to these new challenges. In addition, the paper will try to analyze public perception and awareness toward climate change in Albania, based in a survey which involved a wide range of population. Finally, the paper concludes with recommendations regarding future public policies that address these issues.

**2. Climate Change - Impacts and responses**

Climate change is an international challenge and, as such, requires cooperation on an international scale. The Intergovernmental Panel on Climate Change (IPCC) has calculated that global average surface temperatures have increased by 0.13°C per decade since 1950 and that the global average surface temperatures might increase from 1.8°C to 4°C by the end of the 21st century due to the emissions of GHG

expected to occur in the future [2]. Potential consequences of this heating vary from manageable to catastrophic. Several impacts will be felt on agricultural production [3], on natural ecosystems [4], on biodiversity [5], on the quantity of water pollutants [6], on the reduction of forests and living species and increase the probability of diseases, and on the sea level rise [2]. Moreover, tourist destinations may change, due to the fact that climate change will alter the lengths and quality of the tourism season. This way, the demand and seasonality of tourism will change, therefore affecting the general economic growth of a country depending on tourism [7].

The variability of climate during this last century has been deteriorated by human activity, as anthropogenic factors have put lots of pressure to the natural resources. This pressure is mostly attributed to developed nations, while developing economies and poor countries have now to bear the costs of a damaged environment [8]. Scientists have warned that without any reaction to climate change, the consequences will be disastrous. The future generations will suffer the irreparable consequences caused by environmental pollution.

Contemporary thinking on climate change management defines two distinct kinds of activities: mitigation activities and adaptation activities. Many authors insist that for the next 10-15 years it will be essential to put a major emphasis on mitigation, because the more mitigation is done, the less adaptation will be necessary. However, the effects of climate change will be felt with increasing force in years to come, even under the most optimistic scenario for mitigation efforts [9].

Even though adaptation research outcomes present a range of different opportunities, it is necessary to be aware that one of the most important problems to deal with is finding and implementing financing sources for different countries. With economic development and growing investment (especially in coastal regions and agriculture), along with a growing risk of extreme weather events, disaster and insurance costs are projected to increase rapidly over the decades [10].

However, no matter how much action is taken, some consequences will have to be borne in the future. Business as usual is not an option anymore. Even if we stop global engines of growth now, the depletion and pollution of our natural environment would still continue because of existing consumption patterns and production methods. Hence, scientist agree that there is an urgent need to find new development pathways which would ensure environmental sustainability and reverse ecological destruction, while managing to provide, now and in the future, a decent livelihood for all of humankind [11]. Considerable emphasis today is given to technology and innovation as a key tool for managing climate problems [12].

Nevertheless, lack of awareness towards global warming has caused low public pressure on governments to act. Although awareness rising is necessary, it is not easy to motivate people because there is still little understanding on the effect of human activity in climate change [13].

### **3. Climate change in Albania: Public Policies and Perception**

#### *3.1. Climate change effects and Public policies*

The effects of climate change in Albania include higher sea water temperatures, changes in precipitation patterns, and changes in storm tracks, frequency, and intensity. These impacts could have direct and indirect socio-economic impacts on tourism, human settlements, human health, agriculture, freshwater supply and quality, fisheries, financial services, and human health [14 and 15]. Coastal areas are particularly vulnerable to climate change because of the threats of sea level rise, which have caused frequent flooding in the past. Inundation, flood and storm damage, loss of wetlands, erosion, saltwater intrusion, and rising water tables are predicted to affect coastal communities in the future. There would also be changes in marketed goods and

services, such as land, infrastructure, and agricultural and industrial productivity due to the impacts of climate change [16 and 15].

Because of the above mentioned climate factors, Albania will be affected by a relevant number of natural disasters, including floods, mudslides of soil, and fires in forests. Their effects, in many occasions, have been and will be exacerbated by anthropogenic factors, such as the massive flow of rural-urban migration and urbanization pressures that concentrate population habitations in unsafe areas [17 and 15].

Albania ratified the United Nations Framework on Climate Change (UNFCCC) in October 1994. It entered into force on January 1, 1995. In January 2005, Albania is also party to the Kyoto Protocol (ratified on 16 December 2004). Albania has the status of non-Annex I Party in both these legal documents. The Ministry of Environment, Forestry and Water Administration has the responsibility for the implementation of the UNFCCC and the Kyoto Protocol. As a developing country, Albania has no obligation to reduce the amount of greenhouse gases emissions. Nevertheless, the Government of the Republic of Albania has taken a number of activities aiming at reducing emissions of concentrations of GS's [18]. The National Action Plan (2009) [19] on Climate Change focuses both on mitigation and adaptation activities toward climate change. Mitigation focuses mainly on the energy sector, but also on sustainable transport, conservation of forests and development of new management options, increase of agriculture efficiency, etc. Adaptation measures focus on water resources, agriculture, natural ecosystems, energy and health.

UNDP Program on Climate Change has provided general support for the Government of Albania to resolve the issues of climate change and the implementation of the UNFCCC and the Kyoto Protocol. The program currently consists of a portfolio of ongoing projects, aiming directly to the implementation of new good new practices of management for increasing energy efficiency and designing a carbon market. Also, other projects which address directly climate change issues are being implemented. These measures and projects have been associated with changes in the legal framework and introduction of new economic instruments to promote the reduction of greenhouse emissions and use of renewable energy sources. the program has developed a set of adaptation measures to be implemented in a pilot coastal area in the north-west of Albania. The proposal has been object of a thorough study, in which

many experts of different fields have been contributing. While the results of this study have been finalized and published<sup>1</sup>, the future aim of the program is to extend the study area to the whole coast of Albania [20]. Currently, the program is assisting in the preparation of the Third National Communication to the UNFCCC.

Public awareness, information exchange and communication are important elements for achieving the implementation of the UNFCCC and the Kyoto Protocol [15]. They are intertwined with all environmental programs and projects horizontally and vertically. Efforts to raise awareness on climate change have contributed positively to the process of integrating climate change issues; however the issue of climate change remains relatively underestimated in the public opinion.

### **3.2. Public perception and reaction toward climate change in Albania**

#### *3.2.1. Aim and motivation*

Environmental improvement, in general, is of particular concern in Albania. In order to respond to the urgent need for new environmental infrastructure able to meet the new challenges of climate change, large scale public and private financial resources would need to be mobilized [21]. This will require a move from the traditional approaches to public financing, enabling in the country the development of innovative financing arrangements. However, due to the low confidence that the population has on tax policies, new financing sources of these kind might be put into question. In addition, people have modest knowledge about environmental issues in general and climate change in particular, since environmental education has been very poor in Albania. Therefore, an understanding of people awareness about how environment management affects the development of country is crucial for supporting the process of developing future public policies. For this purpose, this study has involved a wide group of population, mainly composed of high-educated participants. The questions addressed aimed to measure the degree of knowledge that people have on sustainable development issues. The results of the survey will serve to draw valid conclusions about the level of

awareness and education of the population has about the environmental policies on the protection of natural resources and adaptation to climate change. Based on these results, this study will aim also to draw conclusions on where public policy should be addressed in the future.

#### *5.2.2. Methodology of survey*

The survey was conducted during the period January-February 2012. Within this period 2000 questionnaires were handed out and 523 questionnaires (25%) were filled in by citizens living in Albania or abroad. The questionnaire was structured with yes/no answers, multiple choice, point and descriptive evaluation and checkboxes. A set of questions was designed aiming to find out the relevance of different policy tools to sustainable development. Respondents were asked to score different policy tools with points from 1 to 5, where 1 means that the policy does not affect the achievement of sustainable development and 5 means that the policy is very important to the achievement of sustainable development. The time required to fill it out varied from 5-7 minutes. The distribution of the questionnaire was carried out manually, electronically by e-mail and partly through social networks. The quantity of the sample was defined during the process of gathering the information, when the evaluator considered it enough due to the repetition of information. The evaluators chose participants from their social and work environment. The aim of the survey was to assess the level of awareness of high educated people. Therefore, the participants were chosen according to their level of education. All other elements used for the selection beyond that aforementioned, were done completely randomly.

The respondents were composed of 62% females (329) and 38% males (194). 68% (355) of them belonged to the age group 18-30 years, 26% (134) - 30-50 years: 7% (34) - over 50 years. The overwhelming majority of respondents lived in urban areas (98%), and 75% of them lived in Tirana. 6% of respondents were living abroad. The education level of respondents was quite high: 86% of them were graduates or post-graduates. 34% of respondents were employed in the public sector, 43% in the private sector, and 19% were undergraduate students. The rest belonged to groups of pensioners, workers and unemployed.

All data were entered into an Excel database and analyzed by using simple statistical tools, such as frequency distribution, percentages, range,

<sup>1</sup> Detailed information about ongoing and closed projects of the Program can be found on the Program web page: [www.ccalb.org](http://www.ccalb.org)

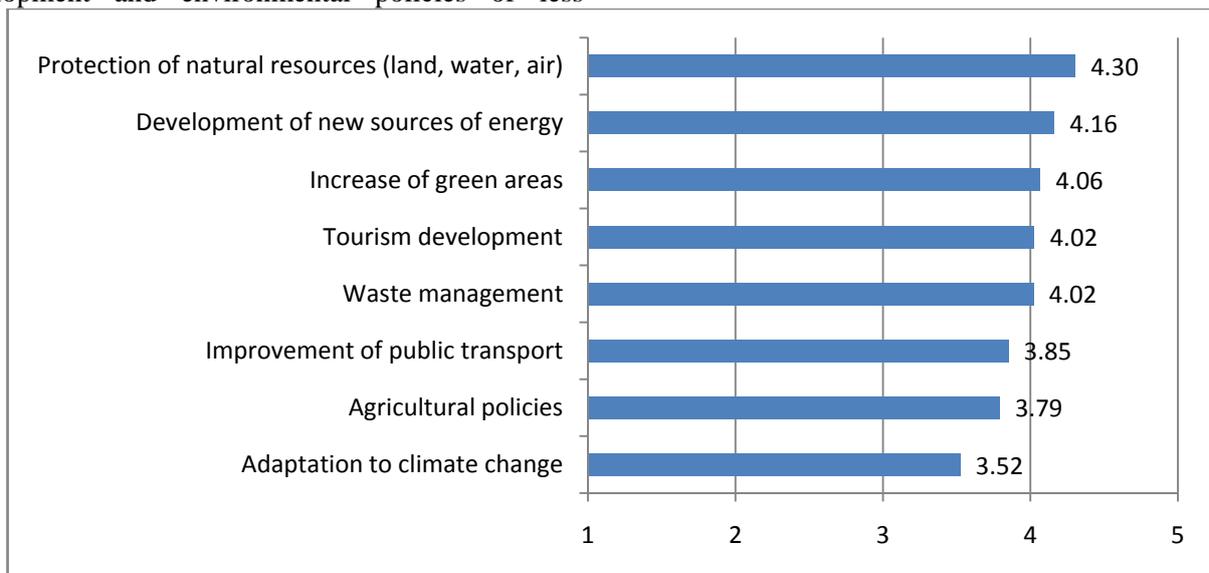
proportions and mean. The results of the survey are represented through descriptive statistics and graphs.

A number of limitations in methodology can be recognized. First of all, as respondents lived mostly in cities, the view points of the population living in rural areas are not shown. It is known that living in rural areas implies different features compared with living in urban areas. These features are related to the economic situation, lifestyle, socio-cultural activities, the level and quality of education, differences in access to information technology in general. Furthermore, as most of the respondents lived mainly in Tirana, the viewpoint of the residents of other districts have not been included. Due to the characteristics of regional development especially in the decades of market economy, Tirana differs significantly from other districts of Albania. Secondly, the level of the respondents' education, as appears from the demographic data presented above, is quite high. Necessarily, opinions on sustainable development and environmental policies of less

educated groups cannot fully appear in the results of the survey. However, at the time of preparation and distribution of the questionnaire, the population group with high education level was deliberately chosen, because if within this group there was lack of knowledge on sustainable development and insufficient awareness and education about environmental policies, then it is understandable that the conclusions can be generalized even for the groups with less educated background.

### 3.2.3. Results of the survey

One of the questions addressed in the survey was whether the respondents have ever heard about sustainable development. Interestingly, despite the level of education of the overall group, only 63% on them has answered "Yes". To be underlined is the fact that only 53% of the students participating in the survey had heard about sustainable development.



**Figure 1:** Ranking of environmental policies according to their contribution to sustainable development

Another group of questions of the survey dealt with environmental policies and their contribution to the achievement of sustainable development. The results showed that people believe that environmental policies in general, like protection of environmental resources, waste management, development of new sources of energy, increase of green areas, and promotion of sustainable tourism, are important or very important policies for supporting sustainable development. Indeed, the overwhelming majority (over 70%) of respondents believe that increasing efforts on these policy areas will contribute for the abovementioned purpose. However, even though

people generally perceive solving environmental problems such as pollution, natural resources deterioration or energy efficiency as important elements for keeping the ability of future generation to meet their needs, just the simple majority of them thinks the same regarding climate change. Only 54% of the respondents consider adapting to climate change as an important or very important policy tool and 46% believe that these policies have no effect or low effect. A better overview of the responses in this issue is presented in Figure 1, where is shown the ranking of different policies based on the average score of their contribution to the achievement of

sustainable development. As the graph shows, adaptation to climate change, with an average score of 3.52 is ranked as the less important policy intervention according to the respondents. Taking into account that the level of education of respondents is quite high, this figure indicates that in fact the level of awareness for this issue is quite low in the overall population. For the very purpose of realization of this questionnaire, this population group chosen for analysis is appropriate to draw conclusions, particularly with regard to issues related to education about environmental issues. As the results show that there are problems in this regard for this population group, the findings can be generalized for wider population groups excluded from this survey.

#### 4. Conclusions and Recommendations

Climate change is not just an environmental issue but one with severe socioeconomic implications, particularly in developing countries. Climate risk management should consistently be integrated in domestic policies, by integrating it into development planning, programs, and projects.

In Albania, climate change could have direct and indirect socio-economic impacts on tourism, human settlements, agriculture, freshwater supply and quality, fisheries, financial services, and human health. The probability of higher temperature increases have not to be negligible. Our economy depend more on climate sensitive sectors (such as agriculture and tourism), and the public sector offer fewer and lower quality public services. Environmental policy have to be revised, and new market based instruments have to be introduced in order to create incentives for economic actors to reduce emissions of green house gases and use renewable sources of energy. Such changes require public understanding of the issue and a strong public support. Rising public awareness is essential in this regard.

The survey presented in the paper aimed exactly at assessing public understanding of climate change issues and their relation to the development of the country. The results showed that more emphasis should be put to information regarding environmental issues, especially through education system and awareness campaigns. Even though the survey had some limitation in its methodology, especially regarding the group of people it was addressed, still it shows that there are serious concerns regarding the level of education and awareness regarding

environmental issues. Therefore, especially students should be informed on problems associated with environmental performance of a country early during their education, so that knowledge regarding these problems arises early in their minds, since they represent the future decision makers of the country. This way, their reaction on the above issues will be consolidated based on knowledge and the way they will respond to the challenges of development will be based on critical reasoning about problems.

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