



# ESTET

**EMBEDDING SUSTAINABILITY SKILLS IN TOURISM  
EDUCATION AND TRAINING**

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IO1: CONCEPTUAL FRAMEWORK FOR EMBEDDING SUSTAINABILITY SKILLS IN TOURISM VET CURRICULA

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# TABLE OF CONTENT

<b>Introduction</b>	4
<b>I. Definitions of Sustainable Tourism and Sustainability</b>	5
<b>TABLE 1 - Definitions of Sustainable Tourism and Sustainability</b>	5
<b>II. Green Skills Identified in the Sustainable Tourism Literature</b>	6
<b>TABLE 2.1 ENVIRONMENTAL PROTECTION CONCEPTS</b>	6
<b>TABLE 2.2 SOCIO-CULTURAL SKILLS</b>	7
<b>TABLE 2.3 GREEN SKILLS FOR THE ECONOMY</b>	9
<b>TABLE 2.4 OTHER GREEN SKILLS</b>	9
<b>III. Green Skills in Existing Curricula</b>	10
<b>TABLE 3 GREEN SKILLS IN EXISTING CURRICULA</b>	10
<b>IV. Focus Groups with VET Institutions</b>	12
<b>TABLE 4 FOCUS GROUPS - VET</b>	12
<b>V. Focus Groups with Business Enterprises</b>	18
<b>TABLE 5 FOCUS GROUPS – BUSINESS ENTERPRISES</b>	18
<b>VI. Skills and Knowledge Levels</b>	23
<b>TABLE 6 SKILLS AND KNOWLEDGE LEVELS</b>	23
<b>VII. Concluding Remarks</b>	26
<b>VIII. Open license</b>	26
<b>IX. References</b>	27

## INTRODUCTION

This conceptual framework identifies sustainability and green skills that may be embedded in VET and IVET institutions. By doing so, it helps equip students and future employees with the skills and competences necessary to tackle one of the most pressing contemporary global challenges, and it also ensures that employers can competently deal with this challenge. It also presents some of the challenges and best practices that both tourism educational institutions and tourism business encounters in terms of environmental, socio-cultural, and economic sustainability.

The Framework is based on desk research and qualitative data collection. The desk research consisted in reviewing 30 tourism curricula on the VET, IVET, BA, and MA levels, and the review of 44 academic journal articles, policy reports, European tourism projects, non-governmental organizations (NGOs) reports, and websites related to sustainable tourism within the European Union (EU). The qualitative research consisted in 12 focus groups in the six countries of the ESTET project consortium, including Bulgaria, France, Greece, Ireland, Italy, and Poland. Two focus groups were held in each country, one with VET professionals and a second with professionals and experts in business enterprises. The material culminating from this research will be used by the ESTET project to produce micro-learning videos, WebQuests and as ideas for service-learning projects for tourism education institutions.

The conceptual framework is the result of contributions from the ESTET consortium members including, in alphabetical order, ALBEA Etudes Et Conseils (France), Eastern Macedonia - Thrace Regional Directorate for Primary and Secondary Education (Greece), European Center for Quality (Bulgaria), Future in Perspective Limited (Ireland), Mazovian Regional Tourism Organisation (Poland), Promimpresa SRL (Italy), University of Social Sciences (Poland).

## I. DEFINITIONS OF SUSTAINABLE TOURISM AND SUSTAINABILITY

**TABLE 1 - Definitions of Sustainable Tourism and Sustainability**

Definitions of Sustainable Tourism and Sustainability	
United Nations World Tourism Organization (UNWTO). Sustainable Tourism	Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities.
Bramwell and Lane (1993). Sustainable Tourism	A positive approach intended to reduce the tensions and friction created by the complex interactions between the tourism industry, visitors, the environment and the communities which are host to holidaymakers. It is an approach which involves working for the long-term viability and quality of both natural and human resources. It is not anti-growth, but it acknowledges that there are limits to growth.
Briassoulis (2002). Sustainable Tourism	Managing the natural, built, and sociocultural resources in destination areas of host communities in order to meet fundamental criteria of promoting their economic well-being, preserving their natural and socio-cultural capital, achieving intra- and intergenerational equity in the distribution of costs and benefits, securing their self-sufficiency, and satisfying the needs of tourists.
Brundtland Report. Sustainability – broadly defined	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

\* The definitions include both institutional definitions such as from UNWTO, and main academic definitions.

## II. GREEN SKILLS IDENTIFIED IN THE SUSTAINABLE TOURISM LITERATURE

**TABLE 2.1 ENVIRONMENTAL PROTECTION CONCEPTS**

These concepts and skills may be used micro-learning videos, WebQuests and as ideas for service-learning projects.

<b>Green Skills for Environmental Protection</b>	
<b>Eco-Friendly Transport</b>	
E-Vehicles	For transporting tourists
Bicycles	Provided at hotels and resorts
Public Transport	Accessible information for tourists
<b>Water Management</b>	
Leaks	Vigilance for leaks in hotels, restaurants, etc..
Water Flow	In Dishwashers, washing machines, garden sprinklers
Water Reuse	Grey water from laundry, sinks, or showers can be reused in gardens or outdoor cleaning
Water Recycling	Turning dirty and polluted water into drinking water. Mainly large hotels due to expensive technologies required
<b>Energy Management</b>	
Solar panels	For lighting, heating etc...
Eco-efficiency	Switching off the lights or adjusting the heating in unused spaces by installing sensors or manually
Energy Audit	To identify the main thresholds of consumption and reduce consumption
Information and Guidance	To tourists and staff on how to efficiently use energy
Renewable Energy	As an alternative source of energy
Insulation	Of premises to cut emissions from heating
Sunlight Optimization	Instead of electric lights when possible
<b>Waste Management</b>	
Waste Separation	Separating the different types of waste for appropriate treatment and recycling
Waste Minimization	Extracting the maximum benefits from the product and generating minimum waste
Waste Disposal	The use of recyclable or decomposable bags for disposal
Composting	Of food to be used in gardens

3Rs: Reduce, Reuse, Recycle	
Reduce	Water, energy, plastic, paper, metals, waste, etc..
Reuse	Plastic, glass, metals, fabrics, etc..
Recycle	Plastic, paper, glass, metals, etc..
Green House Gas Emissions (GHG)	
Carbon Footprint	Estimate the carbon footprint of your enterprise and consider ways of reducing it. For example, serve water in reusable glass jugs instead of water bottles.
Alternative Energy	Use of solar panels, wind turbines, photovoltaics, bio-fuels, etc..
Carbon Dioxide Absorption	By growing more plants and trees in hotels, resorts, etc..
Energy-Efficiency	Switching off the lights or adjusting the heating in unused spaces by installing sensors or manually
Biodiversity	
Protection	Of forests, oceans, lakes, rivers, etc.. through the promotion of and education on sustainable practices
Enhancement	Reforestation campaigns with tourists, respecting fishing quotas, etc.
Wildlife	Enhancing wildlife by respecting protected areas and natural reserves, saving lives of wild animals, and reacting to threats when necessary

**TABLE 2.2 SOCIO-CULTURAL SKILLS**

These concepts and skills may be used micro-learning videos, WebQuests and as ideas for service-learning projects.

Socio-Cultural Skills	
Protecting Local Culture and Heritage	
<i>World Heritage Convention</i> (UNESCO, 1972)	Intangible heritage is described as “the practices, representations, expressions, as well as the knowledge and skills, which communities, groups and individuals recognise as part of their cultural heritage”
Raising Awareness	Among tourists and tourism staff on the importance of local culture and traditions to promote respect, preservation, and care
Promoting Local Products	Traditional crafts passed down the generations, hand-made products from local materials, and so on.

Sustainable Excursions	That are considerate of the local culture, local community, and the local environment
Involving and Protecting Local Communities	
Decision-Making	Involving local communities in the decision making reduces friction and enhances harmony in the tourist destination between the local communities, businesses, and tourists.
Destination Management	Create a good quality of life for residents while maintaining a balance between the interests of visitors, the industry, local communities, and the environment and avoiding conflicts between these parties.
Overtourism:	Explain the impacts of overtourism on the host community in tourist campaigns and to tourism staff, and justify management strategies used to reduce the impacts of overtourism.
Empowerment	Empower local communities by supporting their social and cultural projects when possible.
Community Workshops	To ensure comprehensive stakeholder participation and understand the needs and concerns of the local community
Tourism Policies	Explained to tourism staff and workers in relation to social responsibility
Heritage Sites	
Social Value	As a collective attachment to place that embodies meanings and values that are important to a community (Jones 2017). Instilling social value in the community through awareness raising and campaigns enhances the protection of the heritage site.
Restricted Access	Limiting the number of visitors based on a daily quota as a means to protecting the heritage site from deterioration



**TABLE 2.3 GREEN SKILLS FOR THE ECONOMY**

These concepts and skills may be used micro-learning videos, WebQuests and as ideas for service-learning projects.

<b>Green Skills for Economy</b>	
Circular Economy	
Can Be Defined As	The circular economy relies on value creation through reduction, re-use, recycling and recovery of resources
Design Stage	Design or acquisition of sustainable tourism products from the start allowing for cradle-to-cradle product lifecycle instead of cradle-to-grave.
Reuse	For example, using grey water for hotel or restaurant gardens. Or using old tablecloth for cleaning windows.
Localization	
Local Purchasing	From local markets when possible. For example, food and beverage, furniture, etc..
Local Products	From local raw materials or ingredients to be promoted
Local Hiring	Of staff, technicians when possible
Onsite Recycling	
Water	Possible for big hotels or resorts due to high cost
Composting	To be used in gardening or as animal feed

**TABLE 2.4 OTHER GREEN SKILLS**

These concepts and skills are beyond the environment, culture-society, and economy paradigm and may be used micro-learning videos, WebQuests and as ideas for service-learning projects.

<b>Other Green Skills</b>	
Critical Thinking and System Thinking	Critical thinking and systems thinking as a means to make the connections between the environment, society and culture, and the economy.
Reflexive Thinking	Critical reflection about oneself and the environment is at the heart of changing thinking and action on sustainability
Communication Skills	Cultural awareness and cross-cultural communication
Collaboration and Partnership Skills	To coordinate and work with multiple stakeholders

### III. GREEN SKILLS IN EXISTING CURRICULA

**TABLE 3 GREEN SKILLS IN EXISTING CURRICULA**

The concepts and skills identified in curricula of the six consortium countries enables bridging the gap between skills identified in the literature review and skills that are currently being taught. It must be noted that there is no curricula dedicated entirely to sustainable tourism. Moreover, these skills are mostly confined to certain institutions and certain modules in each institution. This is consistent with ESTET's preliminary research that tourism curricula are generally lacking in relation to a comprehensive sustainable tourism component. Additionally, the skills in this table are useful as some of them are more specific and concrete than what was identified in the general literature review in Table 2.

Green Skills in Existing Curricula	
<b>Environmental protection</b>	<ul style="list-style-type: none"> <li>- Water, energy and waste management</li> <li>- Climate change implications for the tourism sector.</li> <li>- Biodiversity protection</li> <li>- Analyzing the reasons for ecological pollution and elaborate rules for protection of the environment</li> <li>- Having ecological awareness about environmental protection</li> <li>- Learning environmental terminology in the interaction of tourism with the environment, environmental policy, environmental legislation, environmental security, etc.. (BA level)</li> <li>- Management of sustainable tourism development; main directions of the management of the sustainable development of tourism; strategies for sustainable tourism development (BA level).</li> <li>- Natural and landscape heritage, protected areas</li> <li>- Positive and negative impact of tourism on the forest environment; Methods of tourist and recreational valorisation of forests; The importance of forest areas for recreation; Legal regulations for the provision of forests for recreation and tourism</li> </ul>
<b>Health, safety, and the protection</b>	<ul style="list-style-type: none"> <li>- Organization of tourist services by a travel agency and service providers in accordance with the principles of health and safety and environmental protection</li> <li>- Occupational health and safety regulations and negotiation techniques when booking tourist events and services</li> </ul>

	<ul style="list-style-type: none"> <li>- Knowing, indicating, describing, and analyzing the risks from pollution of the environment</li> <li>- Checking, applying, using, organizing, and controlling harmful substances and pollutants, and organizing and sorting of dangerous products and obsolete materials, consumables, etc. in compliance with collection and recycling technology</li> <li>- Respecting the requirements and rules for protection of the environment</li> <li>- Distinguishing methods of food preservation and storage, distinguishing quality management systems and health safety of food and nutrition, distinguishing and applying computer programs and compliance with the principles of sustainable development in hotel gastronomy</li> </ul>
<b>Socio-Cultural</b>	<ul style="list-style-type: none"> <li>- Tourism accessibility; protection of cultural heritage; protection of cultural and environmental assets while considering the implications that are placed on the local community.</li> </ul>
<b>Economic</b>	<ul style="list-style-type: none"> <li>- Tourism value chain and circular economy. For example, design and delivery of sustainable and accessible tourism products</li> <li>- Monitoring and coordinating scarce and limited resources and how to protect certain assets.</li> </ul>
<b>Awareness</b>	<ul style="list-style-type: none"> <li>- Social perceptiveness: being aware of the impact actions can have on persons, communities, and/or the environment</li> <li>- Acquiring knowledge on different philosophical systems as to be able to understand, respect and protect cultures and heritages</li> <li>- Of the local ecosystem (administration, tourism stakeholders, etc...)</li> </ul>
<b>Types of tourism</b>	<ul style="list-style-type: none"> <li>- The different principles and types of responsible tourism</li> <li>- Ecologically sustainable tourism</li> <li>- Economic fair tourism</li> <li>- Socially responsible tourism</li> <li>- Community-based and pro-poor tourism</li> </ul>

	- Solidarity tourism
<b>Management, auditing, and evaluation</b>	<ul style="list-style-type: none"> <li>- Environmental management</li> <li>- Communication of the environmental management policy to customers and staff of the establishment</li> <li>- Monitoring and measurement.</li> <li>- Evaluation of legal compliance.</li> <li>- Control of environmental records.</li> <li>- Audit systems: internal and external</li> <li>- Green Business development and management, sustainable entrepreneurship</li> </ul>
<b>Lifestyle</b>	<ul style="list-style-type: none"> <li>- Slow tourism</li> <li>- Characterization the positive influence of the forest environment on the human body</li> <li>- Presenting benefits of resting in forest areas</li> <li>- Cycling tourism</li> <li>- Eco-restaurants</li> </ul>
<b>Animal welfare</b>	<ul style="list-style-type: none"> <li>- Selection of horses for recreation and equestrian tourism</li> <li>- Safety rules for working with horses in horse recreation and tourism</li> <li>- Organising recreation and horse tourism</li> </ul>

#### IV. FOCUS GROUPS WITH VET INSTITUTIONS

##### TABLE 4 FOCUS GROUPS - VET

The focus groups with VET providers enables identifying where VET providers currently stand in relation to sustainable tourism, as well as where they would like to be and the means of achieving this. This material may be used in micro-learning videos, WebQuests and as ideas for service-learning projects.

While there exists an in-depth understanding among VET educators and experts of various elements of sustainable tourism, there remains to be a gap in the education on sustainable tourism and in achieving the triple-bottom-line due to policies, economic factors, and behavioural factors, among others. The focus groups reveal what skills educators think ought to be included, as well as methods of embedding them. They also provide several best practices.

Focus Groups - VET	
Elements of Sustainable Tourism	
Environmental and natural resources	<ul style="list-style-type: none"> <li>- Assessment of the natural environment and landscape with a view to understanding their state and potential for use. For example, if one beach is used under concession for one summer and it is not cleaned, it will not be possible to use it as a beach next summer. That's why tourism resources should be managed in an intelligent way: not just used, but preserved</li> </ul>
Cultural and social	<ul style="list-style-type: none"> <li>- Impact on destination and local population.</li> <li>- Protection of local culture</li> <li>- Benefits to the local communities</li> <li>- How the tourist engages with the local community and local cultural heritage.</li> <li>- Historic buildings, monuments, and archaeological sites</li> <li>- Cultural events such as religious festivals, folklore, tradition, customs and traditional dances and music</li> <li>- Social events, such as the way of life, language and habits of the inhabitants</li> <li>- Responsible tourism tries to both minimise and reverse the negative effects of travel. These can include overcrowding, the destruction of heritage and the environment, detrimental social change, among others.</li> </ul>
Economic	<ul style="list-style-type: none"> <li>- Tourism that delivers profitability and financial viability for the operators but also contributes to the local economy in terms of use of local products and services, and so on</li> </ul>
Triple-bottom-line	<ul style="list-style-type: none"> <li>- Balance between the environment, local communities, businesses, and tourists' needs.</li> <li>- Economically viable, socially just, culturally and environmentally respectful.</li> </ul>
Behaviours and attitudes	<ul style="list-style-type: none"> <li>- Mindset of managers and employees on tourism</li> <li>- Influencing of tourists' behaviour</li> </ul>
Greens Skills Included in Current Curricula	
Bulgaria	<ul style="list-style-type: none"> <li>- There is no programme specifically on sustainable tourism</li> </ul>

	<ul style="list-style-type: none"> <li>- Elements of sustainable tourism are incorporated into the practical training and assignments</li> <li>- Included at the end of the training in some programmes, for example, how to protect the environment</li> </ul>
Poland	<ul style="list-style-type: none"> <li>- There are no comprehensive elements of sustainable tourism in the curricula</li> <li>- Including sustainable tourism depends on the teacher's effort, own research, and awareness to include new trends and best practices</li> </ul>
Ireland	<ul style="list-style-type: none"> <li>- Some elements of sustainable tourism are included in the curricula</li> <li>- Areas include the socio-economic, cultural, and environmental impacts of tourism; eco-tourism and biodiversity; heritage as a tourism product</li> </ul>
Greece	Includes teaching on development and the environment; environmental management in tourism; Rural Tourism: Agrotourism, Mountain Tourism, Ecotourism
Italy	<ul style="list-style-type: none"> <li>- Teaching management skills specifically focused on green enterprises</li> <li>- Creative thinking</li> </ul>
France	- All participants indicated that the challenges of the sustainable tourism are included as a module or unit of the overall programme
Green Skills that Ought to be Included in the Curricula	
Practical training and experience	<ul style="list-style-type: none"> <li>- Arrange meetings with entrepreneurs and tourism professionals who have implemented and follow sustainable tourism principles in their practice/ business/ day-to-day operations.</li> <li>- Project learning: involving students in creating tourist projects linking ecology, business and local environment</li> </ul>
Implementing change at the workplace	- To recycle, reduce food waste, to compost, to clean work places, use less energy, and so on
Triple-bottom-line	- Economy, society, environment should be included into curricula

Certifications assessments	and	<ul style="list-style-type: none"> <li>- Impact assessments; environmental auditing and assessments</li> <li>- Eco-labels; Industry certification;</li> <li>- Eco-taxes and incentives</li> </ul>
Management Skills		<ul style="list-style-type: none"> <li>- Specifically focused on green enterprises</li> <li>- Creative thinking (also for workers and employees)</li> <li>- Tools for planning and managing sustainable tourism</li> </ul>
An understanding of different types of tourism		<ul style="list-style-type: none"> <li>- To understand the different practices between mass tourism and alternative tourism models (agritourism, ecotourism, historical tourism, cultural tourism, religious tourism, etc.)</li> </ul>
Behaviour		<ul style="list-style-type: none"> <li>- learning how to question, think about, and develop capacities to trigger behaviour changes towards a sustainable tourism.</li> </ul>
Triple-bottom-line		
Bulgaria		<ul style="list-style-type: none"> <li>- The educational programme at the moment reflects this approach.</li> <li>- We address the three dimensions (planet, people, economy) in the educational programme, but not in detail</li> </ul>
Poland		<ul style="list-style-type: none"> <li>- It is necessary and very important</li> </ul>
Ireland		<ul style="list-style-type: none"> <li>- Teachers agreed that it should be covered in their programmes and believe it should be supported by real-world example to underpin its relevance.</li> </ul>
Greece		<ul style="list-style-type: none"> <li>- It is Important</li> </ul>
Italy		<ul style="list-style-type: none"> <li>- It seems possible to introduce the triple-bottom-line approach to students although it would be helpful to simplify the concepts behind it.</li> </ul>
France		<ul style="list-style-type: none"> <li>- The participants debated about the continuous review that should be done theoretically in the educational programmes but at the practical level it is difficult to implement</li> </ul>
Embedding Green Skills in the Curricula		
Practical Training		<ul style="list-style-type: none"> <li>- The best way to include green skills in tourism curricula is to make students practice them in real work environment. Such a strategy should be developed and implemented</li> </ul>

	<p>together with tourism enterprises where students do their work placements.</p> <ul style="list-style-type: none"> <li>- Cooperation with stakeholders is a factor that preconditions successful inclusion of these skills in the curricula. Such as the ministries of education, tourism, VET schools, tourism enterprises.</li> <li>- Providing teachers with ready tools and materials also workshop materials (currently in the pandemic it is very important to give teachers all the tools for online lessons)</li> </ul>
Changes at the workplace	<ul style="list-style-type: none"> <li>- Applying sustainable skills in schools such as recycling or material management, and/or minimizing the use of electricity and water</li> </ul>
Collaboration	<ul style="list-style-type: none"> <li>- With ministries and in cooperation with local government</li> <li>- Cooperation with stakeholders is a factor that preconditions successful inclusion of these skills in the curricula. Such as the ministries of education, tourism, VET schools, tourism enterprises.</li> </ul>
Awareness Raising	<ul style="list-style-type: none"> <li>- Students need to understand the issues of climate change, pollution, loss of biodiversity, as well as responsible economic growth and prosperity of local communities, social well-being, social inclusion etc. to understand why rethinking tourism is necessary</li> </ul>
Best Practices	
Bulgaria	<ul style="list-style-type: none"> <li>- We launched a joint project with the College of Tourism in Dobrich this summer. In our school, as part of the practical training in "Cooking", all food waste will be composted on the territory of the school. The composter will 'feed' with organic fertilizer a mini greenhouse with herbs and spices, which the students themselves will plant and then use for cooking. So, we will try to make a closed circle, so to teach the students how to recycle, to minimize food waste and how to use this waste for gardening.</li> </ul>
Poland	<ul style="list-style-type: none"> <li>- Training directed at students with disabilities</li> </ul>
Ireland	<ul style="list-style-type: none"> <li>- Catherine Mack's Ecotourism Handbook, a comprehensive guide to ecotourism business development - <a href="http://icrt.ie/media/53246/final--ecotourism-handbook-2009.pdf">http://icrt.ie/media/53246/final--ecotourism-handbook-2009.pdf</a></li> <li>- The <b>Green Hotelier website</b> has a great series of 'Know How' articles on a wide range of subjects including: sustainable interior design, green meetings, green IT, engaging employees, sustainability in the kitchen, waste</li> </ul>



	management, solar power, etc.
Italy	<ul style="list-style-type: none"> <li>- Sustainability in education plan, MIUR 2017 (Ministry of Education)</li> <li>- Teaching while playing – educative toolkit for sustainability, CESVI 2018</li> <li>- Piano Educazione Civic, MIUR 2019 (Ministry of Education)</li> </ul> <p>Note: these do not specifically focus on tourism, but only refer to this sector</p>
France	- MONA professionalisation programme 2021 (for professionals of the tourism sector). The programme integrates sustainability as a key aspect in the tourism sector to implement intelligent local strategies
Greece	- Certifications. Destinations and companies that have been awarded an eco quality label. Award-winning companies are always promoting their certification, and most travel websites now include eco-labels in their destination search tools
<b>Challenges</b>	
Study-Work	<ul style="list-style-type: none"> <li>- When students start working and face a different (not sustainable) approach at the workplace, it gets difficult for them to adopt a model of eco-conscious attitude to work and to the environment. It does not depend on the teachers, we can prepare the best topics and materials, but when students do not see it put into practice, they can hardly apply the knowledge on sustainability in their work.</li> <li>- The bigger problem – particularly in smaller towns – is the extent to which employers are ready to take our students for internships. Therefore, most of the internships are not conducted in a real work environment, but in classrooms with simulated work situations and cases (Bulgaria)</li> </ul>
Contracts	- The strong connection between the schools and employers could be guaranteed with contracts for cooperation between schools and employers where the obligations of each party are well described. The existing contracts given from the Ministry are not perfect. This cooperation and these contracts should be specified at state level, not by at the level of VET schools (Bulgaria)
Course content	- Many of the participants already felt that in the courses that they lecture and teach on, that the sustainability dimension was present. There was a recommendation that

	more could be done but there was reluctance to move too far away from the needs of the industry and businesses.
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## V. FOCUS GROUPS WITH BUSINESS ENTERPRISES

**TABLE 5 FOCUS GROUPS – BUSINESS ENTERPRISES**

The focus groups with business enterprises and experts reveal that business professionals are familiar with elements of sustainable tourism. Through the focus groups, the skills desired from students by employers were identified. This enables creating educational material that is also relevant to the market. Sustainable practices and measures already implemented by businesses were also identified, as well as challenges and obstacles to further incorporating sustainability into business strategies, models, and practices. Business professionals suggested that economic factors and lack of government support as an obstacle towards sustainability.

Focus Groups – Business Enterprises	
Elements of Sustainable Tourism	
Environmental	<ul style="list-style-type: none"> <li>- Taking care of the environment</li> <li>- Protection of natural resources</li> <li>- Matching the tourism industry and environment</li> <li>- Low carbon footprint: Leaving no trace, low impact activities and minimising harm on the natural environment</li> </ul>
Socio-cultural	<ul style="list-style-type: none"> <li>- Protection of traditions</li> <li>- Balance between local communities and tourists' needs</li> <li>- Natural resources, cultural heritage and tradition protection</li> <li>Respect for the local community</li> <li>- Efficient usage of cultural, geographical, historical assets</li> <li>- Historic buildings and monuments which, together with archaeological sites</li> </ul>
Economic	<ul style="list-style-type: none"> <li>- Local communities, particularly in remote areas, small towns and villages, are often neglected. Tour operators should strive to change this attitude by including in the</li> </ul>

	<p>value chain smaller local suppliers rather than bigger companies (e.g. local hotels rather than bigger hotel brands, family restaurants rather than restaurant chains), and by advising travellers to buy products and use services offered by the locals (e.g. local handmade souvenirs rather than cheaper products often coming from international suppliers)</p> <ul style="list-style-type: none"> <li>- Cooperation between local people – food producers, transport, attractions and the other service providers etc.</li> <li>- Local cuisine based on local products</li> </ul>
Triple-bottom-line	<ul style="list-style-type: none"> <li>- Sustainable tourism is tourism that cares about people, planet and the economy (particularly prosperity and wellbeing of hosting communities and destinations)</li> </ul>
Responsible tourism	<ul style="list-style-type: none"> <li>- Which complements the notion of sustainable tourism with mainly the consideration of social aspects. The social aspects are based, for example, on soft mobility, taking into account people with disabilities</li> </ul>
Certification	<ul style="list-style-type: none"> <li>- Certification and green labels – standards for the industry – offers a competitive advantage especially in terms of marketing the business</li> <li>- Several requirements mainly provisioned by Ecolabel, ISO and GTSC (Global Tourism Sustainable Council) in order to be certified as sustainable tourism operator</li> </ul>
Sustainability Measures or Practices Applied in the Tourist Enterprise	
Reduce, reuse, recycle	<ul style="list-style-type: none"> <li>- Using recycled paper, collecting used paper for recycling, separating waste, using energy efficient devices and appliances</li> <li>- Using devices, appliances and techniques that help to save water and energy and to reduce waste, e.g. collecting rainwater for gardening, reducing water pressure in pipes, installing dual flush or low flow toilets, installing solar panels as a source of green energy, composting, eliminate single use hospitality consumables (in bathroom, kitchen and restaurant).</li> <li>- Smart energy use: switch to LED bulbs, lights on timers, smart controls throughout the accommodation units (lights, heating and air conditioning)</li> <li>- switching to solar panels and geothermal heating but stressed that these changes would only be financially viable with grant aid support.</li> </ul>

Economic	<ul style="list-style-type: none"> <li>- Use of local fruits and vegetables</li> <li>- Regional and eco products</li> <li>- Local and regional souvenirs</li> </ul>
Socio-cultural	<ul style="list-style-type: none"> <li>- Use of regional recipes</li> <li>- Availability of services and products for seniors and persons with disability</li> <li>- Trained local guides to explain the culture and history</li> </ul>
Influencing Behaviour	<ul style="list-style-type: none"> <li>- Influencing behaviour of employees: encouraging use of public transport or bicycles for going to/from work, choosing travelling by train where possible, if not possible opting for joint travel or car sharing (several people travelling together in one car instead of everybody driving his/her vehicle), switching off car/bus engine when waiting for the group of tourists, conducting workshops about circular economy.</li> <li>- Influencing behaviour of tourists: asking tourists going to natural areas to avoid using disposable tableware, cutlery, bags etc. and bring with them food in durable lunch boxes and bottles; showing places where tourists can enjoy local products and services; asking visitors (in hotels) to use towels for more than one day.</li> </ul>
Animal Welfare	<ul style="list-style-type: none"> <li>- Animal friendly attitude and respect for animals</li> </ul>
Certification and labels	<ul style="list-style-type: none"> <li>- France: DIR label [<i>Destination Internationale Responsable</i>] Responsible International Destination ; ISO certification for tourism, leisure and congress centres; Eco-Gestures Charter [<i>Charte éco geste</i>] addressing mainly qualitative aspects; Fair tourism label at the international level</li> </ul>
Green Skills Expected from Graduates and Trainees	
Environmental	<ul style="list-style-type: none"> <li>- Protecting the natural environment and cultural heritage; leaving no trace; ensure minimum environmental impacts</li> </ul>
Reduce, reuse, recycle	<ul style="list-style-type: none"> <li>- how to save water, energy efficiency, waste management</li> </ul>
General awareness	<ul style="list-style-type: none"> <li>- Climate change</li> <li>- Understanding attitudes, behaviours, and needs of responsible tourists.</li> <li>- knowledge, abilities, values and attitudes to develop</li> </ul>

	<p>and support a sustainability</p> <ul style="list-style-type: none"> <li>- Awareness of basic principles of sustainable and responsible tourism.</li> <li>- Awareness of the main sustainable tourism brands</li> <li>- Knowledge about natural and cultural heritage of the country</li> </ul> <p>Note: The participants expressed the opinion that VET graduates should not be expected to have very specific or in-depth knowledge about sustainability, but should rather <i>be aware of general principles</i></p>
Management skills	- Management skills specifically focused on green enterprises
Food and beverage	Healthy and sustainable food
Soft and inter-personal skills	- Communication skills, personality, attentiveness and politeness were still regarded as essential skills for those working in the tourism and hospitality industry
Training Offered to Enhance Green Skills	
General awareness	<ul style="list-style-type: none"> <li>- one-month induction training dedicated to sustainability issues (offered only by one institution in Bulgaria)</li> <li>- Information sharing: Training for qualified personnel who will be able to transfer the information to the rest of people in the workplace</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>- Waste separation; Waste composting</li> <li>- training for energy saving by the employees; Training for water saving by the employees</li> </ul>
Socio-cultural	- Training on history, regional cuisine, cultural heritage,
Food and Beverage	- knowledge of healthy and suitable nutrition based on local tradition
Challenges in Adopting or Improving Sustainable Tourism	
Behaviour and awareness	<ul style="list-style-type: none"> <li>- Reluctance or resistance to adopting sustainable practices on the part of some tourist enterprises, for example, due to uncertainty around return on investment in green models.</li> <li>- Lack of awareness on environmental value</li> </ul>

Lack of training	<ul style="list-style-type: none"> <li>- The need to pay attention to necessity to implement training for the tourism industry people in sustainable tourism</li> <li>- The need to send employees to workshops and trainings, for example, to study tours to get know major cultural and natural assets in the region</li> </ul>
Economic	- Two of the participants had invested (capital) extensively in 2019 and are struggling to maintain loan repayments. All operators stated that they would need Government assistance over the next 24 months to ensure their survival. If incentivised, the overall agreement that these businesses had no major difficulties in adopting or improving their offering from a sustainability point of view, but at the moment, survival was their primary concern.
Regulations	- Policies on environment preservation, and in general on sustainability, are too much general regardless of the differences between different areas.
Local communities	- The need to create social and environmental awareness among local communities
Government	- The not always present willingness of public authorities to cooperate with businesses on sustainability
Adopting the Triple-Bottom-Line	
Bulgaria	- The shared position to this question was that yes, it would be feasible to adopt the triple-bottom-line approach, but it would be difficult. For it to happen in the tourism sector, all tourism stakeholders along the value chain should cooperate and support each other. The reality, however, is different. The relationships between tourism service providers are often competitive, and businesses are not used to working together
Poland	<ul style="list-style-type: none"> <li>- it is possible but it needs a change in education process and currently there are no such issues in curricula</li> <li>- it is possible but it needs cooperation between business, schools, local communities and educational institutions</li> </ul>
Ireland	- All participants agreed that this is possibly the right thing to do, but from a practical business point of view it required significant investment and commitment and has little impact or improvement on the financial bottom-line.
Italy	the triple-bottom-line would be the best approach to

	foster sustainability in the tourism sector, although it is difficult to find a contact point for all three elements. It seems to be extremely challenging to set up activities balancing all the three components of the model while addressing to impact reduction and cost-effectiveness optimization.
Greece	Yes it is possible but needs passion, commitment, and dedication in the mission of the enterprise.
France	Participants agreed this would be the ideal approach to set the way forward. However, the reality makes difficult to follow all 3 components with equal weight depending on the type and nature of organisation.

## VI. SKILLS AND KNOWLEDGE LEVELS

**TABLE 6 SKILLS AND KNOWLEDGE LEVELS**

The differentiation between basic, intermediate, and advanced levels applies to all skills and concepts included in this document. The educational material produced based on this conceptual framework can be tailored to the specific level depending on the target learners and using a case-by-case approach.

Skills and Knowledge Levels				
	Basic	Intermediate	Advanced	
	Learners will be able to perform simple tasks	Learners will be able to perform multiple and complex tasks	Learners will be able to perform, manage, analyze, and innovate	
	Unistructural	Multistructural	Relational	Extended Abstract
	Identify, Name, Follow Simple Procedure	Combine, Describe, Perform Skills	Analyze, Argue, Critique, Explain Cause, Relate	Create, Formulate, Innovate, Reflect, Theorize
Skills: cognitive (involving the use of logical, intuitive	P	P	P	P

and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments)				
Example of Skills – Water Management	Vigilance for leaks in hotels, restaurants, etc..	Water reuse: Grey water from laundry, sinks, or showers can be reused in gardens or outdoor cleaning	Estimate the carbon footprint of your enterprise and consider ways of reducing it. For example, serve water in reusable glass jugs instead of water bottles.	Water Recycling: Turning dirty and polluted water into drinking water. Mainly large hotels due to expensive technologies required
Knowledge: knowledge and critical understanding, theoretical and factual input			P	P
Example of Knowledge: Critical thinking and triple-bottom-line			The issues of climate change, pollution, loss of biodiversity, as well as responsible economic growth and prosperity of local communities, social well-being, social inclusion etc. to understand why rethinking tourism is necessary	Critical thinking and systems thinking as a means to make the connections between the environment, society and culture, and the economy.



<p>Attitudes: as the ability of the learner to apply knowledge and skills autonomously and with responsibility</p>			P	P
<p>Example of Attitudes: Adopting and applying sustainability values and green innovation</p>			<p>learning how to question, think about, and develop capacities to trigger behaviour changes towards a sustainable tourism.</p>	<p>Influencing behaviour of employees: encouraging use of public transport or bicycles for going to/from work, choosing travelling by train where possible, if not possible opting for joint travel or car sharing switching off car/bus engine when waiting for the group of tourists.</p>

## VII. CONCLUDING REMARKS

As the preliminary research conducted by ESTET revealed, the above research confirmed that the sustainability component remains weak, or in certain countries even lacking, in many tourism curricula. The conceptual framework identified the contemporary green skills being implemented in various fields as well as skills taught in numerous tourism courses. This process enabled identifying the gap between available skills and taught skills. The focus groups revealed where VET institutions and businesses stand now and where they would like to be. VET providers saw a need for cooperation with businesses to equip students with real-world experiences and expose them to sustainable practices already applied. VET providers also stated a need to coordinate and cooperate with ministries and local government. Business on their part stated their desire that VET providers equip students with more green skills to meet the demands of today's greener economy. Therefore, in addition to including the green skills and concepts in educational material, as well as the means of embedding, the ESTET project can provide educators with elaborated and contextualized challenges, opportunities for collaboration, and ideas they may encounter or use.

## VIII. OPEN LICENSE

This document will contribute to producing a handbook open to the public (i.e. third parties) who are permitted to:

- Use the work.
- Adapt the work as needed (e.g. translate, modify, shorten for local contexts, etc..).
- Reproduce and share the original or adapted work with others (e.g. with students in the classroom, online, with peers, etc.).

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