unicef
for every child

Investing in climate change education and infrastructure in Europe and Central Asia

An investment opportunity for the private and public sectors

UNICEF Europe and Central Asia

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Climate change threatens all of humanity. But for children, it is existential. A child born today is likely to live for another 70 or more years, a period in which – in the absence of significant climate action – Europe and Central Asia will experience more heatwaves, wildfires, floods, deteriorating water quality and air pollution.

But for society and the economy at large, the consequences of climate change go beyond that. Children's bodies and brains are far more vulnerable to the effects of climate change than adults. They also threaten children's physical and mental development long-term – undermining their ability to reach their full potential as productive, problem-solving members of society. And these harms are already happening: across Europe and Central Asia, more than 100 million children are currently experiencing the impacts of climate change.

This means the cost of inaction is immense. It also means that taking action now will reap financial rewards — both now, and far into the future.

One of the most important ways to tackle this crisis and safeguard the ability of children to contribute to society and the economy, in both the short- and long-term, is through education.

Schools themselves must lead the way in terms of protecting children from climate impacts such as pollution, extreme temperatures, wildfires and flooding. But what goes on inside the classroom matters too. To be the climate problem-solvers that we need, both now and in the following decades, children need far more preparation, knowledge and skills. Currently, school systems are falling short of both of these goals – leaving children unprepared for the future we all face.

For children, climate crisis impacts start at school

Children are particularly vulnerable to the impacts of climate change. Yet for most children across the region, even their schools and kindergartens – where they spend most of their waking hours – are not resilient to, and do not protect them from, the consequences of environmental degradation.

Cover image: © UNICEF/UNI426487/Margaryan
A boy sits on the grass in the garden of his newly established preschool in Chkalov, Armenia. *May 2024.*



The top three environmental health risk factors for ill health in children in Europe and Central Asia are air pollution, heatwaves or cold, and poor water quality. Across 23 countries and territories in the region, an estimated 6,441 children and teenagers died from causes attributable to air pollution in 2021, 85 per cent of them dying in their first year of life. Around 1 in 2 children in the region face frequent heatwaves – double the global average of 1 in 4. Meanwhile, 2023 was Europe's second warmest year in recorded history: for some countries in southwestern Europe, it was the warmest.

Yet even schools themselves often do not protect children from floods, heatwaves, wildfires and landslides, and are in zones with poor air quality, for example, which impairs children's cognitive development and school performance. Schools are often considered energy inefficient lacking insulation, ventilation and effective heating systems. Meanwhile, extreme weather events such as floods, heatwaves and wildfires frequently lead to school closures, undermining educational outcomes.

For all of us, a better climate future starts at school

We all rely on our education systems to equip children with the skills and knowledge they need to be productive, problem-solving members of the economy and society well into the future. Yet – even while we know that climate change will transform our economies and societies throughout the century, and beyond – schools are failing to offer the education that children need to effect a green transition. Only a few countries in the region include costed investments in the education sector as a main strategy for meeting national priorities in climate change adaptation and mitigation. Children and young people also are being left out of key decision-making on climate change; they are not given sufficient voice and lack platforms for meaningful engagement. Overall, the demand for climate change-related knowledge and green skills across Europe and Central Asia is rapidly increasing, yet the current education systems are not meeting this need.

There is a better way. Along with our partners, UNICEF works to ensure that every child attends a school that is energy-efficient and well-insulated, with green school grounds and clean air. A school where children learn how to creatively and effectively think and problem-solve about the environment and climate. A school that makes them feel empowered, optimistic, and ready to face the future.

For this to happen, we need urgent investment. UNICEF calls on all stakeholders who have an interest – whether financial, political or social – in our societies to fund a sustainable future for all. Investments for specific projects within our strategy start from US $5 million.

Above: © UNICEF/UNI626149/Barai

A man tries to put out a wildfire with a hose to prevent it from approaching a home in Penteli, East Attica, near Athens. *August 2024.*

High potential for reducing carbon emissions in the educational sector

- Educational facilities are big consumers of fossil fuel energy and therefore a significant source of greenhouse gas (GHG) emissions. Most of them are highly energy-inefficient and rely on outdated heating systems without proper insulation. By retrofitting them with energy-efficient technologies, such as better insulation, improved heating and cooling systems, and solar panels, GHG emissions can be significantly reduced. This not only lowers energy consumption but also creates healthier, more comfortable environments for children. School grounds offer considerable potential for greening efforts through the planting of trees and installation of school gardens, the process of planting and tending can be easily linked to the school curriculum.

Below: © UNICEF/UN0635996/Babajanyan VII
Photo Aerial view of Sultonobod village, Tajikistan. *March 2022.*

The demand for climate change-related knowledge, green skills and pro-environmental dispositions is rapidly increasing, yet current education systems are falling short in meeting this demand

- Students and teachers are not acquiring the knowledge, skills, and attitudes to be able to understand and cope with the impact of climate change and to proactively shape innovative adaptation and mitigation solutions.
- Schools are not yet developing a workforce disposed to and upskilled to support the green transition.
- Children and young people are being left out of key decision-making on climate change; they are not given sufficient voice and lack platforms for meaningful engagement.
- Only a few countries in the region currently include education as a significant and influential strategy for meeting national priorities in climate change adaptation and mitigation.



Key messages

Education is crucial in climate change mitigation and adaptation.

UNICEF has the reach and know-how to enable every education system to become climate-responsive and resilient – and help every child learn about and adapt to climate change.

UNICEF works with young people to promote their leadership and proactive engagement in climate action and the development of climate change solutions.

UNICEF works with governments, institutions, and partners to ensure a unified, impactful and sustainable way to deliver results.

UNICEF is 100 per cent voluntarily funded and needs your support to deliver.

UNICEF's response

The challenges are myriad. The stakes are high. UNICEF is committed to a better future for all children through harnessing the transformative potential of the education sector. We will accomplish this through three interlinked pillars.

Pillar 1 – Climate change education and green skills

- Curriculum and teaching practice: We will update school curricula to incorporate – across different subjects and education stages – the causes and mechanics of climate change, environmental issues and effects, and the impacts of climate breakdown. Teacher trainings will transform teaching practices by embedding a wide range of learner-centred and action-oriented pedagogical approaches and techniques, always in an age-appropriate and gender-responsive manner. These curriculum and pedagogical changes will equip the future workforce and citizenry with green skills needed to lead the region's green transformation.

- Climate-smart education systems: A climate change focus will be instilled into education policy, standards and planning; educational finance systems and budgets; and in trainings for pre- and in-service teachers. The educational sector will systematically gather climate change impact and response data through Education Management Information Systems for evidence-based and proactive education policy making and planning.

UNICEF has already delivered, or is currently delivering, these climate change-focused transformations to education systems across the countries in the region.

Examples:

- In **Armenia,** UNICEF, jointly with the Ministry of Education, integrated climate change into the curriculum (7th to 12th grade) and developed climate change manuals. Using a cascade model, trained teachers became trainers in their own communities to equip other teachers with skills to implement climate change-related projects.

- In **North Macedonia**, UNICEF supports in-service teacher training on experiential learning for climate change adaptation and the environment in preschool, primary and secondary education.

- In **Turkmenistan**, UNICEF supported the Government in developing and incorporating climate change curriculum into primary and secondary education.

- In **Armenia**, UNICEF supported the training of teachers and the sensitization of school administrators on climate change in collaboration with the government and its partners.

- In **Azerbaijan**, UNICEF is supporting the government in developing training modules for students and teachers focusing on energy and eco-technologies.

- In **Serbia**, UNICEF supports the government in developing and introducing STEM programmes on climate change mitigation and adaptation in the 5th grade of primary and 1st grade of upper secondary education.

Below: © UNICEF/UNI556839/Nimani

Children take part in a workshop at the Botanical Garden in Skopje, North Macedonia. UNICEF is working with the Government and partners to support the integration of climate change education, with a focus on air quality, into existing curricula; developing new education materials for every stage of education from preschools to secondary education; and providing teacher training for the effective delivery of knowledge to pupils. *March 2024.*



Pillar 2 – Green and climate-resilient educational infrastructure

- Upgrading school infrastructure: School buildings will be upgraded to withstand climate impacts like heatwaves, floods, and other extreme weather events. These upgrades will include energy-efficient systems (e.g., solar panels, improved insulation and ventilation) to reduce energy consumption, greenhouse gas emissions, and operational costs.
- Healthier learning environments: The improvement to indoor air quality, ventilation, and building design will create healthier, more conducive spaces for learning, while protecting children's well-being during climate events.
- Water, sanitation and hygiene (WASH) in schools: Access to safe water at school during the dry/drought season or in the dry regions and strengthened waste management system at school.

Examples:

- In **Uzbekistan**, UNICEF supports schools in vulnerable areas around the Aral Sea with climate resilient infrastructure, including innovative low-cost solutions such as solar-based water heaters for hygiene facilities.
- In **Tajikistan**, UNICEF supported the development of a national protocol for WASH in schools.
- In **Armenia**, UNICEF supported a nationwide School Safety Assessment, resulting in the mobilization of over US $150 million in investments to improve school safety.
- In **Kyrgyzstan**, UNICEF supports the implementation of the Roadmap for Disaster Risk Reduction in Educational Institutions of the Kyrgyz Republic for 2021-2025 by enhancing the resilience of children to climate and disaster.

Pillar 3 – Youth engagement

Youth engagement equips youth with the opportunities and skills needed to actively participate in climate change mitigation and adaptation efforts, both in schools and in their communities. UNICEF supports child and youth-led climate projects, including advocacy, education, and environmental restoration initiatives, and also ensures that young voices are included in and listened to in climate policy discussions at local, national, and international levels.

Examples:

- In **Albania**, **Bosnia-Herzegovina, Kosovo[1], Montenegro, North Macedonia, and Serbia,** UNICEF is working to improve youth advocacy, training, and education related to air quality and climate-related issues.
- In **Türkiye**, UNICEF supported youth climate envoys to develop A Youth National Declaration on Climate Change. Together with the Ministry of Environment, Urbanisation and Climate Change (MoEUCC) and non-governmental organization Doga Koruma Merkezi, more than 200 youth climate envoys were trained on public engagement skills and participated in national and global climate-related policy-level discussions.
- In **Uzbekistan**, UNICEF facilitated a series of consultations between Central Asian governments and young climate advocates, leading to the signing of the Regional Strategy for Promoting a Culture of Sustainable Development and Involving Children and Youth in the Climate Agenda for 2024-2030. The strategy serves as basis for promoting skill-building and youth-led climate action at the country and sub-regional levels.
- In **Kazakhstan**, UNICEF provides youth activists with tools, guides and resources on climate action and supports them in developing and implementing their advocacy action plans.

Why partner with UNICEF

With more than 75 years of experience, we know how to deploy resources to achieve the greatest impact for children. This impact rests on five key comparative advantages, all made possible by donor support: employing expert staff; leading and pioneering; taking work to scale; meeting children's needs throughout childhood and adolescence; and being there for them before, during and after emergencies.

Note: 1. All references to Kosovo should be understood to be in the context of United Nations Security Council resolution 1244 (1999)



How you can invest with UNICEF:

UNICEF has a long history of developing strategic partnerships to meet partners' priorities and philanthropic goals. These bespoke partnerships – many supporting multiple countries – see donors build lasting relationships with our experts and country offices to develop powerful initiatives that endure long-term, and can be scaled up to benefit children over time.

Investment opportunities and impacts

Investing in climate-focused education and infrastructure in the Europe and Central Asia region offers a strategic pathway to foster a climate-resilient, green-skilled workforce and citizenry, while enhancing community adaptation to climate impacts.

This investment, aligned with three key pillars, supports both the region's environmental goals and economic growth.

Pillar 1: Climate change education and green skills

Opportunity: Funding to integrate climate science, environmental challenges, and sustainable practices into school curricula and train teachers across all education levels, including vocational training. This pillar will equip the next generation with green and climate responsive competencies essential for future job markets and the needs of a proactive citizenship participation, thus meeting the region's urgent need for climate-wise skilled labor in areas like renewable energy, sustainable agriculture, and green infrastructure. This pillar also strengthens overall education system responsiveness to the climate change-induced threats.

Examples of targeted programme investments:

- **US$ 10 million** enables 17 million school-aged children across Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan to benefit from climate change education curricula, equipping them with the knowledge and skills they need to build a more sustainable and prosperous future, across both primary and secondary schools. This investment includes reviewing and implementing climate change and green skills into each country's national curricula under the Ministries of Education, as well as providing dedicated teacher training and teacher capacity development programs of all five countries.

- **US$ 5 million** funds the improved green skills and climate education for 5.7 million children and 100,000 teachers across the six Western Balkans territories (Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia), addressing the region's labor market needs for a green transition and economic growth. This will be done by integrating climate change education into primary and secondary schools and offering dedicated teacher training and teacher capacity development programmes.

Above: © UNICEF/UNI549685/Nematov

Rayhona, 17 (left) learns about the effects of gas in different conditions during an experiment with her classmates at their school in Tashkent, Uzbekistan. *September 2024.*

Pillar 2: Green and climate-resilient education and infrastructure

Opportunity: Investment for upgrading educational facilities and grounds, such as by integrating energy-efficient systems like solar panels, insulation and LED lighting. Healthier, climate-resilient schools and surroundings contribute directly to climate and economic goals by enhancing child development, reducing greenhouse gas emissions, contribute to climate change mitigation and lowering operational costs. Learning benefits also arise when students are engaged in the infrastructural projects happening at their schools, thus feeding into the climate change curriculum.

Examples of targeted programme investments:

- **US$ 5 million** funds the comprehensive assessments of 200 schools across the region to identify infrastructural vulnerabilities related to climate risk and opportunities for greenhouse gas emission reductions. This programme includes energy audits, structural evaluations for climate hazard resilience, and tailored improvement plans for each school. Alongside the assessments, the programme delivers targeted training for more than 1,000 school building managers on implementing climate-adaptive maintenance and energy-efficient practices.
- **US$ 20 million** enables the retrofit of 100 schools and kindergartens in the Western Balkans with energy-efficient systems, including solar panels, LED lighting, improved heating and enhanced insulation, leading to at least a 50 per cent decrease in GHG emissions reduction – and improved child development and learning outcomes for more than 50,000 children.

Pillar 3: Youth engagement in climate action

Opportunity: Resources to support youth-led climate projects, from advocacy, innovation and education to environmental restoration, alongside youth engagement in climate policy discussions. By equipping youth with the knowledge, mindset and tools to actively contribute to climate adaptation and mitigation, this pillar strengthens grassroots climate action and policy influence.

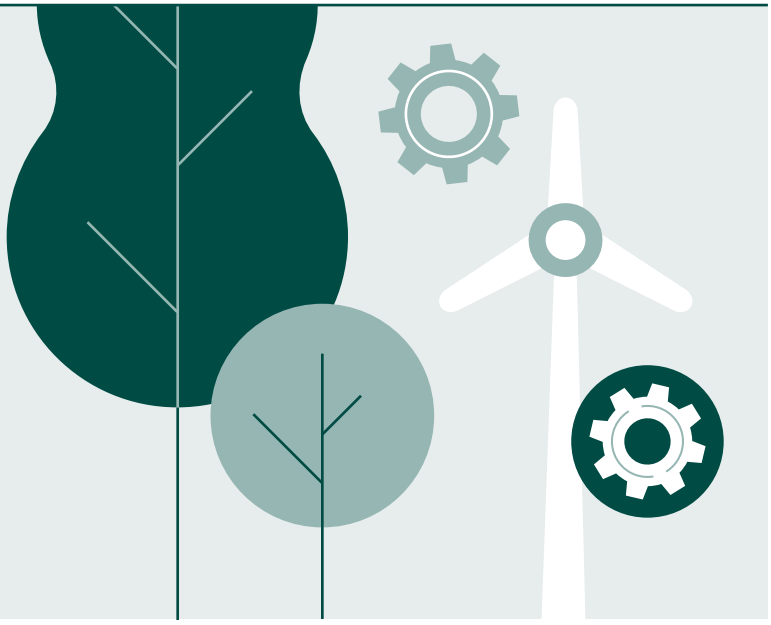
Examples:

- **US$ 7 million** will develop Green Comp Labs and support youth-led green initiatives to equip 2.5 million children and young people in Türkiye with green competencies and digital skills.
- **US$ 10 million** will establish a grant fund for youth-led climate initiatives across 22 programme countries in Europe and Central Asia. This fund will award grants for their innovative approaches and local impact potential. This will encourage youth to volunteer, which has been key in mobilizing communities to engage in environmental protection efforts, promote sustainable practices, and actively participate in climate initiatives. It also will support young people's climate action advocacy.

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