Skill taxonomy

TOOL 2

A structured framework of skills defined at the industry level

Content

Introduction

Skills Taxonomy is realised within the ERASMUS+ transnational project "ADVANCE CIRCULAR - Linking Tourism Industry with VET to embrace circularity," implemented in the four countries of the project partnership: Romania, Spain, Bulgaria, and Slovenia.

The project aims to foster innovative circular approaches and tools in the tourism sector and its related areas through transnational cooperation and knowledge transfer by linking vocational education and training to this sector.

The Skill Taxonomy aims to present a structured framework of skills defined at the level of the tourism sector and related fields from a Circular Economy point of view.

At the same time, the taxonomy provides a relevant foundation for VET institutions to plan and develop professional training programs for this sector, programs connected to the reality of climate change and the circular economy as a determining factor in sustainable development for the planet, society, economy and people.

Benefits of this taxonomy:

◈ A taxonomy of skills is the first step toward a clear X-ray of them, focusing on circularity at the sector and related field level. This will facilitate an increase in the degree of resilience and proactive adaptation to changes in employment and the labour market.

◈ The taxonomy enables tracking skills data to proactively improve and reskill employees in the sector to perform in the evolving future of work in connection with sustainable development and the circular economy.

◈ The taxonomy facilitates skills gap analysis, ensuring curriculum and learning development meet the sector's needs sustainably.

The Tool 2 has the following components:

◊ taxonomy definition(s);

◊ definitions of green skills, in general, with relevance in the circular economy (identification of different definitions of the concept of green skills, examples of other such skills;

◊ green skills definitions specific to the tourism sector and related fields, with relevance in the circular economy (identification of different definitions of the concept of green skills in tourism, examples of other such skills);

◊ five categories[1] based on the key elements of the Circular Economy (as defined by Circle Economy – a global impact organisation):

♦ PRIORITISE REGENERATIVE RESOURCES: Ensure that renewable, reusable, non-toxic resources are efficiently used as materials and energy.

♦ STRETCH THE LIFETIME: While resources/products are in use, maintain, repair, and upgrade them to maximise their lifetime and give them a second life through take-back strategies when applicable.

♦ USE WASTE AS A RESOURCE: Utilise waste streams as a source of secondary resources and recover waste for reuse and recycling.

♦ DESIGN CIRCULAR: Consider circularity during the design process, use suitable materials, and design for an adequate lifetime and extended future use.

♦ INCORPORATE DIGITAL TECHNOLOGY: Tracking and optimising resource use and strengthening connections between different actors through digital online platforms and technologies.

Five green skills were developed for each category. Each skill is defined and described in detail, and two examples of related behaviour are provided to illustrate it. In total, the taxonomy includes 26 skills.

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[1] Five categories were chosen, based on the key elements of the Circular Economy (as defined by Circle Economy) a global impact organisation, as a common foundation to create the taxonomy.

GLOSSARY OF CIRCULAR ECONOMY AND GREEN SKILLS

Circular Economy: An economic system aimed at eliminating waste and the continual use of resources through principles like reuse, sharing, repair, refurbishment, remanufacturing, and recycling.

Green Skills: Abilities needed to support the development of a sustainable and resource-efficient society, including knowledge in areas like renewable energy, energy efficiency, waste reduction, and environmental compliance.

Sustainability Communication: The practice of effectively conveying information about sustainability initiatives and practices to stakeholders, aiming to promote environmental responsibility and sustainable development.

Resource Efficiency: Using the Earth's limited resources sustainably while minimizing environmental impact, ensuring that resource use does not exceed the planet's capacity to regenerate them.

Carbon Management: The process of measuring and reducing carbon dioxide emissions and other greenhouse gases to mitigate climate change, often involving strategies like carbon accounting, reduction initiatives, and offsetting.

Digital Skills for Sustainability: Competencies that enable individuals to use digital technologies to support sustainable practices, such as utilizing data analytics for energy efficiency, applying digital tools for environmental monitoring, and promoting sustainable behaviours through digital platforms.

Lifecycle Assessment: A technique to assess environmental impacts associated with all the stages of a product's life, from raw material extraction through to processing, manufacture, distribution, use, repair and maintenance, and disposal or recycling.

Upcycling: The process of transforming by-products, waste materials, or unwanted products into new materials or products of better quality or for better environmental value.

Eco-Friendly Accommodations: Lodging facilities that implement practices to reduce their environmental impact, such as energy efficiency, water conservation, waste reduction, and the use of sustainable materials, often by adhering to sustainability certifications and reducing resource use.

Sustainable Supply Chains: Supply chains that integrate environmentally and socially responsible practices into the movement of goods and services, from sourcing and production to distribution and end-of-life management.

1 Taxonomy Definitions and Role

1.1 Definition of the taxonomy in the context of the "Advance Circular" project

A skills taxonomy is a structured framework that categorises and organises skills at an industry or sectoral level. It is designed to offer a clear and standardised understanding of the necessary competencies for specific job roles and sectors. In the context of the "Advance Circular" project, the skills taxonomy focuses on green and circular economy skills within the tourism industry, aligning with the broader goals of environmental sustainability and resource efficiency.

The taxonomy aims to:

◊ **Standardise Green Skills:** Establish a common language and framework for defining green skills relevant to the circular economy in the tourism sector.

◊ **Categorise Skills by Function and Industry:** Group and classify skills that reflect their relevance to tourism, vocational education and training (VET), and the circular economy.

◊ **Support Learning and Training: S**erve as a foundation for designing educational and training programs that align with the circular economy's goals of reducing waste, optimising resource use, and promoting sustainability.

1.2 The taxonomy's role in fostering circular economy skills within the tourism sector

The "Advance Circular" project fosters circular economy practices in the tourism sector by linking vocational education and training institutions with industry needs. The skills taxonomy plays a crucial role in achieving this by:

◊ **Bridging Gaps Between VET and Industry**: The taxonomy provides a clear structure for identifying and addressing skill gaps within the tourism sector as it transitions toward circular economy practices. It ensures that VET institutions understand and integrate industry-specific skills into their curricula.

◊ **Promoting Circular Economy Practices:** The taxonomy categorises and defines green skills, promoting the adoption of circular economy principles in tourism. It facilitates the development of a workforce equipped with the skills required to implement sustainable and resource-efficient practices.

◊ **Enabling Skill Alignment and Development:** The taxonomy helps to align the skills required by the tourism industry with the training provided by VET institutions, ensuring a workforce prepared for the challenges and opportunities of a circular economy.

1.3 OBJECTIVES OF THE TAXONOMY FOR ENHANCING SUSTAINABILITY IN VET AND THE TOURISM SECTOR

The objectives of the taxonomy within the "Advance Circular" project are to:

◊ **Increase Understanding of Circular Economy Skills**: Enhance awareness and knowledge of green and circular skills required within the tourism sector.

◊ **Support the Transition to a Circular Economy:** Equip the tourism industry and its workforce with the skills necessary to adopt circular economy practices.

◊ **Facilitate Knowledge Transfer:** Enable the exchange of knowledge and best practices between VET institutions and the tourism industry, supporting the integration of circular skills into educational programs and industry operations.

◊ **Ensure Practical Application of Green Skills**: Provide concrete examples of how green skills can be applied in tourism operations, ensuring that training programs are grounded in practical, real-world contexts.

◊ **Create a Foundation for Future Skills Development**: Establish a structured and adaptable framework that can be expanded as the needs of the tourism sector and the circular economy evolve.

1.4 Breakdown of the taxonomy's component elements, including structure and logical categories

The skills taxonomy comprises several key elements designed to support developing and applying green skills in the tourism sector. These components include:

1.4.1 Skill Categories

The taxonomy is divided into categories that reflect the circular economy's core aspects. These categories organise skills based on their function and relevance to circular practices in tourism. The key categories are presented in the diagram below.

Skill Categories

Prioritise Regenerative Resources
Skills related to utilising renewable, reusable, and non-toxic resources for energy and material efficiency

Design Circular
Skills involving the integration of circularity into the design process, such as choosing sustainable materials and designing for reuse.

Incorporate Digital Technology
Skills related to using digital tools and platforms to track and optimise resource use in a circular economy.

Use Waste as a Resource
Skills that emphasise the reuse and recycling of waste as secondary resources.

Stretch the Lifetime
Skills focused on maintaining, repairing, and upgrading resources to maximise their lifespan.

1.4.2 SKILL DEFINITIONS AND DESCRIPTIONS

Each skill within the taxonomy is clearly defined and described, ensuring all stakeholders (VET institutions, industry, and learners) understand its purpose and application.

1.4.3 EXAMPLES OF RELATED BEHAVIOURS

The taxonomy provides two examples of real-world behaviours or actions that reflect the practical application of each skill in a tourism context to illustrate each skill. These examples help demonstrate how abstract concepts can be translated into everyday operations.

1.4.4 TAXONOMY VALIDATION AND FEEDBACK MECHANISM

The taxonomy includes a process for ongoing validation and feedback, ensuring it remains relevant and adaptable. National seminars and feedback sessions with tourism and VET stakeholders will help refine and improve the taxonomy.

By organising skills into these elements, the taxonomy offers a practical and structured approach to developing a skilled workforce capable of driving circular economy practices within the tourism sector.

2 GREEN SKILLS IN THE CIRCULAR ECONOMY

The whole of the EU's economy will need to adapt skills in all types of occupations to some extent to align with the demands of the green economy.

A robust EU framework and initiatives support skills development, including acquiring green skills.

2.1 KEY EU INITIATIVES WITH RELEVANCE TO GREEN SKILLS

European Skills Agenda aims to help individuals and businesses develop more and better skills and use them by strengthening sustainable competitiveness [1].

European Green Deal aims to transform the EU into a modern, resource-efficient, and competitive economy, ensuring zero net emissions of greenhouse gases by 2050, economic growth decoupled from resource use, and no person and no place left behind [2].

Pact for Skills, under which a new Large-Scale Partnership (LSP) was launched for the renewable energy industrial ecosystem in March 2023 [3].

Just Transition Fund (JTF) aims to support the areas most affected by the transition from a carbon-based economy, including worker upskilling and reskilling [4].

Net Zero Industry Act 2023 aims to enhance skills for net-zero technologies [5].

2.2 OVERVIEW OF GENERAL DEFINITIONS OF GREEN SKILLS

Green skills cover a wide range of competencies, e.g., in the fields of wind, solar, and hydro, as well as energy audits and training. These skills need to be taught in schools to provide the basis for green skills development for all.

According to Eurostat, there are just over 5 million green jobs in the EU economy, mostly in energy and water supply, sewerage, waste management and remediation activities (1.6 million) and construction (1.4 million) [6].

Green Skills: In essence, green skills are about (i) technical knowledge and skills that enable professionals to effectively use green technologies and processes (i.e., resource-efficient technologies or processes that reduce waste and minimise the environmental impact of human action) and (ii) transversal skills, as well as knowledge, values, and attitudes that help them make pro-environmental decisions in their work and lives. These overall green skills are already being introduced in training systems globally [7].

Circular Economy: A systems solution framework that tackles global challenges like climate change, biodiversity loss, waste, and pollution. It is based on three principles, driven by design: eliminate waste and pollution, circulate products and materials (at their highest value), and regenerate nature. A transition to renewable energy and materials underpins it. Transitioning to a circular economy entails decoupling economic activity from consuming finite resources. This represents a systemic shift that builds long-term resilience, generates business and economic opportunities, and provides environmental and societal benefits [7].

2.2.1 IDENTIFICATION OF DIFFERENT DEFINITIONS

City and Guilds Foundation

Definition: Green skills is a collective term for the specific knowledge, abilities and values needed to promote the reduction of negative environmental impact in the workplace.

Relevance: Green skills are now relevant to all sectors, with organisations focusing on creating new dedicated green roles, such as retrofitting and electric vehicle charging installation, and embedding sustainability into existing roles through developing skills like carbon literacy for everyone, from accountants to marketing professionals. As countries worldwide work towards net zero economies, having the right green skills will be essential

for employers with their net-zero targets and striving to meet government guidelines that often have financial incentives attached.

Source: City & Guilds Foundation. Green Skills Training [8].

Green Skills Resources

Definition: Green skills are those needed to reduce environmental impacts and support economic restructuring to attain cleaner, more climate-resilient, and efficient economies that preserve ecological sustainability and provide decent work conditions.

Relevance: The development of generic green skills is essential for the greening of all industries, as they enable a person to develop a green mindset and adopt generic operational practices that minimise environmental impacts.

Source: Green Skills resources. Generic Green Skills for TVET: Teaching and Learning Resources [9].

UNESCO-UNEVOC

Definition: Green skills encompass "technical skills, knowledge, values, and attitudes needed in the workforce to develop and support a sustainable, low-carbon economy."

Relevance: UNESCO-UNEVOC stresses that green skills are broad and include a variety of competencies necessary for the green transition. This includes skills for enhancing energy efficiency, reducing pollution, managing natural resources sustainably, and adapting to low-carbon technologies. These skills are critical for technical roles and broader policy and management positions supporting the development and implementation of green strategies.

Source: UNESCO-UNEVOC. Greening Technical and Vocational Education and Training [10].

2.3 EXAMPLES OF DIFFERENT GREEN SKILLS

Although the labour market has changed significantly and will change further in the coming decades, impacts will be felt in some sectors earlier than others. Skills in specific sectors, such as construction, clean and renewable energy, transport, food and agriculture, manufacturing, and recycling and waste management, will be particularly affected.

Skills requirements are closely linked to the needs of sectors, industries and regions.

Renewable Energy Installation and Maintenance

Example: Skills required for installing and maintaining solar panels, wind turbines, and other renewable energy sources. This includes technical knowledge of renewable energy systems, an understanding of electrical systems, and the ability to work safely at heights.

Source: European Centre for the Development of Vocational Training. Green skills and environmental awareness in vocational education and training [11].

Energy Efficiency Auditing

Example: Skills for conducting energy audits to identify opportunities for energy savings in buildings, industrial processes, and transportation. This involves understanding energy systems, measuring and analysing energy use, and recommending improvements.

Source: International Labour Organization. Skills for green jobs: A global view [12].

Waste Management and Recycling

Example: Skills needed for efficient waste segregation, recycling processes, and waste treatment technologies. This includes knowledge of different types of waste, recycling techniques, and safely handling and processing waste materials.

Source: UNESCO-UNEVOC. Greening Technical and Vocational Education and Training [10].

Sustainable Agriculture

Example: Skills related to organic farming, water conservation, soil health management, and sustainable crop production. This involves understanding eco-friendly farming practices, using natural fertilisers, managing water resources efficiently, and ensuring soil fertility.

Source: International Labour Organization. Skills for green jobs: A global view [12].

Eco-Design and Sustainable Manufacturing

Example: Skills for designing products with minimal environmental impact and using sustainable materials in manufacturing. This includes understanding lifecycle assessment, choosing eco-friendly materials, and designing for recyclability and energy efficiency.

Source: European Centre for the Development of Vocational Training. Green skills and environmental awareness in vocational education and training [11].

Construction

Example: Skills to work with environmentally friendly materials and techniques; heating engineering skills; project management and site supervision skills; specific skills linked to retrofitting.

Source: European Commission. Toolkit Green Skills. A guide to upskilling and reskilling workers for the greeen transition [13].

CONCLUSION

Green Skills development needs careful strategy planning supported by a solid evidence base. Many resources are available to help policymakers, employers, and social partners develop a skills development strategy. Cedefop carries out regular forecasting and information activities that can help inform strategic decisions. For example, a recent Cedefop report examines the green employment and skills transformation, emphasising that rapid changes in skill needs will have impacts far beyond the key occupations driving them, affecting all economic sectors, and not just the sectors that are traditionally in focus, such as the extraction industries, construction and waste management [37].

3 GREEN SKILLS SPECIFIC TO THE TOURISM SECTOR

3.1 INTRODUCTION

The EU is committed to making Europe the first climate-neutral continent by 2050. This ambitious goal, backed by a range of policy frameworks, legislative reforms, strategies, and investments, is driving significant transformations across all sectors of the European economy, labour market, and public behaviour. The tourism industry is no exception, undergoing rapid changes to align with the green transition. The tourism sector's contribution to the green economy is increasingly vital, necessitating that future employees are environmentally conscious and committed to sustainability. To support this transition, jobs in tourism require specific green skills, which are crucial for sustainable business practices and addressing environmental challenges. These skills are essential for adapting standards, processes, and services that protect ecosystems and biodiversity. While ESCO (the European Classification of Skills, Competences, Qualifications, and Occupations)[2] has already outlined the scope of green skills and their relevance to specific professions, the need for these competencies continues to grow.

Therefore, it is essential to identify the green skills needed and integrate them into education and training programs, as these are key to supporting the green transition and ensuring the sector's sustainability.

This chapter examines critical EU initiatives relevant to green skills in the tourism sector, providing definitions, examples, and their relevance to the industry.

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[2] *A total of 571 ESCO skills and knowledge concepts are labelled as green. This includes: 381 skills, 185 knowledge concepts, and 5 transversal skills*. (Green Skills: information skills; communication, collaboration and creativity; assisting and caring; management skills; handling and moving; working with machinery and specialised equipment; constructing).

3.2 Relevance of green skills to the circular economy in tourism

The circular economy is a regenerative system that aims to minimise waste and make the most of resources by closing the loop in product life cycles through reusing, recycling, and reducing materials. In the tourism sector, adopting circular economy principles is closely linked to developing and applying green skills.

Green skills, which include knowledge of sustainable practices, energy efficiency, waste management, and environmental regulations, are fundamental to achieving a circular economy in tourism, as they enable professionals to innovate and implement practices that reduce resource consumption and waste generation. For example, hotel managers with green skills can implement circular practices such as using recycled materials in construction and interior design, reducing single-use plastics, and ensuring that waste is composted or recycled.

Moreover, promoting sustainable tourism products and services, such as eco-tours and carbon-neutral travel packages, relies heavily on the ability of tourism professionals to understand and apply circular economy principles. This helps reduce the environmental impact of tourism activities and creates new economic opportunities, such as green jobs and sustainable business models.

These practices lead to economic and environmental benefits such as cost savings, enhanced brand image, and regulatory compliance. Developing green skills is crucial for fostering a circular economy in tourism, requiring collaboration between governments, educational institutions, and the industry to create a sustainable future.

3.3 Key EU initiatives with relevance to green skills specific to the tourism sector and related fields

A crucial aspect of enhancing the resilience of EU tourism is ensuring that individuals possess the appropriate skills for their roles across all sectors of the tourism ecosystem. While green and digital skills are vital, soft skills, such as language proficiency, are also important. Expanding training opportunities helps to make jobs in the sector more appealing.

The European Union (EU) has recognised the importance of developing green skills to support the transition to a sustainable economy, particularly in sectors like tourism with significant environmental impacts. Several key initiatives have been launched to promote

these skills, helping to prepare the workforce for the challenges and opportunities presented by the green transition.

3.3.1 EUROPEAN GREEN DEAL

Overview: The European Green Deal is a comprehensive strategy to make the EU climate-neutral by 2050. It emphasises sustainability across all sectors, including tourism, by promoting energy efficiency, reducing greenhouse gas emissions, and encouraging sustainable resource management.

Relevance to Green Skills in Tourism: The Green Deal encourages the tourism sector to invest in energy efficiency, sustainable transport, waste reduction, and the protection of natural and cultural heritage. This creates a demand for professionals with skills in these areas, driving the need for green skills training and education [2].

3.3.2 NEW SKILLS AGENDA FOR EUROPE

Overview: Launched in 2016 and updated in 2020, the New Skills Agenda for Europe focuses on ensuring the workforce has the necessary skills to thrive in a green, digital, and resilient economy. It highlights the importance of upskilling and reskilling, particularly in response to the green transition. Action 6 of the Skills Agenda, emphasises that the green transition requires investments in people's skills and presents a set of concrete actions to support the acquisition of skills for the green transition, including the definition of a taxonomy of skills for the green transition.

Relevance to Green Skills in Tourism: The Agenda supports the integration of green skills into vocational education and training (VET), particularly for industries like tourism that are central to the EU economy. It promotes partnerships between businesses, governments, and educational institutions to develop tailored training programs that address the specific green skills needs of the tourism sector [14].

3.3.3 PACT FOR SKILLS

Overview: The EU Pact for Skills is the first flagship initiative under the European Skills Agenda. It aims to aid the resilience and recovery of all industrial ecosystems working towards their green and digital transitions. The Pact for Skills is a key initiative under the European Skills Agenda, aimed at mobilising resources and stakeholders to upskill and reskill workers across various sectors, including tourism. It encourages collaboration between industry, education providers, and governments to address skills gaps and ensure workers are equipped with the necessary skills for the green and digital transitions.

Relevance to Green Skills in Tourism: The Pact for Skills encourages collaborative efforts to develop sector-specific green skills, including in tourism. It aims to build partnerships to create and implement sustainability training programs, such as eco-friendly service provision and sustainable destination management [3].

3.3.4 LARGE-SCALE SKILLS PARTNERSHIP FOR THE TOURISM ECOSYSTEM

Overview: The Large-Scale Skills Partnership for the tourism ecosystem is a significant initiative within the EU Pact for Skills framework. This partnership is designed to address the evolving needs of the tourism sector, which is facing rapid changes due to various factors, including technological advancements, shifts in consumer behaviour, and the impact of global events like the COVID-19 pandemic.

Relevance to Green Skills in Tourism: Under the EU Pact for Skills, each of the 14 industrial ecosystems, including tourism, creates large-scale skills partnerships that bring together signatories and other relevant stakeholders to reskill and upskill their workforce. Initiated in January 2022, the tourism ecosystem partnership started with more than 60 members from various sectors, including industry, social partners, educational institutions, training providers, and regional authorities. The partnership is dedicated to expanding training opportunities and boosting the sector's appeal, aiming to address significant labour shortages that have worsened since the COVID-19 pandemic [15].

3.3.5 CIRCULAR ECONOMY ACTION PLAN

Overview: As part of the European Green Deal, the Circular Economy Action Plan aims to accelerate the EU's transition to a circular economy. It focuses on sustainable product design, waste prevention, and recycling, intending to reduce pressure on natural resources.

Relevance to Green Skills in Tourism: The Circular Economy Action Plan emphasises the importance of skills supporting circular economy practices, such as resource efficiency, waste reduction, and sustainable product development. These skills are crucial for the tourism sector—encompassing accommodation, food services, and waste management. The plan encourages tourism businesses to adopt circular practices, increasing the demand for professionals skilled in waste management, eco-design, and resource optimisation. It also supports creating training programs focused on circular economy principles tailored to the tourism industry [16].

3.3.6 TRANSITION PATHWAY FOR TOURISM

Overview: The Transition Pathway for Tourism is a strategic framework designed to guide the tourism industry towards a more sustainable and resilient future. This pathway outlines the steps and actions needed for the sector to adapt to changing conditions, including environmental, economic, and social factors. The framework aims to address current challenges, leverage growth opportunities, and support the sector in transitioning to greener practices.

Relevance to Green Skills in Tourism: Several outcomes outlined in the co-created transition pathway for tourism pertain to both general skills and educational development and specifically to the Pact for Skills. These outcomes include various key performance indicators established by the large-scale skills partnership for tourism. The collaborative implementation process will provide a platform for all tourism stakeholders to implement and jointly oversee the skills-related commitments [15].

3.3.7 PANTOUR: PACT FOR NEXT TOURISM GENERATION SKILLS

Overview: PANTOUR, a follow-up to the NTG (Next Tourism Generation Skills Alliance), focuses on addressing skills gaps in the tourism sector, with a particular emphasis on green skills. The project aims to support the green and digital transition by mapping new skills needs and developing innovative solutions, including a Sectoral Skills Intelligence Monitor, a Skills Lab, and a Skills Strategy Plan (2026-2036). PANTOUR will expand NTG's scope, adding new sub-sectors like air and cruise transport and museum management while helping businesses and workers adapt to green practices. Over 10 million people in Europe's tourism sector will benefit, with a focus on lifelong learning, inclusivity, and sustainable skills development.

Relevance to Green Skills in Tourism: PANTOUR aims to identify and bridge skills gaps in sustainability and environmental management within the tourism industry, focusing on competencies that support a circular economy. The initiative has launched the Sectoral Skills Intelligence Monitor (SSIM) to collect data on urgent skills needs, particularly related to the green transition, ensuring responsive training programs. PANTOUR promotes lifelong learning by providing access to innovative educational resources emphasising green skills, including waste management and energy efficiency. The project fosters collaboration between vocational education and training providers and higher education institutions to develop curricula incorporating essential green skills for the workforce. Additionally, PANTOUR addresses digital competencies that support sustainable practices, leveraging technology for efficient resource management and enhancing customer service in tourism operations [17].

CONCLUSION

These EU initiatives collectively contribute to developing green skills within the tourism sector and related fields, supporting the industry's transition to sustainability and the circular economy. By aligning policy frameworks with the needs of the tourism industry, these initiatives ensure that professionals are equipped with the skills necessary to drive environmental sustainability and economic growth.

3.4 Definitions of green skills specific to the tourism sector and related fields

The hospitality and tourism sector faces significant environmental challenges due to its unsustainable practices, which impact ecological systems, limited natural resources, and biodiversity. The tourism sector must transition to sustainability to address these issues, incorporating economic, social, and environmental dimensions. Green trends focus on ecological responsibility driven by climate change, extreme weather events, and resource overuse. As a result, the sector is undergoing a green transformation, aligning with the circular economy, eco-tourism, and resource-efficient operations. Key innovations include adopting clean energy technologies (e.g., solar, hydrogen) and pursuing sustainability certifications that aim to reduce greenhouse gas emissions and carbon footprints [18].

In today's rapidly evolving world, tourists are increasingly seeking unique and eco-conscious ways to explore, favouring memorable experiences that align with their environmental responsibility and conservation values. The traditional approach to tourism is no longer sufficient, as the industry must now adapt to sustainable practices that prioritise environmental preservation and social responsibility. To meet these changing demands, tourism professionals must develop green skills, equipping themselves and their organisations with the necessary tools and knowledge to operate sustainably and effectively in this transforming landscape.

Green skills in tourism and related fields [19] encompass a wide range of environmentally friendly competencies, from understanding and implementing sustainable business practices to promoting renewable energy solutions, waste management, biodiversity preservation, and eco-friendly accommodations. These skills enable tourism professionals to develop eco-friendly tourism products, manage natural and cultural resources sustainably, and assess and mitigate the environmental impact of tourism activities. By mastering green skills, they can minimise their ecological footprint while effectively communicating the importance of environmental conservation to attract environmentally conscious travellers [20].

3.4.1 IDENTIFICATION OF DIFFERENT DEFINITIONS

Green skills are increasingly recognised as essential for the tourism sector, aligning with global efforts to promote sustainability and combat climate change.

European Commission's Definition

The European Commission [21] defines green skills as encompassing a wide range of competencies necessary to live and work in sustainable economies. This includes technical skills required to implement processes and technologies that protect ecosystems and biodiversity and transversal skills linked to sustainable thinking and actions relevant to various occupations, including those in tourism.

International Labour Organization (ILO) Perspective

According to the ILO [22], green jobs involve activities contributing to environmental sustainability, including roles directly related to climate adaptation. The ILO emphasises the need for specific skills that enable workers to transition traditional roles into greener ones, particularly in sectors like tourism significantly impacted by climate change [23].

UNIDO's Simplified View

The United Nations Industrial Development Organization (UNIDO) describes green skills as the knowledge, abilities, values, and attitudes necessary for supporting a sustainable and resource-efficient society. This definition underscores the importance of integrating these skills into various sectors, including tourism, to foster sustainable practices [24].

ESCO Framework

The European Classification of Skills, Competences, Qualifications, and Occupations (ESCO) has developed a taxonomy categorising green skills within various occupations. This framework highlights essential skills for the green transition across industries, including tourism. It provides a structured approach to identifying which skills are necessary for specific roles within the sector.

Deloitte's Comprehensive View

Deloitte outlines that green skills encompass technical capabilities, behaviours, and knowledge required to address environmental challenges across various industries, including tourism. This perspective emphasises the broader impact of green skills beyond specialised roles, suggesting that all sectors must adopt greener practices [25].

European Training Foundation

The European Training Foundation defines in the publication "Skills for the Green Transition" as the skills, knowledge, abilities, values, and attitudes needed to live and work in sustainable, resource-efficient economies. These include technical skills for adapting processes and technologies to protect ecosystems and reduce resource consumption and transversal skills for sustainable thinking and action. Green skills span areas like wind, solar, and hydro energy, as well as energy audits and training, and must be taught in schools to support green skills development for all [26].

UNESCO International Centre for Technical and Vocational Education and Training

Competencies, often in the everyday use of the word skills, are defined as what is needed to carry out professional actions in daily work life. International literature provides various definitions of the term competency. Still, one definition often relied on in practical contexts is that competency is developed if a learner has acquired the relevant skills (practical or cognitive, like using a booking tool), knowledge (for example, understanding the booking process in its larger context) and attitudes (such as acting customer oriented). Green and digital competencies are essential in the hospitality and tourism sector to keep pace with technological and regulatory changes and customer expectations. While listing all future competencies is impossible, they generally involve the knowledge, skills, and attitudes needed to implement and support new processes, tools, and products. These competencies vary by occupation and depth, depending on the role's ISCED[3] level—for example, whether a worker selects new tools (management level) or applies them to tasks (lower level) [18].

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[3] *ISCD: International Standard Classification of Education*

Next Tourism Generation Alliance

The green skills, by default, include knowledge of the dangers and risks inherent to any activity, combined with proactive behaviour to avoid or minimise the negative impacts on all concerned parties – the hotel, the guests, nature, the destination and other stakeholders. Green skills do not necessarily require specialised ecological or chemical knowledge about substances and liquids used in a hospitality company. The hospitality industry does not recycle used materials but rather participates in the preparation for recycling and cleaning or in reducing the negative effects which appear in a hotel's daily operations. In this regard, it would be more important to elaborate a proper approach towards nature that would eventually grow into a holistic attitude and become part of the hotel's corporate culture [17].

◊ There are also many existing definitions of green skills in different studies (Source: Renfors, S.-M, 2024. Supporting green *transition in the Finnish tourism sector by identifying green skills. European Journal of Tourism Research*, 36, 3612.). DOI: https://doi.org/10.54055/ejtr.v36i.3223

◊ *Green skills are the professional and vocational skills needed for greening the existing jobs and new green jobs required by sustainable development and climate change*. (Brown, M. (2013). The development of green skills through the local TAFE Institute as a potential pathway to regional development. *International Journal of Training Research, 11*(1), 27 –43.). DOI: https://doi.org/10.5172/ijtr.2013.11.1.27

◊ *Green skills relate to reducing the environmental impact and supporting the economic restructuring to attain cleaner, more climate resilient and efficient economies that preserve environmental sustainability and provide decent work conditions.* (Pavlova, M. (2018). Fostering inclusive, sustainable economic growth and "green" skills development in learning cities through partnerships. *International Review of Education*, *64*(3), 339–354. DOI: https://doi.org/10.1007/s11159-018-9718-x

◊ *Green skills are needed to adapt products, services and processes to climate change and the related environmental requirements and regulations*. (Martinez-Fernandez, C., Ranieri, A., & Sharpe,S. (2013). *Greener Skills and Jobs for a Low-Carbon Future.* OECD Green Growth Papers. Paris: OECD Publishing.)

◊ *Carlisle et al. (2021) explored key green skills gaps in the tourism and hospitality sector in Wales and, in 2022, expanded their analysis to the European tourism sector, identifying the gap between self-reported current green skills and future requirements. These studies highlighted green skills such as energy efficiency, water conservation, waste management, recycling, biodiversity conservation, sustainable transport promotion, environmentally friendly products and services, and climate change*

knowledge. Carlisle et al. (2022) concluded that the size and type of tourism businesses significantly affect both current and future green skills levels and the gaps between them. (Carlisle, S., Zaki, K., Ahmed, M., Dixey, L., & McLoughlin, E. (2021). The imperative to address sustainability skills gaps in tourism in Wales. *Sustainability*, *13*(3), 1161.*;* Carlisle, S., Ivanov, S., Dijkmans, C., & Marco-Lajara, B. M. L. (2022). Environmental Skills Gaps in Tourism and Hospitality Organisations: Evidence from Europe. *Tourism: An International Interdisciplinary Journal, 70*(3), 411–431.).DOI: https://doi.org/10.3390/su13031161

3.5 EXAMPLES OF GREEN SKILLS SPECIFIC TO THE TOURISM SECTOR AND RELATED FIELDS

The tourism sector increasingly acknowledges the significance of integrating green skills to promote sustainability, resource efficiency, and responsible environmental stewardship. As tourism continues to grow globally, the emphasis on minimising environmental impacts while supporting local communities and preserving ecosystems has become paramount. This chapter explores the vital green skills specific to the tourism industry, offering insights into how these competencies reshape the future of tourism and related fields.

3.6 ENVIRONMENTAL MANAGEMENT

Understanding and implementing environmental policies and practices within tourism operations.

Waste Management*:* Proper waste management is essential in tourism to reduce landfill waste [17]. Hotels and other tourism establishments implement recycling, composting, and waste separation programs, often partnering with waste management companies to ensure sustainable processing. For example, businesses are encouraged to separate organic and recyclable materials to minimise waste sent to landfills [27].

Energy Efficiency: Using energy-saving appliances, solar panels, and movement detectors in hotels and resorts enhances energy efficiency, reducing consumption and operational costs. Staff training on energy-saving protocols can further improve efficiency across operations [28].

Climate Responsibility*:* Tourism businesses are adopting climate-friendly practices, such as supporting local environmental projects and replanting native species. For instance,

Wilderness Safaris in Rwanda's Bisate Lodge not only employs local people but also runs educational programs, installs sewage treatment plants, and reforests areas, contributing to climate protection and local development [29].

3.6.1 RESOURCE EFFICIENCY

Maximising the efficient use of resources such as energy, water, and material without compromising service quality [30].

Water Conservation: Water-saving technologies such as low-flow fixtures, tap aerators, and greywater systems can significantly reduce water usage. Hotels encourage guests to reuse towels and linens to reduce water consumption further [28]. ;

Sustainable Supply Chains: Tourism businesses can lower their carbon footprint by sourcing local, sustainable products, such as organic food and eco-friendly materials. This not only reduces transportation emissions but also supports local economies [19].

3.6.2 CARBON MANAGEMENT

Strategies to reduce carbon footprints associated with tourism activities [27].

Carbon Footprint Measurement: Many tourism businesses now use tools to measure and report carbon emissions. This data informs strategies to achieve climate neutrality, aligning with initiatives like the European Green Deal) [31].

Carbon Offsetting: Encouraging tourists to participate in carbon offset programs, such as contributing to reforestation projects or supporting renewable energy, helps balance out the emissions generated by their travel [19].

3.6.3 GREEN PRODUCT AND SERVICE DEVELOPMENT

Creating environmentally friendly products and services that appeal to eco-conscious consumers [17].

Eco-Friendly Accommodations: Developing green accommodations like eco-lodges or hotels that meet eco-certification standards attracts environmentally conscious travellers [31]. For example, Zeeland Dijke Suites in the Netherlands were built using recycled materials, adhering to circular economy principles [32].

Sustainable Transportation Options*: Promoting electric vehicles, bicycles, or public transport can help reduce the sector's reliance on fossil fuels [19]. Destinations like Saas-Fee in Switzerland [33] have adopted these practices, becoming car-free zones with electric shuttles and sustainable energy systems (*a district heating network and a photovoltaic system that supplies sustainable energy for the cable car in this ski area).*

3.6.4 Sustainability Communication

Effectively communicating sustainability initiatives to stakeholders, including customers, employees, and partners [27].

Training on Sustainability Practices: Equipping employees with knowledge of sustainability efforts enables them to communicate these initiatives effectively to guests, enhancing the overall guest experience and fostering engagement in sustainable practices [27].

Marketing Green Initiatives: Highlighting a tourism business's sustainable practices in its marketing materials helps attract eco-conscious tourists who prioritise environmentally responsible travel options [19].

3.6.5 Digital Skills for Sustainability

Utilising technology to enhance sustainability efforts within tourism operations.

Smart Energy Management: Using data-driven technologies to monitor energy and water use allows tourism operators to optimise resource efficiency [34]. These tools also enable real-time tracking of resource consumption, helping operators identify and address inefficiencies [35].

Table 1: Green skills profile in the Finnish tourism sector [27]

Theme	Definition	List of skills
Environmental management	Skills in managing the impacts of the enterprise on the environment by planning, operating, monitoring, and improving its actions	• set environmental objectives • integrate the specifics of the environmental legislation into the actions of the enterprise • adopt an environmental management system to plan, act, monitor, report and improve the performance • apply and manage the sustainability certification schemes • use digital technologies to integrate smartness and sustainability
Resource-efficiency	Skills in reducing, reusing and recycling resources, as well as finding and applying opportunities to keep materials and products in use	• reduce the use of raw materials, energy and water consumption • increase the use of renewable energy • adopt various preventative measures and recycling practices to minimise waste, in particular, plastic and food waste • collaborate within the value chain to share resources • utilise sustainable procurement practices
Carbon management	Skills in identifying, assessing and preventing the impacts of enterprises on climate change	• identify the sources of greenhouse gas emissions in a tourism enterprise and implement procedures to reduce them • calculate the Carbon Footprint generated by the tourism enterprise and make plans on how to minimise and compensate for it • promote the sustainability of transport from the perspective of the tourists and supply chains
Green product and service development	Skills in developing green tourism products and services with a positive impact on sustainability	• use natural resources sustainably in tourism products and services: develop products related to nature conservation, ensure responsible animal interactions, and use of nature protected areas in a sustainable manner • use natural resources innovatively and develop inclusive year-round green products and services to decrease seasonality • identify the influence of the environmental conditions on the safety of the tourists and prevent the potential risks in tourism products and services

		• integrate environmental sustainability with economic and social sustainability when developing green products and services
Sustainability communication	Skills in communicating about the efforts made by the enterprises towards a green economy and encouraging the customers to change their behaviour	• understand the concept of greenwashing • make transparent the measures implemented by the enterprise and its goals and efforts to make a shift towards green economies and communicate these measures to the customers and other stakeholders • increase the customers' environmental awareness, encourage their engagement, and support their transition into the green economy

CONCLUSION

Integrating green skills in the tourism sector is vital for fostering a sustainable and resilient industry that aligns with the principles of the circular economy. The tourism sector can significantly reduce its environmental impact, conserve natural resources, and contribute to a more sustainable global economy by equipping professionals with the knowledge and competencies necessary to implement sustainable practices. As the demand for sustainable tourism continues to rise, so does the need for a workforce adept in these green skills, promoting environmental protection and enhancing the sector's resilience and competitiveness.

Identifying green skills specific to tourism reveals a multifaceted understanding encompassing technical competencies, sustainable practices, and broader societal values. Integrating these skills into training and educational programs is crucial for developing a workforce capable of supporting sustainable tourism initiatives. Furthermore, incorporating green skills into tourism operations promotes environmental sustainability and enriches the overall customer experience as travellers increasingly seek responsible travel options. Ultimately, mastering these essential skills will be critical for the future sustainability and success of the tourism industry, enabling businesses and professionals to embrace practices that protect the environment while delivering enriching visitor experiences.

Economic Sustainability: By fostering sustainable tourism practices, these skills contribute to long-term economic viability for local communities reliant on tourism.

CONCLUSION

Importance of Green Skills in Tourism

Environmental Protection

Green skills help mitigate the adverse effects of traditional tourism practices on natural environments, such as pollution and habitat destruction.

Cultural Preservation

They support efforts to maintain local cultures and traditions by promoting responsible interaction between tourists and host communities.

Economic Sustainability

By fostering sustainable tourism practices, these skills contribute to long-term economic viability for local communities reliant on tourism.

In summary, green skills in tourism are critical for ensuring that the industry can thrive while respecting ecological limits and enhancing social well-being. They encompass a diverse range of technical competencies as well as soft skills aimed at fostering a culture of sustainability within the sector.

4 DETAILED DEVELOPMENT OF SKILL CATEGORIES

4.1 Prioritise regenerative resources

Ensure renewable, reusable, non-toxic resources are efficiently utilised as materials and energy.
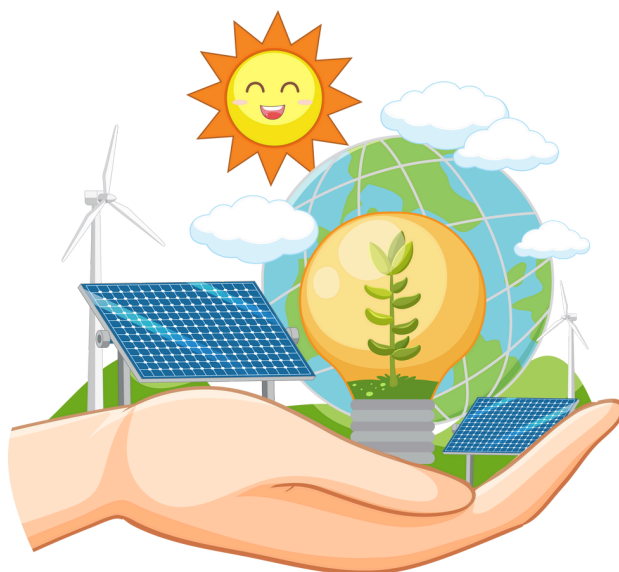
4.1.1 Sustainable resource management

Sustainable resource management means managing resources with the future in mind - understanding and implementing practices that prioritise using renewable resources and reusable materials.

Related Tasks and Activities

- Resource auditing to conduct a Carbon Footprint Audit
- Creating a sustainability policy can help to plan exactly what the tourism business wants to achieve. It allows you to consider what areas your organisation needs to focus on to become more sustainable, and with that, you can plan the exact steps you need to take to achieve these goals.

ADVANCE Circular

Solar power

for example, is classed as a sustainable resource because the sun's energy can be captured without the depletion of the sun itself. Similarly, **wind power** is another sustainable resource because it can't be depleted and can be harnessed through the use of wind turbines.

It's important to note that not every renewable natural resource is always sustainable or better for the environment. For example, Biofuel is a unique form of renewable energy, as its consumption emits climate-affecting greenhouse gases and growing the original plant product uses up other environmental resources; therefore, it is not better for the environment or fully sustainable in its current guise.

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Examples in the Workplace

Practising sustainable resource management lets your clients and consumers know you are taking significant steps to impact the environment positively. It allows them to be confident that your organisation is putting the planet first and is willing to invest time and resources into becoming sustainable.

Comparing your sustainable organisation to other organisations that have not yet invested to become more environmentally friendly allows you to have an edge over competitors. People can see your organisation clearly understands how it affects the environment and is implementing ways to lessen its impact, which can make both old and new consumers want to follow and support you in your environmental journey.

It opens up new avenues to explore, like **working with other environmentally conscious organisations** whose business may be off-limits to anyone who doesn't follow similar standards. Working with other organisations with high sustainability standards can give you an edge over your competitors. The more connections you have with other like-minded organisations, the more your clientele can trust that you are upholding the sustainability standards. Other organisations can also help to guide you in the right direction by implementing other ways of sustainability, allowing everyone to grow from each other.

LEARN MORE

ADVANCE Circular

4.1.2 Energy Efficiency Optimization

Adaptation to improve energy efficiency in operations. This includes skills in energy auditing, implementing energy-saving technologies (like LED lighting and smart thermostats), and optimizing energy use in buildings and transportation. A circular economy avoids using non-renewable resources and preserves or enhances renewable ones, for instance, by returning valuable nutrients to the soil to support regeneration, or using renewable energy instead of fossil fuels.

LEARN MORE

Examples in the Workplace

Based on the research and management plan, tourism businesses can decide how much to invest in renewable energy, and depending on the size of that investment depends on its energy return.

Related Tasks and Activities

Mapping the opportunities to use renewable energy.

Shift to Renewable Energy that saves money and lowers the company's carbon footprint.

Analyse the options and decide which is the best for your business.

Examples in the Workplace

Using renewable resources can help the tourism sector save money in the long run. Installing forms of renewable energy, like solar panels or wind turbines, on their organisation's premises can then be used to power your energy, directly reducing your energy output. Using energy-efficient light bulbs and turning off the lights when you leave a room can also reduce your energy consumption. It also means that you are considering your organisation's impact on the environment outside of just renewable energy.

With energy prices increasing, using your form of renewable resources allows you to cover a significant portion of your energy bills from the resources you invested in, saving your organisation money, in the long run, to invest elsewhere.

In addition to helping the tourism sector save money, sustainable resource management can also help the company earn it. Researchers at the MIT Sloan School of Management found that consumers are willing to pay 2% to 10% more for products from companies that show greater supply chain transparency. The study also revealed that consumers increasingly want to know more about where and how the products they purchase are being made and value information about the treatment of workers in a supply chain and companies' efforts to improve working conditions.

ADVANCE Circular

4.1.3 Implementation of plan for reuse of resources

The use of products or components more than once for the same or other purposes without reprocessing. As tourism businesses begin implementing large-scale renewable energy, making smaller changes like reusable items (bottles, cups, cutlery, refillable cosmetic and cleaning products, dispensers for water, cosmetic and cleaning products, etc.) and stopping single-use.

Upcycling: Giving new life to materials or products that would otherwise be discarded or recycled by creating something of higher value, like transforming an old ladder into a bookshelf for creative interior effect, transforming old covers, sheets or curtains into tote bags for gifts to your clients.

Sharing and renting: Reducing the need for individual ownership by sharing items or offering rentals of equipment or tools when they are not in use. Like bikes, furniture, formal clothes, etc.

Donating and swapping: Extending the life of items like clothing and household goods by donating or organising swap events within a community.

Repair of goods to lower the need to buy new devices, furniture, textiles, etc.

Examples in the Workplace

In the **hospitality business**, all the cosmetic and cleaning products are in dispensers (liquid soap, shampoo, duch gel, etc.). The restaurants have no single portions of jams, sugar, butter, cheese, etc.

In the **offices/ restaurants** are used coffee machines with grained coffee, not capsules (or only refillable capsules)

Staff are engaged in repairing equipment, and **companies invest in good quality, low-energy** appliances.

Related Tasks and Activities

- **Change single-use products** and packaging with reusable/more oversized packages or buy bulk/ refill.

- **Regular checks of equipment and appliances and ensure they are repaired**, not changed when broken.

- **Rechargeable batteries** are used for all electronic devices; charging with electricity (not battery) is preferred if possible.

- **Staff do regular checks, and old equipment and textiles** are upcycled by the staff or in partnership with the organisation/ company/ initiative.

- **Donations of not used stuff** are made regularly to support the local community and people in need.

LEARN MORE

REUSE

REDUCE

RECYCLE

ADVANCE Circular

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4.1.4 Implement a plan for the use of non-toxic resources

Being aware of the environmental impact of various products and services helps make informed decisions that minimize harm to the environment and the health of the people and other living species.

Related Tasks and Activities

- **Mapping of products and services** used in the business
- **Analysis and identification** of the toxic and polluting products and services
- **Creation of an action plan** to stop using toxic products and services
- **Creation of policy** for the use of environmentally friendly products and services
- **Plan for implementation** of environmentally friendly products and services
- **The sustainability manager/ other responsible person monitors** the implementation of the policy and new opportunities for the use of environmentally friendly products and services.

Examples in the Workplace

Accommodations start using biodegradable cleaning and cosmetic products that don't harm the environment and people's health

LEARN MORE

Travel companies step towards using reusable energy (if the building is not their own, there are options to declare to the energy provider that you want part or all of the energy you use to be from renewable sources).

4.1.5 Environmental Education and Communication

Educating and communicating with staff, guests, and stakeholders about sustainability practices is vital. This involves skills in creating educational programs, marketing sustainable initiatives, and engaging the community in environmental efforts. Sustainability and circularity must be part of each business's branding and communication strategies.

Related Tasks and Activities

Developing Educational Programs
Creating workshops, tours, and interactive sessions for guests and staff to promote understanding of sustainable practices, such as waste reduction, energy conservation, and local biodiversity.

Related Tasks and Activities

Developing Educational Programs	Communication with Stakeholders
Sustainability Marketing	Training Staff
Community Engagement	Integration into Brand Strategy

Related Tasks and Activities

Sustainability Marketing
Designing campaigns and materials highlighting a business's sustainable practices, such as eco-friendly accommodations, locally sourced food, and waste management initiatives.

Community Engagement
Organizing events and initiatives that involve local communities, such as clean-up drives, conservation efforts, or educational talks on the importance of preserving local natural resources.

Communication with Stakeholders
Sharing updates, reports, and success stories related to sustainability initiatives with investors, local government, and partner organizations to maintain transparency and build support.

Training Staff
Providing training sessions for employees on sustainability principles, eco-friendly operations, and how to communicate these practices to guests effectively.

Integration into Brand Strategy
Ensuring sustainability is a core element of the brand identity and message conveyed through various communication channels, including websites, brochures, and social media.

ADVANCE Circular

Examples in the Workplace

Eco-Friendly Hotel Programs: A hotel develops a program where guests can learn about local wildlife and efforts to protect nearby natural habitats. It includes guided nature walks, eco-tours, and information sessions led by local environmental experts.

Waste Reduction Campaigns: A resort launches a campaign to minimize single-use plastics, providing guests with reusable water bottles and setting up refill stations around the property. They share the results of this initiative through newsletters and social media, encouraging guests to support the effort.

Sustainable Dining Experiences: A restaurant offers cooking classes using locally sourced ingredients, explaining how this practice supports local farmers and reduces the carbon footprint of their meals. The experience is marketed as part of their commitment to sustainability.

Collaborative Community Projects: A tourism company partners with a local school to host workshops on recycling.

Eco-friendly Lodging: A hotel creates a digital guide for guests, highlighting water-saving practices, local wildlife information, and tips for minimizing energy use during their stay. Staff members receive regular training on how to guide guests in following these practices.

Sustainable Food Experiences: A tour operator organizes farm-to-table dining experiences for guests, featuring local producers and educating visitors about sustainable agriculture. Marketing campaigns emphasize the tour's commitment to supporting local communities and reducing food miles.

Local Environmental Initiatives: A resort partners with a local school to conduct beach clean-up events, involving tourists in these activities as part of their stay. The initiative is promoted through social media, showcasing the resort's commitment to preserving the local environment.

Circular Economy Practices: An eco-lodge implements a program to reduce single-use plastics by providing reusable water bottles to guests and installing water refill stations. Communication with guests emphasizes the impact of these actions on local ecosystems.

Cultural Heritage Promotion: A tourism business collaborates with a local museum to create interpretive materials about the region's cultural heritage, emphasizing sustainable tourism practices that respect local traditions and reduce environmental impact.

ADVANCE Circular

GREEN NETWORK ASIA

Hoi An, Vietnam: This city has managed tourism sustainably through various initiatives, particularly waste management and conservation. It involves collaborations between the University of Danang and the Cham Island Marine Protected Area (MPA). This partnership enhances students' understanding of solid waste management through hands-on activities, such as group discussions with local communities and participating in conservation efforts. This program aims to foster environmental awareness and educate tourists and locals on sustainable practices.

GREEN TOURISM

Costa Rica's Monteverde Cloud Forest Reserve: Known for its commitment to eco-tourism, it integrates environmental education as a core part of the visitor experience. Tourists learn about the region's biodiversity, conservation efforts, and sustainable practices through guided tours and educational programs. This approach protects the natural environment and fosters a deeper understanding of sustainability among visitors. It exemplifies how educating tourists can support local conservation goals and promote sustainable tourism.

ADVANCE Circular

4 DETAILED DEVELOPMENT OF SKILL CATEGORIES

4.2 Design Circular Skill

Considering circularity during the design process, use suitable materials to design for an adequate lifetime and extended future use.

4.2.1 Centricity on Customer&Circularity

The ability to plan and organize activities and services by focusing on users' needs, emphasising the impact on the environment and society of these activities and services.

Related Tasks and Activities

- Investigating changing user needs and feelings.
- Implementing proper tools for data collection and analysis.
- Using a human-centred approach (thinking by doing, visualizing, combining divergent and convergent approaches, and collaborative work style as design thinking practices).
- Collecting suggestions and opinions, then acting on customer feedback - circular improvements require listening to customers and implementing their feedback.

ADVANCE Circular

Examples in the Workplace

The hotel or restaurant team uses surveys, feedback forms, and social media listening tools to regularly collect customer opinions related to circular practices that have already been applied or planned to be applied.

Based on the feedback received, the hotel or restaurant team identifies areas for improvement and opportunities to improve the customer experience through circular practices.

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4.2.2 Experimentation
(Prototype, Test, and Evaluate)

The ability to propose and create prototypes, perform tests and critically evaluate results to refine and improve proposed solutions.

Related Tasks and Activities

- Gathering information about a current or new product, service, or activity.
- Finding out how it can be modified to meet customer needs and circularity best.
- Testing the ideas on the intended users to ensure that the final solution not only meets their needs but is also designed for longevity and minimal environmental impact.
- Evaluating the test results and implementing changes and solutions.

Examples in the Workplace

A restaurant experiments with recipes and dishes with edible parts of food that are not usually consumed (citrus peel, leaves and stalks of certain vegetables, dried bread, etc.).

A tour operator experiments and tests the introduction and use in the proposed itineraries of some local attractions and places to visit where circular practices are already used.

4.2.3 Creative Circular Thinking

The ability to propose and create prototypes, perform tests and critically evaluate results to refine and improve proposed solutions.

Related Tasks and Activities

- Producing as many ideas and solutions as possible for a problem related to circularity.
- Improving the ways of using/reusing a product.
- Proposing creative changes to save resources;
- approaching openly the challenges related to waste generated in activities with tourists.
- Deal with uncertainty by trying different solutions, improvising, seeing what happens, and developing workable solutions.

Examples in the Workplace

A hotel implements the creative idea of giving additional value to rooms that are not fully booked and used in certain seasons by using them as coworking spaces for local entrepreneurs or as co-exhibition spaces for small local artists and craftsmen.

A team hotel designs&organizes creative culinary shows, in which the guests are the main "actors", being asked to present and prepare their recipes from a maximum of three ingredients, accompanied by their recommendations for reusing leftovers.

4.2.4 Circular User Engagement

The ability to stimulate circular mentalities and the predispositions that guests have to behave circularly through actions that promote the efficiency of resources and the flow of circular value.

Related Tasks and Activities

- Stimulating stakeholders to share ideas and apply circular practices together;
- Mobilizing of tangible and intangible resources (including human resources), which can be pooled, to implement practices and actions in the circular economy because the tourism industry requires many facilities/infrastructure to meet the needs of the tourists;
- Harnessing diverse expertise: a multidisciplinary and collaborative approach for a comprehensive understanding of materials, processes and user behaviours to create sustainable solutions.

ADVANCE Circular

Examples in the Workplace

Hotels in the same area design collaborative services to be used by their customers, for example, a shared bike park for rent and a shared souvenir shop made from reused/recycled local materials.

Restaurants in the same area create and use a standard garden together to have fresh vegetables continuously, with lower costs than if each restaurant had its own garden, transferring food waste for compost in this typical garden.

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4.2.5 Circular Economy Collaboration

The ability to facilitate the collaborative and participatory approach to circularity while ensuring a continuous exchange of perspectives, know-how and actions between various stakeholders.

Related Tasks and Activities

- Stimulating stakeholders to share ideas and apply circular practices together.
- Mobilizing of tangible and intangible resources (including human resources), which can be pooled, to implement practices and actions in the circular economy because the tourism industry requires many facilities/infrastructure to meet the needs of the tourists.
- Harnessing diverse expertise: a multidisciplinary and collaborative approach for a comprehensive understanding of materials, processes and user behaviours to create sustainable solutions.

ADVANCE Circular

Examples in the Workplace

Hotels in the same area design collaborative services to be used by their customers, for example, a shared bike park for rent and a shared souvenir shop made from reused/recycled local materials.

Restaurants in the same area create and use a standard garden together to have fresh vegetables continuously, with lower costs than if each restaurant had its own garden, transferring food waste for compost in this typical garden.

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4 DETAILED DEVELOPMENT OF SKILL CATEGORIES

4.3 Stretch the Lifetime Skills

● ● ●

While resources/products are in use, maintain, repair and upgrade them to maximise their lifetime and give them a second life through take-back strategies when applicable.

● ● ●

4.3.1 Product Maintenance and Repair

The ability to perform regular maintenance, repair, and servicing of products to extend their usability and prevent early disposal.

Examples in the Workplace

Hotel Maintenance
A hotel maintenance team performs regular checks and repairs on air conditioning units, plumbing, and appliances to ensure they operate efficiently and last longer, reducing the need for replacements and minimizing downtime for guests.

Equipment Rental Services
A tourism equipment rental service maintains and repairs outdoor gear, such as bikes and kayaks, extending their lifespan and keeping rental items in good condition for guests.

ADVANCE Circular

Related Tasks and Activities

Inspecting products for wear and tear.

Performing preventive maintenance.

Fixing or replacing broken components.

Conducting quality checks.

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the European Union

Examples in the Workplace

Establishing Standard Operating Procedures (SOPs):

Many hotels implement SOPs to ensure that maintenance tasks, such as repairs and system checks, are performed consistently and efficiently. For instance, routine inspections of air conditioning units, plumbing, and appliances are scheduled regularly, and the maintenance team follows clear guidelines to identify and fix issues before they escalate. SOPs also help ensure that all team members follow safety protocols during maintenance activities, which reduces downtime and improves guest satisfaction.

LEARN MORE

Using Hotel Maintenance Management Software:

Many modern hotels use dedicated software to streamline maintenance operations. This software helps hotels keep track of maintenance tasks, such as checking HVAC systems or plumbing repairs and assigns them to staff members. It also tracks the progress of each task. It ensures that critical systems like air conditioning or plumbing are serviced efficiently, reducing the risk of system failures and improving the longevity of the equipment.

LEARN MORE

ADVANCE Circular

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the European Union

4.3.2 Upgrading and Retrofitting

The ability to enhance existing products or systems by upgrading or retrofitting them with newer, more efficient parts or technologies.

Examples in the Workplace

Lighting Upgrades:

A hotel retrofits older lighting systems with energy-efficient LED lights, reducing energy consumption and extending the infrastructure's lifetime.

LEARN MORE

Related Tasks and Activities

Assessing products for potential upgrades.

Installing upgrades.

Selecting appropriate upgrade components.

Testing for improved performance.

Examples in the Workplace

Vehicle Upgrades:

A tour operator upgrades its fleet with energy-efficient engines or electric motors, improving fuel efficiency and extending the vehicles' operational life. Evan Evans Tours in the UK has launched its first fully electric motor coach for guided tours around iconic British landmarks. This initiative helps reduce the environmental impact of their operations and supports the growing demand for sustainable travel options.
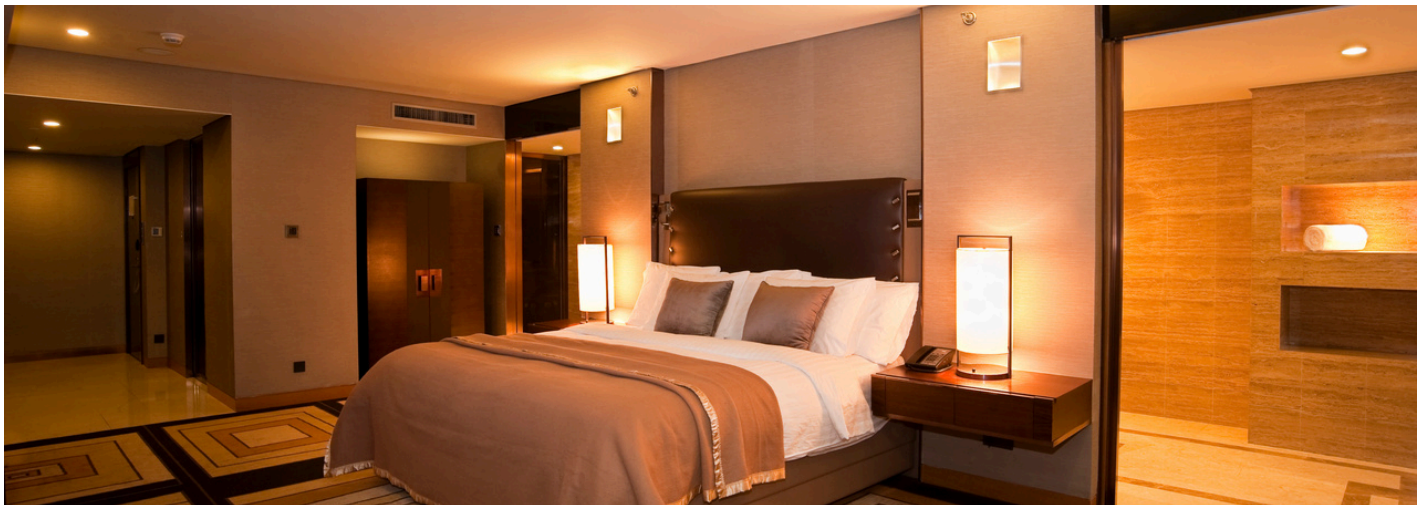
These upgrades contribute to reducing emissions and lowering fuel and maintenance costs over time, making them both an environmentally and economically sound investment for tour operators.

4.3.3 Take-Back and Refurbishment Management

The skill to manage take-back programs, including the collection, refurbishment, and redistribution of used products.

Examples in the Workplace

Uniform Refurbishment:
A resort implements a take-back program for staff uniforms, repairing and refurbishing them to extend their use and reduce the need for new uniforms.

LEARN MORE

Mattress Refurbishment Program:
A hotel chain collects and refurbishes old mattresses, cleaning and repairing them for reuse, reducing waste and costs associated with new purchases.

LEARN MORE

Related Tasks and Activities

Organizing take-back logistics.

Ensuring compliance with safety standards.

Refurbishing collected products.

Redistributing refurbished items.

4.3.4 Sustainable Inventory Management

The ability to manage inventory in a way that prioritizes sustainability, including tracking product conditions, scheduling maintenance, and coordinating take-back or refurbishment activities.

Examples in the Workplace

Linen Inventory Management
A hotel manages its linen inventory by tracking wear and tear, implementing take-back programs with textile recyclers, and reintroducing refurbished linens into service.

Rental Equipment Tracking
A tourism operator uses inventory management software to track the condition of rented equipment, scheduling maintenance and refurbishments as needed to prolong the lifecycle of the items.

LEARN MORE   LEARN MORE   LEARN MORE

## Related Tasks and Activities

Monitoring inventory for signs of wear.   Optimizing stock levels to reduce over-purchasing.

Scheduling timely maintenance.

Integrating take-back programs.

4.3.5 Lifecycle Assessment and Extension Planning

The ability to evaluate the entire lifecycle of a product and develop strategies to extend its useful life.

Life Planning

PAST   PRESENT   FUTURE
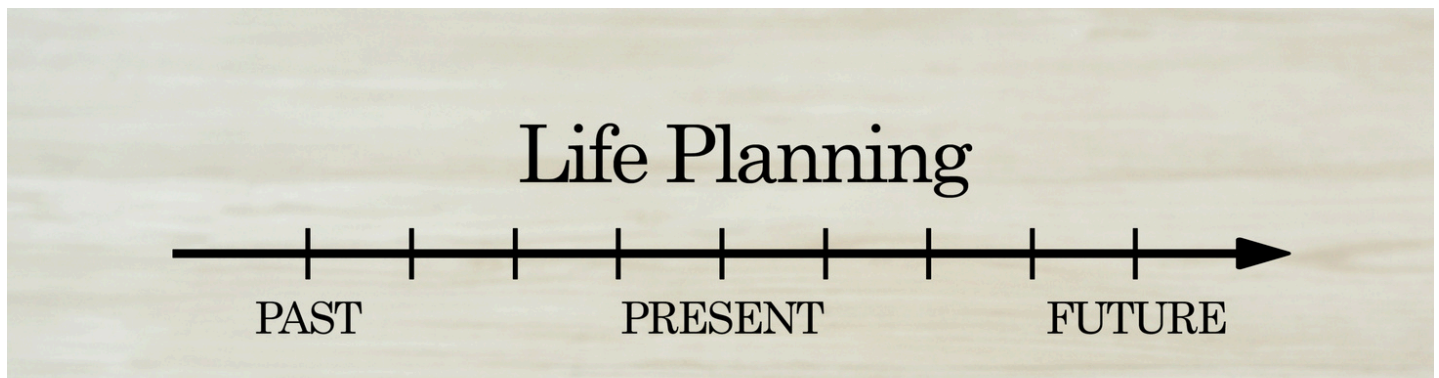
Examples in the Workplace

Furniture Lifecycle Extension
A resort regularly assesses its room furnishings and schedules reupholstery and refinishing to extend its service life, reducing waste and maintaining aesthetics.

Reusable Marketing Materials
A travel agency evaluates the lifecycle of promotional materials, opting for reusable digital formats instead of printed brochures, thus extending the usability of their marketing resources.

LEARN MORE   LEARN MORE   LEARN MORE

These skills and best practices illustrate how the tourism sector can effectively stretch the lifetime of resources and products through strategic maintenance, refurbishment, and sustainable management initiatives.

Related Tasks and Activities

Conducting lifecycle assessments.

Identifying stages where products can be maintained or upgraded:

Planning for the extension of product life through maintenance or take-back strategies.

4 DETAILED DEVELOPMENT OF SKILL CATEGORIES

4.4 "Use Waste as a Resource" Skills

Utilise waste streams as a source of secondary resources and recover waste for reuse and recycling.

4.4.1 Turning biowaste into biogas and fertiliser

Biowaste – mainly food and garden waste – is a key waste stream with a high potential for contributing to a more circular economy.

Related Tasks and Activities

Composting (treatment in the presence of oxygen) and anaerobic digestion (treatment in the absence of oxygen) are currently the two most widely applied treatment techniques. Anaerobic digestion generates biogas and is thus a renewable energy source, while composting is used as a soil improver and fertiliser.

Composting: The compost bin is closest to where most organics are produced, like in the kitchen or break room. This will make composting convenient and promote more participation.

Anaerobic digestion: Anaerobic digestion for biogas production takes place in a sealed vessel called a reactor, which is designed and constructed in various shapes and sizes specific to the site conditions. Multiple organic materials can be combined in one digester: food waste, oils, and greases from restaurant grease traps and other sources.

ADVANCE Circular

Examples in the Workplace

Uses: in restaurants that produce much food waste, a university with many cafeterias, or office space simply looking to divert waste from landfills.

Compost
A Guide To Workplace Composting

Co-funded by the European Union

4.4.2 Secondary raw material (SRM)

SRM enables recyclables to re-enter the production value chain, reducing dependency on primary resources. SRM markets are vital to delivering a circular economy in the EU. These markets were established long ago, are international and open, and occupy a significant market share of their respective material supply. Among the markets that function very well are aluminium, paper, plastic, wood, and glass.

Related Tasks and Activities

Secondary materials are used to make various semi-finished products and articles, which we use daily. Companies use them in packaging, construction, clothing, toys, logistics, automotive, etc.

Plastics make items such as shopping bags, insulation, hydraulic and electrical materials, stationery accessories, and toys.

Processed waste paper is used to produce many valuable items, such as copier paper, kitchen or toilet paper, cardboard packaging, bags, and package fillers. Glass aggregate, on the other hand, is used to make jars, bottles, glass wool and fibres, and decorative chippings.

Examples in the Workplace

The Global Tourism Plastics Initiative unites the tourism sector to address the root causes of plastic pollution. It enables businesses, governments, and other tourism stakeholders to lead by example in the shift towards a circular economy of plastics. They are committed to eliminating unnecessary single-use plastics and transitioning to reuse models, recyclable or compostable plastic packaging, and items.

Sheedo exemplifies circular economy principles in sustainable paper manufacturing by incorporating a unique approach. Instead of conventional paper, Sheedo uses paper embedded with seeds, allowing them to be planted rather than discarded directly into the trash.

4.4.3 Textile recycling

Restaurants and food service businesses generate tons of surplus food. Solutions for this sector can also impact food waste generated by other sectors, not just waste from Restaurants and Foodservice businesses.

Resuinsa	EEA EU	Goodnewsnet...

Examples in the Workplace

In light of this, **Resuinsa (expert in hospitality industry textiles)** is developing a viable solution through an R&D&i project alongside the Centre for Technological Development and Innovation, which enables textiles used by hotels to be reintroduced into the textile value chain through repurposing waste and boosting a 100% circular economy at hotels. The project considers all aspects of collecting, processing, and managing textile waste to transform it into new hotel items.

Some companies, such as **Archivist, a sustainable clothing line**, specialise in revitalising hotel sheets and turning them into T-shirts. Dutch entrepreneurs Eugenie Haitsma and Johannes Offerhaus launched the eco-friendly company after they felt inspired to investigate what happened to old hotel sheets. Most hotel chains retire their bedding for minor holes and damages that can be easily remedied or removed. They managed to save 200 kilos of delicate cotton hotel bedsheets from a landfill.

Related Tasks and Activities

The Waste Framework Directive (WFD) mandates that from 2025, EU Member States must establish separate collection systems for used textiles to foster their circularity.

The directive directly affects hoteliers since they will be responsible for the waste they generate.

4.4.4 Second life for leftover food

CLICK HERE

SRM enables recyclables to re-enter the production value chain, reducing dependency on primary resources. SRM markets are vital to delivering a circular economy in the EU. These markets were established long ago, are international and open, and occupy a significant market share of their respective material supply. Among the markets that function very well are aluminium, paper, plastic, wood, and glass.

Related Tasks and Activities

Use left-over ingredients through repurposing practices.

Consider partnerships that seek large-volume byproducts (e.g., citrus peels, coffee grounds, etc.) as input sources for upcycled products.

Sell end-of-day products: Employ dynamic pricing options for end-of-day sales, such as late happy hours or using markdown alert apps.

Establish donation relationships: Establish relationships for collecting extra food for donation directly with organisations or through matching software solutions.

Examples in the Workplace

Too Good To Go is an online application that fights food waste. It connects restaurants, bakeries, or supermarkets with customers to sell leftover food cheaply. The customer purchases at a low cost, and the restaurant profits on items that would otherwise be discarded.

4.4.5 Water recycling and reuse

Water reuse refers to recovering and treating water to a standard appropriate for a second purpose. This skill addresses all aspects of water consumption in the tourism sector and helps alleviate the environmental problem of water scarcity and drought.

🌐 LinkedIn article

🌐 Water Reuse EU

Related Tasks and Activities

Innovative and creative ways to recycle water in tourism include collecting rainwater from roofs or gutters, reusing grey water from showers or sinks, and purifying wastewater from toilets or sewers.

Greywater Systems: These capture lightly used water from showers and sinks to irrigate gardens or flush toilets. Rainwater, for example, can be collected from roofs and stored for drinking, washing, and irrigation.

Rainwater Harvesting: Collect rainwater in landscaping, laundry, or toilet tanks.

Low-flow Fixtures: Install water-efficient faucets, showerheads, and toilets to minimise water consumption.

ADVANCE Circular

Examples in the Workplace

Innovative project: LIFE WAT'SAVEREUSE is a European project highlighting the benefits of saving and reusing water. This project was developed over three years in the Mediterranean basin. It was launched on September 1, 2020, and ended on October 30, 2023. The main objective of the LIFE WAT'SAVEREUSE project was to highlight the benefits of saving and reusing water, as well as the opportunities this can bring to the tourism sector and the implementation of initiatives that promote a circular economy model based on the reduction of water consumption.

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4 DETAILED DEVELOPMENT OF SKILL CATEGORIES

4.5 Incorporate Digital Technology Skills

● ● ●

Tracking and optimising resource use and strengthening connections between different actors through digital online platforms and technologies.

● ● ●

4.5.1 Data Analytics for Resource Management

Data Analytics for Resource Management involves proficiently using data analytics tools to monitor and analyse resource consumption—specifically energy, water, and materials. This systematic approach enables professionals to derive actionable insights that enhance sustainability practices, leading to improved resource allocation and a reduced environmental footprint.

Related Tasks and Activities

1. Gather resource usage data from various sources, including sensors and smart meters.
2. Ensure data accuracy and consistency for practical analysis.
3. Use analytical software (e.g., Excel, Python, Tableau) to interpret resource consumption data and identify patterns.
4. Assess resource usage against industry standards or historical data to pinpoint inefficiencies.
5. Use historical data to estimate future resource needs through predictive analytics.
6. Propose actionable improvements to reduce resource consumption, such as equipment upgrades or process adjustments.
7. Create visual reports and dashboards to summarize findings for stakeholders and management.
8. Work with team members across departments to implement data-driven changes aligned with sustainability goals.

ADVANCE Circular

Related Tasks and Activities

1. Data Collection & Monitoring

2. Data Cleaning and Preparation

3. Data Analysis

4. Benchmarking & Comparison

5. Predictive Modeling & Forecasting

6. Optimization Recommendations

7. Reporting Insights

8. Collaboration with Stakeholders

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Examples in the Workplace

Energy Management in Hotels using Data Analytics

The Marriott Hotel chain uses data analytics to monitor and reduce energy consumption across its properties. By collecting data from building management systems, Marriott identified inefficient energy use patterns, particularly in HVAC (Heating, Ventilation, and Air Conditioning) systems, and adjusted operations to match real-time occupancy levels. The data helped them reduce energy waste significantly without compromising guest comfort.

» LEARN MORE

ANALYTICS

1 2 3 4 5 6 7 8

Predictive Analytics in Tourism for Efficient Transportation

TUI Airline employs the SITA OptiClimb® solution across its airlines as part of its sustainability agenda. This predictive analytics tool uses machine learning to optimize fuel burn during climbs by providing pilots with tailored climb speeds based on weather forecasts and operational inputs.

ADVANCE Circular

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4.5.2 Digital Collaboration Platforms

The ability to effectively use online collaboration tools and platforms is crucial for enhancing communication and cooperation among stakeholders in the tourism sector. These tools facilitate shared initiatives focused on the circular economy, allowing users to share information, collaborate on projects, and maintain efficient workflows regardless of their physical location. This skill set promotes cooperation, streamlines processes, and encourages sustainable practices within the tourism industry.

CLICK HERE

Related Tasks and Activities

- Discussing via platforms like Microsoft Teams or Slack.

- Collaborating in real-time using Google Docs or Microsoft SharePoint.

- Organizing tasks and tracking progress using tools like Trello or Asana
.

- Conducting meetings through video conferencing software such as Zoom or Google Meet.

- Using digital whiteboards or brainstorming tools to gather input from team members

Related Tasks and Activities

Utilizing Communication Tools

Virtual Meetings

Document Sharing and Co-authoring

Feedback and Idea Sharing.

Project Management

Examples in the Workplace

Project Coordination in Tourism Development:
The Adventure Travel Trade Association (ATTA) uses Asana to manage eco-friendly travel promotion projects, allowing real-time updates and feedback to align team efforts with project goals and timelines. This collaborative approach enhances efficiency and encourages innovative solutions that support circular economy initiatives within tourism.

Crisis Management during Travel Disruptions:
During the COVID-19 pandemic, travel organizations utilized Microsoft Teams for effective communication, facilitating daily briefings and strategy sessions to develop responsive customer service strategies while prioritizing sustainability.

Sustainability Initiatives by Intrepid Travel:
As the world's largest carbon-neutral travel company, Intrepid Travel employs Microsoft Teams and Google Workspace to implement sustainability measures, including a carbon labelling initiative on over 500 itineraries that inform travellers on their trip's CO_2 emissions. Their open-source guide helps other businesses calculate trip emissions, promoting accountability and informed decision-making among consumers.

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4.5.3 Blockchain for Transparency in Supply Chains

This skill refers to knowledge of blockchain technology to ensure transparency and traceability in the supply chain, allowing for better management of resources and waste reduction.

This approach leverages decentralized and immutable ledgers to document every transaction and movement of resources in real time, including bookings, payments, and customer data. The primary objectives are to reduce inefficiencies, prevent fraud, improve resource management, and minimize waste, fostering trust among stakeholders through reliable information access.

Related Tasks and Activities

1. Develop tailored blockchain systems for specific supply chain needs.
2. Align blockchain with existing systems for secure data flow.
3. Track transactions, bookings, payments, and service delivery to prevent fraud and errors.
4. Record transactions for regulatory compliance and auditing purposes.
5. Facilitate real-time communication and data sharing among all parties involved, including suppliers, hotels, airlines, and travel agencies.
6. Use blockchain for secure identity management during check-in processes.
7. Monitor sourcing of products (e.g., food, souvenirs) to promote eco-friendly practices.
8. Utilize analytics tools to derive insights from blockchain records for informed decision-making.

ADVANCE Circular

Related Tasks and Activities

1. Implementing Blockchain Solutions

2. Data Integration and Management

3. Transaction Monitoring

4. Auditing and Compliance

5. Stakeholder Collaboration

6. Customer Identity Verification

7. Sustainability Tracking

8. Data Analysis

Examples in the Workplace

Webjet's Blockchain Platform: Webjet has developed a blockchain-based platform that records all booking transactions on an immutable ledger, enhancing customer experience by reducing inaccuracies and providing real-time alerts. It streamlines communication among travellers, agents, and hotels, significantly improving transparency in the tourism supply chain.

Travala's Decentralized Booking System: Travala is a travel booking service that leverages blockchain technology to connect travellers directly with service providers while minimizing fees. Using its native cryptocurrency (AVA), Travala allows users to book accommodations and activities in a secure environment. The platform's reliance on the blockchain ensures that all transactions are transparent, reducing costs for travellers and providers while enhancing trust in the booking process.

» LEARN MORE

BLOCKCHAIN

1 2 3 4 5

ADVANCE Circular

4.5.4 IoT Integration for Smart Resource Tracking

IoT Integration for Smart Resource Tracking refers to implementing Internet of Things (IoT) devices and technologies to monitor and manage resource consumption in real time within the tourism industry. This skill enables businesses to collect data on resource usage—such as energy, water, and other consumables—facilitating proactive measures to optimize consumption, reduce waste, and enhance operational efficiency.

Related Tasks and Activities

1. Setting up sensors and devices to monitor various resources (e.g., energy meters, water flow sensors).
2. Gathering real-time data from IoT devices and analysing it to identify usage patterns and areas for improvement.
3. Implementing strategies based on data insights to optimize resource consumption.
4. Ensuring IoT devices function correctly and performing regular updates or repairs as needed.
5. Generating reports on resource usage for internal assessments or regulatory compliance.

ADVANCE Circular

Related Tasks and Activities

1. Installation and Configuration of IoT Devices

2. Data Collection and Analysis

3. Resource Management

4. Maintenance of IoT Systems

5. Reporting and Compliance

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Examples in the Workplace

Smart Hotel Room Management
Hotels like Hilton utilize IoT technology that allows guests to control room amenities via a smartphone app, optimizing energy use by adjusting settings when rooms are unoccupied. The Westin London City employs sensors to monitor water usage, alerting maintenance staff to potential leaks before they lead to costly repairs. This proactive approach saves resources and enhances guest satisfaction by ensuring that facilities are always in optimal condition.

Smart Tourism IoT
The intelligent city Gothenburg, Sweden, has released a smart map for sharing rental options and a parking app integrated with public transport, promoting efficient travel while utilizing 60% recycled heat for heating needs.

Smarter Intercity Traveling with IoT
Singapore's self-driving buses allow business owners to track assets and process payments remotely, enhancing convenience for travellers who can schedule pickups easily.

LEARN MORE

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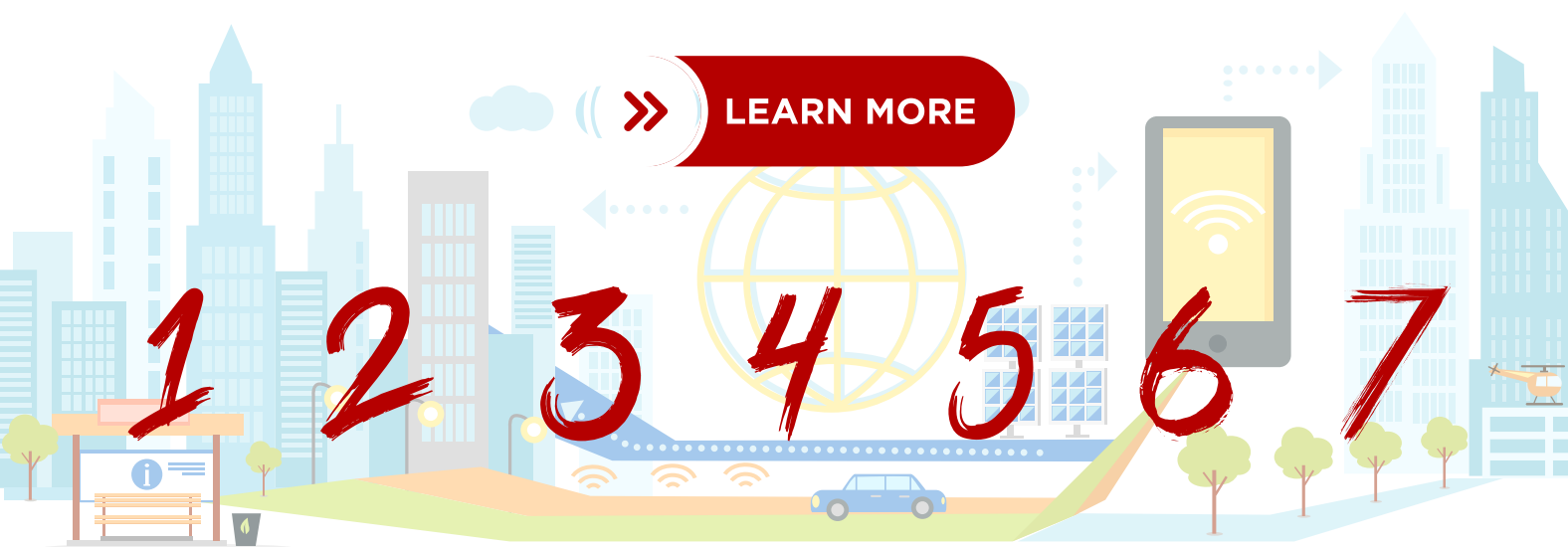
4.5.5 Sustainable Business Model Innovation

Sustainable Business Model Innovation in the tourism industry refers to the capability to design and implement innovative business models that integrate digital technologies to promote circular economy principles. This approach emphasizes reducing waste through strategies such as product-as-a-service models, which allow businesses to deliver value without the need for ownership, thereby minimizing resource consumption and environmental impact.

Related Tasks and Activities

1. Conduct studies on market trends and consumer behaviour to identify opportunities for sustainable innovations.
2. Collaborating with local communities, suppliers, and customers to understand their needs and incorporate their feedback into business strategies.
3. Implementing digital tools and platforms that facilitate sustainable practices, such as online booking systems that promote eco-friendly options.
4. Creating business models incorporating circular economy principles, such as leasing instead of selling products.
5. Assessing the effectiveness of implemented models through key performance indicators related to sustainability and customer satisfaction.

Related Tasks and Activities

1. Desearch and Development

2. Stakeholder Engagement

3. Digital Transformation

4. Model Design

5. Monitoring and Evaluation.

Examples in the Workplace

Digital Platforms for Waste Reduction

The WasteWise digital platform aims to minimize food waste in the hospitality sector by providing tools for tracking, analyzing, and reducing food waste at various stages—from procurement to disposal. Utilizing WasteWise allows hotels and restaurants to significantly reduce their food waste, leading to cost savings and a lower environmental impact.

Virtual Reality (VR) for Education on Sustainability

The Machu Pichu Virtual Tours aims to provide an immersive educational experience that allows users to explore the historical and cultural significance of Machu Picchu without physically visiting the site, thereby reducing the environmental impact associated with tourism. By offering virtual tours of Machu Picchu, tourism organizations provide an engaging educational tool and promote sustainable tourism by reducing foot traffic, raising awareness and promoting conservation efforts.

LEARN MORE

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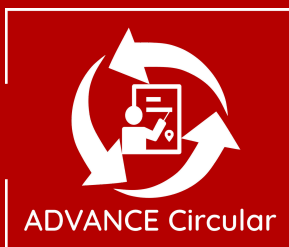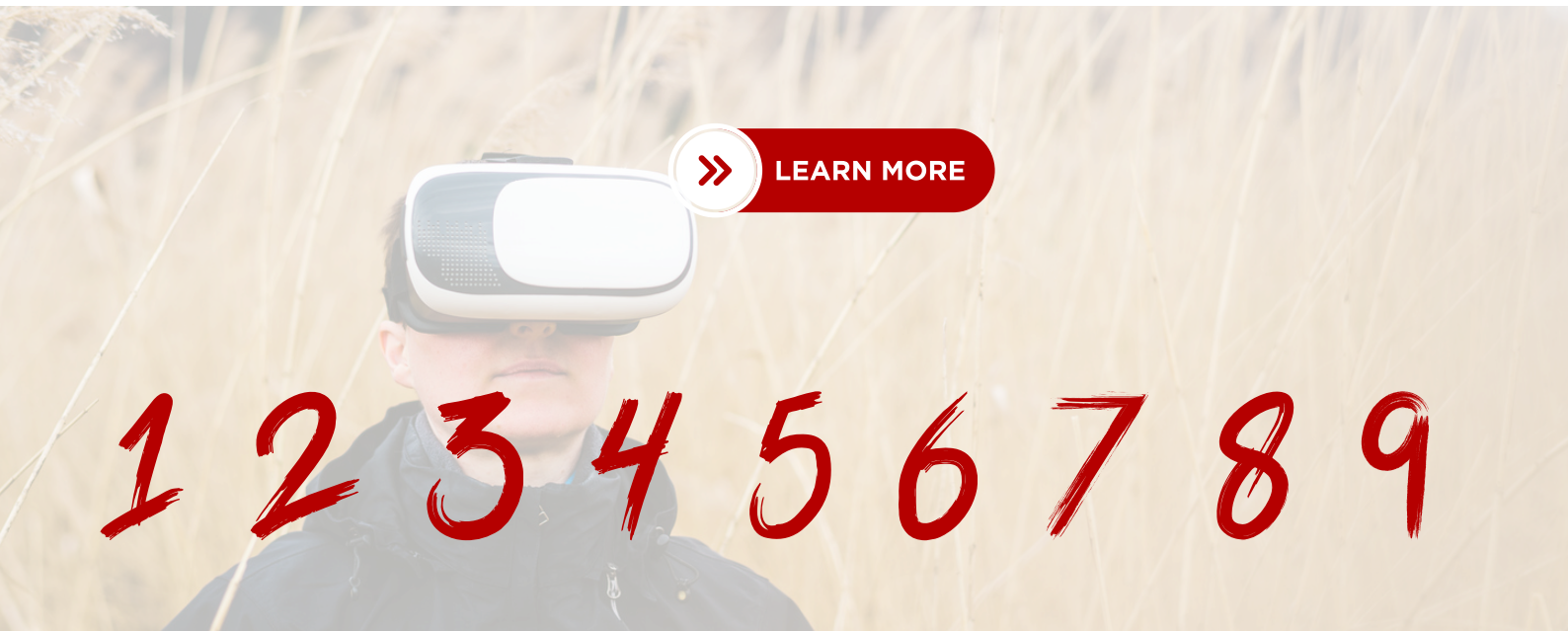
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4.5.6 Digital Marketing for Sustainable Practices

Digital Marketing for Sustainable Practices uses digital channels and technologies to promote sustainable tourism initiatives, educate travellers about eco-friendly options, and foster responsible travel behaviours. This approach aims to align marketing efforts with sustainability goals, ensuring that tourism development benefits local communities and preserves natural resources.

Related Tasks and Activities

1. Developing engaging content highlighting sustainable practices, eco-friendly destinations, and responsible travel tips.
2. Utilizing platforms like Instagram, Facebook, and TikTok to promote sustainable tourism initiatives and engage with eco-conscious travellers.
3. Optimizing online content to improve visibility in search results related to sustainable tourism.
4. Partnering with influencers who advocate for sustainable travel to reach a broader audience.
5. Sending newsletters that inform subscribers about sustainable practices, events, and eco-friendly travel options.
6. Analyzing consumer behaviour data to tailor marketing strategies that resonate with environmentally conscious travellers.

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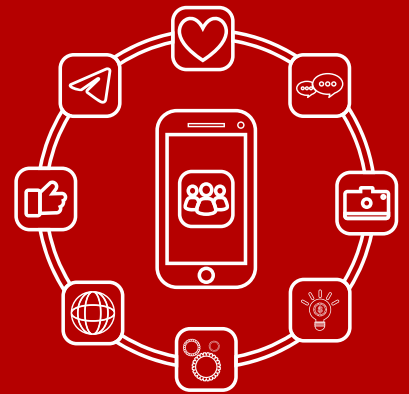
Related Tasks and Activities

1. Content Creation

2. Social Media Campaigns

3. Search Engine Optimization (SEO)

4. Influencer Collaborations

5. Email Marketing

6. Data Analytics

Examples in the Workplace

Social Media Campaigns

Hilton Hotels has effectively utilized social media, particularly Twitter and Facebook, to promote its environmental initiatives through the "Travel with Purpose" campaign. This initiative is part of Hilton's Environmental, Social, and Governance (ESG) strategy, which aims to foster responsible travel globally by highlighting sustainability goals like reducing carbon emissions and water consumption. The campaign encourages guests to adopt eco-friendly practices during their stays, such as minimizing towel use and participating in recycling programs. By actively engaging users on social media, Hilton raises awareness of its sustainability efforts. He invites guests to contribute to these initiatives, reinforcing the company's commitment to creating a positive environmental and social impact.

Partnerships with Local Businesses

A digital marketing team might collaborate with local businesses to offer discounts on eco-friendly services, such as electric bike rentals or organic farm tours. This partnership can be highlighted in targeted advertising campaigns emphasising the benefits of sustainably supporting local economies while travelling.
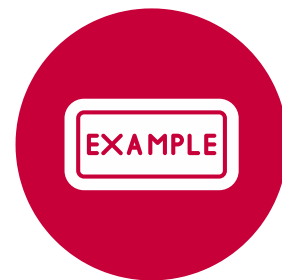
5.1 SUSTAINABLE TOURISM PRACTICES AND DESTINATIONS: EXAMPLES FROM AROUND THE WORLD [36]

40 examples of sustainable tourism and destinations from around the world:

1. **The Galapagos Islands, Ecuador** – A protected wildlife sanctuary that limits visitor numbers to prevent environmental damage and promote sustainable tourism.
2. **Costa Rica** is a country that is strongly committed to sustainable tourism, focusing on eco-tourism, community-based tourism, and conservation efforts.
3. **Bhutan** – A country that measures its economic success through a Gross National Happiness index, which includes the protection of the environment and cultural heritage.
4. **Norway** is known for its sustainable tourism, including eco-friendly transportation, green energy, and sustainable tourism certification programs.
5. **The Netherlands** – A country that is promoting sustainable tourism through initiatives such as green hotels, bike-friendly cities, and nature conservation programs.
6. **New Zealand** – A country with a strong focus on sustainable tourism, including eco-tourism, conservation efforts, and responsible travel practices.
7. **The Amazon Rainforest, Brazil** – A region that has adopted sustainable tourism to promote conservation and support local communities.
8. **The Great Barrier Reef, Australia** – A protected marine park that promotes sustainable tourism, such as reducing carbon emissions and protecting the natural environment.
9. **Kenya** – A country that has implemented sustainable tourism, including wildlife conservation, community-based tourism, and eco-friendly lodges.
10. **Iceland** is a country promoting sustainable tourism through eco-friendly transportation, renewable energy, and eco-certification programs.
11. **South Africa** – A country that is known for its conservation efforts, including wildlife protection and community-based tourism.
12. **The Azores**, **Portugal** – A group of islands promoting sustainable tourism through eco-tourism, whale watching, and nature conservation programs.
13. **The Serengeti**, **Tanzania** – A protected wildlife sanctuary that promotes responsible tourism practices, such as reducing carbon emissions and supporting local communities.
14. **The Cook Islands, Pacific Ocean** – A group of islands committed to sustainable tourism, including protecting the environment and supporting local communities.

15. **Thailand** – A country that has implemented sustainable practices, including community-based tourism, wildlife conservation, and responsible travel.
16. **The Faroe Islands, Denmark** – A group of islands that is promoting sustainable tourism through eco-friendly transportation, sustainable seafood, and nature conservation programs.
17. **The Lake District, England** – A protected national park that promotes sustainable tourism, such as reducing carbon emissions and supporting local communities.
18. **The Annapurna Region, Nepal** – A region that is promoting sustainable tourism through community-based tourism, conservation efforts, and responsible trekking practices.
19. **The Maasai Mara, Kenya** – A protected wildlife reserve that promotes sustainable practices, such as reducing carbon emissions and supporting local communities.
20. **The Blue Mountains, Australia** – A protected national park that promotes sustainable tourism practices, such as reducing carbon emissions and supporting local communities.
21. **Guna Yala, Panama** – A protected indigenous territory that promotes sustainable tourism, such as supporting traditional livelihoods and preserving cultural heritage.
22. **The Isle of Eigg, Scotland** – An island promotes sustainable tourism through renewable energy, eco-friendly accommodations, and community-based tourism initiatives.
23. **The San Blas Islands, Panama** – A group of islands promoting sustainable tourism through eco-tourism, community-based tourism, and responsible travel practices.
24. **The Burren, Ireland** – A protected national park that promotes sustainable practices, such as reducing carbon emissions and supporting local communities.
25. **The Bay of Fundy, Canada** – A protected marine park that promotes sustainable tourism practices, such as reducing carbon emissions and supporting local communities.
26. **The Lofoten Islands, Norway** – An archipelago promoting sustainable tourism through eco-friendly transportation, responsible fishing, and community-based tourism initiatives.
27. **The Tongariro National Park, New Zealand** – A protected national park that promotes sustainable tourism, such as reducing carbon emissions and supporting local communities.
28. **The Danube Delta, Romania** – A protected wetland that promotes sustainable tourism practices, such as eco-tourism and responsible travel practices.
29. **The Douro Valley, Portugal** – A region promoting sustainable tourism through eco-tourism, responsible wine tourism, and community-based tourism initiatives.
30. **Lake Titicaca, Peru/Bolivia** – A protected lake that promotes sustainable tourism, such as preserving cultural heritage and supporting traditional livelihoods.

31. **The Everglades, United States** – A protected wetland that promotes sustainable tourism, such as reducing carbon emissions and supporting local communities.
32. **The Cinque Terre, Italy** – A protected coastal area that promotes sustainable tourism practices, such as reducing carbon emissions and supporting local communities.
33. **The Mekong Delta, Vietnam** – A region promoting sustainable tourism through eco-tourism, responsible travel practices, and community-based tourism initiatives.
34. **The Lake District, Chile** – A protected national park that promotes sustainable tourism practices, such as reducing carbon emissions and supporting local communities.
35. **The Sinharaja Forest Reserve, Sri Lanka** – A protected rainforest that promotes sustainable tourism, such as eco-tourism and responsible travel practices.
36. **The Jasper National Park, Canada** – A protected national park that promotes sustainable tourism practices, such as reducing carbon emissions and supporting local communities.
37. **The Arctic, various countries** – A region promoting sustainable tourism through eco-tourism, responsible travel practices, and nature conservation programs.
38. **The Torres del Paine National Park, Chile** – A protected national park that promotes sustainable tourism, such as reducing carbon emissions and supporting local communities.
39. **The Sagarmatha National Park, Nepal** – A protected national park that promotes sustainable tourism practices, such as eco-tourism and responsible trekking practices.
40. **The Monteverde Cloud Forest Reserve, Costa Rica** – A protected cloud forest that promotes sustainable tourism practices, such as eco-tourism and nature conservation programs.

These are just a few more examples of the many destinations and businesses worldwide adopting sustainable tourism. With a growing focus on responsible and ethical tourism, sustainable tourism is becoming an increasingly important industry worldwide.

For further reading, follow the links below:

◊ Green Hiking: Tips for Reducing Your Environmental Footprint on the Trails - GreenTourism
◊ How To Save Water: 18 Conservation Tips - GreenTourism
◊ What is an Eco Lodge? - GreenTourism

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