GreenVET pathway

Green futures:
Navigating sustainability in vocational education and training

EDITORIAL

Editor in Chief: Tjaša Jerman Kuželički
Contributors: Riikka Barber, Silke Becker, Katrin Echtermeyer, Mārtiņš Riekstiņš Alberigo Ciao D'Arienzo, Marco De Cave, Georgia Karaoli

Document Design: p-consulting.gr

Project Website: green-vet.eu

PROJECT PARTNERS

- **Wisamar non-profit Educational Institute** | Germany
- **Omnia Educational Partnerships** | Finland
- **SYNTHESIS Center for Research and Education** | Cyprus
- **Chamber of Commerce and Industry** | Slovenia
- **Latvian Chamber of Commerce and Industry** | Latvia
- **p-consulting.gr** | Greece
- **Polygonal** | Italy

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Co-funded by the European Union

Project number: 2023-1-DE02-KA220_VET-000157144

TABLE OF CONTENTS

Introduction

Amidst a global call for sustainability, the European Green Deal has proven to be a visionary roadmap to a greener future. This set of ambitious initiatives, which aims to achieve climate neutrality by 2050, not only signals a shift in policy, but also in societal values and practices. At the centre of this change is the field of vocational education and training (VET), which has the task of preparing future professionals for the challenges and opportunities of a sustainable economy.

This guide, "Green futures: Navigating sustainability in vocational education and training" serves as a compass for VET institutions that are on this transformative journey. It summarises insights, strategies and practical guidance in six modules, each offering a unique perspective on integrating sustainability principles into education. At the centre of this document are the detailed presentations of key European papers, frameworks and approaches related to the Green Deal — familiar buzzwords that recur in social discourse— - and their relevance and application in the context of VET. With its comprehensive scope, it is intended to be a reservoir of knowledge, a true one-stop resource for the various stakeholders in the VET landscape. Remarkable in its depth, this document serves several purposes: it offers basic insights for those who do not yet have a plan, provides references for those who are ready to initiate change but do not know where to start, and systematically presents the most relevant approaches. Whether you are an educator seeking insight into curriculum customisation, a manager striving for institutional sustainability or a stakeholder invested in the success of green VET, this guide offers invaluable insight.

At its core, this document is based on the realisation that sustainability, education and workforce development are interlinked. By taking a holistic view, active engagement with the green ethos is encouraged among individuals and institutions alike. This guide serves as a signpost and invites stakeholders to embark on a journey towards sustainable practises in the VET sector. At the centre of the guide is the recognition of the central role of VET in a just transition, a fundamental aspect that is often overlooked. By empowering students to adopt sustainable practises early on, they are not only prepared for the paradigm shift, but also equipped with the necessary tools to succeed in a changing economic and social landscape.

The **first module** highlights the profound **impact of the European Green Deal on the VET sector**. It emphasises the need to adapt curricula to incorporate green skills and sustainability principles. By exploring the role of digital technologies, financial frameworks and partnerships, teachers and learners will gain a deeper understanding of their central role in realising the EU's sustainable economy goals.

The **second module** is aligned with the **Agenda 2030 and Education for Sustainable Development (ESD)** and addresses the global commitment to end poverty through sustainable development goals. It emphasises the importance of vocational education and training in achieving these goals and provides insights into methods that effectively integrate education for sustainability. By aligning with the Sustainable Development Goals (SDGs), VET institutions can play a central role in promoting environmental responsibility and social justice.

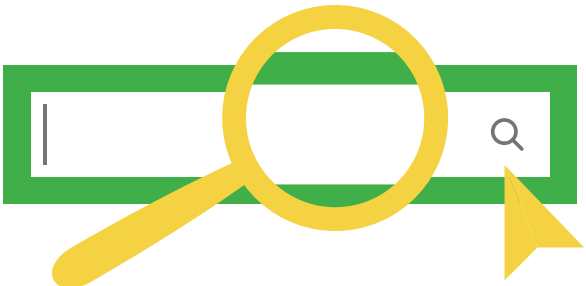
An important point in our journey towards sustainability is the development of green competences, as explored in the **third module**. The **European Framework for Sustainability Competences**, known as GreenComp, provides a roadmap for integrating these competences into VET programmes. Through innovative teaching methods and tools, teachers can engage learners in cultivating the knowledge, skills and attitudes necessary for a greener future.

Implementing sustainability goes beyond adapting curricula; it requires a holistic transformation of educational institutions. This ethos underpins the **Whole institution approach to sustainability (WIA)**, which is described in the **fourth module**. By fostering a culture of sustainability within the institution, teachers lead by example and empower students to become agents of change in their communities.

The **fifth module** will introduce you to our GreenVET Database that provides a tool to **research and share resources and material on the intersection of VET and the Green Transition**. GreenVET Database is a collection of resources contributed by project partners, our community of practice, but also open to everyone else. The module gives instructions on how to browse what other VET-actors found helpful and instructions on contributing to the database.

At the end of each module, a short example of good practise is presented in the form of a case study. This is accompanied by a link to the GreenVET database where the full case study can be accessed.

Each module also contains a list of **keywords** and a link to a resource database which allows further exploration of the topics covered using these **keywords**.



Additionally, a **glossary** is provided at the end of the document explaining the terms used in the text to aid understanding.

As an addition to this framework, the **Annex** provides schools with **questionnaires**, that can be conducted within the **school community**. The results will give you insight on the management's, the teachers' and the students' knowledge of and attitude towards sustainable development and will give you an outline of where potential and challenges lie when engaging the school into a Whole Institution Approach to sustainability.

When VET institutions embark on this journey of transformation, they embody the transformative power of education. By equipping learners with the knowledge, skills and values they need to navigate a rapidly changing world, they are paving the way for a more sustainable and prosperous future for generations to come.

MODULE 1: European Green Deal and VET

1. Summary

This module examines the European Green Deal's influence on the Vocational Education and Training (VET) sector, highlighting the need for curriculum adaptation to incorporate **green skills** and sustainability principles. It explores the role of digital technologies in sustainability education, the financial and partnership frameworks supporting this transition, and the significant impact on key industries. Aimed at educators and learners, the module prepares participants to effectively contribute to the EU's journey towards a sustainable economy by 2050.

2. Are we ready for a greener future? Navigating the European green deal's impact on education and workforce skills

As the European Union embarks on an ambitious journey towards a sustainable economy with the European Green Deal, the quest for **climate neutrality** by 2050 is not just a policy overhaul but a transformative societal shift. This initiative seeks to **decarbonise** the economy, revolutionise energy systems, and tackle environmental challenges head-on. But what does this mean for the VET sector and our workforce? Are we ready to equip our future professionals with the **green skills** and competencies required for this green economy? Let's dive into how the European Green Deal is reshaping education, workforce development, and the global job market, preparing us for a sustainable and prosperous future.

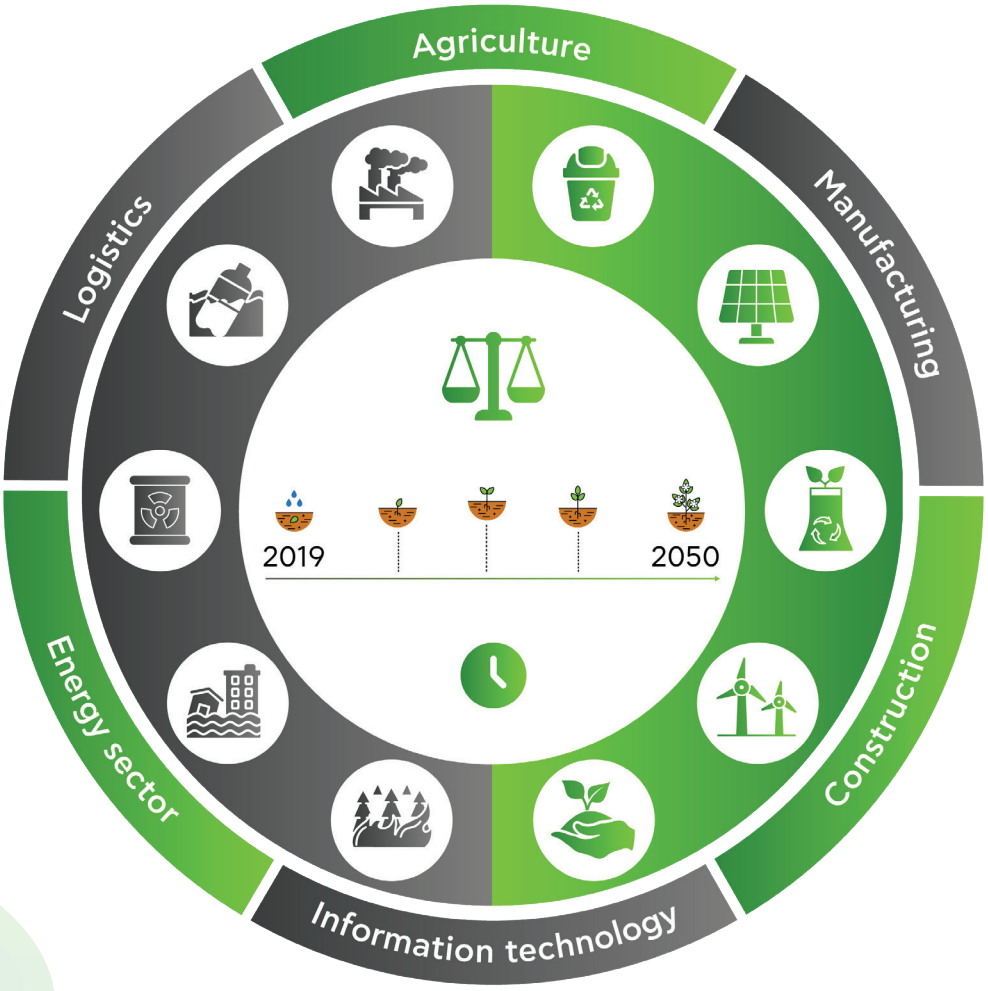
*Highlighted words are defined in the glossary at the end of this document. Take a look for more details.

3. Understanding the European Green Deal: Implications for VET Across Professional Fields

The European Green Deal, launched in December 2019 by the European Commission, represents a comprehensive response to the climate and environmental challenges faced by the European Union and the world at large. This ambitious policy framework seeks to make Europe the first climate-neutral continent by 2050, signalling a radical shift towards a sustainable economy, investment, and growth, without leaving any person or place behind. The Deal encompasses a broad range of initiatives aimed at cutting emissions, investing in cutting-edge research and innovation, and preserving Europe's natural environment. The European Green Deal represents a transformative agenda with far-reaching implications, both within the EU and globally (European Commission, Green transition, n.d.).

Among the first initiatives under the European Green Deal was the **Climate Law**, proposed in March 2020, aiming to legally bind the EU's commitment to achieving net-zero greenhouse gas emissions by 2050. Another early and significant move was the introduction of the European Green Deal Investment Plan, also known as the Sustainable Europe Investment Plan, which seeks to mobilise at least €1 trillion in sustainable investments over the next decade. This plan underscores the EU's commitment not only to tackle the climate crisis but also to finance the transition to a green economy.

The European Green Deal has since evolved to include a wide array of policies and measures across various sectors, including energy, agriculture, biodiversity, and pollution. Key components like the **"Fit for 55"** package, proposed in July 2021, aim to align current legislation with the 2030 climate target of reducing net greenhouse gas emissions by at least 55% compared to 1990 levels.



This ambitious initiative involves **decarbonising** the EU economy, revolutionising its energy systems, and tackling climate and environmental challenges across all policy areas. For the VET sector, this transition necessitates significant adaptation to equip the workforce with the **green skills** and competencies required by an increasingly green economy (Leonard et al., 2021).

3.1. What are the key policy changes and initiatives impacting VET?

Central to the European Green Deal is the development of a highly skilled, qualified workforce capable of supporting the EU's transition to a green economy. This includes integrating **green skills** into VET programmes to ensure sectors have access to employees knowledgeable in sustainability practices (Tagliapietra, Trasi, & Veugelers, 2023).

In the EU, a range of green jobs are gaining prominence, reflecting the diverse needs of an economy transitioning towards sustainability. Globally, the renewable energy sector, in particular, is experiencing significant job growth, with employment expected to surpass 38 million by 2030. The solar industry holds the largest share of these jobs, followed by hydropower, biofuels, and wind power, indicating a broad spectrum of opportunities in the renewable energy field (World Economic Forum, 2023). Looking at historical data in the EU, it's crucial to note that the environmental economy over the last 20 years has grown significantly faster than other sectors and has a much larger gross value added (Eurostat, Environmental economy – statistics on employment and growth, 2024). This underscores the demand and potential for a green transition, as well as the need for necessary changes in education, particularly in VET and STEM programmes, to supply professionals with the required skills to meet future market demands.

3.2. How will the VET curricula be transformed under the European Green Deal?

Under the European Green Deal, the transformation of VET curricula is poised to be both profound and pivotal. This initiative demands a significant shift in educational frameworks, with a strong emphasis on integrating sustainability, green technologies, and eco-conscious practices into the core of vocational training. The European Green Deal emphasises the importance of educating and training the workforce in sustainable development, climate change mitigation and adaptation, renewable energy sources, and the principles of the **circular economy** (Kazak, 2022). The intention is not merely to adjust existing curricula but to revolutionise them, ensuring that they are fully aligned with the objectives of achieving a sustainable and environmentally resilient economy. This means that the existing curricula require a comprehensive overhaul, from updating teaching methodologies and learning materials to incorporating real-world applications of **green skills**. The goal is to equip the next generation of professionals with the knowledge, skills, and mindset required to drive and sustain the ecological transition and the transformation involves several key actions:

Incorporation of Green Skills: Embedding knowledge and practices related to environmental protection, energy efficiency, sustainable resource management, and waste reduction into courses. The objective is to ensure graduates are not only aware of sustainability challenges but are equipped to address them effectively.

Interdisciplinary approach: The changing job market demands an interdisciplinary approach. Sustainable curriculum development requires combining technical skills with environmental ethics, policy understanding, and social responsibility, ensuring a holistic grasp of sustainability issues and solutions.

Engagement with stakeholders: Developing a sustainable curriculum necessitates active engagement with industry stakeholders, environmental organisations, and the community to ensure the curriculum's relevance and alignment with labour market needs.

Innovative teaching methods: Employing methods like project-based learning, experiential learning, and digital platforms, including artificial intelligence, and virtual and augmented reality, enhances sustainability education delivery. These methods foster active learning and critical thinking essential for tackling complex environmental issues and offer experiences and future opportunities for enhancing workspaces and applications.

Professional development for educators: Ensuring educators are well-equipped to teach sustainability topics is crucial. This involves ongoing professional development in sustainability education, green technologies, and pedagogical strategies.

The European Green Deal supports the implementation of these actions within VET programmes through funding opportunities, policy support, and the promotion of best practices. This shift towards sustainable curriculum development represents a fundamental change in how vocational education is approached in the EU. It positions VET programmes as a cornerstone of Europe's strategy for a sustainable, inclusive, and resilient future (European Commission, Green transition, n.d.).

3.3. What are the funding and partnership possibilities for the European Green Deal?

The European Green Deal not only establishes a comprehensive framework for a sustainable, green transition within the European Union but also underlines the need for significant financial investment to facilitate this transformation (European Commission, Just Transition funding sources, n.d.). Acknowledging the considerable costs of transitioning to a green economy, the Deal outlines various financial mechanisms to assist VET institutions in developing and implementing sustainability and **green skills**-focused curricula.

Key financial mechanisms under the European Green Deal:

Just Transition Fund: A pivotal financial tool aimed at supporting regions most impacted by the shift towards a green economy (European Commission, Just Transition Fund, n.d.). This fund is intended to soften the socio-economic effects of the transition by providing resources for upskilling and reskilling workers in high-carbon industries and promoting the development of new green skills within these communities. VET institutions in these areas can access funds to adjust their programmes to the evolving demands of the green economy, preparing the workforce for future job markets.

European Structural and Investment Funds: A portion of these funds is dedicated to facilitating the green transition, with specific allocations for education and training initiatives. This includes investments in new teaching materials, the creation of innovative and sustainable learning environments, and the integration of digital tools and technologies to bolster **green skills** training.

Innovation Fund: Focuses on fostering innovative technologies and practices. While primarily targeting industry innovation, a segment of this fund is also directed towards educational institutions for the development of state-of-the-art training programmes that are in sync with the latest advancements in green technologies and sustainable practices.

3.4. Which VET sectors will be most impacted, and in what way?

The European Green Deal represents a significant paradigm shift, poised to influence all sectors and industries across the board, either through direct mandates or indirectly through cascading effects. This initiative is aimed at propelling Europe towards a greener, more sustainable future, and as such, it necessitates a comprehensive revaluation and restructuring of practices across the entire spectrum of professional fields (Bogoslov, Lungu, Stoica, & Georgescu, 2022).

While the impact of the European Green Deal is universal, certain sectors are anticipated to experience the ramifications more immediately and tangibly. These areas will need to quickly adapt to the transitions, changing their operational, production, and service delivery models to align with the new environmental standards and sustainability goals (Thunqvist, Gustavsson, & Lundqvist, 2023). This, in turn, requires a proactive approach in VET programs to ensure that the workforce emerging from these institutions is well-equipped with the knowledge, skills, and competencies necessary to thrive in a rapidly evolving professional landscape (World Economic Forum, 2021).

Agriculture and food production: While some agricultural practices already focus on sustainability, the Green Deal could further incentivise techniques like precision and regenerative agriculture, and reduce reliance on chemical fertilisers and pesticides. This transition requires expertise in soil health management, sustainable food systems, data science, and agricultural technology for resource efficiency.

Manufacturing: Traditionally resource-intensive with significant pollution output, manufacturing is set for a shift towards sustainability. Emphasising eco-friendly materials, cleaner production technologies, and life cycle assessment practices is crucial. Advancements in material science and engineering for energy efficiency will play a key role, alongside innovation in recycling and the **circular economy** to reduce the sector's environmental footprint.

Heavy industries: Sectors such as steel, cement, and chemicals, known for substantial emissions, are at a transformative juncture towards green innovation. This includes developing carbon capture and storage technologies, adopting cleaner production processes, and using alternative materials with lower **carbon footprints**

Construction and real estate: Transitioning towards sustainability, this sector focuses on energy-efficient construction techniques and retrofitting existing buildings. Proficiency in green building technologies, such as 3D printing and sustainable property management, is essential for aligning industry practices with environmental goals and fostering job creation.

Information technology: The IT sector's impact primarily comes from data centre energy consumption and electronic waste. Adopting green IT practices like energy-efficient data centres and optimising cloud computing is crucial. Balancing innovation with sustainability is vital due to the sector's energy use and e-waste production.

Logistics: This sector, a significant emissions contributor, focuses on adopting electric trucks, optimising delivery routes, and enhancing shipping operations with cleaner fuels and innovative designs. These efforts aim to reduce **carbon footprints** while maintaining efficiency, aligning with sustainability goals.

Chemical production: The transition towards sustainability emphasises the development of bio-based and recyclable materials, underpinned by green chemistry principles to minimise environmental impact and reduce reliance on non-renewable resources. Expertise in bioengineering and sustainable product design is key to innovation.

Fashion industry: Transitioning to a **circular economy** model involves using sustainable materials, recycling garments, and integrating eco-design principles. This approach aims to reduce the industry's environmental footprint by minimising waste and promoting resource reuse and recycling.

Tourism industry: Driven by the need to preserve natural resources and enhance community well-being, green and sustainable tourism practices will become the norm. This requires professionals skilled in sustainable tourism, ensuring environmental conservation and community welfare, enriching tourist experiences, providing deeper, more meaningful interactions with local cultures and environments.

Healthcare: The sector's significant waste production calls for sustainable practices in hospitals and clinics, such as using biodegradable materials, energy-efficient medical equipment, and waste reduction strategies. This creates a demand for professionals skilled in sustainable healthcare operations.

3.5. What is the role of technologies in the Green Transition of VET?

Technologies will play a crucial role in the transition process of VET schools, promising to have a lasting effect and impact. These innovations will revolutionise teaching methods, curriculum development, and skills training, ensuring students are equipped for the future workforce. Furthermore, the integration of technology in VET schools will enhance learning experiences, foster greater accessibility to education, and prepare students for a rapidly changing technological landscape (Muench et al., 2022).

Interactivity and engagement: Digital and simulation technologies enhance sustainability education by offering interactive and immersive experiences. Tools like simulation software allow learners to engage with environmental scenarios, connecting theory with practical application. Virtual and augmented reality technologies offer deep immersion into environmental challenges, encouraging sustainable practices.

Collaboration: Digital platforms facilitate collaboration through group activities, discussions, and projects, promoting peer-to-peer learning and idea exchange. This enhances understanding of sustainability, fosters teamwork, and drives innovation within professional communities.

Accessibility and flexibility: Digital tools offer personalised learning experiences for VET students, catering to diverse knowledge levels, learning styles, and professional needs. This customisation addresses the specific requirements of learners' fields.

Global access to resources and expertise: The flexibility of digital tools goes beyond personal learning paths and paces, it also encompasses access to an extensive array of resources and expertise worldwide. This international perspective is crucial for comprehending the complex nature of sustainability challenges and solutions, preparing VET professionals to make significant contributions in their communities and globally.

Customised learning experience: Digital tools offer customisation and flexibility, tailoring learning to each VET student's needs and career goals. Topics range from sustainable construction to water conservation, with adaptive technologies adjusting the curriculum's complexity and pace to individual preferences.

Cost-effectiveness: Compared to traditional education, digital platforms reduce costs related to materials, infrastructure, and logistics by providing accessible online content. This affordability benefits learners and allows organisations to invest in employee education more economically.

Scalability: Online learning platforms can serve an unlimited number of participants, significantly lowering costs per learner. This is crucial for sustainability education, aiming to equip a wide workforce with essential skills and knowledge for environmental challenges. It fosters continuous learning and makes sustainable practices more attainable for businesses and communities worldwide.

Simulation technologies: These technologies offer realistic replications of real-world scenarios, providing a deep engagement with sustainability principles for VET students. Through simulations, learners can explore complex situations like sustainable urban development or renewable energy optimisation in a risk-free environment. This approach also bridges the gap between theoretical knowledge and practical application

Speaking of this...

Photovoltaic Academy ("Photovoltaik Praktiker Ausbildung"), is an initiative in the Region of Lower Austria that started in 2022. It involves key stakeholders such as the Education Directorate of Lower Austria, HTC Hollabrunn, the Chamber of Commerce, and the Guild for Electrical Engineering, along with local enterprises and VET provider WIFI NÖ. Driven by a high demand for skilled workers in photovoltaics, HTC Hollabrunn leverages its professional teachers and specialised equipment to foster closer industry ties. The project aims to enhance vocational training effectiveness and contribute to Lower Austria's 2030 climate goals by promoting photovoltaics. Target groups include technical school students, apprentices, and skilled workers, with funding sourced from a public-private partnership.

Find out more about this best practise in our GreenVET database.

Further resources

You can find more resources on this topic by searching for the following keywords in our GreenVET database: **GreenVET pathway (green-vet.eu)**

- EU Green Deal
- Green Transition
- Green Jobs
- Green skills / green competencies
- (Vocational) education for sustainable development

MODULE 2: Agenda 2030 and VET

1. Summary

This module looks at the Agenda 2030, which was adopted by the UN in 2015 and contains 17 interlinked Sustainable Development Goals (SDGs) aimed at achieving global peace and prosperity. The module emphasises the crucial role of VET in achieving the SDGs by providing practical skills, enhancing employability, promoting gender equality and supporting sustainable industry practises. Furthermore, it addresses the integration of Education for Sustainable Development (ESD) into VET to ensure that learners acquire the knowledge and skills required for sustainable practises.

2. What is Agenda 2030 and the sustainable development goals?

Agenda 2030 is a global action plan adopted by all United Nations Member States in 2015. It provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At the heart of the Agenda 2030 are the 17 **Sustainable Development Goals (SDGs)**, which are an urgent call for action by all countries in a global partnership.

Agenda 2030 addresses the most pressing challenges facing the world, such as poverty, inequality, climate change, environmental degradation, peace, and justice. It emphasizes that development must balance social, economic, and environmental sustainability. The agenda is universal, meaning it applies to all countries, and it seeks to leave no one behind, ensuring that the goals are achieved by everyone, including the most vulnerable.

The Sustainable Development Goals (SDGs), also known as the Global Goals, were ratified by the United Nations in 2015 as a universal call to action to eradicate poverty, safeguard the planet, and ensure that by 2030 all individuals experience peace and prosperity. The 17 SDGs are interlinked—they acknowledge that action in one sphere will impact outcomes in others, and that development must harmonise social, economic, and environmental sustainability.

The 17 Sustainable Development Goals (SDGs)

1 No Poverty

End poverty in all its forms everywhere.

2 Zero Hunger

End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.

*Highlighted words are defined in the glossary at the end of this document. Take a look for more details.

3

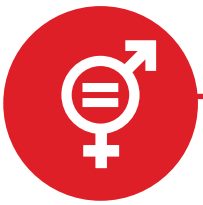
Good Health and Well-being

Ensure healthy lives and promote well-being for all at all ages.

4

Quality Education

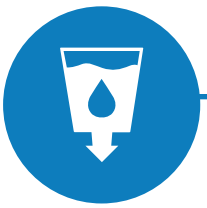
Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.



5

Gender Equality

Achieve gender equality and empower all women and girls.



6

Clean Water and Sanitation

Ensure availability and sustainable management of water and sanitation for all.

7

Affordable and Clean Energy

Ensure access to affordable, reliable, sustainable, and modern energy for all.

8

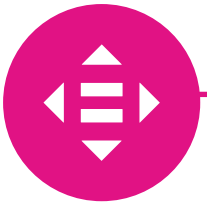
Decent Work and Economic Growth

Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.

9

Industry, Innovation, and Infrastructure

Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.



10

Reduced Inequality

Reduce inequality within and among countries.

11

Sustainable Cities and Communities

Make cities and human settlements inclusive, safe, resilient, and sustainable.

12

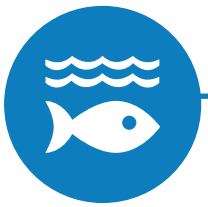
Responsible Consumption and Production

Ensure sustainable consumption and production patterns.

13

Climate Action

Take urgent action to combat climate change and its impacts.



14

Life Below Water

Conserve and sustainably use the oceans, seas, and marine resources for sustainable development.

15

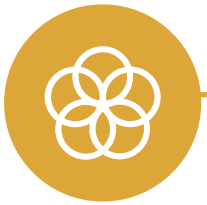
Life on Land

Protect, restore, and promote sustainable use of terrestrial ecosystems, manage forests sustainably, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

16

Peace, Justice, and Strong Institutions

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels.



17

Partnerships for the Goals

Strengthen the means of implementation and revitalise the global partnership for sustainable development. (United Nations, 2024)

2.1. How do SDGs embody the interconnected nature of economic, social, and environmental challenges?

The SDGs embody the interconnected nature of economic, social, and environmental challenges by highlighting the necessity of addressing these aspects collectively to achieve sustainability. These dimensions are interconnected:

1. Economic Challenges:

- **Poverty (SDG 1) and Hunger (SDG 2):** Economic growth is essential to eradicate poverty and hunger, but it must be inclusive and provide equitable opportunities for all (SDG 8).
- **Decent Work (SDG 8):** Quality jobs reduce poverty and inequality, fostering economic stability and growth.
- **Industry, Innovation, and Infrastructure (SDG 9):** Promoting industrialisation and innovation drives economic development, creating jobs and reducing inequality.

2. Social Challenges:

- **Education (SDG 4):** Access to quality education empowers individuals, promoting economic growth and reducing inequality.
- **Gender Equality (SDG 5):** Ensuring equal opportunities for women and girls enhances social cohesion and economic productivity.
- **Health (SDG 3):** Good health is foundational for people to participate fully in society and the economy.

3. Environmental Challenges:

- **Clean Water and Sanitation (SDG 6):** Sustainable management of water resources is crucial for health, agriculture, and industry.
- **Climate Action (SDG 13):** Mitigating climate change impacts is vital to protect ecosystems, human health, and economic stability.
- **Life on Land (SDG 15) and Life Below Water (SDG 14):** Preserving biodiversity and ecosystems ensures resources for future generations and supports economic activities like agriculture and fisheries.

3. What do Agenda 2030 and SDGs have to do with VET?

3.1. The Role of VET in Achieving the SDGs

Vocational Education and Training (VET) is crucial for the 2030 Agenda for Sustainable Development for several reasons (UNESCO/UNEVOC, 2016):

1. Quality Education (SDG 4):

VET provides practical skills and technical knowledge, complementing academic education and promoting lifelong learning. The Education 2030 Framework for Action guides countries to ensure VET is available and effective, helping individuals reach their full potential and contribute to ending poverty.

2. Promoting Decent Work and Economic Growth (SDG 8):

VET enhances employability and job creation by providing practical skills and training. It supports industries by supplying skilled workers, driving economic growth.

3. Reducing Inequalities (SDG 10):

VET offers opportunities for marginalized and disadvantaged groups, promoting social inclusion and reducing economic disparities. It provides pathways for lifelong learning, allowing individuals to adapt to changing job markets.

4. Supporting Gender Equality (SDG 5):

Inclusive VET programs encourage participation from women and other underrepresented groups, promoting gender equality and enabling more women to access quality jobs and economic opportunities.

5. Contributing to Sustainable Industry, Innovation, and Infrastructure (SDG 9):

VET fosters innovation and entrepreneurship by training individuals in new technologies and sustainable practices. It supports the development of resilient infrastructure through skilled labor.

6. Advancing Environmental Sustainability (SDGs 6, 7, 13, 14, and 15):

VET can incorporate training in sustainable practices, renewable energy, and environmental conservation. Educating individuals on sustainable practices helps industries reduce their environmental impact.

3.2. The Role of the SDGs in Education and VET

On the other hand, the SDGs also serve as a powerful framework for guiding educational policies, curricula, and practices towards a more inclusive, equitable, and sustainable future for all. The Sustainable Development Goals (SDGs) are crucial in the global educational context for several reasons (UNESCO/UNEVOC, 2016):

1. Universal Agenda:

The SDGs provide a universal framework addressing global challenges such as poverty, inequality, climate change, and environmental degradation. Incorporating these goals into education ensures that learners worldwide are equipped with the knowledge and skills needed to contribute to achieving these objectives.

2. Interdisciplinary Learning:

The SDGs require collaboration across various fields and sectors to find holistic solutions. Integrating them into education promotes interdisciplinary learning, helping students understand complex issues from multiple perspectives and fostering critical thinking and problem-solving skills.

3. Relevance to Learners' Lives:

The SDGs address issues directly impacting communities and future prospects. By learning about the SDGs, students gain a deeper understanding of global challenges and their local manifestations, empowering them to become active participants in addressing these issues.

4. Promotion of Values and Ethics:

The SDGs promote values such as sustainability, equity, social justice, and responsible citizenship. Incorporating these values into education fosters ethical decision-making, empathy, and a sense of responsibility towards people and the planet, shaping learners into responsible global citizens.

5. Preparation for Future Challenges:

Education aligned with the SDGs prepares students for the complex and uncertain challenges of the future. It equips learners with knowledge, skills, and attitudes related to sustainability, resilience, and innovation, helping them navigate a rapidly changing world and contribute positively to sustainable development efforts.

6. Empowerment and Agency

Learning about the SDGs empowers students to recognize their potential to effect change. Education emphasizing active citizenship, social entrepreneurship, and community engagement enables students to take meaningful action towards achieving the SDGs, fostering a sense of agency and purpose.

7. Global Citizenship Education:

The SDGs nurture a sense of global awareness and responsibility, encouraging students to think beyond national boundaries and work towards a more just, equitable, and sustainable world.

The interconnected nature of the SDGs highlights the need for a holistic approach to development, where economic, social, and environmental aspects are addressed together. VET is a key instrument in this, providing the skills and knowledge necessary to achieve sustainable development. By aligning VET programs with the SDGs, we can create a skilled workforce capable of driving and sustaining economic growth, social equity, and environmental protection.

4. What is education for sustainable development (ESD)?

Education for Sustainable Development (ESD) is an educational approach that empowers learners of all ages to acquire the knowledge, skills, attitudes, and values necessary to shape a sustainable future. The aim is to equip people with the competencies required to address complex sustainability challenges, promoting a holistic understanding of the interdependence between human and natural systems. (UNESCO, 2023)

ESD primarily focuses on **Sustainable Development Goal 4** (SDG 4), which is to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all." Specifically, it targets **SDG 4.7,** which aims to ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and culture's contribution to sustainable development. (UNESCO, 2023)

4.1. What is the connection between ESD and VET?

The integration of ESD into VET is crucial because VET equips individuals with the practical skills and knowledge needed for various trades and professions, directly influencing economic and social development. Embedding sustainability in VET ensures that future professionals can contribute to sustainable practices in their respective fields. Here's how ESD connects with VET:

1. Curriculum Integration:

- **Incorporating Sustainability Topics:** VET programs can include modules on sustainable practices, renewable energy, waste management, and resource efficiency.
- **Project-Based Learning:** Encouraging students to work on projects that address real-world sustainability challenges in their trades.

2. Skill Development:

- **Green Skills:** Teaching skills needed for jobs in the green economy, such as renewable energy technicians, sustainable agriculture practices, and eco-friendly construction methods.
- **Soft Skills:** Promoting critical thinking, problem-solving, and collaborative skills necessary for addressing sustainability challenges.

3. Industry Partnerships:

- **Collaboration with Sustainable Businesses:** Partnering with businesses that prioritize sustainability to provide practical training and internships.
- **Professional Development:** Offering continuous professional development for educators to stay updated on sustainable practices and technologies.

Examples of ESD in VET

1. Renewable Energy Training Programs:

- **Solar and Wind Energy:** VET programs teaching installation, maintenance, and management of solar panels and wind turbines.
- **Energy Auditing:** Training individuals to conduct energy audits and recommend efficiency improvements for businesses and homes.

2. Sustainable Agriculture:

- **Organic Farming Techniques:** Teaching sustainable farming practices, including organic farming, permaculture, and sustainable pest management.
- **Soil Conservation:** Educating on techniques for soil health and conservation, reducing erosion, and enhancing biodiversity.

3. Eco-Friendly Construction:

- **Green Building Practices:** Training in the use of sustainable materials, energy-efficient building designs, and LEED (Leadership in Energy and Environmental Design) certification processes.
- **Retrofitting Buildings:** Skills for retrofitting existing buildings to make them more energy-efficient and sustainable.

4. Waste Management and Recycling:

- **Recycling Technologies:** Training on modern recycling techniques and waste management systems.
- **Circular Economy Principles:** Educating about designing products for longer use, reuse, and recycling to minimize waste.

ESD is essential for achieving a sustainable future, and its integration into VET is a powerful strategy to equip individuals with the necessary skills to drive sustainable practices across various industries. By focusing on SDG 4, particularly SDG 4.7, ESD in VET can help develop a workforce capable of addressing and solving sustainability challenges, ensuring that economic growth is inclusive, equitable, and environmentally responsible.

Speaking of this...

The VET4SDG program, implemented in 2020–2021 and 2021–2022, was an expert-level program for Finnish TVET teachers and managers, supporting the integration of Sustainable Development Goals (SDGs) into the everyday work of TVET institutions. The program focused on sharing good practices for achieving SDGs and giving Finnish TVET teachers and managers concrete tools for analysing and measuring the extent to which SDGs have been met in their sector or institution.

Find out more about this best practise in our GreenVET database.

Further resources

You can find more resources on this topic by searching for the following keywords in our GreenVET database: **GreenVET pathway (green-vet.eu)**

- Agenda 2030
- (Vocational) education for sustainable development
- Agenda 2030
- SDG 4
- Participation

MODULE 3: Green Competencies and VET

1. Summary

This module looks at the GreenComp: the European framework for sustainability competence – a document that provides a common basis and consensual definition of sustainability competence. It then explores how green competences can be integrated into VET programmes to achieve sustainability goals. It answers the question: What innovative teaching methods and tools can be used to make the learning experience of developing green competences more engaging and effective? Specific examples of teaching ideas are given for all 12 green competences for 3 exemplary VET programmes. This is followed by examples of GreenComp knowledge, skills, and attitudes for each competence for the same 3 exemplary VET programmes.

*Highlighted words are defined in the glossary at the end of this document. Take a look for more details.

2. How can we work for a greener future by building green competences?

> Sustainability education is viewed in the same light as transformative learning as its aim is to change the person and the social institution through a holistic approach. (Bianchi, G. et all, 2022, p.16)

The growing awareness of the need to modify our consumption habits, production processes, and overall lifestyles is pushing us to reevaluate how we envision a sustainable future. In this context, we are challenged to find pathways to transform our current practices into ones that foster a greener and healthier world. If our existing methods and mindsets are inadequate, we must explore new ways of thinking and acting that can lead us toward environmental stewardship and sustainable living. How can we effectively leverage our current understanding and capabilities to initiate meaningful change? This challenge calls for new insights, new perspectives, and new competences. It is necessary to reshape our way of thinking and acting - both as individuals and as a society. It is up to all of us to learn and cultivate these skills, recognising that the older generations will have to go through a transition. The advantage lies with the younger generation, who can acquire sustainable ways of thinking and acting from the outset. At the same time, the field of education must also adapt, aiming to shape individuals who will be able to think critically, adapt to changes, understand the interconnectedness of humanity around the world, and recognize the urgency of changing development paradigms and business models towards **sustainability**, within the constraints of our planet. (Štarkl, 2023, p.4)

The European Commission has introduced a document known as the European Framework for Sustainability Competences. This framework creates a common language for learners and provides guidance for educators, summarising the core principles of **sustainability competence.** This common understanding serves as a catalyst for environmental sustainability education and enables institutions to adapt their pedagogical approaches. The European framework for sustainability competence, called **GreenComp**, is the result of extensive consensus building and research involving experts, stakeholders, and representatives from different sectors (Bianchi, G. et all, 2022, p.9).

This approach is highly adaptable and fosters local, national, and international collaboration to create a common ground for dialogue, exchange of practices and peer learning among educators. The **GreenComp** document is intended for all learners, regardless of age, educational level or learning environment. In this module, the application of green competences in VET will be explored.

3. How can we build green competences in VET for a greener future?

Competence, as defined in the Council Recommendation of 22 May 2018 on key competences for lifelong learning, is a ''dynamic combination of the knowledge, skills and attitudes a learner needs to develop throughout life, starting from early age onwards.'' (p.12) In this way, sustainability competence is a dynamic combination of knowledge, skills, and attitudes that a learner needs to develop in order to contribute to the much-needed transition to a sustainable future.

The **GreenComp** framework organises sustainability competence into 12 competences for better understanding and handling - these are the components of sustainability competence. These 12 competences are grouped into 4 competence areas, as shown in Figure 2. As shown in the diagram, all competences are part of a whole (circle), which is divided into 4 equally important areas without hierarchy. Although mastery of all 12 competences is desirable, it is not necessary for the individual to perform equally well in each competence. What matters is the ability to integrate knowledge, skills, and attitudes within each competence into the wider context. Each of the 12 competences is considered equally important, which emphasises the holistic approach of sustainability education.

Teachers can incorporate the teaching of sustainability competences into various activities that they carry out with learners, both in the compulsory and elective parts of the educational programme. When planning **environmental sustainability learning** activities, educators can address societal issues or challenges and situations and use the framework of competences as proposed in the GreenComp document as a guide for reflecting on sustainable and unsustainable practices and actions in the broadest sense. All 4 competence areas and the individual competences are presented below. Concrete examples are used. Firstly, concrete ideas are presented on how VET teachers can support learners in developing competences. They can also use supporting questions that are provided. In addition, for each

competence, an example is given of what knowledge, skills and attitudes that together make up the competence could be. In this module, 3 examples of VET programmes - carpentry, cosmetology and car body repair - are used to show what green competences look like in practise. VET professionals should be able to easily adapt and transfer these examples to their own teaching area.

3.1. Embodying Sustainability Values

> 'Embodying sustainability values' encourages us to reflect on and challenge our own personal values and worldviews in terms of unsustainability, and sustainability values and world-views. This area advocates equity and justice for current and future generations, while supporting the view that humans are a part of nature. (Bianchi, G. et all, 2022, p. 17)

Questions to start embodying sustainability values:

- What values have led to the current situation/problem/challenge?
- What values do I want to see and practice in the future?
- What is important to me about the environment and society?
- What needs do I have? What needs does society have?
- Are my actions necessary? Are they just? Are they sustainable? (Belasic et al., 2023, p.38)

Teaching Ideas for GreenComp in VET: Embodying Sustainability Values			
	Carpentry	**Cosmetics**	**Car body repair and refinishing**
Valuing Sustainability	Teach about sustainable wood sources, such as FSC-certified lumber, and why it's important to use them.	Teach about sustainable sourcing of cosmetic ingredients, such as organic farming and fair-trade practices.	Teach about environmentally friendly automotive paints and coatings, such as water-based or low-VOC options.
	Discuss the impact of deforestation and the benefits of using reclaimed or salvaged wood.	Discuss the importance of using recyclable or biodegradable packaging for cosmetic products.	Discuss the importance of proper waste disposal and recycling of automotive materials like metal, plastic, and glass.
Supporting Fairness	Explore fair trade certifications for wood products and the impact on local communities.	Explore the impact of the beauty industry on communities and how fair-trade practices can benefit local producers.	Explore the impact of the automotive industry on communities and the importance of fair labour practices.
	Discuss the importance of fair wages and working conditions in the woodworking industry.	Discuss ethical issues such as animal testing and the importance of choosing cruelty-free products.	Discuss ethical considerations in Car body repair, such as the use of salvaged parts or fair pricing for services.
Promoting Nature	Encourage projects that involve creating habitats such as birdhouses, bat boxes, or bee hotels.	Encourage the use of natural and plant-based ingredients in cosmetic formulations.	Encourage the use of eco-friendly cleaning products and practices in the Car body shop.
	Teach about the benefits of using non-toxic finishes and paints for both health and environmental reasons.	Teach students how to create their own skincare products using ingredients from nature, such as botanical oils and extracts.	Discuss the benefits of repairing and restoring vehicles to extend their lifespan, reducing the need for new manufacturing.

GreenComp knowledge, skills, and attitudes in VET - Embodying Sustainability Values			
	Carpentry	Cosmetics	Car body repair and refinishing
Valuing Sustainability			
Knowledge	Understanding the impact of wood sourcing on forests and ecosystems.	Awareness of the environmental impact of cosmetic ingredients.	Knowledge of VOC emissions and their effects on air quality.
Skill	Implementing wood recycling and upcycling techniques.	Selecting cruelty-free and ethically sourced materials.	Using eco-friendly paints and materials.
Attitude	Valuing the preservation of biodiversity in woodwork projects.	Prioritising eco-friendly practices in formulations.	Committed to reducing carbon footprint through repair processes.
Supporting Fairness			
Knowledge	Understanding the impact of fair-trade wood certifications on local communities.	Learning about the importance of fair trade and ethical sourcing in the cosmetics supply chain.	Recognizing the importance of preserving ecosystems and habitats affected by automotive repair.
Skill	Choosing wood suppliers with Fair Trade certification.	Using ethically sourced and Fair Trade Certified™ ingredient.	Collaborating with suppliers to source environmentally conscious auto parts and materials.
Attitude	Advocating for equal opportunities in the field.	Promoting inclusivity and diversity in production.	Supporting fair and just practices by considering the impact of repair work on local communities.
Promoting Nature			
Knowledge	Knowing that the degradation and depletion of natural resources such as forests for timber can lead to disasters and conflicts (e.g. loss of biodiversity, droughts, mass migration and war).	Knowing the benefits of organic and plant-based ingredients in products.	Knowing that human activities such as improper disposal methods for car waste can quickly and irreversibly damage ecosystems
Skill	Imagining wood harvesting in a way that promotes human coexistence and respect for other forms of life.	Choosing natural and biodegradable ingredients in cosmetic products.	Practising proper waste management and recycling protocols in the repair process.
Attitude	Practice empathy with the impact of carpentry on forest habitats and wildlife.	Is critical towards the exploitation of natural resources for cosmetic purposes.	Cares about a harmonious relationship between car repair and nature.

3.2. Embracing Complexity in Sustainability

> **'Embracing complexity in sustainability'** is about:
> • empowering learners with systemic and critical thinking, and encouraging them to reflect on how to better assess information and challenge unsustainability,
> • scanning systems by identifying interconnections and feedback; and
> • framing challenges as sustainability problems which helps us learn about the scale of a situation while identifying everyone involved. (Bianchi, G. et all, 2022, p. 19)

Questions for reflection on complexity in sustainability:

- What factors influence the current situation/problem?
- What factors have contributed to the current situation?
- How would you describe the situation/problem from various perspectives?
- Who are the main parties involved in the situation/problem? (Belasic et al., 2023, p. 38)

Teaching Ideas for GreenComp in VET: Embracing Complexity in Sustainability

	Carpentry	Cosmetics	Car body repair and refinishing
Systems Thinking	Explore the entire lifecycle of wood products, from sourcing to disposal, and discuss ways to minimise waste.	Discuss the life cycle of cosmetic products, from ingredient sourcing to disposal, and ways to minimise environmental impact at each stage.	Analyse the environmental impact of different automotive repair processes, such as painting, welding, and sanding.
	Discuss how different woodworking techniques impact the durability and sustainability of the final product.	Explore how different cosmetic formulations affect water usage, waste generation, and energy consumption.	Discuss ways to minimise waste and energy consumption in the Car body repair shop
Critical Thinking	Analyse different wood species and their sustainability ratings, considering factors like growth rate and habitat impact.	Analyse the environmental and health impacts of common cosmetic ingredients, such as microplastics and chemical preservatives.	Evaluate the environmental and health impacts of common car body repair materials, such as solvents and fillers.
	Evaluate the environmental impact of different joinery methods and finishing techniques.	Evaluate the sustainability certifications and eco-labels available for cosmetic products.	Explore alternatives to traditional repair methods, such as paintless dent repair or aluminium welding for lightweight vehicles.
Problem Framing	Task students with designing furniture or structures that solve specific sustainability challenges, such as water conservation or space efficiency.	Task students with creating sustainable packaging designs for cosmetics, considering factors such as material choice and recyclability.	Task students with creating sustainable repair plans for damaged vehicles, considering factors such as material choice and repair techniques.
	Encourage students to research and propose solutions for reducing waste in a carpentry workshop.	Challenge students to develop skincare or makeup products that address specific sustainability challenges, such as sun protection without harmful chemicals.	Challenge students to develop strategies for reducing waste in the car body shop, such as recycling or repurposing materials.

GreenComp knowledge, skills, and attitudes in VET - Embracing Complexity in Sustainability			
	Carpentry	Cosmetics	Car body repair and refinishing
Systems Thinking			
Knowledge	Grasping how projects fit within larger environmental systems.	Understanding environmental impacts of cosmetic products throughout the lifecycle.	Understanding that even actions in car body repair can have environmental, social, cultural and economic impacts.
Skill	Designing projects with energy efficiency and waste reduction in mind.	Using life cycle thinking to assess the environmental, social, and economic impacts of cosmetic manufacturing.	Identifying challenges and opportunities within the car body repair system that can trigger sustainable change.
Attitude	Seeing connections between materials and environmental impacts.	Considering broader ecological implications of cosmetic production.	Shows concern for the short- and long-term impacts of car body repair actions on ecosystems and communities.
Critical Thinking			
Knowledge	Analysing lifecycle of different wood types for projects.	Evaluating safety and sustainability of cosmetic preservatives.	Analysing environmental impacts of auto paints and finishes.
Skill	Evaluating ecological footprint of carpentry techniques.	Assessing ecological footprint of packaging materials.	Assessing ecological impact of repair techniques.
Attitude	Questioning traditional practices for sustainability.	Challenging industry norms for sustainable alternatives.	Questioning conventional auto repair methods for sustainability.
Problem Framing			
Knowledge	Identifying common sustainability challenges in woodworking.	Recognizing the waste generated by single-use cosmetic products and packaging in a beauty salon.	Understanding the harmful effects of certain chemicals used in traditional car body paint and finishes.
Skill	Defining specific sustainability goals for projects.	Setting targets to reduce waste through refillable product options and eco-friendly packaging.	Defining objectives to transition to eco-friendly, low VOC (volatile organic compound) paints.
Attitude	Viewing sustainability challenges as opportunities for creativity.	Seeing sustainability as a selling point for clients seeking eco-conscious beauty services.	Embracing the challenge of understanding and navigating the complexity of sustainability issues in autobody repair.

3.3. Envisioning Sustainable Futures

> **'Envisioning sustainability futures'** enables learners to visualise alternative future scenarios and identify actions to achieve a sustainable future. It is essential that learners acquire the competence of 'adaptability' while coping with uncertainty about the futures and trade-offs in sustainability. (Bianchi, G. et all, 2022, p. 23)

Questions to start envisioning sustainable futures:

- What would be the best solution for nature and society?
- How can I make a difference?
- How could we do things differently?
- What opportunities do I have to do this in my local environment?
- What will the future look like if we don't change our behaviour? (Belasic et al., 2023, p. 38)

Teaching Ideas for GreenComp in VET: Envisioning Sustainable Futures

	Carpentry	Cosmetics	Car body repair and refinishing
Futures Literacy	Discuss emerging trends in sustainable architecture and furniture design.	Discuss emerging trends in green cosmetics, such as carbon-neutral formulations or zero-waste packaging.	Discuss emerging trends in electric and hybrid vehicles and the implications for Car body repair.
	Challenge students to create futuristic designs that integrate renewable materials and energy-efficient features.	Explore the potential for incorporating biotechnology and natural alternatives into future cosmetic products.	Explore the potential for integrating renewable materials, such as bioplastics, into vehicle repair processes.
Adaptability	Explore how carpentry skills can be adapted to create sustainable outdoor structures like pergolas, greenhouses, or compost bins.	Encourage students to experiment with eco-friendly cosmetic formulations, such as waterless skincare or solid shampoo bars.	Teach students how to work with new materials and technologies that promote sustainability, such as carbon fibre composites or bio-based plastics.
	Discuss the potential for incorporating smart technologies into woodworking projects to improve energy efficiency.	Discuss how cosmetic professionals can adapt to changing consumer preferences towards sustainable and ethical products.	Discuss how Car body repair shops can adapt to changing regulations and consumer preferences for eco-friendly services.
Exploratory Thinking	Host workshops on upcycling and repurposing old furniture or materials into new pieces.	Host workshops on DIY cosmetic formulation using sustainable and locally sourced ingredients.	Host workshops on upcycling automotive parts or creating art from salvaged vehicle materials.
	Encourage students to experiment with different eco-friendly finishes and sealants, such as natural oils or beeswax.	Challenge students to create innovative cosmetic products that promote environmental consciousness, such as biodegradable glitter or reef-safe sunscreen.	Challenge students to design and fabricate eco-friendly accessories for vehicles, such as bike racks or cargo organisers.

GreenComp knowledge, skills, and attitudes in VET - Envisioning Sustainable Futures			
	Carpentry	Cosmetics	Car body repair and refinishing
Futures Literacy			
Knowledge	Acquiring knowledge about new eco-friendly materials for future carpentry projects, such as reclaimed wood options.	Identifying trends in zero-waste beauty products and refillable packaging for future salon services.	Recognising the growth of electric vehicles (EVs) in the automotive market and their unique repair requirements.
Skill	Planning workshop layouts with adaptable spaces for emerging sustainable techniques.	Creating a plan for incorporating natural, locally sourced ingredients into custom beauty formulations.	Researching EV repair protocols and specialised tools needed for battery maintenance.
Attitude	Imagining a future where carpentry shops utilise solar panels and rainwater harvesting systems.	Envisioning a future where the salon offers personalised, eco-conscious beauty experiences.	Envisioning a future where the workshop is equipped to handle EV repairs, including body modifications for aerodynamic efficiency.
Adaptability			
Knowledge	Recognizing how carpentry skills can be adapted to create sustainable outdoor structures like pergolas, greenhouses, or compost bins.	Exploring eco-friendly cosmetic formulations such as waterless skincare or solid shampoo bars.	Learning to work with new materials and technologies that promote sustainability, such as carbon fibre composites or bio-based plastics.
Skill	Experimenting with eco-friendly woodworking techniques for sustainable outdoor projects.	Experimenting with formulations to create sustainable and innovative cosmetic products.	Adapting repair techniques to incorporate eco-friendly materials and methods.
Attitude	Being open to incorporating smart technologies into woodworking projects for improved energy efficiency.	Being receptive to changing consumer preferences and adapting formulations to meet eco-conscious demands.	Being proactive in adopting green technologies and practices in Car body repair services.
Exploratory Thinking			
Knowledge	Exploring innovative carpentry designs to minimise waste.	Knowing about the potential of reducing microplastics in cosmetic products.	Identify methods of upcycling automotive parts and salvaged materials.
Skill	Experimenting with unconventional, sustainable materials.	Experimenting with alternative, natural ingredients.	Experimenting with transforming salvaged vehicle materials into upcycled auto accessories.
Attitude	Demonstrate curiosity and creativity in eco-friendly carpentry.	Demonstrate curiosity and creativity in sustainable cosmetic formulations.	Demonstrate resourcefulness and creativity in adapting to changing trends in Car body repair.

3.4. Acting for Sustainability

> **Acting for sustainability** encourages learners to act at individual and collective level to shape sustainable futures, to the extent possible. It also invites learners to demand action from those responsible to make change happen. (Bianchi, G. et all, 2022, p. 25)

Questions to start thinking about acting for sustainability:

- What am I prepared to do for a better future?
- Who can I turn to to do this?
- How can I tell my friends about the problem/situation?
- What is the first step I/we can take?
- How can I demand action from the key players? (Belasic et al., 2023, p. 38)

Teaching Ideas for GreenComp in VET: Envisioning Sustainable Futures			
	Carpentry	**Cosmetics**	**Car body repair and refinishing**
Political Agency	Discuss the role of local regulations and building codes in promoting sustainable construction practices.	Discuss the role of regulations and certifications in ensuring the sustainability and safety of cosmetic products.	Discuss the role of government regulations and emissions standards in promoting sustainable transportation.
	Invite guest speakers from environmental organisations or green building councils to discuss advocacy opportunities.	Invite guest speakers from environmental organisations or regulatory bodies to discuss advocacy opportunities.	Invite guest speakers from environmental agencies or advocacy groups to discuss policy initiatives.
Collective Action	Collaborate on community projects such as building benches for parks or creating educational displays for local nature centres.	Collaborate on community projects such as organising eco-friendly beauty events or workshops.	Collaborate on community projects such as repairing vehicles for low-income families or local nonprofits.
	Organise a carpentry workshop focused on creating sustainable products for a local charity or fundraiser.	Partner with local salons or spas to promote sustainable beauty practices and products.	Partner with automotive manufacturers or dealerships to promote sustainable repair practices.
Individual Initiative	Prompt students to create personal sustainability plans for their carpentry careers, setting goals for reducing waste or promoting eco-friendly practices.	Encourage students to develop personal sustainability plans for their careers in cosmetics, setting goals for reducing waste or promoting ethical sourcing.	Encourage students to develop personal sustainability plans for their careers in car body repair, setting goals for waste reduction or energy efficiency.
	Encourage entrepreneurship by guiding students to develop business plans for a woodworking business that emphasises sustainability and ethical sourcing.	Guide students in creating their own eco-friendly cosmetic brands, emphasising sustainable packaging, ingredients, and business practices.	Guide students in promoting eco-friendly practices within their workplaces, such as implementing recycling programs or using energy-efficient lighting.

GreenComp knowledge, skills, and attitudes in VET - Envisioning Sustainable Futures			
	Carpentry	Cosmetics	Car body repair and refinishing
Political Agency			
Knowledge	Understanding local regulations for sustainable construction.	Knowing regulations on cosmetic ingredient safety and environmental impact.	Understanding environmental laws related to auto repair and disposal.
Skill	Advocating for environmentally friendly building codes and policies.	Advocating for stricter regulations on harmful chemicals in cosmetics.	Advocating for stricter regulations on auto waste management.
Attitude	Engaging in civic activities to promote green carpentry.	Engaging in public campaigns for transparency in the cosmetics industry.	Participating in initiatives for greener auto repair policies.
Collective Action			
Knowledge	Joining woodworking groups focused on sustainable initiatives.	Joining cosmetic industry associations dedicated to sustainability.	Knowing about green auto repair workshops and community projects.
Skill	Collaborating with peers on community carpentry projects for the environment.	Collaborating with other brands on eco-conscious product lines.	Participating in green auto repair workshops and community projects.
Attitude	Believing in collective efforts for sustainable woodworking practices.	Supporting collective actions for green cosmetics.	Believing in collective efforts for sustainable auto repair practices.
Individual Initiative			
Knowledge	Staying updated on emerging eco-friendly carpentry techniques through industry publications and online resources.	Attending conferences or webinars on sustainable cosmetic formulation methods and trends in the industry.	Researching and staying informed about the latest advancements in eco-friendly Car body repair technologies and materials.
Skill	Implementing sustainable practices in carpentry projects, such as using reclaimed materials or low-VOC finishes, without prompting.	Using eco-friendly beauty products and promoting their use within professional cosmetic services.	Actively implementing innovative green auto repair practices in professional projects, such as using water-based paints or promoting sustainable part options.
Attitude	Feeling empowered to make green choices in woodworking.	Demonstrating a commitment to sustainable practices by actively seeking out and integrating green cosmetic options in professional services.	Taking the lead in suggesting and adopting green solutions within the workshop, demonstrating a proactive approach to incorporating environmentally friendly practices in Car body repair work.

Speaking of this...

At the School centre Škofja Loka in Slovenia students had the task of developing an idea for an eco-product and analysing the market situation and the business case for launching the product. In this way, they developed green competences.

Find out more about this best practise in our GreenVET database.

Further resources

You can find more resources on this topic by searching for the following keywords in our GreenVET database: **GreenVET pathway (green-vet.eu)**

- Green skills / green competencies
- Green transition
- (Vocational) education for sustainable development
- Participation
- SDG 4

MODULE 4: Whole Institution Approach to Sustainability and VET

1. Summary

The GreenVET Pathway aims to support VET schools Europewide in implementing a Whole Institution Approach (WIA) to sustainability. For educational institutions, this means aligning the school's operations on various levels to higher sustainability standards and making this process visible to the whole school community and beyond.

This module gives an introduction to the concept, its areas of action and reflects on the implications and benefits for Vocational Education and Training institutions. Furthermore, the chapter gives details on what parties should be involved in the WIA and how educational institutions can start and maintain a sustainability practice holistically.

2.Introduction: What is a Whole Institution Approach?

The **Whole Institution Approach to sustainability** (WIA) represents a dynamic school development strategy centered on fostering sustainable practices. WIA recognizes school development as an ongoing journey tailored to each institution's unique context.

Central to WIA is the belief that educational institutions must embody the principles they teach, serving not only as places of learning but also as laboratories for experimentation. Here, sustainable practices are not just concepts taught in theory but are actively explored, tested, adapted, evaluated, and integrated into the institution's fabric. This approach embodies Education FOR Sustainable Development rather than merely delivering Education ABOUT Sustainable Development (Hargreaves, 2008).

In essence, the school, encompassing its values, operations, premises, school community, and networks, transforms into a laboratory where sustainable thinking is ingrained in every aspect: "WIA means to collaboratively switch the default mode of all rules-in-use to sustainability" (Holst, 2022, p.1015).

3. The Whole Institution Approach in Vocational Education and Training

3.1. Why is it necessary to take a holistic approach?

As an essential component of Sustainable Development Goal 4, "Quality Education", sub-goal 4.7 emphasizes the imperative for all learners to cultivate the knowledge and skills necessary to advance sustainable development (United Nations General Assembly, 2015, p.21). In **UNESCO's strategic roadmap**, "Transforming Learning and Training Environments" is considered one of the 5 priority action areas to achieve this: "The entire learning institution needs to be aligned with sustainable development principles, so that learning content and its

pedagogies are reinforced by the way facilities are managed and how decisions are made within the institution" (UNESCO, 2020, p.28). This comprehensive approach underscores the significance of integrating sustainability not only as an add-on to all other educational endeavors but also as a way of promoting a sustainability mindset and sustainable behavior to become second nature.

In his 2022 study, Jorrit Holst conducted a comprehensive examination of Whole Institution Approaches worldwide, proposing the integration of sustainability into the **"hidden curricula"** of educational institutions. By bridging formal and informal curricula, Holst advocates for the normalization of sustainability across all facets of institutional life (Holst, 2022). Recognizing the duality of the learning experience and intentionally aligning formal and informal curricula offers learners an optimal environment for profound engagement with sustainable development principles.

3.2. What kind of school do we want to be?

One key advantage of the WIA is that it allows schools to unite around a shared vision of sustainability. Instead of viewing sustainability as limiting or burdensome, it presents opportunities for improvement enhancing the quality of school life (and learning) for everyone involved.

Traditionally, sustainability initiatives may be perceived as requiring sacrifices, such as giving up certain dietary preferences or modes of transportation. However, schools can shift this narrative by emphasizing a positive vision for sustainability and highlighting the benefits of adopting more sustainable practices. This positive framing can help counteract feelings of resistance and reluctance, motivating individuals to embrace sustainability actions willingly.

By asking fundamental questions such as "What kind of school do we want to be?" educators and administrators can kickstart discussions within the school community that inspire positive incentives for sustainability. This process encourages envisioning an environmentally responsible, socially inclusive, economically resilient, and educationally enriching school community.

3.3. Who should be part of the process?

The broader the shoulders that carry the transformation, the more successful the implementation of a WIA becomes. Taking the whole school community on board is one of the cornerstones of this approach.

Who should be part of the process?

School management / principal:

The school management's commitment is crucial for the success of the process. It holds responsibility for both organizational management and pedagogy, and the implementation of a WIA is unthinkable without its active commitment.

Teaching staff:

Teachers have an immense influence on school life. They craft lessons, select teaching methodologies, and orchestrate classroom dynamics. Additionally, they serve as role models for students through their behavior. By purposefully utilizing both formal and informal learning within the school, teachers possess the power to authentically lead the way toward sustainability transformation.

Students:

Empowering students to take initiative can profoundly impact fostering a sustainable learning environment and facilitating holistic transformation within the school. Furthermore, students will emerge as change agents, applying their learning to real-world challenges and acting as catalysts for change in their current and future professional spheres.

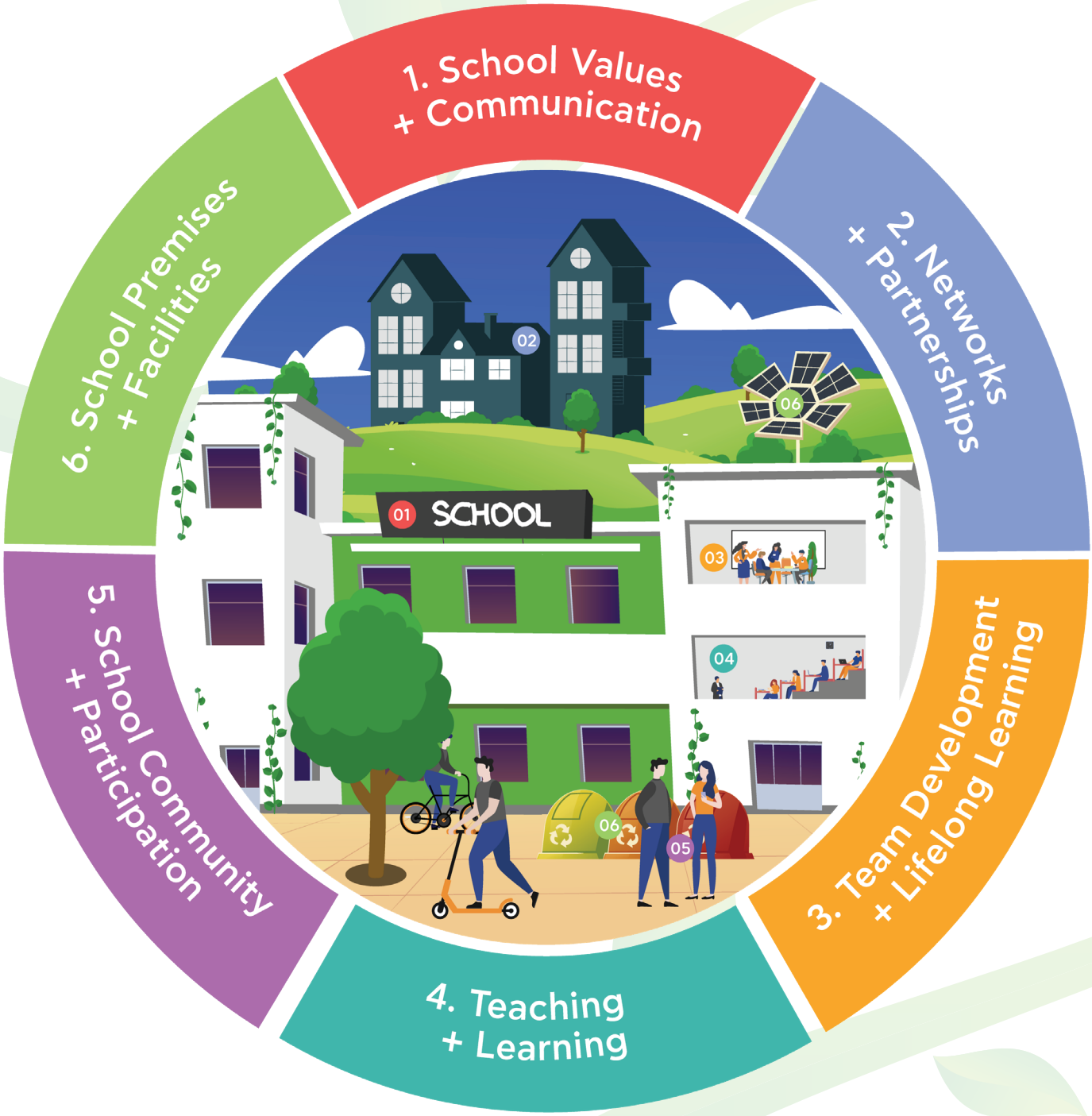
Further school staff:

Everyone who contributes to the school community should have a voice and a role in adopting a WIA. Indeed, employees such as administrative staff, canteen workers, or janitors have considerable influence. Their firsthand knowledge of organizational operations can pave the path to more effective solutions and outcomes.

Community (beyond school):

It's highly beneficial to explore the involvement of external stakeholders who can consistently support the school in adopting a WIA. Given teachers' extensive responsibilities, leveraging additional resources can enhance both effectiveness and the teaching staff's dedication to the process. Potential collaborators could include community members from the local area, neighboring schools, environmental NGOs, or municipal support systems.

3.4. What areas does the Whole Institution Approach address?



In the WIA concept, we categorize into six areas, illustrating the comprehensive engagement of the entire institution. The areas may intersect.

1: SCHOOL VALUES + COMMUNICATION
What are our values, and how do we communicate them?

In the first action area of the WIA, schools define how they want sustainability to be inscribed in theagenda or their guidelines, but also how they want that commitment to be visible internally and externally. This could include general management decisions like developing a mission statement, including sustainability in their school program, but also making this known to the school community and the general public.

2: NETWORKS + PARTNERSHIPS
Who are your allies in the local, regional, national, and transnational context?

An effective catalyst for advancing WIA school development often lies beyond the confines of the institution itself. Consider the power of supportive networks, which operate on various scales: from fostering dialogue with other VET schools regarding education for sustainable development, whether on a local, national, or even international level, to facilitating peer-to-peer learning through collaboration with similar institutions. Moreover, extending outreach into the broader local learning ecosystem beyond the VET sector can be highly beneficial. Forging partnerships within the local community can infuse the school's sustainability efforts with a fresh perspective and added depth. In the local context, viewing networking as a reciprocal engagement where both parties contribute and benefit is particularly advantageous.

3: TEAM DEVELOPMENT + LIFE-LONG LEARNING
What competencies do teachers and staff need to build?

As UNESCO states in its roadmap (UNESCO 2020, p.30), "[e]ducators remain key actors in facilitating learners' transition to sustainable ways of life". How can staff be supported in developing that role? What competencies need to be strengthened for teachers to fulfill those expectations? Regarding sustainability, this considers professional knowledge that has to be updated, but also regarding methodologies that equip teachers with the skills to motivate and foster a welcoming, empowering institutional climate. The interdisciplinary nature of teaching sustainability may also require team development steps that foster collaboration between fellow teachers, but also between adminstrative staff and teachers. Furthermore, facilitating exchange between practitioners promotes a sharing mentality, that enrichens the teaching experience. From the management side, it is crucial to recognize and validate the efforts of staff who exhibit agency in Education for Sustainable Development (ESD), reinforcing the importance of proactive engagement and leadership in sustainability initiatives.

4: TEACHING + LEARNING
What and how do we teach?

(Vocational) education for sustainable development requires cross-curricular and action-oriented learning. In this area, schools are asked to reflect on and improve how their teaching and learning arrangements facilitate that kind of transformative learning. Is the learning connected to real-world problems, e.g., at work, in the community, or on the campus? Are students encouraged to connect ecological and social sustainability to their professional activity? Does the teaching encourage self-efficacy in developing sustainable behavior at work and beyond? Do students get equipped for life-long learning for sustainability?

5: SCHOOL COMMUNITY + PARTICIPATION
How do we involve everyone and encourage participation?

Establishing a framework that encourages involvement from the whole school community is crucial to fostering inclusive participation and engagement. This begins by instilling a sense of joint responsibility for the process, where everyone feels accountable and valued. Empowering individuals, particularly trainees, as change agents can amplify collective action and innovation momentum. Moreover, institutionalizing space for participatory practices ensures that diverse voices are heard and considered in decision-making processes.

6: SCHOOL PREMISES + FACILITIES
How do we increase the sustainable profile of our infrastructure and everyday actions?

Establishing a framework that encourages involvement from the whole school community is crucial to fostering inclusive participation and engagement. This begins by instilling a sense of joint responsibility for the process, where everyone feels accountable and valued. Empowering individuals, particularly trainees, as change agents can amplify collective action and innovation momentum. Moreover, institutionalizing space for participatory practices ensures that diverse voices are heard and considered in decision-making processes.

3.5. How do we get started?

The WIA is a circular process that has to be maintained regularly. Therefore, there is no general timeline that will lead to success. Moreover, it is important to establish a working cycle that helps the responsible team to stay on top of the game. A Whole Institution Approach requires time, patience, flexibility, creativity, resilience, and risk-taking.

KEY STEPS

Build and maintain a team

The first step in the process is to establish a dedicated team comprising members from various segments of the school community. After a while and certainly in the new school year, give the chance to other people to join in.

Communicate

Regular updates, newsletters, meetings, and social media posts can keep the entire school community informed about ongoing initiatives, progress made, and upcoming plans. Encouraging feedback and suggestions ensures that everyone feels involved and valued.

Analyse / Assess

Keep track of the status quo. Regularly analyse sustainable practices, behaviour, and attitude within the school community to monitor progress and also where there are more hurdles to overcome.

Plan / Create a vision

Develop a clear, inspiring vision for the future. Engage the school community in participatory practices to generate ideas and aspirations.

Implement

Break down the overarching vision into actionable steps and timelines. Assign responsibilities and allocate resources. Encourage innovation, creativity, and adaptability as the initiatives unfold, allowing room for experimentation and learning from both successes and setbacks.

Analyse your challenges

Learn from your challenges. They help you identify where you need to adjust your strategies. Obstacles may include logistical issues, budget or time constraints, resistance to change, or unforeseen external factors.

Celebrate your achievements

Recognize and celebrate milestones, achievements, and successes in the journey toward sustainability. Whether it is reducing carbon emissions or implementing waste reduction programs, celebrating accomplishments boosts morale, fosters a sense of pride, and reinforces further commitment to the cause.

3.6. What factors make a Whole Institution Approach successful?

Actors who are successfully implementing a WIA have given recommendations on how to make the process successful.

LIFE-LONG LEARNING

Educational institutions are living systems that keep growing and changing. Incorporating sustainability holistically is a process rather than an outcome. **Lifelong learning** can be shown here as a skill that applies to individuals as well as to institutions.

SHARE LEADERSHIP

The educational institution should establish a welcoming atmosphere that encourages everyone's participation and contribution. This includes inclusive ways of participatory co-creation and decision-making, as well as giving agency to the school community by enabling participation in the implementation and monitoring of practices, preparing students to be active citizens.

CROSS BOUNDARIES

Educational institutions implementing a WIA can gain extra momentum by crossing boundaries and forming unexpected alliances. Think about crossing boundaries between professional disciplines within the school, between students and teachers, school and training companies, educational sectors, generations, and urban and rural actors. All of those initiatives make sustainability action a connecting force and express appreciation for all kinds of backgrounds and expertise. by enabling participation in the implementation and monitoring of practices, preparing students to be active citizens.

Speaking of this...

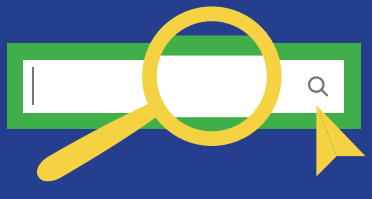
Susanna-Eger-Schule, VET-school for Gastronomy and Hospitality situated in Leipzig, Germany, is well on track to anchoring sustainability in their institution holistically. By addressing sustainable development in the school curricula and linking those to life on campus, students experience sustainable thinking and sustainable practices at every step of their educational path. With student-driven initiatives, the school is constantly evolving, while involving and taking on board the whole school community.

Find out more about this best practise in our GreenVET database.

Further resources

You can find more resources on this topic by searching for the following keywords in our GreenVET database: **GreenVET pathway (green-vet.eu)**

- Whole Institution Approach / Whole School Approach
- Participation
- Sustainable practices
- (Vocational) education for sustainable development
- SDG 4



MODULE 5: GreenVET Database

1. Summary

The GreenVET database is a central hub dedicated to Vocational Education and Training (VET) with a focus on the Green Transition. It offers a platform for the exchange of resources, including teaching materials, best practices, and opportunities for collaboration. Users can search for and share links to relevant resources, helping to build a community of educators committed to advancing sustainability. The registration process is simple, and all user contributions are reviewed, with confirmations communicated via email. This module will guide you through the process of navigating the database and the key steps for uploading resources.

2. Introduction: What is the GreenVET database?

The database is designed to be a valuable resource hub at the intersection of Vocational Education and Training (VET) and the Green Transition.

Furthermore, the database serves as a community tool.

The database enables educators working in the field of climate change and environmental sustainability education to build their capacity by providing links to key resources. It also enables them to support each other as they can contribute resources for their colleagues.

It enables stakeholders to find and contribute useful resources, facilitating the exchange of information and collaboration within the VET community. The key features of the database include:

Resource Exchange:

Users can share and access links to background information on topics related to VET and the Green Transition.

Teaching Materials:

The database will host a variety of teaching materials that can be used to enhance educational programs focused on sustainability.

Best Practices:

Stakeholders can research and contribute best practices, providing insights and successful strategies for integrating green initiatives into VET.

Methodologies:

Users can learn about and share effective methodologies for teaching and implementing green concepts.

Collaboration Opportunities:

The platform will help users find and connect with local partners for collaborative projects and initiatives.

3. GreenVET Database

3.1. What can be found in the database?

In the database you can find links to resources that are valuable for everyone working in a VET-school and is interested in sustainability. This could be teaching material for a specific professional sector or policy papers on EU initiatives, newspaper articles on the Just Transition, or a podcast on Education for Sustainable Development. You will get the link to the resource and a short description of a peer explaining what it is about and why it could be relevant to you.

3.2. How to search in the database?

1. Catchphrase: If you have a particular catchphrase or term in mind, include it in your search query. This can narrow down your results to the most relevant resources.

2. Language (Sprache): You can filter search results based on the language of the resources. Select your preferred language to find materials that are available in that language.

3. Free Search: For a broad search, use the free search option. This will return results based on any keywords or phrases you enter, providing a wide range of relevant resources.

4. Priority Levels:

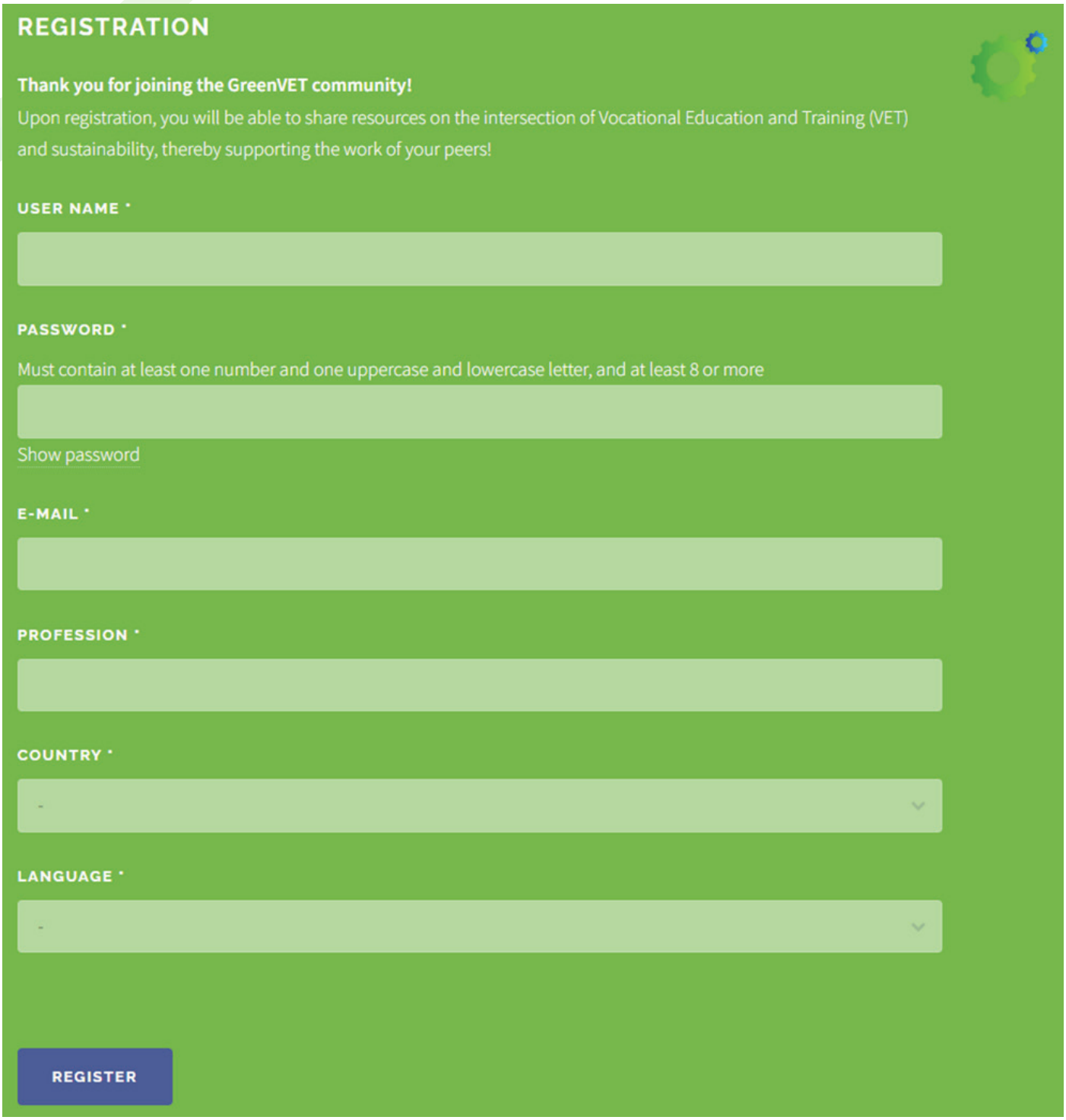
- **Low Priority:** Resources marked with low priority are less urgent but still relevant. They may be useful for supplementary information or additional insights.
- **Normal Priority:** These resources are considered standard and typically include essential materials that are relevant and useful.
- **High Priority:** High priority resources are critical and highly relevant. They should be your primary focus if you need the most important and impactful information quickly.

By using these search features and filters, you can efficiently find the resources you need and ensure that you access the most relevant and high-quality information available in the database.

3.3. How can one contribute?

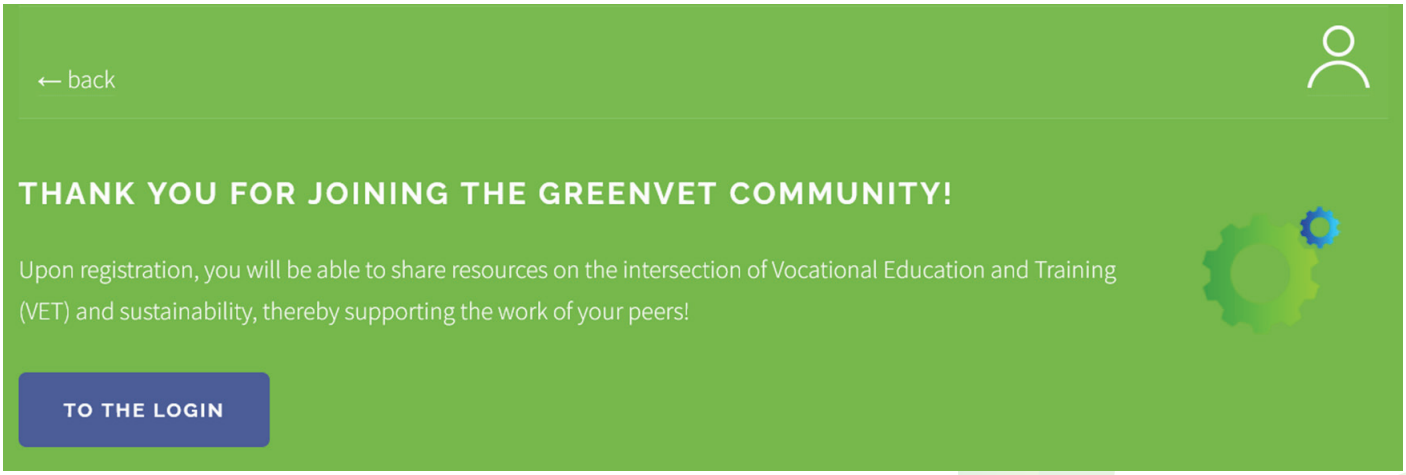
While the database is particularly aimed at teachers, administration, and management working at VET-schools, everyone's contribution is appreciated! To share valuable resources you have discovered, please register here and get further instructions. Don't worry - the registration is short and painless.

3.4. What needs to be done to register?



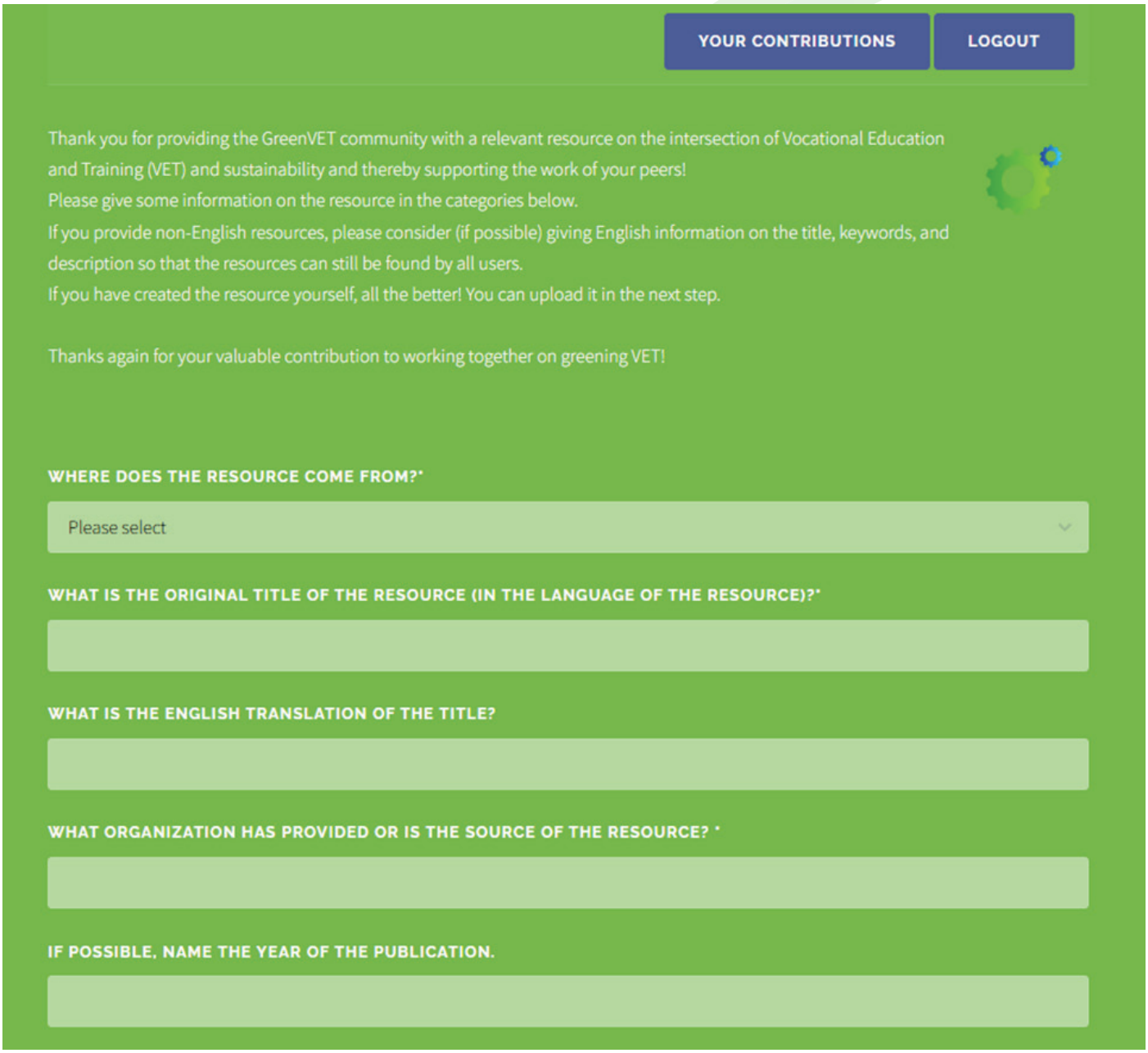
After clicking the "Register" button, you can create your username, enter the password to access the database, provide your email, profession, country, and language. After clicking the "Register" button, you will receive an email confirming that you are now able to add resources to the database.

After registering, you will also receive a confirmation e-mail with your login details and a brief explanation of how to proceed.



3.5. How to enter a resource?

To enter a resource you need to login. After logging in, you will be taken directly to the page for entering a new resource.



Just follow the explanations there and enter the required information about resources. If you want to enter a resource that you have created yourself, you can indicate this right at the beginning and upload the document in the next step.
The following details of a resource are required.

- Whole Institution Approach / Whole School Approach
- European Green Deal
- Green Transition
- Circular Economy
- Participation
- Green skills / green competencies
- Green jobs
- Agenda 2030
- (Vocational) education for sustainable development
- Sustainable Practices
- SDG 1: No poverty
- SDG 2: Zero hunger
- SDG 3: Good health and well-being
- SDG 4: Quality education
- SDG 5: Gender equality
- SDG 6: Clean water and sanitation
- SDG 7: Affordable and clean energy
- SDG 8: Decent work and economic growth
- SDG 9: Industry, innovation and infrastructure
- SDG 10: Reduced inequalities
- SDG 11: Sustainable cities and communities
- SDG 12: Responsible consumption and production
- SDG 13: Climate action
- SDG 14: Life below water
- SDG 15: Life on land
- SDG 16: Peace, justice and strong institutions
- SDG 17: Partnerships for the goals

After that, add more information:
What kind of format has the resource?
[Choose one]

- Press article
- Brochure / Dossier / Report
- Scientific paper
- Framework / Policy Paper
- Film / Video / Podcast
- Lesson activity / Teaching material
- Website / Online Platform
- Best Practices
- (Online) Game
- Other

What is the original language of the resource?
[Choose one]

- English
- Greek
- Slovenian
- Italian
- German
- Finnish
- Latvian
- Other

Does the resource relate to any specific vocational/professional sector?
[Choose one]

- Manufacturing and Engineering
- Information Technology (IT) and Telecommunications
- Health and Social Care
- Hospitality and Tourism
- Construction and Building Trades
- Business and Administration
- Agriculture and Environmental Sciences
- Creative Arts and Design
- Automotive Technology
- Renewable Energy and Sustainability
- Culinary Arts and Food Services
- Electronics and Electrical Engineering
- Logistics and Transportation
- Hairdressing and Beauty Services
- Mechatronics and Robotics
- Textile and Fashion Technology
- Language and Communication Services
- Fitness and Sports Science
- Various sectors
- Not specified

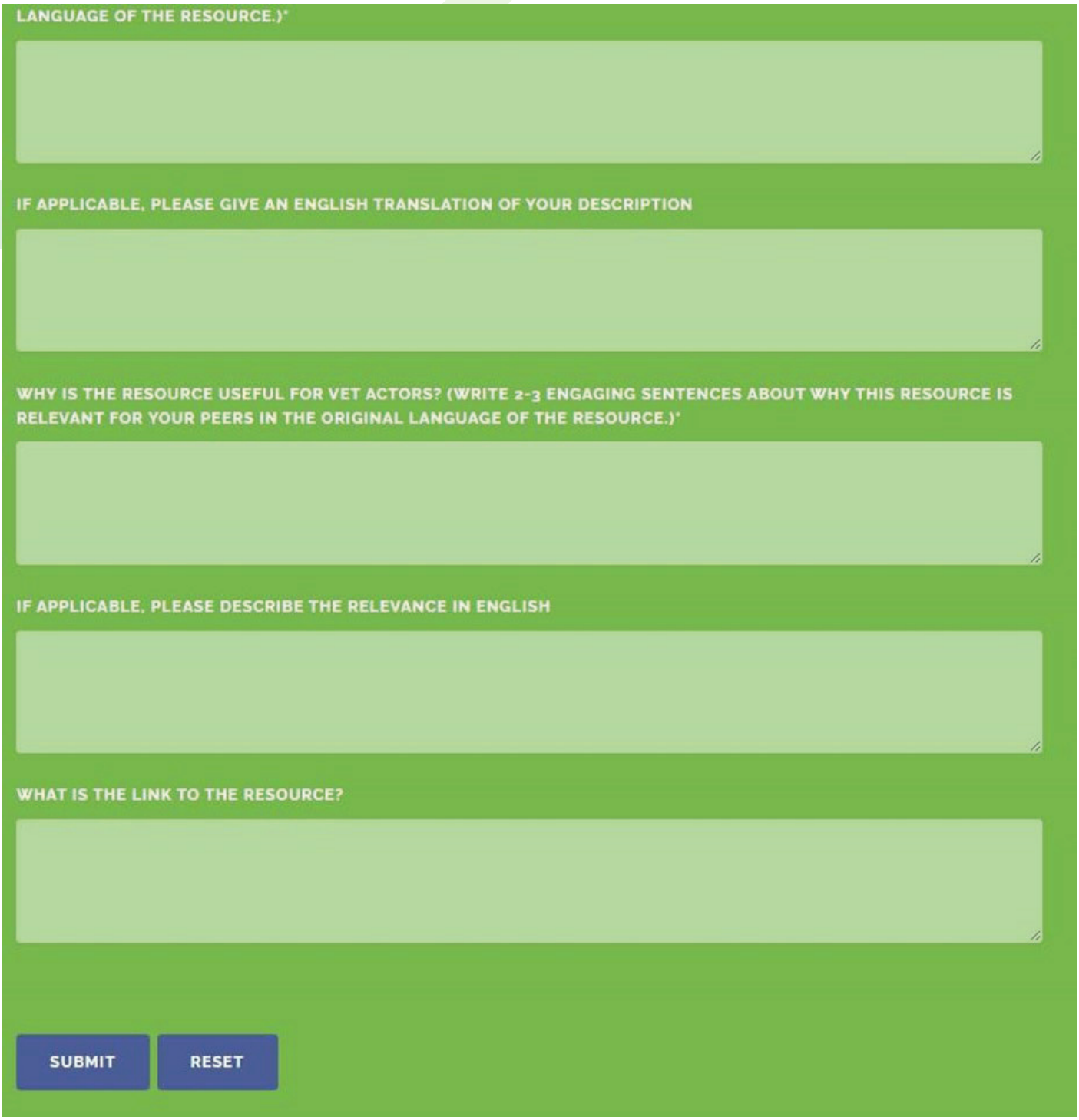
What is the resource about? (Give your peers a short description of 2–3 sentences in the original language of the resource.)
[Free text, max. number of characters?]

If applicable, please give an English translation of your description:
[Free text, max. number of characters?]

Why is the resource useful for VET actors? (Write 2–3 engaging sentences about why this resource is relevant for your peers in the original language of the resource.)
[Free text, max. number of characters?]

If applicable, please describe the relevance in English:
[Free text, max. number of characters?]

What is the link to the resource?
[Free text]



Once you have entered all the required information, you can upload your resource by clicking the "Submit" button. You will then receive an email confirming that your resource has been received and will be reviewed. The email will also provide a link where you can view and edit your contributions.

4. Final Considerations

The GreenVET database thrives on the active participation of its community. Whether you are an educator, an administrator or simply a passionate advocate for sustainability in VET, your contributions can make a significant difference. We encourage you to explore the database, share valuable resources, and network with like-minded individuals who share your commitment to green initiatives.

Get Involved:

- **Share Your Resources:** Help others by contributing teaching materials, best practices, and methodologies. Your insights and resources can support colleagues and enhance sustainability education.
- **Join the Community:** By registering and participating, you become a part of a collaborative network dedicated to the Green Transition in VET.
- **Discover and Collaborate:** Use the database to find useful resources, learn from best practices, and connect with partners for collaborative projects.

To contribute, simply register and follow the easy instructions provided. Let's work together to build a robust, resourceful community committed to sustainability in vocational education.

Glossary

Agenda 2030	Agenda 2030 refers to the United Nations' sustainable development agenda for the 21st century. Officially known as the "Transforming our world: the 2030 Agenda for Sustainable Development," it was adopted by all United Nations Member States on 25 September 2015. The agenda consists of 17 Sustainable Development Goals (SDGs) and 169 targets aimed at addressing global challenges such as poverty, inequality, climate change, environmental degradation, peace, and justice.
Carbon Footprint	Carbon footprint measures the total amount of greenhouse gases produced by our actions, directly or indirectly, usually expressed in equivalent tons of carbon dioxide (CO2). It encompasses emissions from activities like driving, using electricity, and the production of goods and services we use.
Circular Economy	An economic system aimed at minimising waste and making the most of resources. This involves reusing, repairing, refurbishing, and recycling existing materials and products to extend their lifecycle.
Climate Law	Proposed in March 2020, this legislation seeks to legally bind the EU to achieve net-zero greenhouse gas emissions by 2050, underscoring the EU's commitment to the green transition.
Climate Neutral	The state of achieving net-zero greenhouse gas emissions, where all emissions are balanced by absorbing an equivalent amount from the atmosphere, thereby having a neutral impact on the climate.
Competence	Is a ''dynamic combination of the knowledge, skills and attitudes a learner needs to develop throughout life, starting from early age onwards.'' (Council Recommendation, p.12)
Decarbonisation	The process of reducing carbon dioxide emissions, typically from the energy sector, to mitigate climate change. This involves transitioning to low-carbon power sources, such as renewable energy.
Education for Sustainable Development (ESD)	It is an approach to education that aims to foster the knowledge, skills, attitudes, and values necessary to create a sustainable future. It promotes learning that empowers individuals to make informed decisions and take responsible actions for environmental integrity, economic viability, and a just society, both locally and globally.
ESD for 2030	It is a framework developed by UNESCO to advance Education for Sustainable Development (ESD) as a key enabler for achieving the Sustainable Development Goals (SDGs) by the year 2030. It builds upon the previous decade of ESD efforts (2005-2014) and the Global Action Programme (GAP) on ESD (2015-2019). ESD for 2030 sets out a vision and roadmap for integrating sustainability principles into education systems worldwide. It emphasizes the transformative power of education in addressing global challenges and fostering a culture of sustainability.
European Green Deal	The European Green Deal is a set of policy initiatives by the European Union with the goal of making Europe climate-neutral by 2050. This strategy aims to transform the EU into a modern, resource-efficient economy, ensuring no net emissions of greenhouse gases and that economic growth is decoupled from resource use.

"Fit for 55" Package	A set of policy proposals that were introduced in July 2021, aiming to align current legislation with the 2030 climate target of reducing net greenhouse gas emissions by at least 55% compared to 1990 levels.
Greencomp	It is the abbreviated name of the European Commission's document "European Framework for Sustainability Competences". It also serves as a reference for the comprehensive set of knowledge, skills and abilities related to green competences and sustainability competence as a whole.
Green Skills	Competencies and knowledge required for the workforce to support and drive the transition towards a sustainable and environmentally friendly economy.
Hidden Curriculum	Hidden Curriculum refers to the divergence between the formal learning experience (courses, lessons, learning activities) and the knowledge, skills, and attitudes that educators aim to teach, as well as the implicit academic, social, and cultural messages conveyed to students on an informal level. The formal and informal hidden agendas can align or contradict each other.
Learning for environmental sustainability	aims to nurture a sustainability mindset from childhood to adulthood with the understanding that humans are part of and depend on nature. Learners are equipped with knowledge, skills and attitudes that help them become agents of change and contribute individually and collectively to shaping futures within planetary boundaries. (Bianchi, G. et all, 2022, p 13)
Lifelong learning	Lifelong learning refers to the ongoing pursuit of knowledge and skills throughout one's life. The goal of lifelong learning is to continuously adapt and grow, enhancing knowledge, competences, and abilities to navigate an ever-evolving world and contribute meaningfully to society. The European Union's Council acknowledged the importance of lifelong learning with its 2019 framework, "Key Comptences for Lifelong Learning" (European Union, 2019).
Partnerships for Sustainability	Collaborative efforts between government, civil society, businesses, and academia to promote sustainable development through education, research, and innovation.
Sustainability	Prioritising the needs of all life forms and of the planet by ensuring that human activity does not exceed planetary boundaries. (Bianchi, G. et all, 2022, p 12)
Sustainability competence	empowers learners to embody sustainability values, and embrace complex systems, in order to take or request action that restores and maintains ecosystem health and enhances justice, generating visions for sustainable futures. (Bianchi, G. et all, 2022, p 12)
Sustainable Development Goals (SDGs)	The Sustainable Development Goals (SDGs) are a collection of 17 global goals set by the United Nations General Assembly in 2015 as part of the 2030 Agenda for Sustainable Development. The SDGs are designed to address various social, economic, and environmental challenges facing the world today. Each goal has specific targets to be achieved by 2030.

Sustainable practices	Sustainable practices refer to actions and behaviours that aim to meet the needs of the present without compromising the ability of future generations to meet their own needs. These practices focus on environmental, social, and economic considerations to ensure that resources are used efficiently, ecosystems are preserved, and social equity is maintained over the long term. Examples include reducing waste, conserving energy, using renewable resources, promoting social justice, and supporting local economies.
UNESCO roadmap	The UNESCO ESD 2030 Roadmap delivers a summary of the central goals and content of the new UNESCO ESD 2030 program. It serves as a guide, offers suggestions for implementation, and shows how global challenges can be solved with the help of education for sustainable development. In 5 priority action areas, the roadmap addresses EU member states and regional and global stakeholders to develop activities boosting sustainable development: Advancing policy, transforming learning and training environments, building capacities of educators and trainers, empowering and mobilizing youth, and accelerating sustainable solutions at the local level.
Whole Institution Approach to sustainability	A Whole Institution Approach is a comprehensive strategy that integrates sustainability principles and practices throughout all aspects of an organization or institution. Rather than focusing solely on isolated initiatives or departments, this approach seeks to embed sustainability into the core values, operations, and culture of the entire institution. A synonymous term directed at educational institutions is Whole School Approach (WSA).

References

- Belasić I., Sunčć T., Štarkl, D. (2023). Na poti k trajnostnim izdelkom oz. storitvam. Retrieved from https://cpi.si/wp-content/uploads/2024/01/Prirocnik_Na-poti-k-trajnostnim-izdelkom.pdf

- Bianchi, G., Pisiotis, U., Cabrera Giraldez, M. (2022) GreenComp – The European sustainability competence framework. Bacigalupo, M., Punie, Y. (editors), EUR 30955 EN, Publications Office of the European Union, Luxembourg, 2022; ISBN 978-92-76-46485-3, doi:10.2760/13286, JRC128040. Retrieved from https://publications.jrc.ec.europa.eu/repository/handle/JRC128040

- Bogoslov, I., Lungu, A., Stoica, E., & Georgescu, M. (2022). European Green Deal Impact on Entrepreneurship and Competition: A Free Market Approach. Sustainability. 2022; 14(19):12335. https://doi.org/10.3390/su141912335

- Council of the European Union. (2018). Council Recommendation of 22 May 2018 on key competences for lifelong learning. Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604(01)

- European Commission. Directorate-General for Education, Youth, Sport and Culture. (2021). Education for Environmental Sustainability: policies and approaches in European Union Member States. https://op.europa.eu/en/publication-detail/-/publication/a193e445-71c6-11ec-9136-01aa75ed71a1

- European Commission. (n.d.). Green transition. European Commission - European Reform Support Service. Retrieved March 22, 2024, from https://reform-support.ec.europa.eu/what-we-do/green-transition_en

- European Commission. (n.d.). Just Transition Fund. Retrieved April 26, 2024, from https://ec.europa.eu/regional_policy/funding/just-transition-fund_en

- European Commission. (n.d.). Just Transition funding sources. European Commission. Retrieved March 22, 2024, from https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/finance-and-green-deal/just-transition-mechanism/just-transition-funding-sources_en

- European Union (2019). Key Competences for Lifelong Learning. Luxembourg.

- Eurostat. (2024). Environmental economy – statistics on employment and growth. Retrieved from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Environmental_economy_%E2%80%93_statistics_on_employment_and_growth

- Hargreaves, LG (2008). The whole-school approach to education for sustainable development: From pilot projects to systemic change. Policy and Practice: A Development Education Review. Vol. 6, Spring, pp. 69-74.

- Holst, Jorrit (2022). Towards coherence on sustainability in education: a systematic review of Whole Institution Approaches. Sustainability Science (2023) 18:1015-1030. https://doi.org/10.1007/s11625-022-01226-8.

- Kazak, T. (2022). European Green Deal. Yearbook of the Law Department. https://doi.org/10.33919/yldnbu.20.9.12

- Leonard, M., Pisani-Ferry, J., Shapiro, J., Tagliapietra, S., & Wolf, G. (2021). The geopolitics of the European Green Deal. International Organisations Research Journal. https://doi.org/10.17323/1996-7845-2021-02-10

- Muench, S., Stoermer, E., Jensen, K., Asikainen, T., Salvi, M. & Scapolo, F. (2022). Towards a green and digital future. Publications Office of the European Union, Luxembourg. doi:10.2760/977331

- Štarkl, D., Belasi, I. (Ed.). (2023). Prispevki za razumevanje trajnostnosti na podroju poklicnega in strokovnega izobraževanja. Center RS za poklicno izobraževanje. https://cpi.si/wp-content/uploads/2024/03/Zbornik-VSE.pdf

- Tagliapietra, S., Trasi, C., & Veugelers, R. (2023). Europe's Green Industrial Policy. ICE, Revista de Economía. https://doi.org/10.32796/ice.2023.932.7657

- Thunqvist, D., Gustavsson, M., & Lundqvist, A. (2023). The Role of VET in a Green Transition of Industry: A Literature Review. International Journal for Research in Vocational Education and Training. https://doi.org/10.13152/ijrvet.10.3.4

- UNESCO (2020). Education for Sustainable Development. A roadmap. Paris.

- UNESCO (2024, June). What you need to know about education for sustainable development. Retrieved from https://www.unesco.org/en/sustainable-development/education/need-know

- UNESCO-UNEVOC (2016) The Agenda for Sustainable Development – SDG 4-Education 2030 The place of skills in the Agenda. Retrieved from Module1_UNESCO_Chakroun https://unevoc.unesco.org/tvetleadership/presentations/Module1_UNESCO_Chakroun.pdf

- United Nations General Assembly. (2015). 70/1. Transforming Our World: The 2030 Agenda for Sustainable Development. Retrieved from 21252030 Agenda for Sustainable Development web.pdf (un.org).

- World Economic Forum. (2021, September). Sectors where green jobs are growing in demand. Retrieved from https://www.weforum.org/agenda/2021/09/sectors-where-green-jobs-are-growing-in-demand

- World Economic Forum. (2023, January). Renewable energy transition to generate millions of green jobs. https://www.weforum.org/agenda/2023/01/renewable-energy-transition-green-jobs/

GreenVET pathway

Scan for more

green-vet.eu

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.