



Republic of North Macedonia  
Ministry of Environment  
and Physical Planning



# **RAPID ASSESSMENT OF THE CLIMATE CHANGE INTEGRATION IN THE EDUCATION**

## **Summary of the research**

Prepared within the project “Macedonia’s Fourth National  
Communication and Third Biennial Update Report on Climate Change  
under the UNFCCC”

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Quality education is a basic human right for all and a foundation of social-economic development. All developed societies aim to achieve a sustainable development. The sustainable development is based on creating a “knowledge-based economy” that depends on knowledge, information and a high level of skills and competences. In order for each individual, especially young people, to cope with the global challenges (including the consequences of climate change and also implementing green technologies), it is necessary to have an appropriate knowledge and attitude, skills and competences, that correspond with the contemporary requirements of their personal and professional life. Additionally, in order to enable people to develop such competences that throughout life, with proper upgrading, will guarantee them good job and decent life, it becomes necessary for education and training systems to be reformed and adapted to the requirements of the knowledge-based economy. According to that, the Macedonian education system is also “responsible” for the future of numerous generations of young people in our country. The improving processes should refer to increased “climate literacy” and “supply” of young people with “green” competences.

Climate change education clarifies the climate change and helps students, and all members in the educational process, to understand the causes and consequences of them. Meanwhile, they are getting prepared to live a life with the effects of climate change and are getting encouraged to take appropriate measures in order to have a more sustainable lifestyle. Speaking generally, this type of education is divided into two parts: climate change education for mitigation and climate change education for adaptation to the consequences of the climate change.

This report is part of the research conducted by UNDP within the project “Fourth National Communication and Third Biennial Update Report on Climate Change under the UNFCCC” and presents an overview of the current level of integration of contents related to climate change in the Macedonian educational system. Regarding the current situation, this report proposes recommendations and corrective activities to develop a modern, credible and comprehensive climate change education.

During the research, in which international good practices and experiences were analysed with key recommendations from United Nations, European Commission, OECD and other relevant institutions for climate change education, the following was concluded:

- All countries that have signed the *Paris Agreement on Climate Change* need to recognize and confirm the importance on climate change education (UN, Paris, 2015)<sup>1</sup>

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<sup>1</sup> <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

- *The European Green Deal*, among other things, emphasizes the importance of climate change education (EC, 2019)<sup>2</sup>
- *The Economic and Investment Plan for the Western Balkans* and the *Guidelines for the Implementation of the Green Agenda for the Western Balkans* state: „Education is key to positively affect behaviours regarding the environment, starting from an early age as well as to reskill workers from transition industries. **Curricula need to include key competences and skills necessary to perform in the green economy.** To be successfully implemented, the Green Agenda for the Western Balkans needs to be reflected in the reforms of the education systems in order to guarantee that people are equipped and prepared for the labour market and society of tomorrow.” (EC, 2020)<sup>3</sup>

The analyses conducted in the Macedonian educational system were based on research in both segments of education:

- analysis of the **formal educational sector** (online research of the available curricula of preschool, primary and secondary education-and part of the available textbooks-, as well as the study programs of the accredited higher education institutions)
- analysis of the **non-formal educational sector** (verified programs of the Adult Education Center and review of part of the trainings related to the subject issues of the non-governmental organizations)

The research about formal education and part of the programs provided by Adult Education Center has been realized according to the following key words:

***climate, ecology, sustainable development, energy, energy efficiency, waste, protection, flood, drought, biodiversity, fossil fuels, greenhouse gases.***

Therefore, the final report maps those sections (content related to climate change) that correspond to the terms used in the search, and can be found in the programs and textbooks that are available in the online database of Ministry of Education and Science (MES).

The realized research and analyses have shown that a certain level of development has been achieved in the implementation of climate change education in the education system in our country (especially on the **level of primary and secondary education**). The fact that some of the subject-related content are involved in subjects such as: languages, civil society, life skills, ethics, arts..., is really gratifying. Apart from these subjects, there is climate change content in geography, physics, chemistry, biology, etc.

However, the inclusion of these contents in formal education is segmented, in individual subjects, without correlation. Here arises the question whether anyone has a transversal view of all contents related to climate change in all subjects. Therefore, additional research and

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<sup>2</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1596443911913&uri=CELEX:52019DC0640#document2>

<sup>3</sup> [https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/green\\_agenda\\_for\\_the\\_western\\_balkans\\_en.pdf](https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/green_agenda_for_the_western_balkans_en.pdf)

comparative analysis of all climate change contents (by volume, quality and novelty in the areas), that are currently included in the education, are more than necessary. This will support better coordination of contents, so that some of them won't overlap, while others won't be skipped. It is also necessary to make a more detailed analysis of the didactic methods, techniques and forms used in the various subjects that convey the climate change content.

An analysis of the study programs of **all three cycles of higher education** (first cycle-undergraduate studies, second cycle-postgraduate studies, third cycle-doctoral studies), offered by the universities in the country, was conducted. The main focus was the involvement of climate change education in the universities, mostly within the technical, natural and biotechnological sciences. The educational process in higher education in our country has a social responsibility to create prepared young people that will be able to bear the social-economic development of the country in the next decades, and also to cope with the challenges posed by climate change. The appropriate preparation should be done by involving the climate change education as an upgrade to the already existing concepts, which main aim is to reach environmental protection and sustainable development. The analysis has shown that these concepts are already included in the study programs of all three cycles at some of the universities in our country.

The analysis conducted on the numerous adult training programs that are verified in the **Adult Education Center**, through the keyword search method used in this project, has identified around 20 training programs that contain some of the keywords related to climate change. During the verification process, the Adult Education Center can significantly influence training providers by suggesting them to include more climate-related content in their programs. This is in full compliance with the recommendations and plan of the European Union for transition of the educational sector to a knowledge-based economy and preparation of young people (also those who need retraining) to green technologies.

The **civil society sector**, as in most of the developed countries, is the driving force of change in various areas. Identified topics and forms of non-formal education on climate change in the non-governmental sector could be a starting point that will be upgraded and modelled according to the regulations for standardization of non-formal education in the country.

Research on the inclusion of climate change education realized within this project, did not intend to check the level of awareness of young people to deal with the challenges of climate change, nor to check the accuracy of the content presented in various subjects and areas.

Finally, summarizing all of the conducted analyses related to the inclusion of climate change education in the formal and non-formal educational sector, the following can be concluded: there are climate change-related content in every educational segment but, until now, a horizontal (or transversal) review of their quality and volume hasn't been made. This type of review could provide information about how detailed this content in different subjects or programs is, whether there is a connection between the topics vertically (in different levels of education) or horizontally (in various subjects), whether there is an overlap of the contents or their upgrading, how much the information presented in the programs and textbooks is

contemporary and based on scientific facts, etc. An additional challenge for the teachers is the use of appropriate didactic methods, forms and techniques that should be based on modern tools and technologies, so this issue will be better presented to students and listeners.

The report provides numerous recommendations for better integration of climate change in both formal and non-formal education, which would increase the climate literacy among young people. **This type of education will help young people to understand and to get involved in addressing the impact of global warming and also, to encourage lifestyle changes in order to adapt to the challenges of climate change.** Some of the more important recommendations are:

- Implementing and strengthening climate change education should be a long-term goal of the Government of the Republic of North Macedonia (until 2050), by including this requirement in the key strategic documents. Thereby, these policies should not depend on the temporary political party-the one that is in power or the one that has its own minister in charge of this issue (Ministry of Education and Science, Ministry of Environment and Physical Planning of Macedonia).
- Coordination of the strategies for socio-economic development with educational policies and sustainable development policies (Government of the Republic of North Macedonia and Ministries).
- Coordination and upgrade of the existing *Education Strategy of RNM for 2018-2025* and the *Concept for development of primary education* with the latest recommendations from relevant international institutions related to the development of “green” competences and climate literacy (MES).
- A holistic approach is recommended while developing the *Education Strategy* and the *Concept for development of primary education*, in which all key competences for lifelong learning will be developed at the same time in accordance with EU recommendations<sup>4</sup>, with the main focus on:
  - DigitComp-digital competences
  - EntreComp-entrepreneurial competences
  - LifeComp-life competences
  - GreenComp-“green” competences for climate change and sustainable development
- *Establishment of a coordination group for climate change education in MES*, that will work on operational level and in which, not only representatives from Ministry of Education and Science, Bureau for Development of Education, Centre for Vocational Education and Training, Adult Education Center, will be involved, but also representatives from NGOs

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<sup>4</sup> European Commission, 2019. Key Competences for lifelong learning. DG Education and Training.

and the business sector. This group should be linked to the national designated body and the national coordination mechanism related to Green Climate Fund.

- Support from the Ministry of Education and Science while realizing some of the activities related to the content of education on climate change, through: guest lecturers, organized visits to companies and other organizations, participation in competitions, fairs and summer schools (camps) related to green technologies, climate change, ecology, sustainable development and SDGs.
- To develop and implement appropriate tools and mechanisms for assessing the level of development of each of the key competences at different stages of the educational cycle, especially on “green” competences.
- Greater involvement of the expert field and the civil sector while developing the key competences and generally, while developing educational reforms.
- To introduce a subject or more climate change-related content at the faculties that educate future teachers. As a result, “green” competences and climate literacy will be developed among teachers, who will transfer the knowledge to their students in the future.
- Teachers are key drivers of climate change education. They need to change the awareness about sustainable development and develop “green” competences among young people. Therefore, it is necessary to directly support the teaching staff in all segments of their career development.

In addition, the education systems in our country should be in synergy with the climate activities undertaken at national level in accordance with the United Nations and European strategies, such as the current Green Agenda, that will certainly require investment in education. **These investments should include new educational standards, trainings for teachers, better climate curricula, extracurricular activities and other climate mitigations and adaptations.**