GUIDANCE NOTE ON EDUCATION FOR THE GREEN TRANSITION

31.7.2024, DG INTPA G3, E3, F1, F2, DG NEAR, DG ECHO, DG EAC

Contents

Education and skills investments as drivers of impactful EU partnerships

Societies and economies face challenges presented by climate change, loss of biodiversity and environmental degradation. The planetary crisis has a disproportionate impact on generations who have contributed to it the least. Climate-induced displacement of school-aged children is increasing and learning is interrupted for 40 million children annually.[1] This disproportionately affects the most vulnerable in society, especially girls, and the economic costs of lost learning are significant.

Addressing these challenges requires the transformation of economies and societies to improve resilience and ensure a just and inclusive green transition. **Education, as the engine of new knowledge, skills and attitudes, must be at the heart of the solutions.** The success of the green transition relies on education systems providing green competences and skills for all, in a life-long learning approach to mitigate impact and improve adaptation, while greening economies. Education enables young people to drive sustainability and secure new jobs in the green transition.

The Global Gateway strategy stands for sustainable and trusted connections that work for people and the planet. Increased access to **quality education is essential for successful investments** and job markets, especially in Sub-Saharan Africa, as shown by a recent analytical report by the International Monetary Fund (IMF).[2] **Skills development**, re-skilling and up-skilling, as well as higher education and research, will ensure relevant human resources for societal transition and to **support Global Gateway investments, in a 360-degree approach.**

The EU has strong global commitments in the areas of climate, greening and education. It aims to be a climate-neutral continent by 2050 and is a champion of global education partnerships, with an increase in Official Development Aid **education budget from 7% to 13%,** and a financial commitment of **35% to climate and greening.**

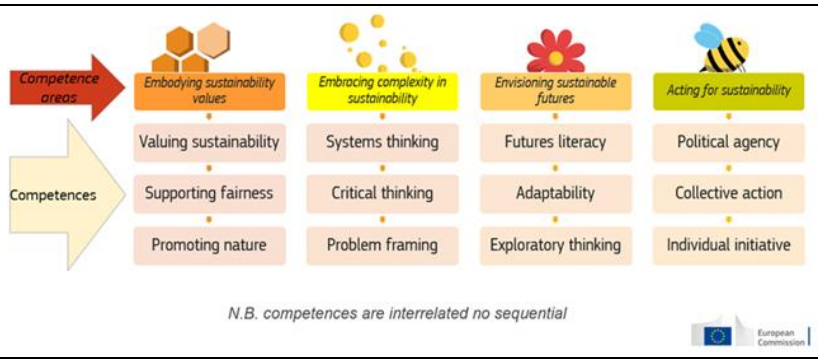
The aim of this Guidance Note is to support staff in EU-Delegations and headquarters to ensure that:

- EU education investments equip learners of all ages with competences and skills for a just green transition,
- EU green investments are accompanied by learning components in a 360-degree approach,
- The EU integrates education into climate mitigation, adaptation, loss and damage actions, and policy dialogue.

The Guidance Note outlines strategies for delivering education investments in two ways:

1. Education investments as the best long-term strategy for the green transition
2. Mainstreaming education in every green investment and EU Flagship

DEFINITION
This Guidance Note uses **The EU Green Competence Framework** (2022) GreenComp[3] to define green competences. It identifies sustainability competences in terms of values, complexity, futures competences and actions.



For more details on **the definitions of green competences and skills,** see ANNEX 1.

[1] https://www.educationcannotwait.org/news-stories/press-releases/the-climate-crisis-disrupts-the-education-40-million-children-every
[2] Regional Economic Outlook for Sub-Saharan Africa, April 2024 | A Tepid and Pricey Recovery (imf.org)
[3] GreenComp: the European sustainability competence framework (europa.eu)

European and global commitments

The 2030 Agenda with the Sustainable Development Goals (SDGs) is a joint global agreement. Education is instrumental in enabling people to respond to all SDG challenges. The Paris Agreement on Climate Change states that, *"Parties shall cooperate in taking measures, as appropriate, to enhance **climate change education**, training, public awareness, public participation, public access to information and international cooperation."*

Ahead of the UN Transforming Education Summit (TES) in 2022, there were 139 country commitments on green education. The Greening Education Partnership, coordinated by UNESCO, to be active until 2030, is a global TES initiative. It will work on greening schools, learning, capacity and readiness, as well as supporting communities.

The EU's European Green Deal recognises that global green challenges require a global response and stresses the EU's role as a global leader in this response. While the EU is set to promote and implement ambitious environment, climate and energy policies across the world, the Green Deal also acknowledges the important role of education to develop skills and knowledge, foster resilient communities and prevent education shocks.

The EU Biodiversity Strategy 2030 proposes that education encourages the appreciation of nature and the benefits it brings to society. The EU "Farm to Fork Strategy" focuses on climate change adaptation, for example, through nutrition and healthy diets, and ways to enhance nutrition through school meals.

One of the five strategic priority areas of the European Education Area (EEA) is "*Supporting the green and digital transitions in and through education and training*". The EEA points to a need for a profound change in individuals' behaviour and skills, using education and training as catalysts.

In June 2022, EU Member states confirmed their commitment to green education by adopting both a Council Recommendation on learning for the green transition and sustainability and Council Conclusions on the transformative role of education for sustainable development and global citizenship as an instrumental tool for the achievement of the sustainable development goals (SDGs).

The European Global Gateway strategy stands for sustainable and trusted connections that work for people and the planet. One of the five investment areas is Education and Research, and another one is Climate and Energy.

The EU's international partnerships are based on the European Consensus on Development (2017), where education is listed as a central element for tackling poverty and inequalities and environmental responsibility is recognised.

Three out of five focus areas of the EU NDICI funding instrument for 2021-2027 relate to education, sustainability and climate (sustainable growth, climate change and human development). For 2021-2027, the EU has committed to using 35% of the NDICI budget on climate and biodiversity actions, and at least 10% on education.

Green transition is one of the six key areas of engagement of the Gender Action Plan to promote gender equality and women's empowerment through all external action of the European Union 2021-2025 (GAP III), which supports women to influence decision-making on environment, climate change policies and actions.

The Youth Action Plan in the EU external action for 2022-2027 is a strategic partnership with young people to deliver on international commitments, such as the Agenda 2030 and the Paris Climate Agreement.

The EU Communication on Education in Emergencies and Protracted Crisis highlights the right to education of vulnerable children and youth affected by disasters, as 90% of all humanitarian disasters are climate-induced (UNDRR).

Eleven reasons to invest in the green transition through education

To provide knowledge, skills and values to support a sustainable societal and economic transformation

1. To make progress towards the SDGs by 2030: substantial advance in human capacity is needed through education, according to the Report by *The World in 2050* initiative.[4]
2. To protect, restore, preserve and sustainably manage natural resources, biodiversity and balanced ecosystems: these are vital to human life and health, providing ecological services and supporting livelihoods.
3. To support a just green transition of economies, investments and entrepreneurship: education systems need to build knowledge, skills and values to act, for all learners at all levels.
4. To influence human behaviour: green education has transformative potential for societies, well-being, economies, production and consumption patterns. It offers an alternative to extractive economies based on endless growth.

To enhance quality learning, well-being and hope

5. To transform education by active, hands-on, interdisciplinary learning: this helps us to understand, engage in and value the natural world and our position in it. Education can ensure that environment, biodiversity and climate change are mainstreamed in all sectors, including energy, mobility, agriculture, infrastructure, economics, law and governance.
6. To support climate literacy, and fight disinformation and climate change denial.
7. To enhance well-being, prevent eco-anxiety and help create positive future scenarios among young people and learners.
8. To diversify our knowledge to include indigenous solutions and practices: local knowledge systems allow a better understanding of linkages between climatic and social phenomena, to create better contextual solutions.

To promote climate justice and equity

9. To provide green justice: the climate and biodiversity crisis has a disproportionate impact on populations who have contributed the least to it. The top 50% high-income states are responsible for 86% of global CO_2 emissions.
10. To support the resilience of education systems: climate change is disruptive to learning, affecting the most vulnerable, especially girls. 12.5 million girls have their education disrupted annually due to climate change.[5]
11. To support gender equality: this can be done by developing green skills for all and ensuring that everyone leaving basic education can address sustainability in any job. A focus only on new green, male-dominated jobs increases the gender gap.

[4] TWI2050 - e World in 2050 (2018). Transformations to Achieve the Sustainable Development Goals. Report prepared by e World in 2050 initiative. International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria. www.twi2050.org

[5] Malala Fund

Strategies for delivery

1. Create a resilient, local learning ecosystem for the green transition

The **just and inclusive green transition** is a process towards a sustainable and fair society. It entails fundamental changes not only in key production and consumption lines like energy, transport, agriculture and food, but also in human behavior. A successful green transition, leaving no-one behind, relies on **efficient functioning of the learning ecosystem.**

Education and research are investment priorities of the Global Gateway strategy. The transition of societies and economies needs a variety of government investments. One of the best long-term investments is in human resources, to drive change through skills, knowledge and innovation.

Successful investment in **specialised skills development requires quality basic and secondary education to improve the general level of education in the long run.** Education tackles sustainability challenges through systems and futures thinking, critical thinking and problem-solving skills. It promotes adaptability and develops social and emotional skills. Education influences behavior, consumption patterns and supports green economies.

Greening education systems should cover all levels (from pre-primary to higher education) and across all types (formal, non-formal and informal). This is why we need to speak about a **lifelong learning approach**. Topics related to addressing the triple planetary crisis should be mainstreamed in education policy, curricula, teacher training, methodology, learning materials and research.

A well-functioning learning ecosystem is a prerequisite for a just and inclusive green transition, but the planetary crisis is also **causing huge disruptions to learning.** Today, there are **63 million climate-impacted children worldwide** who urgently need education support.[6] Learning is disrupted by hazards such as droughts, floods, cyclones and other extreme weather events. While these children have contributed least to the issue of climate change, they have the most to lose. Furthermore, over the last ten years, **31 million school-aged children have been displaced by the climate crisis,** with 13 million in the last three years alone.

The planetary crisis interrupts learning for 40 million children annually[7], but education is also at the heart of finding solutions. There is evidence that higher levels of education increases the adaptive capacity of a community.[8] It is essential to **recognise the role of education in climate change, biodiversity and environment policies**, strategies and action plans, such as the Nationally Determined Contributions (NDCs), Biodiversity Strategies, National Action Plans (NAPs) or National Disaster Risk Reduction and Management Strategies.

Support teachers and active pedagogies

Teachers are the most important resource in education systems. Beyond any other school-based factor, teacher effectiveness is the most central predictor of student learning. There is consistent evidence showing the link between effective teaching and improved learning outcomes.

Teachers are vital to all efforts to improve and strengthen learning. **Teaching quality is critical in promoting children's learning outcomes**, supporting their socio-emotional development, and empowering them to **cope with societal change, including green and digital transitions.**

Education for Sustainable Development (ESD)[9] plays an increasingly important role in empowering future generations to take informed decisions and responsible actions for environmental integrity, economic viability and create a just society for present and future generations. When incorporated into teacher professional development, ESD increases teachers' competences to improve their learners' awareness, empathy and knowledge from an early age.

[6] Futures at Risk: Climate-Induced Shocks and Their Toll on Education for Crisis-Affected Children | Education Cannot Wait
[7] Born into the Climate Crisis: Why we must act now to secure children's rights | Save the Children's Resource Centre
[8] GCA_State-and-Trends-in-Adaptation-2022_Education.pdf
[9] Education for sustainable development | UNESCO

In 2021, Education International launched a Teach4ThePlanet Manifesto, advocating for climate change education across all levels of education and subjects, granting it as much importance as reading, writing and arithmetic.

Green education should be incorporated in the curricula of Teacher Training Institutions and in **professional development of teachers of all subjects.** Teachers also need training on **psychosocial support** to enhance student well-being. Teaching and learning resources should be designed with educators, including non-formal educators from other knowledge systems such as indigenous ones.

Pedagogies should be interactive and encourage local identification of problems. They should be practical, playful and creative, and offer positive hope and actions. This approach includes:

- providing students with concrete experiences in their own context
- facilitating their reflection on these experiences
- connecting them to the theoretical concepts being studied
- allowing them to actively solve a real-world problem.[10]

In a study on primary school students in Nigeria, experiential learning, such as fieldwork trips to erosion sites or national parks, improved students' knowledge and skills to solve environmental problems.[11]

Examples of EU-funded partnerships on greening teacher education:

- The €100 million **Regional Teacher Initiative for Africa (**RTIA) is a Team Europe initiative by France, Belgium and Finland, with UNESCO and the African Union. It enhances teaching quality to develop competences for the digital and green transitions. For information on how to participate, contact RFTA@expertisefrance.fr
- In Nepal, the EU is providing €50 million to support the 'Education for All' education reform package that aims to support **access to quality and inclusive education for all and equip future generations with green skills and values.** Activities include support to establishing green schools, enhancing local education plans and budgets to be climate-change responsive, including climate change components in science and social science curricula, teacher training and support to engage children in climate-smart community actions.
- In Mauritania, as a complement to EU cooperation in the fisheries sector, teachers in local schools were trained in biodiversity and students were taken to a nature reserve to enhance action-based learning.

Build green curricula and learning through local concerns and indigenous knowledge

The current state of climate change and greening in curricula is inadequate, both in terms of access and quality. A UNESCO analysis of national curriculum frameworks from 100 countries in 2021 revealed that around **50% did not even mention climate change,** while others only briefly included it.[12]

What is a green curriculum?

A green curriculum integrates climate mitigation and adaptation in teaching and learning from pre-primary, primary, secondary and tertiary school levels as well as in teacher training. It emphasises the interconnections between the environment, economy and society, engaging students across cognitive, socio-emotional and behavioral domains to inspire action for sustainability.[13]

UNESCO's International Bureau of Education (UNESCO-IBE)[14] proposes a curriculum that prioritises environmental sustainability, conservation and eco-literacy as a potent tool to empower learners as agents of change and advocates who can critically and constructively face and address these critical issues for humanity.

Curricula should include concepts of society, environment and economics, and reflect the local context. Local education authorities and schools should have opportunities to influence the curriculum to address local green challenges. This

[10] Kwauk, C., Winthrop, R. (2021) "Unleashing the creativity of teachers and students to combat climate change: an opportunity for global leadership." Brookings.
[11] Ajitoni, S. O., Gbadamosi, T. V. (2015) "Community-based instructional strategies, school location, and primary school pupils' environmental knowledge:" Available at: https://files.eric.ed.gov/fulltext/EJ1177058.pdf
[12] Greening Education Partnership | UNESCO
[13] Greening every curriculum | UNESCO
[14] Greening the curriculum | International Bureau of Education (unesco.org)

may involve collaborations with parents, local communities, indigenous groups and youth activists through, for example, student parliaments, birds clubs and environmental societies. Ecological, intercultural and interdisciplinary learning for students is essential to access and produce knowledge while also critically applying it. The UNESCO-LINKS promotes the use of local and indigenous knowledge for sustainable decision-making and practices.

The Greening Education Partnership, a global community of practice coordinated by UNESCO, has developed a Greening Curriculum Guidance, launched in June 2024.[15] It targets national authorities, policymakers and curriculum developers, and outlines essential learning objectives to tackle sustainability challenges and climate change. The guidance also serves as a useful resource for school principals and teachers to determine age-appropriate topics and learning objectives. It spans all education levels, from ages 5 to over-18, including lifelong learning.

Example of EU-funded partnerships around greening curricula:

- In the Kyrgyz Republic, a €35 million bilateral programme develops quality education and digital, media and green skills. The partnership mainstreams climate change into policy, curricula, teaching methods and learning materials, procurements and budgeting.

Strengthen girls' and women's education for resilience and equality

When looking into the future, we need to consider the disproportionate impact that climate change, loss of biodiversity and environmental degradation has on girls' education. Learning is disrupted by hazards such as droughts, floods, cyclones and other extreme weather events. A growing body of evidence shows a risk of exposure to gender-based violence, child marriage, unwanted pregnancy and school dropout. These hazards increasingly disrupt learning, particularly affecting girls, with 12.5 million girls having their education interrupted annually due to climate change (Malala Fund).

Climate change exacerbates preexisting gender equity gaps and socially constructed power relations, norms and practices. Greening education pedagogies must be gender transformative and socially inclusive. All learners should be encouraged to develop gender equal attitudes, gender empowering practices and an understanding of how our planetary challenges are deeply intertwined with our social equity challenges.

Existing evidence points to a positive association between girls' education and better resilience to climate disasters at country level. For each additional year of education that girls acquire, a country's resilience to climate disasters increases by 2 to 3 percentage points on average (The Education Commission, 2022). Girls' secondary education has been identified as the most important socioeconomic determinant in reducing vulnerability to climate change (UK Foreign, Commonwealth & Development Office, 2022). If the share of women receiving a lower secondary education increased from 30% to 70%, this could result in a 60% lower death toll from extreme weather events by 2050 (The Education Commission, 2022).

Gender analysis should inform climate-smart education approaches. Disaster risk management needs gender-sensitive responses. Women's and girls' voices should be meaningfully represented in the design and the decision making of climate-smart education. Education programmes should develop girls' leadership skills and support girls to become agents of change in climate and environmental justice.

The green transition of societies also runs the risk of increasing existing gender gaps, if the focus is only on new, male-dominated jobs. Women are already underrepresented in fast-growing green energy sectors that require high-level technical skills (UNICEF Innocenti – Global Office of Research and Foresight, 2024). Green skills should be developed in all sectors, for everyone, to address sustainability in any job.

The green jobs of the future will require STEM skills and knowledge. Mathematical capability and knowledge are critical to developing STEM skills and working in STEM fields. However, girls' confidence in these subjects tends to be lower than boys', even when they perform well. Globally, women are considerably less likely to choose STEM fields. In 2018–23, the share of STEM graduates who were female was 35%.

[15] Greening every curriculum | UNESCO

Engage young people

The world's population today is the youngest in history, with children representing one quarter of the planet's 8 billion people. However, 70% of young people surveyed say that they cannot explain climate change (UNESCO). Young people are demanding an education that prepares them to respond to the planetary crisis.

There is scope for involvement of climate youth activists and organisations in supporting teachers through local community actions around schools. One of the aims of the Youth Action Plan in the EU external action for 2022-2027 is to strengthen young people's capacity to contribute to sustainable development and the green transition.

In 2021, The EU launched the first Youth Sounding Board (YSB) for EU International Partnerships to advise on youth participation in external action. The aim is to create a real, fundamental, long-lasting change in how the EU engages with young people in its international partnerships. The YSB has sub-groups working on climate and education.

Examples of youth-related actions implemented under the Youth Action Plan, regional and bilateral partnerships:

- The EU **Youth Empowerment Fund** (YEF) is an innovative flagship of the Youth Action Plan. It supports youth-led initiatives, which contribute to the achievement of the SDGs. It will provide opportunities for mentoring, coaching and capacity strengthening, especially for under-represented communities. YEF is implemented by the Big Six Youth Organizations and young people will lead on all aspects of the initiative, which started in 2024.
- **Mozambique e-Youth and Green Deal:** This programme offers enhanced opportunities for young people to obtain decent employment. It provides access to finance and capacities for start-ups and SMEs, with a particular focus on digital, renewable energy, green and creative industries.
- The **EU-ASEAN Green Team Europe Initiative** of €30 million works on climate action, environmental and biodiversity protection. Team Europe members are Austria, Denmark, France, Italy, Germany and Romania. It has a component on green advocacy and environmental education for young people.

The EU Development Education and Awareness Raising (DEAR) Programme supports projects that engage Europeans in global issues related to social, economic and environmental development. Examples include:

- Climate games, and climate education: Game on! Don't let climate change end the game | Homepage (climategame.eu)
- Development of knowledge and critical understanding among EU citizens on co-responsibility of climate change. NOPLANETB - EU DEAR Programme

Develop green and climate resilient schools

The EU supports partner countries to build resilient education systems, actively engaged in risk prevention, reduction and management. Countries must ensure **learning continuity**, especially for the most marginalised, in the event of climate and environmental disruptions. It is vital to consider greening activities for learners in humanitarian contexts, in particular targeting young people and children not integrated in national education systems. See also the recommendations by DG ECHO for Education in Emergencies in their ECHO Environmental Guidance, and the INTPA Guidance on education in emergencies.

In fragile countries, a joint approach between humanitarian and development coordination mechanisms is critical.[16]

Crisis-sensitive education planning[17] involves analysis of risks facing the system to understand and minimise the impacts and occurrence of risks. Global tools such as the Comprehensive School Safety Framework (CSSF) 2022–2030[18] and INEE Minimum Standards Handbook[19] can support in planning.

[16] Strengthening coordinated education planning and response in crises: synthesis report | ODI: Think change
[17] Crisis-sensitive educational planning | IIEP-UNESCO
[18] Comprehensive School Safety Framework – GADRRRES | Geneva Global Hub for Education in Emergencies (eiehub.org).
[19] INEE Minimum Standards for Education: Preparedness, Response, Recovery | INEE

Examples of EU-funded partnerships related to resilience:

- In Mozambique, the EU is a key partner when cyclones and severe weather events interrupt education. In the aftermath of cyclones Idai and Kenneth, the EU contributed €10 million to a response fund, which included re-building more climate-resilient schools
- Education Cannot Wait work in Mozambique PORTRAITS OF RESILIENCE | Education Cannot Wait

Climate-smart school infrastructure

Integrating sustainability, resilience and climate change mitigation into planning, design, construction and maintenance of both new and existing school infrastructure ensures a safe and healthy learning environment. It is important to involve end-users in the design process.

Climate-smart approaches include location planning for maximising access and minimising climate risks, materials and methods for climate-smart school construction, heating, cooling and generating energy to facilitate learning, energy efficiency and conservation, sustainable food and water sources.

Schools can be developed as 'Living Labs' by integrating sustainability. Climate-smart infrastructure and sourcing locally available materials can be accompanied by strengthening vocational education and training (VET) and study programmes in construction. This integrated, local skills-building can re-interpret traditional methods in an eco-friendly manner and reduce reliance on imported products and labour.

ILO has developed Guidelines for Greening VET institutions, with the following Action Plan: establishment of green committee, efficient use of energy, creating rooftop gardens, waste management, green infrastructure development, formation of green clubs, use of ecofriendly products and transportation, rainwater storage, celebration of environment related days, and capacity development of staff on green management.

Green energy and circular economy in schools

Green energy partnerships should also extend to the education sector and equip schools with renewable energy sources. The green energy can be used for kitchens, school meals, heating and lighting etc.

Circular economy approaches are essential. Schools can organise the maintenance, repair and recycling of digital equipment for remote learning. They can organise waste collection, recycling and awareness raising, especially regarding plastic waste, making links with water and soil pollution, and damage to biodiversity and health

Sustainable water, sanitation and hygiene facilities (WASH) in schools can be developed as part of water sector interventions to increase school access and retention, particularly of girls, at secondary levels.

Green gardens, sustainable school meals and nutrition partnerships can be integrated in partnerships around food security or agriculture. Green school transport and green procurements can also be integrated in transport sector-specific interventions. Biodiversity collaboration can entail biodiversity preservation through green gardens.

Examples of EU-funded programmes:

- An EU-funded green energy initiative DESIREE, under development in 2024, supports energy efficiency, energy management and electrification of social infrastructure, including schools. It will be piloted in Uganda, Kenya, India, Ecuador and Colombia. The initiative involves the European Investment Bank EIB.
- The Slow Food Gardens in Africa Project work as open-air classrooms. They are created by a community of village or school associations, local administrators or non-profit organisations and use sustainable cultivating methods. The Slow Food Gardens use local materials and are adapted to their surroundings. They recover the wisdom of older generations and benefit from the skills of experts.
- Countries have developed Eco-School programmes (e.g., in the Seychelles). Eco-schools have been internationally awarded and work closely with communities Our Programme — Eco Schools.

2. Mainstream education in every green investment and EU Flagship

Ensure solid foundational learning

All sectors can contribute to the green transition and education can be an important enabler of all green investments. Education is vital for unlocking the transformations in every sector of society and green education should be an integrated component when designing Global Gateway partnerships in central investment areas like green energy, sustainable agriculture and forestry, food security, green value chains developments, critical raw materials, transport, sustainable connectivity and water.

The previous section highlighted the need to build **learning ecosystems around basic education and skills** to support a just and inclusive green transition: greening curricula and learning, teacher training, greening schools and engaging youth. No successful investment in specialised skills development is possible without quality **basic and secondary education to improve the general level of education in the long run.** Increased access to **quality basic education is essential for successful investments** and job markets, especially in Sub-Saharan Africa, as shown by a recent analytical report by the International Monetary Fund (IMF).[20]

In addition to a ground of solid basic education, green investments should be accompanied by learning components in vocational education and training as well as higher education and research.

Develop VET and green skills

The EU supports VET systems that are responsive to concrete and decent employment opportunities created by investments, trade, (regional) value chain development and other market dynamics, particularly those created by the Global Gateway, that includes the green economy as sector of intervention. It seeks to support a paradigm shift where the VET offer is reverse engineered from concrete job opportunities. The collaboration with the private sector, be it in (social) sector dialogues or in the development and implementation of concrete training measures, is therefore a necessary requirement and a key feature.

Where a specific investment (e.g., pharma and hydrogen) is envisaged under EU initiatives, the EU would help identify the required skills profiles in the context of this investment and translate them into recommendations for the VET system to be able to deliver. Following green economy investments, VET has the potential to support the change by making the skills the investments require available to entrepreneurs, while students will have a better chance of finding a job in the green economy. This also includes re-skilling existing workforce and equipping everyone with the knowledge, skills and behaviours required to transform their workplaces and communities.

Useful resources:

- The Skills for the Green Transformation Toolkit showcases examples of approaches, tools, processes and initiatives for developing the skills needed for the green transformation.
- The European Training Foundation (ETF) is working on green skills policy advice, peer learning and regional skills ecosystems, in the EU Neighborhood region.
- The Greening TVET and skills development: A practical guidance tool by ILO offers guidance on designing competency standards and curricula for greener jobs, adapting training delivery and assessments, greener campus, capacitating teachers, trainers and enterprises.

[20] Regional Economic Outlook for Sub-Saharan Africa, April 2024 | A Tepid and Pricey Recovery (imf.org)

Examples of EU-funded skills development partnerships related to green investments:

- The €75 million Team Europe Initiative **Opportunity-driven Skills and VET** in Africa (TEI OP-VET) brings together France, Germany, Belgium and Finland around skills development for Global Gateway investments, for various sectors in the green economy.
- In Sierra Leone, the €50 million **'Transformational Energy Access for Sierra Leone'** programme aligns VET with skills for the renewable energy market and aims to bring more women and girls into VET.
- **Transforming Technical Education EU-Cambodia Partnership 2024-2027.** VET action supporting two Team Europe Initiatives "Sustainable landscapes, forests and agriculture" and "Green energy and industrial value chains". It supports access, green curricula, teacher training and gender for a just transition.
- **Kenya** Promoting Demand-Driven Skills in E-waste Management and Recycling – VET Toolbox
- **Uganda** VET Training – rural Electrification through Solar Powered Mini-grids – VET Toolbox

Integrate higher education, innovation and research

Higher education supports the modernisation of economies to make them more innovative and stimulate new jobs. Quality higher education is essential for local competence development as it generates locally relevant research, knowledge, skills and values to find solutions to complex sustainability concerns.

In connection to **green investments, higher education helps build the wider national learning ecosystem and the necessary multi-disciplinary learning.** It is important to involve higher education institutions, teacher trainers and researchers to roll out sustainability to all sectors, such as urban and rural development, agriculture, food security, fisheries, water management, energy and transport. **Study modules should be developed as sustainable and adaptive learning components for future use.**

Higher education can engage **in local innovation, community outreach and lifelong learning through real world projects and applied research,** connected to communities and employers. This could include helping a company start a solar division, conducting energy audits for businesses and NGOs, or providing workshops for the community on mitigating/adapting to climate change. Building **regional educational networks** is also beneficial, as countries share landscape, ecosystems, rivers, coasts and marine ecosystems.

Examples of EU-funded partnerships on higher education and research for the green transition:

- One of the core priority areas of the **Erasmus+ programme f**or 2019-2024 is climate change and greening. Partnerships funded by Erasmus+ develop innovative learning methods in non-formal and formal education and build higher education and VET around climate change, green energy, sustainable use of natural resources, green agriculture and ecotourism etc.
- In Central Asia, Erasmus+ supports the 'Strengthening **Higher Education in the Water Sector for Climate Resilience'** programme, which brings together 16 higher education institutions (five from the EU and 11 from Central Asia).
- One dimension of the €60 million **EU-ASEAN Sustainable Connectivity** initiative – called "SCOPE" – improves people-to-people connections, leveraging ERASMUS+ and inter-University cooperation to advance youth engagement with the Green Agenda, and alignment of skills and green job opportunities.
- **The Team Europe Initiative on Smart, Green and Digital Recovery in Ghana** is mainstreaming higher education and skills development in agribusiness, cocoa value chains, energy, water management, urban development and digitalisation. It strengthens both VET and higher education.
- The EU supports **Regional Centres of Excellence (RCE) in green transition in Sub-Saharan Africa** (€80 million for 2023 to 2030), contributing to policy, innovation ecosystems and business development.

3. Explore opportunities to access climate financing

The United Nations Framework Convention on Climate Change **(UNFCCC)** works through **mitigation, adaptation** and, increasingly, **loss and damage** to address climate change. **Nationally determined contributions (NDCs)**[21] are at the heart of the Paris Agreement and the achievement of its long-term goals. In their NDC, each country outlines their efforts to reduce national emissions and adapt to the impacts of climate change. It is essential **to recognise the role of education in the NDC, and if education is mentioned, to look for access to climate funds.**

The impact of climate change and environmental degradation is increasing the cost of delivering education, and the cost of education system adaptation. It is critical that education financing is maintained, and **climate-related investments should be used to cover the learning loss caused by climate change. Higher levels of learning correlate with stronger adaptive capacity.**[22]

Currently, global climate funds mainly consider education within the portfolio of infrastructure and learning environments. The direct impact of increased learning on behaviour change, production and consumption patterns should increasingly be made clear. Some evidence exists but is limited. A World Bank study shows that **a year of education increases pro-climate beliefs, behaviours, policy preferences and green voting**.[23]

A 2023 report[24] by the Global Partnership for Education and Save the Children presents the cost implications of building climate-smart education systems. Country-specific costing data responding to various hazards will help governments and donors prioritise impactful climate-smart interventions in their education systems.

Education is highly under-represented in the climate finance portfolios, with one estimate from 2018 standing at 0.03% of climate finance spent on education.[25] Education-oriented climate aid accounts for just ~1.3% of total climate-oriented bilateral ODA aid. An analysis of projects funded by key climate funds over a 17-year period found that just **2.4% of climate finance** from these sources (Green Climate Fund, Adaptation Fund, Least Developed Countries Fund and Special Climate Change Fund) could be deemed **'child-responsive'**, defined as addressing the risks children experience from the climate crisis and strengthening the resilience of child-critical social services, including education.

The EU supports many of the climate funds, including the Green Climate Fund, the Adaptation Fund, the Least Developed Countries Fund and the Loss and Damage Fund, as part of its international commitment to reducing climate change.

Example of education in the portfolio of the Adaptation Fund:

Implementing Measures for Climate Change Adaptation and Disaster Risk Reduction Mitigation of School Facilities in Haiti (Adaptation Fund, $10m).[26]

Implemented by UNESCO and various partners including Ministry of Education and UNOPS, the project, approved in February 2022, enhances the adaptive capacity and resilience of the Haitian education sector to disaster risks emanating from climate-induced hazards. It uses a multi-hazard school safety assessment methodology developed by the Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector (GADRRRES), school retrofitting – which represents the main budget line - and the roll-out of school risk management protocols. It is expected to benefit approximately 150,000 school students.

[21] Nationally Determined Contributions (NDCs) | UNFCCC
[22] GCA_State-and-Trends-in-Adaptation-2022_Education.pdf
[23] Human Capital and Climate Change | NBER
[24] The need for climate-smart education financing A review of the evidence and new costing framework | Documents | Global Partnership for Education
[25] FCDO position paper, Addressing the climate, environment, and biodiversity crises in and through girls' education, available at: https://assets.publishing.service.gov.uk/media/639071bf8fa8f569f9c82436/Addressing_the_climate__environment__and_biodiversity_crises_in_and_through_girls__education.pdf
[26] Implementing Measures for Climate Change Adaptation and Disaster Risk Reduction Mitigation of School Facilities in Haiti - Adaptation Fund (adaptation-fund.org)

4. Data, monitoring and indicators

When EU education investments focus **on improving green education and skills or ensuring education systems are more resilient,** monitoring these outcomes should be integrated into results frameworks. Partnerships need to include relevant **indicators, that are aligned with and draw on national systems for data collection.**

As the connection between environment/climate and education is relatively new, most countries still lack data on the impact of environmental change on education systems, the risk this presents, and on the effects and impact of learning on human behavior, awareness and consumption patterns. Examples of green education indicators are set out in Annex 3, drawing on work globally, with some proposed and potential indicators for inspiration.

There are European and global efforts to identify monitoring measures and indicators for greening education. For example, the GEM Report, MECCE and UNESCO have converged into one proposal for a headline indicator[27], in response to a decision by the SDG 4 High-level Steering Committee in December 2022. Within the European Education Area, there is ongoing work to identify indicators and monitoring processes for the Green Competence Framework, with its conceptual reference model.

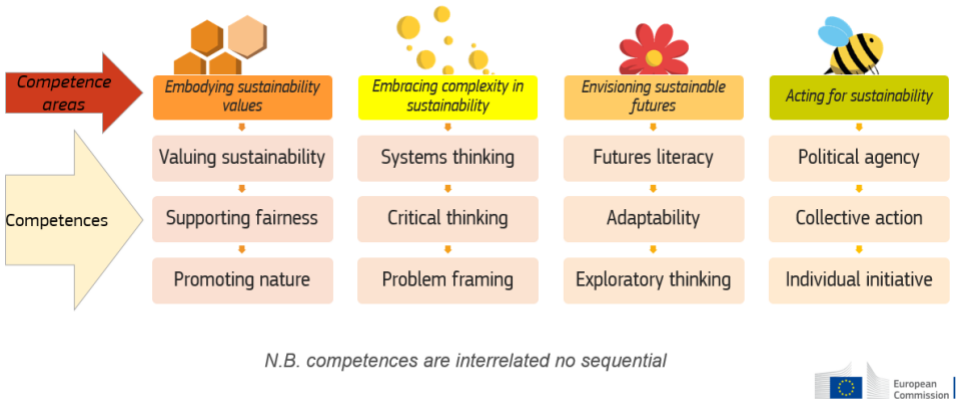
The Global Partnership for Education report Toward Climate-Smart Education Systems (section 2.1) includes practical guidance on finding and developing data related to climate vulnerability, and discusses relationship between EMIS and climate data in low-and middle-income countries.

DATA AND INDICATORS STEP BY STEP
Clarify the current situation: Is reference to climate/environment included in existing policy and what national aims/benchmarks exist? Is greening integrated in core curricula or in teacher education (pre-service or in-service)? What learning materials exist? What evidence, such as qualitative/quantitative research, is available on the impacts of climate change and environmental degradation on children, communities and schools? How is Public Finance Management responding to inequalities and vulnerabilities in terms of exposure to climate-change risk management? Is data disaggregated by gender and levels of exposure and vulnerability?
Clarify what data exists to measure the change: What types of national assessments are carried out? What information exists on school resilience and safety, climate risks for schools, early-warning systems etc.? This data might sit with other ministries, e.g. geographical information system (GIS) database that contains locations of existing schools and natural hazard data.
Identify with the ministry of education what data is needed to inform planning and decision making and which policy / programme results need to be monitored. Learning assessments related to green skills and competences may not yet exist at national level. If greening education is an entirely new dimension, indicators of progress could be the inclusion of these elements in policy, curricula, teaching, learning and materials.
Support collaboration between the Ministry of Education, relevant line ministries and humanitarian and development partners for the gathering, sharing, analysing and disseminating of climate change, environmental and disaster-related data concerning children and schools.
Disaggregate data according to age, sex, disabilities, location, demographic and socioeconomic characteristics to enable targeted interventions to address climate and environment-related vulnerabilities.

[27] Education and climate change: learning to act for people and planet - UNESCO Digital Library

Annex 1: Definitions of green competences and skills

EU Green Competence Framework (2022) provides a consensual definition of what sustainability as a competence entails.[28] It identifies **sustainability competences** to help learners **develop knowledge, skills and attitudes** that promote ways to think, plan and act with empathy, responsibility, and care for our planet and for public health.



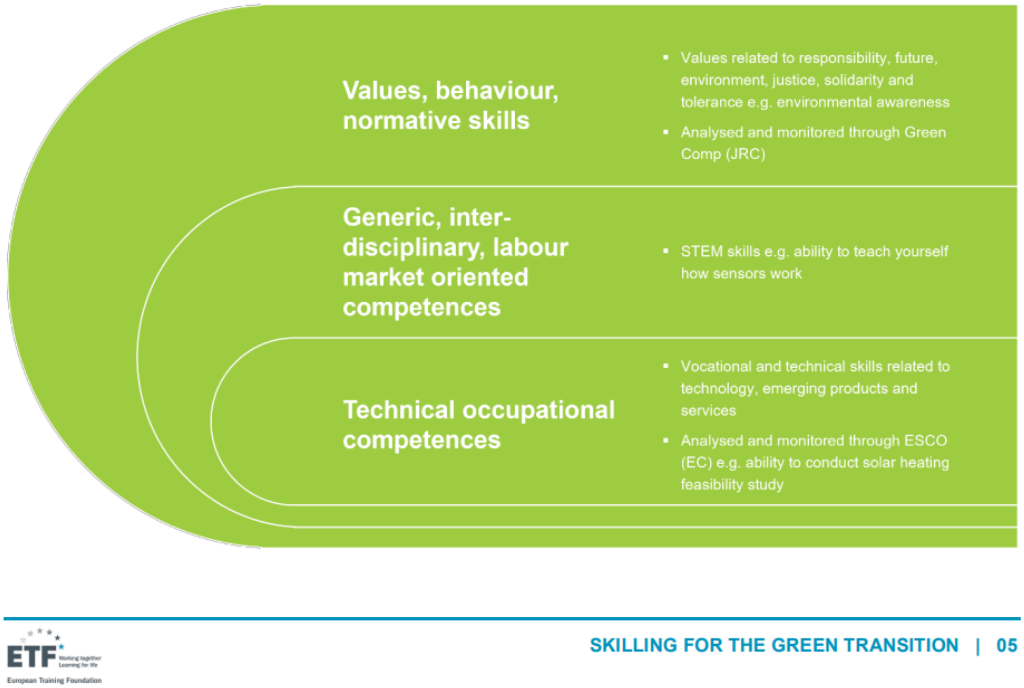
Some practical examples on how to develop green competences:

LEARNING	EXAMPLES
Systems thinking, critical thinking, problem framing, acting for sustainability and entrepreneurial skills	Problem-based learning around local sustainability concerns, such as water shortage, erosion, desertification, where science is combined with social issues, global economy, history, such as learners taking part in community restoration programmes through Eco-schools in Rwanda
Valuing sustainability and biodiversity, local livelihood and employability	Experiential learning through fieldwork trips to erosion sites, national parks or illegal dump sites, such as outings to coastal nature reserve in Mauritania, close to the main fishing port, to enhance awareness of the value of fisheries/ocean.
Adaptability and exploratory thinking	Hands-on learning. For example: learners in biology classes in Bangladesh working on floating gardens in floating schools, built after flooding; learners participating in development local risk reduction plans, e.g. to enhance community planning to protect vulnerable students from negative coping strategies such as child marriage during a crisis.
Collective action and individual initiative	Living Labs. Green learning zones/gardens at schools, also used by local communities for nutrition. Tree-planting, recycling and sustainability campaigns, nature/beach clean-up activities and fund-raising events.
Active citizenship and political agency	Model COP events, Young reporters for environment, a platform to research environmental issues and promote solutions through investigative reporting, photography and video journalism.
Circular economy	Schools working with local youth organisations or NGOs, e.g. on business or recycling materials/plastics and redesigning for arts and crafts or textiles.
Green energy, adaptability, sustainable construction and water management	School children, VET students or learners in after-school clubs working with installation and maintenance of solar panels, locally available materials for school buildings and rainwater harvesting.

[28] GreenComp: the European sustainability competence framework (europa.eu)

ETF green skills[29]

Green skills as defined by the European Training Foundation (2023) focus mainly on vocational learning and refer to technical occupational competences, generic, inter-disciplinary competences and values, behaviour and normative skills.



[29] Skilling for the green transition | ETF (europa.eu)

Annex 2: Examples of Response of Team Europe and multilaterals

TEAM EUROPE

Belgium: Global partnerships on eco-friendly and climate resilient educational infrastructure, training teachers/materials, environmental and climate change awareness activities, green skills for the green economy. VVOB Technical Brief on Climate Education. Example: South Africa - Keep It Cool: climate change education | VVOB.

Finland: UNTIL WE ACT - Finnish Climate Collaboration. Since 2020, climate sustainability a priority of the higher education global partnership programme HEP. Examples include Climate Change Education in Vietnam and Biogas value chain for circular economy in Zambia.

France: Education and sustainable development are key priorities of France's external action. Cooperation on climate-resilient infrastructure and learning environments, training teachers in climate change education through the programme APPRENDRE, girl's education, green forestry (Cameroon, Gabon, Congo and DRC), green skills for women in the Ethiopian electricity sector, green Centres of Excellence in Nigeria, Côte d'Ivoire and Benin.

Germany: The GIZ works particularly on VET and skills for a just transition. The focus is on system reform, green employment strategies, energy, transport and skills development in informal economy, e.g. energy transition in South-Africa. The German G7 presidency in 2022 achieved a commitment of increased ODA for green skills by 2025.

The Netherlands: Greening is a priority theme in the Orange Knowledge Programme for global higher education partnerships, e.g. collaboration on climate-smart agriculture in Bangladesh and South-Africa, coastal zone and green hydrogen port management.

MULTILATERALS

UNESCO is the lead agency on Education for Sustainable Development (ESD). A global Greening Education Partnership (GEP) was launched at the Transforming Education Summit (TES) in 2022. It will address climate and sustainability in education policies and curriculum, teacher training, schools and communities, from early childhood to adult education. UNESCO also assists countries in developing skills strategies to support a green transition. Within the GEP, UNESCO and the International Bureau of Education IBE have developed a global Greening Curriculum Guidance, as well as Quality Standards for Green schools.

UNICEF works on climate change and disaster risk reduction in many of the 190+ countries where it operates. In East Asia and the Pacific, work is underway to build the resilience of education systems. UNICEF chairs the Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector (GADRRRES), which has created the Comprehensive School Safety Framework helping governments protect education stakeholders from climate-related risks.

The Global Partnership for Education (GPE) has developed a climate smart education system framework, to support countries to integrate climate change and environmental considerations into education sector plans, budgets and strategies. E.g. in Rwanda, the GPE is minimising anticipated risks from climate change by building school flood defense mechanisms, and training teachers and students in conservation and sustainability.

Education Cannot Wait (ECW) is the UN's Global Fund for education in emergencies and protracted crises. The Fund has, though its First Emergency Response and Multi-Year Resilience Programmes, supported countries such as Haiti, Mozambique and Pakistan to protect educational outcomes in their response to climate-induced disasters. In its new strategy, ECW sets out an increased ambition on preparedness, continuity and resilience to climate-induced crisis.

The World Bank has several education and climate related projects ongoing. All projects are subject to a climate impact assessment. As an example, in the Democratic Republic of Congo, a comprehensive school safety master plan, including an evacuation plan for flooding and heat, was developed.

UNEP is the leading global environmental authority that sets the global environmental agenda. UNEP is working with universities and partners such as the Scout Movement and the gaming industry to support their communities of millions of young people to learn and act in support of the environment.

Annex 3: Examples of Indicators

Established = Suggested =

INDICATORS MONITORING THE CLIMATE RESILIENCE AND RESPONSE OF EDUCATION SYSTEMS	DATA SOURCE
Integration of climate change in national education policy: environment, sustainability, and climate-related key words in National Curriculum Frameworks / Education Sector Plans / VET / Higher education laws and policies	MECCE
Integration of education in national climate policy: presence of education / training / skills / teachers, and other education-related words in Nationally Determined Contributions, National Action Plans and Climate Change Strategies	Education International
Integration of green learning in education assessments • Green competencies / knowledge in exams and/or school-based assessments	National and/or local assessments
Financing to climate resilient education • Budget allocation to education spending on climate mitigation or adaptation activities • ODA to climate-relevant education projects in mitigation and/or adaptation	State finances, education budget and expenditure reports
Climate risks and hazards to the education system • Number of children living in emergencies, disaggregated by exposure to climate risk as well as by gender, age and disability (established UNICEF indicator) • Type, frequency, duration of climate risks/hazards, disaggregated by geographic location, number of schools present, number of children impacted	UNICEF, meteorological dept. or weather services, early warning systems, climate risk and vulnerability assessments
Climate resilience of school infrastructure • Number of schools designated as "green" or "climate resilient" • Number of schools with early warning systems for locally relevant climate hazards • Number of schools with a clean water source	National/international databases of green schools, eco-schools, relevant ministries
Climate disaster and risk preparedness, continuity of learning • School has a safety and evacuation plan relevant to local climate hazards • Number of schools with a climate-related continuity of learning plan • Number of days school closed due to climate-related event, disaggregated by climate hazard, geographic location of school, number of students impacted (by gender)	EMIS

INDICATORS MONITORING LEARNING AND STUDENTS' GREEN LEARNING OUTCOMES	DATA SOURCE
SDG 4.7 by 2030 ensure all learners acquire knowledge and skills needed to promote sustainable development, among others through ESD and sustainable lifestyles, and appreciation of culture's contribution to sustainable development	UNESCO Governments
Green competencies • Students' self-declared knowledge on climate change and environmental degradation • Students' climate / environmental literacy, green socioemotional learning outcomes	MECCE/PISA Localised assessments
Production of climate-relevant knowledge • Number of peer reviewed publications by national universities on topics relevant to climate change	MECCE/Web of Science
Quality of green education content / green learning opportunity • Content targets a breadth of green competencies: well-being, values, agency, acting for sustainability, climate justice, climate mitigation and adaptation • Content is based on science, is gender-responsive and socially inclusive • Content includes entrepreneurship and exposure to green economy careers	Curriculum analysis National monitoring Programme evaluations
Climate-trained education personnel • Number of teachers provided with teacher professional development opportunities in climate-relevant topics and pedagogies, percentage of teacher that incorporate change in teaching • Extent to which in-service/pre-service training programs integrate climate-relevant topics, learner-centered pedagogies and green competencies	Teacher Unions, EMIS School-level monitoring data, Programme evaluations
Youth green employment outcomes • Number of young people applying for business loans, grants, funding, by green business type • Share of youth in green sector employment, by gender and location	Employment data Programme impact evaluations

Rio Markers and education: if an action is eligible for either significant or principal objective regarding climate change adaptation and/or mitigation, it will count with a 40% or 100% contribution to climate. Please note that "general environmental protection" that includes environmental education/training or environmental research, score, by definition, principal objective.

TYPICAL ACTIVITIES FOR BIODIVERSITY
Capacity building in taxonomy, biodiversity assessment and information management of biodiversity data; education, training and awareness-raising on biodiversity.
Research on ecological, socio-economic and policy issues related to biodiversity, including research on and application of knowledge of indigenous people.
Approaches, methods/tools for assessment, valuation and sustaining of ecosystem services.
TYPICAL ACTIVITIES TO COMBAT DESERTIFICATION
Capacity building in desertification monitoring and assessment; education, training and public awareness programmes related to desertification and land degradation.
Research on desertification and land degradation.
TYPICAL ACTIVITIES FOR CLIMATE CHANGE ADAPTATION AND MITIGATION
Integration of environmental/climate education into school curricula
Special mitigation or adaptation-oriented education programmes
Strengthening of quality of higher education/science/technology to reduce emissions (e.g., renewable energy, energy efficiency), or on carbon sequestration practices (e.g., forestry)
Off grid energy access for schools; sustainable school buildings (i.e., natural cooling)
Improving knowledge and understanding of climate related phenomena and related issues
Building capacities to address local climate issues including disaster risk preparedness and management