

CLIMATE CHANGE AND HUMAN CAPITAL IMPACT – THE CASE OF ALBANIA

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Abstract: Climate change is causing major impacts on the economic performance of developing countries and on the livelihoods of millions of poor people around the world. With economic development and growing investment, along with the growing risk of extreme weather events, disaster costs are projected to increase rapidly over the decades. Dealing with the consequences requires a multidimensional approach. Investing in human capital is deemed as an appropriate reaction for lowering the impacts of climate related disasters. This paper will offer an overview of climate related impacts and their connection to development and human capital. This discussion will be held both at macro level (the government) and micro level (individuals and households). The discussion will focus on Albania, and its path toward building climate resilient communities through action within the education system.

Key words: climate change, education, sustainable development, capacity building, human capital, Albania

1. INTRODUCTION

The living circumstances, economic performance, and environmental resources and services of afflicted nations or regions are all significantly impacted by climate related disasters. These have primarily been influenced by population growth and increased exposure of assets to harmful impacts of climate change. This trend is expected to worsen with increasing urbanization, environmental degradation, and the anticipated rise in the frequency and intensity of hydrometeorological events brought on by climate change (Ghesquiere F. and Mahul, O. 2010). It is acknowledged that disasters can have far-reaching repercussions, harming people, property, and infrastructure as well as hurting economic activity and possibly having cascading and worldwide implications. Consequences may have long-term and even permanent effects on the environment, as well as on social, economic, and political structures. One of the major sectors affected by climate related impacts is the education system. Through the education system, human capital is developed. Investing in human capital is deemed as an appropriate reaction for lowering the impacts of climate related disasters (Angrist et al, 2023).

The issues facing Albania's higher education systems, as well as how they have responded to the need to develop adaptive capacities to assist deal with catastrophic challenges brought by climate, will be the main topics of this paper. It will provide a comparative review of the field of climate education in Albania, with arguments regarding the degree of inclusion of issues such as climate change, climate science, disasters, sustainable development, in bachelor's and master's program curricula. Further recommendations related to the capacity of the educational system to address global difficulties brought on by climate change will be made at the conclusion of this study.

2. CLIMATE CHANGE AND ITS IMPACTS

When discussing about disasters and their impacts is crucial to address also how climate change is contributing to disaster impacts all over the world. Climate change affects disaster risk in two ways: short-term climate variability and its extremes influence the range and frequency of shocks that society absorbs or adjusts to, whereas longer-term variability can lead to changes in the productive base of society, particularly in natural resource dependent economies (Parry and Carter, 1985). 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 (IPCC, 2007). Potential consequences of this heating vary from

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manageable to catastrophic. Several impacts will be felt on agricultural production (Howden et al, 2007), on natural ecosystems (Hulme, 2005), on biodiversity (Bates et al, 2008), on the quantity of water pollutants (Haines, 2006), on the reduction of forests and living species and increase the probability of diseases, and on the sea level rise (IPCC, 2007). 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 (Fankhauser and Tol, 2005).

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 (IBRD, 2010). 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.

Obviously climate change is contributing to raising disaster risk. However, public policies for disaster risk management often do not comprise climate action. The reason for these two distinctive agendas include (Schipper and Pelling, 2006):

- climate change policy deals exclusively with climate-related hazards and their impacts;
- the time frames for reactive adaptations to climate change and disasters are distinct— disaster impacts are relatively immediate and concentrated, whereas the consequences of climate change may evolve, along with social change, over a longer time scale; and
- disaster risk reduction has to date focused on the local and national scales, while climate change policy has so far prioritized mitigation, which has been predominately global in scope.

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 (Goodwin, 2008).

Mainstreaming education for sustainable development into curricula of higher education studies is considered today as an important mitigation measure, which will contribute to the development of the human capital and to the ability of future generation to cope with the impacts of climate change. The next part of the paper elaborates more on this issue.

3. HUMAN CAPITAL AND EDUCATION FOR SUSTAINABLE DEVELOPMENT

The difficulties brought forth by climate change have a significant impact on education. Disasters caused by climate change have an impact on education's supply and demand sides. The less developed communities are the ones who pay the price for environmental degradation, and this has an impact on how education is provided. These effects have an impact on educational quality and put the safety of teachers and students involved in the teaching and learning process in danger. Disasters brought on by climate change can harm or completely destroy educational systems and school buildings, endangering the communities' physical security and mental health. Climate and environmental migration, a concept more and more adressed in international literature, brought on by climate hazards also disrupt the delivery of education. Furthermore, because children are kept home from school to assist their family during catastrophes, the economic effects of disasters lower school enrollment (Kopinina, 2012; Anderson, 2012; Hamilton, 2011).

Although the education industry is challenged by climate change, the sector possesses various adaptive capabilities. The leaders of tomorrow are developed in higher education institutions. It is crucial that the role of education is not undervalued because it has already been demonstrated to have an effect on significant global concerns. Human capital investment through the education system is the main issue to look into.

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There are many ways how sustainable development issues related to disaster risk management can be mainstreamed into education system. Education for Sustainable Development is a comprehensive and multidisciplinary tool that includes not only relevant content knowledge on disasters, climate change and other sustainability topics, but also focuses on the capacity of schools and education systems to become climate-proofed and resilient as well as sustainable and green. Sustainability education offers many opportunities, but in the same time poses many challenges (Makrakis & Kostoulas-Makrakis, 2016).

Education system can bring improvement of human capital by improving literacy, addressing teaching and learning methodologies that foster a problem solving and critical thinking approach, and by making university services more sustainable and greener (Kopnina, 2012; Anderson, 2012; Hamilton, 2011).

Although the role of education in addressing these challenges is being increasingly recognized, the capacity of education to contribute to adaptation and mitigation measures has yet to penetrate mainstream development thinking. This is particularly true for the Balkan region, including Albania.

4. AN OVERVIEW OF EDUCATION FOR SUSTAINABLE DEVELOPMENT IN ALBANIA²

Currently, there are no higher education study programs in the field of Climate Change or Sustainable Development in Albania. However, in post-communist era (1990 to the present) higher education curricula have been heavily revised to incorporate the principles set forth in the Bologna Process. In addition, entirely new courses have been devised. The European Union has supported the higher education sector in the region through a broad range of projects and financing schemes, and most countries have reciprocated by embracing western education practices, such as multidisciplinary or interdisciplinarity. The experience of EU countries in the sustainability field, has been a driver in enrolling a sustainability path in higher education in Albania. Joint initiatives, bringing together higher education institutions from EU and the Balkans, fostering collaboration and networking in the region and beyond, address both the integration goals of each country and serve the needs of joint, integrated, common action for sustainability. Some of the projects implemented at Higher Education Institutions addressing sustainability and climate action within the education system since 2016 include:

- jOiNEd For sUsTainability - bUilding climate REsilient communities in WB and EU - 1FUTURE (2023-2026) - <https://1future.feut.edu.al/#>
- Knowledge for a resilient society (2016-2020) - <http://www.kforce.gradjevinans.net/>
- Capacity building for Blue Growth and curriculum development of Marine Fishery in Albania (2019-2022) - <http://almars-project.eu/>
- Knowledge Triangle for Low Carbon Economies (2020-2023) - <https://kalcea.com/>
- Engineering curricula modernization in renewable energy in Albanian Universities 2020-2023 - <https://engineproject.eu/>
- Promoting Climate Change Adaptation and Disaster Risk Management in the framework of EU Integration (2020-2023) - <https://climateanddisasters.feut.edu.al/>
- Sustainable Development of Blue Economies through higher education and innovation in WBC (2020-2023) - <https://www.bluewbc.eu/>

While bachelor programs tend to be more traditional in terms of content and focus, postgraduate programs are making a concerted effort to diversify their content. The creation of master programs that straddle across faculties is evidence of that. This shift reflects the achievement of new skills, able to meet new community, government, and industry needs. To give some evidence on the development in

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the field, an overview of education content related to climate change offered in the three larger universities in Albania, namely University of Tirana, Polytechnic University of Tirana and Agricultural University of Tirana is given next.

One of the programs of study of interdisciplinary nature at The University of Tirana, Faculty of Economy, University of Tirana, was implemented in 2018 in the framework of an EU project called Knowledge for a Resilient Society. It includes sustainability topics in its curricula. The program of study is called Master of Science in Risk Management and includes topics related indirectly and directly to sustainability, such as disaster risk management, climate change adaptation, financial resilience toward hazards, disaster risk modelling, disaster risk evaluation, etc. This program of study is the only program in the country that includes a course on Climate Change Adaptation. In addition, the Faculty of History and Philology, Department of Geography have several subject related to climate change in its program of studies. Under the Curriculum of the Bachelor Program in Geography a subject on Climato-geography and a subject on Environmental Policy are included. At Master Level, under the Curriculum of Master of Science in Geography, some subjects related to climate change are shown. Also at Master level, in other programs of studies, subjects related to Evaluation and Management of Natural Risks and Environmental Management are offered from the Department of Geography. Finally, the Faculty of Natural Sciences has several topics related to climate change under the curriculum of Master of Science in Environmental Biology and Professional Master of Environmental Biotechnology. Renewables and other environmental management topics are included in the curriculum of Bachelor and Master programs in Chemistry field.

The Polytechnic University of Tirana, within Environmental Engineering programs of studies at master level have several subjects related to the field. Other courses related to environmental management and protection, renewables, natural resources engineering and natural resources management are included in the curriculum of the Faculty of Geology and Mining, under the Bachelor Diplomas of Earth Science Engineering, Natural Resources Engineering and Geoinformatics Engineering. Selected topics, indirectly related to climate change, such as urban regeneration and environmental planning, can be found in the content of the programs of studies of the Urban Planning Profile at the Faculty of Architecture and Urban Planning.

At the Agriculture University of Tirana, the Bachelor Program “Management of Natural Resources” includes several topics related to global change, ecosystem impact, pollution, renewables etc.). Within the Master Program in Renewable Energies, there is one subject dedicated to Climate Change and several related to renewables. In addition, within the curriculum of the Professional Master Rural and Environmental Sustainable Development and on the Professional Master of Environmental Management, some topics are indirectly related to Climate Change. Finally, other courses across different programs of studies related to the environment in general, forestry, sustainable tourism, and sustainable economic development touch upon climate change related issues, such as biodiversity, environmental protection, sustainable use of resources, etc.

Other Public and Private Universities have also made progress in addressing climate change in their curriculum. This short review showed the areas and programs of studies where climate issues are mainstreamed and future paths towards the improvement of education for sustainable development in Albania.

5. CONCLUSION

Reality has proven that economic development is affected by climate change impacts. In such circumstances, it is important to build capacities with interdisciplinary knowledge and cooperation between faculties, capable of creating sustainable financial plans for the preparation and taking preventive measures against disasters, according to national and regional economy sources.

Further integration of the concepts of education for sustainable development in higher education in Albania has still a way to go. Initiatives and progress in this path have already started. Further development in this field, in line with EU experience in the education system, is strongly needed to support awareness raising and action towards climate change and its impacts and to further support the human capital development in the country.

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