

## **Project: “Building Capacity towards sustainable capital development in North Macedonia”**

### **Activity Area III - Development and Delivery of Capacity Building activities on Education for Sustainable Development and Climate Change**

#### **Action Plan for integration of the Education for Sustainable Development and Climate Change Education into primary, secondary education (including VET), higher and adult education**



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August 2024

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## Abbreviations

BDE	Bureau for Development of Education
CCE	Climate Change Education
CAE	Center for Adult Education
CVET	Center for Vocational Education and Training
ESD	Education for Sustainable Development
GCF	Green Climate Fund
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
KPI	Key Performance Indicators
ISCED	International Standard Classification of Education
MoES	Ministry of Education and Science
MPA	Ministry of Public Administration
MSPDY	Ministry of Social Policy, Demography and Youth
NDA	National Designation Authority (NDA)
RVETC	Regional Vocational Education and Training Centers
S3	Smart Specialization Strategy
SEC	State Examination Center
SEI	State Educational Inspectorate
SDG	Sustainable Development Goals
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNDP	United Nations Development Program
VET	Vocational Education and Training
WP	Working Package

## Executive Summary

**Quality education** is a basic human right and fundamental for socio-economic development. To cope with global challenges like climate change and implement green technologies, individuals need relevant knowledge and skills, necessitating reforms in education and training systems. The Macedonian education system aims to enhance climate literacy and equip children and young people with green competencies. The Education for Sustainable Development (ESD) integrates sustainability into learning, empowering people to address global issues like climate change and resource use. The Climate Change Education (CCE) focuses on understanding the climate crisis and developing critical thinking and proactive attitudes for change.

**North Macedonia's education system** is decentralized, consisting of pre-school, primary, secondary, higher, and adult education. Municipalities manage primary and secondary schools, with exceptions in Skopje and special schools.

- Pre-school and Primary Education: The curricula include elements of sustainability and climate awareness.
- Secondary Education: General and vocational education includes ESD and CCE topics primarily as electives.
- Higher and Adult Education: Some programs cover ESD and CCE, focusing on sustainable and technical sciences.

**Strategic Documents and Integration:** The National Development Strategy and the Smart Specialization Strategy emphasize sustainable development, aligning educational goals accordingly. However, existing legislation and curricula lack comprehensive integration of green transition topics across all levels of education, with ESD topics mostly limited to elective subjects and extracurricular activities.

The **action plan** for North Macedonia aims to integrate ESD and CCE into all education levels and teacher training, following UNESCO's principles of action-oriented, justice-promoting, high-quality, and relevant content. By 2024, UNESCO recommends that 90% of countries implement such green curricula, positioning North Macedonia to adopt these practices. Key objectives include:

- Integrating ESD and CCE into curricula and programs at all educational levels.
- Enhancing capacity building for educators and administrative staff.
- Investing in infrastructure to support ESD and CCE.

These goals align with national strategies, including the National Development Strategy 2024-2044 and the upcoming Law on Climate Change, which mandates climate change education. Additionally, the Energy Development Strategy 2040 emphasizes the role of higher education in advancing renewable energy and technology.

The **implementation framework** includes:

1. Establishing a formal project team and coordination unit within the government.

2. Reviewing and updating the project plan, including milestones and key indicators.
3. Developing a baseline report on current ESD and CCE integration and infrastructure.
4. Engaging stakeholders, including youth and community members, in curriculum development.
5. Creating a detailed, action-oriented curriculum for all educational levels using transformative pedagogy.
6. Piloting and refining instructional resources based on stakeholder feedback.
7. Producing and distributing final learning materials with a communication strategy.
8. Orienting textbook writers and examination boards on greening education.
9. Providing educators with pre- and in-service training in collaboration with key stakeholders.
10. Implementing the plan through a whole-school approach, strengthening partnerships with schools, CSOs, municipal authorities, and the private sector.
11. Monitoring and assessing the impact of ESD and CCE programs, making adjustments as necessary to meet project goals and key performance indicators.

The **governance and institutional framework** for the action plan on integrating ESD and CCE into North Macedonia's educational system involves several key components:

1. **Structures and Mechanisms:** The Ministry of Education and Science (MoES) will lead the project, coordinating with other national institutions and international bodies. The oversight structure includes establishing a formal project team and coordination unit within the government, reviewing, and updating project plans, and ensuring stakeholder engagement.
2. **Stakeholder Engagement:** The strategy involves actively engaging government ministries, science institutions/organizations, civil society organizations, and private sector partners. Key stakeholders include the Assembly of North Macedonia, the President, the Government, and various educational institutions. Each has defined roles in supporting policy development, sponsoring educational events, and ensuring alignment with national strategies and budget allocations.
3. **Roles and Responsibilities:**
  - MoES: Oversee overall coordination, approval of developed new curriculum, and investment in green educational infrastructure. It will also manage international collaboration and budget planning.
  - Bureau for Development of Education (BDE): curriculum development, handle curriculum integration and teacher training related to ESD and CCE.
  - Center for Vocational Education and Training (CVET) and Center for Adult Education (CAE): Focus on incorporating ESD and CCE into vocational and adult education curricula and frameworks.
  - State Examination Center (SEC) and State Educational Inspectorate (SEI): Monitor and assess the implementation of ESD and CCE in educational assessments and quality controls.

4. **Engagement Strategy:** The action plan will establish an extended project team, involving stakeholders in the first six months. This team will undergo capacity building to effectively drive the project forward and integrate ESD and CCE into all levels of education.

The framework ensures comprehensive oversight, stakeholder involvement, and clear roles for various institutions, aiming to foster a collaborative approach to greening the educational system.

#### **Governance and Implementation of ESD and CCE in North Macedonia:**

- **Policy Framework:** North Macedonia's strategic documents, such as the National Development Strategy 2024-2044 and Education Strategy 2018-2025, will be updated to integrate Education for Sustainable Development (ESD) and Climate Change Education (CCE). A new education strategy (2026-2030) will align with these goals, embedding ESD and CCE in policies and quality assurance criteria.
- **Institutional Strengthening:** A centralized climate change unit (focal point) will oversee ESD and CCE integration, supported by training programs for public administration. The project will build capacity with international support and adjust key performance indicators as needed.
- **Public-Private Partnerships:** The quintuple helix model will drive the green transition by engaging government, industry, academia, and civil society. Activities include fostering partnerships, conducting workshops, and facilitating international cooperation to ensure a comprehensive approach.
- **Learning Environment:** A Whole School Approach will update curricula and promote ESD and CCE across education levels. Training will be provided for educators and administrative staff, with investments in green infrastructure, materials, and tools for schools.
- **Key Activities:** The action plan also envisage development of methodologies, integrate ESD and CCE into curricula, train thousands of educators, and implement green infrastructure in schools. A digital database/platform within the MoES shall support resources and monitoring.
- **Implementation:** Communication efforts will include an online portal and public awareness campaigns. Funding will come from national and international sources, with incentives for corporate investment in green schools. Monitoring systems will ensure effective implementation and transparency.

Institutional **risks** of the action plan include limited support from educational bodies and policy misalignment, which can be mitigated by engaging stakeholders early and advocating for policy updates. Resource constraints may be addressed by securing diverse funding sources. Environmental risks, such as climate-related disruptions and ecological impacts, can be managed through climate-resilient infrastructure and environmental assessments. General risks include project delays, budget overruns, stakeholder miscommunication, technology failure, and regulatory compliance issues.



A **crisis management framework** will include a dedicated team, early warning systems, and contingency planning. Specific responses to crises, such as institutional resistance or natural disasters, involve mediation, safety measures, emergency fundraising, and transparent communication.

## 1. Introduction

### 1.1. Education for Sustainable Development and Climate Change Education

**Quality education (SDG4)<sup>1</sup> is a basic human right for all** and a foundation of social-economic 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 children and 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 shaping the future of numerous generations in the country. Related measures should therefore focus on increased “climate literacy” and equip children and young people with “green” competences.

**Education for Sustainable Development (ESD)** is an educational approach that seeks to integrate the principles and practices of sustainability into all aspects of learning and teaching. “ESD gives learners of all ages the knowledge, skills, values, and agency to address interconnected global challenges including climate change, loss of biodiversity, unsustainable use of resources, and inequality. It empowers learners of all ages to make informed decisions and take individual and collective action to change society and care for the planet<sup>2</sup>.”

**Climate change education (CCE)** helps people understand and address the impacts of the climate crisis, empowering them with the knowledge, skills, values and attitudes needed to act as agents of change.<sup>3</sup> Therefore, CCE demands a focus on the kind of learning, critical and creative thinking and capacity building that will enable children and youth to engage with the information, inquire, understand, ask critical questions and take what they determine are appropriate actions to respond to climate change<sup>4</sup>.

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<sup>1</sup> Source: <https://sdgs.un.org/goals/goal4> (SDG4 = Sustainable Development Goal 4: Quality Education – “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”)

<sup>2</sup> Source: <https://www.unesco.org/en/sustainable-development/education/need-know> (accessed 8th August 2024)

<sup>3</sup> Source: <https://www.unesco.org/en/climate-change/education>

<sup>4</sup> Stevenson, R. B., Nicholls, J., & Whitehouse, H. (2017). What is climate change education?. Curriculum perspectives, 37, 67-71.



## 1.2. Background information on North Macedonia's education context.

Key pillars of the education system of North Macedonia are pre-school education, primary education, secondary education, higher education, and adult education (Figure 1)<sup>5</sup>. The Macedonian educational system is decentralized. The management of the primary and secondary schools is under responsibility of the municipalities, except for the secondary schools in the capital Skopje which are under responsibility of City of Skopje. Some of the special schools (music, art, etc.) are under the direct responsibility of the **Ministry of Education and Science**.<sup>6</sup> Pre-school education is managed by the Ministry of Social Policy, Demography and Youth. The curricula for the subjects in the pre-primary, primary and general secondary education and for the general subjects in the vocational education are prepared by the **Bureau for Development of Education (BDE)**<sup>7</sup> and for the vocational subjects by the **Centre for Vocational Education and Training (CVET)**<sup>8</sup>.

### 1.2.1. Pre-school education

The responsibility for **pre-school curriculum development** lies within BDE. International best practices suggest that already pre-school education should cover elements of sustainability and climate change. It's essential to foster a love for nature and teach children to understand sustainability practices. These factors will play a critical role in how children grow up to address these issues<sup>9</sup>.

### 1.2.2. Primary education

The duration of **primary education** (ISCED 1 and ISCED 2) in North Macedonia is nine years, free of charge and compulsory for all children aged 6 to 15, with no regards to the gender, religion, and nationality. The number of students in the regular primary schools at the beginning of the school year 2023/2024 was 182.124, while around 19,050 teachers are included in the educational process<sup>10</sup>. Primary education activities are defined and regulated by the **Law on the Primary Education**<sup>11</sup> the **Concept for Nine-years Primary Education**<sup>12</sup> and the **National Learning Standards for Primary Education**<sup>13</sup>. The concept for extracurricular activities<sup>14</sup> addresses opportunities to include activities related to ESD and climate change education, such as the promotion of environmental clubs.

<sup>5</sup> Source: <https://eurydice.eacea.ec.europa.eu/national-education-systems/republic-north-macedonia/overview>

<sup>6</sup> Source: <https://mon.gov.mk/>

<sup>7</sup> Source: <https://www.bro.gov.mk/>

<sup>8</sup> Source: <https://csoo.edu.mk/en/homepage/>

<sup>9</sup> Source: <https://www.planetbee.org/planet-bee-blog/>

<sup>10</sup> Source: <https://www.stat.gov.mk/OblastOpsto.aspx?id=5>

<sup>11</sup> Source: [https://mon.gov.mk/download/?f=Zakon%20za%20osnovnoto%20obrazovanie%20-%20nov\\_1.pdf](https://mon.gov.mk/download/?f=Zakon%20za%20osnovnoto%20obrazovanie%20-%20nov_1.pdf)

<sup>12</sup> Source: <https://mon.gov.mk/content/?id=3785>

<sup>13</sup> Source: <https://mon.gov.mk/stored/document/standardi-USVOENI.pdf>

<sup>14</sup> Source: <https://www.bro.gov.mk/wp-content/uploads/2020/06/Koncepcija-za-vonnastavni-aktivnosti-2020-1.pdf>

### North Macedonia – 2023/2024

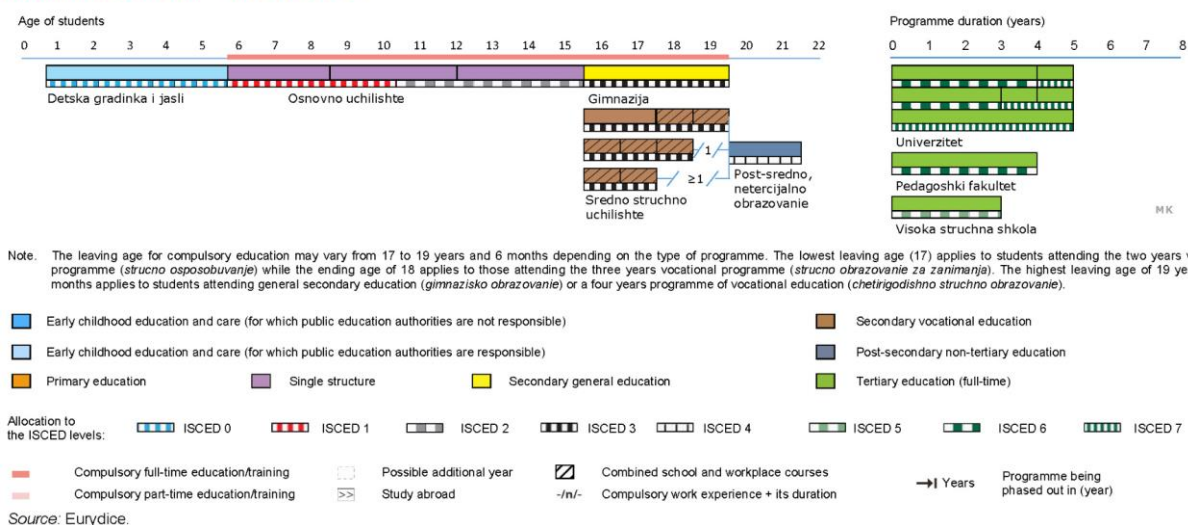


Figure 1 Structure of the education system of the Republic of North Macedonia

#### 1.2.3. Secondary education

Upon completion of the primary education, students are provided with the opportunity to enrol under equal terms in a secondary school. **Secondary education** (ISCED 3) consists of general secondary education (Gymnasium) in duration of four years and vocational education (vocational schools) in duration of two (vocational education of two years), three (vocational education for professions) or four years (vocational technical education). The secondary education is compulsory and comprises all children in the age cohort 15 to 19 years for the general secondary education, and for the age cohort 15 to 17, 18 or 19 in the VET depending on the selected track. The number of students in regular secondary schools, at the beginning of the 2023/2024 school year, is 67.278<sup>15</sup>. There are 135 secondary schools with 7.047 teachers involved in the education process.

The **Law on Secondary Education**<sup>16</sup> defines secondary education as compulsory for each citizen and is free in public secondary schools. The activities and responsibilities of the secondary education are defined and regulated, beside the Law on the Secondary Education, also with the Law for Vocational Education and Training. The latest version of the **Law for Vocational Education and Training** is from 2019<sup>17</sup>, however, the newest version of this Law is in the process of public discussion and is expected to be adopted during 2024.<sup>18</sup> In addition, with the aim to have more regional approach, the **Concept for the establishment of Regional Vocational Education and Training Centers** (RVETC) was adopted

<sup>15</sup> Source: <https://www.stat.gov.mk/OblastOpsto.aspx?id=5>

<sup>16</sup> Source: [https://ener.gov.mk/Default.aspx?item=pub\\_regulation&subitem=view\\_reg\\_detail&itemid=77227](https://ener.gov.mk/Default.aspx?item=pub_regulation&subitem=view_reg_detail&itemid=77227)

<sup>17</sup> Source: <https://mon.gov.mk/download/?f=Zakon%20za%20strucno%20obrazovanie%20i%20obuka.docx>

<sup>18</sup> Source: [https://ener.gov.mk/Default.aspx?item=pub\\_regulation&subitem=view\\_reg\\_detail&itemid=66198](https://ener.gov.mk/Default.aspx?item=pub_regulation&subitem=view_reg_detail&itemid=66198)

(09.05.2022)<sup>19</sup> and currently (status of end of August 2024) there are 5 RCVETs formally approved by the Government.

The **Law on teachers and professional associates in the primary and secondary education** (adopted in 2019),<sup>20</sup> as well as the **Law for textbooks for primary and secondary education** (2018 version),<sup>21</sup> the **Law on training and examination for the principal of primary school, secondary school, student dormitory and open civil university for lifelong learning** (2018)<sup>22</sup> and the **Law on student's (primary and secondary education level) standard** (2020)<sup>23</sup> are regulatory documents that are covering topics for primary and secondary education and have also broader scope.

#### 1.2.4. Higher education

**Higher education** (ISCED 5, 6 and 7): implements under-graduate, master and doctoral studies in the higher educational institutions and institutes which are autonomous and independent. Activities of the higher educational institutions are regulated by the **Law on higher education**<sup>24</sup>. There are seven state universities and 14 private universities in the Republic of North Macedonia. In the academic year 2022/2023, a total of 53 821 students were enrolled in the educational process<sup>25</sup>. The number of professors and associates (teaching assistants) in Macedonian higher education institutions in the academic year 2022/2023 was 4 496. Of the total number, 3 166 or 70.4% are professors/teachers, while 1 330 or 29.6% are teaching assistants.

#### 1.2.5. Adult education

Education system in our country includes formal and non-formal education, but also informal learning. Formal adult education is provided at state and private schools and universities, both full-time and part-time. Special priority of the Republic of North Macedonia is the **adult education**, an activity which is regulated with the **Law on Adult Education**<sup>26</sup> and **Law for Vocational Education**. The system of adult education is promoted by the **Centre for Adult Education**<sup>27</sup>, an institution established by the government in order to contribute through the adult education to the achievement of socio-economic needs of Macedonia, to meet the needs of the labour market and to assist individuals in their personal development.

A **concept for secondary education of adults** has been adopted in 2022<sup>28</sup>. This concept represents a vision that should develop postulates and mechanisms of secondary education of adults over ten years and more. The focus is on measures and activities that will enable the

<sup>19</sup> Source: <https://mon.gov.mk/content/?id=5895>

<sup>20</sup> Source: <https://mon.gov.mk/download/?f=Zakon%20za%20nastavnicite%20i%20str.pdf>

<sup>21</sup> Source: <https://mon.gov.mk/download/?f=Zakon%20za%20ucebnici>

<sup>22</sup> Source: <https://mon.gov.mk/download/?f=Zakon%20za%20obuka>

<sup>23</sup> Source: [https://mon.gov.mk/download/?f=Zakon%20za%20ucenickiot%20standard\\_1.docx](https://mon.gov.mk/download/?f=Zakon%20za%20ucenickiot%20standard_1.docx)

<sup>24</sup> Source: <https://mon.gov.mk/download/?f=Zakon%20za%20visokoto%20obrazovanie.doc>

<sup>25</sup> Source: <https://www.stat.gov.mk/OblastOpsto.aspx?id=5>

<sup>26</sup> Source: <https://mon.gov.mk/download/?f=Zakon%20za%20obrazovanie%20na%20vozasnite.pdf>

<sup>27</sup> Source: <https://cov.gov.mk/>

<sup>28</sup> Source: <https://mon.gov.mk/stored/document/Koncepcija%20za%20sredno>

adults to actively adjust to the changes within the society and will enable personal growth and inclusive and cohesive society that learns and develops.

#### 1.2.6. Key strategic documents

The umbrella strategy that covers all aspects of the educational sector is the **National Education Strategy 2018-2025**<sup>29</sup>. However, this strategy does not have explicit any ESD and CCE elements.

The **National Development Strategy 2024-2044** was adopted by the Government in January 2024<sup>30</sup>. The Strategy has a strong focus towards sustainable development and green transition as it can be seen from the Vision and Mission of the first pillar **Competitive and Innovative economy**. **Vision:** In the next 20 years, Macedonia will become a developed, green, innovative, and efficient economy with a motivated and high-quality workforce, marking continuous progress and sustainable competitiveness while being agile in response to global trends. **Mission:** Through synergy between businesses, the government and the education system, Macedonia will create a highly skilled and knowledgeable workforce that meets the needs of the labor market. This skilled workforce will offer products and services with high added value, enabling competitiveness in a dynamic and complex world).

The educational system is included through all the pillars of the strategy and is presented as a carrier for the sustainable development of our country, while one of the main pillars of the strategy (among six) is completely related to Green and Digital Transformation.

The **Smart Specialization Strategy (S3) of the Republic of North Macedonia 2023 – 2027**<sup>31</sup> with **S3 Action plan for 2024 and 2025**<sup>32</sup> was adopted by the Government in December 2023. Both documents focus on green and digital transition of the Macedonian economy. ESD and CCE is noteworthy present in one of the horizontal priorities of S3 is **Energy for the future** (cross sector interrelatedness, energy efficiency, eco solutions, renewable energy, climate change, decarbonization). One of the key messages of S3 was that the educational sector should follow the priorities of S3 and adopt the curriculums towards that needs.

### 1.3. Overview of current status of integration of ESD and CCE in the educational system

#### 1.3.1. Legislation and strategic framework

The analysis of the current education related legislative (Laws on primary, secondary, VET, Higher and Adult education) showed that **green transition topics are not addressed at all**. Only within the Law on secondary education, the Article 51: “Activities for sustainable

<sup>29</sup> Source: <https://mon.gov.mk/download/?f=strategija-za-obrazovanieto-2018-2025.docx>

<sup>30</sup> Source: <https://www.nrs.mk/mk-MK/pocetna/za-nrs/nashata-strategija.nsp>

<sup>31</sup> Source: [https://mon.gov.mk/download/?f=Mk\\_%20S3\\_MK%20%2020.12.2023\\_1.doc](https://mon.gov.mk/download/?f=Mk_%20S3_MK%20%2020.12.2023_1.doc)

<sup>32</sup> Source: [https://mon.gov.mk/download/?f=Mk\\_%20S3-AP%2020.12.2023\\_MK\\_1.DOC](https://mon.gov.mk/download/?f=Mk_%20S3-AP%2020.12.2023_MK_1.DOC)

development, climate change and green technologies” is directly related to educational elements related to the green transition.

There is a concept for primary education supporting sustainability related activities. Within the National Learning Standards for primary education, there are competences that are related to education for sustainable development and ecology, but not related to climate change.

### 1.3.2. Integration into curricula

In 2023, within the project “Building Capacity Towards Sustainable Human Capital Development (funded by Green Climate Fund)” an in-depth analysis of teaching curricula with focus of ESD and CCE content was conducted by Dr. Petra Pop Ristova and Mr. Niklas Hayek. The key conclusions for primary and secondary education include:

“In **lower primary education**, ESD topics are included in the subjects of Society, Natural science, Art education and English. In upper primary ESD topics are incorporated in Geography, Biology and Citizen education (Table 1). However, ESD topics in the **upper primary curriculum** are mostly focus of the elective subjects, meaning that unless students choose these subjects, their education on sustainability will not progress significantly. The focus in primary education is on ESD themes related to health, environmental protection including protection of water and management of waste, air pollution, energy resources in the context of climate change and biological and landscape diversity. Not all SDGs are included in the primary education, and serious shortcomings have been identified regarding topics related to SDG1, SDG2, SDG2, SDG8, SDG9, SDG12, SDG14, SDG17 (Table 1). Key topics on poverty alleviation, citizenship, peace, responsibility in local and global context, governance, gender equity, rural and urban development, economy, production and consumption patterns and corporate responsibility are insufficiently integrated in the primary education curricula. A particular big drawback is the lack of topics related to sustainable consumption and production (SDG12) in the primary education curricula. Values, lifestyles, and attitudes are established from an early age, and without proper guidance and education for transformation of our consumption habits, sustainable development and climate actions cannot be achieved. We could not find any references on SDGs or the concept of sustainable development in the curricula for primary education. Primary education curriculum should aim to provide solid understanding of the basic economic, environmental, and social concepts as part of SD. However, in line with previous analyses, our results show that this does not seem to be the case, as primary education curriculum mainly focuses on environmental education (as noted also previously by Aceska & Nikoloski in 2017)”. However, the situation with integration of ESD and CCE in the primary school educational system is significantly improving with adoption of the National Learning Standards. This significant improvement can be seen in curriculum for 5<sup>th</sup> and 6<sup>th</sup> grade of primary education<sup>33 34</sup>.

Analyses of **secondary education** curriculum showed that ESD topics in the first two years of education are to some extent included in subjects of Geography, Sociology, Art education,

<sup>33</sup> Source: <https://www.bro.gov.mk/wp-content/uploads/2022/01>

<sup>34</sup> Source: <https://www.bro.gov.mk/wp-content/uploads/2023/03/Prirodni-nauki-6-odd..pdf>



Biology, and English (Table 2). In the last two years of secondary education, ESD topics are only integrated in elective subjects and project-based subjects. Student individual progress on ESD and CCE depends on whether students select these subjects. This represents a big drawback in the secondary education. The quality of ESD topics in the secondary education seems to be inferior compared to the primary education, and overall topics are not sufficiently updated to reflect new developments. Similarly, to primary school curricula, education on sustainable consumption and production is completely missing, and furthermore there is a serious gap in the integration of topics relating to climate action and quality education (SDG13 and SDG4, Table 2).”

General analysis of the study programs on the level of **higher education** showed that topics related to ESD and CCE are already included in the study programs of all three cycles at some of the universities in our country (mostly within the technical, natural, and biotechnological sciences). However, what is currently either missing or under development are courses / programs related to the Green Financing; Carbon Taxation, Green Legislative; Climate Governance, the Health Effect of Climate Change, new technologies related to Hydrogen, Batteries, Carbon Capture; Waste Management; Climate Modelling; Circular Economies Models; Cities and Climate Change; Tourism and Climate Change, etc.

Additional, in-depth analysis was conducted to all **Pedagogical Faculties** in the country (their accredited study programs) because these Faculties produce teachers that teach pupils in primary schools in classes from first up to fifth school year in primary education. It can be noticed that there is a course “Environmental education” that is covering some aspects of education for sustainable development (mainly protection of the environment, etc.), while climate changes are not mentioned in the study program. It is very important to increase capacities of the professors from the Pedagogical faculties in the country involved in the course “Environmental education” and similar courses and support them with trainings and didactic materials related to ESD and CCE and textbook on CCE that will be adopted by all Pedagogical Faculties at the Universities as a joint curriculum.

The **Centre for Adult Education (CAE)** has already approved several training programs related to ESD and CCE (e.g. operator on systems for renewable energy, operator and maintenance of photovoltaics systems, etc.). However, the whole process off accreditation requires review and an update with focus on ESD and CCE. The Law on Professional Development and Training of Administrative Officers is currently in the process of approval by the Parliament. The Law is withing responsibility of the Ministry of Public Administration. It is envisaged to have significant training for all administrative servant, both on the entry position and for the management positions. In this regard, it will be important for training program of administrative workers to be enriched with topics related to ESD and CCE.

Table 1 Current integration of ESD and CCE topics in the curriculum for primary education in North Macedonia.

Grade/ Level	Sustainable Development Goals																	Links to school subjects
	SDG 1	SDG 2	SDG 3	SDG 4	SDG 5	SDG 6	SDG 7	SDG 8	SDG 9	SDG 10	SDG 11	SDG 12	SDG 13	SDG 14	SDG 15	SDG 16	SDG 17	
I			+			+					+							- Subject: Society, Art education
II			+								+							- Subject: Art education, Natural sciences
III			+	+											+			- Subject: Natural science, Society
IV			+								+							- Subject: English, History and society, Art education
V			+								+		+		+			- Subject: English, Art education, Natural science
VI											+		+		+			- Subject: English, Natural science
VII						+	+				+		+		+			- Subject: Geography, Biology
VIII				+			+			+						+		- Subject: Chemistry, Geography, Citizen education
IX				+			+						+		+	+		- Subject: Geography, Biology
VII-IX			+									+			+			- Elective subject: Education on environment
VII-IX			+															- Elective subject: Improvement of healthcare
I-IX			+	+											+			- Elective subject: Life skills

Table 2 Current integration of ESD and CCE topics in the curriculum for secondary education (Gymnasium) in North Macedonia.

Grade/ Level	Sustainable Development Goals																	Links to school subjects
	SDG 1	SDG 2	SDG 3	SDG 4	SDG 5	SDG 6	SDG 7	SDG 8	SDG 9	SDG 10	SDG 11	SDG 12	SDG 13	SDG 14	SDG 15	SDG 16	SDG 17	
I			+			+		+		+			+					- Subjects: English, Biology, Geography
II	+	+	+			+		+	+		+		+		+		+	- Subject: English, Arts, Sociology, Geography
III	+		+		+	+				+	+		+	+	+			- Subject: English, Biology, elective Geography, elective Sociology, elective Bioethics
IV							+						+		+	+		- Subject: elective Biology, elective Physics, elective Sociology
I-IV															+	+		- Elective subjects: Life skills, Project-based natural sciences, Language; Peace, tolerance
II-III			+					+										- Elective subjects: Project-based Innovation and entrepreneurship, Healthy living



## 2. Objectives

Education is a critical agent in addressing the issue of climate change, because it can encourage people to change their attitudes and behavior; it also helps them to make informed decisions.<sup>35</sup>

ESD and CCE are essential for fostering a well-informed, proactive society that is equipped to address one of the most pressing challenges of our time. In addition, this type of education is vital for equipping people with the knowledge, skills, and values needed to create a sustainable future. It empowers individuals to contribute to a more sustainable world, where economic development, environmental protection, and social equity are balanced and interdependent.

### 2.1. Objectives of this action plan

The main goal of this action plan is to provide a strategic framework for greening the national education of the Republic of North Macedonia through comprehensive integration of ESD and CCE.

“A green curriculum approach integrates climate mitigation and adaptation in teaching and learning from pre-primary, primary, secondary, and tertiary school levels as well as in teacher training. It emphasizes the interconnections between the environment, economy, and society, engaging students across cognitive, socio-emotional, and behavioral domains to inspire action for sustainability”.<sup>36</sup> In addition, UNESCO recently promoted “Greening curriculum guidance: teaching and learning for climate action<sup>37</sup>” that envisage four key principles of greening the education system:

- Action-oriented
- Justice-promoting
- Quality content
- Comprehensive and relevant

UNESCO in July 2024 calls 90% of countries to green their national curriculums before 2030.

North Macedonia must be among these countries with implemented green education system on all levels. The project will support this aim through the implementation of the action plan.

### 2.2. Main objectives of integrating ESD and CCE into education system of the country

<sup>35</sup> Source: <https://www.un.org/en/climatechange/climate-solutions/education-key-addressing-climate-change>

<sup>36</sup> Source: <https://www.unesco.org/en/education-sustainable-development/>.

<sup>37</sup> Source: <https://unesdoc.unesco.org/ark:/48223/pf0000390022>

The process of greening the education system is suggested to have three main pillars:

- **Integration of ESD and CCE into curricula** and study programs on all educational levels;
- **Capacity building** related to ESD and CCE among public sector decision makers, teaching and administrative staff at educational institutions;
- **Investment in infrastructure** that will support educational processes related to ESD and CCE.

Based on these pillars, main project objectives are:

1. **To integrate ESD and CCE into Curriculum**: Incorporate Education for Sustainable Development (ESD) and Climate Change Education (CCE) topics and content across all educational levels and study programs.
2. **To enhance Capacity Building**: Strengthen the capacity of teaching staff and educational institutions' administration through targeted training and professional development related to ESD and CCE.
3. **To invest in Supportive Infrastructure**: Invest in and develop infrastructure that facilitates and supports educational processes related to ESD and CCE, ensuring a conducive learning environment.

### **2.3. Alignment of objectives with long-term national climate and education related goals and strategies**

The aforementioned objectives are fully in line with the key national strategies, e.g., the National Development Strategy 2024-2044<sup>38</sup>. Education is horizontal dimension, while one of the key pillars is related to green transformation.

The National Strategy for Education 2018-2025 ends next year. Now is the right moment to develop new educational strategy with strong green component. The objectives and activities envisaged within this project proposal and action plan should be one of the main drivers of the next educational strategy.

Another relevant development is the draft Law on Climate Change<sup>39</sup> that is being prepared for North Macedonia. The draft-law under article 76 envisions for the government to develop and implement educational programs on climate change for all levels of education as mandatory of optional subjects. These programs **should teach students about the science of climate**

<sup>38</sup> Source: <http://www.nrs.mk/>

<sup>39</sup> Source: [https://ener.gov.mk/Default.aspx?item=pub\\_regulation&subitem=view\\_reg\\_detail&itemid=77486](https://ener.gov.mk/Default.aspx?item=pub_regulation&subitem=view_reg_detail&itemid=77486)

**change, its impacts, and what they can do to help mitigate and adapt to it as well as helps in awareness-raising and human and institutional capacity on climate change mitigation, impact reduction and early warning.** The Ministry of Education and Science is to provide support for the publication of books, brochures, and pamphlets on topics related to the negative effects of climate change and the possible measures to reduce greenhouse gas emissions and adapt to climate change.

Furthermore, the **Energy Development Strategy 2040** for North Macedonia<sup>40</sup> suggests that the inclusion of higher education entities such as universities and the Macedonian Academy of Science and Arts are key stakeholders in the that can stimulate the research and innovation in the energy sector. It is of paramount importance to increase investments in the development and implementation of advanced technological solutions, particularly in renewable and energy-efficient technologies (OIE and EE) and to promote key projects, including innovative energy technologies.

Moreover, the country will very soon initiate the process of preparation of the national adaptation strategy. It is strongly recommended the elements of ESD and CCE to be reflected in the processes of development of this strategic document.

### 3. Scope and Approach

#### 3.1. Definition of key education sectors to be targeted by the action plan.

The project is targeting whole educational system, however, main activities will be focused on formal education activities within the:

- Pre-school education
- Primary education
- Secondary education (including VET)
- Higher education
- Adult education.

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<sup>40</sup> Source: <https://www.economy.gov.mk/Upload/Documents/Energy>

### **3.2. Methodologies and frameworks to be used for implementing the action plan.**

Implementation of the action plan shall follow proposed methodology<sup>41</sup>:

1. Establishment of the formal implementation team and coordination unit within the Government of the Republic of North Macedonia.
2. Review and update of the action plan, milestones, key indicators, and deliverables.
3. Review of the status quo and development of the baseline report (analysis of current status of integration of ESD and CCE in the curriculum and study program; overview of the equipment and other infrastructure available for ESD and CCE).
4. Establish and ensure inclusive participation of stakeholders in the curriculum development process, including youth and community members.
5. Develop a detailed curriculum (for all educational levels) that ensures action-oriented learner outcomes, including the use of transformative and 'place-based' pedagogy.
6. Prepare and pilot sample instructional resources within and across subject areas to test the new curriculum and solicit feedback from numerous stakeholders, especially youth.
7. Finalize, produce, and distribute learning resources, including suggestions for assessment, with an associated communication and publicity strategy.
8. Provide substantive orientation to greening education for textbook writers, examination board staff and other stakeholders, and obtain any necessary approvals.
9. Provide educators and administration staff with quality pre- and in-service training and continuous professional development opportunities, in cooperation with quadruple helix stakeholders.
10. Implement the key activities within the action plan through whole institution (school) approaches and strengthen partnerships between schools, science institutions/organizations, CSOs, municipal authorities and the private sector to implement greening education (infrastructure investments, materials, and tools, capacity building of educators and staff, and curriculum changes towards ESD and CCE).
11. Monitor and assess the results of ESD and CCE programming on green (sustainable development and climate change related) competencies in an ongoing manner. If needed – to take corrective measures to be in line with project plan and all Key Performance Indicators (KPI) and deliverables.

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<sup>41</sup> This methodology is following main aspects of UNESCO 10-step roadmap for greening curriculum (<https://unesdoc.unesco.org/ark:/48223/pf0000390022>)

## 4. Governance and Institutional Framework

The key institution responsible for the educational system in North Macedonia is the **Ministry of Education and Science (MoES)**. Several other institutions have a direct impact in the creation of the functional education system in the country. On the Table 3, only institutions that will be directly involved in the process of implementation of the activities of the action plan are mentioned.

*Table 3 Institutions (stakeholders) important for the development of the educational system in our country*

Institution	Activities related to education (with an additional focus on green transition)
<b>State institutions and authorities</b>	
<b>Assembly of RNM</b> <a href="https://www.sobranie.mk/">https://www.sobranie.mk/</a>	<ul style="list-style-type: none"> <li>- Adoption of laws related to education, economic development, self-employment, technological development, green transition, etc.</li> <li>- Active participation of parliamentary groups and individuals - MPs with amendments in improving laws related to education</li> <li>- Selection (confirmation of selection) of key persons in public positions in organizations/institutions/bodies related to education activities and work with young people</li> </ul>
<b>President of RNM</b> <a href="https://pretsedatel.mk/">https://pretsedatel.mk/</a>	<ul style="list-style-type: none"> <li>- Support and promotion of activities related to the development of the educational system</li> <li>- Sponsorship (patron) of events related to competitions in various fields between pupils, students and schools, start-up camps, science fairs, innovations, green / sustainability related competition, etc.</li> <li>- Stimulating and supporting activities related to inclusion in education, multiculturalism, ethics, sustainable development, etc.</li> </ul>
<b>Government of RNM</b> <a href="https://vlada.mk/">https://vlada.mk/</a>	<ul style="list-style-type: none"> <li>- Coordination of policies for socio-economic development (in addition to other areas and with a focus on education, but also green transition);</li> <li>- Appointment of competent persons to ministerial and director positions</li> <li>- Definition and promotion of policies and implementation of measures for the development of the educational system from all aspects (infrastructure, quality in the educational process, support and career development of teaching and administrative staff in educational institutions, etc.)</li> <li>- Ensuring an adequate budget for the implementation of strategies, programs and activities related to the development of the educational system</li> </ul>
<b>Ministry of Education and Science - MoES</b> <a href="http://mon.gov.mk/">http://mon.gov.mk/</a>	<ul style="list-style-type: none"> <li>- Development of all strategic documents for education (primary, secondary, higher education; secondary vocational education, adult education; science, research and technological development; etc.)</li> <li>- Coordination of all institutions and activities related to the implementation of program goals and activities in the field of education</li> <li>- Creation of curricula for primary and secondary education; providing general frameworks for the development of higher education</li> </ul>

	<ul style="list-style-type: none"> <li>- Manage and taking care of the educational infrastructure; information equipment and software support in educational institutions</li> <li>- Strategic and financial support for the development of science and scientific education, national projects for research and technological development and for the development of research and technological infrastructure</li> </ul>
<p><b>Ministry of Social Policy, Demography and Youth (MSPDY)</b> <a href="https://www.mtsp.gov.mk">https://www.mtsp.gov.mk</a></p>	<ul style="list-style-type: none"> <li>- Adoption of the curricula and study program for pre-school education and teacher training efforts needs approval and support from MSPDY</li> </ul>
<p><b>Bureau for Development of Education – BDE</b> <a href="http://bro.gov.mk/">http://bro.gov.mk/</a></p>	<ul style="list-style-type: none"> <li>- An administrative body within the framework of the Ministry of Education and Science with the capacity of a legal entity and performs professional work of importance for the development of upbringing and education</li> <li>- It includes components that determine the purpose and content of educational work in the area of preschool, primary, high school, secondary professional and post-secondary education, the education of children with special educational needs, the education of adults, student homes, as well as the education of children and the citizens of the Republic of North Macedonia abroad for learning the mother tongue and culture.</li> <li>- BDE is responsible, together with the municipality units for education on the approval of yearly school plan of activities.</li> </ul>
<p><b>Center for Vocational Education and Training – CVET</b> <a href="http://www.csoo.edu.mk">http://www.csoo.edu.mk</a></p>	<ul style="list-style-type: none"> <li>- Responsible institution for the development of the national framework for professional qualifications.</li> <li>- Develop and advances vocational education in accordance with modern technological and social development.</li> <li>- Develop educational qualifications (occupational standards, qualification standards, curricula and programs and examination programs in vocational education)</li> <li>- Prepare concepts for professional education from II – V B level according to the National qualification framework</li> <li>- Provide support to vocational education through counselling, coaching and mentoring of teachers and trainers in vocational subjects in vocational education and training,</li> <li>- Give an opinion on the fulfilment of the conditions of the institutions that require verification for the implementation of vocational education and training,</li> <li>- Develop standards for school space and equipment, etc.</li> </ul>
<p><b>Center for Adult Education - COV</b> <a href="http://www.cov.gov.mk">http://www.cov.gov.mk</a></p>	<ul style="list-style-type: none"> <li>- Development of an adult education system that will provide high-quality opportunities for learning and acquiring qualifications in accordance with the needs of the labor market, development of entrepreneurship and will contribute to the economic, social and personal development of individuals</li> <li>- Accreditation of training and coaching programs on various topics,</li> <li>- Ensuring quality especially by establishing standards and criteria for formal and informal education of adults, etc.</li> </ul>
<p><b>State Examination Center – SEC</b> <a href="https://dic.edu.mk/">https://dic.edu.mk/</a></p>	<ul style="list-style-type: none"> <li>- An independent organization that is directly under the authority of the RSM Government</li> <li>- SEC oversees organizing the high school graduation, as well as organizing and implementing various types of student assessments, including international tests (e.g., the Program for International Student Assessment - PISA and the Study of Trends in Learning Mathematics and Natural Sciences at the International Level – TIMSS)</li> <li>- It also conducts training, assessment and licensing of directors (candidates for directors) of educational institutions.</li> </ul>
<p><b>Pedagogical Service</b></p>	<ul style="list-style-type: none"> <li>- Institution (organ within the Ministry of Education and Culture) responsible for:</li> </ul>



	<ul style="list-style-type: none"> <li>- preparation of programs and measures to improve the psychological, social, cultural and educational development of students, as well as for the implementation of procedures to support the development of students and</li> <li>- organization and support of the procedures for the preparation of textbooks for primary and secondary education.</li> </ul>
<p><b>The State Educational Inspectorate - SEI</b> <a href="https://dip.gov.mk/">https://dip.gov.mk/</a></p>	<ul style="list-style-type: none"> <li>- A body within the Ministry of Education and Culture responsible for controlling the application of legal regulations related to education and for controlling the quality of the educational process in all educational levels and in open civil universities.</li> <li>- SEI is also responsible for monitoring of the implementation of yearly the school program of activities</li> </ul>
<p><b>Municipalities in RNM and the City of Skopje</b></p>	<ul style="list-style-type: none"> <li>- Responsible for appointing managers in primary and secondary schools</li> <li>- It provides funding for schools, control of school operations, organization of student transportation</li> <li>- Support of project activities carried out by the school, which are of interest to the community (collecting plastic bottles, handicraft fairs, helping people with special needs), (e.g. the city of Skopje is a patron and sponsor of an annual competition for the best business concept on green innovation for students from secondary schools at the level of the city territory) etc.</li> </ul>
<p><b>Universities</b></p>	<ul style="list-style-type: none"> <li>- Responsible for providing high education in three levels: undergraduate, postgraduate and doctoral level. In total there are <b>28 higher education institutions</b> that are active in the country <sup>42</sup>: six (6) state universities, one (1) private-public non-profit higher education institution, ten (10) private universities, four (4) higher professional schools and four (4) scientific institutes (where studies from the second cycle of studies are organized), as well as two (2) faculties: the Orthodox Theological Faculty in Skopje and the Faculty of Islamic Sciences in Skopje, and the higher education institution Military Academy "General Mihailo Apostolski" in Skopje.</li> </ul>
<p><b>The Agency for Quality in Higher Education</b> <a href="https://www.akvo.mk/">https://www.akvo.mk/</a></p>	<ul style="list-style-type: none"> <li>- Agency for Quality in Higher Education is an independent professional body that have Board for Accreditation of Higher Education, Board for Evaluation of Higher Education and Director of the Agency for Quality of Higher Education.</li> <li>- Main activities of this Agency are: <ul style="list-style-type: none"> <li>o Implementation of the system of provision, assessment, development and promotion of higher education in the Republic of North Macedonia.</li> <li>o Maintaining quality standards and promoting and improving the quality of higher education institutions and their study programs (in accordance with the accepted standards and procedures of the guide applied by the European Association for Quality Assurance in Higher Education):</li> </ul> </li> </ul>
<p><b>Schools (primary and secondary)</b></p>	<p>In the country there are<sup>43</sup>:</p> <ul style="list-style-type: none"> <li>- <b>364 primary schools</b>, of which 340 municipal schools, 9 state schools (of which 6 primary schools for students with special educational needs, 2 Institutes for children with special educational needs and 2 Institute for taking care of children with educational and social problems), 14 music schools (4 state, 10 municipal) and 1 school for adults.</li> <li>- <b>130 secondary schools</b> (of which 109 are public state and municipal: 22 are high schools; 46 are vocational; 29 offers both high school and vocational education; 4 schools are for students with special educational needs; 4 music schools, 1 sports academy, 1 sport high school, 1 math-informatics gymnasium and 1 art school). There are also 21 private high schools operating in the country.</li> </ul>

<sup>42</sup> Source: <https://mon.gov.mk/download/?f=Strateshki%20plan%202023-2025.pdf>, p. 6

<sup>43</sup> Source: <https://mon.gov.mk/download/?f=Strateshki%20plan%202023-2025.pdf>, p. 5



*Note: The list of institutions that directly or indirectly contribute to the development of the education system in the country is much larger. The above table presents key organizational units that are responsible for the creation and implementation of education policies and can be directly involved in the activities in the educational sector related to the green transition and climate literacy.*

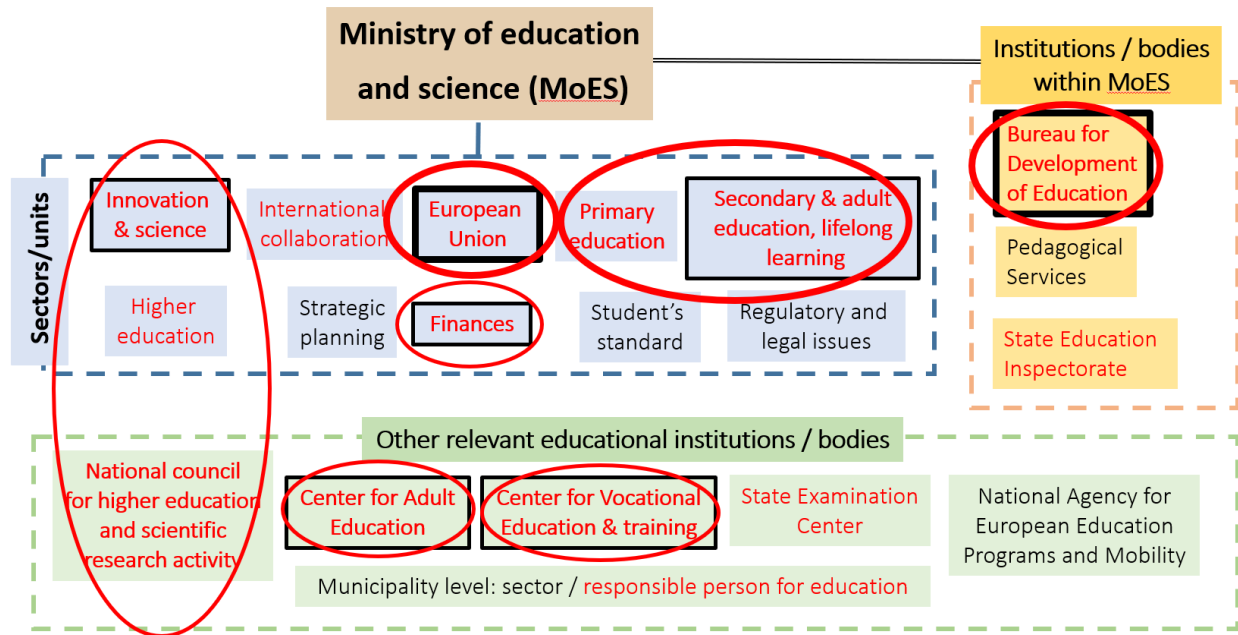


Figure 2. Suggested structure of the project unit for ESD and CCE in the educational sector

Figure 2 recommends institutions and units that should participate in a **project unit responsible for the implementation of this action plan**. The selection of the institutions and units was done based on the impact that they (will) have toward achieving carbon neutrality by 2050.

As it can be seen from the organizational chart, key stakeholder institutions are represented with several symbols.

- Text:
  - o Red text (bold) – very important institution
  - o Red text (normal) – important institution
  - o Black text normal – institutions that in the first phase will have just supporting role
- Rectangles (each institution is represented with the rectangle):
  - o Black bold outline - institution with very significant role in ESD and CCE
  - o Black normal outline – institution with important role in ESD and CCE

- No outline – institution with basic supportive role in ESD and CCE
- Circles / ellipses:
  - Bold red line – lead institution for ESD and CCE activities
  - Normal red line – institution(s) that should work alone (or together) within their scope of activities to implement actions related to ESD and CCE

It is recommended that the individuals participating in this working group are representatives nominated by their respective institutions, and that they already have experience in the topics related to green transition and sustainable development. Table 4 presents the list of institutions and the reason why they should be included in ESD & CCE working group.

*Table 4. List of institutions and the reason why they should be included in CC / ESD project unit (working group)*

Institution/unit	Individuals	Responsibilities
<p><b>Ministry of Education and Science - MoES</b> <a href="http://mon.gov.mk/">http://mon.gov.mk/</a></p> <p>First block - sectors: 1. European Union <b>(coordinator for MoES)</b> 2. International collaboration 3. Strategic planning 4. Finances</p>	<ul style="list-style-type: none"> <li>- 1 person from the EU sector as a main coordinator already employed in the MoES</li> <li>- 1 person acting as a deputy coordinator from EU sector or international collaboration sector already employed in the MoES</li> <li>- 1 Person from Finance department responsible for coordination of procurement processes</li> </ul>	<p><b>Overall coordination</b></p> <ul style="list-style-type: none"> <li>- Main focal point for ESD and CCE in MoES, responsible for coordination of the team in MoES on the vertical and horizontal level with all institutions within MoES</li> <li>- Contribute to the annual MoES planning by ensuring that ESD &amp; CCE measures are properly addressed.</li> <li>- Coordination of international projects and funding, national and international programming related to ESD and CCE on the national level and general on the MoES level</li> <li>- Coordination of activities with National Designation Authority for the Green Climate Fund and the Ministry of Environment and Physical Planning</li> </ul> <p><b>Financial planning</b></p> <ul style="list-style-type: none"> <li>- Coordination of the investment in green educational infrastructure (energy efficiency in buildings, installation of photovoltaics, green eco gardens, optimization of waste management per school, laboratories at schools/universities, etc.)</li> <li>- Coordination of ESD/CCE budgeting in the annual / multiannual plans of MoES</li> </ul> <p><b>Advocacy</b></p> <ul style="list-style-type: none"> <li>- Introduction of ESD and CCE in all education related strategies, laws, bylaws, concepts, programs, etc.</li> <li>- Engage in the development of national climate plans, such as the National Determined Contribution, the National Adaptation Plan, National Communications, Low Emission Development Strategies, and similar.</li> </ul>

		<ul style="list-style-type: none"> <li>- Facilitation of linkages between ESD/CCE and gender equality and ensure the nexus topic is considered in the ministry's work.</li> <li>- Promotion of ESD and CCE on the national level</li> </ul> <p><b>Overall monitoring and reporting</b></p> <ul style="list-style-type: none"> <li>- Supervision and monitoring institutional investment plans related to infrastructure projects</li> <li>- Monitor progress of implementing ESD and CCE actions in MoES in general</li> <li>- Reporting to the Minister of Education and Science on activities planned and carried out</li> </ul>
<p><b>Ministry of Education and Science - MoES</b> <a href="http://mon.gov.mk/">http://mon.gov.mk/</a></p> <p>Second block - sectors:</p> <ol style="list-style-type: none"> <li>1. Secondary and adult education, lifelong learning (<b>coordinator 2 for MoES</b>)</li> <li>2. Primary education</li> </ol>	<ul style="list-style-type: none"> <li>- 1 person already employed at the Sector for secondary and adult education, lifelong learning</li> <li>- 1 person already employed at the Sector for primary education (as a deputy coordinator)</li> </ul>	<p><b>Coordination with educational institutions</b> (primary, secondary, and adult education)</p> <ul style="list-style-type: none"> <li>- Coordination among schools on ESD and CCE related activities (strengthening and accreditation of teachers' associations related to green transition, etc.)</li> <li>- Coordination of international projects and funding, national and international programming related to ESD and CCE on the level of primary, secondary, and adult education</li> </ul> <p><b>Monitoring implementation</b> (primary, secondary, and adult education)</p> <ul style="list-style-type: none"> <li>- Collect the relevant data to feed the progress indicators derived from relevant action plans and strategies related to primary, secondary, and adult education</li> <li>- Monitor the progress in implementing ESD and CCE actions related to primary, secondary, and adult education, identified in relevant national actions plans</li> </ul>
<p><b>Ministry of Education and Science - MoES</b> <a href="http://mon.gov.mk/">http://mon.gov.mk/</a></p> <p>Third block - sectors:</p> <ol style="list-style-type: none"> <li>1. Innovation and science (<b>coordinator 3 for MoES</b>)</li> <li>2. Higher education</li> <li>3. National council for higher education and scientific research activity and/or Agency for quality in higher education (<a href="https://www.akvo.mk/">https://www.akvo.mk/</a>)</li> </ol>	<ul style="list-style-type: none"> <li>- 1 person already employed at the Sector for Innovation and science</li> </ul>	<p><b>Coordination with higher educational institutions</b></p> <ul style="list-style-type: none"> <li>- Build relationships with scientific experts and consultants to get fact-based input for guiding the working group and supporting decision making</li> <li>- Foster innovation in energy efficiency and the use of renewable energy for educational institutions</li> <li>- Support introduction of more ESD&amp;CCE programs in higher education (<i>because of universities autonomy MoES can only advise/suggest implementation of ESD&amp;CCE related topics in the study programs and courses within different Faculties at the universities.</i>)</li> </ul> <p><b>Monitoring implementation</b> (higher education level)</p> <ul style="list-style-type: none"> <li>- Collect the relevant data to feed the progress indicators derived from relevant action plans and strategies related to science and higher education</li> <li>- Monitor the progress in implementing ESD and CCE actions related to science and higher education, identified in relevant national actions plans</li> </ul>
<p><b>Bureau for Development of</b></p>	<ul style="list-style-type: none"> <li>- 3 persons already employed at the BDE (one acting</li> </ul>	<p><b>Support to educational institutions</b></p> <ul style="list-style-type: none"> <li>- Development and approval of ESD and CC related content in the formal curricula for preschool, primary, high school,</li> </ul>



<p><b>Education – BDE</b> <a href="http://bro.gov.mk/">http://bro.gov.mk/</a></p> <p>Fourth block (1 main coordinator and 2 deputy coordinators)</p>	<p>as a main coordinator and others as a deputy 1 –responsible for curriculums and deputy 2 – responsible for teacher and administrative staff trainings</p>	<p>secondary professional and post-secondary education, the education of children with special educational needs, the education of adults,</p> <ul style="list-style-type: none"> <li>- BDE approval of yearly school plan of activities (ESD and CC related activities should be increased significantly).</li> <li>- Coordination of teacher trainings (choice of topics, number of teachers to be addressed by trainings, etc.).</li> </ul> <p><b>Coordination and reporting</b></p> <ul style="list-style-type: none"> <li>- Support to public awareness campaigns to inform about climate changes related issues.</li> <li>- Coordination of the activities with National Designation Authority for the Green Climate Fund and the Ministry of Environment and Physical Planning</li> <li>- Regular reporting to the Minister of Education and science on activities planned and carried out.</li> </ul>
<p><b>Center for Adult Education – CAE</b> <a href="http://www.cov.gov.mk">http://www.cov.gov.mk</a></p>	<ul style="list-style-type: none"> <li>- 1 person already employed at COV</li> </ul>	<p><b>Promotion of ESD and CCE in adult education</b></p> <ul style="list-style-type: none"> <li>- Support to ESD and CCE related programs for adult education (e.g. additional incentives like decrease fees for these types of courses, or fast-track approval)</li> <li>- Identify educational programmes/projects that promote green jobs and are eligible for funding.</li> <li>- Promotion of educational programmes/projects that promote green jobs</li> </ul>
<p><b>Center for Vocational Education and Training – CVET</b> <a href="http://www.csoo.edu.mk">http://www.csoo.edu.mk</a></p>	<ul style="list-style-type: none"> <li>- 1 person already employed at CVET</li> </ul>	<p><b>Promotion of ESD and CCE in vocational education</b></p> <ul style="list-style-type: none"> <li>- Integration of ESD and CCE into the national framework for professional qualifications and into curricula for vocational profiles.</li> <li>- Support to ESD and CCE in vocational education through counseling, coaching and mentoring of teachers and trainers</li> <li>- Support the integration with industry to better target qualifications related to ESD and CCE</li> </ul>
<p><b>State Examination Center – SEC</b> <a href="https://dic.edu.mk/">https://dic.edu.mk/</a></p>	<ul style="list-style-type: none"> <li>- 1 person already employed at SEC as an associate member</li> </ul>	<p><b>Promotion of Whole School Approach to ESD and CCE</b></p> <ul style="list-style-type: none"> <li>- Inclusion of ESD and CCE related topics into the training, assessment and licensing of directors (candidates for directors) of educational institutions in order to create whole school approach on ESD and CCE</li> </ul>
<p><b>The State Educational Inspectorate - SEI</b> <a href="https://dip.gov.mk/">https://dip.gov.mk/</a></p>	<ul style="list-style-type: none"> <li>- 1 person already employed at SEI as an associate member</li> </ul>	<p><b>Monitoring and coordination</b></p> <ul style="list-style-type: none"> <li>- Monitoring how ESD and CC related activities from the yearly school program are implemented in practice at the schools.</li> <li>- Facilitate linkages between municipality level education advisers and schools</li> </ul>

As it can be seen from the table 4, there will be **two main coordinators**:

- At the Ministry of education and science, responsible for overall coordination of the project activities and activities related to the infrastructure investments related to ESD and CCE.

- At the Bureau for development in education, responsible for integration of topics and content related to ESD and CCE in the curriculums and study programs; and capacity building among teachers and administrative staff of educational institutions.

In addition, in the first 6 months of the project implementation in line with the model of quintuple helix, participants from the key stakeholders will be engaged in (so called) the extended project team and adequate capacity building of the team will be provided.

## 5. Action Areas and Strategies

### 5.1. Governance

#### 5.1.1. Policy and Legislative Framework

Currently, active strategic documents that have elements related to the education system are:

- National Development Strategy 2024-2044<sup>44</sup>,
- Smart Specialization Strategy (S3) 2024-2027<sup>45</sup> with S3 Action Plan 2024-2025<sup>46</sup>,
- Human Capital Strategy 2024-2030<sup>47</sup>,
- Strategic Plan of the Ministry for Education and Science 2024-2026<sup>48</sup>,
- Action plan for the activities of the Ministry for Education and Science 2024<sup>49</sup>,
- Education Strategy 2018-2025<sup>50</sup>.

Only the National Development Strategy 2024-2044 is directly addressing green transition process in different sectors also including the education sector. However, since Education Strategy expire in 2025, now is the right time, new education strategy (e.g. 2026-2030), and the corresponding action plan, to be fully in line with this project activities and North Macedonia to have comprehensive green education system in all segments and aspects.

The action plan for the activities of the Ministry for Education and Science for 2025 will include significant green components for infrastructure and for professional development of teaching and administrative staff and that will be in line with this project proposal.

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<sup>44</sup> Source: <https://www.nrs.mk/>

<sup>45</sup> Source: [https://mon.gov.mk/download/?f=Mk\\_%20S3\\_MK%20%2020.12.2023\\_1.doc](https://mon.gov.mk/download/?f=Mk_%20S3_MK%20%2020.12.2023_1.doc)

<sup>46</sup> Source: <https://mon.gov.mk/download/?f=Strateski%20plan%202024-2026.pdf>

<sup>47</sup> Source: <https://mon.gov.mk/download/?f=Strategija%20za%20covecki%20kapital%202024%20-%202030.pdf>

<sup>48</sup> Source: <https://mon.gov.mk/download/?f=Strateski%20plan%202024-2026.pdf>

<sup>49</sup> Source: <https://mon.gov.mk/download/?f=Godishen%20plan%20za%20rabota%20na%20MON%202024%20--.pdf>

<sup>50</sup> Source: <https://mon.gov.mk/download/?f=strategija-za-obrazovanieto-2018-2025.docx>

However, this action plan can perfectly fit within new Strategy for Education 2025-2030 that should be developed in the near future.

### 5.1.2. Institutional Strengthening and Capacity Building

A full capacity building process (with international support) of ESD and CCE project team is envisaged in the first six months of the action plan implementation. During this process all key performance indicators and deliverables will be reviewed and updated according to the current situation.

The **project unit**, as a core team (in details elaborated in the Table 4), will be responsible for smooth implementation of the action plan. Based on the needs during the implementation, the project core team can be expanded with the representatives from other stakeholders (e.g. Ministry of finance, State Statistical Office, etc.).

### 5.1.3. Public-Private Partnerships and Stakeholder Engagement

Implementing a quintuple helix approach (figure 3) - involving all relevant players in the whole process of greening the educational system, will not only foster a robust public-private-civil society partnership but also ensure that the green transition of the education system is inclusive, comprehensive, and aligned with both national and global sustainability goals.

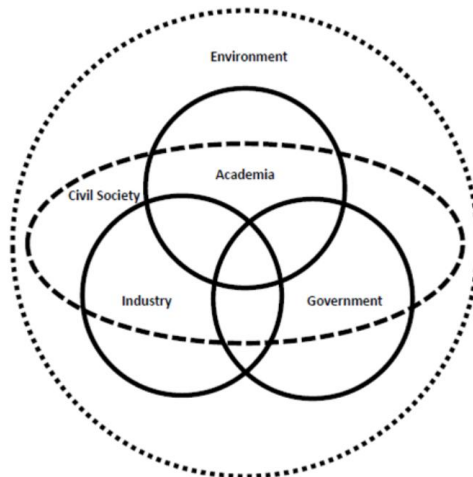


Figure 3. Quintuple helix (based on the research of Carayannis, E. G. et al.<sup>51</sup>)

<sup>51</sup> Carayannis, Elias G.; Grigoroudis, Evangelos; Campbell, David F. J.; Meissner, Dirk; Stamati, Dimitra (2018). "The ecosystem as helix: an exploratory theory-building study of regional co-opetitive entrepreneurial ecosystems as Quadruple/Quintuple Helix Innovation Models: The ecosystem as helix". R&D Management. 48 (1): 148–162.



The quintuple helix approach can be directly related to ESD and CCE as it is elaborated on the Figure 4<sup>52</sup>. This model for collaboration has been already applied to European Union-sponsored projects and policies, including the EU-MACS (EUropean Market for Climate Services) project<sup>53</sup>, a follow-up project of the European Research and Innovation Roadmap for Climate Services, and the European Commission's Open Innovation 2.0 (OI2) policy for a digital single market that supports open innovation<sup>54</sup>.

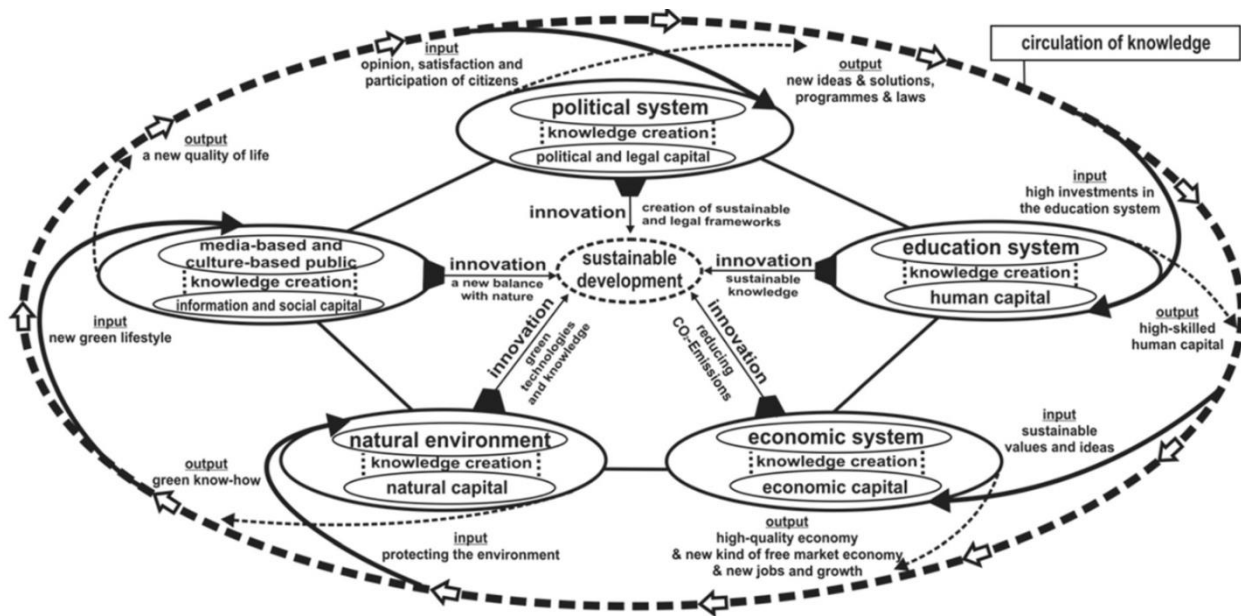


Figure 4: Effects of Investment in Education on Sustainable Development in Quintuple Helix (Carayannis, E. G. et al. - 2008)

Several key activities are planned in order to establish functional Quintuple Helix model for ESD and CCE in the Republic of North Macedonia.

- Actively **promote partnerships** between government entities, private sector organizations, educational institutions, and civil society to drive the green transition within

<sup>52</sup> Carayannis, Elias G.; Barth, Thorsten D.; Campbell, David F. J. (2012-08-08). "The Quintuple Helix innovation model: global warming as a challenge and driver for innovation". Journal of Innovation and Entrepreneurship. 1 (1): 2.

<sup>53</sup> Source: <http://eu-macs.eu/outputs/livinglabs/>

<sup>54</sup> hubavem (2013-12-04). "Open Innovation 2.0". Digital Single Market - European Commission.



the education system. This collaboration will leverage the unique strengths and resources of each sector to create more effective and sustainable solutions.

- Conduct a **series of workshops**, forums, and roundtable discussions to engage key stakeholders from various sectors, including educators, policymakers, industry leaders, and community representatives. These events will serve as platforms for sharing ideas, best practices, and challenges. Feedback gathered from these sessions will be used to refine and enhance the strategies for integrating ESD and CCE into the education system.
- Strengthen ties with **international organizations** and educational networks to benefit from global expertise and resources. Encourage active participation in international forums, conferences, and collaborative projects focused on ESD and CCE. This global engagement will ensure that the country stays aligned with international standards and best practices, while also contributing to global efforts in education for sustainability.
- **Develop projects** under public-private partnerships aimed at enhancing the infrastructure, resources, and technological tools needed for the green transition in education. These projects will include developing green campuses, investing in renewable energy for schools, and creating digital platforms for ESD and CCE content delivery.
- Establish a **national network of stakeholders** committed to the green transition of the education system. This network will facilitate ongoing dialogue, collaboration, and knowledge exchange among government agencies, educational institutions, private companies, NGOs, and other relevant entities.
- Implement a **monitoring and evaluation framework** to assess the effectiveness of stakeholder engagement activities. Regularly review and adapt engagement strategies to ensure they are meeting the needs of all involved parties and contributing to the overall goals of the green transition.

## 5.2. Key Work Packages (WP) and activities.

**Project duration:** 5 years (60 months)

**Total budget:** 13.200.000,00 EUR

**Key outputs:**

- Developed detailed methodology and progress framework for introduction of SD and CC for different ages of students.
- Integrated SD and CC related content in >60 subjects in primary and secondary education
- Developed 5 modules for adult learning related to SD and CC (3 for administration and 2 for management staff); Introduced 4 new qualification profiles at VET schools; Developed at least 5 modules for re-qualification towards green jobs.
- Trained 50 master trainers (5 days training).

- Trained 5000 teachers from primary schools and 2000 teachers from secondary schools (including VET) (3 days training).
- Trained 800 administrative staff from primary and secondary schools (2 days training).
- Trained 150 administrative staff from all education sectors (MoES, BDE, CVET, DEC, DPI, etc.) (2 days training).
- Trained 60 participants from the university management (3 days training).
- In depth training of 20 staff and developed new material for course related to SD and CC at Pedagogical faculties (2 days training).
- Implementation of Post-secondary Education Concept.
- Piloted whole school approach to 10 pilot schools (investments in photovoltaics and windmills, high-efficiency air conditioning units, Utilize Passive Heating & Cooling Techniques; optimization of electricity use; new waste management approaches, greening of the school campus (and/or green buffer zones) for cooling effect and reduction of pollution etc.).
- 40 school have roof photovoltaics.
- 50 schools have plastic bottle recycling vending machine.
- 20 schools eco garden implemented - strategic planting of trees, shrubs and green buffer zone in and around schools to provide shade (positive impact on energy usage reduction), improved management of water (collection of atmospheric water, water-saving toilets, change of leaking water systems, permeable pavements etc.) and reduction of air pollution.
- Developed digital database/platform for purchased equipment and developed materials; (MoES).
- Purchased CC related equipment that will be available for students and researchers from UKIM technical campus and open for industry.

In the excel table attached to this document is a detailed overview of planned activities per working package, key performance indicators, responsible institutions, overall budget per working package, etc. In the table 5 are presented only list of key activities per working package.

*Table 5 Overview of main project Working Packages and activities*

No.	Work Package/Task/Deliverable
<b>WP 1</b>	<b>Project Management (including PR activities and stakeholder engagement)</b>
Task 1.1	1. Establishment of the project team for implementation of the project (+ office costs: rent, utilities, translation)

Task 1.2	2. Establishment of ESD and CCE project unit (+ support for 5 years functioning) and facilitate international support; financial planning
Task 1.3	3. Selection of the experts that will be involved in the project
Task 1.4	4. Promotional activities
Task 1.5	5. Quadruple Helix engagement
<b>WP 2</b>	<b>Integration of topics and content of SD and CC in the curriculum and study programs</b>
Task 2.1	Development of the methodology for in-depth analysis of current status with integrated ESD and CCE content in the educational system
Task 2.2	Review of all strategic documents, laws, yearly programs per institution in the area of education, climate change and sustainable development.
Task 2.3	Production and promotion of the status-quo (baseline) report on integration of ESD and CCE in the educational system
Task 2.4	Development and printing of set of materials related to SD and CC for all levels of education
Task 2.5	Development of new modules and material for training of administrative staff at all educational institutions and for Ministry of Public Administration
Task 2.6	Initiation of at least 4 new qualifications at VET schools based on the green job market needs
Task 2.9	Direct support to already established RVETC and establishment of at least 2 new RVETC (that will have focus on green jobs / qualifications)
Task 2.8	Establishment of new Centers of Green Excellence
Task 2.9	Support in the implementation process of Post-secondary Education Concept
<b>WP 3</b>	<b>Capacity building of educators and administrative staff</b>
Task 3.1	Develop plan and detailed schedule for trainings
Task 3.2	Selection and training of master trainers
Task 3.3	Selection of the school, institutions and trainees
Task 3.4	Implementation of trainings: - 5000 primary and 2000 secondary teachers - 800 administrative staff from educational institutions - 150 administrative staff from State examination centre and Ministry for public administration - 20 professors and teaching assistants from Pedagogical faculties

	- 30 staff from 10 pilot school on the whole school approach
Task 3.5	Development of materials and implementation of trainings for CAE employees on the terminology of green skills, green development, climate change, sustainable development, etc., for better identification of the new needs of the labor market.
Task 3.6	Revising the procedures and criteria for the verification of programs for skills and qualifications needed for green transition
<b>WP 4</b>	<b>Investments in SD and CC related infrastructure</b>
Task 4.1	Developed detailed background analysis in order to determine readiness of the institutions (schools, universities, MoES IT department) to absorb new equipment.
Task 4.2	In coordination with the ESD and CCE project team and other key stakeholders to select institutions where investments will be done (where possible to develop private - public partnerships that will support investments).
Task 4.3	Develop and implement transparent procurement procedures.
Task 4.4	Purchase selected infrastructure (equipment, laboratories, PV systems, Vending machines, servers, , training materials, etc.).
Task 4.5	Install the equipment and train the staff that will operate the equipment.
Task 4.6	Upload all developed training materials on the central platform (with proper maintenance of the system and continuous update of the content)
Task 4.7	Monitor functioning of the equipment, software, etc.
<b>WP 5</b>	<b>Evaluation and monitoring</b>
Task 5.1	Selection of external evaluators
Task 5.2	Selection of external financial revision
Task 5.3	Developed specific performance indicators that will monitor the effectiveness ESD and CCE, aligned with GCF indicators
Task 5.4	Monitoring overall progress of North Macedonia on ESD and CCE on the international scorecards / platforms
Task 5.5	Development of mechanisms for monitoring the implementation of updated curricula and introduced new content
Task 5.6	Continuous monitoring and fine-tuning of the project implementation in order to secure smooth implementation

### 5.3. Accelerating implementation

#### 5.3.1. Communication and Outreach

Table 6 Key elements related to communication and outreach

<p><b>Development of a digital database/platform for training material supporting ESD and CCE at all levels</b></p>	<p>The project will create a digital database/platform that provides training materials to support Education for Sustainable Development (ESD) and Climate Change Education (CCE) at all educational levels. This database/platform will serve as a centralized resource for educators, students, and the public, ensuring easy access to up-to-date and relevant content.</p>
<p><b>Raise public awareness on topics of sustainable development and climate change</b></p>	<p>Public awareness campaigns will be launched to educate the broader community about sustainable development and climate change. These campaigns will leverage social media, traditional media, and community engagement activities to maximize reach and impact. By raising awareness, the project aims to foster a culture of sustainability within the society.</p>
<p><b>Showcasing Best Practices of ESD and CCE</b></p>	<p>The project will also focus on showcasing good practices in ESD and CCE through case studies, success stories, and demonstration projects. These examples will serve as inspiration and guidance for schools and communities aiming to integrate sustainable practices into their education systems and daily lives.</p>

#### 5.3.2. Financial Mechanisms and Incentives

##### Overview of Budget Requirements

The successful implementation of the project requires a well-structured financial plan that considers all aspects of the project. Key components of the budget include:

- Funding for the **creation and integration of ESD and CCE content into existing curricula across all educational levels**. This includes research, curriculum design, pilot testing, and continuous updates.
- Budget allocation for **training and professional development programs aimed at educators, administrative staff, and policymakers**. This includes workshops, seminars, certification courses, and the development of educational resources and materials.

- Capital expenditures for **upgrading educational infrastructure to support sustainable practices**, such as energy-efficient buildings, school green gardens (as a living labs), renewable energy installations, waste management systems, and digital database/platform for ESD and CCE delivery.
- Funds to support the **organization of stakeholder engagement activities**, including workshops, forums, and roundtable discussions. This also covers the costs of establishing and maintaining a national stakeholder network.
- Resources allocated for the **project management, including continuous monitoring and evaluation** of the project's progress, project staff salaries, containing data collection, impact assessments, and adjustments to the strategy based on feedback and performance metrics.
- Budget for **communication campaigns to raise awareness** about the importance of ESD and CCE, and to engage the wider community in supporting the initiative. This includes the production of promotional materials, online content, and media outreach.

### **Secure funding from national and international sources, including the Green Climate Fund, to support the transition to a low-carbon economy.**

To ensure the financial sustainability of the ESD and CCE project, it is crucial to secure funding from a diverse range of sources. This includes:

**National Government Funding:** Advocate for the inclusion of ESD and CCE in national education budgets and policy frameworks. Lobby for dedicated funding streams within the national education budget, as well as special grants or subsidies for schools that prioritize sustainability education. Mainly the budget can come from the respective budgets from the institution involved in the ESD and CCE project group (MoES, BDE, CVET, CAE, etc.)

**International Funding Agencies:** Apply for grants and financial support from international organizations and agencies that focus on education, sustainability, and climate change. Key potential sources beside **Green Climate Fund** (GCF) include:

- Global Environment Facility (GEF) which supports projects related to biodiversity, climate change, and sustainable development.
- UNESCO and UNDP - leverage partnerships with UNESCO and UNDP, which often provide financial and technical assistance for projects that align with the Sustainable Development Goals (SDGs).
- European Union (EU) Funds - pursue funding from the EU's various education and sustainability programs, such as Erasmus+ for educational exchanges and Horizon Europe for research and innovation in sustainable development; LIFE and INTERREG programs that have separate lines for environment protection, etc.



- Bilateral donors that are working in the republic of North Macedonia and have ESD or CCE related programs: USAID, GIZ, SIDA, etc.
- Philanthropic Organizations and Foundations - engage with philanthropic organizations and foundations that support environmental education and sustainability initiatives. Examples include the Bill & Melinda Gates Foundation, the Rockefeller Foundation, the Ford Foundation, etc.
- Corporate Sponsorships and CSR Initiatives - encourage corporations (including banks) and companies to invest in the ESD and CCE project as part of their Corporate Social Responsibility (CSR) initiatives. This could involve direct financial contributions, in-kind donations, or sponsorship of specific programs or infrastructure projects.

### **Develop incentives for companies and organizations to invest in green schools.**

On a long term, project team can advocate to **develop incentives for companies and organizations to invest in Green Schools.**

- Advocate for tax breaks or deductions for companies that invest in green schools or support sustainability education initiatives. This could include tax credits for donations, investments in renewable energy installations for schools, or sponsorship of sustainability-related educational programs.
- Develop and promote green bonds specifically targeted at funding green school projects. Companies and organizations can invest in these bonds as a way to support sustainability while also receiving a financial return. Similarly, impact investors, who seek both financial and social returns, can be encouraged to invest in projects that advance ESD and CCE.
- Establish public recognition programs, such as awards or certifications, for companies that actively support ESD and CCE. Public recognition can enhance a company's reputation and brand image, providing a non-financial incentive for investment.
- Offer companies the opportunity to partner with schools or educational institutions on sustainability projects. These partnerships can provide companies with valuable community engagement opportunities, brand visibility, and the chance to demonstrate their commitment to sustainability.
- Create grant programs where government or philanthropic organizations provide matching funds for private sector investments in green schools. This reduces the financial burden on companies while amplifying the impact of their contributions.
- Encourage companies to collaborate with educational institutions in developing and delivering ESD and CCE content. This could involve providing expertise, resources, or funding for curriculum development, teacher training, or student projects related to sustainability.

### 5.3.3. Monitoring, Reporting, and Evaluation

*Table 7 Key elements related to monitoring, reporting, and evaluation*

<b>Monitoring Systems</b>	Robust monitoring systems will be established to track the implementation of ESD and CCE in the education system. This will include monitoring investments in infrastructure and the integration of ESD and CCE into curricula and teaching practices. The monitoring framework will be aligned with Green Climate Fund (GCF) indicators to ensure consistency and effectiveness.
<b>Performance Indicators</b>	Specific performance indicators will be integrated to measure the effectiveness of ESD and CCE initiatives. These indicators will be aligned with GCF requirements and will cover areas such as student engagement, teacher training, infrastructure improvements, and public awareness. Regular monitoring will allow for timely adjustments and improvements in the implementation process.
<b>Reporting and Feedback</b>	A transparent reporting system will be put in place to ensure accountability and continuous improvement. Regular reports will be generated and shared with stakeholders, including government agencies, educational institutions, and the public. This feedback loop will enable the project to adapt and refine its strategies to better meet its objectives.

## 6. Risk Management and Mitigation

*Analysis of potential risks associated with the action plan's implementation and strategies for their mitigation, focusing on institutional and environmental variables.*

By identifying potential risks and formulating robust mitigation strategies, the proposed action plan for integrating ESD and CCE into North Macedonia's education system can achieve its goals while minimizing the impact of unforeseen challenges. Implementing a crisis management framework ensures that the project remains resilient in the face of unexpected events, thereby safeguarding the long-term sustainability of the initiative.

## 6.1. Identification of Potential Risks and Their Mitigation Strategies

Table 8 Identification of potential risks and their mitigation strategies

Risk	Explanation	Probability to occur (1-low; 5-high)	Mitigation
<b>Institutional Risks</b>			
Limited Institutional Support	Inadequate backing from educational institutions or government bodies could delay or hinder the implementation of the action plan. Potential problems if responsible person change (Minister, Director of Agency, or whole Government)	4	Engage key stakeholders early in the process through regular consultations and workshops to ensure alignment and buy-in. Establish a clear communication channel with decision-makers to address concerns promptly.
Policy Misalignment	The existing education policies may not fully support the integration of ESD and CCE.	4	Advocate for policy revisions where necessary and align the action plan with national strategies such as the National Development Strategy 2024-2044. Collaborate with policy-makers to ensure that ESD and CCE are embedded in new policy frameworks.
Resource Constraints	Limited financial and human resources within educational institutions may impede the plan's execution.	3	Secure funding from diverse sources, including national budgets, international donors, and the Green Climate Fund. Develop partnerships with private sector organizations to leverage additional resources.
<b>Environmental Risks</b>			
Climate-Related Disruptions	Extreme weather events or climate-related disruptions could impact the infrastructure needed to support ESD and CCE.	2	Incorporate climate-resilient infrastructure investments, such as energy-efficient school buildings and renewable energy sources. Develop contingency plans that outline alternative arrangements for continuing educational activities during such events.

Ecological Impact	The implementation of new infrastructure or programs could inadvertently harm local ecosystems.	2	Conduct environmental impact assessments before any major infrastructure projects. Implement sustainable practices, such as the use of eco-friendly materials and green technologies, in all aspects of the action plan.
<b>General Risks (Common in Various Projects)</b>			
Project Delays	Delays in the project timeline due to unforeseen circumstances, such as supply chain disruptions or regulatory approvals.	4	Develop a detailed project schedule with built-in buffers for potential delays. Regularly review the timeline and adjust resources as needed to stay on track.
Budget Overruns	Project costs exceeding the allocated budget due to poor estimation, unexpected expenses, or inflation.	3	Implement strict budget monitoring and control mechanisms. Conduct regular financial reviews to identify and address any potential overruns early. Consider securing contingency funds to cover unexpected costs.
Stakeholder Miscommunication	Miscommunication or lack of communication with stakeholders, leading to misunderstandings and conflicts.	3	Establish clear communication protocols, including regular updates and meetings. Use collaborative platforms to ensure that all stakeholders are informed and engaged throughout the project.
Technology Failure	Failure of critical technology or infrastructure that is essential for the project's success.	2	Conduct thorough testing and validation of all technology before deployment. Have backup systems in place and ensure that technical support is readily available.
Regulatory Compliance Issues	Non-compliance with local, national, or international regulations, leading to fines, delays, or project cancellation.	3	Stay informed about relevant regulations and ensure that all project activities are compliant. Consult with legal experts as needed to navigate complex regulatory environments.

## 6.2. Crisis Management Plans to Address Unforeseen Challenges

### 6.2.1. Crisis Management Framework

- **Establish a Crisis Management Team:** Form a dedicated team responsible for monitoring potential crises, making decisions, and communicating with stakeholders during emergencies. Employee external evaluation expert.
- **Develop Early Warning Systems:** Set up mechanisms to detect early signs of potential crises, including monitoring climate data, stakeholder feedback, and resource availability.
- **Contingency Planning:** Draft detailed contingency plans that include alternative action steps, resource reallocation, and communication strategies to be enacted in case of a crisis.

### 6.2.2. Response to Specific Crisis Scenarios

*Table 9 Response to specific crisis scenarios*

Specific Scenarios	Crisis	Response
<b>Institutional Resistance</b>		Engage a neutral mediator to facilitate discussions between stakeholders. Reassess the action plan and make necessary adjustments to address institutional concerns while maintaining core objectives.
<b>Natural Disasters</b>		Activate contingency plans that prioritize the safety of students and staff. Coordinate with local disaster response teams and utilize remote learning platforms if necessary.
<b>Funding Shortfalls</b>		Re-prioritize activities within the action plan to focus on the most critical components. Launch an emergency fundraising campaign targeting international donors and philanthropic organizations.
<b>Procurements and Supply Chain Disruptions</b>		Identify alternative suppliers or resources to minimize disruptions. Establish contracts with multiple suppliers to ensure a steady flow of materials and resources.
<b>Public Relations Crises</b>		Develop a communication strategy that includes transparency and timely updates to the public and stakeholders. Prepare spokespeople to address concerns and maintain public trust.

## 7. Annexes

Annex 1 – Excel table with detailed overview of the work packages, tasks, responsible institutions, beneficiary, coherence and alignment with current national strategies, and overall budget