



ADAPTATION FUND

AFB/PPRC.37/Inf.24
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Adaptation Fund Board
Project and Programme Review Committee
Thirty-seventh Meeting
Bonn, Germany, 7-8 April 2026

PROPOSAL FOR NORTH MACEDONIA



ADAPTATION FUND

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Regular-sized Project Concept

Country/Region: North Macedonia

Project Title: Learning to adapt: strengthening the climate resilience of education in North Macedonia

Thematic Focal Area: Education

Implementing Entity: World Bank

Executing Entities: Ministry of Education and Science

AF Project ID: AF00000475

IE Project ID:

Requested Financing from Adaptation Fund (US Dollars): 10,000,000

Reviewer and contact person: Mahamat Assouyouiti

Co-reviewer(s):

IE Contact Person:

Technical Summary

The project “Learning to adapt: strengthening the climate resilience of education in North Macedonia” aims to strengthen North Macedonia’s resilience to climate change, supported by a climate-adaptive education system. This will be done through the three components below:

Component 1: Strengthening the adaptation capacity of the school network (USD 7,545,997);

Component 2: Enhancing adaptation knowledge of students, teachers and school leadership (USD 765,017);

Component 3: Promoting learning and knowledge management (USD 30,000).

Requested financing overview:

Project/Programme Execution Cost: USD 875,576

Total Project/Programme Cost: USD 9,216,590

Implementing Fee: USD 783,410

Financing Requested: USD 10,000,000

The proposal includes a request for a project formulation grant and/or project formulation assistance grant of USD 150,000.

	<p>The initial technical review raises several issues, such as the lack of information about the initial stakeholder's consultations, as well as the lack of detail to explain the project's benefits sustainability and replicability, as is discussed in the number of Clarification Requests (CRs) and Corrective Action Requests (CARs) raised in the review.</p> <p>The second technical review raises several issues such as, the need to complete the AF ESP and gender policy, project cost-effectiveness as well equitable distribution of benefits as indicated in the various CRs and CARs below.</p>
Date:	January 21, 2025

Review Criteria	Questions	First Technical Review Comments November 17, 2025	Second Technical Review Comments January 21, 2025
Country Eligibility	1. Is the country party to the Kyoto Protocol, and/or the Paris Agreement?	Yes. The country has ratified both the Kyoto Protocol (November 18, 2024) and the Paris Agreement (January 9, 2018).	-
	2. Is the country a developing country particularly vulnerable to the adverse effects of climate change?	Yes. North Macedonia is highly vulnerable to a range of climate-related hazards, including floods, heatwaves, wildfires, and landslides. The country has a long-standing history of devastating floods, and in the future, it is expected to face more frequent and intense extreme weather events, including torrential rainfall and heatwaves.	-
Project Eligibility	1. Has the designated government authority for the Adaptation Fund endorsed the project/programme?	No. As per the Endorsement letter dated June 24, 2025.	CAR1: Cleared as per the clarification provided in review sheet regarding the Albanian language spelling.

		CAR1: However, please correct the name of the focal point as they appear to be an error in the last name (Name in letter is: Izet Mexhiti; Name received in AF nomination letter is: Izet Medziti).	
	2. Does the length of the proposal amount to no more than Fifty pages for the project/programme concept, including its annexes?	Yes. The concept note is 48 pages, including its annexes.	-
	3. Does the project / programme support concrete adaptation actions to assist the country in addressing adaptive capacity to the adverse effects of climate change and build in climate resilience?	Yes, but further information is needed. The project activities aim to climate adaptation knowledge and infrastructure in the education sector in North Macedonia. The proposed activities contribute to an integral perspective focus on education. The concept note presents a diagram of the Theory of Change for the proposed project in Table 2. However, more details are needed for outcomes and outputs. CR1: Kindly review the main project's outcomes and outputs to ensure the following: <ol style="list-style-type: none"> 1. <i>Outcome 2</i>, kindly rephrase and specify what type of contributions, for example, knowledge contributions. 2. <i>Outcome 3</i>, please include at least one outcome for component 3. 	CR1: Cleared as per revised project's outcomes and outputs as well as the ToC.

		<p>3. <i>Outcome 4</i>, please amend number of the outcome in Table of Project Components and Financing (it appears as 3 and it should be 4).</p> <p>4. <i>Output 4.2</i>, please amend it as the current wording is the same as output 4.1.</p> <p>5. Please include the outcomes under each component, as corresponds. The outcomes included should be the same listed in Table of Project Components and Financing.</p> <p>6. Please also remove the mid-term from the outcomes column.</p> <p>CR2: Kindly include, under Part II “Project justification”, a brief explanation of the diagram in Table 2. This would clearly state how the project activities would lead to substantial tangible outcomes.</p> <p>CR3: At Part II Section A, kindly indicate explicitly how the project supports one or more of the Adaptation Fund Strategic Objectives.</p>	<p>CR2: Cleared as per revised section A related to the project TOC in paragraph before the TOC table.</p> <p>CR3: Cleared as per revised Section “Project/Programme Objectives” with clear indication of the Adaptation Fund Strategic Objectives on page 8 of tracked changed version.</p>
	4. Does the project / programme provide economic, social and environmental benefits,	<p>Unsure.</p> <p>The proposal presents an explanation, including statistics, of</p>	

	<p>particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?</p>	<p>the project's potential economic, social, and environmental benefits. It also includes an Initial Gender Analysis. However, the concept note does not clearly identify specific vulnerable groups beyond women, nor does it demonstrate how benefits will be equitably distributed.</p> <p>CR4: Please specify whether other vulnerable groups beyond women will benefit from the project. If so, please include a description of how benefits will be equitably distributed.</p> <p>CR5: While the project document refers to multi-hazards risks faced by schools' infrastructure; it doesn't specify which climate hazards are being targeted by the proposed adaptation actions nor a proposed approach to deal with overlapping climate hazards. Please clarify and amend the CN document to address this issue.</p> <p>CAR2: Please define or clarify the selection criteria for the schools and</p>	<p>CR4: Not cleared Thank you for the clarification provided with additional paragraph and table 2. However, kindly confirm that the proposed school selection and locations has been discussed and agreed with local stakeholders and government focal points, in particular in relation to equal distribution of benefits. Kindly document such consultation with the Annex on stakeholder consultation.</p> <p>CR5: Not cleared Thank you for this clarification in the review sheet. Kindly reflect it in the main document to strengthen the CN.</p> <p>CAR2: Cleared as per revised Table 2 with selection criteria included.</p>

		<p>other adaptation actions to avoid vulnerable groups being left behind, in compliance with AF ESP principles of equity and vulnerable groups.</p> <p>CR6: unlike the economic benefits section, the paragraph on social benefits doesn't not provide an estimated benefits with context specific figures. Please strengthen the social benefits with specific and quantifiable data where possible.</p> <p>CAR3: In addition to detailed table 3, kindly provide a total cumulative number of direct and indirect beneficiaries, disaggregated by gender and age. It is unclear if the beneficiaries straddle across the components or not.</p>	<p>CR6: Cleared as per revised section on social benefits with indicative figures.</p> <p>CAR3: Cleared as per Updated beneficiary information on Table 4.</p>
	<p>5. Is the project / programme cost effective?</p>	<p>Unsure. The concept note includes an explanation of how the project is cost effective in Part II.C, comparing two scenarios, one with the implementation of the proposed project and the other without it. However, more details are needed for the sustainability point of view.</p> <p>CR7: Kindly include, where possible, provide quantitative estimates through proxies or qualitative justifications to support the comparison.</p>	<p>CR7: Not cleared Thank for the detailed Table 4 with indicative beneficiaries per group. However, please provide a total cumulative number of beneficiaries in one figure with gender disaggregated data, to allow reporting for total AF</p>

			funding use. As presented, it is not clear if some of the same individuals will span various components. Such cumulative figure should also be further assessed during FP stage.
	6. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments?	<p>Yes, but further information is required.</p> <p>The concept note provides a table listing information about relevant plans and policies related to the proposed project and how both are aligned. However, the document lacks references to SDGs and other development indicators.</p> <p>CAR4: Kindly provide specific linkage about how the project supports the implementation of the SDGs in North Macedonia.</p>	<p>CAR4: Cleared as per revised table 6 information in page 26.</p>
	7. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?	<p>Yes, but further information is required.</p> <p>In Table 7, the proposed project includes alignment with relevant national and international standards and codes, for example, the European Union's Energy Performance of Buildings Directive (EPBD), the national Law on Construction, and the national Rulebook on Energy Performance of Buildings. However, more details about each identified standard are needed.</p>	

		<p>CR8: Considering the newly proposed school infrastructure to protect from climate hazards, please clarify and elaborate in the CN if the existing standards are sufficient or a need for new approach and standards for climate-proofed infrastructure.</p> <p>CR9: Even though the proposed project focuses on climate-resilient schools, the CN does not specify a clear definition and standard of the proposed approach for resilient school infrastructure based on local standards and experiences. Please explain and comment in the CN how the proposed “climate resilient infrastructure” will build resilience in the context of North Macedonia?</p> <p>CR10: Please elaborate if there will be new standards to be established taking onto account the climate change model for North Macedonia that can serve as reference for future infrastructure building in the education sector and beyond in the context of climate change adaptation.</p> <p>CAR5: While World Bank Environmental and Social Framework are being adhered to please also insert language that refers to compliance with AF ESPs</p>	<p>CR8 – 10: Not cleared Kindly resubmit the review sheet with reference to how and where in the proposal (use paragraph or page numbers) each of the CR8-10 has addressed.</p> <p>CAR5: Not cleared The proposed wording “The project will ensure full compliance with the World</p>

		<p>under the component descriptions example under Mitigation of negative impacts related to component 4.</p>	<p>Bank's Environmental and Social Framework, which will enable compliance with the Environmental and Social Policy of the Adaptation Fund" does not address sufficiently the compliance with AF policies on ESP and gender. Please specify clearly that the project will be implemented in compliance with AF ESP and gender policy.</p>
	<p>8. Is there duplication of project / programme with other funding sources?</p>	<p>Yes, but further information is required. The proposal provides a table listing of all projects with potential synergies and duplications with the proposed project, including the ongoing project implemented by the World Bank in North Macedonia titled: "Additional Financing for the Primary Education Improvement Project". However, more details about the lack of potential duplication with other projects are needed.</p> <p>CR11: Kindly ensure that each identified project in Table 6 include the following:</p> <ul style="list-style-type: none"> • implementing entity, • specific location within the country, • The lack of overlap should be accompanied by sound justification (e.g. by indicating the distinct geographic locations and/or types of interventions). For example, 	<p>CR11: Cleared as per revised Table 7.</p>

		<p>if the justification states that “<i>Will not introduce infrastructure upgrades in the same schools as PEIP</i>”, it should indicate where those schools are and how it is ensured that they will not be the same.</p>	
	<p>9. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?</p>	<p>Yes, but further information is required. The proposed project includes component 4, exclusively dedicated to learning and knowledge activities in Part II.G. However, information related to specific activities and how tracking of the experiences will be kept are not included.</p> <p>CR12: Kindly clarify the following:</p> <ul style="list-style-type: none"> • what entities will be responsible for tracking the experiences gained, how this will be done, and when the tracking will take place. • Please specify what type of information will be collected throughout this process and what will be disseminated. • Additionally, provide detailed information on the learning and knowledge-sharing activities conducted beyond the national conference, and explain how the knowledge generated will be sustained after the project concludes. 	<p>CR12: Cleared as per revised Part II G on KM including budgeting information for KM activities.</p>

		<p>CAR6: Please note that the evaluation component included under component should be re-considered. Evaluation costs are covered under the IE fee and therefore activity 4.1.1 should not form part of the component budget. Consider replacing the current activity 4.1.1 with a learning deliverable that can contribute to the sustainability of the project since the other learning activity is a conference.</p>	<p>CAR6: Cleared as per revised Activity 4.1.1. now dedicated to KM.</p>
	<p>10. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender Policy of the Fund?</p>	<p>Yes, but further information is required. The proposed project states that a consultative process with national authorities took place in Part II.H, including Table 8 that lists the main participants, issues and changes in the proposal. However, more details are needed.</p> <p>CR14: Kindly include the list of stakeholders in Annex, including if possible one or two images.</p> <p>CR15: Considering the important role of vulnerable groups including women and youth, kindly explain how these groups have been</p>	<p>CR14: Cleared as per clarification provided on the use of public information for the consultation. At FP stage, kindly seek consent for the use of consultation information to be annexed to FP annexes.</p> <p>CR15: Not Cleared. Thank you for the clarification and further information provided. However, kindly reflect those in the main</p>

		<p>involved during consultation workshops if any.</p> <p>CR16: As raised above, kindly explain how the project will ensure the equitable distribution of benefits and how this approach has been discussed during the consultative process.</p>	<p>document and not only the review sheet.</p> <p>CR16: Cleared as per revised information in Sections A and B.</p>
	<p>11. Is the requested financing justified on the basis of full cost of adaptation reasoning?</p>	<p>Yes, but further information is required.</p> <p>The proposal mentions adaptation objectives and the contribution of the proposed project to them. It includes both BAU and Adaptation Fund scenarios. However, it does not clearly separate adaptation-specific costs from baseline development activities nor clear information about additional funding from the ongoing World Bank project in North Macedonia.</p> <p>CR17: Please provide information about whether this project will meet its outcomes and outputs solely with the resources of the Adaptation Fund, and how the proposed project's objective will be achieved in regards adaptation.</p> <p>CR18: Kindly clarify whether the project requires co-financing or not. If co-financing is being considered, please clearly indicate how the</p>	<p>CR17 & 18: Cleared as per revised document with footnote 7 confirming that the project will be able to effectively meet its adaptation objectives (objective details in Results Framework in Part III) with the Adaptation Fund resources only, and no co-financing is required.</p>

		<p>project with the AF resources only, will be able to effectively meet its objectives.</p> <p>CR19: Considering that most of the proposed activities under component 1 (infrastructures) are to be designed or identified (selection of schools for retrofitting and extension), kindly confirm if this project will be implemented through an approach of unidentified sub-project (USP). Please consult the UPS guidance. Guidance Document for Project/Programme with Unidentified Sub-Projects.</p>	<p>CR19: Cleared as per the confirmation that there are no USPs planned under the project.</p>
	<p>12. Is the project / program aligned with AF's results framework?</p>	<p>Yes, but further clarification is needed.</p> <p>As per information provided in Part III.A. The concept note includes a mapping of the proposed project's results and products to the Adaptation Fund Strategic Results Framework. However, the document does not fully demonstrate the project alignment with AF's results framework.</p> <p>CR20: Please ensure that outcome and output indicators are well presented. Kindly refer to CR1 and revise all indicators and amend when</p>	<p>CR20: Cleared as per revised output indicators and ref. CR1.</p>

		<p>corresponds, ensuring all are SMART.</p> <p>CAR7: Please utilize the updated template for the results framework alignment table Results Framework Alignment Table (Amended in November 2025) (77 kB, DOC).</p>	<p>CAR7: Cleared as per revised Framework and using the updated template.</p>
	<p>13. Has the sustainability of the project/programme outcomes been taken into account when designing the project?</p>	<p>Yes, but further information is needed. The proposed project indicates that project outcomes sustainability has been intentionally embedded in the project's design. It provides an explanation for each component. However, the arrangements for the project's benefits sustainability are not included and more details and needed.</p> <p>CR21:</p> <ol style="list-style-type: none"> 1. Kindly explain clearly how replication and scaling up of the proposed project activities and benefits will be achieved. 2. Kindly provide the specific plans for the financial sustainability post project. 	<p>CR21: Cleared as per revised Section J on how project sustainability and replication.</p>

		<p>CR22: considering that the proposed resilient schools will be newly introduced to North Macedonia, please identify the O&M mechanism and implementation modality to ensure project sustainability.</p>	<p>CR22: Cleared as per revised Section J on O&M mechanisms and implementation modalities for the upgraded schools.</p>
	<p>14. Does the project / programme provide an overview of environmental and social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?</p>	<p>Yes, but further information is needed. The concept note provides the results of an initial environmental and social screening, stating the proposed project as category B (moderate). It also includes the table assessing all 15 principles from the Adaptation Fund ESP against the proposed project activities in Part II.K. However, more details are needed.</p> <p>CR23: Please review the table in Part II.K to ensure that the mitigation measures described in the third column start with the phrase ‘To mitigate this risk...’ followed by the description of each measure. For more information, please visit: AF’s ESP guidance.</p> <p>CAR8: For the AF principles “Access and Equity” and “Marginalized and Vulnerable Groups” for which potential impacts have been identified and further assessment needed, please clarify how this can</p>	<p>CR23: Cleared as the revised Part II. K with 3rd column in table amended.</p> <p>CAR8: Not cleared Despite the explanation provided that risk assessment and relevant mitigation measures for the principles “Access and Equity” and “Marginalized and Vulnerable Groups” will be determined as per the (updated) World</p>

		<p>be done without undermining the AF ESP and gender policy.</p> <p>CR24: Please confirm if the project includes USP for activities involving construction and refer to AF policy of USP for compliance.</p>	<p>Bank Stakeholder Engagement Plan and ESMF for the (AF) PEIP projects, there is still need to explicitly indicate that the project will comply with the Adaptation Fund ESP and Gender Policy and alignment with all 15 principles.</p> <p>CR24: Cleared as per confirmation that there is no USP and Ref. CR19.</p>
Resource Availability	1. Is the requested project / programme funding within the cap of the country?	Yes.	-
	2. Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project/programme budget before the fee?	<p>Yes. As per information provided in Table “Project/Programme Components and Financing”, pages 9-10, and PFG Request. All figures in the concept note are rounded to a whole number and add up and match across the tables and components. The Implementing Entity Management Fee is correct in size (exactly 8.5% of the total Project Cost). There is a PFG requested that is correct in size, with a total amount of 150,000 USD, including the 8.5% for the Implementing Fee.</p> <p>CAR9:</p> <ol style="list-style-type: none"> 1. Please ensure that the IE certification at Part III, B of the project document as well as Part C of the PFG request form is duly signed with the re-submission. 	<p>CAR9: Not Cleared.</p> <ol style="list-style-type: none"> 1. Addressed. 2. Not addressed. Please ensure that the IE certification at Part III, B of the project document as well as Part C of the PFG request form is duly signed with the re-submission.

		<p>2. Please ensure that the right spelling of the DA is used at Part III, A H.E. Mr. Izet Mexhiti,</p>	<p>CAR10 (NEW):</p> <ol style="list-style-type: none"> 1. Please confirm if WB intends for Ministry of Education and Science to execute the PFG if not please update the PFG form to state WB as the EE for the PFG. 2. Please ensure that column 1 row 3 is revised. It currently indicates 'Time of relevant World Bank Staff to develop the full project proposal' It is not acceptable for the IE to fund its staff outside of the IE fee amount for the PFG. Any IE costs should be subsumed under the 8.5% of the IE fee associated with the PFG. Please revise and review the acceptable PFG activities at https://www.adaptation-fund.org/readiness/readiness-grants/project-formulation-grants/ .
	<p>3. Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?</p>	<p>Yes. As per information provided in Table "Project/Programme Components and Financing", pages 9-10, and PFG Request. All figures in the concept note are rounded to a whole number and add up and match across the tables and components. The Project Execution</p>	<p>-</p>

		Cost is correct in size (exactly 9.5% of the total Project Cost).	
Eligibility of IE	1. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?	Yes. The World Bank is an accredited MIE. Accreditation Expiration Date: 06 June 2028.	-
Implementation Arrangements	1. Is there adequate arrangement for project / programme management, in compliance with the Gender Policy of the Fund?	n/a at concept stage	
	2. Are there measures for financial and project/programme risk management?	n/a at concept stage	
	3. Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social Policy and Gender Policy of the Fund?	n/a at concept stage	
	4. Is a budget on the Implementing Entity Management Fee use included?	n/a at concept stage	

	5. Is an explanation and a breakdown of the execution costs included?	n/a at concept stage	
	6. Is a detailed budget including budget notes included?	n/a at concept stage	
	7. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?	n/a at concept stage	
	8. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function?	n/a at concept stage	
	9. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	n/a at concept stage	
	10. Is a disbursement schedule with time-bound milestones included?	n/a at concept stage	



CONCEPT NOTE PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme: Learning to adapt: strengthening the climate resilience of education in North Macedonia

Country: North Macedonia

Thematic Focal Area: Education

Type of Implementing Entity: Multilateral Implementing Entity

Implementing Entity: World Bank

Executing Entities: Ministry of Education and Science

Amount of Financing Requested: 10 million (in U.S Dollars Equivalent)

Project Formulation Grant Request (available to NIEs only): Yes No

Amount of Requested financing for PFG: (in U.S Dollars Equivalent) 150,000 USD

Letter of Endorsement (LOE) signed: Yes No

NOTE: LOEs should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: <https://www.adaptation-fund.org/apply-funding/designated-authorities>

Stage of Submission:

- This concept has been submitted before
- This is the first submission ever of the concept proposal

In case of a resubmission, please indicate the last submission date: 10/17/2025

Please note that concept note documents should not exceed 50 pages, including annexes.

Project/Programme Background and Context:

Provide brief information on the problem the proposed project/programme is aiming to solve. Outline the economic social, development and environmental context in which the project would operate.

Economic, social and development context

Since gaining independence, the Republic of North Macedonia has achieved notable advancements in its social, economic, and institutional landscape. The country has seen its per capita income double and has transitioned from a lower-middle-income to an upper-middle-income economy. Its advantageous position in the Western Balkans, combined with a competitively priced labor force and favorable tax incentives, has made it an attractive destination for foreign direct investment (FDI). Over the past twenty years, trade openness has more than doubled. These developments, along with key social protection reforms, have contributed to improved living standards and reductions in both extreme poverty and inequality, by establishing systems that support the most vulnerable—particularly during recent crises.¹

Following recent shocks, North Macedonia’s potential GDP growth has declined to below 2 percent annually. Prior to 2020, the country experienced consistent and inclusive economic expansion, supported by macroeconomic stability, increased trade integration, and reforms conducive to business growth. However, the COVID-19 pandemic and the repercussions of Russia’s invasion of Ukraine disrupted this trajectory, triggering inflation and halting progress in poverty alleviation. At the current pace of growth, it may take decades for North Macedonia to reach high-income status and align with the average income levels of the European Union. In terms of purchasing power parity, the country’s GDP per capita is currently 42% of the EU-27 average.

In spite of earlier gains, over 395,000 people were living in poverty in 2019, and nearly one-third of the population remained at risk of falling into poverty if exposed to economic shocks. Poverty rates remain particularly high—exceeding 30%—in rural areas, the northern regions, and the Skopje metropolitan zone. Addressing poverty will require substantial efforts to boost labor force participation and enhance gender equality and social inclusion. Even with a solid 5 percent annual growth rate since 2023, and assuming income distribution remains unchanged, projections indicate that more than 235,000 individuals will still be living in poverty by 2030. This underscores the urgency of accelerating and broadening economic growth. The labor market, a critical factor in reducing poverty, remains weak. The decline in the unemployment rate from 15.4% in 2021 to 14.4% in 2022 was largely due to increased inactivity among those aged 50–64, rather than a rise in employment. Job vacancy rate remains low, despite a modest uptick in 2022. Youth unemployment stood at 25.6% in the second quarter of 2023—one of the highest in the region and well above the EU-27 average.

¹ North Macedonia CPF, 2023

Despite some progress in improving human capital development, the Human Capital Index (0.56) remains low. This level of human capital—among the lowest in the Europe and Central Asia region—highlights persistent inefficiencies and quality concerns, particularly within the education and health sectors, which remain inadequately equipped to address both longstanding and emerging challenges. These shortcomings directly affect the country’s overall productivity. North Macedonia is experiencing a significant loss of human capital, driven by high youth unemployment. On average, young graduates spend 2.5 years seeking stable employment. In 2022, around 57% of the population identified the lack of adequate job opportunities as the most pressing issue.

Limited employment opportunities and perceptions of better services abroad have driven continuous emigration since the early 1970s, particularly among individuals aged 25–49. More recently, the country has also seen a significant outflow of highly educated individuals, or the increasing incidence of the so-called “brain drain.” Brain drain risks creating critical skills shortages in key sectors and hinder the country’s ability to benefit from investments in human capital, while further constraining the already shrinking talent pool. Constraints on the availability of skilled labor are further driven by a declining and aging population. Life expectancy (74.7years) in the country is increasing, but fertility is decreasing, with less than 1.5 children per woman being born.

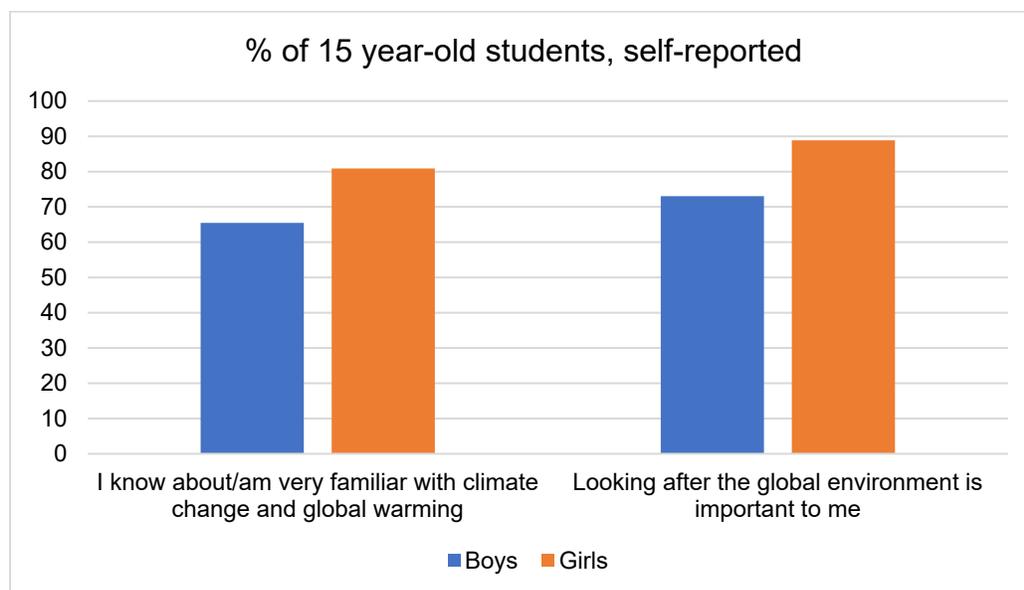
Social exclusion continues to obstruct progress in economic development and poverty alleviation. The Roma population faces restricted access to essential services and economic opportunities, resulting in elevated poverty levels; in 2021, approximately 75% of Roma individuals were at risk of poverty. Ensuring equitable access to basic opportunities for these groups is vital for sustaining poverty reduction and enabling broader participation in economic growth.

Initial gender analysis

Enrollment rates in primary and secondary education show a decreasing gender gap, while women dominate in tertiary education. By 2020, girls had reached parity with boys in primary education, were narrowing the gap in secondary education, and had a lead in pre-primary settings. The most pronounced gender disparity appears in tertiary education, where women had a gross enrollment rate of 50.6% in 2020, compared to 35% for men. On average, women in North Macedonia attain higher levels of education than men. In 2020, 25.1% of women aged 25 to 64 had completed tertiary education, compared to 21.4% of men in the same age group. Among students, girls in North Macedonia also report greater environmental awareness and attach greater importance to looking after the global environment (Figure 1).

Figure 1: Environmental awareness and attitudes among students in North

Macedonia, 2018



Source: OECD (2022), *Are Students Ready to Take on Environmental Challenges?*, PISA, OECD Publishing, Paris, <https://doi.org/10.1787/8abe655c-en>.

Despite women’s higher representation in tertiary education, lower fertility rates, and longer life expectancy, these gains have not translated into better economic outcomes. North Macedonia continues to face issues such as the gender wage gap, unequal labor force participation, and marked occupational segregation. In 2022, the Gender Equality Gain Index (GEGI)—which estimates the potential long-term GDP per capita increase from equalizing employment rates between men and women—stood at 19.7%, underscoring the significant economic and social benefits of closing the gender employment gap.

Significant and enduring disparities persist in labor market outcomes between women and men. While female labor force participation has shown a gradual increase since 2000, it still lags far behind that of men. As of 2021, there exists a substantial gap of 23.6 percentage points in the labor force participation rate (53.1 percent for women compared to 76.7 percent for men) (Figure 16). Despite efforts, these rates have plateaued for both genders, perpetuating the gender gap. North Macedonia displays wider gender disparities in labor force participation compared to the EU-27. Data from EU-SILC (2019) reveals that in North Macedonia, the gender pay gap is such that women earn 9.8 percent less than men (Table 2). Upon controlling for individual characteristics, occupation, and industry, the gender wage gap widens further. Specifically, the gap escalates to 14 percent after controlling for individual characteristics such as education level, age, and experience.

The unequal distribution of caregiving responsibilities significantly limits women’s economic engagement. Prevailing social norms often place a disproportionate share of domestic duties on women. In North Macedonia, 48.7% of men and 37.7% of women agree with the statement: “A woman should do most of the household chores even if the husband is not working.” As a result, women are the primary contributors to unpaid care and domestic labor, creating a notable imbalance

in household responsibilities. This unequal division is largely driven by the lack of comprehensive social, educational, and labor policies that challenge and transform gender norms and stereotypes at both individual and systemic levels.² As a result, supporting uninterrupted school operations during climate events – as foreseen by Component 1 of this project – is essential to reduce household stress. Provision of extra-curricular activities – foreseen under Component 2 - will further support female labor market participation, enabling students to remain at schools in afternoon hours engaged in meaningful activities. In addition, given that primary education teachers and school principals in North Macedonia are predominantly women (74% and 55%, respectively), any interventions targeting them must consider and be designed around the caregiving duties shaped by prevailing gender norms. Section B below provides a detailed explanation how gender considerations have been integrated in the project design at activity level.

Environmental context

North Macedonia is vulnerable to a range of climate-related hazards, including floods, heatwaves, wildfires, and landslides. The country has a long-standing history of devastating floods, and in the future, it is expected to face more frequent and intense extreme weather events, including torrential rainfall and heatwaves. In recent decades, the country has grappled with a growing number of heat-related challenges—including rising temperatures, prolonged droughts, and an increased risk of wildfires—all of which pose serious threats to national stability and economic productivity. Over the past two decades, North Macedonia has suffered over US\$667 million in damages from climate-induced disasters. Climate-related shocks often have localized impacts and tend to exacerbate existing socioeconomic vulnerabilities. Rural areas, municipalities with shrinking populations, and rapidly growing urban zones are particularly susceptible to flooding and other climate-related hazards.³

Floods and wildfires have been particularly damaging for North Macedonia. These hazards are not only causing widespread economic losses but also disrupting livelihoods, degrading ecosystems, and placing increasing pressure on public resources and infrastructure. Flooding has emerged as a particularly severe threat, with recurring events causing widespread damage, displacement, and loss of life. Notable incidents include the 2015 floods in Pelagonija and Strumica, and the catastrophic 2016 floods in the western and northwestern regions. On average, floods affect approximately 70,000 people annually and result in losses exceeding US\$500 million. Wildfires and extreme heat have also intensified, especially during the summer months. In addition, the past decade has seen a marked increase in heatwaves and prolonged warm periods, with record-breaking tropical nights and summer days. Wildfires alone have destroyed over 18% of the country’s forested areas, caused economic losses of €180 million, and contributed significantly to national greenhouse gas emissions—equivalent to the country’s average annual output.

In addition, the severity of certain natural hazards—and their associated impacts—is projected to increase as the climate continues to change. North Macedonia is expected to experience a warmer and drier climate, marked by

² World Bank, North Macedonia: Country Gender Assessment (2024)

³ World Bank, Country Climate and Development Report North Macedonia (2024)

decreased precipitation and a higher frequency of wildfires and extreme weather events. Despite these shifts, the country will remain susceptible to flooding, while its exposure to droughts and elevated summer temperatures is anticipated to rise. Only between 1996 and 2016, the number of flood events rose by almost 30%. By 2060, the likelihood of experiencing a severe drought in any given year in North Macedonia is estimated to range between 0.23 and 0.37.

Critical infrastructure, including schools, is at risk of climate disruptions. Geospatial analysis conducted in North Macedonia reveals that 13% of schools are highly exposed to flooding, while 28% face medium to high landslide risk—9% of which are in high-risk zones. Nearly 2% of schools are vulnerable to multiple overlapping hazards. These are concerning statistics, as research shows that the impacts of climate change negatively affect learning environments and student outcomes, for example through contamination, debris, inadequate temperature regulation and school closures,⁴ putting long-term human capital development in North Macedonia at risk. Table 1 below provides an overview of the climate impacts on the school infrastructure since 2020.

To address these escalating risks, North Macedonia must prioritize substantial investments in climate adaptation. Such investments promise wide-ranging benefits—economic, social and environmental. Allocating resources toward climate adaptation and financial preparedness helps prevent substantial human, physical, and economic losses. At the same time, climate change presents opportunities for green and sustainable growth, particularly in sectors like transportation and urban planning. Climate-related initiatives also generate important social and environmental co-benefits, contributing to the well-being of both people and ecosystems. In the Western Balkans, cost-effective, nature-based solutions at the local level support adaptation by promoting the sustainable management of natural resources—benefiting ecosystems and local populations, especially in mountainous and downstream regions.

⁴ PAD IPEIP North Macedonia (2020)

Table 1: Overview of climate change impacts on North Macedonia's school infrastructure, 2020-2025

Year	Municipality	School	Event type	Event (short description)
2020	Skopje (Gjorče Petrov)	Primary school Tihomir Milosevski	Storm / wind + heavy rain	Roof destroyed; flooded corridors; classes paused temporarily
2020	Skopje (Aerodrom)	Secondary school Marija Kiri Sklodovska	Strong wind over 100km/h	Roof damaged
2021	Kočani	Secondary school Gjosho Vikantiev	Heavy rain + roof reconstruction	Water entered due to exposed roof; computers and inventory damaged
2021	Ohrid	Sveti Naum Ohridski	Heavy rain	Roof leaks
2021	Struga	Primary school Niko Nestor	Heavy rain	Roof leaks
2022	Skopje (Aerodrom)	Two schools	Severe storm / cloudburst	Municipality reports two school buildings flooded; municipal teams repaired
2022	Kicevo	Primary school Faik Konica	Heavy rain	Roof leaks
2022	Delchevo	Secondary school Metodi Mitevski Brico	Storm and strong wind	Broken windows, flooding in certain classrooms
2022	Delchevo	Primary school Vancho Prke	Storm and strong wind	Roof heavily damaged- total demolition of roof construction above two classrooms, destruction of solar boiler heater
2023	Kumanovo	Primary school Krste Misirkov	Prolonged rain	Leaking roof after days of rain; flooded classrooms and power issues; shortened classes
2023	Kumanovo	Primary school Brakja Miladinovci	Prolonged rain	Leaking roof after days of rain; flooded classrooms and power issues; shortened classes
2023	Kumanovo	Two schools	Prolonged rain / roof leaks	Flooded classrooms; power safety concerns; shortened classes
2023	Vasilevo	Primary school Goce delchev-Sushevo	Storm with heavy wind	School fire
2024	Tetovo	Secondary school Gjoce Stojcheski	Severe storm / heavy rain + hail	Textile school listed among most damaged objects; water pumping across many buildings
2024	Shtip	Secondary school Kole Nehtenin	Strong wind over 75km/h	Roof damaged
2024	Kumanovo	Primary school Toli Zordumis	Heavy rain	Two floodings in 2024 due to storm waters from the street
2024	Shtip	Primary school Dimitar Vlahov	Heavy rain	In the period 2022-2024 in the event of heavy rain flooding occurred in the administrative spaces, classrooms on the top floor, and the school hallways
2025	Bitola	Primary school Krste Petkov Misirkov-Bistrica	Heavy rain → mediatheque flooded; wall leak on adjacent classroom	Damage noted just before school year; repairs needed
2025	Skopje (Centar)	Ilija Nikolovski Luj	Strong wind and rain	Roof damaged; flooded rooms
2025	Shtip	Secondary school Jane Sandanski	Heavy rain	Roof leaks in the gym; wall cracks and mold in teachers office and other school rooms as a result of water penetrating walls
2025	Skopje	Secondary school Dimitar Vlahov	Fire	Fire in the grass area behind the school building

Source: Ministry of Education and Science

Project/Programme Objectives:

List the main objectives of the project/programme.

This project in North Macedonia has three primary objectives: i) strengthen the adaptation capacity of the school network, ii) enhance adaptation knowledge of students, teachers and school leadership, and iii) promote learning and knowledge management to foster project sustainability and replicability.

The project and its objectives are well aligned with the Adaptation Fund's overall

objective to “reduce vulnerability and increase adaptive capacity to respond to the impacts of climate change, including variability at local and national levels”⁵, the Fund’s goal is to “assist developing-country Parties to the Kyoto Protocol and the Paris Agreement that are particularly vulnerable to the adverse effects of climate change in meeting the costs of concrete adaptation projects and programmes in order to implement climate-resilient measures”⁶, as well as the Fund’s outcomes 3, 4 and 8, as detailed in Part III below.

Recognizing the increasing vulnerability of schools to climate-related hazards, the project seeks to transform schools into safe, adaptive, and future-ready environments that can withstand climate shocks while fostering a culture of resilience among students, educators, and communities. Through strategic investments, the project aims to ensure that both existing and new school infrastructure is climate-resilient and energy-efficient, thereby safeguarding the physical learning environment and ensuring continuity of education during extreme weather events. This includes retrofitting older school buildings that can serve as models of climate-smart design and as community resilience hubs for the duration of extreme climate event responses.

At the same time, the project seeks to integrate climate adaptation into the educational experience itself. By embedding adaptation-focused content into extracurricular programming, it aims to equip students with the knowledge, skills, and mindset needed to navigate and respond to the realities of a changing climate. These experiential learning opportunities will foster climate adaptation awareness, critical thinking, problem-solving, and environmental stewardship from an early age.

Equally important is the project’s focus on building the capacity of teachers and school leadership. By providing targeted training on climate adaptation, disaster risk preparedness to teachers, and supporting capacity building in the area of school risk management for principals and school professional teams, the project will empower education professionals to lead adaptation efforts within their schools and communities. This institutional strengthening is essential for sustaining long-term resilience of the project.

Finally, the project aims to establish a robust system for learning, knowledge sharing, and scaling of successful adaptation practices. By capturing and disseminating lessons learned, the project will contribute to national policy development and support the replication of effective models across the country.

In essence, the project aspires to position the education sector as a proactive agent of climate resilience and sustainable development in North Macedonia.

Project/Programme Components and Financing:

Fill in the table presenting the relationships among project components, activities, expected concrete outputs, and the corresponding budgets. If necessary, please refer to the attached instructions for a detailed description of each term.

⁵ Adaptation Fund Results Framework, updated in November 2025.

⁶ Ibid.

For the case of a programme, individual components are likely to refer to specific subsets of stakeholders, regions and/or sectors that can be addressed through a set of well defined interventions / projects.

The table below describes the tentative project components, activities, and expected concrete outputs, providing the foundation for the development of the full project proposal. For each project component, it also presents the corresponding indicative budgets, which will be confirmed and may be adjusted during the development of the full project proposal, based on a detailed costing exercise. Preliminary cost estimates by component are provided in the Annex 1.

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US\$)
1.Strengthening the adaptation capacity of the school network	Output 1.1. 10 primary schools upgraded with climate-resilient infrastructure	Outcome 1: Reduced learning disruptions and enhanced community resilience to climate events	7,545,997
2. Enhancing adaptation knowledge of students, teachers and school leadership	Output 2.1. After-school clubs engaging students on climate adaptation launched in 25 primary schools Output 2.2. Teachers in grades 1-5 trained on climate adaptation Output 2.3. Network formed for teacher peer-support Output 2.4. Leadership of all primary schools trained on climate adaptation	Outcome 2: Increased awareness of climate adaptation importance and concepts among students, educators and school leadership	765,017
3.Promoting learning and knowledge management	Output 3.1. Awards organized for the most innovative extracurricular activities and learnings captured in a comprehensive booklet Output 3.2. Concluding public conference held to	Outcome 3: Strengthened evidence base and stakeholder engagement on enhancing climate resilience in and through education	30,000

	share lessons learned and learnings captured in a Lessons learned project brief		
5. Total Components Cost			8,341,014
6. Project/Programme Execution cost			875,576
7. Total Project/Programme Cost			9,216,590
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			783,410
Amount of Financing Requested			10,000,000

Projected Calendar:

Indicate the dates of the following milestones for the proposed project/programme

The below table shows the indicative project calendar.

Milestones	Expected Dates
Start of Project/Programme Implementation	October 2026
Mid-term Review (if planned)	October 2028
Project/Programme Closing	October 2031
Terminal Evaluation	Within 6 months after project closing

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Describe the project/programme components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience. For the case of a programme, show how the combination of individual projects will contribute to the overall increase in resilience.

The project has three main components, which work together to ensure that schools are physically secure amid climate hazards, that students and educators are empowered with the knowledge and tools to adapt, and that institutional systems support continuous learning and risk management. Each component contributes directly to embedding climate adaptation into the core of the education sector, which is key for increasing the level of awareness and proactivity on adaptation issues in the general population. Across the project components, the project will avoid or mitigate any potential negative impacts by adhering to the World Bank Environmental and Social Framework, which will enable

compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund (see more in Section B).

Component 1: Strengthening the adaptation capacity of the school network

Component 1 will focus on enhancing the climate resilience of the school infrastructure to ensure that schools can remain open – to the extent possible – in the face of climate shocks or can be reopened as soon as possible. It includes retrofitting 10 selected primary schools to better withstand extreme weather events and natural hazards. The list of schools is provided in Table 2. The 10 schools have been selected from among 20 primary schools which will benefit from classroom extensions (with climate-resilient features) or internal space reorganization under the Additional Financing for the Primary Education Improvement Project (PEIP) of the World Bank in North Macedonia, which this Adaptation Fund project seeks to complement (see Section F for details)⁷. The schools that have been selected are located in climate vulnerable and economically disadvantaged regions, and/or socio-economically vulnerable municipalities (Table 2).

Table 2: 10 primary schools to be upgraded with Adaptation Fund financing, incl. selection criteria

No.	Region	Municipality	Name of primary school	Disaster risk, region (UN INFORM Risk Index, incl. natural/climate risk)	GDP, region	Socio-economic vulnerability, municipality
1	Skopje	Gazi Baba	Njegosh	High	138.4	Neighborhoods with elevated social vulnerability and overcrowded school facilities
2	Skopje	Kisela Voda	Krume Kepeski	High	138.4	Neighborhoods with elevated social vulnerability and overcrowded school facilities
3	Vardar	Veles	Vasil Glavinov	Medium	89.5	Mixed low-income urban–rural populations
4	East	Shtip	Slavejko Arsov	Medium	93.3	Mixed low-income urban–rural populations
5	Northeast	Rankovce	Hristijan Todorovski Karposh	Medium	54.7	Rural, limited fiscal capacity
6	Vardar	Sveti Nikole	Goce Delchev	Medium	89.5	Mixed low-income urban–rural populations
7	Southwest	Kichevo	Kuzman Josifovski Pitu	Medium	88.4	Rural, limited fiscal capacity
8	Polog	Jegunovce	Aleksandar Zdravkovski	High	53.2	Rural, limited fiscal capacity
9	Polog	Jegunovce	Shemshevo	High	53.2	Rural, limited fiscal capacity
10	Southwest	Ohrid	Zhivko Chingo	Medium	88.4	Limited fiscal capacity

Note: The UN INFORM Risk Index provides a measure of disaster risk in a country, capturing three areas: hazard and exposure, vulnerability, and lack of coping capacity. Under “hazard and exposure”, exposure to the following climate hazards is measured: floods, droughts, wildfires, and landslides (UN, 2022). The GDP values represent an index of GDP per capita, with 100 corresponding to the national average for North Macedonia.

⁷ While the Adaptation Fund project will be complementary to the Additional Financing PEIP project and will further strengthen it, no co-financing is required for the Adaptation Fund project. The project proposed in this CN will be able to effectively meet its objectives with Adaptation Fund financing only.

The foreseen infrastructure investments will ensure that the effects of climate disruptions on learning are minimized and that schools can serve as emergency shelters – limited to defined areas of school premises and for the duration of extreme climate event responses⁸ – for surrounding communities. By reinforcing the built environment, this component directly supports both educational continuity and community-level climate resilience. The type of interventions to be pursued will be determined based on a comprehensive climate vulnerability assessment, evaluating the type of climate hazard(s) the schools are facing and the schools’ current preparedness to withstand them. The initial climate assessment (see above) suggests that increasing schools’ resilience to floods, storms, landslides and extreme heat may likely be prioritized. The infrastructure retrofits will make use of natural and recycled materials to the extent possible, and where suitable incorporate nature-based solutions (e.g. planting trees in school vicinities to provide extra shade). Many of the potential infrastructure upgrades aiming to foster climate resilience (e.g. strengthening school insulation, ventilation, etc.) are simultaneously expected to improve schools’ energy efficiency. The infrastructure retrofits will ensure alignment with existing technical norms and standards (Table 8), as well as the standards set by the Law on Climate Action, to be adopted by the Parliament in 2026. The Law is designed to guide North Macedonia toward becoming a climate-neutral, resilient, and sustainable society by 2050, and aims to establish a comprehensive legal framework for addressing the causes and impacts of climate change in the Republic of North Macedonia. The Law will go beyond the norms directly relevant to the school infrastructure but will also serve as a basis to adopt or adjust the existing norms and standards in climate resilience and school infrastructure resilient buildings.

Outcome 1: More communities served by climate-resilient schools for learning and protection during climate events

Output 1.1. 10 primary schools upgraded with climate-resilient infrastructure

Tentative activities:

- Activity 1.1.1. Retrofit 10 selected primary schools with climate-resilient, energy-efficient upgrades

Component 2: Enhancing adaptation knowledge of students, teachers and school leadership

Component 2 will introduce experiential, hands-on learning opportunities for students to deepen their understanding of climate adaptation. Building on the mandatory concept of extracurricular activities institutionalized under North Macedonia’s new Concept for Primary Education, the component foresees allocating grant funding to 25 primary schools to incentivize the development and launch of meaningful extracurricular activities focused on adapting to the effects of climate changes. Research shows that learning in real-life contexts can effectively develop much more comprehensive forms of knowledge (Sabarwal et al., 2024). The funding may be allocated towards technical assistance for supporting schools with the design of such activities, their implementation in collaboration with local stakeholders and communities and preparing teachers to lead them. Relevant regional examples – such as in Montenegro where students at a primary school located in a coastal, wildfire-prone area develop information materials for educating tourists on wildfire prevention and use them to promote responsible tourist behavior among local

⁸ Such considerations have been incorporated into the project design to ensure any potential disruptions to schooling are minimized. In North Macedonia, it should be noted that in the case of emergency situations, dormitories are designated as primary emergency shelters, while sports halls and schools are used only additionally if needed.

visitors (Singh and Shah, 2022) – may serve as basis for inspiration.

This component will be able to leverage the learnings acquired under the World Bank Additional Financing project in North Macedonia (See Section F for details), which will support the roll-out of extracurricular activities (including environmentally-focused ones) at 20 primary schools as part of piloting of the “whole-day-school” model (WDS). This Adaptation Fund project will enable extending such opportunities to 25 more schools beyond the 20 targeted under the Additional Financing project, while benefitting from accumulated implementation know-how and focusing the extracurriculars on climate adaptation specifically. Through these extracurricular activities, such as climate adaptation clubs and student-led projects, learners will have the opportunity explore local climate risks and develop practical solutions in collaboration with local stakeholders. This approach not only builds climate literacy but also fosters innovation, critical thinking, and a sense of agency. By engaging students directly in adaptation efforts, this component helps cultivate a generation that is better prepared to respond to the challenges of a changing climate, while strengthening community ties at the local level.

Component 2 also focuses on equipping educators and school leadership with the knowledge and tools to integrate climate adaptation into both teaching and school management, complementing activities aimed at supporting capacity-building of teachers and school principals in North Macedonia under the World Bank Additional Financing project (AF PEIP, See Section F for details). Primary school teachers of grades 1-5 will receive targeted training on incorporating climate adaptation themes into teaching—covering topics such as the causes and impacts of climate change (climate-enhanced/exacerbated extreme events and slow onset events) and the role of individuals and ecosystems in buffering climate effects, contextualized to the local level to make the learning more tangible for students. To avoid crowding out critical foundational learning in early years, the training will include strategies for teachers on effectively integrating climate content into foundational literacy and numeracy instruction. The training may also cover approaches to alleviating climate anxiety among students, among others. To reinforce this work, a climate resilience peer-learning network (i.e. a “community of practice”) will be established to facilitate peer learning, share innovative practices, and promote civic engagement among educators. Existing relevant resources developed by local stakeholders (e.g. online teacher training modules on climate topics) could be utilized as basis in the training design process and scaled up.

In addition, school leadership (i.e. school principals and two members of school professional teams) across all primary schools will be trained and supported with capacity building focused on climate adaptation, to enable them to better support teachers in integrating climate themes into teaching as well adequately maintaining school premises amidst climate change effects and risks. This will complement training for school principals foreseen under AF PEIP (see Section F), without introducing duplication. The training may cover risk awareness in climate local contexts, infrastructure maintenance and knowledge (e.g. identifying vulnerabilities in school buildings and grounds, understanding retrofit options, etc.), and engagement with local stakeholders, among others. Evidence shows that including school leaderships in climate resilience efforts is crucial. In Haiti, after Hurricane Matthew, schools with stronger management practices demonstrated faster recovery—especially in cases of severe damage. Principals who scored higher on various management indicators were able to reopen schools more quickly, reintegrate students and teachers sooner, reduce learning losses significantly, and implement disaster risk reduction strategies to prepare for future events. Similarly, in

Puerto Rico, principals with stronger management capabilities were more successful in maintaining student engagement through remote learning during the crisis (Sabarwal et al., 2024). Therefore, the comprehensive approach foreseen under this Component ensures that both teaching and school governance actively contribute to building climate resilience.

Outcome 2: Increased awareness of climate adaptation importance and concepts among students, educators and school leadership

Output 2.1. After-school clubs engaging students on climate adaptation launched in 25 primary schools

Tentative activities:

- Activity 2.1.1. Launch adaptation-focused extracurricular activities for students (e.g. afterschool ecology clubs with emphasis on climate adaptation, etc.)

Output 2.2. Teachers in grades 1-5 trained on climate adaptation

Tentative activities:

- Activity 2.2.1. Design and launch teacher training focused on climate adaptation for primary school teachers in grades 1-5

Output 2.3. Network formed for teacher peer- support

Tentative activities:

- Activity 2.3.1. Establish a teacher climate resilience peer-learning network

Output 2.4. Leadership of all primary schools trained on climate adaptation

Tentative activities:

- Activity 2.4.1. Design and launch training for school leadership of all primary schools on climate adaptation

Component 3: Promoting learning and knowledge management

Component 3 is solely dedicated to learning and knowledge management (see details in Section G), ensuring that the project's outcomes are systematically assessed and shared. The explicit focus on learning and knowledge management seeks to enable future replicability and scale-up of the project's activities, magnifying the project's original reach and thereby further strengthening North Macedonia's climate resilience.

Outcome 3: Strengthened evidence base and stakeholder engagement on enhancing climate resilience in and through education

Output 3.1. Awards organized for the most innovative extracurricular activities and learnings captured

Tentative activities:

- Activity 3.1.1. Organize awards for the most innovative extracurricular activities and compile examples into a comprehensive booklet

Output 3.2. Concluding public conference held to share lessons learned and learnings captured

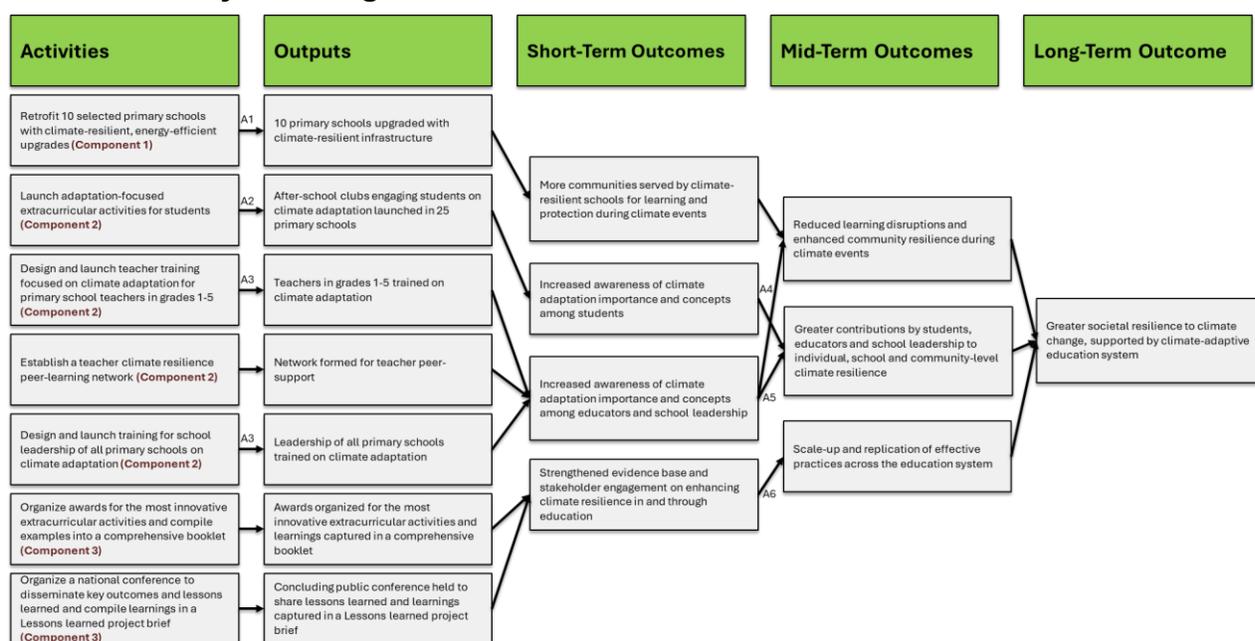
Tentative activities:

- Activity 3.2.1. Organize a national conference to disseminate key outcomes and lessons learned and compile learnings in a Lessons learned project brief

Together, Components 1-3 form a cohesive strategy for bolstering the climate resilience of North Macedonia's education system and society more broadly. From resilient infrastructure and empowered educators and school leadership to informed students and adaptive institutions, the project offers a robust model for climate-resilient education, not only protecting the education sector from climate risks but also transforming it into a driver of long-term climate resilience and sustainability.

Table 3 below outlines how the project components, activities and outputs are expected to lead to short-, mid- and long-term outcomes, together with critical assumptions underpinning the project's theory of change (TOC). The TOC illustrates how the project's three components work together to enhance North Macedonia's resilience to climate change, by making the education system both climate-resilient and a catalyst for broader societal adaptation. On the one hand, by strengthening the adaptation capacity of the school network and training school principals on integrating climate resilience considerations into school operations, schools will be better prepared to withstand climate shocks, reducing learning disruptions and enhancing community resilience during climate events by serving as emergency shelters, if needed. On the other hand, practical student learning opportunities combined with integrating climate resilience considerations into curricula by trained and empowered teachers will increase awareness of climate adaptation importance and concepts among students and educators, fostering long-lasting behavioral change and greater adoption of climate resilient practices at individual, school and community level. Finally, promoting learning and knowledge management through systematically collecting the project's lessons learned and creating space for national dialogue among key stakeholders will enable effective peer-learning and create momentum, supporting scale-up and sustainable replication of effective practices across the education system.

Table 3: Theory of change



B. Describe how the project/programme provides economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender

considerations. Describe how the project/programme will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

The project is expected to provide an array of economic, social and environmental benefits.

Economic benefits

The primary expected economic benefits of the project relate to the avoided damages from climate-related events on school infrastructure, as well as the avoided economic losses from disrupted learning hours. Approximate economic benefits can be estimated using proxy indicators derived from past experiences and comparable interventions. For example, in August 2016, a catastrophic rainstorm caused flash floods in Skopje and surrounding areas, resulting in 21 fatalities and severe damage to public infrastructure, including schools. The Government allocated approximately €36.4 million for recovery, with school rehabilitation costs estimated at €240,000–€540,000 (c. USD\$280,000-630,000) per facility. These repairs included structural reinforcement, electrical and plumbing restoration, and interior refurbishments. By retrofitting 10 schools (for a total cost of USD 7,500,000), the project could therefore potentially prevent direct damages in the range of USD\$2,800,000-6,300,000 from a single climate hazard event. The Ministry of Education will be able to approximate the economic benefits of the project by periodically requesting data on the costs of damages caused by climate change from the 10 target schools and comparing these with costs borne by similar schools in similar areas that did not benefit from adaptation retrofits. In addition, EBRD’s indicator focused on measuring “avoided losses” or ICMA’s focused on “avoided disruption” could be considered to this end.⁹ The potential savings would be significantly amplified when considering the cumulative impact of various (and sometimes multi-hazard) climate events over time, the project's potential to catalyze broader climate-resilient upgrades beyond the 10 initial schools, as well as the prevented student learning losses caused by climate-related school closures and therefore losses to the economy over the long term. Evidence from COVID-19 induced school closures estimates that learning loss equivalent to one-third of a school year corresponds to around one tenth of a standard deviation of lost test results and is therefore projected to lead to an average 1.5% reduction in GDP over the remainder of the century. The present value of this loss is estimated to be equivalent to 69% of current GDP for a typical country (Hanushek and Woessmann, 2020).

Social benefits

The project is expected to produce significant social benefits, expected to materialize through increased climate resilience among students, teachers, and principals, empowering them to become proactive agents of adaptation at individual, school and community level. As such, education is the strongest predictor of climate-friendly behaviors, including adaptation. An additional year of schooling increases climate awareness by 8.6%, which correlates with higher engagement in resilience-building actions (Sabarwal et al., 2024). Education promotes innovation and the adoption of new technologies, factors that are crucial for greater climate resilience. For example, in Ethiopia, completing six years of education increases the likelihood of a farmer to adapt

to climate change by 20%, while in ten African countries, each year of education reduced inaction by 1.6% (Deressa et al., 2009). In Uganda and Pakistan, basic and secondary education respectively lead to greater adoption of drought-resistant crops, diversified farming, and climate risk management strategies (Hisali et al., 2011; Khan et al., 2020). In addition, evidence from countries including Senegal, Mali, Thailand, Cuba, Haiti, the Dominican Republic, El Salvador, and Brazil indicates that individuals with higher education levels are better prepared for disasters (including climate-related shocks), suffer fewer negative impacts, and recover more quickly. This is largely because education improves future planning, resource management, and responsiveness to disaster-related training (Muttarak & Pothisiri, 2013; Pichler & Striessnig, 2013; Van der Land & Hummel, 2013; Wamsler et al., 2012). Further evidence suggests that educating children can impact parental attitudes and climate awareness (Hoge et al., 1982; Whitbeck & Gecas, 1988; Dhar et al., 2018; Meeusen, 2014; Gronhoj & Thogersen, 2009), extending adaptation benefits far beyond school children themselves. Education is also particularly instrumental in improving the adaptive capacity of women, their families and communities. Improvements in women’s education have been linked to better health outcomes for their children, making the children in turn more resilient and adaptive to climate change, especially among the poor and vulnerable. When girls receive 12 years of quality education, they are more likely to possess the skills needed to withstand and overcome shocks stemming from extreme weather events (Malala Fund, 2021). One study goes as far as to claim that girls’ secondary education is the most important socioeconomic determinant in reducing vulnerability to climate change (Muttarak & Lutz, 2014).

For climate action, overall education attainment and quality matters the most (Sabarwal et al., 2024). In discussions about education and climate, there is often confusion—and even conflation—between climate-specific education and general education. It is essential to clarify that the broader benefits outlined above stem primarily from access to quality education as a whole. Each additional year of education contributes to climate awareness and action, including through concrete adaptation strategies such as those mentioned above. The quality of education also plays a critical role. Pro-environmental attitudes and scientific proficiency tend to reinforce one another: students who perform well in environmental science—such as on the PISA science assessment—also tend to exhibit stronger pro-environmental attitudes. In North Macedonia, overall education attainment and quality are being promoted by the World Bank through the Primary Education Improvement Project (PEIP) and its related Additional Financing (AF) (see Section F).

In an ideal world, high-quality and accessible general education is also able to equip students with climate-specific competencies (Sabarwal et al., 2024). This is precisely the focus of this Adaptation Fund project, complementing the above-mentioned PEIP/PEIP AF initiatives while seeking to maximize the achievement of broader adaptation benefits for North Macedonia. Climate education specifically, if done well, has the potential to work (Sabarwal et al., 2024). A meta-analysis of 169 studies across 43 countries found that environmental education significantly improved environmental knowledge, attitudes, intentions, and self-reported behavior (Van de Wetering et al., 2022). However, clear focus on adaptation will be important, as global climate change education discourses still focus disproportionately on mitigation education and discussing the causes of climate change (Global Center on Adaptation, 2021). Qualitative evidence from 15 school-based climate adaptation projects (e.g. rainwater harvesting, heat-resilient schoolyards, etc.)

integrated into curricula shows that the projects successfully engaged students in taking local adaptation actions and influenced broader community adaptation practices (Global Center on Adaptation, 2021). Further, Sabarwal et al., 2024 suggest that climate-related knowledge and skills can help youth act on climate change, channeling the increasingly prevalent climate anxiety among youth in a positive and productive way.

The project components will extend the benefits of uninterrupted learning amid escalating climate risks—promoting regular school attendance and continued education, which are linked to higher engagement in resilience-building actions—directly to over 4,400 primary education students, 48% of whom are female, in some of the most climate-vulnerable and socio-economically disadvantaged areas of the country. In addition, capacity-building for teachers and school leadership will instill and promote adaptation knowledge, attitudes, intentions, and self-reported behaviors among students at the primary level, directly reaching more than 8,000 education professionals. This ensures that every one of North Macedonia’s 357 primary schools has a trained principal and that over 100,000 pupils in grades 1–5 benefit from teachers equipped to foster resilience. Furthermore, by enabling schools with planned infrastructure upgrades to serve as emergency shelters and provide vital services during climate crises in case of need, the project will strengthen community resilience to climate shocks for more than 330,000 inhabitants across the nine target municipalities where retrofits will be undertaken.

Environmental benefits

From an environmental perspective, the climate resilience retrofits planned for the 10 primary schools under Component 1 will not only protect infrastructure but also contribute to energy savings and emissions reductions. Measures such as improvements to the building envelope—including façade, roof, and windows—as well as upgrades to heating, cooling, and ventilation systems, are expected to yield significant efficiency gains. According to a 2021 energy-efficiency analyses commissioned for 23 schools by the Ministry of Education and Science, retrofitting a school building envelope alone can reduce energy consumption by 50%. When combined with other upgrades (e.g. cooling/heating, ventilation systems, etc.) energy use can be reduced by up to 80%, resulting in substantial emission savings and contributing to climate mitigation goals.

Project beneficiaries

The economic, social and environmental benefits of the project are expected to reach a range of direct and indirect beneficiaries. Approximation of direct and indirect project beneficiaries, disaggregated by gender, is provided in Table 4, together with the underlying assumptions behind the calculations.

Table 4: Estimate of direct and indirect beneficiaries, by gender and age

Component 1: Strengthening the adaptation capacity of the school network	Total	Female	Male	Assumptions	Total beneficiaries	Assumptions
Direct						
Students	4434	48%	52%	Total number of students in the 10 target schools, by gender		Total number of direct beneficiaries, cumulative across components/sub-categories, avoiding double-counting as in certain cases beneficiaries straddle across components. Upper bound, given that it separately counts the 250 students and 25 teachers to directly benefit from the extracurricular activities, who may be among those students and teachers already counted as benefiting from other project components. However, given that the schools to be supported with grants to provide the extracurricular activities will be competitively selected, it is not possible to provide further specification at this point.
Teachers	449	80%	20%	Total number of teachers in the 10 target schools, by gender		
Principals	10	55%	45%	1 principal per school, gender split using average for all principals at primary education level		
Other school staff	117	59%	41%	Total number of other staff in the 10 target schools, by gender		
Indirect						
Community members	338477	51%	49%	Community members in the municipalities benefiting from the 10 retrofitted schools which can serve as shelters, by gender	Direct	13352
Component 2: Enhancing adaptation knowledge of students, teachers and school leadership						
Direct						
Students engaged in extracurriculars	250	48%	52%	25 clubs in total, 10 students per club, gender split based on average for all primary students. Note: Potential overestimation of boys' participation given PISA data on environmental awareness and care for environment among boys.	Female	70%
Teachers trained (grades 1-5)	7210	87%	13%	Total number of teachers in grades 1-5, gender split using average for teachers in grades 1-5	Male	30%
Principals & professional teams trained	1071	55%	45%	Training for all principals and two members of school professional teams, gender split using average for all primary education principals	Age	
Indirect						
Other students in select schools where extracurriculars will be provided	11884	48%	52%	25 schools with a club, excluding the 250 students as direct beneficiaries, gender split based on average for all students in primary education	6-15yo	35%
Pupils in grades 1-5, benefiting from trained teachers	101900	49%	51%	Total pupils in grades 1-5, gender split using average for students in grades 1-5	20-30yo	4%
Pupils in schools with trained principals	173280	48%	52%	All students in primary education as each principal trained, gender split based on average in primary education	31-50yo	39%
					50+yo	22%
Component 3: Promoting learning and knowledge management						
Direct						
All primary school principals	357	55%	45%	Total primary school principals (direct recipients of the learning deliverables), gender split using average for all principals at primary education level	Indirect	517127
Indirect						
All primary students	173280	48%	52%	Total number of pupils in primary education, split by gender	Female	50%
All primary teachers	17599	74%	26%	Total number of teachers in primary education, split by gender	Male	50%
All primary other school staff	4608	61%	39%	Total number of other staff in primary education, split by gender	Age	
					0-5yo	3%
					6-15yo	40%
					16-19yo	3%
					20-30yo	8%
					31-50yo	19%
					50+yo	27%

Note: The table on the right presents a detailed breakdown of beneficiaries by gender. Beneficiaries straddle across all Components. The table on the left provides an aggregated estimate of direct and indirect beneficiaries—disaggregated by gender and age—ensuring no duplication.

Gender and diversity considerations

In light of the initial gender analysis (see Introduction) and the estimated gender split among direct and indirect project beneficiaries (Table 5), both gender and diversity considerations will be carefully integrated at the activity level, ensuring an equitable distribution of project benefits, as follows:

Component 1: Strengthening the adaptation capacity of the school network

Activity 1.1.1: Retrofit 10 selected primary schools with climate-resilient, energy-efficient upgrades

- The proposed project would prioritize schools located in climate vulnerable and economically disadvantaged regions, and/or socio-economically vulnerable municipalities (Table 2). Schools selected for Adaptation Fund support are located in some of the poorest and most climate-vulnerable regions of North Macedonia, including Polog, Northeast, Vardar, East and Southwest. These regions have the lowest GDP per capita in the country (Polog: 53.2; Northeast: 54.7), high shares of ethnic minorities (Roma, Albanian, Turkish), and include multiple rural municipalities with limited fiscal capacity, such as Jegunovce, Rankovce and Kichevo. Schools in Veles, Sveti Nikole and Štip serve mixed low-income urban–rural populations, while Gazi Baba and Kisela Voda in Skopje include neighborhoods with elevated social vulnerability and overcrowded school facilities. By targeting municipalities with the

lowest fiscal capacity and highest vulnerability, the project ensures that benefits are equitably distributed and reach those most affected by climate risks. The selected 10 schools were therefore prioritized because they serve the most vulnerable student populations, face the greatest climate-related risks, and represent municipalities least able to finance the required climate-resilient upgrades, ensuring that Adaptation Fund resources are directed where they will produce the most equitable and transformative impact.

- Ensure infrastructure upgrades prioritize inclusiveness. The 10 target schools selected for infrastructure upgrades under this project have previously been equipped with access ramps for individuals with physical disabilities and upgraded sanitation facilities that meet gender-sensitive standards, as part of the World Bank supported parent project (see further details in Section F below). This project will further elevate the infrastructure quality by integrating climate adaptation measures and ensuring access to such project benefits to vulnerable students, including those with disabilities.

Component 2: Enhancing adaptation knowledge of students, teachers and school leadership

Activity 2.1.1: Launch adaptation-focused extracurricular activities for students

- Design inclusive outreach to foster equal participation by boys and girls, addressing lower environmental awareness among boys (PISA).
- Include activities that challenge gender stereotypes, such as promoting leadership roles for girls.
- Support female labor force participation by extending opportunities for students to remain at school engaged in meaningful after-school activities, helping reduce the disproportionate share of domestic and care duties shouldered by women.

Activity 2.2.1: Design and launch teacher training focused on climate adaptation for primary school teachers in grades 1-5

- Ensure training delivery modes are flexible to accommodate teachers with caregiving responsibilities.
- Encourage use of gender-responsive examples in teaching reflecting diverse experiences with and impacts of climate adaptation.

Activity 2.3.1: Establish a teacher climate resilience network

- Create safe spaces for diverse voices, including minority and rural educators.
- Promote gender balance in leadership roles in the network.

Activity 2.4.1: Design and launch training for school leadership of all primary schools on climate adaptation

- Ensure training delivery modes are flexible to accommodate principals with caregiving responsibilities.
- Train principals to monitor and promote equal access to climate adaptation resources for all students and teachers.

Component 3: Promoting learning and knowledge management

Activity 3.1.1: Organize awards for the most innovative extracurricular activities and compile examples into a comprehensive booklet

- Assess gender-responsiveness of the extracurricular activities as part of the award

selection process

Activity 3.2.1: Organize a national conference to disseminate key outcomes and lessons learned and compile learnings in a Lessons learned project brief

- Invite representatives from vulnerable groups (e.g. Roma and disability associations, etc.).
- Ensure full venue accessibility.
- Aim for gender parity in panels and presentations.

Mitigation of negative impacts

In addition, the project will avoid or mitigate any potential negative impacts by adhering to the World Bank Environmental and Social Framework, which will enable compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund. The activities to be supported by the grant are similar in nature and type to those supported under the parent project and Additional Financing (see Section F for more details), financed through the World Bank loans. As such, the Environmental and Social Management Framework (ESMF) and Stakeholder Engagement Plan (SEP) developed for the World Bank supported parent project and updated for the Additional Financing project to address potential adverse environmental and social risks and impacts will be applicable for the scope of this Adaptation Fund project as well. The ESMF and SEP will be updated to incorporate references to the Adaptation Fund activities.

C. Describe or provide an analysis of the cost-effectiveness of the proposed project/programme.

The proposed project is designed to build climate resilience through a comprehensive approach that includes infrastructure upgrades, experiential, hands-on learning on climate adaptation for students, targeted capacity-building for teachers and principals, and knowledge-sharing. Each component is strategically aligned to maximize benefits and minimize costs, ensuring a high return on investment in terms of reduced future damages, enhanced educational outcomes, and strengthened community resilience. The cost-effectiveness of each project component is described in Table 5 below.

Cutting across all project components, the initiative's cost-effectiveness will be significantly enhanced by leveraging synergies with the ongoing World Bank operation in North Macedonia, specifically the Additional Financing project (refer to Section F for details). By leveraging the established project framework of the Additional Financing project where relevant (e.g. on E&S risk management, stakeholder engagement, etc.), resources can be utilized efficiently and effectively. This approach will foster collaboration and coherence between the two projects while mitigating the risk of unnecessary duplication of efforts and expenses. Consequently, the project will benefit from a streamlined implementation process, maximizing impact while minimizing costs.

Overall, the project's cost-effectiveness is evident in its potential to provide long-term benefits that justify the initial investment, making it a valuable initiative for North Macedonia's long-term climate resilience.

Table 5: Cost-effectiveness analysis of the proposed project components

Component	AF proposed solutions	Alternative approaches
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<p>Component 1 - Strengthening the adaptation capacity of the school network</p>	<p>Component 1 involves retrofitting 10 selected primary schools with climate-resilient infrastructure. Depending on the nature of the specific climate hazard in the country, this may include infrastructure interventions such as improving thermal insulation or ventilation in school buildings, as well as implementing nature-based interventions such as planting trees in school vicinities to introduce extra shading. The 10 schools will be selected from among 20 target schools, which are already benefiting from climate-resilient and energy-efficient classroom extensions under an ongoing World Bank operation.</p>	<p>Currently, the 20 target primary schools (from which 10 were selected for climate retrofits under this project) operate with standard infrastructure that lacks specific climate-resilient features. While some improvements are being implemented under an ongoing World Bank operation—such as climate-resilient and energy-efficient classroom extensions—these upgrades are limited to new additions and do not extend to the original school buildings. This creates a risk of dual-quality infrastructure, where students benefit from modern, climate-resilient classrooms but continue to rely on older, less protected facilities for other activities. As a result, the schools remain vulnerable to climate-related disruptions and cannot be used as community hubs/shelters, especially during emergencies or extreme weather events when safe, resilient spaces are most needed for the community at large. Over time, this lack of comprehensive resilience may lead to lost instructional time, and increased maintenance costs and emergency repairs, placing additional strain on school budgets and local resources.</p>
<p>Cost-effectiveness comparison: This investment is expected to significantly reduce future costs associated with climate-related damages and disruptions by ensuring the safety of students and staff and minimizing educational interruptions during extreme weather events. By upgrading school facilities with features such as improved insulation or waterproofing, the project can prevent costly repairs and maintenance that would otherwise be necessary after climate-related incidents. These proactive measures not only safeguard the physical infrastructure but also enhance the overall resilience of the education system, making it better equipped to handle future climate challenges. Furthermore, resilient schools can serve as community hubs during emergencies, providing shelter and resources to local residents, which can lower the overall burden on emergency services and reduce recovery costs. In addition, retrofitting existing school buildings is a more cost-effective approach than construction of new climate resilient facilities. While the cost of a climate-resilient retrofit comes at an approximate cost of EUR 618,000 (see Annex 1 for costing details), construction of a new school building is estimated to cost close to EUR 3,350,000.¹⁰</p>		
<p>Component 2 - Enhancing adaptation knowledge of students, teachers and school leadership</p>	<p>Component 2 of this project includes support for the development and implementation of adaptation-focused extra-curricular activities for primary education students. Schools will be incentivized to submit applications for grants, which can be used for technical assistance in the design of such activities, teacher training to lead them, and operational costs of implementation. Such extra-curricular activities could be modelled after the existing concept of “ecology clubs” but place adequate emphasis on climate adaptation activities. Further, the Component focuses on developing and implementing continuous professional development programs for teachers in grades 1-5 and primary school principals, focused on climate adaptation.</p>	<p>The new Concept for Primary Education mandates the provision of extracurricular activities, which may be short- and/or long-term. Among the suggested long-term activities by the Ministry of Education are ecology clubs, aiming to “stimulate the students’ interest and motivation to explore the environment, learn about climate changes occurring in the course of the year, how they affect the environment, in view of acquiring environment protection skills and habits”. However, as schools are free to decide what type of extra-curricular activities are implemented, there are no incentives to include ecology clubs in their extra-curricular offerings, creating the risk of limited take-up. In addition, the ecology clubs are currently conceptualized lack explicit focus on climate adaptation, and</p>

¹⁰ Numbers based on a cost-estimate for constructing a new primary school (EUR 956/m², with VAT), provided by the Chamber of Architects and Engineers of North Macedonia in 2022, and an estimate of a typical primary school size of 3500m², provided by the Ministry of Education and Science.

	<p>Such training, with focus on climate adaptation, will be developed and integrated into North Macedonia's Catalog for teacher professional development. Existing, relevant teacher training programs, including those flagged by relevant NGOs during the consultation process and delivered at small scale outside of the formal teacher training system, will be considered as basis in the training design process. In addition, a support "community of practice" – i.e. a teacher climate resilience network – is foreseen to promote information-sharing and good practices exchange on integrating climate adaptation themes into teaching.</p>	<p>limited support for schools to set up and run such extracurricular initiatives. As a result, students forego meaningful opportunities for strengthening their adaptation awareness, limiting students' preparedness to adapt to the effects of climate change at the individual, school and community level. Furthermore, teachers in grades 1-5 in North Macedonia currently lack support for integrating climate-related themes into teaching altogether, limiting students' understanding and future capacity to adopt and take part in adaptation actions. Training on "green skills" for teachers in grades 6-9 is foreseen under the Additional Financing PEIP of the World Bank. The content and exact focus of such green skills training remains to be determined. However, given that climate mitigation themes are often prioritized in climate education, there is a real risk of overlooking climate adaptation. For school principals, no climate-related training is currently available, leaving school leadership insufficiently equipped to manage school operations amidst the impacts of climate change, increasing the risk of costly yet preventable damage to the school infrastructure and absence of support for climate adaptation initiatives of teachers and students at the school level.</p>
	<p>Cost-effectiveness comparison: Component 2 is a cost-effective complement to infrastructure investments under Component 1, building climate resilience through low-cost, hands-on extracurricular activities. By funding adaptation-focused programs—such as ecology clubs—schools can foster early awareness and preparedness among students, reducing long-term societal costs linked to climate-related disruptions. Providing students with experiential, hands-on learning opportunities on climate adaptation fosters informed decision-making and promotes engagement in community-wide adaptation initiatives, enhancing long-term climate resilience of local communities. The foreseen approach also aligns with the Ministry of Education's existing concept for extracurricular programming, ensuring activities are grounded in national frameworks. This alignment not only reinforces policy coherence but also avoids duplication and the creation of parallel initiatives, thereby preventing the waste of resources, maximizing the impact of allocated funding and their sustainability. In addition, investing in teacher training under Component 2 ensures that educators are well-equipped to adopt and promote effective adaptation behaviors, leading to their own as well as students' long-term enhanced efficacy in responding to climate change effects in their local communities. The project's "climate resilience network" for teachers will ensure a multiplier effect of the supported teacher training programs. Training modules developed for teachers in grades 1–5, to be included in the Catalog for teacher professional development, can serve as a scalable model for future training of teachers in grades 6–9, fostering sustainability, generating economies of scale and reducing development costs. As the training is designed, the project will ensure coherence with any parallel green skills training initiatives—such as those targeting other teacher cohorts—to promote synergies and avoid duplication. Existing relevant teacher training programs—including those designed and delivered by relevant NGOs at small scale outside the formal teacher training system and mentioned during the consultation process—will serve as a foundation for developing the training content, further supporting the efficient use of resources and building on established expertise. Additionally, investing in the training and support of school principals will enhance the resilience of school infrastructure and the safety of students and staff, helping prevent costly damages and harm during climate-related hazards.</p> <p>For a total estimated cost of approximately USD 770,000, this component will directly benefit 250 students, over 7,000 teachers, and more than 1,000 school leaders. It will lay the groundwork for a transformative shift in mindset and behavior among the younger</p>	

	<p>generation, fostering informed individual actions that can enhance resilience and, in the long-term, labor productivity, amid the worsening climate impacts. By increasing climate awareness among students, the Component also has the potential to spark future innovations that will help reduce the impact of climate change on key economic sectors—taken together, ultimately mitigating the projected cost of climate adaptation inaction, estimated at around 4% of North Macedonia’s annual GDP by 2050 (CCDR, 2024).</p>	
<p>Component 3 - Promoting learning and knowledge management</p>	<p>Component 3 encompasses undertaking a process and outcomes evaluation of the project, and organization of a national conference. on disseminating learnings from the project. These activities aim to strengthen the knowledge-base of the project’s outcomes and implementation success and challenges, raise awareness of the lessons learned, and increase the capacity for potential scale-up.</p>	<p>In the absence of a structured learning and knowledge management aspect, the project risks missing critical opportunities to capture and share its learnings. Without a dedicated process and outcome evaluation, there would be limited understanding of the activities’ effectiveness, what implementation challenges emerged and how they have been addressed. Moreover, without a national dissemination platform—such as a final conference—to communicate these insights, valuable knowledge may remain siloed within implementing teams, reducing its potential to inform future initiatives and inspire stakeholders on the ground. This lack of systematic reflection and outreach could hinder broader awareness, limit institutional learning, and constrain the capacity for scaling up successful approaches across other schools, regions or levels of education.</p>
	<p>Cost-effectiveness comparison: This dedicated knowledge management component—comprising a awards for innovative extracurricular activities, a national conference and learning and knowledge diffusion deliverables—will enable systematically capturing and sharing critical lessons from the project. This proactive approach will help avoid common pitfalls such as repeating implementation mistakes, overlooking context-specific challenges, or failing to adapt successful strategies. By disseminating insights across stakeholders, the project strengthens institutional learning and builds momentum for scale-up. Without such mechanisms, valuable knowledge could remain fragmented or undocumented, potentially leading to inefficiencies, missed opportunities, and increased costs in future climate-resilience initiatives in the education sector.</p> <p>For an estimated cost of around USD 30,000, this component will support the dissemination of lessons learned and the scaling up of successful practices across the primary education system—including over 170,000 students, 17,000 teachers, and more than 350 school leaders. By documenting the application of adaptation interventions at the primary level and disseminating the lessons learned, the initiative can inspire similar activities at other education levels, creating a ripple effect that strengthens climate awareness and resilience throughout the entire education system. Such an adaptation investment is expected to have a high benefit-to-cost ratio (BCR), given that BCRs of adaptation investments in North Macedonia range from 2–10€ per 1€ invested (CCDR, 2024).</p>	

D. Describe how the project/programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national adaptation plan (NAP), national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.

Tables 6-7 below provide a comprehensive list of relevant strategies, plans and projects, describing their key features and alignment with the proposed Adaptation Fund project.

Table 6: Relevant strategies

Title	Brief description	Project alignment
The National Development Strategy 2024-2044	Leading document that defines the main national development goals, strategic areas, and priorities for accelerated, inclusive, balanced, gender-equal, and sustainable development, supporting the country's goal of joining the EU by 2030 and the UN's Agenda 2030	<ul style="list-style-type: none"> ✓ Alignment with Project Components 1-2 - Under Strategic Area 5.5 "Secure, Safe and Resilient Society", Goal no. 2 "Climate-Resilient Communities", Priorities 2 and 3 refer to "Preparedness and Response to Climate Risks" and "Climate-resilient local and regional infrastructure and services", respectively - Under Priority 2, the Strategy supports the development of training programs and regular capacity-building related to climate adaptation, as well as strengthening education on climate change preparedness - Under Priority 3, the Strategy promotes the construction and reconstruction of climate-resilient infrastructure, as well as re-evaluation of the existing designed infrastructure to meet resilience standards
Long-term Strategy on Climate Action (LTS) and Action Plan	Serves as the planning framework for climate change adaptation and basis for a comprehensive National Adaptation Plan, currently under preparation	<ul style="list-style-type: none"> ✓ Alignment with Project Component 2 - Building on the recommendations of the Third Environmental Performance Review of Republic of North Macedonia, proposes an expanded list of measures for enhanced climate mainstreaming in the education sector - Among the measures is the development of an action plan for the introduction of climate-related education at all education levels and in lifelong learning, teacher education and in-service training; allocating resources for the implementation of climate change education activities on all educational levels; establishing a coordination mechanism on climate change education among all relevant stakeholders, etc. - Further measures include supporting climate change awareness raising activities; providing strategic guidance to the donor community to support projects related to climate action and climate awareness rising in the country; etc.
National Education Strategy 2018-2025	Sets the strategic vision for North Macedonia's education system until 2025	<ul style="list-style-type: none"> ✓ Alignment with Project Components 1-3 - Among the Strategy's priorities is to improve the learning environment and quality of primary education provision, improve the content of primary education, enhance the capacities of human resources in primary schools, increase the effectiveness of primary education organization and management, and strengthen the capacities of national institutions
World Bank Country Partnership Framework (CPF) for the Republic of North Macedonia 2024-2028	Outlines the priorities for the World Bank Group's (WBG) engagement with the Republic of North Macedonia for FY24–FY28	<ul style="list-style-type: none"> ✓ Alignment with Project Components 1-2 - Identifies High-level outcome (HLO 3) of Increased climate resilience, and related Objective 3.2: Scale up climate-resilient infrastructure; and HLO 2 on More Productive Private Sector Jobs, and related objective 2.2: Strengthen foundational skills
Smart specialization strategy 2024-2027	Aims to foster sustainable growth by focusing on a knowledge-based, innovative economy. It has four vertical priority domains: Smart Agriculture and Food with Higher Added Value; Information and Communication Technologies (ICT); Electro-Mechanical Industry – Industry 4.0; and Sustainable Materials and Smart Buildings	<ul style="list-style-type: none"> ✓ Alignment with Project Component 1 - The priority area "Sustainable Materials and Smart Buildings" focuses on reducing energy demand and using renewable energy sources and sustainable materials in the construction and building sectors, including for the renovation of old public buildings, among others - Accordingly, Component 1 of the project will prioritize the use of secondary materials and energy-efficient solutions for school retrofits, to the extent possible
World Bank Group North Macedonia—Country Climate and Development Report (2024)	Describes the country's climate and development context, adaptation and mitigation risks and opportunities, and makes recommendations for policy reforms and investments in four areas: (1) resilience and adaptation, (2) decarbonization	<ul style="list-style-type: none"> ✓ Alignment with Project Components 1-3 - Highlights that human capital is a cornerstone of adaptation efforts, and that education specifically plays a vital role - Underlines the importance of strengthening student learning outcomes, preparing all teachers in North Macedonia for "green education", and that as part of the adaptation efforts, the country will need to

	and mitigation, (3) macroeconomy and financing, and (4) regulatory/institutional framework and education and labor.	consider “greening” schools and supporting energy-efficiency of school buildings
2030 Agenda for Sustainable Development	The Agenda developed by the UN identifies 17 Sustainable Development Goals (SDGs) aiming to promote peace and prosperity for the people and the planet.	<ul style="list-style-type: none"> ✓ Alignment with Project Components 1-3 - By enhancing North Macedonia’s resilience to climate hazards, the project’s Components 1-3 directly contribute towards SDG 13 (Climate Action). Further, Component 1 contributes to SDG 11 (Sustainable Cities and Communities) by supporting the development of a core part of climate-resilient public infrastructure – schools – and making them accessible to communities as emergency shelters in case of need. Component 1 also supports SDG 10 (Reduced Inequalities), as the schools to be targeted for climate-resilient infrastructure upgrades will be located in economically vulnerable regions/municipalities, and serve high shares of students from disadvantaged socio-economic backgrounds and/or ethnic minorities. SDG 5 (Gender Equality) will be supported through Component 2, ensuring that the planned extracurricular activities incorporate inclusive outreach and a gender-sensitive lens while promoting female labor force participation, and that capacity-building for teachers and school leadership is designed to accommodate the care-taking needs of the female-dominated workforce. SDG 4 (Quality Education) will be fostered through Components 1-3, given that the planned interventions are focused on the education sector and will simultaneously enhance climate resilience and education quality in the country.
National Strategy for Waters 2011-2041	Provides a long-term framework for sustainable water management aimed at protecting, maintaining, and improving the country’s water resources.	<ul style="list-style-type: none"> ✓ Alignment with Project Component 1 - In relation to climate resilience, the strategy recognizes climate change as a major risk to water availability, quality, and distribution; emphasizes the need to improve adaptation capacity through integrated water resource management; promotes the construction and rehabilitation of infrastructure (dams, irrigation systems, wastewater treatment) to handle extreme weather events such as droughts and floods; encourages the use of data and monitoring systems to forecast hydrological and climatic changes; aims to strengthen institutional coordination and cross-sectoral cooperation (agriculture, energy, environment) to ensure resilient and efficient water use under changing climate conditions. Component 1 of the project aligns with the Strategy by rehabilitating the school infrastructure in order to strengthen its resilience to floods, while promoting cross-sectoral coordination.

Table 7: Relevant projects

Title	Brief description <i>(What are the project’s key features?)</i>	Project complementarity <i>(How does the Adaptation Fund proposed project complement the existing project in question?)</i>
Primary Education Improvement Project (PEIP)	The Primary Education Improvement Project (US\$25mil), financed by the World Bank, became effective in 2021 and is expected to conclude with the close of its Additional Financing component (see below) by 2028. Among others, the project finances non-structural upgrades of basic infrastructure (electricity, lighting, connectivity, gender-sensitive toilet and sanitation facilities, painting, wiring, and refurbishing floors, etc.) in	<p>Synergies</p> <ul style="list-style-type: none"> - Elevates focus on climate adaptation - Contributes to further upgrading the primary school infrastructure - with focus on climate resilience -beyond the basic infrastructure improvements provided to the 100 target schools - Aligns with efforts to strengthen teacher training by supporting adaptation-related capacity-building - Builds on strengthened disaster risk planning capacities at the system level by providing adaption-focused training to school principals <p>Avoiding overlap</p>

	<p>100 schools with utilization rates above 65% and not located in earthquake-prone zones; training of 9,800 primary school teachers in demand areas identified by the Bureau for Development of Education (BDE), and support for the Ministry of Education and Science (MoES) to improve sector management by developing disaster risk planning. The project involves collaboration with local stakeholders and NGOs, and leverages digital education platforms to support teacher training.</p> <p>Implementing Agency: Ministry of Education and Science Location: nationwide</p>	<ul style="list-style-type: none"> - Will not introduce infrastructure upgrades of similar/same types on the existing buildings in the same schools as the ones included in the PEIP interventions. Even though four (4) of the proposed schools overlap with previous interventions in PEIP, the type of work done under PEIP was not related to climate adaptation, but focused on minor renovations of toilets, floors, inside doors, access ramps, etc. As the same implementing agency will implement the activities under the Adaptation Fund Grant, it will ensure that there is no overlapping in actual interventions. - Will ensure coordination with PEIP on demand areas for professional development of teachers identified by BDE, and provide training in areas not covered <p>Relevant learnings</p> <ul style="list-style-type: none"> - Active engagement with local communities and NGOs creates stronger, more relevant and sustainable innovations in teaching practices - Digital education platforms proved valuable in support of teacher training, fostering peer-learning and experience exchange
<p>Additional Financing for the Primary Education Improvement Project (AF PEIP)</p>	<p>The Additional Financing (US\$16.7mil) for the Primary Education Improvement Project (see above), became effective in 2025 and is expected to conclude by 2028. Financed by the World Bank, it supports the expansion of 20 selected primary schools (beyond the 100 targeted by PEIP, see above) to include new, climate-resilient and climate-efficient classrooms, or more space thanks to internal space reorganizations, piloting of a “whole-day-school” (WDS) model whereby selected schools receive grants and technical assistance for the design and roll-out of extracurricular, experiential and remedial programs, managerial skills training for school principals to help implement the WDS model and two additional cycles of in-service training for teachers in grades 6-9, including on “green skills”.</p> <p>Implementing Agency: Ministry of Education and Science Location: Nationwide</p>	<p>Synergies</p> <ul style="list-style-type: none"> - Strengthens the Additional Financing by integrating climate adaptation as a core focus - Aims to retrofit 10 out of 20 selected schools where classroom extensions or internal reorganizations are planned to enhance climate resilience while reducing the risk of dual infrastructure quality - Expands access to quality extracurricular activities beyond the 20 pilot schools, with emphasis on adaptation-focused initiatives (e.g. student adaptation/ecology clubs) - Provides targeted climate adaptation training for teachers and principals, complementing existing green skills and managerial capacity-building efforts <p>Avoiding overlap</p> <ul style="list-style-type: none"> - Will not introduce infrastructure upgrades related to climate resilience in the same parts of schools as AF PEIP, since the AF PEIP activities shall be entirely focused on construction of new wings (extension of buildings) or adaptation of existing building with the sole purpose of creating additional classrooms (mostly interior rearrangement of walls). As the same implementing agency will implement the activities under the Adaptation Fund Grant, it will ensure that there is no overlapping in actual interventions. - Will expand access to extracurricular activities beyond the 20 schools covered by AF PEIP - Will provide teacher and managerial training in areas not covered by AF PEIP, and target teachers in grades 1-5 - Training covered by AF PEIP for teachers grades 1-5 shall focus on reading comprehension. <p>Relevant learnings</p> <ul style="list-style-type: none"> - Will integrate learnings from the planned, pilot roll-out of extracurricular activities under AF PEIP
<p>North Macedonia Public Sector Energy Efficiency Project</p>	<p>Financed by the World Bank, the project (US\$27.40mil) became effective in 2021 and will close on 31 January 2027. It has supported energy-efficiency renovations of public buildings, including school buildings in selected municipalities, focusing on out-door infrastructure, insulation, heating systems, etc. In this way, the project has complemented the non-structural infrastructure upgrades delivered under PEIP (see above).</p> <p>Implementing Agency: Ministry of Finance Location: Nationwide</p>	<p>Synergies</p> <ul style="list-style-type: none"> - Supports ongoing efforts to strengthen the public education infrastructure by focusing on enhancing its climate resilience <p>Avoiding overlap</p> <ul style="list-style-type: none"> - Will not introduce infrastructure upgrades in the same schools as in the selected municipalities. The Implementing agency is in regular contact with the Ministry of Finance and the PMU structure established there to coordinate and avoid overlapping of activities. <p>Relevant learnings</p> <ul style="list-style-type: none"> - The project has supported the establishment of the Energy Efficiency Fund, which may be considered as a potential sustainable future funding source of similar initiatives as proposed under this project
<p>Project for Renovation of Energy Efficiency in Student</p>	<p>The Project “Renovation of Energy Efficiency in Student Dormitories in North Macedonia” is an ongoing project, targeting higher education, financed by KfW and Reep Plus</p>	<p>Synergies</p> <ul style="list-style-type: none"> - Supports ongoing efforts to strengthen the public education infrastructure by focusing on enhancing its climate resilience

Dormitories in North Macedonia	<p>since 2019. The overall goal of the Program is to contribute to better living and learning conditions for students. It focuses on energy-efficient reconstruction and modernization of selected public facilities in the education sector (state-owned student dormitories) in the Republic of North Macedonia. Specifically, the focus is on increasing energy efficiency, structural integrity, and basic comfort in student dormitories.</p> <p>Implementing Agency: Ministry of Education and Science Location: Nationwide</p>	<p>Avoiding overlap</p> <ul style="list-style-type: none"> - Will not include student dormitories (part of the higher education infrastructure), only primary education buildings - This absence of overlapping is already ensured by the determination of eligible expenditures under this project.
Project for Construction of physical education facilities and schools rehabilitation	<p>This project was co-financed by CEB Loan in the amount of EUR 30 million (2011-2024). It targeted construction of physical education facilities (school gyms) and renovation of primary and secondary schools. Most of the renovation activities focused on improving the energy-efficiency of the school buildings (primary and secondary level).</p> <p>Implementing Agency: Ministry of Education and Science Location: Nationwide</p>	<p>Synergies</p> <ul style="list-style-type: none"> - Supports ongoing efforts to strengthen the public education infrastructure by focusing on enhancing its climate resilience <p>Avoiding overlap</p> <ul style="list-style-type: none"> - Will not introduce climate resilient infrastructure upgrades in the same schools. As the same implementing agency will implement the activities under the Adaptation Fund Grant, it will ensure that there is no overlapping in actual interventions.

E. Describe how the project/programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and complies with the Environmental and Social Policy of the Adaptation Fund.

The project will ensure full compliance with the World Bank’s Environmental and Social Framework, which will enable compliance with the Environmental and Social Policy of the Adaptation Fund, including by proactively identifying potential E&S risks and related mitigation strategies (see Section K). In addition, compliance with the existing relevant national technical standards, regulations and codes will be ensured, as comprehensively outlined in Table 8.

Table 8: Relevant national technical standards, regulations and codes

Title	Brief description	Project compliance - Statement confirming project compliance
Law on Construction (“Official Gazette of the Republic of North Macedonia” No. 130/09, with subsequent amendments)	This law regulates building permits and technical project documentation.	All main designs for construction/reconstruction will include proof of compliance with energy efficiency standards. The project will comply with the Law on Construction (“Official Gazette of the Republic of North Macedonia” No. 130/09, with subsequent amendments) by ensuring that all retrofitting and construction works under Component 1 are designed, approved, and implemented in accordance with legally required construction permits, technical standards, and safety regulations. The interventions will follow proper planning procedures and adhere to environmental and safety requirements to ensure quality, durability, and climate resilience of school infrastructure. This approach guarantees that all construction activities will align with national legal frameworks for safe, sustainable, and regulated building practices.
Rulebook on Energy Performance of Buildings (Official Gazette No. 94/13 and updates)	This rulebook provides the methodology for calculating energy performance, minimum requirements for insulation, glazing, HVAC systems, etc.	Adherence to the rule will be ensured during the design phase as compliance is mandatory for building permits. The project will comply with the Rulebook on Energy Performance of Buildings (“Official Gazette” No. 94/13 and updates) by ensuring that all retrofitting and construction works under Component 1 meet the required standards for energy efficiency and building performance. Incorporating climate-resilient upgrades, such as improved insulation, will ensure alignment with the Rulebook’s requirements for sustainable design, energy performance certification, and long-term operational efficiency, thereby enhancing both the environmental sustainability and resilience of the school infrastructure.
Seismic norms/Eurocodes (notably Eurocode 8)	Eurocode 8 is the European standard that provides the design principles for earthquake-resistant structures to ensure they can withstand seismic impacts without collapse and with controlled levels of damage	Such norms are mandatory for structural safety of the schools. The project will comply with the Seismic Norms and Eurocodes, notably Eurocode 8, by ensuring that all retrofitting and construction works under Component 1 are designed and implemented in accordance with the highest seismic safety standards. Structural interventions will be based on thorough seismic risk assessments to guarantee that school buildings can withstand earthquakes and other related hazards. This approach not only ensures compliance with national and European engineering standards but also strengthens the safety and resilience of educational infrastructure, protecting students, staff, and surrounding communities.
Law on Environment (“Official Gazette” No. 53/05 with amendments)	This is the framework environmental law that regulates the protection and improvement of the environment ensuring sustainable management of natural resources, aligning national policy with EU environmental acquis, and guaranteeing citizens’ right to a healthy environment.	The project’s components are in full compliance with the Law on Environment (“Official Gazette” No. 53/05 with amendments), as they promote preventive and adaptive measures that reduce environmental risks, safeguard human health, and ensure sustainable use of resources. Through school retrofitting and climate-resilient construction (Component 1), the project addresses environmental protection and disaster risk reduction, directly minimizing adverse climate impacts. By fostering climate literacy and hands-on adaptation activities among students (Component 2), it aligns with the Law’s provisions on public awareness, education, and active participation in environmental protection. Capacity building of teachers and school leaders (Component 2) ensures integration of climate adaptation and disaster preparedness into institutional practices, contributing to systemic resilience and sustainable management of educational infrastructure. Finally, knowledge management and dissemination (Component 3) strengthen monitoring, evaluation, and public transparency, in line with the Law’s principles of accountability and continuous environmental improvement. Collectively, the components demonstrate a preventive, adaptive, and participatory approach to environmental protection, fully supporting North Macedonia’s

		legal framework for environmental and climate resilience.
Rulebook on Environmental Impact Assessment (Official Gazette No. 33/06 with amendments)	The Rulebook sets out the detailed procedure for preparing, submitting, reviewing, and approving Environmental Impact Assessment studies for projects that may significantly affect the environment.	The project components are in compliance with the Rulebook on Environmental Impact Assessment (“Official Gazette” No. 33/06 with amendments) as they incorporate preventive planning, risk assessment, and mitigation measures in line with national requirements for evaluating and managing environmental impacts. Infrastructure retrofitting (Component 1) will be guided by climate vulnerability and hazard assessments to ensure that construction activities minimize negative environmental effects and enhance resilience. Educational and extracurricular activities (Component 2) focus on awareness-raising, capacity building, and behavioral change, which align with the Rulebook’s principles of integrating environmental considerations into decision-making and public participation. Knowledge management (Component 3) supports monitoring, evaluation, and dissemination of lessons learned, ensuring that environmental impacts are systematically assessed and that adaptive measures are applied. Together, these measures reflect the Rulebook’s emphasis on precaution, transparency, and sustainable development while ensuring that project interventions have positive and lasting environmental outcomes.
Law on Spatial and Urban Planning (Official Gazette 51/2005 with amendments)	This law regulates the conditions and manner of the system of spatial and urban planning, the types and content of the plans, the preparation and procedure for the adoption of the plans, the implementation of the plans and the monitoring of their realization, supervision, and other issues in the field of spatial and urban planning.	The project will comply with the Law on Spatial and Urban Planning (“Official Gazette” No. 51/2005 with amendments) by ensuring that all retrofitting and construction activities under Component 1 are implemented in accordance with approved urban and spatial plans, respecting zoning, safety, and environmental standards. The interventions are designed to enhance the functionality and resilience of existing educational facilities without conflicting with local development plans. In addition, the project’s focus on sustainable design, efficient land use, and community-oriented adaptation measures supports the Law’s objectives of balanced spatial development, safe infrastructure, and improved living conditions.
Law on Waste Management (Official Gazette No. 68/04 and amendments)	This law supports alignment with the Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (CELEX No. 32008L0098).	The project will comply with the Law on Waste Management (“Official Gazette” No. 68/04 with amendments) by ensuring that all construction, retrofitting, and school-based activities follow proper procedures for handling, separation, and disposal of waste. During infrastructure upgrades under Component 1, waste materials will be managed in line with national standards, prioritizing reuse and recycling where possible to minimize environmental impact. Educational and extracurricular activities under Component 2 will further promote awareness on sustainable waste practices among students and educators, aligning with the Law’s objectives of prevention, reduction, and environmentally sound management of waste.
Law on Safety and Health at Work (Official Gazette No. 92/2007 with amendments) ensuring environmental protection and worker safety	This is the primary legal act that regulates occupational safety and health (OSH) in the workplace. The law is harmonized with relevant EU directives (notably Directive 89/391/EEC) and International Labor Organization (ILO) conventions.	The project will comply with the Law on Safety and Health at Work (“Official Gazette” No. 92/2007 with amendments) by ensuring that all retrofitting and construction works under Component 1 are carried out in accordance with occupational safety standards, including risk assessments, use of protective equipment, and safe working procedures. Environmental safeguards will be applied to prevent harmful exposure and ensure safe handling of materials, protecting both workers and the surrounding community. Training and awareness activities under Component 2 also integrates safety considerations, promoting a culture of prevention and responsibility. In this way, the project guarantees that climate-resilient improvements are implemented with full respect for worker safety and environmental protection.
Law on Energy Efficiency and amendments (Official Gazette No.32/20, 110/21, 236/22, 147/24, 74/25 and 193/25)	With this law, the provisions of Directive 2012/27/EU on energy efficiency and Directive 2010/31/EC on the energy performance of buildings are transposed, as adopted and amended by the Ministerial Council of the Energy Community	The project components are in line with the Law on Energy Efficiency (“Official Gazette” No. 32/20 with amendments) by prioritizing energy-efficient retrofitting and construction under Component 1, which integrates climate-resilient and energy-saving measures in school buildings. These interventions reduce energy consumption, lower greenhouse gas emissions, and improve the overall sustainability of educational infrastructure. Furthermore, through awareness-raising and capacity-building activities under Component 2, students, teachers, and school leaders will be encouraged to adopt energy-conscious behaviors and practices, reinforcing the

		Law's objectives of promoting rational energy use and long-term energy efficiency across sectors.
Law on the Ratification of the United Nations Framework Convention on Climate Change (Official Gazette No.61/97)	This law ratifies the United Nations Framework Convention on Climate Change (UNFCCC), thereby formally committing the Republic of Macedonia (now North Macedonia) to the international framework aimed at stabilizing greenhouse gas concentrations in the atmosphere and addressing the impacts of climate change. By adopting this law in 1997, the country accepted the principles and obligations of the Convention, including the preparation of national communications, reporting of emissions, and implementation of measures for climate change mitigation and adaptation in line with global efforts.	The project components are fully compliant with the Law on the Ratification of the United Nations Framework Convention on Climate Change ("Official Gazette" No. 61/97), as they directly contribute to the Convention's objectives of strengthening adaptive capacity, reducing vulnerability, and promoting sustainable development. By retrofitting schools with climate-resilient and energy-efficient measures (Component 1), building knowledge and skills among students and teachers (Component 2), and fostering knowledge sharing for replication (Component 3), the project supports North Macedonia's national commitments under the UNFCCC to integrate adaptation into sectoral policies and enhance resilience of communities to climate change impacts.
Law on the Ratification of the Kyoto Protocol to the United Nations Framework Convention on Climate Change (Official Gazette No.49/2004)	This law ratifies the Kyoto Protocol, through which North Macedonia committed to the international agreement establishing legally binding obligations for industrialized countries to reduce greenhouse gas emissions, thereby strengthening the global response under the UNFCCC.	The project components comply with the Law on the Ratification of the Kyoto Protocol to the UNFCCC ("Official Gazette" No. 49/2004) by contributing to national efforts to mitigate and adapt to climate change in line with international obligations. Through climate-resilient (and energy-efficient) retrofitting of schools (Component 1), the project reduces greenhouse gas emissions and promotes sustainable infrastructure. Educational, training, and knowledge-sharing activities (Component 2) further strengthen awareness, institutional capacity, and community engagement, supporting the Protocol's goals of promoting low-carbon development, adaptation measures, and long-term climate resilience.
Law on Ratification of the Paris Agreement (Official Gazette of the Republic of Macedonia No. 161/2017)	This law formalized North Macedonia's commitment to global climate action by legally endorsing the Paris Agreement (adopted at the 21st Conference of the Parties to the UN Framework Convention on Climate Change in December 2015). It obliges the government to develop and implement climate policies, including national contributions to greenhouse gas reduction and climate resilience.	All project components are in line with the national obligations to contribute towards climate resilience and the national commitment to promote sustainable development, low-carbon growth, and adaptation strategies. Component 1 aligns with Article 7 of the Paris Agreement, which promotes climate-resilient infrastructure to protect communities from climate hazards. Component 2 are in line with national obligations to support public awareness and education, as emphasized in Article 12 of the Paris Agreement, which calls for climate change education, training, public awareness, public participation and public access to information.
Law on the Ratification of the Doha Amendment to the Kyoto Protocol to the United Nations Framework Convention on Climate Change (Official Gazette No.152/19)	This law ratifies the Doha Amendment to the Kyoto Protocol, reaffirming North Macedonia's participation in global climate action within the framework of the UNFCCC and its protocols.	The project components are in compliance with the Law on the Ratification of the Doha Amendment to the Kyoto Protocol ("Official Gazette" No. 152/19) by advancing North Macedonia's commitments under the second commitment period of the Protocol to reduce emissions and strengthen adaptation. The energy-efficient retrofitting of schools (Component 1) directly contributes to lowering energy use and associated emissions, while the educational, training, and knowledge management activities (Component 2) build long-term adaptive capacity and promote sustainable, low-carbon practices. In this way, the project supports both mitigation and adaptation objectives outlined in the Doha Amendment.
Energy Law (Official Gazette No.101/25 and amendment in Official Gazette No.135/25)	Includes new obligations for the public sector, such as solar installations and stricter renovation standards.	The project components are in compliance with the Energy Law ("Official Gazette" No. 101/25 with amendment No. 135/25) by integrating measures that promote efficient, safe, and sustainable energy use in the education sector. Through retrofitting schools with climate-resilient and energy-efficient technologies (Component 1), the project aligns with legal provisions for reducing energy consumption and enhancing sustainability of public buildings. Complementary awareness, training, and knowledge-sharing activities (Component 2) encourage responsible energy practices among students, teachers, and school leaders, thereby supporting the Law's objectives of fostering energy efficiency, sustainability, and security of supply.
Law on Waters (Official Gazette. 87/2008, 6/2009, 161/2009, 83/2010, 51/2011, 44/2012, 23/2013,	Regulates all aspects of water management, including surface waters, groundwaters, and water habitats. This law establishes waters as public goods, subject to special protection, and covers	The project will comply with the Law on Waters by ensuring sustainable water management during infrastructure retrofitting and fostering flood protection and adaptation to climate impacts in primary schools, thereby safeguarding the learning environment and public health under changing climatic

163/2013, 180/2014, 146/2015, 52/2016)	water usage, distribution, pollution control, financing of water management, and protection against harmful effects of water.	conditions.
Law on Drinking Water Supply and Drainage of Urban Wastewater (Official Gazette No. 68/04, with amendments)	This law governs public water supply, the drainage of urban wastewater, and aims to ensure access to sufficient quantities of quality drinking water, protect water resources, and manage wastewater through its purification and discharge.	The project will comply with the Law on Drinking Water Supply and Drainage of Urban Wastewater by incorporating effective drainage solutions reducing schools' vulnerability to climate-related water stress, floods, and sanitation risks, where relevant.
MKC EN 805:2025 – Water supply, requirements for systems and components outside buildings	Covers design, construction, installation, testing and commissioning of external water supply infrastructure (mains, reservoirs, pipes etc.).	The project will ensure that any relevant infrastructure upgrades in schools comply with the law.
MKTİ CEN/TR 17801:2022 – Guidelines for water safety plan concept in buildings	Guidance for analyzing, evaluating, and managing risks in potable water installations inside buildings, in line with EU standards (EN 806, EN 1717 etc.).	The project will ensure that any relevant infrastructure upgrades in schools comply with the law.
Norms and standards for school premises, equipment, and teaching aids in primary schools in the Republic of North Macedonia, September 2025	This document establishes the necessary norms and standards for space, equipment, and teaching aids required for the successful and uninterrupted implementation of the educational process in primary schools in the country. The application of these norms and standards contributes to improving the quality of teaching, achieving the set educational objectives, ensuring equal working conditions across all primary schools at the national level, and motivating schools to invest in providing appropriate equipment, teaching tools, and materials.	The project will ensure adherence to these norms and standards during any infrastructure (and other relevant) works and interventions.

F. Describe if there is duplication of project/programme with other funding sources, if any.

The project will primarily act as an important complement to the existing “Additional Financing for the Primary Education Improvement Project” (AF PEIP), to be implemented by the World Bank between 2025 and 2027. Under the Additional Financing project, further resources (USD 16.7 million) were mobilized for the benefit of North Macedonia’s primary education system, in addition to the financing (USD 25 million) provided under the “parent” “Primary Education Improvement Project”. Through the Additional Financing, 20 selected schools are being expanded to include new, climate-resilient and climate-efficient classrooms, or internally reorganized to create additional space, with the view of supporting the transition towards a single-shift school schedule. In addition, the Additional Financing project enables the piloting of a “whole-day-school” (WDS) model, whereby selected schools already operating under a single-shift model receive grants and technical assistance for the design and roll-out of extracurricular, experiential and remedial programs as part of an extended school day. Managerial skills training for school principals to help implement the WDS model is also facilitated. In addition, among the supported interventions are two additional cycles of in-service training for teachers, including “green skills” training for target subject teachers in grades 6-9.

This project, with the support of the Adaptation Fund, will allow for significant

strengthening of the existing Additional Financing by elevating the focus on adaptation and incorporating adaptation as a core consideration. First, in half of the 20 selected schools where new climate-resilient and climate-efficient classroom extensions, or basic internal space reorganizations, are foreseen under Additional Financing, this Adaptation Fund project will facilitate retrofitting of 10 of the 20 target parent school buildings with climate resilient infrastructure upgrades as well, thereby reducing the risk of quality and sustainability duality within the education infrastructure. Second, the Additional Financing project seeks to pilot the WDS and places emphasis on extending the school day with a range of quality extracurricular activities. This Adaptation Fund project will ensure that additional students in 25 schools - beyond those in the 20 pilot schools - will be able to benefit from meaningful extracurriculars, in particular targeted, adaptation-focused activities (e.g. adaptation student clubs). Finally, while capacity-building for teachers and school leadership is foreseen under the Additional Financing, it is focused teachers in grades 6-9 and on broader managerial skills for school principals, respectively. Through this Adaptation Fund project, primary school teachers in grades 1-5, school principals and members of school professional teams will be supported through targeted training on climate adaptation, helping to strengthen the climate resilience of the broader school community as well as school operations. Further details on how the project avoids duplications with other relevant initiatives are provided in Section D.

G. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.

The project's Component 3 aims to ensure that learning from the project interventions is systematically captured and shared, while promoting the dissemination of best practices. The Component will contribute towards the development of a culture of evidence-based decision-making and foster a broader understanding of what works in strengthening climate resilience in the education sector.

Component 3 will facilitate the development of a compendium showcasing best-practice examples of adaptation-oriented extracurricular activities designed by schools and supported under the project. Three times during the implementation period (Years 3, 4, and 5), a grant committee—comprising representatives from the Ministry of Education, BDE, municipalities, and relevant NGOs—will select the most innovative and impactful activities submitted by schools benefiting from the related grants. Each winning school will receive a financial top up (USD 2000) for their activities, which will be featured on the project's webpage, which will be established. The webpage will be linked to the [existing PEIP webpage](#). At the conclusion of the project, the winning, most innovative activities will be consolidated into a comprehensive booklet to be disseminated among primary schools by the Ministry of Education in Year 5. Throughout the project duration, the webpage, to be set up by the Ministry of Education in Year 1 of the project, will track and continuously highlight progress on key project outputs (e.g. schools retrofits completed, teacher training module developed and now available in the CPD catalogue, etc.).

To maximize the visibility and uptake of project results, a national public concluding conference will be organized toward the end of the implementation period. This event

will serve as a platform to present key outcomes, take stock of lessons learned, and facilitate dialogue among policymakers, educators, civil society, local/municipal-level actors and development partners. The conference will feature case studies from participating schools and panel discussions with project stakeholders, among others. By convening a wide range of actors, the conference will help build momentum for promoting climate resilience through education, raise awareness of the importance of climate adaptation more broadly, and empower action in the local community. The learnings presented at the conference will be noted by the Ministry of Education and summarized in a Lessons learned project brief, which will be disseminated among primary schools.

H. Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

An initial consultative process with national authorities has taken place during the preparation of this concept note. The concept note was developed in close collaboration with the Ministry of Education and Science during May-June 2025 and reviewed and endorsed by the Ministry of Environment and Physical Planning on 24 June 2025. The Minister of Education and the Minister’s cabinet were consulted in-depth through a mix of in-person meetings and virtual exchanges. The scope and activities of the project were further discussed with representatives of the Ministry of Education during a World Bank mission to Skopje, North Macedonia, on 27 June 2025.

During 14-15 October 2025, virtual consultations with additional relevant stakeholders were undertaken. Virtual mode was chosen to enable all groups, including those in rural or remote areas, to participate. Translation from English to Macedonian and vice-versa was provided to enable meaningful participation. Over the two days, consultations with two groups of stakeholders were conducted: i) representatives of the civil society, in particular education and vulnerable groups, met in a dedicated session to ensure a project design that extends the project benefits in an equitable manner, ii) representatives of the civil society, in particular environmental/climate education groups. Such method was chosen to enable adequate and safe space for each group to share honest feedback, with the objective of ensuring equal access and benefits of all groups to the project benefits through an inclusive and responsive project design. On both days, majority of participants were female. The consultation participants (listed by organization), issues raised and their integration into the project design in this concept note are outlined in Table 9. Full list of participants is included in Annex 2.

Table 9: Participants in virtual stakeholder consultations, 14-15 October 2025

14 October, 2025	
Organizations represented	<ul style="list-style-type: none"> • Association for Democratic Development of the Roma – SONCE (<i>contributes to civil integration and equal practice of democratic rights and opportunities of the Roma minority</i>) • NGO Romalítico (<i>advocates for the Roma minority rights and works on combating discrimination</i>) • Association of Class Teachers – UCHITEL (<i>supports educators, focusing on rights and professional development, and advocates for better education quality</i>) • Foundation for Educational and Cultural Initiatives “Step by

	<p>Step” (implements programs in kindergartens, primary schools and other educational and cultural institutions, supporting innovative approaches to help youth and children achieve their full potential through education)</p> <ul style="list-style-type: none"> • Macedonian Center for Civic Education – MCGO (develops and delivers educational programs and projects – incl. for the youth, e.g. with focus on VET/primary education – and provides services to educational and other public institutions to contribute to the continuous development of the civil society) • Ministry of Education and Science • World Bank team members, incl. Education Specialists and E&S Specialists
<p>Main issues raised and incorporation into project design</p>	<ul style="list-style-type: none"> • Comment: Student learning should focus on practical, hands-on activities outside of classrooms and should be implemented in collaboration with local stakeholders, which helps foster student motivation and engagement. Teachers would equally be motivated to participate in such activities. Design change: Extracurricular activities for hands-on student learning in collaboration with local stakeholders are foreseen under Component 2. • Comment: Participants underlined the need for ensuring that vulnerable groups were not precluded from accessing the project benefits, and the importance of designing the project in an inclusive way. Design change: The schools selected for infrastructure upgrades are located in economically disadvantaged regions of the country (see Section A), ensuring the extension of the project’s benefits to vulnerable groups. All schools where climate resilient retrofits are foreseen have been previously equipped with access ramps for individuals with physical disabilities and upgraded sanitation facilities that meet gender-sensitive standards, ensuring that no groups are precluded from accessing the project benefits at the school level. More broadly, gender considerations have been carefully integrated into project design (Section B). In addition, all teachers in grades 1-5 and all primary school principals will be able to benefit from the planned capacity-building. • Comment: Schools tend to experience a high turnover among school principals, which might impact on the sustainability of the relevant capacity-building activities. Consideration should be given to training the principals as well as the school “professional teams” – typically consisting of a pedagogue and/or a psychologist, and in some cases a special education specialist and a social worker – who tend to be long-term school employees. Design change: Training for two members of schools’ professional teams, in addition to school principals, has been integrated into the project design under Component 2. • Comment: Knowledge dissemination is key, and a separate awareness-raising campaign could be considered. Design change: A one-off awareness-raising campaign may not be effective from a sustainability and cost-effectiveness perspective, especially as a national public concluding conference is already planned. Instead, project progress will be shared throughout the project through a dedicated website, and lessons learned captured and disseminated post project implementation through targeted learning deliverables (see Section G), to ensure wide reach <i>and</i> long-term archiving.
<p>15 October, 2025</p>	
<p>Organizations represented</p>	<ul style="list-style-type: none"> • Bidi Zelen (Go green) (focuses on inspiring young people to develop their leadership potential in the field of environmental protection and sustainable living) • Eko svest (Eco awareness) (one of the leading non-profit

	<p><i>environmental organizations in North Macedonia)</i></p> <ul style="list-style-type: none"> • The Institute for good governance and policies in environment and climate change – Skopje (IPECC) (<i>promotes sustainable development and good governance in the fields of environment and climate change by developing and implementing policies that contribute to environmental protection and achieving climate-neutral development</i>) • Makedonsko Ekolosko drustvo (Macedonian Environmental Society) (<i>one of the oldest environmental organizations in the country dedicated to conservation and promoting ecology in education and practice</i>) • Ministry of Environment and Physical Planning • Ministry of Education and Science • World Bank team members, incl. Education Specialists and E&S Specialists
<p>Main issues raised and incorporation into project design</p>	<ul style="list-style-type: none"> • Comment: While all participants were highly supportive of the project overall and its individual components and expressed willingness to support the elaboration of the detailed project proposal as well as the project implementation, they raised concerns regarding the sustainability of the activities, which should be central to the project design. Design change: Sustainability of project activities has been carefully integrated into the project design (see Section J). • Comment: Infrastructure upgrades should prioritize naturally-based and recycled materials to the extent possible, and consider cost-effective, nature-based solutions. Design change: Such considerations have been integrated into the scope of infrastructure upgrades foreseen under Component 1. • Comments: Emphasis was placed on extending the scope of project activities beyond the capital of Skopje, to ensure a broader reach and geographical representation. Design change: The 10 schools selected for retrofits include a mix of schools within and outside of Skopje. • Comment: Support for focusing on training teachers on climate adaptation in grades 1-5 was expressed, as this cohort is typically overlooked with respect to climate education. Design change: This teacher cohort is already the focus under Component 2. • Comment: Many NGOs in North Macedonia have experience with relevant local and regional projects or initiatives (e.g. some have already developed online teacher training modules on climate mitigation and adaptation, etc.) which can be leveraged for inspiration/scale-up during the project and are willing to share resources. Design change: Existing resources (e.g. relevant teacher training modules) can be used as basis during project implementation and potentially scaled-up (e.g. during the development of teacher training modules under Component 2).

As the full project proposal is developed, these early consultations will be expanded through a comprehensive, gender-responsive engagement process, enhancing the inclusivity, depth, and overall reach of the consultations. As noted above, this project concept note is closely aligned with the Additional Financing for the Primary Education Improvement Project (see Section F above), including with regards to the key beneficiaries and affected stakeholders. In the context of the Additional Financing project, a comprehensive Stakeholder Engagement Plan has already been developed to serve as a platform for productive interaction with the potentially affected parties and others with interest in the project implementation and outcomes. More specifically, the

Stakeholder Engagement Plan (SEP) aims to: i) understand the stakeholder engagement requirements as per North Macedonia's legislation, ii) provide guidance for stakeholder engagement such that it meets the standards of the World Bank, iii) identify key stakeholders that are affected, and/or able to influence the Project and its activities, iv) identify the most effective methods, timing and structures through which to share project information, and to ensure regular, accessible, transparent and appropriate consultation, v) develop a stakeholder engagement process that provides stakeholders with an opportunity to influence project planning and design, vi) establish formal grievance/resolution mechanisms, vii) define roles and responsibilities for the implementation of the SEP; and viii) define reporting and monitoring measures to ensure the effectiveness of the SEP and periodical reviews of the SEP based on findings. This Plan will therefore provide a valuable basis for the full-scale consultative process to be undertaken during the development of the full project proposal.

I. Provide justification for funding requested, focusing on the full cost of adaptation reasoning.

Baseline Scenario (without Adaptation Fund resources) Without the requested Adaptation Fund investment, North Macedonia's education system will remain insufficiently equipped to address the growing challenges posed by climate change. While the World Bank's Additional Financing for the Primary Education Improvement Project provides critical support for infrastructure expansion and educational quality (see Section F for more detail), it leaves significant room for further strengthening the climate resilience of the country's education system.

In the 20 priority schools targeted for expansion under the Additional Financing project, only the new classroom extensions are designed to be climate-resilient. The existing school buildings—often decades old—will remain vulnerable to extreme weather events such as floods, heatwaves, and storms. The same applies to schools where only basic, internal space reorganizations are planned to create more space. This risks creating duality in infrastructure quality and undermining the overall safety and continuity of education during climate-related disruptions.

While the Additional Financing supports the piloting of a whole-day school (WDS) model, including through the support for the design of environmentally-focused extracurricular programming, it does so in the 20 target primary schools. Without the Adaptation Fund support, additional students will miss out on opportunities to engage in such experiential learning, in particular in activities focused on climate adaptation, essential for developing practical skills and awareness in a changing climate.

Teachers and school leadership will also remain underprepared to address climate adaptation challenges. The current training supported under the Additional Financing focuses primarily on building "green skills" among teachers in grades 6-9, and broader managerial competencies of school principals, but does not equip these stakeholders with the tools to integrate adaptation into pedagogy and school operations.

Finally, without a structured mechanism for capturing and disseminating lessons learned from adaptation efforts, valuable insights will remain localized and fragmented. This will hinder the replication and scaling of successful models across the country, limiting the broader impact of climate resilience initiatives in the education sector.

Additionality (with Adaptation Fund resources)

With the support of the Adaptation Fund, North Macedonia can close these critical adaptation gaps and ensure a comprehensive, climate-resilient transformation of its education system while boosting the climate resilience of its society. While the Adaptation Fund project will complement and align with the Additional Financing PEIP, no co-financing is required for the Adaptation Fund project to meet its objectives.

The project will enable the retrofitting of 10 selected existing primary school buildings from among the 20 primary schools being extended under the Additional Financing project, ensuring that both new and old infrastructure meet climate-resilient standards. This holistic approach will safeguard students and staff, reduce the risk of educational disruption, and enhance the long-term sustainability of school facilities. These schools will not only provide safe and sustainable learning environments but also serve as demonstration sites for climate-smart infrastructure and as emergency shelters for surrounding communities during climate-related disasters.

Adaptation Fund resources will also allow for the scale up of extracurricular activities piloted as part of the WDS model in 20 primary schools under the Additional Financing project, and bring such activities, with explicit focus on climate adaptation, to a larger pool of students in 25 additional schools. These activities—such as adaptation clubs and school-based resilience projects—will empower students with practical knowledge and skills to navigate and respond to climate challenges.

In addition, teachers in grades 1-5, and school leadership (beyond school principals themselves, including two members of schools' professional teams) will benefit from targeted professional development on climate adaptation. Such capacity-building will build institutional capacity to respond to climate threats and foster a culture of resilience within schools.

Moreover, the project will establish a dedicated learning and knowledge management component to document, evaluate, and share best practices, thereby supporting the scaling of successful adaptation models nationwide and ensuring alignment with national education and climate strategies.

In sum, the requested Adaptation Fund financing is essential to address cost of adaptation in North Macedonia's education sector, supporting in turn climate resilience of the country's society more broadly, in a more comprehensive fashion. Without the Adaptation Fund financing, the country risks perpetuating infrastructure vulnerabilities, missing critical opportunities for student engagement, and leaving teachers and school leadership ill-equipped to manage climate risks. However, with the support of the Adaptation Fund, the education system can become a cornerstone of national resilience—protecting today's learners, modeling climate-smart infrastructure, and preparing tomorrow's leaders for a climate-affected future.

J. Describe how the sustainability of the project/programme outcomes has been taken into account when designing the project/programme.

The sustainability of the project outcomes has been intentionally embedded into the

project's design to ensure that its benefits endure well beyond the implementation period.

First, the sustainability of the project is strongly supported by its alignment with national education reforms and integration of activities into established institutional frameworks within the country's education system, positioning the project to benefit from sustained policy support. The government's commitment to transitioning to single-shift schooling and the whole-day school model creates ideal conditions for integrating climate-resilient infrastructure upgrades and adaptation-focused extracurricular activities into the daily school experience. In the coming years, the government is committed to transitioning around 100 schools from multiple shifts to a single shift, accompanied by investments in the extension and refurbishment of the school infrastructure. If proven successful, and based on project lessons which will be thoroughly documented, the project's activities can be scaled and embedded into such future infrastructure expansion and curriculum enrichment efforts, ensuring continued relevance and impact.

Second, the project's investments in school infrastructure are designed for longevity and adaptability. By retrofitting selected schools with climate-resilient and energy-efficient designs, the project ensures that these facilities will remain safe, functional, and cost-effective for decades. These schools will not only withstand future climate shocks but also serve as enduring community assets—providing shelter during emergencies. The infrastructure improvements are conceived as long-term public investments that reduce future maintenance burdens and support sustained educational delivery. Operational and financial sustainability of the upgraded schools will be fostered thanks to the new financing formula for primary education adopted in Q3 2025, which, among others, allocates stable, continuous funding for operational and maintenance (O&M) to primary schools, depending on their needs. Combined with the planned training for all primary school principals on integrating climate adaptation into school operations, the upgraded infrastructure's sustainability will be secured from both operational and financial perspectives.

Third, the project cultivates a lasting culture of climate awareness and resilience among students through experiential learning. By embedding climate adaptation into extracurricular activities—such as student-led projects and climate clubs—the project nurtures a generation of learners who are not only informed but also actively engaged in shaping their communities' climate futures. These experiences are designed to instill adaptation knowledge as well as lifelong skills in problem-solving, collaboration, and environmental stewardship, ensuring that the project's influence continues to grow through the actions of its student alumni. In addition, the concept of extra-curricular activities is formally established in North Macedonia within the new Concept for Primary Education, showcasing commitment to support and promote such activities at the primary education level in the long-term. To further enhance sustainability and replicability, the most innovative extracurricular activities will be compiled into a comprehensive booklet and distributed to primary schools by the Ministry of Education. Since schools have full autonomy in designing extracurricular programs (i.e., there is no centralized catalogue to update), this approach ensures that successful practices are not lost but shared widely across the education system. The financial sustainability will be further fostered thanks to the new financing formula for primary education (see above), which allocates stable, continuous funding for extracurricular activities for

schools, among others. Such a combined approach will ensure that schools have both the knowledge and funding for replicating successful, adaptation-focused extracurriculars.

Fourth, the project builds enduring institutional capacity by equipping educators and school leaders with the tools and networks needed to sustain climate adaptation efforts over time. Through targeted training on climate adaptation, teachers will gain competencies allowing them to equip a whole generation of students with relevant climate resilience knowledge and skills. To institutionalize climate adaptation within the teacher training system, the teacher training module developed under the project will be integrated into the national Continuing Professional Development (CPD) catalogue, an official institutional framework in North Macedonia, making it a permanent, publicly funded offering for educators. The establishment of a teacher climate resilience network is expected to foster ongoing information exchange and collaboration among educators, continuing organically even after formal project activities conclude. Additionally, training provided to all school principals at the primary level and their professional teams—who typically remain in place long-term and serve as custodians of institutional memory—will help ensure that the knowledge and practices gained through the project are retained at the school level. This continuity will safeguard the integration of climate adaptation strategies even in the event of future school leadership changes.

Fifth, the project's dedicated learning and knowledge management component ensures that insights and innovations are systematically documented, evaluated, and shared. Among others, this will include the preparation of a Lessons learned project brief capturing the key lessons shared at the national concluding conference, which will be prepared by the Ministry of Education and disseminated among primary schools, creating a foundation for continuous improvement and future replication.

Finally, North Macedonia has recently established a dedicated Energy Efficiency Fund, with expectations to become operational by the end of 2025. The Fund will be constituted as a dedicated unit within the Development Bank of North Macedonia (DBNM) to provide a sustainable and revolving financing mechanism for energy efficiency (EE) investments in the public sector. The Fund aims to support the country's efforts to scale up energy efficiency measures by financing retrofits of municipal buildings, but it might be open to support energy efficiency improvements in central government buildings on a grant basis. The EEF will be governed by the Energy Efficiency Committee, as stipulated in the DBNM Law. The EE Fund currently has access to EUR 5 million from World Bank financing and an additional EUR 10 million from the green bond issued by the previous government. These resources are planned to finance EE retrofit projects in eligible municipalities that apply for funding, contributing to reduced energy consumption, lower public expenditure on energy, and improved comfort and performance of public buildings. The Fund therefore offers a potential long-term financing mechanism to support future climate-resilient upgrades, helping schools maintain and further strengthen their capacity to adapt to climate change.

Together, these elements ensure that the project is not a one-time intervention, but a catalyst for enduring transformation—embedding climate resilience into the core of North Macedonia's education system and society and enabling it to evolve and respond to future challenges for years to come.

K. Provide an overview of the environmental and social impacts and risks identified as being relevant to the project/programme.

The results of an initial environmental and social screening classify the project as a Category B project, as the screening has identified adverse environmental or social impacts that are fewer in number, smaller in scale and less widespread than for Category A projects, or are reversible or easily mitigated. Overall, the project entails low to moderate risks, which can be easily avoided or minimized through standard mitigation measures, which will be undertaken in accordance with the ESMF developed and implemented for the World Bank Parent Project and Additional Financing for the Primary Education Improvement Project, which will be updated to cover this project as well, and by adhering to the World Bank Environmental Health and Safety Guidelines and Good International Industrial Practices. Further details are provided in the table below.

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
<i>Compliance with the Law</i>		No risk: While the project will ensure full compliance with all applicable domestic and international law and regulations which have been duly identified (see list of relevant regulations in Section D) and may be further complemented during the development of the full project proposal, the project is classified as requiring further assessment and management here as this principle always applies, as per the Adaptation Fund’s E&S Policy.
<i>Access and Equity</i>		Low/moderate risk: There is a low/moderate risk of vulnerable and disadvantaged groups (e.g. socio-economically disadvantaged populations, individuals with disabilities, etc.) being excluded from access to the project benefits. However, to mitigate this risk, such considerations were taken into account during the project design, for instance by ensuring that schools with planned infrastructure upgrades serve high shares of vulnerable students, are designed in a way that considers the needs of students with disabilities, etc. (see details in Section B, sub-section “Gender and diversity considerations”, above). To ensure continuous and consistent adherence to the Access and Equity principle, a Stakeholder Engagement Plan (SEP) prepared for the World Bank Parent Project and later updated for the Additional Financing for the Primary Education Improvement Project (see Section H above) will be updated to accommodate climate adaptation activities, allowing the project to consistently benefit from relevant

		stakeholder input.
<i>Marginalized and Vulnerable Groups</i>		Low/moderate risk: There is a low/moderate risk of adverse impacts on marginalized and vulnerable groups (e.g. women, disabled individuals, etc.). To mitigate this risk, the groups that have been identified as being potentially impacted by the project (see Section B above for more details) have been duly consulted during the development of this concept note and will continue to be in line with the SEP (see row above). Further, the Additional Financing for the Primary Education Improvement Project also has a robust grievance redress mechanism, which will be used to cover the activities under this project as well. The GRM will allow all communities and individuals, who believe that they are adversely affected by the project, to submit complaints, ensuring that any negative feedback received is promptly reviewed and addressed.
<i>Human Rights</i>		Low risk: While the project will ensure full respect for human rights through all its phases, it is classified as requiring further assessment and management here as this principle always applies, as per the Adaptation Fund’s E&S Policy.
<i>Gender Equality and Women’s Empowerment</i>		Low risk: As the project concerns the education sector, in which the labor force is heavily female dominated, there is a risk that women may not be able to fully benefit from project activities unless their specific needs are considered during the project preparation stage. Equally, there is a risk of low engagement of boys in the adaptation-related extra-curricular activities, as boys tend to exhibit lower levels of environmental awareness (see the Context section above). To mitigate this risk, a number of measures (e.g. organizing teacher training in a flexible manner to accommodate teachers’ care-giving responsibilities, targeted awareness-raising among students about extra-curricular activities, etc.) have been incorporated into the project design, as detailed in the initial gender analysis (see Context section above) to ensure gender equality remains at the core of the project design and implementation.
<i>Core Labour Rights</i>		Low/moderate risk: Given that school refurbishment activities under Component 1 will involve civil works delivered by local companies to be hired by the Executing Entity, minor labor risks, mostly concerning occupational health and safety issues are expected. To mitigate these risks, the ESMF developed for the World Bank Parent Project and Additional Financing for the Primary Education Improvement Project will be updated and adhered to, while the World Bank Environmental Health and Safety Guidelines and Good International Industrial Practices will be adhered

		to as well.
<i>Indigenous Peoples</i>	X	No risk: There are no indigenous people in North Macedonia.
<i>Involuntary Resettlement</i>	X	No risk: No permanent or temporary land acquisition or asset loss is expected, as infrastructure interventions will not involve new construction.
<i>Protection of Natural Habitats</i>	X	No risk: The project will have no impact on North Macedonia's legally protected natural habitats, those officially proposed for protection, recognized by authoritative sources for their high conservation value, or recognized as protected by traditional or indigenous local communities.
<i>Conservation of Biological Diversity</i>		Low risk: There is a low risk of impacting biological diversity as Component 1 may include the introduction of nature-based adaptation solutions (e.g. planting trees) in the vicinity of schools. To mitigate this risk, the ESMF developed for the World Bank Parent Project and Additional Financing for the Primary Education Improvement Project will be updated and adhered to, while the World Bank Environmental Health and Safety Guidelines will be adhered to as well.
<i>Climate Change</i>	X	No risk: The project will not result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change.
<i>Pollution Prevention and Resource Efficiency</i>		Low/moderate risk: There is a low/moderate risk related to the implementation of activities under Component 1, envisaging refurbishment of the existing school facilities, which will be associated with generation of some amounts of construction waste and dust during the implementation of the refurbishments and physical works. To mitigate this risk, the ESMF developed for the World Bank Parent Project and Additional Financing for the Primary Education Improvement Project will be updated and adhered to, while the World Bank Environmental Health and Safety Guidelines and Good International Industrial Practices will be adhered to as well.
<i>Public Health</i>	X	No risk: No adverse impact on public health is envisaged.
<i>Physical and Cultural Heritage</i>	X	No risk: No adverse impact on physical and cultural heritage is envisaged.
<i>Lands and Soil Conservation</i>	X	No risk: No adverse impact on land and social conservation is envisaged.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Demonstrate how the project/programme aligns with the Results Framework of the Adaptation Fund

Project Objective(s) ¹¹	Project Objective Indicator(s)	Adaptation Fund Outcome	Adaptation Fund Outcome Indicator	Grant Amount (USD)
Objective 1: Strengthen the adaptation capacity of the school network	Number of municipalities benefitting from education facilities with improved capacity to withstand climate-related incidents	Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	7,545,997
Objective 2: Enhance adaptation knowledge of students, teachers and school leadership	Percentage of primary education students, teachers and individuals in school leadership benefitting from learning programs on climate adaptation	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	765,017
Objective 3: Promote learning and knowledge management to foster project sustainability and replicability	Number of project events organized to foster innovation and knowledge diffusion	Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies	8. Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national and/or subnational level	30,000
Total outcome level grant amount				8,341,014
Project Outcome(s)	Project Outcome Indicator(s)	Adaptation Fund Output	Adaptation Fund Output Indicator	Grant Amount (USD)
Outcome 1: Reduced learning disruptions and enhanced community resilience to climate	Number of schools benefitting from climate-resilient infrastructure upgrades	Output 4: Vulnerable development sector services and infrastructure assets	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from	7,545,997

¹¹ The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

events		strengthened in response to climate change impacts, including variability	climate variability and change (by sector and scale)	
Outcome 2: Increased awareness of climate adaptation importance and concepts among students, educators and school leadership	Number of primary education students, teachers and individuals in school leadership benefitting from learning programs on climate adaptation	Output 3.1: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1 No. of news outlets in the local press and media that have covered the topic	765,017
Outcome 3: Strengthened evidence base and stakeholder engagement on enhancing climate resilience in and through education	Number of knowledge deliverables capturing the project's lessons produced	Output 8: Viable innovations are rolled out, scaled up, encouraged and/or accelerated.	8.2. No. of key findings on effective, efficient adaptation practices, products and technologies generated	30,000
Total output level grant amount				8,341,014

¹ The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government² *Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:*

<i>H.E. Mr. Izet Mexhiti, Deputy Prime Minister and Minister, Ministry of Environment and Physical Planning</i>	Date: <i>June 24, 2025</i>
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B. Implementing Entity certification *Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address*

<p>I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (.....list here.....) and subject to the approval by the Adaptation Fund Board, <u>commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund</u> and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.</p>

⁶ Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

<i>Name & Signature</i> Implementing Entity Coordinator	
Date: <i>(Month, Day, Year)</i>	Tel. and email:
Project Contact Person:	
Tel. And Email:	



ADAPTATION FUND

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МИНИСТЕРСТВО ЗА ЖИВОТНА СРЕДИНА
И ПРОСТОРНО ПЛАНИРАЊЕ
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СКОПЈЕ - SHKUP

Letter of Endorsement

Ministry of Environment and & Physical Planning of the Republic of North Macedonia

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

June 24th 2025

Subject: Endorsement for : **"Learning to adapt - strengthening the climate resilience of education in North Macedonia"**

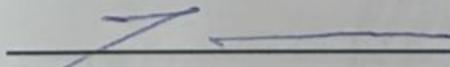
In my capacity as designated authority for the Adaptation Fund in North Macedonia, I confirm that the above national project proposal is in accordance with the government's select national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in North Macedonia.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by the World Bank and executed by the Ministry of Education and Science of North Macedonia.

Sincerely,

Minister of Environment and & Physical Planning

Izet Mexhiti



Official blue circular stamp of the Ministry of Environment and Physical Planning of North Macedonia. The stamp contains the text: Република Северна Македонија, Министерство за животна средина и просторно планирање, Скопје, ШКУП, and the Macedonian name of the ministry: Министриа е мједесит јетесор дхе планификимит харѣсинор. The stamp also features the coat of arms of North Macedonia.



Revised PFG Submission Form¹ (additions in red)

Project Formulation Grant (PFG)

Submission Date: 17 October 2025

Adaptation Fund Project ID:

Country/ies: North Macedonia

Title of Project/Programme: Learning to adapt: strengthening the climate resilience of education in North Macedonia

Type of IE (NIE/RIE/MIE): Multilateral Implementing Entity (MIE)

Implementing Entity: World Bank

Executing Entity/ies: Ministry of Education and Science

A. Project Preparation Timeframe

Start date of PFG	April 2026
Completion date of PFG	October 2026

B. Proposed Project Preparation Activities (\$)

List of Proposed Project Preparation Activities	Output of the PFG Activities	US\$ Amount	Budget note²
Develop the full project proposal and manage the preparation process	Full project proposal	97,000 USD	Time of relevant World Bank Staff to develop the full project proposal (i.e. concretizing project activities incl. technical, E&S and FM aspects, etc.) and manage/coordinate the proposal preparation process (incl. liaison with Ministry counterparts and stakeholders, etc.)

¹ As presented in AFB/PPRC.33/40 Annex 1.

² The proposal should include a detailed budget with budget notes indicating the break-down of costs at the activity level. It should also include a budget on the Implementing Entity management fee use.

Undertake climate vulnerability assessment of the education infrastructure and other technical studies as needed	Climate vulnerability assessment of the education infrastructure and other technical studies	25,000 USD	Outsourced expertise for specialized technical assistance, including a climate vulnerability assessment of the education infrastructure to help understand the retrofit needs of the 10 selected schools
Undertake stakeholder consultations	Stakeholder input into the project proposal	5,000 USD	One round of in-person stakeholder consultations
Undertake travel during full proposal development	Input into the project proposal	10,250 USD	Travel costs required during project preparation, including within-country travel
Total project formulation grant without IE fee		137, 250 USD	Total PFG allocation for proposal preparation excluding the 8.5% IE fee
Implementing Entity (IE) Fee (8.5%)		12,750 USD	IE fee based on 8.5% of total PFG
Total Project Formulation Grant		150,000 USD	Total PFG budget inclusive of IE fee

Please describe below each of the PFG activities and provide justifications for their need and for the amount of funding required: Please see details in Table B above.

For LLA Projects only:

If requesting additional funding for LLA projects to enable devolving decision making to the local level, please specify the activities that would directly serve to enable devolving decision making to the lowest appropriate level and enable local actors to make informed decisions on how adaptation actions are defined, prioritized, designed, and implemented:

Please provide justifications for their need and for the amount of additional funding required:

C. Implementing Entity

This request has been prepared in accordance with the Adaptation Fund Board’s procedures and meets the Adaptation Fund’s criteria for project identification and formulation

Implementing Entity Coordinator, IE Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address

Annex 1

Preliminary cost estimates by project component

1.) Strengthening the adaptation capacity of the school network

Item	Value
Moderate retrofit price/m2 (EUR)	150
Mid-range price for design and engineering/m2 (EUR)	16,5
Mid-range price for supervision of works/m2 (EUR)	10
m2 in one school	3,500
Total price per school (EUR)	617,750
Cost of retrofitting 10 schools (EUR)	6,177,500
Cost of retrofitting 10 schools (USD)	7,206,632
Total cost, approximate, assuming margin of c.4.5%	7,545,997

Source: Item cost estimates of the World Bank and the Ministry of Education and Science of North Macedonia, most based on past education infrastructure projects. FX used 1.1666 USD/EUR, based on ECB rate on 8 October 2025.

2.) Enhancing adaptation knowledge of students, teachers and school leadership

Item	Value
Grant per school to develop and implement extra-curricular activities	10,000
Number of schools supported	25
Total funding for award-winners	18,000
Total cost for extracurriculars	268,000
Number of primary school teachers in grades 1-5	7210
Number of primary school principals	357

Number of professional team members	714
Cost of training per person (USD), approximate, based on item cost of 3000 MKD and FX of 52.67 MKD/USD	57
Total cost of training	472,017
Set up and operation of a teacher network over 5 years (USD)	25,000
Total component cost (USD)	765,017

Source: Item cost provided by the World Bank based on allocations for similar activities under the Additional Financing for the Primary Education Improvement Project in North Macedonia.

3.) Promoting learning and knowledge management

Item	Value
Preparation of a booklet with examples of innovative extra-curricular activities	2,500
Preparation of the Lessons learned project brief	2,500
Final conference	25,000
Total component cost (USD)	30,000

Annex 2

Participants in stakeholder consultations (besides the World Bank team), 14-15 October 2025

14 October 2025	
Organization	Name
Association for Democratic Development of the Roma – SONCE	Mr. Nezir Huseini
NGO Romalitico	Ms. Marija Sulejmanova
Association of Class Teachers – UCHITEL	Ms. Natasha Todorovska
Foundation for Educational and Cultural Initiatives “Step by Step”	Ms. Suzana Kirandzhiska
Macedonian Center for Civic Education – MCGO	Ms. Ana Raleva
Ministry of Education and Science	Ms. Danijela Maneva, Ms. Milica Mojsoska, Ms. Milena Petrov
15 October 2025	
Bidi Zelen (Go green)	Mr. Blazhe Josifovski, Ms. Arta Qerimi
Eko svest (Eco awareness)	Ms. Elena Nikolovska
The Institute for good governance and policies in environment and climate change – Skopje (IPECC)	Ms. Jadranka Ivanova
Makedonsko Ekolosko drustvo (Macedonian Environmental Society)	Ms. Svetlana Pejovikj
Ministry of Environment and Physical Planning	Ms. Mjelma Mehmeti
Ministry of Education and Science	Ms. Danijela Maneva, Ms. Milica Mojsoska, Ms. Milena Petrov