



Green & Digital COMPETENCE FRAMEWORK and CURRICULUM

Through this Framework and Curriculum, we seek to build resilience in the hospitality sector, ensuring it can withstand future economic shocks while contributing positively to environmental goals.

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About the Framework

01



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Context

The EcoSmart Green & Digital Competence Framework emerges in response to **critical challenges currently facing Europe's hospitality sector**, particularly among small and medium-sized enterprises (SMEs).

The hospitality sector, which plays a vital role in the European economy, is under increasing strain from a combination of economic, environmental, and technological pressures. In the second half of 2023 alone, 280 restaurants and cafés in Ireland permanently closed, illustrating a broader crisis affecting the industry continent-wide.

These closures are symptomatic of deep structural issues—namely high operational costs, fragile profit margins, and growing external pressures—creating a volatile environment for hospitality businesses.

Among the primary drivers of this crisis are inflation, energy price hikes linked to geopolitical instability, and residual effects of the COVID-19 pandemic on supply chains and consumer behaviour. Yet, even as the sector grapples with these immediate threats, it is also being called upon to meet long-term imperatives: the digital transformation and the

green transition, as mandated by broader EU policy goals. For many hospitality SMEs, however, limited resources and a lack of technical expertise create barriers to adopting artificial intelligence (AI), digital technologies, and sustainable business practices.

The **Erasmus+ supported EcoSmart project** is both a strategic and timely intervention. It seeks to empower the sector by developing a practical and scalable framework that supports digital upskilling and environmental sustainability.

At its core is the recognition that VET (Vocational Education and Training) providers must be equipped with targeted, industry-specific tools and curricula. By doing so, the framework will enhance the competencies of hospitality professionals, enabling them to more effectively integrate digital tools and sustainable practices into their daily operations.



The EcoSmart Green & Digital Competence Framework represents a proactive effort to align a vulnerable but vital sector with Europe's vision for a smart, sustainable, and inclusive future.

Environmental, Social and Governance (ESG)

Environmental, Social, and Governance (ESG) principles play a critical role in crisis **prevention and resilience-building within the hospitality sector**. As global expectations shift toward responsible business practices, integrating ESG frameworks helps hospitality SMEs proactively manage risks and strengthen long-term stability.

From an environmental perspective, improving energy efficiency, reducing waste, and sourcing sustainably can reduce operating costs and buffer against resource scarcity or price volatility - factors that frequently intensify during crises.

Social responsibility also contributes to resilience. Ensuring fair labour practices, employee wellbeing, and community engagement can build stronger internal cultures and external trust, which are essential when navigating disruptions such as staffing shortages or public health emergencies. Meanwhile, good governance - through transparent decision-making, ethical business conduct, and robust risk management - enhances organisational agility and crisis response.

ESG integration is no longer optional; it is becoming a standard expected by investors, regulators, and increasingly, customers. VET-Education is pivotal to counter the growing ESG risk vulnerability of SMEs and their increased demand for ESG skilled personnel. Hospitality businesses that embrace ESG are better positioned to access green financing, attract conscientious consumers, and comply with emerging regulations. In times of crisis, these companies often demonstrate greater adaptability and stakeholder support. By embedding ESG into their core strategies, hospitality SMEs can not only prevent or mitigate crises but also drive sustainable, responsible growth in an increasingly uncertain world.



Environmental	Social	Governance
<ul style="list-style-type: none"> Energy usage & efficiency CO2 emissions reduction Water management Pollution & air quality Waste management Materials Nature 	<ul style="list-style-type: none"> Health & safety Employee working conditions & pay Equality, diversity & inclusion Engagement with local community Product safety & standards/customer welfare Supply chain integrity (labour, health & safety standards, materials sourcing) 	<ul style="list-style-type: none"> Ethical standards Risk management Compliance Shareholders' rights Accounting integrity Conflict of interest

Table 1. ESG Principles

Sustainability within the Hospitality Sector

Sustainability is a critical component of **crisis prevention for SMEs in the hospitality sector**, which is increasingly exposed to environmental, economic, and social disruptions

From climate-related events such as extreme weather and resource shortages to rising energy costs and shifting consumer expectations, unsustainable practices can quickly become liabilities. For SMEs—often operating on tight margins—such vulnerabilities can threaten their long-term viability.

By adopting sustainable practices, hospitality businesses can build greater resilience. Energy efficiency, waste reduction, and responsible sourcing lower operational costs and reduce exposure to fluctuating utility prices or supply chain disruptions. Environmental stewardship can also

open access to green funding opportunities, tax incentives, and partnerships that support financial stability during crises.

Moreover, sustainability aligns with evolving consumer preferences. Guests are increasingly choosing eco-conscious establishments, meaning that sustainability can serve as a competitive advantage and customer retention strategy, especially during market downturns. Internally, sustainable operations can enhance staff engagement and wellbeing, reducing turnover in a sector already facing labour shortages.

Ultimately, embedding sustainability into daily operations allows SMEs to better anticipate and adapt to change. It transforms crisis response from reactive to proactive, equipping hospitality businesses to survive and thrive amid the complex challenges of a rapidly changing world

Digitalisation & AI within the Hospitality Sector

Digitalisation is increasingly vital for **crisis prevention and resilience in SMEs within the hospitality sector.**

These businesses, often operating with limited margins and resources, are highly vulnerable to external shocks - whether economic, environmental, or geopolitical.

Events such as the COVID-19 pandemic and the energy crisis resulting from the war in Ukraine have highlighted the fragility of traditional business models in this sector. Digitalisation offers powerful tools to mitigate these risks and enhance operational adaptability.

By adopting digital technologies, SMEs can improve real-time decision-making, streamline operations, and diversify revenue streams through online platforms and delivery services. Cloud-based management systems, digital booking platforms, and automated inventory tools reduce dependency on manual processes and enhance business continuity during disruptions. Moreover, data analytics can help forecast demand, optimise pricing, and monitor performance—essential for anticipating challenges before they escalate.

Artificial Intelligence (AI) further amplifies the benefits of digitalisation by enabling predictive capabilities and intelligent automation, which are

key to crisis prevention in the hospitality sector. AI can analyse large volumes of data in real time to detect emerging trends, identify potential disruptions, and recommend proactive measures—whether related to inventory shortages, staffing needs, or shifts in customer demand. For instance, AI-powered forecasting tools can help SMEs prepare for seasonal fluctuations or unexpected declines in bookings, allowing them to adjust pricing or marketing strategies swiftly.

Chatbots and AI-driven customer service systems ensure seamless communication during high-stress periods, maintaining service quality even when staff are limited. In operational terms, AI can optimise energy usage, reduce food waste, and enhance supply chain resilience—each of which contributes to greater efficiency and crisis readiness. For resource-constrained SMEs, these tools provide cost-effective ways to operate smarter and more sustainably, ultimately increasing their ability to anticipate and navigate future crises.

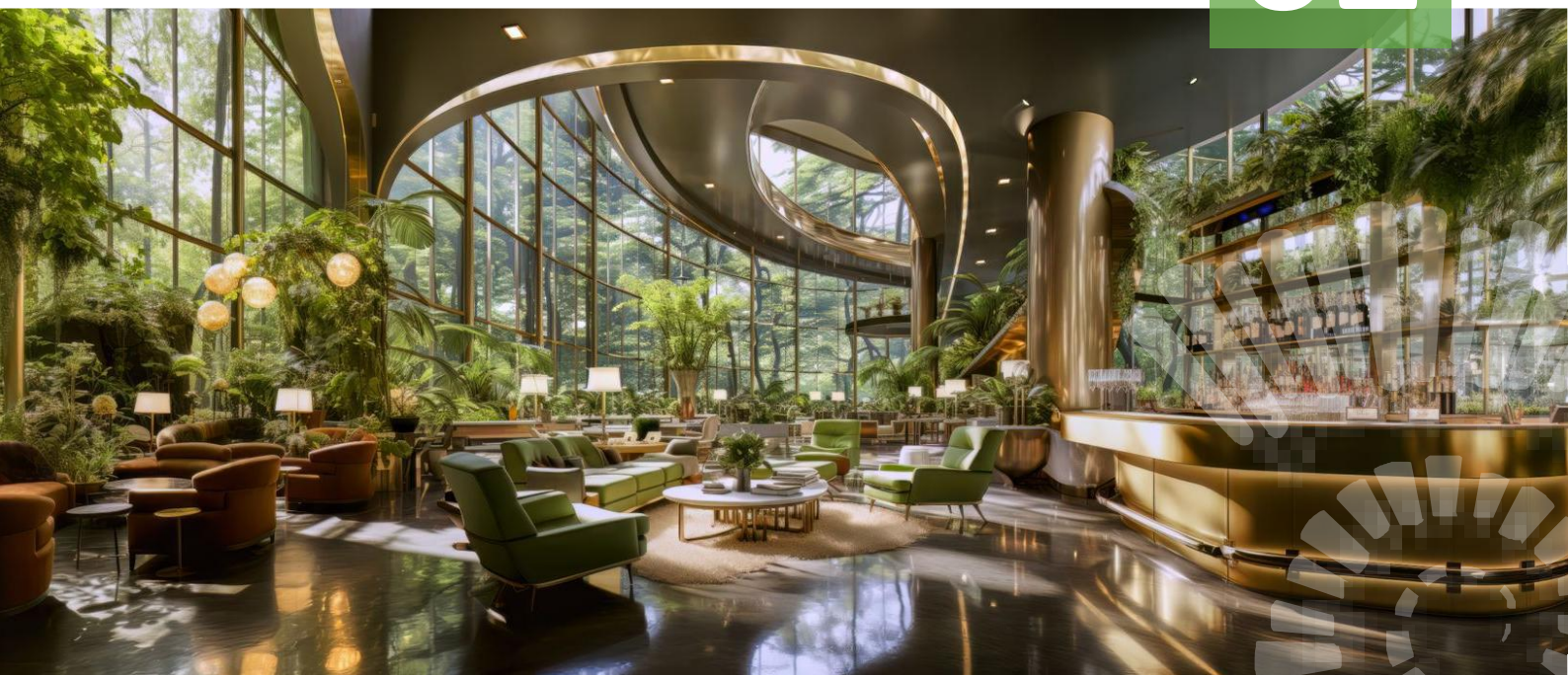
Digitalisation also facilitates more effective communication with customers and staff, enabling faster responses to changing conditions or public health measures.

Additionally, it supports remote operations and virtual training, which are crucial during crises that limit physical interaction.

Overall, integrating digital tools strengthens the capacity of hospitality SMEs to prepare for, withstand, and recover from crises, contributing to a more sustainable and future-ready sector

Existing Competence Frameworks

02



The **EcoSmart Green & Digital Competence Framework** will be grounded in the competencies outlined in **GreenComp** (sustainability), **EntreComp** (entrepreneurship), and **DigComp** (digital competence), ensuring a comprehensive skillset tailored to the hospitality sector.

By integrating these frameworks, the EcoSmart Green & Digital Competence Framework will promote environmental awareness, digital proficiency, and entrepreneurial thinking among hospitality professionals. This alignment enables SMEs to adopt innovative, sustainable practices and digital solutions essential for competitiveness and resilience.

Through practical, sector-specific applications of these EU competence models, the framework will support the transformation of hospitality businesses into agile, eco-conscious enterprises equipped to meet current and future economic and environmental challenges.

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GreenComp

The GreenComp framework, formally known as the **European Sustainability Competence Framework**, is an initiative developed by the European Commission to support individuals in developing the knowledge, skills, and attitudes needed to live, work, and act in sustainable ways. It provides a common reference for learning for sustainability, applicable across education, training, and lifelong learning.



GreenComp is structured around four key competence areas

*These areas encompass **twelve competencies in total**, emphasising personal responsibility, critical thinking, systems thinking, and the capacity to initiate and manage sustainable change.*



The GreenComp framework is designed to be flexible and adaptable, making it relevant to a wide range of sectors, including education, business, and public policy.

GreenComp does not prescribe specific learning outcomes or curricula but instead offers a guiding structure to support the integration of sustainability across disciplines and professions.

- 01** Embodying Sustainability Values;
- 02** Embracing Complexity in Sustainability;
- 03** Envisioning Sustainable Futures;
- 04** Acting for Sustainability

In the context of hospitality, GreenComp supports the development of sustainable business models, resource efficiency, and environmentally responsible decision-making. It equips professionals with the mindset and capabilities to respond to environmental challenges and contribute to the EU's broader Green Deal objectives.

[Access GreenComp here in 24 EU official languages](#)

EntreComp

The EntreComp framework, or the **European Entrepreneurship Competence Framework**, was developed by the European Commission to define and promote entrepreneurship as a key competence for lifelong learning. It broadens the traditional view of entrepreneurship beyond business creation, emphasising a mindset and set of skills that enable individuals to turn ideas into action across all areas of life.



EntreComp is structured around three core areas:

These are further divided into 15 competencies, including creativity, ethical and sustainable thinking, mobilising resources, planning, and learning through experience. Together, they outline what it means to be entrepreneurial—whether starting a business, driving innovation in an organisation, or solving social and environmental challenges.

- 01** Ideas and Opportunities;
- 02** Resources;
- 03** Into Action

The framework is flexible and cross-sectoral, making it applicable in education, employment, and civic contexts. It supports the development of entrepreneurial attitudes such as initiative, resilience, collaboration, and problem-solving.

In the hospitality sector, EntreComp is particularly relevant for empowering SMEs and employees to innovate, adapt, and create value in competitive, high-pressure environments. By applying the EntreComp model, hospitality professionals can strengthen their capacity to lead sustainable change, manage resources effectively, and seize new opportunities - critical for long-term resilience and growth.

DigComp

The DigComp framework, or **the European Digital Competence Framework for Citizens**, was developed by the European Commission to define the key components of digital competence required for personal, social, and professional development. It serves as a common reference for assessing and improving digital skills across Europe.



DigComp is structured around five key competence areas

These areas are further broken down into 21 competencies, ranging from using digital tools responsibly and evaluating online information to creating digital content and ensuring cybersecurity.

- 01 Information and Data Literacy;
- 02 Communication & Collaboration
- 03 Digital Content Creation;
- 04 Safety;
- 05 Problem Solving

The framework is designed to be flexible, adaptable, and technology-neutral, making it suitable for all levels of digital proficiency and applicable across various sectors and educational contexts. DigComp provides a solid foundation for developing targeted training programs, shaping curricula, and informing policy initiatives related to digital transformation.

In the hospitality sector, the DigComp framework is vital for helping SMEs and employees leverage digital tools to streamline operations, improve customer engagement, enhance marketing strategies, and adapt to digital trends. By building digital competence, hospitality professionals can increase efficiency, competitiveness, and innovation - crucial for navigating an increasingly digitalized economy and meeting evolving customer expectations.

The competences in the existing frameworks are as follows:



GreenComp

- 1. Embodying Sustainability Values**
 - Valuing sustainability
 - Supporting fairness
 - Promoting nature
- 2. Embracing Complexity in Sustainability**
 - Systems thinking
 - Critical thinking
 - Problem framing
- 3. Envisioning Sustainable Futures**
 - Futures literacy
 - Adaptability
 - Exploratory thinking
- 4. Acting for Sustainability**
 - Political agency
 - Collective action
 - Individual initiative



DigiComp

- 1. Information & Data Literacy**
 - Browsing, searching, and filtering data, information, and digital content
 - Evaluating data, information, and digital content
 - Managing data, information, and digital content
- 2. Communication & Collaboration**
 - Interacting through digital technologies
 - Sharing through digital technologies
 - Engaging in citizenship through digital technologies
 - Collaborating through digital technologies
 - Netiquette
 - Managing digital identity
- 3. Digital Content Creation**
 - Developing digital content
 - Integrating and re-elaborating digital content
 - Copyright and licenses
 - Programming
- 4. Safety**
 - Protecting devices
 - Protecting personal data & privacy
 - Protecting health and well-being
 - Protecting the environment
- 5. Problem Solving**
 - Solving technical problems
 - Identifying needs and technological responses
 - Creatively using digital technologies
 - Identifying digital competence gaps



EntreComp

- 1. Ideas & Opportunities**
 - Spotting opportunities
 - Creativity
 - Vision
 - Valuing ideas
 - Ethical and sustainable thinking
- 2. Resources**
 - Self-awareness and self-efficacy
 - Motivation and perseverance
 - Mobilising resources
 - Financial and economic literacy
 - Mobilising others
- 3. Into Action**
 - Taking the initiative
 - Planning and management
 - Coping with uncertainty, ambiguity, and risk
 - Working with others
 - Learning through experience

Table 2. GreenComp, DigComp & EntreComp Competences



The **EcoSmart Green & Digital Competence Framework** is the foundation for the project.

All **EcoSmart** resources are based on intensive co-creation processes and expert involvement in building the foundation of the Competence Framework and the curriculum.

This ensures consistent alignment of the resources with the knowledge and competence needs, challenges and risks of ESG, Sustainability, and Digitalisation (including AI) within the hospitality sector

Green & Digital Competence Framework for Hospitality SMEs

Our ECOSMART Competence Framework encompasses **three interconnected facets**:

01

Competence Framework

A comprehensive framework that outlines the essential digital and sustainability competencies needed by SMEs in the hospitality sector. This framework will serve as the cornerstone for developing educational materials, ensuring that they are closely aligned with industry needs and the digital and environmental challenges faced by SMEs. The framework will be informed by extensive research and feedback from experts in the fields of digital technology, sustainability, and hospitality management, ensuring its relevance and applicability.

The framework will equip SMEs and students with the essential skills needed for a sustainable and digitally proficient future. This framework identifies key competencies by drawing on established EU models - GreenComp, EntreComp, and DigComp—and adapts them to the unique context of the hospitality sector. Informed by both a detailed needs analysis and expert consultation, the framework offers a holistic approach to building digital literacy, environmental awareness, and entrepreneurial thinking.

02

Curriculum

A detailed curriculum built upon the Competence Framework, designed to be modular and flexible, allowing for easy integration into existing VET programs or as standalone training. The curriculum will cover a range of topics from implementing sustainable business practices to leveraging

digital tools for enhancing operational efficiency and customer engagement. The curriculum will include learning objectives, instructional content, and assessment guidelines, providing VET providers with a comprehensive package to upskill their learners effectively.

The curriculum will be flexible and integrable, with modular content that can be delivered in classroom, hybrid, or self-paced online formats. It emphasises adaptability to future sectoral demands and integrates cultural and gender sensitivity, ensuring inclusivity and relevance across diverse learner groups. Together, the framework and curriculum support the upskilling of hospitality professionals and enhance sector resilience.

The framework will include **three interconnected facets:**

03

Training Resources, Toolbox, and VET Packages

The training resources will be developed from the curriculum to equip learners with the essential skills and knowledge to adopt and apply sustainable and digital practices within the hospitality sector. These resources will consist of a modular collection of educational materials, designed to build competencies in ESG awareness, sustainability, digital literacy, and strategic planning. They will include real-world case studies, practical implementation guides, and supplementary learning tools, all adaptable to various teaching formats to ensure maximum pedagogical flexibility.

A central component will be the Toolbox, a practical set of instruments aimed at helping learners and professionals design and implement ESG and digitalisation strategies. This hands-on kit will serve as a vital resource for aligning training with current and emerging labour market demands.

Additionally, tailored Educator Packages will support VET instructors by providing structured guidance on embedding ESG and digital competencies into existing curricula. These packages will help bridge theory and practice, ensuring that sustainability and digital skills are effectively integrated into everyday teaching and learning.



Profile of Target Groups & Beneficiaries

04

The **EcoSmart Framework** is an open-access resource designed to be flexible and adaptive to the diverse learning needs of its target audiences, **with a primary focus on enabling personalised learning pathways.**

It acknowledges that learners will have varying characteristics and requirements shaped by factors such as socio-economic background, educational level, motivations for starting a business, size and performance of the business, and growth ambitions.

This tailored approach ensures relevance and accessibility for a wide range of users.

The **EcoSmart Hospitality initiative** is strategically designed to engage a broad spectrum of stakeholders, ranging from educational institutions to small and medium-sized enterprises (SMEs), with the overarching goal of enhancing the hospitality sector's competitiveness and sustainability across Europe.

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4.1

Primary Target Group – VET Providers and Educators

The EcoSmart key outputs are primarily designed **for VET organisations, trainers, and educators who support micro, small, and medium-sized enterprises (SMEs) and their workforce.** These innovative tools aim to strengthen the VET sector’s capacity to **promote ESG awareness & ESG risk literacy, digital literacy, and embed sustainability competences within the hospitality industry.**

The EcoSmart key outputs are primarily designed for VET organisations, trainers, and educators who support micro, small, and medium-sized enterprises (SMEs) and their workforce.

These innovative tools aim to strengthen the VET sector’s capacity to promote ESG awareness & ESG risk literacy, digital literacy, and embed sustainability competences within the hospitality industry. By offering targeted support and education, the project addresses sector-specific

challenges, bridging key knowledge and skills gaps related to ESG, green and digital practices.

The resources aim to empower vocational education and training (VET) professionals with the tools, skills, and resources necessary to prepare current and future SME workforces for the digital and green transition. This includes integrating sustainable practices and digital readiness into teaching methodologies and curricula.

4.2

Secondary Target Groups - Higher Education & Entrepreneurship Education

Beyond the VET context, the **modular and adaptable learning resources are designed to be highly relevant for higher education institutions (HEIs) and entrepreneurship education programmes.**

Their broad applicability supports the integration of digital skills, sustainability competences, and ESG literacy across multiple educational levels and disciplines. The flexibility of the resources allows

educators in these settings to adopt them either in full or as standalone modules, depending on curricular needs and institutional priorities.

4.3

Direct Beneficiaries – Workforce and SMEs in the Hospitality Sector

SMEs and their workforce are key beneficiaries of the project’s outputs, gaining direct access to innovative training materials and practical support tools tailored to their specific operational realities

The ECOSMART resources can be delivered through VET providers or used independently for self-directed learning, offering flexibility to suit different learning preferences and capacities.

The content is designed to address the structural challenges and diverse knowledge needs of SMEs, particularly in relation to green, ESG and digital literacy and compliance to enhance their resilience and sustainability.

Supporting knowledge resources further equip SMEs with the insights and guidance needed to effectively implement these recommendations, contributing to improved crisis preparedness and long-term adaptability.

4.4

Indirect Beneficiaries:

01

Policy Makers and Industry Stakeholders:

Findings can inform policy and contribute to frameworks that support innovation and sustainability in hospitality.

02

Wider Society:

By enabling a more resilient, sustainable, and digitally capable hospitality sector, the project supports societal goals such as economic growth, environmental stewardship, and job creation.

03

Project partners:

Collaborators will acquire new strategies, tools and methods for improving the effectiveness of their services. They will improve their own competences in knowledge sharing and strategic relationship building and have a clear understanding of how to sustain and grow the project in the long term

Development of the Framework

05



The **EcoSmart Green & Digital Competence Framework** was developed using a bottom-up, learner-centred approach, focusing on the real-world needs of SMEs and entrepreneurs operating in the hospitality sector.

The process began by identifying the skills, competences, and tools necessary for navigating emerging crises, particularly those related to digitalisation, sustainability, and ESG.

These insights formed the foundation for defining specific learning outcomes and guiding the development of targeted educational content.

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The EcoSmart Framework and Curriculum are structured around **two core components**, forming the basis of the pedagogical strategy and enabling the structured development of training resources:

5.1

Competence Framework

The Competence Framework defines the essential ESG, digital and green skills required by VET professionals and SMEs within the hospitality industry.

Informed by targeted research and developed through collaborative expert input, the framework integrates and adapts elements from key EU frameworks—GreenComp, EntreComp, and DigComp. This co-creation process ensures a

comprehensive and relevant foundation for ESG, sustainability and digital training, tailored to the hospitality sector’s unique challenges, and supports a sector-wide shift towards resilience and sustainability.

5.2

Curriculum Development

The Curriculum brings the framework to life by **outlining specific learning objectives, topic areas, and modular content**. It provides VET educators with a clear, flexible roadmap for integrating EcoSmart resources into existing programmes or using them as standalone materials

The curriculum is designed to be:

Development of the framework and curriculum is grounded in research activities, including desktop country reviews and semi-structured interviews, providing a strong evidence base and direct insight from the hospitality sector to inform content and design.

01

Flexible:

Adaptable to classroom, hybrid, and online /self-learning formats

02

Integrable:

Suitable for full course delivery or partial integration into current training offers

03

Future-proof:

Designed for easy updates and expansion as ESG and digitalisation demands evolve

04

Inclusive:

Developed with attention to cultural and gender sensitivity, ensuring relevance and accessibility for all learners



Research activities undertaken as part of EcoSmart have provided the foundation for developing the framework

These include:

- **Country reports (secondary research)**
- **Interviews (primary research)**

Detailed description of the research activities conducted, including guiding questions for the semi-structured interviews is available in the EcoSmart WP2 Research Methodology document.

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Country Reports

The country reports aimed to provide a **comprehensive analysis of the state of digitalisation and sustainability in the hospitality sector within each participating country**. These reports identified existing policies, training programmes, and industry needs, offering valuable insights that directly informed the development of the EcoSmart Competence Framework.

By capturing national contexts, the reports enabled the framework to be customised to reflect the specific conditions and challenges faced by SMEs and educators across different countries.

In addition, the inclusion of good practice examples and stakeholder perspectives ensured the framework was enriched with practical insights and aligned with industry realities. These contributions helped integrate best practices into the framework,

enhancing its relevance and applicability for both education and business settings.

As a result, the country reports played a crucial role in shaping a framework that is effective, comprehensive, and targeted, supporting its successful integration into training programmes, VET curricula, and SME operations across the European hospitality sector.

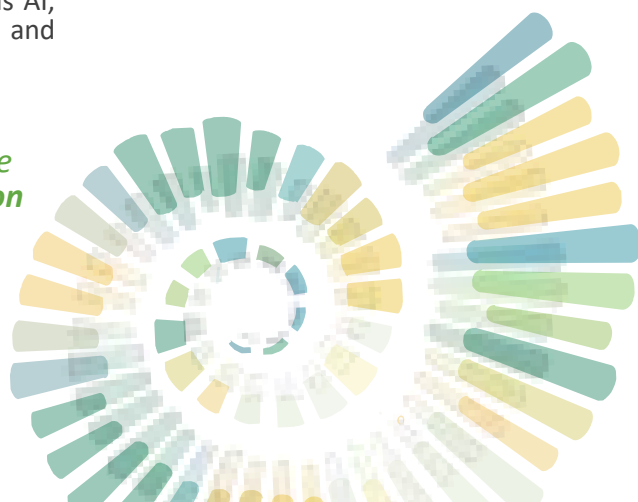
Results & Recommendations

The EcoSmart Country Reports highlight several overarching recommendations to support the development of a green and digital competence framework tailored to the hospitality sector. A key priority is to strengthen the digital and sustainability skills of SMEs, which often lack the technical capacity, financial resources, and strategic knowledge needed to implement effective digital and green practices. Training initiatives should be aligned with established EU frameworks such as GreenComp, DigComp, and EntreComp to ensure comprehensive skill development. The creation of flexible, modular training resources—suitable for vocational education, higher education, and self-directed learning—will help broaden access and ensure relevance across diverse educational and operational contexts. Upskilling in areas such as AI, digital marketing, circular economy principles, and ESG compliance is especially critical.

*The full results of the country reports are available in the **EcoSmart WP2 Report on Insights from Ireland, Türkiye, Spain, Germany and Denmark**.*

Additionally, encouraging greater adoption of green certifications and ESG reporting among SMEs through incentives and awareness-raising is essential to fostering responsible business practices. The reports also stress the importance of cross-sector collaboration involving policy makers, education providers, industry stakeholders, and local communities to ensure successful implementation and impact.

Finally, there is a strong need to develop robust systems for measuring and monitoring sustainability and digitalisation progress, which can guide both strategic planning and policy-making, enhancing sector resilience and future readiness.



Semi-Structured Interviews

To ensure the **EcoSmart Green and Digital Competence Framework** is grounded in the realities of the hospitality sector, **a series of semi-structured interviews were conducted across participating countries.**

These interviews aimed to assess the awareness, relevance, and applicability of the GreenComp, DigComp, and, to a lesser extent, EntreComp frameworks within the sector. They also explored the current state of digital and sustainability competences at national and industry levels.

In total, 27 interviews were conducted. Each interview lasted approximately 40 minutes and targeted a diverse group of stakeholders, including:

01**VET Experts:**

(Educators, Academics, Trainers) Focused on Sustainability and/or Digitalisation.

02**Subject-Matter Experts:**

Specialising in Digital and Sustainability Skills in Hospitality.

03**Hospitality Industry Representatives:**

From Hotels and Restaurants, Examining Sustainability and Digitalisation Perspectives.

The insights gathered offered real-world perspectives, identified existing strengths, gaps, and challenges, and generated practical recommendations to shape the framework. This consultative, multi-stakeholder approach ensures the final EcoSmart Green & Digital Competence Framework is comprehensive, adaptable, and aligned with the evolving needs of the hospitality sector.

Research Design and Analysis

Interview Participant Overview

A random sampling method was used for participant selection

Participant Summary Sustainability

	Ireland	Spain	Türkiye	Germany	Total
Industry	3	2	2	2	9
Experts	1	2	2	0	5
VET Educators	1	2	3	0	6
TOTAL	5	6	7	2	20

Participant Summary Digitalisation

	Ireland	Spain	Türkiye	Germany	Total
Industry	1	2	2	2	7
Experts	1	2	2	0	5
VET Educators	2	2	3	0	7
TOTAL	4	6	7	2	19

Data Organisation

Data from each interview was summarised for each theme, and categorised by respondent type – **Industry Manager, Expert, VET Educator and by Country.**

Data Analysis

A thematic analysis of the interview data was conducted for each of the respondent groups – Industry Managers, Experts and VET Educators for each of the Subject areas – Sustainability and Digitalisation, giving 6 analysis reports.

A training needs analysis was also produced from the respondent groups – Industry Managers, Experts and VET Educators for each of the Subject Areas – Sustainability and Digitalisation.

For each of the Subject areas – Sustainability and Digitalisation a synthesis of the individual reports on the thematic analysis and training needs analysis were compiled. These final two reports informed the development of the Competence Framework.

Sustainability in Hospitality: An Analysis of Manager, Expert and Educator Perspectives

This report synthesizes findings from **three separate reports** on sustainability in the hospitality sector, drawing from the perspectives of **Hospitality Sustainability Managers, Sustainability Experts, and Sustainability Educators** across **Ireland, Spain, and Türkiye (with Germany included in the managers' report)**.

Common themes, unique insights, and cross-cutting recommendations are presented to provide a comprehensive overview of sustainability practices, challenges, and opportunities in the hospitality industry.



Shared Themes Across All Stakeholders

Theme	Educators	Experts	Managers
Commitment to Sustainability	Strong individual commitment, but lacking institutional support	High urgency, especially for environmental issues	Clear operational commitment, especially in energy and waste
Barriers to Implementation	Outdated curricula, limited resources, lack of frameworks	Financial constraints, policy inconsistency, SME resistance	High costs, infrastructure gaps, inconsistent customer demand
Importance of Training & Education	Emphasis on applied learning, but fragmented	Critical for both students and professionals	Staff training essential, but varies by company size
Role of Policy & Regulation	Need for structured frameworks like GreenComp	Advocates for stronger, clearer policies	Desire for simplified, supportive government incentives
Customer Influence	Students' perceptions vary; some see sustainability as irrelevant	Consumers are inconsistent; risk of greenwashing	Younger and international guests drive green innovation

01

Educators:

- **Challenges:** Lack of systemic integration of sustainability; reliance on individual initiative.
- **Teaching Methods:** Case studies, gamification, and real-world projects are effective but under-resourced.
- **Frameworks:** Low awareness and usage of EU frameworks like GreenComp.
- **Country Differences:**
 - **Ireland:** Supportive students, but risk of tokenism.
 - **Spain:** Fragmented curriculum, faculty limitations.
 - **Türkiye:** Stronger practical exposure, but low sectoral demand.

02

Experts:

- **Focus Areas:** Climate change, resource management, and embedding sustainability in business strategy.
- **Leadership:** Emphasize top-down commitment from senior management
- **Country Differences:**
 - **Ireland:** Strong EU alignment, certification credibility.
 - **Spain:** Emphasis on social sustainability, regional disparities.
 - **Türkiye:** Economic constraints, but youth engagement is promising.

03

Managers:

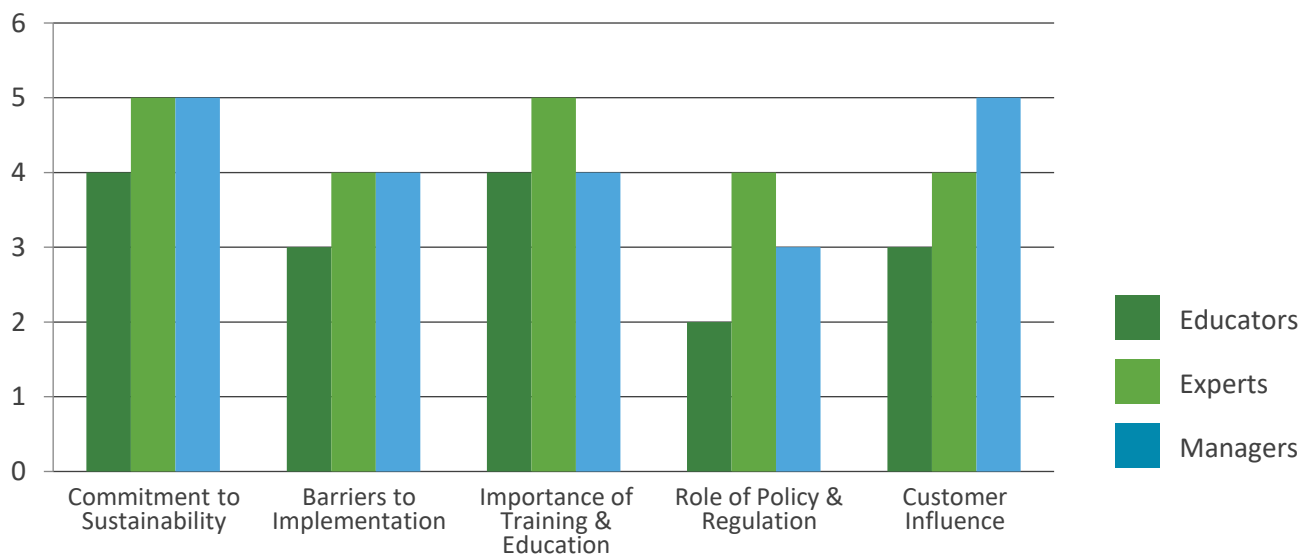
- **Operational Focus:** Energy conservation, waste reduction, and local sourcing.
- **Customer Role:** Major driver of change, especially among younger demographics.
- **Country Differences:**
 - **Ireland:** Community partnerships, branding sustainability.
 - **Germany:** Structured, regulation-driven, strong training systems.
 - **Spain:** Reactive strategies, cost-saving focus.
 - **Türkiye:** Aspirational, culturally rooted, but economically constrained.

Unique Insights by Stakeholder Group

Area	Recommendation
Policy	Develop clear, consistent, and accessible sustainability policies and incentives.
Education	Embed sustainability and digital skills across all levels of hospitality education.
Industry Collaboration	Foster partnerships between academia, industry, and government.
Training	Standardize and expand staff training programs across regions.
Community Engagement	Leverage local partnerships and youth engagement to drive grassroots change.



Stakeholder Perspectives on Sustainability Themes



Sustainability Training Needs in Hospitality Sector

This report provides a **comparative analysis of sustainability training strategies** in the hospitality sector, reflecting the perspectives of **Sustainability Educators, Sustainability Experts, and Industry Managers**.

It highlights shared visions, key themes, and strategic recommendations for unified action.

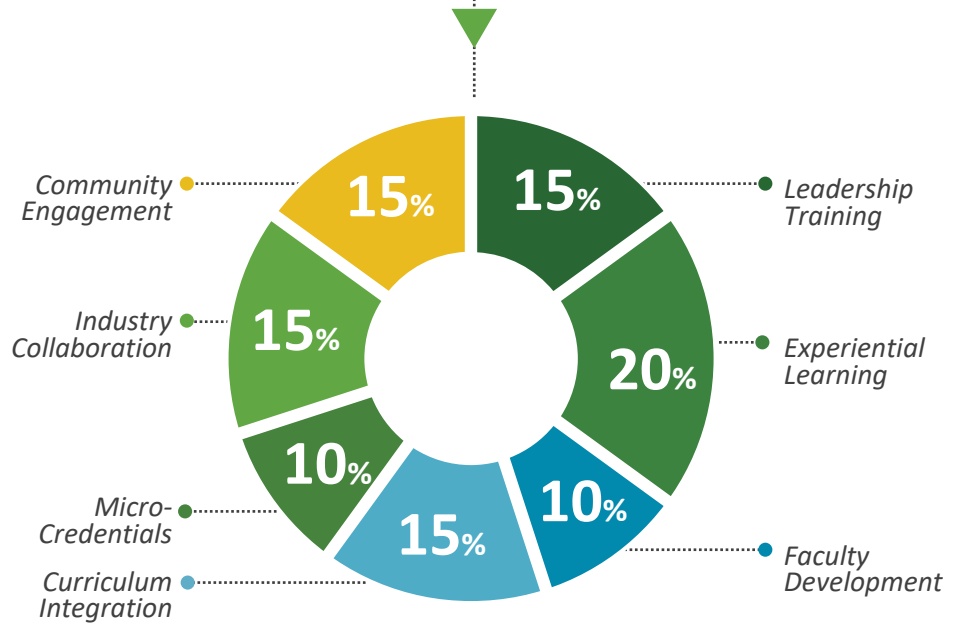
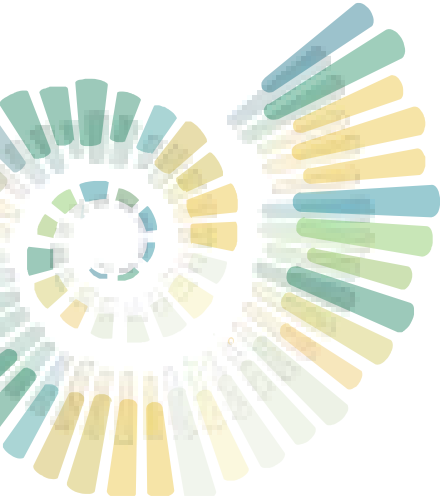


Comparative Table of Key Themes

Key Themes	Sustainability Educators	Sustainability Experts	Industry Managers
Curriculum Integration	Embed sustainability from Year 1 across all disciplines	Tailor content to local conditions	Deliver core principles with local adaptations
Experiential Learning	Increase internships and real-world projects	Promote internships and sustainability labs	Use applied learning approaches
Faculty Development	Mandatory training for educators	Train leaders to champion sustainability	Create modular CPD courses
Industry Collaboration	Co-create learning experiences with businesses	Build partnerships across sectors	Facilitate exchange visits and online forums
Micro-Credentials	Offer short, flexible courses	Offer short-term courses for upskilling	Develop short, skills-based training
Leadership Training	Focus on strategic planning and cultural change	Train leaders in strategic planning	Create CPD courses on leadership
Community Engagement	Involving youth and local communities	Empower students and communities	Train staff to engage customers

Training Priorities in Sustainability Education

This training needs analysis outlines **targeted actions for improving sustainability education within hospitality programmes**. It is informed by a comparative analysis of educational practices in **Ireland, Spain, and Türkiye**, highlighting key gaps and actionable opportunities.



Sustainability Educators

Conclusion

Implementing this strategy requires a coordinated, multi-level effort among educators, institutions, and industry stakeholders. By embedding sustainability as a core pillar of hospitality education, supported by frameworks, practical tools, and stakeholder engagement, graduates will be better prepared to lead and innovate in a rapidly changing industry.

- 01 Institutional Integration of Sustainability Across the Curriculum
- 02 Structured Adoption of European Frameworks
- 03 Practical, Experiential Learning Enhancements
- 04 Faculty Development and Institutional Support
- 05 Teaching Resources and Localized Case Studies
- 06 Student-Centered Pedagogical Approaches
- 07 Collaboration with Industry and Policymakers

Conclusion

This strategy provides a clear roadmap for equipping hospitality professionals with the tools and mindset necessary to deliver sustainable services. With targeted investment, public-private collaboration, and regional alignment, sustainability training can drive real transformation across the European hospitality sector.

- 01 Enhance sustainability knowledge and practices across all hospitality roles.
- 02 Embed sustainability into education and training systems in each country.
- 03 Foster cross-country knowledge sharing to accelerate collective learning.
- 04 Promote the uptake of green certifications through tailored training.
- 05 Encourage customer-focused sustainability communication by staff.
- 06 Standardised Yet Localised Training Modules
- 07 Integration into Vocational and Higher Education Curricula
- 08 Incorporate sustainability as a required topic in hospitality education.
- 09 Use applied learning approaches (e.g., projects, internships, field visits).
- 10 Create modular online CPD courses on leadership, green innovation, and regulation.
- 11 Offer CPD credits or certifications to enhance career advancement.
- 12 Communication and Customer Engagement Training
- 13 Cross-Border Peer Learning Programmes
- 14 Certification-Linked Training
- 15 Incentive Schemes for Participation
- 16 Work with national tourism boards and ministries to integrate strategy into public policy.
- 17 Partner with industry associations and educational institutions for curriculum development.
- 18 Ensure training materials are accessible in local languages and tailored to varying literacy levels.
- 19 Evaluate training effectiveness through feedback loops, performance tracking, and guest satisfaction metrics.

Sustainability Experts

Conclusion

This training strategy provides a comprehensive roadmap for embedding sustainability in hospitality education and workforce development. By addressing both structural and behavioral challenges, the recommended interventions can accelerate the hospitality sector's transition toward environmental and social responsibility.

- 01 Develop Context-Specific Curriculum Modules
- 02 Integrate Sustainability into Core Hospitality Courses
- 03 Provide Practical and Experiential Learning Opportunities
- 04 Upskill Current Workforce Through Micro-Credentials
- 05 Foster Leadership and Change Management Skills
- 06 Promote Consumer Awareness and Communication Skills
- 07 Collaborate Across Sectors and Institutions
- 08 Engage Youth and Community in Co-Designing Solutions
- 09 Monitor and Evaluate Programme Impact

Strategic Recommendations for Unified Action

Conclusion

To harmonize efforts across all groups, the following strategic recommendations are proposed:

- 01 Create a shared competency framework that bridges education, industry, and policy.
- 02 Develop a centralized platform for sharing localized case studies, training modules, and best practices.
- 03 Establish feedback loops to evaluate training impact and continuously refine content.
- 04 Promote cross-border collaboration through EU-supported peer learning and exchange programs.

Digitalisation in Hospitality: An Analysis of Manager, Expert and Educator Perspectives

This synthesis report integrates insights from three distinct groups within the hospitality sector:

Hospitality Industry Managers, Digitalisation Experts, and Hospitality Educators across Ireland, Spain, and Türkiye. The report highlights shared themes, barriers, and country-specific contrasts, providing a comprehensive overview of digitalisation in the hospitality industry.

Shared Themes Across All Groups

01

Digitalisation as a Strategic Imperative:

All three groups agree that digitalisation is no longer optional - it is essential for operational efficiency, customer engagement, and long-term sustainability. Managers and experts emphasize its role in streamlining operations and enhancing customer service. Educators recognize the need to prepare students for a tech-driven industry, though they face challenges in curriculum integration.

02

Training and Skills Development:

Managers highlight the need for upskilling staff, especially older employees, and often rely on informal methods like “digital ambassadors.” Experts stress continuous, practical training and collaboration with educational institutions. Educators face infrastructure and institutional barriers but advocate for blended learning, gamification, and real-world projects.

03

Barriers to Implementation:

Common barriers include financial constraints, resistance to change, and lack of digital literacy. SMEs are particularly affected due to limited resources. There is inconsistent awareness and application of EU frameworks like DigComp and GreenComp across all groups.

01

Hospitality Industry Managers:

- **Customer-Centric Digitalisation:** Managers are driven by evolving guest expectations, seamless check-ins, QR menus, and online reviews are now standard.
- **Operational Focus:** Tools like POS and PMS systems are widely used, but structured training is often lacking.
- **Support Needs:** Managers call for more government and institutional support, especially for SMEs.

02

Digitalisation Experts:

- **Future-Oriented Vision:** Experts see AI, predictive analytics, and blockchain as transformative technologies.
- **Sustainability Integration:** Digitalisation is linked to environmental goals, though there's concern about superficial "greenwashing."
- **Framework Utilization:** Spanish experts are most familiar with EU frameworks; Irish experts prefer custom solutions; Turkish experts focus on regulatory compliance

03

Hospitality Educators:

- **Pedagogical Innovation:** Educators use flipped classrooms, simulations, and interactive tools like Kahoot and Genially.
- **Curriculum Gaps:** There's a lack of structured digitalisation strategies and qualified instructors.
- **Soft Skills Emphasis:** Communication, empathy, and teamwork are seen as equally important as digital fluency



Sustainability Training Needs in Hospitality Sector

This report synthesizes the perspectives of three key groups on **digitalisation training and education in the hospitality sector**: Hospitality Educators, Digitalisation Experts, and Industry Managers. The synthesis highlights common themes, unique contributions, and strategic priorities identified by each group. The report includes comparative tables and infographics to visualize the findings.



Comparative Table of Strategic Priorities

There was a significant divergence of views on strategic priorities in Digitalisation from each of the interview groups, showing a distinct set of priorities for each group. This is a challenge when assessing the relevance to the Competence Framework.

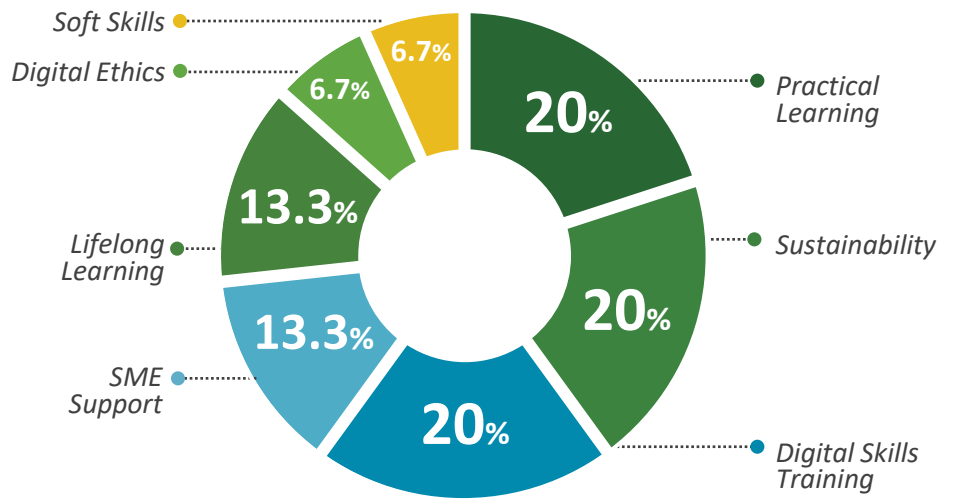
Strategic Priority	Hospitality Educators	Digitalisation Experts	Industry Managers
Unified Digital Skills Framework	Adoption of frameworks like DigComp across all modules.	N/A	N/A
Faculty Development	Training in digital pedagogy, AI, and inclusive teaching.	N/A	N/A
Infrastructure Investment	Upgrading labs and access to industry-standard tools.	N/A	N/A
Practical Projects	Embedding digital marketing, CRM simulations, and data analysis.	N/A	N/A
Soft Skills Integration	Combining digital tools with teamwork and communication training.	N/A	N/A
Framework Awareness	Promoting DigComp, GreenComp, and EntreComp.	N/A	N/A
Interdisciplinary Collaboration	Joint modules with IT, business, and design faculties.	N/A	N/A
Institutional Digitalisation Offices	For coordination and support.	N/A	N/A
Core Digital Competencies	N/A	Data literacy, cybersecurity, and tool proficiency.	N/A

Comparative Table of Strategic Priorities

Strategic Priority	Hospitality Educators	Digitalisation Experts	Industry Managers
Sustainability Integration	N/A	ESG reporting, green tech, and real-world case studies.	N/A
Future-Oriented Skills	N/A	AI, blockchain, robotics, and scenario planning.	N/A
Experiential Learning	N/A	Internships, digital projects, hackathons.	N/A
SME Support	N/A	Modular training, digital ambassadors, ROI workshops.	N/A
Lifelong Learning	N/A	Micro-credentials, online platforms, alumni networks.	N/A
Change Management	N/A	Leadership training, human-centered design, storytelling.	N/A
Tiered Digital Literacy	N/A	N/A	Beginner to advanced modules, mobile-friendly formats.
Digital Ambassadors	N/A	N/A	Peer-led mentoring and certified champions.
Sustainability + Digital Skills	N/A	N/A	Real-world tools like energy monitoring and waste tracking.
Blended Learning	N/A	N/A	Online onboarding + in-person workshops.
Role-Specific Training	N/A	N/A	Booking systems, QR menus, review management.
Knowledge Portals	N/A	N/A	Shared resources and best practices across regions.
Government Support	N/A	N/A	Subsidized training and recognized certifications.
Cultural & Ethical Training	N/A	N/A	Digital ethics and long-term societal impact.



Common Themes Across All Groups



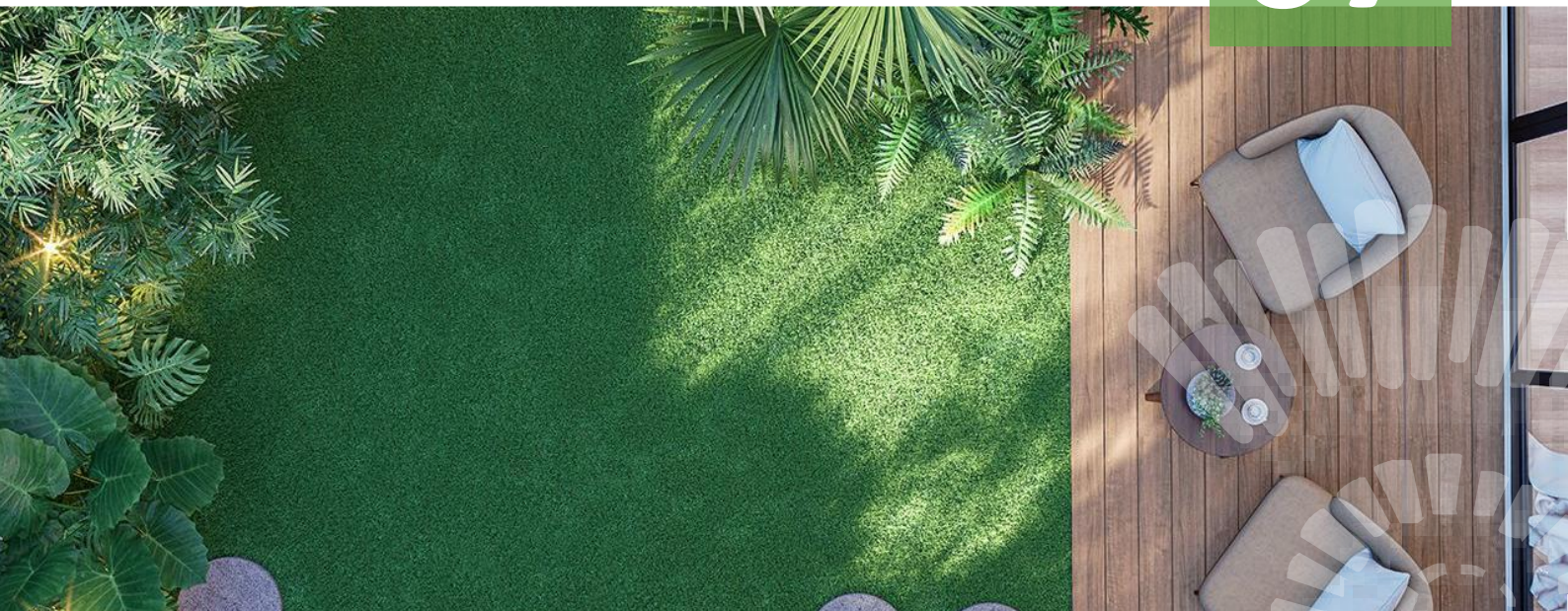
Data Analysis

- There is broad convergence of the views on Sustainability across respondents, but each country is at a different point in the development journey and localized approaches need to be appreciated
- There is far less convergence of views on Digitalisation, particularly between respondent groups. Each group appears to have identified very different priorities.
- There is very low awareness of EU Frameworks – GreenComp, EntreComp and DigComp – across all countries and respondent groups.



Using EU Competence Frameworks to Analysis Research Findings

07



The **EcoSmart Competence Framework for Digitalisation and Sustainability** is developed through a combination of the industry specific research carried out as above across **Ireland, Spain, Türkiye, Denmark and Germany**, which has been analysed using the **DigComp and GreenComp EU Frameworks**.

The EU Framework on EntreComp was also referenced in the analysis of any management and entrepreneurship skills identified in the project research.

7.1	Hospitality-Specific Sustainability Competence Analysis using GreenComp	38
7.2	Hospitality-Specific Digitalisation Competence Analysis using DigComp	40

Hospitality-Specific Sustainability Competence Analysis using GreenComp

Adapted from the **European Sustainability Competence Framework (GreenComp)**, this process aligns core sustainability competencies with specific applications in hospitality education and training.



01 Embodying Sustainability Values

Developing a sustainability mindset by caring for the environment, society, and future generations.

GreenComp Competence	Hospitality Specific Application
Valuing sustainability	Promote sustainable tourism models, such as eco-lodging and low-impact travel; introduce learners to ethical sourcing and fair labor in hospitality supply chains.
Supporting fairness	Explore topics like inclusive tourism, accessibility, gender equality, and social justice in the context of guest services and local community impact.
Promoting nature	Teach appreciation of biodiversity and nature as tourist attractions; integrate conservation practices in destination management and hotel landscaping.

02 Embracing Complexity in Sustainability

Understanding how sustainability is interconnected and requires systems thinking.

GreenComp Competence	Hospitality Specific Application
Systems thinking	Analyze the full life cycle of hospitality operations (e.g., food sourcing to waste disposal) and their environmental and social impacts.
Critical thinking	Evaluate sustainability certifications (e.g., Green Key, LEED, EcoLabel) and examine cases of greenwashing in the tourism sector.
Problem framing	Discuss trade-offs in tourism growth vs. environmental/social limits; develop case scenarios around energy use, overtourism, or water scarcity.
Strategic problem solving	Use hospitality-specific challenges to create sustainability action plans—e.g., energy-saving retrofits, carbon-neutral events, or zero-waste kitchens.

03 Envisioning Sustainable Futures

Imagining and creating desirable and inclusive futures for people and the planet.

GreenComp Competence	Hospitality Specific Application
Futures literacy	Facilitate foresight exercises: what will sustainable hospitality look like in 2035? Include scenario planning and trend analysis in tourism.
Adaptability	Train students to manage disruption (e.g., climate change, pandemics) and adapt services with resilience and flexibility.
Exploratory thinking	Encourage innovation projects in sustainable hospitality, like circular economy hotels, slow tourism models, or regenerative destination design.
Openness to change	Foster an attitude of lifelong learning, openness to feedback, and responsiveness to evolving customer and regulatory expectations.

04 Acting for Sustainability

Moving from awareness to deliberate action to drive sustainable transformation.

GreenComp Competence	Hospitality Specific Application
Political agency	Empower students to advocate for responsible tourism policy and sustainability certifications within their organizations and communities.
Collective action	Promote teamwork on sustainability challenges through group projects, student-led green initiatives, or partnerships with local businesses.
Individual initiative	Encourage students to implement sustainability projects during internships or capstones - e.g., introducing recycling protocols at a hotel.
Ethical practice	Include ethical dilemmas in training (e.g., overbooking, food waste, local exploitation) and emphasize professional standards in ESG practices.



Hospitality-Specific Digitalisation Competence Analysis using DigComp

Adapted from the **European Sustainability Competence Framework (DigComp)**, this process aligns core digitalisation competencies with specific applications in hospitality education and training.



01 Information and Data Literacy

Articulate information needs, locate and retrieve digital data, information and content. Judge the relevance of the source and its content. Store, manage and organize digital data, information and content

DigComp Competence	Hospitality Specific Application
Browsing, Searching and filtering data, information and digital content	Develop a unified digital skills framework
Evaluating data, information and digital content	Provide core digital competency modules on data analysis
Managing data and digital content	Develop tiered digital literacy programmes for management activities

02 Communication and Collaboration

Interact, communicate & collaborate through digital technologies while being aware of cultural & generational diversity, participate in society through public and private devices, & manage one's digital presence

DigComp Competence	Hospitality Specific Application
Interacting through digital technologies	Appoint and train digital ambassadors
Sharing through digital technologies	Cultural and change management training
Collaborating through digital technologies	
Engaging citizenship through digital technologies	Invest in staff development
Netiquette	Provide security awareness training
Managing digital identity	

03 Digital Content Creation

Create and edit digital content, improve and integrate information and content into an existing body of knowledge and give understandable instructions for a computer system

DigComp Competence	Hospitality Specific Application
Developing digital content	Embed practical digital projects in learning
Integrating and re-laborating digital content	Provide practical and experiential learning
Copyright and licences	
Programming	Focus on practical, role specific applications

04 Safety

Protect devices, content and personal data, physical and psychological health, social well-being and inclusion, environmental impact.

DigComp Competence	Hospitality Specific Application
Protecting devices	Awareness of frameworks, maintenance and security
Protecting personal data and privacy	Cybersecurity awareness
Protecting health and well-being	Ethical and cultural dimensions of digitalisation
Protecting the environment	Asset re-use and disposal

05 Problem Solving

Identify needs and problems and resolve conceptual and situational problems, innovate processes and products, keep up-to-date with digital evolution

DigComp Competence	Hospitality Specific Application
Solving technical problems	Encourage Interdisciplinary Collaboration
Identifying needs and technological responses	Structured frameworks for application and process development
Creatively using digital technology	Use Blended Learning Approaches, Provide Access to Shared Knowledge Portals
Identifying digital competence gaps	Adaptive and Future-Oriented Skills Development

Course Outline / Curriculum

08

Cluster	Module Title	Competence Framework Alignment	(Digital) Badge	Why it works
Sustainability and Green Innovation	Integrating Sustainability in Daily Hospitality Operations	Embedding sustainability values in everyday action	Green from the Ground Up	Enables practical eco-conscious behaviours at Hospitality Business Level. Drives cultural change and operational responsibility
	Circular Economy & Resource Efficiency	Circularity and Resource use. Managing Resources.	Less Waste, More Value	Empowers Hospitality Businesses to reduce waste, manage costs, and create circular value. High alignment with policy trends.
	Sustainable Customer Experience Design	Impact and Empathy. Creativity and Critical Thinking.	Designing for Conscious Guests	Combines sustainability with guest experience. Reflects market demand and consumer shifts
Digital Transformation & Smart Hospitality	Digital tools for Hospitality Businesses	Communication and Collaboration. Digital content creation	Digital Ready, Day One	Closes basic digital skills gaps. Tailored to small Hospitality Operations and Real-World Tools (PMS, CRM, etc)
	Data-Driven Decision Making in Hospitality Businesses	Information and Data Literacy. Taking the initiative	Decide Smarter, Serve Better	Fosters data-driven culture and operational insight. Responds directly to Hospitality Interviews across partners
Strategic Leadership and Entrepreneurial Mindset	Leading Green and Digital Change	Mobilising others. Vision. Coping with uncertainty Collective action	Leaders in Transition	Trains change leaders in the sector. Encourages Sustainable Innovation, Digital Leadership and collaborative Transformation

Integrated Competence Framework & Curriculum for Sustainability & Digitalisation in Hospitality

09

01 Integrating Sustainability in Daily Hospitality Operations

Embedding environmentally and socially responsible practices into everyday hospitality workflows to improve resilience, regulatory compliance, guest satisfaction, and environmental impact. This includes operational behaviours across cleaning, procurement, catering, energy use, and staff routines.

<p>Knowledge, Skills, and Attitudes (KSA)</p>	<ul style="list-style-type: none"> ● Knowledge: Principles of sustainable hospitality operations (energy efficiency, water conservation, ethical sourcing, carbon footprint awareness). ● Skills: Implementing low-impact cleaning protocols, monitoring resource use, applying local procurement guidelines. ● Attitudes: Proactivity, responsibility for shared resources, attention to long-term impact, commitment to sustainability.
<p>Framework Links</p>	<ul style="list-style-type: none"> ● GreenComp: Acting for Sustainability, Embodying Sustainability Values ● EntreComp: Ethical and Sustainable Thinking
<p>Examples in Hospitality</p>	<ul style="list-style-type: none"> ● A boutique hotel switches from disposable plastic toiletry containers to bulk dispensers to reduce plastic waste. ● Kitchen staff use food waste bins and track reductions as part of daily prep. ● A front office team promotes local transport and green-certified partner businesses.
<p>Learning Outcomes</p>	<ul style="list-style-type: none"> ● Identify five sustainable actions applicable to front-desk, kitchen, or housekeeping operations. ● Design a staff shift routine that includes sustainability checkpoints (e.g., energy shut-off, recycling). ● Evaluate the short- and long-term environmental impact of a hotel's daily routines.

02 Circular Economy & Resource Efficiency

Applying circular economy principles - such as reducing resource inputs, reusing materials, and designing out waste - to hospitality workflows, procurement strategies, and customer services.

Knowledge, Skills, and Attitudes (KSA)	<ul style="list-style-type: none"> • Knowledge: Circular design concepts, material flows, circular procurement, cradle-to-cradle principles. • Skills: Conducting waste/resource audits, implementing repair/reuse practices, measuring efficiency indicators. • Attitudes: Critical mindset about consumption, appreciation for innovation and conservation, cost-efficiency awareness.
Framework Links	<ul style="list-style-type: none"> • GreenComp: Systems Thinking, Envisioning Sustainable Futures • EntreComp: Creativity, Mobilising Resources
Examples in Hospitality	<ul style="list-style-type: none"> • A resort repurposes worn-out linens into laundry bags or aprons for staff. • Restaurant managers design menus based on zero-waste principles (e.g., full-vegetable usage). • Facilities teams audit water consumption in guest rooms and introduce low-flow fixtures.
Learning Outcomes	<ul style="list-style-type: none"> • Conduct a basic material flow assessment in a hospitality unit. • Create a checklist for identifying circular opportunities in kitchen, housekeeping, and maintenance. • Compare linear vs. circular models in terms of environmental and financial outcomes for SMEs.

03 Sustainable Customer Experience Design

Developing guest experiences that are environmentally friendly, culturally respectful, socially inclusive, and economically viable - without compromising guest comfort, luxury, or satisfaction.

Knowledge, Skills, and Attitudes (KSA)	<ul style="list-style-type: none"> • Knowledge: Sustainable design principles, eco-labels, responsible tourism trends, behavioural nudges. • Skills: Designing inclusive, meaningful experiences aligned with sustainable values; engaging customers through educational content; integrating green practices subtly into service delivery. • Attitudes: Empathy, cultural awareness, creativity, a belief in value co-creation.
Framework Links	<ul style="list-style-type: none"> • GreenComp: Promoting Nature, Collective Action • EntreComp: Valuing Ideas, Customer Engagement
Examples in Hospitality	<ul style="list-style-type: none"> • A rural guesthouse offers seasonal menus highlighting locally sourced ingredients, presented with a short story about the producers. • Reception staff encourage guests to participate in an eco-challenge with small rewards (e.g., least towel use). • Hotel room signage offers guests the option to choose different levels of housekeeping frequency, explaining the environmental benefits.
Learning Outcomes	<ul style="list-style-type: none"> • Map the guest journey and identify sustainability-enhancing touchpoints. • Propose two experience design ideas that support sustainability and improve customer satisfaction. • Develop a guest communication strategy for sustainability initiatives using storytelling and visual cues.

04 Digital Tools for Hospitality SMEs

Selecting, deploying, and integrating digital tools to enhance efficiency, sustainability, customer service, and competitiveness in hospitality SMEs.

Knowledge, Skills, and Attitudes (KSA)	<ul style="list-style-type: none"> • Knowledge: Key digital tools for SME operations (PMS, POS, CRM, reputation management, digital check-in, energy monitoring). • Skills: Setting up and configuring tools, training staff, evaluating tool effectiveness. • Attitudes: Comfort with technology, curiosity, innovation-oriented thinking.
Framework Links	<ul style="list-style-type: none"> • DigComp: Digital Content Creation, Communication and Collaboration, Digital Problem Solving • EntreComp: Taking Initiative, Planning
Examples in Hospitality	<ul style="list-style-type: none"> • A small hotel adopts a cloud-based PMS integrated with their booking engine and channel manager. • A café uses a loyalty app that tracks purchases and promotes plant-based items to reduce food carbon footprint. • A B&B installs smart thermostats to monitor and reduce heating costs.
Learning Outcomes	<ul style="list-style-type: none"> • Identify 5 digital tools that streamline hospitality SME operations. • Set up a digital platform to manage bookings and customer records. • Evaluate which tool offers the best cost/benefit ratio for digital transformation.

05 Data-Driven Decision Making in Hospitality

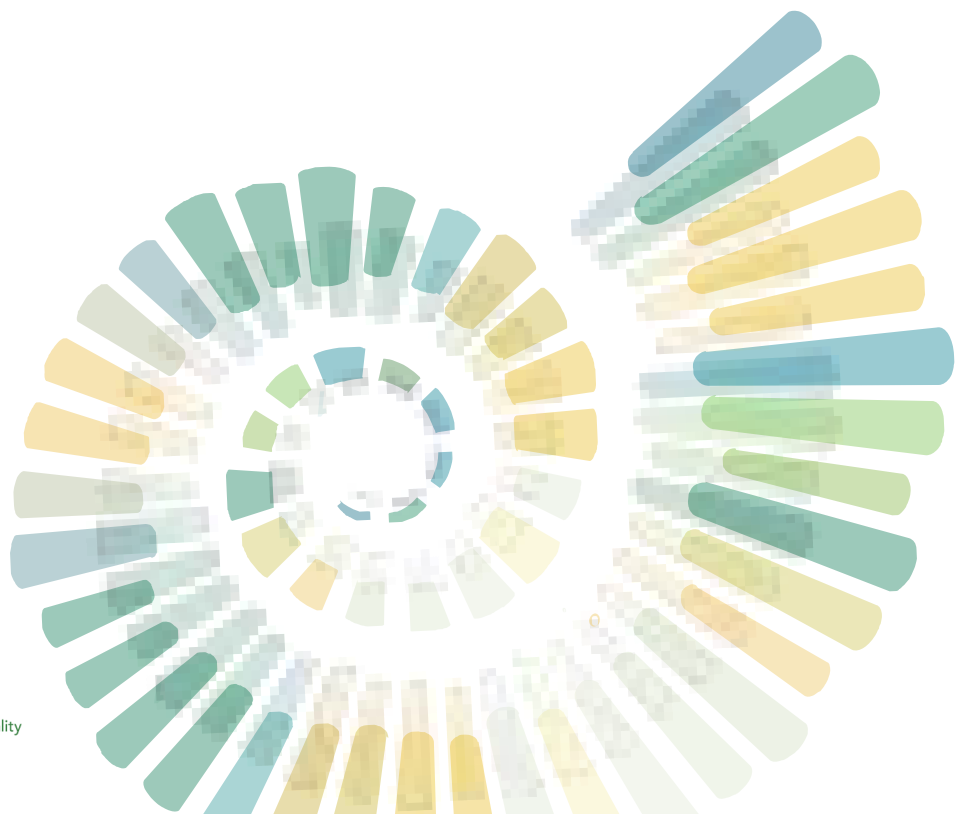
Using data analytics and digital information to monitor performance, predict trends, support strategic decisions, and personalise services in hospitality.

Knowledge, Skills, and Attitudes (KSA)	<ul style="list-style-type: none"> • Knowledge: Types of data (operational, customer, sustainability metrics), basic analytics tools, key performance indicators. • Skills: Reading dashboards, interpreting customer reviews, identifying patterns, using data to adapt service offers. • Attitudes: Curiosity, evidence-based reasoning, responsiveness to trends.
Framework Links	<ul style="list-style-type: none"> • DigComp: Information and Data Literacy, Problem Solving • EntreComp: Learning Through Experience, Vision
Examples in Hospitality	<ul style="list-style-type: none"> • A restaurant owner uses POS sales data to adjust staffing based on demand forecasts. • A hotel analyses guest reviews using sentiment analysis software to identify key satisfaction drivers. • A hostel uses occupancy and energy data to adjust lighting and cleaning schedules.
Learning Outcomes	<ul style="list-style-type: none"> • Analyse basic performance data from a hospitality dashboard. • Recommend an operational change based on sustainability metrics. • Use customer data to design a new service feature or marketing tactic.

06 Leading Green and Digital Change

Empowering teams and organisations to implement, scale, and sustain green and digital practices in the face of internal and external change.

<p>Knowledge, Skills, and Attitudes (KSA)</p>	<ul style="list-style-type: none"> • Knowledge: Principles of change management, stakeholder communication, policy alignment, team development. • Skills: Leading transformation projects, building buy-in, mediating resistance, setting measurable targets. • Attitudes: Visionary thinking, resilience, inclusion, motivation to influence others positively.
<p>Framework Links</p>	<ul style="list-style-type: none"> • EntreComp: Mobilising Others, Coping with Uncertainty, Strategic Planning • GreenComp: Political Agency, Individual Initiative
<p>Examples in Hospitality</p>	<ul style="list-style-type: none"> • A general manager sets a 3-year digital transformation roadmap that includes staff training, tool adoption, and review mechanisms. • A head chef leads a kitchen team in transitioning to seasonal, low-waste ingredients and documents results to share with customers. • A spa director introduces a sustainability ambassador programme among staff to foster green culture and innovation.
<p>Learning Outcomes</p>	<ul style="list-style-type: none"> • Facilitate a change workshop for staff on green and digital priorities. • Draft a phased implementation plan for a digital or sustainability initiative. • Develop indicators to track progress in a transformation effort.



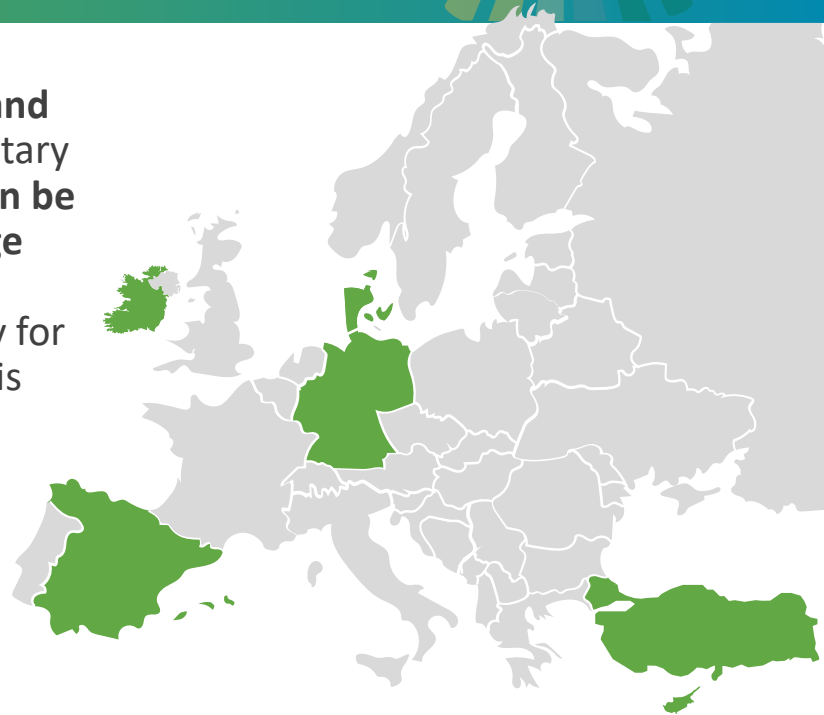
Summary






10

Digitalisation and sustainability are not parallel trends but deeply interconnected forces shaping the future of hospitality.

Ireland, Spain, Germany, Denmark and Türkiye offer diverse yet complementary perspectives on **how these forces can be harnessed for competitive advantage and environmental stewardship.**

While challenges remain, particularly for SMEs and rural areas, the trajectory is clear: the future of hospitality lies in smart, sustainable innovation.



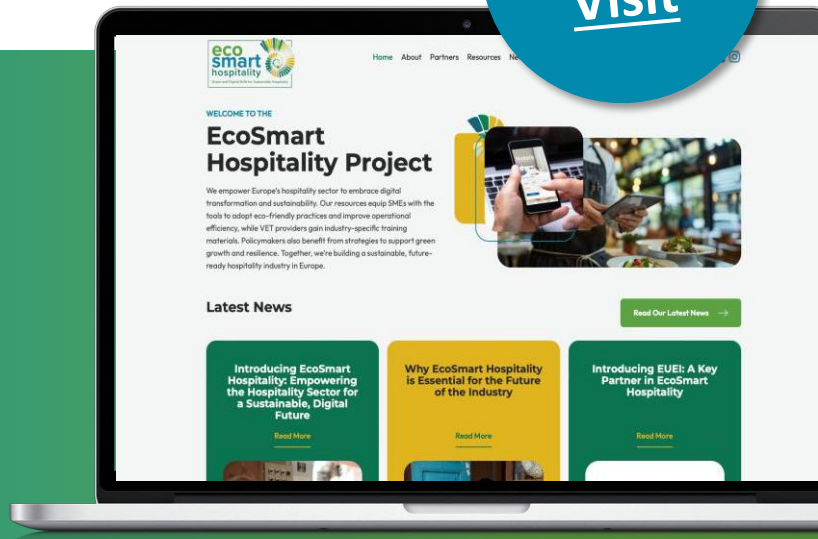
Aspect	 Ireland	 Spain	 Türkiye	 Denmark	 Germany
Digital Maturity	High	High	Emerging	High	Moderate to High
Sustainability Focus	Strong Policy Support	Advanced Practices	Growing Focus	Strong, Long-standing, Global Leader	Growing, SDG-aligned
Key Technologies	Cloud PMS, AI, IOT	Smart City Technology; AI, Blockchain	Mobile Apps, AI., IOT	AI, IOT, Contactless Technologies	Cloud PMS, AI, Automation
Challenges	Rural Digital Divide	Regional Disparities	Regulatory and Financial Barriers	Scaling in Rural Areas	Staff shortages, OTA reliance
Opportunities	EU funding, Government Support, Educated Workforce	Smart Tourism Leadership	Youth-driven Innovation	Experiential Travel, Hotel Design	Direct bookings, IT Strategy Alignment

Policy

- **Develop National Digital-Sustainability Frameworks:**
Governments should create integrated policies that promote both digital innovation and sustainability in hospitality.
- **Support SMEs:**
Financial incentives, training, and infrastructure support are crucial for small and medium-sized enterprises to adopt digital and green practices.
- **Foster Public-Private Partnerships:**
Collaboration between government, academia, and industry can drive innovation and knowledge sharing.
- **Promote Digital Literacy:**
Workforce training in digital tools and sustainability practices is essential for long-term transformation.
- **Encourage Data-Driven Decision Making:**
Use of big data and analytics can optimize resource use and enhance sustainability reporting.



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