Skill Gap Analysis

D.3.2 Upskilling / Reskilling Box



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TourX CoVE for the Tourism Industry

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1. Executive summary

The present document, a deliverable of the TourX project, provides a comprehensive analysis of the current state of tourism training frameworks and vocational education and training (VET) systems in partner countries – Greece, Italy, Portugal, China, Germany, Spain and Belgium. It identifies the challenges, gaps, and opportunities for enhancing tourism-oriented VET programs to better meet the needs of a rapidly evolving industry. The findings presented here form a critical foundation for advancing collaborative efforts among Centers of Vocational Excellence (CoVEs) and for the development of innovative tools that address the tourism sector's requirements.

The analysis highlights substantial variations in VET structures across partner countries. For example, Germany and Belgium's dual training system, which integrates classroom learning with workplace experience, have proven highly effective due to their close industry collaboration. In contrast, Greece and Spain rely primarily on school-based model, which underscores the need to integrate hands-on learning to better align with real-world tourism operations. In addition, regions with high seasonal employment, such as Italy and Spain, demonstrate the value of adaptive training modules to help workers navigate fluctuating demands while maintaining service quality. While most countries have aligned their VET qualifications with the European

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Qualifications Framework (EQF), the uneven integration of modern digital and sustainable skills into curricula remain a challenge in building cohesive and future-ready workforce.

Skills gaps emerge as a critical concern across all partner countries. Key deficiencies include digital literacy, customer service excellence, multilingual proficiency, and sustainability practices. These gaps limit the workforce's ability to adapt to growing industry demands, particularly in areas such as digital transformation, eco-tourism, and enhanced customer engagement. Countries such as Germany, Spain, and Portugal have taken significant steps toward technology-based training, equipping workers with competencies in online platforms, data analytics, and virtual tools. These advancements not only improve customer experience but also contribute to operational efficiency and environmental sustainability by reducing waste and streamlining processes. Addressing these skills shortages is vital for fostering a competitive and resilient tourism sector.

The deliverable also explores the challenges and opportunities associated with integrating TourX tools and frameworks into existing CoVEs. While aligning regional standards and ensuring technological compatibility pose significant hurdles, there are clear opportunities to drive innovation, share best practices, and scale successful models across countries. The report features several case studies that highlight best practices, such as Italy's initiatives in sustainable tourism and Spain's incorporation of digital competencies into its VET programs. These examples offer replicable strategies for addressing shared challenges and leveraging regional strengths.

In response to these findings, the deliverable outlines a series of targeted recommendations. These include integrating upskilling and reskilling initiatives into tourism VET programs, with a focus on digital and green skills, as well as enhancing customer service training to reflect diverse industry needs. Additionally, micro-credentials and lifelong learning programs, such as those implemented in Portugal, play a crucial role in maintaining workforce adaptability and competitiveness. Policy and legal frameworks are proposed to ensure the interoperability of TourX tools with existing CoVEs and compliance with EU standards.

Furthermore, the report emphasizes the importance of leveraging European funding mechanisms, such as the European Social Fund (ESF) and Erasmus+, to support program development and foster cross-border collaboration. Stronger stakeholder engagement is also highlighted, with a call for deeper partnerships among VET providers, industry stakeholders, policymakers, and regional authorities to ensure practical applicability and scalability.

The TourX project, supported by this document, aims to drive significant improvements in the quality and relevance of tourism VET programs. By addressing skills gaps, fostering innovation, and promoting collaboration, TourX provides a roadmap for enhancing the competitiveness and sustainability of the tourism sector. Ultimately, adaptability, collaboration, and innovation must remain at the core of VET strategies to ensure a skilled, resilient, and future-ready workforce, capable of meeting the demands of a rapidly changing global industry.

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2. Introduction

Tourism-related enterprises comprise one in every ten businesses within the EU-27 non-financial sector, encompassing over 2.3 million enterprises—primarily small and medium-sized enterprises (SMEs). TourX partner countries, including Italy, Spain, Germany, and Greece, house over half of these businesses. Employing more than 12.3 million people, the sector represents 9% of total employment in the EU's non-financial economy and 22.4% within services, demonstrating its broad economic impact.

Despite its strengths, the sector has faced unprecedented challenges due to the COVID-19 pandemic, which caused shifts in consumer habits, operational standards, and workforce demands, leading to economic downturns and job losses, particularly among vulnerable populations. Nevertheless, a strong recovery is anticipated, with the European Travel Commission projecting a robust demand for travel in Europe, and the United National World Travel Organization (UNWTO) estimates predicting over 562 million tourist arrivals by 2030. This recovery, however, depends on the sector's ability to adapt to evolving tourism trends and demands a workforce equipped with updated skills to drive growth sustainably.

The rapid advancement of Industry 4.0 and the pandemic's lasting effects underscore an urgent need for targeted reskilling and upskilling. Digital proficiency, data analytics, and e-commerce capabilities are increasingly critical, as are competencies in hygiene protocols, crisis management, and customer service to meet higher health and safety expectations. The growing emphasis on sustainable practices calls for green skills that align with the United Nations' Sustainable Development Goals (SDGs), specifically SDGs 8, 12, and 14, to maximize tourism's economic, social, and environmental contributions. For the sector to remain competitive and resilient, continuous skills development through upskilling and reskilling is essential, ensuring that tourism businesses and their workforce can adapt to current and future demands effectively.

This deliverable, therefore, supports the TourX project's objective to enhance tourism training at the vocational education and training (VET) level. Task 3.2 specifically aims to assess and refine VET curricula in key partner countries by analyzing current programs, identifying skill gaps, and recommending curriculum improvements to better align with market needs. The analyzed state of the art serves as a benchmark, ensuring that the evaluation process is rooted in best practices and industry standards. By addressing gaps in digital, green, and customer-centric skills, this deliverable lays the groundwork for regional curriculum redesign, equipping the workforce with the competencies needed for the sector's sustainable growth.

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3. Conceptual framework for Upskilling and Reskilling

The COVID-19 pandemic has accelerated major changes in the workforce, making it crucial for employees to quickly adjust to different roles and learn new skills. The tourism industry faces transformative shifts driven by technological advancements, evolving consumer preferences, and a strong push towards sustainability. This shift has emphasized the importance of reskilling and upskilling programs to meet the changing requirements of the job market (Li, 2022). These approaches not only support individual career growth but also strengthen the sector's capacity to remain competitive and resilient, positioning tourism organizations to thrive in a dynamic global market. Such initiatives are necessary in the workplace to help employees fulfil future staffing needs. In today's job market, skill enhancement and acquiring new skills are vital methods for career growth. Upskilling and reskilling serve complementary roles in workforce development.

Reskilling and upskilling are critical terms in the tourism industry. What new skills do we need to acquire? What current skills do we need to improve? The TourX project brings together VET providers alongside higher education institutions, all dedicated to equipping people young and mature alike—for their futures. Investing in science and research is an ideal approach to fulfil this mission, fostering international collaboration to achieve efficient and impactful reskilling and upskilling initiatives.

Upskilling involves enhancing an employee's current skills to meet the evolving demands of their existing role or industry. This process aims to advance careers and increase effectiveness in current positions.

Reskilling, on the other hand, involves acquiring entirely new skills outside an employee's current field, typically aimed at transitioning to different roles or industries. This process is crucial for adapting to changes and ensuring organizational agility.

3.1 Upskilling

What is Upskilling?

Upskilling refers to providing employees with further education or training to improve their abilities and competencies. Various terms have been associated with the concept of upskilling, including "upsize," "up-spin," "upspring," "upstage," among others (Oladele and Lisoyi, 2020). According to Veena (2024), it also means to acquire new or improving existing skills relevant to an employee's current job or industry, aiming to advance one's career or enhance effectiveness or adaptability in the current position. This process helps organizations foster a culture of continuous learning and development, keeping employees engaged and motivated, while also

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attracting and retaining top talent. Such a culture enables organizations to adapt to changing business needs and remain competitive in a rapidly evolving environment.

In an increasingly competitive labor market, strong transversal skills help workers stand out and become more attractive to employers (European Commission, 2023). Therefore, upskilling is crucial to prepare individuals for newly defined jobs, enhancing an employee's current skill set to bolster their overall performance and adaptability to new technologies within their existing position (Nakash, 2024). The ongoing upskilling of the workforce is essential for competitiveness in a globalized post-pandemic economy characterized by rapid technological changes (Australian Industry and Skills Committee, 2021). This involves targeted training and development within an employee's position or team, creating specific programs to teach new skills that align with evolving role and industry demands.

Examples of Employee Upskilling

As examples of employee upskilling, it is interesting to explore the model of in-company training to guarantee upskilling opportunities that fit to the company's needs and that have the necessary quality for the career advancement that is expected. By investing in employee development, organizations not only increase employee productivity, but also improve job satisfaction and retention rates. In the tourism industry, where customer experience is paramount, leading companies understand the value of developing their teams. One such example is Marriott International, which has developed a comprehensive training program to ensure its employees remain at the forefront of industry excellence.

Marriott developed a comprehensive upskilling program for its employees focused on enhancing customer service skills and digital proficiency. The program included a combination of online learning modules, in-person workshops, and hands-on training. Employees were trained on the latest hospitality management software, digital marketing tools, and customer relationship management systems. This initiative aimed to improve quality service, enhance guest experiences, and streamline operations. By addressing the reluctance to adopt new technologies and promoting a culture of continuous learning, Marriott empowered its employees to adapt to changing industry demands.

Another example is Hilton Worldwide's upskilling program, which emphasizes leadership development and digital transformation. Hilton offers various training programs, including the Hilton University online platform, which provides courses on leadership skills, digital marketing, revenue management, and sustainability practices. The training consists of interactive modules, virtual reality simulations, and mentorship opportunities. These efforts aim to foster a culture of innovation and ensure that employees are well-equipped to meet the evolving needs of guests and the business Hilton Learning and Development.

Furthermore, Accor Hotels has implemented a robust upskilling initiative known as the "Accor Academy." This program focuses on developing digital skills, management capabilities, and sustainable tourism practices. Accor Academy offers a blend of e-learning courses, practical

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workshops, and cross-functional training programs. The goal is to equip employees with the skills needed to enhance guest experiences and drive operational efficiency. By promoting continuous learning and development, Accor ensures that its workforce remains competitive and capable of adapting to industry changes Accor Academy.

The InterContinental Hotels Group (IHG) also prioritizes employee upskilling through its "IHG Future Leaders" program. This initiative is designed to identify and nurture high-potential employees for leadership roles. The program includes leadership training, project-based learning, and exposure to different areas of the business. Participants gain valuable insights into strategic management and operational excellence, preparing them for future leadership positions within the company IHG Future Leaders.

Finally, the Spanish tourism company Meliá Hotels International has launched the "Meliá Digital Academy." This program aims to enhance the digital skills of its employees, focusing on areas such as digital marketing, data analytics, and e-commerce. The training includes online courses, webinars, and interactive workshops led by industry experts. By investing in digital upskilling, Meliá ensures that its employees can effectively leverage technology to improve customer engagement and drive business growth Meliá Digital Academy.

In conclusion, continuous skill development and mastery of new tools are essential for both personal growth and organizational success in the tourism sector, and the examples above illustrate that the biggest hospitality companies have already taken action in that way. Upskilling initiatives enable companies to stay competitive and responsive in a fast-changing marketplace, fostering innovation and adaptability. Simultaneously, these efforts empower employees by enhancing their career prospects and supporting professional advancement. By investing in employee upskilling, organizations not only drive strategic growth but also cultivate a culture of learning that benefits both the workforce and the broader industry.

3.2 Reskilling

What is Reskilling?

Reskilling involves acquiring entirely new skills outside one's current field, typically aimed at transitioning to another occupation or industry (Morandini et al., 2023). This process is crucial for adapting to changes and ensuring organisational agility in a rapidly evolving business environment. Often necessitated by the obsolescence of previous roles, reskilling provides employees with opportunities to learn skills outside their current position or team, facilitating transitions into different roles within the company (Nakash, 2024).

By addressing immediate skill shortages and preparing for future challenges, reskilling fosters a culture of continuous learning and adaptability. This approach not only helps employees remain relevant and engaged but also enhances the organisation's capacity to respond to shifting market demands. As industries undergo rapid technological advancements and structural changes, the strategy to reskill becomes increasingly important for maintaining a competitive edge. Therefore,

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investing in reskilling initiatives is essential for both individual career development and overall organisational resilience.

Examples of Employee Reskilling

Companies that prioritize employee engagement greatly benefit from investing in upskilling and reskilling initiatives. Leveraging AI and platforms like Phenom, organizations gain insights into employees' long-term growth, aligning career paths and skill development with organizational goals This strategic collaboration between HR and business leaders ensures the workforce is prepared for future demands and maintains workforce agility.

AI-enabled strategic planning identifies retraining opportunities, facilitating internal talent growth and mutual benefits for both the business and employees. For instance, Amazon's initiative to retrain warehouse workers as IT engineers and data scientists highlights the value of internal career development. As automation reduces manual labor needs, retraining employees for technical roles helps retain valuable staff and reduce turnover, offering new career opportunities within the company.

In the tourism sector, companies like TUI Group have initiated reskilling programs to prepare their workforce for new roles. TUI's program focuses on retraining employees from operational roles to more technology-focused positions. This includes extensive training in data analysis, digital marketing, and IT management. Through partnerships with educational institutions, TUI provides certifications and practical experience to help employees transition smoothly into their new roles TUI Careers.

For example, TUI offers a "Digital Transformation" training module that includes courses on data analytics and digital marketing strategies. Employees participate in interactive workshops and receive mentorship from industry experts. This program not only enhances their technical skills but also prepares them for roles that are critical to the company's digital evolution. The training typically lasts several months and includes both theoretical and practical components to ensure comprehensive learning TUI Careers.

Another example is the reskilling efforts of Airbnb, which has adapted its workforce to focus more on online experiences amid changing travel patterns. Airbnb's reskilling program includes training in virtual event hosting, digital content creation, and online community management. This shift not only helps employees retain their jobs but also enables Airbnb to diversify its offerings and maintain engagement with its user base Airbnb Newsroom.

For instance, Airbnb offers a "Virtual Experience Host" training program that teaches employees how to design and manage online experiences. The training includes modules on video production, virtual event planning, and customer engagement strategies. Employees gain practical experience by creating and hosting their virtual events, which are then reviewed and optimized with feedback from seasoned hosts. This approach ensures that employees develop the skills necessary to succeed in a digital-first environment Airbnb Newsroom.

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In conclusion, reskilling is crucial for the tourism sector to remain competitive and resilient. By investing in continuous learning and development, companies can ensure their workforce is adaptable, skilled, and prepared for the future.

3.3 The benefits of upskilling and reskilling

As outlined above, upskilling and reskilling provide substantial advantages to the tourism sector. They enhance *workforce flexibility*, equipping employees with the skills needed to adapt within their roles or take on new responsibilities. This adaptability is vital for maintaining *organizational resilience*, as a skilled and flexible workforce can respond effectively to unexpected changes and emerging industry trends.

Additionally, focusing on digital, customer service, and sustainability-related skills drives *innovation* across the sector. Digital competencies empower employees to adopt new tools and technologies, which improve operational efficiency and elevate the customer experience. In parallel, proficiency in customer engagement and sustainable practices aligns with contemporary industry trends, appealing to a conscientious and increasingly diverse clientele and supporting sustainable development goals.

These initiatives also confer a clear *competitive advantage*, enabling tourism businesses to attract and retain top talent by creating a culture of continuous learning and adaptability. This approach not only meets current needs but also positions organizations as forward-thinking leaders, increasing their appeal in a competitive market and contributing to the long-term growth and sustainability of the EU tourism sector.

While upskilling and reskilling serve different functions, both are essential pillars of professional development programs, allowing organisations to develop a culture of continuous learning and adaptability. Both are indispensable for building a resilient, adaptable, and innovative workforce. By investing in these strategies, organisations can ensure long-term success and sustainability in an ever-changing business environment.

Some benefits of upskilling and reskilling include:

- **Close skills gaps**: Upskilling and reskilling help bridge gaps between the skills needed in the workforce. When employees enhance or acquire new skills, they become prepared to meet future market demands and can transition to different roles or industries, effectively addressing potential workforce shortages. Additionally, this process helps to resolve discrepancies between current employee capabilities and evolving job requirements.
- **Increase employee retention**: Enhance job satisfaction and loyalty by investing in employee growth. When employees' skills are upgraded or adapted to meet the evolving demands of the workforce, especially in the tourism sector, their professional abilities are enhanced. This improvement is often achieved through targeted training courses, project-based practices, and staying informed about industry trends and developments.

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- **Facilitate internal mobility**: Enable employees to transition smoothly between roles within the organisation. When employees move between roles, they often need to acquire new skills or enhance existing ones to succeed in their new positions. This seamless transition is facilitated by the organization's commitment to continuous skill development, which is a key aspect of upskilling and reskilling initiatives.
- **Enable adaptation to change and organization growth**: Equip employees with the skills needed to thrive amid technological and market shifts. Through reskilling and upskilling, employees can grow professionally, remain flexible to changing workforce demands, and broaden their horizons. This process allows them to accumulate valuable experience while fostering a passion and curiosity for learning, which is both essential for personal and professional growth.
- **Boost employee productivity**: Upskilling and reskilling help employees to evidently work well based on the future workforce requirements. In addition, it enhances the performance and effectiveness of the workforce by increasing productivity, especially in the tourism industry.
- **Improve job satisfaction**: Increase engagement and motivation through continuous learning opportunities which will help them perform at their best. When employees have access to training and development, they feel more valued and empowered, boosting their commitment to their roles. Continuous learning allows them to expand their skill sets, stay current with industry trends, and overcome challenges with confidence.
- **Fuel innovation**: Professional skills, alongside work experience, play a crucial role in today's dynamic workforce. Employees who possess strong innovative abilities and adaptability are well-equipped to navigate shifts in the industry, allowing them to seize new opportunities and drive mutual growth for themselves and their organizations. These qualities not only enhance their value as employees but also contribute to their personal development, building resilience and a proactive approach to challenges.
- **Reduce costs**: Minimize the need for external hiring by developing existing talent. When skills are upskilled or reskilled, the cost of hiring new employees is reduced as the old one's skills match current demands.

How to Upskill and Reskill Employees and Students?

To effectively upskill and reskill employees and students, organizations must follow a strategic plan that aligns with their goals and supports individual development. Here are some essential steps to build a successful upskilling and reskilling program:

1. **Identify current skills**: Start by mapping out the skills landscape within your organization. HR technology can facilitate this process by automating data collection, quickly identifying both existing skills and gaps (Phenom Blog, 2023).
2. **Validate skills**: After identifying the skills, it is crucial to validate them to ensure accuracy and relevancy. AI-powered HR solutions can analyze data from various sources to confirm the skills' validity and update them as needed (Cornerstone OnDemand).
3. **Provide personalized recommendations**: Use technology to offer tailored upskilling and reskilling recommendations that align with individual career goals. This approach helps

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employees see the direct impact of addressing skills gaps on their career growth (Sprout Social).

4. **Offer resources and opportunities**: Provide access to training programs, workshops, online courses, and hands-on projects. An AI-powered talent marketplace can gather and personalize these opportunities based on each employee's current skills and career aspirations (HubSpot, SEMrush).
5. **Track progress**: Utilize HR technology to monitor employee goals and track learning and development achievements. By evaluating progress, you can measure the impact of upskilling and reskilling efforts and identify areas for further improvement (GeekWire).

3.3.1 Upskilling and Reskilling strategies for recovery

In the wake of global disruptions, such as the COVID-19 pandemic, economic shifts, and technological advancements, the need for upskilling and reskilling has become increasingly evident as a critical strategy for workforce recovery. Additionally, as industries evolve and job requirements change, employees are required to adapt by acquiring new skills to ensure their relevance in an increasingly competitive market. The challenges posed by the pandemic have underscored the importance of a flexible, knowledgeable, and future-ready workforce. By equipping employees with new skills, industries can adapt to emerging trends. The following key areas highlight how strategic training initiatives can support the recovery and transformation of the tourism sector based on upskilling and reskilling strategies.

Digital transformation: The pandemic accelerated the adoption of digital technologies in the tourism sector. Upskilling workers in digital literacy, online marketing, and e-commerce is crucial for adapting to new market trends. Training programs on digital tools and platforms can enhance operational efficiency and customer engagement.

Sustainable tourism practices: Emphasizing sustainability and responsible tourism is vital for recovery. Reskilling programs can focus on eco-tourism, conservation efforts, and community-based tourism, attracting environmentally conscious travelers and contributing to long-term sector resilience.

Health and safety protocols: The importance of health and safety in tourism has been underscored by the pandemic. Upskilling employees in health and safety protocols, hygiene standards, and crisis management can build traveler confidence and ensure a safe travel environment. Certification programs for health and safety compliance can enhance the reputation of tourism businesses.

Crisis management and resilience training: Preparing for future crises is essential for sustainability. Reskilling programs in crisis management, risk assessment, and business continuity planning can equip tourism professionals with the skills needed to navigate uncertainties and recover swiftly from disruptions.

Customer service excellence: Delivering exceptional customer service will be key to attracting and retaining travelers as tourism rebounds. Upskilling programs focused on communication

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skills, cultural competence, and personalized service can enhance the overall tourist experience and foster customer loyalty.

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4. Analysis of existing tourism training in partner countries

This section provides an analysis of the Vocational Education and Training (VET) systems in Germany, Belgium, Greece, Italy, Portugal, China and Spain, comparing their structures, pathways, and training opportunities within the tourism sector. The evaluation considers each country's approach to training, including certification processes, industry collaboration, and adaptability to market needs, followed by an assessment of skill gaps and training needs across the regions.

4.1 Current state of Tourism VET Training

The VET systems across European Union member states play a fundamental role in equipping the tourism sector with a skilled and adaptable workforce. As tourism continues to evolve, driven by technological advancements, shifts in consumer preferences, and an emphasis on sustainability, VET programs are essential for preparing individuals for diverse roles within this sector. These systems are designed to bridge educational frameworks with labor market needs, offering students practical skills and certifications aligned with the European Qualifications Framework (EQF). However, the approach, structure, and specific pathways within VET systems vary by country, shaped by each nation's educational policies, economic requirements, and regional employment demands.

Common to most partner countries, including Germany, Belgium, Greece, Italy, and Spain, is the recognition of tourism as a critical sector, economically significant and labor-intensive. VET programs in these countries offer students the opportunity to specialize in tourism and hospitality roles, with pathways available from secondary education through to post-secondary, advanced technical, and tertiary levels. Each country integrates practical and theoretical learning, though the balance between these elements differs. For instance, Germany and Belgium favor dual training models, blending on-the-job learning with classroom instruction, while Greece and Spain place greater emphasis on school-based instruction, complemented by practical experiences during or following coursework.

Certification standards and qualification frameworks are consistently aligned with the EQF, facilitating recognition of qualifications across borders and enhancing labor mobility within the EU. However, despite these structural alignments, VET programs in the tourism sector face common challenges in adapting to rapidly changing industry demands. These include the need for enhanced digital competencies, advanced customer service and language skills, sustainable tourism practices, and leadership training to meet the sector's evolving requirements. The TourX project seeks to analyze the tourism sector by asking the project partner countries (Spain, Italy, Belgium, Portugal, China, Greece) to give their inputs about the tourism sector, given their strong presence. These partner countries, in order to fully understand the VET system after the pandemic, sought to conduct focus groups and interviews to better understand the sector and what can be done to uplift its image accordingly.

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Below are descriptions of the VET systems and the existing courses in tourism in the partner countries according to the national reports prepared by the TOURX partners.

Germany

The training system in Germany's Vocational Education and Training is a dual system characterized by a combination of practical and theoretical training, where hands-on experience is gained in companies alongside theoretical instruction at vocational schools. This system relies heavily on collaboration with industry, as companies provide practical training and mentorship, guided by qualified trainers who must pass additional certification exams to ensure high training standards. Vocational schools deliver the theoretical component of the curriculum, which covers both occupational subjects and general education, developed in coordination with industry requirements to maintain relevance. The system also offers structured pathways for students, allowing them to progress through various levels of qualifications based on their training and experience, all under the oversight of relevant chambers and educational authorities that regulate the quality and effectiveness of the training programs. Trainees in tourism gain skills through structured apprenticeships for roles such as restaurant specialists, hotel managers, and chefs. The program combines hands-on training with company-specific standards and structured theory through frameworks overseen by federal and regional entities. In Germany, initial training in the hospitality industry consists of vocational programs lasting 2 to 3 years, with the duration and content varying based on the specific occupational role. These diverse programs include specialist in gastronomy with a focus on restaurant services, specialist in gastronomy with a focus on system gastronomy, specialist in restaurant and event catering, chef, specialist kitchen etc. Under the involved institutions, training companies provide practical training, where trainees work directly in operations under various conditions to build essential skills. During this training, qualified trainers guide them through practical tasks, plan training, coordinate with vocational schools and chambers, and assess performance. Trainees also participate in both workplace and vocational school training, documenting their progress in a report submitted to the chamber. The vocational school complements trainees' practical training with theoretical instruction on both specialized and general subjects, following a set curriculum held either in multi-week blocks or on designated days.

Approximately halfway through the training period, an intermediate examination is administered by the Chamber of Industry and Commerce (IHK) or the Chamber of Crafts (HWK) to assess trainees' knowledge. The vocational training concludes with a final exam, also organized and conducted by the relevant, which consists of both practical and theoretical components. Upon passing this exam, trainees earn an officially recognized vocational qualification.

Belgium

Belgium's tourism sector is a key part of the EU economy, and the country's Vocational Education and Training system plays a vital role in preparing individuals for careers, fostering economic growth, and addressing skill gaps in the workforce. Starting at age 15, students can engage in dual learning, combining traditional classroom instruction with apprenticeships in various industries,

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including tourism. This flexible system offers pathways ranging from technical and vocational secondary education to tertiary-level professional bachelor's programs, making VET accessible and adaptable to regional socio-economic conditions and Belgium's linguistic diversity.

Managed at the federal level by education and training ministers, Belgium's VET system emphasizes formal certification and adapts to the unique linguistic challenges posed by the country's multilingual communities and migration trends. VET providers operate within both public and subsidized private school networks, sharing common goals, certifications, and occupational profiles, while maintaining some autonomy to support educational choice.

Employment and VET policies are developed collaboratively with social partners who help facilitate alternating work-study programs and continuous vocational training. Each region (Flanders, Wallonia, the German-speaking Community, and the Brussels-Capital Region) has distinct priorities shaped by its socio-economic context. These priorities are formalized in regional government strategies that address workforce skills and language training. Regional frameworks, such as the "school basin" approach in French-speaking areas and the "Flemish partnership for dual learning" in Flanders, enable locally tailored responses to socio-economic and educational needs.

Greece

In Greece, education is mandatory for children between the ages of 5 and 15, covering both primary schooling and the initial phase of secondary education, which lasts three years (middle school). After completing this stage, students can opt to continue their studies by following either a general or vocational educational path. Vocational education and training in Greece are overseen by the state, with the Ministry of Education managing it in collaboration with the Ministry of Labor and Social Affairs (CEDEFOP, 2023a). Vocational High Schools (EPAL) in Greece, overseen by the Ministry of Education, provide three-year day and evening courses for students with a middle school certificate or equivalent, who can enrol without exams. Specializations vary based on student demand, local needs, and socio-economic factors. After completion, graduates are eligible to sit for the national exams for higher education entry. Vocational Training Schools (ESK), also under the Ministry of Education, offer two-year programs combining theoretical and practical training through workplace learning agreements with employers, who may offer employment incentives post-apprenticeship. ESKs, both public and private, are free to attend at public institutions.

Additionally, Vocational Apprenticeship Schools (EPAS), under DYPA, provide two-year vocational programs with practical work experience. Greece's post-secondary education, Vocational High Schools also offer an optional "apprenticeship year" for graduates of EPAL or equivalent technical schools. This program combines weekly in-school sessions with four days of workplace training in the public or private sector. Apprentices earn 75% of the legal minimum wage, gaining both work experience and professional rights. A specialization in Tourism Business Employee is among the options. After completing the apprenticeship, graduates can either enter the workforce or pursue related studies in IEK programs. The program aims to provide initial

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vocational training, enhance skills, and improve job market integration for vocational graduates (ReferNET OEPPEP, n.d.). However, Greece's VET faces challenges in perception, with vocational education often considered a secondary choice. Recent reforms aim to enhance its appeal and alignment with labor market needs.

Italy

Italy's VET system features a range of institutions, including vocational institutes and higher technical institutes, designed to link training directly to labor market requirements. Tourism-specific programs emphasize practical skills in catering, hospitality, and customer service. Italy faces a high demand for seasonal workers in tourism, which has increased the emphasis on adaptable, practical training, especially for entry-level roles. Italy's VET system also offers advanced qualifications, bridging education with regional tourism needs. The VET system is also delivered through various institutions: Vocational Institutes offer three- and five-year courses in fields like hospitality, catering, and tourism; Technical Institutes focus on industry-linked courses in tourism; Higher Technical Institutes (ITS) and HIVET courses emphasize advanced technical and scientific training for cultural and tourism planning; and universities offer tourism degrees at multiple levels. To enter, students need a secondary school diploma or equivalent. Vocational Institutes provide specialized three-year and five-year programs in areas like catering and tourism services, with three-year courses focusing on practical skills and five-year courses offering a comprehensive, cross-curricular curriculum. Certifications include the Vocational Diploma (EQF4) for three-year program graduates, the Higher Technical Diploma (EQF5) for those completing specialized five-year courses, and the bachelor's degree (EQF6) for university graduates. Master's degrees and further qualifications are also accessible. The VET system schools run through a year, two or five bases depending on the school in question. Some of the programs are tourism management, hospitality management, tourism and culture etc. with offers internships, project works and practicing training.

The system is overseen by multiple bodies: the Unified Conference, MIUR (Ministry of Education, University, and Research), Regional Authorities, the European Social Fund (ESF), Accredited Training Organizations, and public bodies that collaborate to align VET with labor market demands, particularly in the tourism and hospitality sectors.

Spain

Spain's VET structure is robust, with secondary and post-secondary pathways allowing students to progress into specialized tourism fields. Vocational training in tourism includes a strong emphasis on regulatory compliance, language skills, and practical experience through partnerships with companies. Programs are adaptive to both regional and national tourism trends, fostering a skilled workforce for hospitality, catering, and event management. The VET system in Spain also postulate to regulate vocational training initiatives and programs for employment. The main objective is to promote and extend training among companies and workers, both employed and unemployed that enhances employability, professional and personal development needed for productive systems. Over the years, competencies

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distribution has been the main aim of the various decrees in the establishment of laws to govern the vocational training. The decree aims to organize the structure of the Ministry of Education and Vocational Training by issuing diplomas for education over the periods of 2 and 4 years. The Royal Decree 498/2020 of April 28 (article 5.3) establishes that the Ministry, through the General Secretariat of Vocational Training, is responsible for organizing, developing, evaluating, managing, and innovating vocational training within the educational system and for employment. This encompasses training for both unemployed and employed individuals, national and regional training calls linked to professional certificates, and dual vocational training in education. It also involves establishing and updating vocational qualifications, specialization courses, and professional certificates.

Additionally, it sets guidelines for issuing Spanish vocational diplomas, certifications, and maintains a registry of vocational qualifications, certificates, and partial accreditations. It manages evaluation and accreditation of skills acquired through work experience and informal training, creates supportive tools, and maintains a registry of accredited individuals. The decree posits to coordinates the national network of reference centers and approves their multi-annual plans in collaboration with relevant administrations.

China

In China, vocational education and training encompass diverse learning experiences connected to the workplace. This includes different levels and forms of vocational school education, apprenticeships through school-industry partnerships, vocational skills and certification training, and opportunities for knowledge advancement within companies (China Briefing). The higher vocational education or *gaodeng zhiye jiaoyu* is part of Technical and Vocational Education and Training (TVET) (Jing et al., 2022). Since the 1978 reform and opening-up, vocational education in China has seen substantial growth and transformation. This progress has cultivated numerous highly skilled technical professionals, greatly advancing China's socialist market economy. The reform has also raised public cultural literacy and contributed to overall societal well-being (Guo et Lamb, 2010). China's VET system is a subsystem of the national education system, which integrates formal education into (vocational high schools, technical schools, and higher vocational colleges) and non-formal vocational training (government-led, enterprise-based, and social training institutions) conducted outside the formal education system which aims to enhance workforce readiness, combining theoretical and practical training for skill development and employment competitiveness. The VET education system is more structured and academically focused, whereas the training system is adaptable and designed for employed individuals aiming to enhance their skills. In comparing the VET system, the programs in China combine theory and practical training in tourism management, hospitality, and customer service, focusing on skills like cultural awareness, marketing, and digital competencies, delivered through blended methods including classroom learning, online courses, and internships, leading to industry-recognized certifications. In contrast, other industry VET programs vary by sector, with healthcare emphasizing clinical skills and patient care, manufacturing focusing on machinery operation and safety, and IT prioritizing technical skills and certifications, often delivered through sector-specific methods like virtual labs or on-site training. The tourism industry faces a growing demand for skilled professionals, particularly in technology-intensive fields like IT and materials,

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yet there is a notable shortage of high-quality talent. Key competencies required include multilingual proficiency to effectively engage with international clients and navigate cultural differences, as well as innovation and problem-solving skills to develop new services, optimize processes, and address industry challenges.

Additionally, professionals need strong sales and marketing abilities to understand customer needs, create targeted strategies, and build lasting relationships. Comprehensive industry knowledge, including destinations, culture, history, tourism products, service standards, and regulations, is essential, alongside exceptional customer service skills for communication, personalized service, and dispute resolution. Effective teamwork and leadership capabilities are also vital, enabling resource coordination, task delegation, and collaborative success. Finally, professional certifications, such as those in tourism management, tour guiding, or hotel management, are crucial for enhancing competence and competitiveness. Addressing these skill gaps through targeted VET programs is essential to align workforce capabilities with the evolving demands of high-growth, technology-driven sectors.

Portugal

In Portugal, various double certification paths offer both educational and professional qualifications, aimed at young people completing basic (9th year) or upper-secondary (12th year) education. These paths include Professional Courses, Education and Training Courses, Specialized Artistic Courses, and Technological Specialization Courses. The National Agency for Qualification and Vocational Education and Training (ANQEP) oversees these programs, promoting skills development aligned with labor market needs. ANQEP operates within a network of public and private organizations, including Qualifica Centers, schools, and IEFP vocational training centers, to offer vocational courses, adult education, and lifelong learning opportunities. These courses provide practical skills and certifications that prepare individuals for the workforce or further education. The National Qualifications System, established in 2007, includes the National Qualifications Framework (NQF), which classifies qualifications across eight levels. The system focuses on improving qualifications for both young people and adults, particularly in response to labor market demands. Courses are designed to address skills gaps, including areas like technology, customer service, and specialized fields, and offer flexible pathways such as certified modular training and adult education programs.

In the tourism sector, the growing demand for qualified professionals, including those with digital and customer service skills, aligns with the focus of these educational and training programs. However, there is still a gap in skilled professionals, particularly in areas like international tourism and eco-tourism. The implementation of VET programs, along with qualifications like double certification, addresses these gaps, offering both educational and professional certifications that enhance employability and career progression in the tourism sector. These initiatives help bridge the skills gap by providing targeted training in line with industry trends and labor market needs.

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4.2 Comparison of VET programs

The VET programs across TourX partner countries exhibit a range of structural and pedagogical approaches tailored to meet national and regional needs within the tourism sector. This diversity in educational strategies reflects each country's economic structure, workforce requirements, and regional cultural nuances, resulting in distinct methodologies and certification standards that collectively support the development of tourism-related competencies.

Dual Training vs. School-Based Models: The dual model, prominently featured in Germany and Belgium, integrates classroom instruction with on-the-job training, effectively preparing students for immediate roles in the workforce. This approach has proven successful in developing hands-on skills in hospitality, culinary arts, and tourism management, ensuring students gain practical insights alongside theoretical knowledge. Conversely, Greece and Spain maintain more school-based models, with a stronger emphasis on theoretical instruction, though recent reforms in Greece are introducing increased opportunities for apprenticeships to expand experiential learning. Italy employs a mixed approach, with school-based training and practical placements especially emphasized in tourism's seasonal sectors, such as hospitality and event management.

Regional adaptability: The adaptability of each VET program to regional economic needs is a significant feature across partner countries. Belgium, with its multilingual regions, offers programs tailored to linguistic and cultural diversity, meeting both local and international tourism demands. Italy and Spain emphasize regional specialization, preparing students for peak-season tourism by integrating short-term skills development and seasonal adaptability into their curricula. Germany's system standardizes training modules across regions, fostering a highly mobile workforce capable of working within various sectors, while Greece's system, influenced by centralized educational policies, is starting to offer region-specific tourism tracks to address local market needs.

Certification and qualification levels: All partner countries align their VET qualifications with the EQF facilitating labor mobility and ensuring that certifications are recognized across the EU. Italy and Germany offer well-defined, sector-specific qualifications for tourism roles. Germany's qualifications are standardized across sectors, while Italy's are more regionally adaptable, allowing for specialization in various fields such as gastronomy or hotel management. In Spain, qualifications are aligned with national occupational standards, making it easier for graduates to enter the workforce. Greece, however, has faced challenges in aligning VET qualifications with market demands, affecting the perceived value and employment outcomes for VET graduates in tourism. Efforts are underway to address these challenges through enhanced certification standards and closer alignment with industry needs.

Integration of Digital and Sustainable Skills: Increasingly, VET programs across these countries are integrating digital skills and sustainable tourism practices into their curricula, though the extent and emphasis vary. Germany and Spain have made significant strides in embedding digital competencies such as online booking management and social media marketing, essential for modern tourism operations. Italy and Belgium are focusing on sustainable tourism, training

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students in eco-friendly practices and resource management aligned with EU sustainability goals. In Greece, while digital and green skills integration is emerging, the programs are still evolving to meet the full range of industry expectations, with a gradual increase in these competencies anticipated in the coming years.

Industry Collaboration and Stakeholder Involvement: Effective collaboration with industry stakeholders is essential for ensuring that VET programs remain responsive to market trends. In Germany and Belgium, close partnerships with industry associations help shape VET curricula to align with employer expectations and evolving skills requirements. Italy and Spain also foster industry partnerships, particularly in regions with high tourism demands, facilitating placements and seasonal employment. Greece, while beginning to develop stronger industry links, is working to enhance collaborative efforts to provide students with more substantial hands-on training and improve employment outcomes.

4.3 Skills gaps and training needs

While VET systems in the TourX partner countries are designed to address foundational needs in the tourism sector, certain skill gaps are pervasive across regions due to rapid advancements in industry demands and shifting consumer expectations. These gaps highlight areas where VET curricula could evolve to better align with the current and future needs of the tourism workforce, focusing on critical areas such as digital skills, customer service, sustainability, and leadership.

Digital and technological skills: With the digital transformation of the tourism industry, there is a growing need for enhanced technological competencies across all partner countries. Key areas include digital marketing, data analytics, online booking management, and familiarity with customer relationship management (CRM) software. Italy and Spain have proactively incorporated digital modules into their tourism curricula, ensuring graduates are prepared to navigate an increasingly digitalized market. However, in countries such as Greece and Belgium, digital integration remains limited, with traditional training models often lacking in technology-based competencies. Expanding digital learning content and practical application of digital tools across these countries would enable a more resilient workforce, adaptable to innovations in e-commerce, virtual tourism experiences, and digital customer engagement.

Customer service and language proficiency: Given the international scope of tourism, there is a high demand for multilingual proficiency and cultural sensitivity in customer service roles. Germany, Belgium, and Spain place significant emphasis on language training, reflecting the importance of accommodating diverse tourist demographics. Yet, despite these efforts, a gap remains in training for adaptable, culturally aware customer service practices that respond dynamically to the specific needs of international clients. Italy's seasonal tourism model illustrates the need for flexible customer service skills that adapt to varied regional and seasonal demands. Developing soft skills in customer interaction, conflict resolution, and cultural empathy, alongside multilingual training, would strengthen the service standards across the region, improving overall guest experiences.

Sustainable practices: The shift toward sustainable tourism practices is essential for the sector's future, with green skills becoming increasingly critical. Italy and Spain have incorporated

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sustainable tourism principles into their VET programs, covering areas like eco-friendly operations, waste management, and resource conservation. Nonetheless, there is considerable room for growth across all partner countries in embedding sustainability comprehensively within VET curricula. Practical training in environmental management, sustainable hospitality, and local ecosystem preservation would equip students with the skills needed to support the industry's alignment with EU sustainability goals. Such training can also help reduce tourism's environmental footprint, meeting the expectations of eco-conscious travelers and fostering long-term resilience in the sector.

Management and leadership: Effective leadership is essential for high-level tourism roles, such as hotel management, event coordination, and operational strategy. In Germany and Spain, certain VET pathways offer advanced management training, yet these options are less common in Greece and Belgium, where there is a notable shortage of qualified professionals in strategic roles. Addressing this gap would involve creating specialized modules focused on leadership, strategic planning, and organizational management in the tourism context. Expanding management and leadership training across all partner countries would prepare graduates for career advancement, increasing the sector's capacity for innovation and quality assurance.

Adaptability and crisis management: The COVID-19 pandemic underscored the need for crisis management and adaptability skills within tourism. However, these areas remain underdeveloped in most VET programs, despite their importance. Training in adaptability, problem-solving, and risk management would enable future professionals to navigate disruptions and changes effectively. Incorporating these skills into VET curricula would build a workforce prepared to maintain service continuity and ensure safety in unpredictable situations, a critical component of modern tourism management.

In summary, while the VET systems in partner countries provide a strong foundation in traditional tourism skills, addressing these gaps—particularly in digital competencies, customer service, sustainability, leadership, and crisis management—would support a more dynamic and future-ready tourism workforce. By adapting VET curricula to reflect these needs, TOURX partner countries can enhance their workforce's resilience, agility, and capability to meet evolving industry standards.

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5. Market needs analysis in the tourism sector

The tourism and hospitality sectors were among the hardest hit by the COVID-19 pandemic. Unlike other industries that could adapt by leveraging digital technologies, these sectors, which rely heavily on in-person interactions and are labor-intensive, faced significant challenges (Sharma et al., 2020). In 2020, tourism activity decreased by 85% compared to 2019, with a further decline of 80% in 2021. This downturn led to millions of job losses and substantial revenue decreases, severely impacting many emerging economies that are reliant on tourism (Sharma et al., 2020).

Analyzing market needs in the tourism sector is crucial to understanding especially the Vocational Education and Training aspect in particular. The vocational education market is undergoing unmatched growth due to a combination of national support measures that create a favorable policy environment, heightened competition in the job market, and the evolving demand for talent driven by technological advancements and economic development. In this context, tourism market research plays a vital role—not only in identifying where people travel but also in understanding the skills required to meet evolving traveler expectations. It delves into the reasons behind their destination choices, the experiences they seek, and the ways they plan their trips, providing essential insights for shaping effective vocational training programs.

The market analysis below is based on the country reports elaborated by the TourX project partners, aiming at providing context on their specific context and recent trends.

5.1 Key Findings per Partner Country

Germany

Germany's tourism industry is a key economic sector, providing extensive employment opportunities across catering, hospitality, transportation, leisure, recreation, and event management. In recent years, the tourism labor market has shifted considerably due to advancements in technology, demographic shifts, and the effects of the COVID-19 pandemic, which have, in turn, impacted the demand for specific skills and qualifications, particularly in Brandenburg. Currently, the tourism sector in Germany demands for skills and qualifications in some areas. For instance, in Brandenburg's tourism sector, there is a growing demand for specific skills and qualifications. Hospitality and guest service skills are highly valued due to the rise in domestic and nature tourism. Digital expertise is also increasingly essential, with tourism companies seeking professionals proficient in booking systems, data analysis, online marketing, and social media, as digital platforms, automated processes, and virtual experiences continue to expand in the coming years. Sustainability and environmental management are in demand, as companies need experts to create eco-friendly business strategies, design sustainable travel packages, and reduce the tourism industry's carbon footprint.

Additionally, language and intercultural skills are crucial in Germany's international tourism market, with English and languages like Polish (especially in Brandenburg), Spanish, French,

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Russian, and Chinese being highly sought after. Intercultural competence is equally important to cater to a diverse global clientele. Strong management and leadership abilities, including knowledge of business administration and tourism-specific expertise, are necessary for managers to address the challenges of a globalized, technology-driven industry.

Consequently, Germany faces a notable shortage of skilled workers in the gastronomy and hotel sectors, particularly in service, kitchen, hotel management, and cleaning roles. Many lefts during and after the pandemic due to unstable conditions and low wages, while challenging shift work further hinders recruitment. The event and leisure management sectors are also experiencing a skills gap, especially in event planning and project management, as demand for unique, large-scale events increases. However, emerging trends in the tourism sector are creating new opportunities, particularly due to the growing demand for camping and outdoor tourism, which necessitates specialized service staff for organization and maintenance. The rise of sustainable travel is generating new job profiles focused on environmental management and sustainable tourism, requiring expertise in climate protection, eco-friendly infrastructure, and sustainable resource use. There is also an increasing interest in nature and health tourism, along with niche markets like adventure tourism, where innovative concepts and specialized services are in high demand.

To address the staff shortage, the industry is prioritizing further training, encouraging career changes, and recruiting international specialists. Brandenburg's tourism strategy includes initiatives to enhance working conditions, such as implementing flexible hours and promoting a better work-life balance, to improve the sector's long-term appeal. Consequently, Brandenburg's tourism industry must not only fill current gaps but also develop the qualifications and conditions necessary to meet the rising demand for high-quality, service-oriented, and sustainable tourism.

Belgium

Belgium's tourism industry plays a crucial role in the economy, significantly impacting both employment and revenue. However, it encounters distinct labor market challenges influenced by evolving consumer preferences, technological developments, and the repercussions of the COVID-19 pandemic. The labor market in Belgium has seen some changes because of the pandemic. The sector demands key roles in tourism and hospitality include hotel managers, front desk staff, chefs, waitstaff, tour guides, event coordinators, and travel agents, with in-demand skills such as customer service, language proficiency (Dutch, French, English, and German), digital marketing, and technical expertise in reservation and property management systems.

Additionally, the tourism sector depends significantly on seasonal staff during peak times, yet there is frequently a shortage of available workers for hospitality and service positions. Also, there is a notable shortage of experienced professionals in management positions, such as hotel managers and event planners. Many skilled workers left the industry during the pandemic, creating gaps in leadership and expertise. On the aspect of culinary, there is a strong demand for skilled chefs and culinary staff, especially in areas renowned for their gastronomy, as many establishments face challenges in finding qualified candidates capable of preparing authentic Belgian cuisine. With a growing focus on sustainability, there is an increasing need for professionals skilled in eco-friendly practices within tourism and hospitality, including

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sustainable travel planning and management. Digitalization has further expanded opportunities in digital marketing, online engagement, and e-commerce, making expertise in these areas highly valuable as businesses enhance their online presence. Post-pandemic, demand has surged for professional's adept at ensuring health and safety compliance. Additionally, the rise in cultural and experiential tourism has opened roles for those who can create and manage unique local experiences, including cultural tours, culinary events, and immersive activities.

Greece

Tourism is a major contributor to Greece's employment, comprising around 20.89% of the nation's total workforce, with about 963,000 people engaged directly or indirectly in the sector. In 2014, tourism accounted for 19.2% of total employment, and before COVID-19, this contribution had risen to nearly 25%. These figures underscore tourism's crucial role in sustaining jobs and bolstering the Greek economy (Tsartas and Lagos, 2012). However, the sector faces challenges, as over 60% of its workforce is unskilled, which complicates efforts to raise service standards, embrace digital transformation, and promote sustainable practices. Key skill gaps are apparent, particularly in customer service, catering, and management across various subsectors. The workforce of the tourism sector has a shortage in areas such as hotels and food service establishments. The growth of the sector, on the other hand, is linked to economic growth or the development of the country.

The tourism sector creates a lot of jobs by reducing the unemployment rates nationwide. However, its growth has not increased the proportion of tertiary sector employment concerning Greece's total employment. The high-demand professions are staff in the housekeeping departments, hotel managers, receptionists, cooks (especially as Greece relies on gastronomy tourism), and customer service staff. The sector also currently demands skills such as exceptional customer service, multilingual proficiency, digital marketing and social media expertise, and technological competence. Regarding qualifications, they seek degrees from professionals in tourism and hospitality, professional certifications, and sustainable tourism skills. There is also an educational gap in the workforce of the sector as only, for instance, 24% of employees possess formal qualifications from tourism schools. The tourism sector in Greece also needs to develop and train certain areas especially customer service skills with an emphasis on customer behavior, personal development training where professionals are equipped with time management training in costing, product knowledge, catering sector (specialized in areas such as wine, cocktail) coupled with knowledge in meat, fish, cheese and be expert in raw preparations.

Greece's tourism labor market sector also focuses on areas for upskilling and reskilling evidently in sectors such as customer service, personal and professional development, specialized skills in the catering sector, and training in housekeeping and ergonomics, which is important for the maintenance of high standards of service and protecting workers health.

Italy

Italy's tourism industry is a key economic sector, yet it faces distinct labor market challenges influenced by shifting consumer demands, the COVID-19 impact, and technological change. In

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2021, tourism employed about 1,030,116 people, with a predominantly young workforce 58% under 40 and 35.25% under 30, while only 4% were over 60. Women made up 52.7% of workers, highlighting the sector's flexibility in work-life balance. Foreign nationals represented 23.9% of employees, averaging 246,467 annually. Most employment contracts were permanent (60.2%), with 39.8% on fixed terms, and part-time work was widespread, comprising 54.4% of roles. There were 77,583 apprentices, mainly part-time, with 14.7% in seasonal positions, while 98,462 intermittent workers, mostly on fixed-term contracts, earned an average salary of EUR 9,326.

Before the pandemic, tourism employment was growing, with a 1.4% increase in 2019, outpacing the broader economy. However, longstanding challenges persist, including low protections for contracts, wages, and qualifications, along with high levels of undeclared work. In 2020, nearly 75% of cases in the HORECA sector revealed labor violations, totaling 10,472 confirmed cases. Between 2020 and 2021, employment rose by 7.8%, adding almost 75,000 jobs, though still 13.5% below pre-pandemic levels. Business numbers grew modestly by 2.8%, with over 80% in the public sector and 13.3% in accommodations. Prior to the pandemic, tourism employment in Italy was on a strong upward trend, growing by 1.4% annually in 2019 and outpacing the broader economy. However, the sector has long struggled with inadequate protections in terms of contracts, wages, and qualifications, as well as a high rate of irregular hiring practices, including undeclared work. In the HORECA sector, nearly 75% of cases in 2020 involved violations of these protections, amounting to 10,472 confirmed cases. Employment in tourism increased by 7.8% from 2020 to 2021, adding almost 75,000 jobs, though it remained 13.5% below pre-pandemic levels. The number of businesses grew slightly by 2.8%, with over 80% in the public sector and 13.3% in accommodations (EBNT, 2022b).

Italy's tourism sector is facing a high demand for skilled workers, particularly in hospitality roles such as waitstaff, chefs, bartenders, and receptionists, with the Veneto region seeing a notable increase in seasonal recruitment post-pandemic. However, the industry is also grappling with a shortage of professionals, underscoring the evolving dynamics and the need for a qualified workforce to meet new challenges and opportunities. Seasonal and youth employment have been rising, with over 23,000 young hires in 2022, a 16% increase from 2019. Despite this, an estimated 300,000–350,000 seasonal positions remain unfilled, with 40% of these roles proving difficult to staff. In addition to traditional skills, there is a growing demand for digital expertise in areas like digital marketing, virtual tourism, and online customer service, reflecting the sector's ongoing digital transformation. This shift in worker preferences toward more stable, less demanding jobs highlights the need for adaptability in both skills and expectations to ensure the industry can thrive. Demand for professionals in tourism management, strategic planning, and health compliance is high, driven by changing consumer expectations and safety standards. Youth hiring has increased, creating entry-level opportunities, with seasonal roles remaining a key entry point into the labor market. Post-pandemic, the sector is seeing growth in emerging areas such as sustainable tourism, digital transformation, and health and safety compliance (EBNT, 2022b).

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Spain

Spain market needs and analysis in the tourism sector according to country context was based on the Canary Islands, in accordance with the expertise and location of the project partner. The Canary Islands, or the Canaries, are a Spanish archipelago situated off the northwest coast of Africa, approximately 100 kilometers (62 miles) west of the Morocco-Western Sahara border (wikipedia.com). This Island also projects the tourism sector in Spain as the dominant drive of the local economy that seeks to thrive the sector. Nonetheless, there are challenges that the sector faces, in addressing the changing needs of tourists and adjusting to industry shifts. The Canary Islands' tourism sector faces several key labor markets needs as it adapts to global trends and local challenges. There is a high demand for multilingual professionals, particularly in roles such as receptionists, concierges, and tour guides, to cater to increasing numbers of international visitors, and with professionals who are fluent in languages like English, German, and French which is now considered a core competency. Additionally, as the industry prioritizes sustainability, there is a growing need for professionals with expertise in renewable energy, waste management, and eco-friendly practices to meet both regulatory requirements and the demand from eco-conscious tourists, especially from Europe. The expansion of technology in tourism has also created a shortage of skilled workers in hospitality technology, driving demand for IT support specialists, digital marketers, and revenue management analysts to keep the industry competitive and innovative. In parallel, the rapid growth of the tourism sector has also outpaced the supply of qualified tourism management professionals, leaving a gap in roles like general managers, operations managers, and marketing managers, highlighting an urgent need for targeted education and training to develop management talent with industry-specific skills.

In addition to these specific competencies, there is a general need for tourism professionals to possess strong customer service skills, passion for the industry, and adaptability. Addressing these workforce gaps in multilingual skills, sustainable tourism, hospitality technology, and tourism management will be essential to support the Canary Islands' position as a premier tourist destination while preparing for continued growth and evolving market demands. Overall, the sector requires the critical need for skill development and strategic planning to navigate future challenges in the industry.

China

China's tourism marketing is continually advancing, but compared to global standards, there is room for greater innovation and specialization. Although tourism management regulations in China are improving, further standardization and rigor may be needed, especially when compared to some European countries. Artificial intelligence is expected to play an increasingly vital role in the hotel and tourism sectors, driving digital transformation and fostering industry innovation. However, that is not the case, it is crucial to recognize and address the associated challenges to support AI's healthy and sustainable development. A market needs analysis in the tourism sector generally identifies demands, trends, and skill gaps important for industry growth and sustainability. Key findings according to the national report of China include a rising demand for professionals skilled in tourism management, hospitality, digital tools, and customer service, alongside opportunities in eco-tourism and experiential travel. Challenges include shortages of

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qualified personnel in global tourism and customer service, increasing the need for training in cultural proficiency, regulatory compliance, and technology use. Continuous professional development, informed by stakeholder feedback and trends such as post-COVID travel behaviors and digital nomadism, is essential for aligning training programs in China with industry needs and enhancing workforce competitiveness and sustainability.

Subsequently, the sector also records rising labor costs and intensified market competition as consumer preferences become more diverse. The industry faces the task of meeting personalized needs and enhancing customer experience. Digital transformation also brings concerns around information security and privacy that must be managed. To tackle these challenges, the tourism and hotel sectors in China should focus on improving service quality, modernizing facilities, optimizing the customer experience, and embracing digital transformation.

Portugal

The tourism industry in Portugal is facing several challenges that hinder its ability to attract and retain a skilled workforce. In 2022, the sector employed 286,600 people, with an anticipated annual need for over 19,000 new jobs. Despite this, there is a significant labor shortage, with around 50,000 unfilled vacancies across the industry. This shortage is particularly pronounced in the hotel sector and tourist entertainment, where 1 in 8 vacancies remains unfilled in accommodation and catering, and 1 in 10 vacancies in tourist entertainment struggles to attract candidates. This highlights the critical need for a skilled workforce to drive the continued recovery and growth of the tourism sector after the pandemic. The current workforce in the tourism sector is largely underqualified, with 49% having only basic education, 37% with secondary or post-secondary education, and just 14% holding a higher education degree. Additionally, many workers in the sector face low wages, long hours, and limited career progression, which has led to 27% of tourism professionals considering leaving the field. These factors make the sector less attractive to potential talent, leading to a cycle of high turnover and insufficient skilled labor. The Agenda Profissões do Turismo (2003) aims to tackle these issues by focusing on attracting and retaining talent, improving work conditions, and increasing investment in training and professional development. The agenda outlines the importance of boosting salaries and benefits for tourism workers to make the sector more appealing. At the same time, it emphasizes the need to qualify and value human resources through targeted education and training programs, particularly at the secondary and post-secondary levels, as well as in specialized skills such as digital marketing, sustainable tourism, and innovation in tourism products. In addition, the 2027 Tourism Strategy identifies five major challenges for the sector: combating seasonality, valuing heritage and culture, spreading demand across regions, qualifying and valuing human resources, and stimulating innovation. Seasonality, for example, remains a persistent problem, as many tourism-related jobs are tied to specific times of the year, making the sector less stable and less attractive. This instability, coupled with long and unpredictable working hours, makes it difficult to retain workers, particularly younger professionals who are seeking more stable employment opportunities. The TEF (Tourism Education Future) project on the other hand, highlights the need for stronger links between educational institutions and the tourism industry to ensure that training programs align with current market needs. It also calls for the development of new

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training courses that focus on high-demand skills, such as digital marketing, sustainable tourism practices, and consumer profiling. TEF also advocates for retraining initiatives targeted at senior workers in the hospitality sector and for addressing the challenge of integrating immigrant workers into the tourism workforce. Given that many immigrants in the sector struggle with language barriers, offering language courses and cultural orientation would help them better integrate and enhance their roles as "cultural brokers" within the tourism experience.

The strategy also emphasizes the importance of gender equality in the workforce, acknowledging that women often face additional challenges in the tourism sector, such as difficult working hours and a double burden of family and work responsibilities. The industry must consider these factors when attempting to attract and retain more women in the workforce. To support these efforts, the strategy calls for continuous training and the promotion of knowledge transfer from educational institutions and research centers to tourism companies. This includes fostering collaborations between academia and the private sector, ensuring that the skills being taught in training programs are directly applicable to the real-world needs of the industry. Additionally, promoting Portugal as a "smart and sustainable" destination requires a focus on technological innovation and sustainability, with tourism professionals being trained to lead these efforts. Ultimately, addressing these market needs and challenges through strategic actions focused on improving working conditions, enhancing education and training, and fostering a more inclusive and attractive sector will be crucial for the long-term growth and competitiveness of Portugal's tourism industry.

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6. Training Needs Assessment: Results and Methodology

The TourX project, in seeking to address the challenges of the ever-changing tourism environment due to the contraction caused by the COVID-19 pandemic, conducted a Training Needs Assessment (TNA), developed through a research methodology that includes a literature review. This analysis identifies significant challenges such as designing upskilling and reskilling programs, addressing the urgent need to diversify, promoting more sustainable models of tourism development and adopt smart investment strategies. It is further coupled with interviews and focus groups conducted with core stakeholders. It also explores the evolving skill requirements for tourism professionals, along with the industry's complexities and market dynamics. The TNA provides an overview of the project and includes a general discussion of the methodology used, concluding with final remarks.

It also seeks to foster a bottom-up approach to excellence in the tourism sector, enabling educational partners (VET and Higher Education Institutions) to strengthen their ability to quickly adjust skills training to meet the changing economic and social environment.

To provide a clear and structured overview of the key training needs in the tourism sector across the partner countries, the following summary has been included before the detailed analysis. This condensed section highlights the main priorities and challenges each country faces, offering a comprehensive yet concise perspective before delving into the specific information. For a quicker overview, a table summarizing all this information has been placed in Appendix A.

In Germany, the increasing digitalization of the tourism sector is reducing personal interactions, making soft skills more critical than ever. At the same time, sustainable tourism and digital proficiency are key priorities, as the industry seeks to minimize resource consumption. To support career development, there is a need for a digital platform where students can track their progress. However, for these initiatives to succeed, government funding for SMEs remains essential.

Similarly, in Belgium, digital skills play a crucial role, while sustainability is an emerging priority. To effectively address these evolving industry demands, strengthening green competencies is necessary. Additionally, fostering collaboration with European tourism associations and academic institutions will enhance training programs and provide valuable international experience.

In Greece, mastering foreign languages, particularly for tourism professionals, is fundamental. Moreover, soft skills such as teamwork, communication, and problem-solving are indispensable. As the sector embraces AI-driven customer service, smart tourism, and sustainability-focused initiatives, digital skills become increasingly essential. However, despite the importance of training, seasonal employment often limits businesses' ability to invest in staff development. To address this, training programs should be flexible, cost-free for employees, and aligned with industry needs.

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Italy also places great importance on language acquisition, particularly in English and German. Furthermore, both digital and environmental competencies are vital, with sustainable tourism practices such as circular cooking and eco-friendly transport gaining traction. Yet, the tourism sector struggles with seasonality and job shortages, making it less appealing for new professionals. To counteract this, training should incorporate additional skills in marketing, management, and promotion to create more attractive career opportunities.

In Spain, language skills remain a fundamental requirement, as do strong digital competencies, particularly in AI and data analytics. The future of tourism relies on sustainability and technological advancements, making it essential for training programs to address these aspects. However, despite government partnerships with businesses to provide work-based learning, funding remains insufficient to fully support these initiatives.

Meanwhile, in China, adaptability, teamwork, and communication skills are becoming increasingly important. Digital transformation is reshaping the industry, with a focus on AI-powered tourism, low-carbon initiatives, and personalized services. To remain competitive, training programs should integrate real-world case studies and advanced concepts from both domestic and international markets.

Finally, in Portugal, mastering foreign languages, particularly French and German, is a pressing need. While sustainability awareness is growing, digital adaptation remains a challenge. Although personal interaction is still highly valued in the sector, virtual check-ins are expected to rise in the coming years. Consequently, training must stay aligned with industry trends, but financial constraints continue to hinder its full development.

6.1 Steps in the TNA conduction

The TNA was conducted by some selected partners of this project with the idea of gathering all information pertaining to the TourX project. The TNA seeks to provide essential insights and a thorough framework for VET providers and tourism industry stakeholders. The report serves as a tool in designing educational programs that emphasize sustainability, resilience, and innovation, key elements for the tourism sector's future.

A needs assessment is a valuable tool for any trainer or organization planning a program or course. By identifying the real needs of the target audience, it helps in designing a program that is relevant and effective. Before addressing a training design, a thorough needs analysis is essential to gain a clear understanding of where training is necessary, what content should be covered, and who the trainees will be.

Before conducting a successful TNA, some steps were considered based on prior developed research questions stating the why(s), which gave an overview of how data was collected, and an analysis made.

Generally, in addressing research questions, either qualitative, quantitative or mixed methods are used. Qualitative research is defined as “research that mainly utilizes words and images as its primary data source” (Remenyi, 2017). In contrast, quantitative research is “a research approach

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that primarily involves gathering numerical data and analyzing it using mathematical or statistical methods" (Remenyi, 2017).

These methods ensure that every study address core issues by framing clear, specific, and focused research questions aligned with the problem at hand. Quantitative methods use surveys with structured questions to collect measurable data, helping to identify patterns and trends. In contrast, qualitative methods rely on interviews and focus groups to gain deeper insights into perceptions that may not be fully captured by quantitative approaches. Qualitative studies typically involve a smaller, targeted population, while quantitative studies engage a larger sample. The mixed-method approach combines elements of both qualitative and quantitative research, providing a comprehensive framework for answering research questions.

The TNA employed a qualitative research method to effectively address the issue at hand and ensure a comprehensive understanding of the topic. This approach enabled participants to provide detailed insights into their perspectives on the questions posed. Given that the research questions focused on future uncertainties and scenarios, it was essential to select informants with significant expertise and decision-making authority to align with the project's shared vision.

Qualitative research is inherently time-intensive, and this study was no exception. Each interview typically lasted about an hour, with transcription requiring up to eight hours per interview. To optimize resources, some interviews were conducted via Zoom and other virtual platforms, reducing the need for travel and saving time. The questions followed a structured format and were used consistently across both focus groups and interviews, conducted by a dedicated team from each partner organization.

The research questions and objectives focus on how the tourism industry can enhance resilience, leverage emerging technologies like AI, and develop sustainable skills to meet evolving consumer demands and future challenges. Regarding resilience, the study emphasizes the importance of reskilling and upskilling professionals to prepare them for potential crises, such as pandemics. Technological skills—particularly in technical and digital domains—are crucial for ensuring the sector's continued relevance and competitiveness.

The research highlights the need for the tourism industry to sustain itself over time, even in the face of future disruptions. Sustainability is a critical concern in all sectors, particularly in a dynamic and rapidly evolving industry like tourism. It becomes especially important after the institutionalization phase, where ensuring lasting change requires embedding sustainability into organizational policies, practices, and norms.

To remain resilient amid potential disruptions such as pandemics, the tourism industry must diversify its offerings, strengthen crisis management, and adopt flexible, sustainable practices. Preparing for an uncertain future involves investing in technologies like AI to enhance personalization and operational efficiency, while also addressing ethical and privacy considerations. Future skill needs include expertise in sustainability, digital literacy, AI-driven customer service, and adaptability to eco-friendly and responsible tourism trends.

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However, achieving sustainability can be challenging. Barriers such as stakeholder resistance to change, inadequate monitoring, and insufficient assessment of progress can undermine efforts to maintain and improve sustainable practices.

Data Collection Methodology

The data was collected from Germany, Spain, Italy, Greece, Portugal, Belgium and China. Interviews based on a semi-structured format which were given to participants including the focus group to answer or share their opinions. The questions were the same for both the interviews and focus groups coupled with discussions from each country during the analysis stage/results presented by country basis. A total of 11 focus groups were held, involving 107 participants from China, Germany, Italy, Portugal, Spain, and Belgium. The participants came from various professions, including tourism specialists such as vocational education and training school managers, CEOs, and public organization representatives, students, tourism trainers' teachers, and tourism professionals (such as cooks and receptionists). The findings for each country were detailed in dedicated sections, with a thorough thematic analysis provided for each. Additionally, 58 interviews were conducted across China, Germany, Greece, Spain, Italy, Portugal, and Belgium. Each research team received specific guidelines on how to carry out the data collection process. The role of an experienced and skilled moderator was crucial in each focus group, guiding discussions to gather a range of opinions and perceptions from a small, diverse group on a specific topic. Moderators typically ask open-ended questions to encourage participants to share their thoughts, feelings, and experiences, which in a way also yielded complex responses from some participants.

Additionally, focus groups are generally one of the most effective methods for collecting qualitative data and are frequently used to test new products or ideas, gather feedback on existing products or services, or explore consumer behaviors and attitudes (Krueger and Casey, 2014). In the process of gathering information about the tourism sector in this project, it was recommended to form a focus group with 6 to 15 participants, including representatives from the project's target groups and key stakeholders who can provide valuable insights. In this context, the focus is viewed as examining the current conditions and future needs related to digital, green, and social requirements for tourism workers and businesses. The questions considered were centered on sub-headings such as skills (upskilling/reskilling), competence-based learning, graduate tracking system, funding, internationalization to gain insights into the tourism sector.

On the concept of upskilling and reskilling in the tourism industry, it is important to identify effective programs and initiatives that facilitate skill acquisition. This is done by establishing strategic partnerships that can help align these efforts with the evolving industry demands. Also, understanding the barriers organizations face when pursuing upskilling is also essential, which will allow VET providers to address obstacles and develop more accessible, tailored programs. Enhancing competence-based curricula by aligning them with both current and future needs of the tourism industry was also considered, with a focus on key competencies and skills that are prioritized and effectively assessed to meet industry demands. Integrating innovative teaching methodologies and technologies that will enrich the learning experience, helping students develop practical skills and industry-relevant knowledge was also analyzed. However, to ensure

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a sustainable path for the industry, it is important to focus on current and future competencies and skills. As the COVID-19 pandemic highlighted the need for the concept of upskilling and reskilling and sustainable tourism, all of this is aimed at identifying critical competencies and skills to advance tourism education, whether provided by universities or VET institutions.

Data Analysis

The data gathered from respondents or participants were analyzed using the thematic analysis format. This sought to provide deeper insights into the perception of the tourism sector and the challenges it faces, which might not be captured fully through quantitative data. In some instances, qualitative data analysis software, such as webQDA, was utilized, while in others, the analysis relied on the researchers' interpretation. The researchers were confident that data saturation had been achieved in each country, meaning additional respondents were not needed, as participants began to reiterate viewpoints already shared by others. Consequently, data collection was concluded once no new information was emerging. Ethical issues were also considered during the data collection based on a set of agreements signed or assented by participants.

The focus groups and interviews conducted across various countries were guided by a common set of keywords, which are used as subsections below to organize the discussion for each country. These keywords highlight the key issues explored during the sessions. The collected data was analyzed based on the participant groups or their responses, and the outcomes have been summarized for clarity and ease of understanding.

Germany

Germany organized 2 focus groups with 8 professionals, 6 cooks and 2 lecturers. This group contribution was recorded according to subject area specifics developed by the partners. The group's questions for discussions were based on skills in the tourism sector, training programs, future-oriented education, graduate tracking mechanisms, and funding systems. The group shared their perspective based on their areas of expertise and meaningful recommendations.

Skills in tourism

The focus group made statements on the issue of communication as it assists personnel in the tourism sector to adapt to new market trends. Social skills are based on how to work in a team that is empathetic with guests and colleagues, especially intercultural competencies that are on the rise. Students and professionals were also advised to enhance their technological skills as digitalization is increasingly having an impact on the tourism sector. For instance, the lectures for the group posited that social skills should be focused on in the coming years such as the promotion of an inclusive and diversified work culture.

Training program

Programs of the various pieces of training should also integrate programs that are essential and align with the culture. Focus on digital skills such as dealing with online booking systems and social media marketing are crucial aspects in the modern tourism sector and so should be

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considered. Soft skills, on the other hand, need to be highly stressed as personal contact is fading away due to digitalization. With the world being a global village now or global customer-based, intercultural skills should be added to training programs for graduates to work effectively.

Future-oriented education

About this topic, participants suggested that education was evolving in a forward-looking approach and so there should be a need for an incorporation of sustainable tourism management to address the growing demand for eco-friendly travel options and tourism services in the future. Also, considering that this trend is linked to digital skills, digitalization can aid in reducing resource consumption.

Graduate tracking mechanism

Participants through the focus groups postulated that to improve education, it is important to have a tool that helps teachers and leaders assess the impact of programs on tourism professionals. The creation of a digital platform should be considered where graduates can share their career progress, allowing data to be collected on the effectiveness of the curriculum. A network could also evaluate the long-term results of tourism training, with surveys and in-person meetings providing continuous feedback. For instance, one participant said, "Evaluating training programs can lead to long-term success." A mentoring system that connects students could additionally offer useful feedback to improve course content based on real-world experience.

Funding systems

The issue of funds is a prominent aspect that was considered by participants in Germany. Participants made pronouncements that the state should be able to release funds to support small and medium-sized businesses. They saw this as being crucial, as funding initiatives for businesses that provide staff training might foster professional development. The optimum strategy would involve a mix of initiatives for businesses and individuals, such as low-interest loans designed especially for vocational training that provide an easily available source of funding for personal growth.

Belgium

In March 2024, Belgium conducted an online focus group with 12 experts. Participants shared their experiences and opinions in response to several questions. Key themes identified were based on skills and role in RSP (Regional Skills Partnership).

Skills

Schools and countries should assess their progress compared to others, as projects focusing on digital skills and sustainability are emerging. However, establishing strong connections between industry and schools remains a challenge.

Role in an RSP (Regional Skills Partnership)

The PANTOUR project has established national skills partnerships in 7 countries (with 10 planned), involving over 200 stakeholders. These partnerships adopted flexible structures,

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focusing on skills intelligence, training needs analysis, and evaluating Blueprint project outputs, like the Regional Skills Partnerships in the TourX project. A key challenge is identifying a leading tourism player to drive the process. Establishing a standard skill level is essential for creating jobs and promoting tourism as a career. Collaboration with regional tourism associations and other schools in Europe is crucial for offering valuable experiences and exploring diverse approaches.

Greece

Greece did not organize any focus groups, instead they conducted 8 interviews with experts, employers, and teachers in the tourism sector. The interviews explored key themes such as essential skills, digital skills, green skills, training, future challenges, and funding mechanisms.

Skills

Tourism professionals in Greece require strong soft skills, including teamwork, communication (interpersonal and foreign languages), time management, problem-solving, flexibility, empathy, intercultural openness, and adaptability to change. These competencies can be effectively assessed through continuous performance monitoring, aligned with shared goals and principles.

The ability to apply social skills, such as common sense and empathy, is seen crucial for daily activities, as well as time management.

Digital skills

While digital skills are not necessary for all job positions in the tourism sector, they are critical in travel agencies for handling reservations, customer communication, data management and invoicing, since they are essential for searching, sharing, processing information, and managing communication platforms.

Green skills

Sustainable practices are increasingly important in the Greek tourism industry, whether due to competitive pressures or as part of marketing strategies. Businesses must comply with environmental standards and integrate green skills into their operations.

However, before fully adopting green practices, fundamental infrastructure challenges, such as waste collection and stable electricity supply, must be addressed at the regional level.

Green skills in tourism involve both a mindset shift towards sustainability and practical application, such as efficient use of natural resources and recycling.

Training

Participants emphasized that training should be free for employees, as business are reluctant to invest in staff development due to seasonal employment patterns. Flexible learning methods, such as storytelling and case-based learning, are seen as effective ways to transfer knowledge. Digital learning platforms are widely accepted, with business owners willing to participate in upskilling and reskilling initiatives alongside their staff.

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VET providers should align their programs with quality assurance standards in the tourism industry. Training should be short, flexible, and available both online and in-person. Existing programs are seen as insufficient, as they focus on specific job roles rather than providing the horizontal green and digital skills needed across the sector.

Future training programs should integrate forecasts of industry trends, practical skills, real-life scenarios, continuous curriculum updates, and lifelong learning opportunities.

Emerging trends

The emerging trends that should be addressed in training are the impact of advanced technologies, the growing demand for sustainable tourism experiences, and the increasing need for personalized services.

Graduate tracking education

To track graduates' career paths, a monitoring system should be implemented, supported by big data analysis, to follow employment trends and reskilling progress.

Future

Business in the tourism sector must comply with public policies, though green policies are sometimes unclear in their objectives. A more accessible and transparent approach from local and national governments is needed.

Funding opportunities

The Greek government plays a central role in allocating funds for staff training. While regional authorities occasionally finance training programs, sectoral organizations (such as federations and unions) currently lack the resources to support such initiatives.

Challenges

A major barrier to workforce development is the cost of reskilling, given the high turnover and seasonal nature of employment in tourism. To ensure continuous professional growth, training and reskilling programs must be offered free of charge to both employees and businesses.

Italy

Italy organized 2 focus groups with a group of 14 students and 11 made up of experts from the sector. These experts also comprised 10 specialists and 1 CEO. This group made contributions based on questions for discussions such as training, digital skills, inclusion, skills to focus on in the future, access to vocational training, and funds. The group shared their perspective based on their areas of expertise, especially with the 11 experts, whereas the students' focus was on their training.

Training

The training in the various tourism sectors in Italy is focused on mainly skills and other areas. The focus group shared opinions on the aspects of training, since this is important in every tourism

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sector. Skills such as marketing and explaining where the making of a business plan for an event are essential. Students' participants also have the chance to do internships during training to boost their experience to gradually enter the labor market after school. Participants also expressed interest in the socio-economic impact of current affairs, highlighting the importance of language learning, particularly English and German. They also focused on management, marketing, creativity, teamwork, and digital skills, including website creation, as key trends and essential competencies.

Digital skills

Digital abilities were thought to be important for information analysis and comparison during the focus group. Another crucial communication tool that was noted was social networks, which provide instant response. Additionally, digitalization was discussed as a crucial order, for instance, in registration and immediate order delivery to the kitchen. Another chance to record more reservations is through online booking platforms. When a consumer sees that they can use digital abilities, such as for bookings, it can help to make the product more competitive.

The environment

This is an aspect that resonates well with the tourism sector because, usually, the digital transition is well-advanced, whereas the ecological transition remains more challenging. With this, participants highlighted that effective environmental practices should be adopted by companies, such as circular cooking (reusing meat scraps and bones, responsibly disposing of fryer oil), reusable crockery and cutlery, collective shuttles for guest transport, automated room temperature controls, water bottles to reduce plastic use, light sensors, and reused paper.

Inclusion

The focus group discussion also brought about the concept of inclusion on the aspect of vulnerable customers. These customers are people from different social and cultural backgrounds, such as the LGBTQ+ community, and especially the disabled tourists. Personnel should be trained on their needs and based on the scarcity of adequate facilities for the disabled tourists in the sector.

Skills to focus on in the future

The sector has been evolving at a fast pace. Participants suggested that there was a need for it to be critically assessed, thus personnel should acquire skills as a supplement to their professional career. The most important skills for digital competence to assist with this sector were a) marketing, communication and promotion of the offer (social media, website, etc.); b) reception, check-in, and facilities management. Even though all these are eminent in the sector already, there was a need to make them aware of the essence but not be abused.

Access to vocational training

Discussions among participants emphasized that the sector was no longer appealing to participants for reasons related to the type of work they would do such as seasonality and its

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rhythms. In addition, there is also a shortage of “classic" jobs like servers, cooks, cleaning services, tourist guides, and all the reception types. This led to the participants lamenting the basic training options and the unappealing nature of the tourism industry, which influences the decisions of people entering the workforce.

Funds

Funds are generally diverse, and access to them is not difficult. Funded training options are available, along with resources to tailor training to the specific needs of businesses. However, many resources cannot be allocated to training demands simultaneously, making it challenging to include large groups of employees, primarily due to organizational constraints related to daily operations.

Spain

They conducted only one focus group composed of 6 participants. These were the town/island councils (5) and a promoter in tourism. Their discussions relied on skills (for tourism workers), training, new skills, metric to measure success in tourism, challenges in tourism, international exposure and experience.

Skills

Tourism workers need skills in sustainable tourism, foreign languages, destination management, technology, customer service, and urban planning, to ensure that they can apply sustainable practices, communicate effectively, manage destinations, use industry tools, deliver excellent service, and support sustainable tourism growth were pointed out by participants.

Training

The discussion reinforced the need for accommodation as it provides the sector with suitable arrangements or adjustment for clients. Accommodation and tourism companies are currently supporting employee skill development through specific training programs on sustainable tourism, customer service, and technology. Local governments are partnering with businesses to offer internships, while incentives and scholarships encourage continuous professional development. Also, internationally recognized certifications, such as Certificates of Professionalism Levels 1, 2, and 3, are being promoted to enhance expertise in the sector.

New skills

It was deduced from the focus group that as the tourism sector evolves, workers must master skills in emerging technologies like AI and data analytics and apply sustainable practices such as renewable energy and conservation and create personalized customer experiences by tailoring services to individual needs.

Metrics to measure success in tourism

With the evolving nature of this sector, there is a need for indicators to assess the impact of tourism actions including the employment rate in the sector, employee satisfaction, workforce skill levels, the tourism competitiveness index, participation in training programs, the economic

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impact of tourism, progress on sustainability objectives, and visitor feedback on service quality and environmental practices. These indicators will help assess the tourism sector and how to improve or upgrade the various areas.

Challenges in tourism

The sector faces enormous challenges, especially with the in-company training and internship programs which require significant financial and human resources. The issue of limited funds and personnel also poses a challenge to the effective implementation of such programs. Also, ensuring programs are relevant and up to date is difficult, as is finding qualified trainers due to their scarcity. The success of these initiatives also depends on the active participation of local tourism businesses, but some are reluctant to engage due to time or resource constraints.

Internationalization

Internationalization can significantly boost the competitiveness and employability of tourism businesses by providing exposure to global markets, new business practices, and diverse cultures. It broadens the perspective of companies, allowing them to better understand international tourists' needs and preferences, which helps tailor their products and services more effectively. Additionally, international experiences offer opportunities to acquire advanced skills in management, marketing, and customer service, which can be applied to enhance daily operations.

Networking at international events, trade fairs, and business exchanges also fosters valuable connections with global industry professionals, opening doors to new business opportunities, strategic alliances, and collaborations. The tourism sector being raised to an international activity will boost a company’s global reputation, increasing its visibility and attracting more international customers, which ultimately drives demand and business growth.

China

China organized 4 focus groups with 3 being done on-site and the remaining one online in February and March 2024 respectively. This group contribution was documented according to subject area specifics developed by the partners. The focus group was composed of Rectors (2), Directors/managers (17), Experts in the field (10), Staff/teachers (7), and students (4). The group's questions for discussions were based on the current state of the tourism sector, challenges, skills in tourism, training in tourism, course content developed for students and professionals, impact of technology. The group sought to express their views of these areas based on their ideas. For instance, even though China’s tourism market and management regulations are advancing, further efforts in innovation and standardization are needed to meet international standards. In addition, per the discussions of the focus group, there needs to be a key focus on future trends in green, low-carbon practices, customized services, integration with tourism, culture, and technology, and the expansion of hotel branding and chains. Artificial intelligence also needs to be critically assessed as it will play a crucial role in driving digital transformation, though challenges must be addressed to ensure its sustainable growth in the industry. Participants noted that the hotel tourism industry faces major challenges, including rising labor costs, intensified

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competition, and the need to meet diverse, personalized consumer demands. Additionally, issues of data security and privacy from digital transformation are critical. To tackle these challenges, the industry must enhance service quality, update facilities, improve customer experience, and adopt digital solutions. The following are the key words based on the thematic analysis of the material from the focus groups.

Skills in the Tourism Sector

Participants agreed that employees need solid professional knowledge, social skills (like communication, teamwork, and problem-solving), and adaptability in the tourism sector to thrive. Also, they expressed their views that innovation and adaptability are crucial in today's dynamic market, as they drive company progress, offer competitive advantages, and help employees meet evolving demands. Eventually, they suggested that China, with the rapid growth in the hotel industry, has a demand for skilled managers with experience and language skills, and so companies should foster continuous learning and innovation to enhance employees' skills and value.

Training in Tourism

Most participants agree on the importance of continually updating employees' skills, especially with rapid advancements in technology and changes in the tourism sector. By adopting a learning mindset, employees can enhance their abilities through training, industry networking, and professional reading. Supportive measures like in-house training, expert lectures, external learning opportunities, and cross-departmental collaboration can further build experience and broaden perspectives. Also, taking into consideration that educational approaches differ internationally, European hotel management, particularly in Switzerland, emphasizes practical training by balancing classroom instruction and paid internships. In contrast, Chinese hotel management programs focus more on theory, resulting in graduates with less hands-on experience and adaptability.

Course Content

Some participants shared their opinion that it was essential to integrate advanced concepts and practical case studies in tourism and hotel management in China that are from both home and abroad. This approach would introduce advanced knowledge and allow students to stay informed about the latest industry dynamics and trends. Additionally, course materials should focus on creative and practical skills fostering creativity in students.

Impact of Technologies

One participant noted that introducing new technologies helps businesses create more competitive products and improve their brand image. Technology also supports companies in moving towards eco-friendly production and sustainable growth. Examples shared included facial recognition check-in systems, which let guests check in quickly, enhancing their experience; virtual reality (VR) technology also offers tourists new experiences; smart room control systems, a major innovation in Chinese hotels; and big data analysis, which plays a key

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role in tourism services. These technological advancements are crucial for promoting sustainability in industry.

Portugal

The focus group was composed of 16 participants: teachers, students, researchers and experts. The discussions were focused on soft skills, language, tourism sector, education, green skills, digital skills, the future of tourism and funding opportunities.

Soft skills

Soft skills are important in tourism schools. Students should be taught these skills in order to be capable of working in groups in schools. This will help them to work with people on the field after training. This should be coupled with more investment in terms of teaching, especially on how to serve and behave with clients. Participants also stressed that these should be addressed as well as in terms of leadership, understanding how to be led, time management, and task management.

Language

The issue of language is a delicate matter, as most of the tourism sector training makes use of English. In Portugal, almost every student has a good command of English, however there is the need to communicate in German or French and it is difficult to find students who can speak these languages. French is a challenge in Portugal, as only a few have a command of the language. Germans can easily speak English, but the French are not so predisposed to do so. Therefore, the need for more people to master French is a current gap. With this, some participants in the focus group stated that finding people who speak the stated languages fluently was challenging. Students concur that mastering a variety of languages is crucial for them in this sector and so should be addressed.

The sector dynamics

The tourism sector is becoming unattractive for the Portuguese, as immigrants are mostly the ones that fill the job positions, as they are more likely to accept the heavy workloads and low wages common in this sector. For instance, they are the ones who are willing to “wear the company shirt” and not the young Portuguese. Some participants consider that the tourism sector is unattractive as one said: “As far as hospitality is concerned, only those with “a screw loose” go into hospitality these days, because we are dealing with people and people, and unfortunately, it is increasingly difficult to deal with them”. Students have a lack of resilience; they do not know how to act when something unexpected happens. Participants consider that nowadays young people look for projects instead of long-term positions. Some consider they are not up for the job: “they do not wear the company shirt”. However, companies are investing more in employee training focused on culture, ethics, and fostering loyalty which experts expressed as being important. In Portugal's tourism sector, where relationships are key, personal interaction is still valued, with many highlighting the importance of a warm welcome. Nonetheless, some participants predicted that virtual check-ins will rise in the next five years in the sector. To ensure training aligns with industry needs, close collaboration between companies and schools is

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crucial, or a gap will remain between education and the sector's demands. The issue of salaries was raised as participants also suggested that raising salaries in the sector will attract more people to work in the field. The concern of some participants was about personnels having tough times at work, especially with difficult clients. But in Fátima for instance, it was stated that most of their clients come year after year because of the people who work there. Which establishes the importance of human relations even though AI solutions are well received.

Education

Participants noted a decline in the quality of basic education and highlighted the need for tourism schools to keep up with industry trends, particularly in emerging technologies, to better prepare students. While students have strong theoretical knowledge and technical skills, they often struggle with practical applications and customer interactions, suggesting a need for more real-world experience. There is also a call for greater focus on sustainability and soft skills development. Despite the rise of digital tools, schools must continue to emphasize fundamental skills like soft skills, relationship management, languages, and conflict resolution. Digital marketing is increasingly important in curricula, and ongoing learning is crucial due to the sector's constant changes. However, legal and budget limitations sometimes prevent schools from sourcing local products for sustainable practices. Some trainers avoid using tools like ChatGPT, as they believe it reduces students' critical thinking and creativity. The pandemic increased technological skills but also led to a decline in critical thinking and writing abilities.

Green skills

Participants emphasized the importance of a "green" mentality and sustainability skills, though these issues are often overlooked in daily life. The new generation is seen as more motivated and aware of sustainability, particularly in nature tourism. However, some critics argue that sustainability in research is often superficial and lacks practical application. In Portugal, there is a growing interest in sustainability, especially in rural areas, as people have returned to the countryside for safety during and after the Covid pandemic. Sustainability in tourism education is still in its early stages, but it's clear that graduates will likely work in eco-friendly accommodations, often in inland areas that were previously not seen as tourist destinations.

Digital skills

Currently, there is a technological shift due to artificial intelligence, with vast amounts of data and widespread in the use of tech reshaping industries. This change, accelerated post-pandemic, is prompting businesses to adapt at different paces. However, tourism will remain a people-centric industry, as some functions and problems are best handled by humans. While AI is gaining traction in tourism, some trainers avoid using it in their classes, as tourism is seen as a relationship-driven sector. AI tools like ChatGPT are being used by students and professionals, but there's a need for proper training on how to use these tools effectively. In some areas, AI is still underutilized, such as in hotels where the focus is mainly on digitalizing processes. However, AI is more prominent in events, where virtual hosts and AI-driven services like robot waiters are becoming common. Despite its growing role, some participants worry that AI could shift the industry from human-to-human interactions to human-machine relations.

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The future of tourism

Participants identified languages, soft skills, and digital marketing as the key competencies in the tourism sector. While students are adept at using tools like social media for content creation, there's a distinction between basic usage and applying these tools strategically for marketing, whether from the perspective of a user, programmer, or campaign manager. Sustainability is a growing trend, but in Portugal, many hotels are still in the early stages of adopting environmental practices, with a lack of awareness about the need to update their operations and infrastructure.

Funding Opportunities

Tourism schools rely on public funding to cover teaching expenses, but these budgets are often insufficient to purchase all necessary materials. As some courses require more funding than others, public tenders are used to meet material needs, which can prevent the use of local suppliers.

General conclusions from interviews

The interviews were conducted with respondents from the selected countries above, the questions for discussions were also based on skills, curriculum framework, training, the future of tourism, sustainability, funding, career development and planning of hotel professionals, the sector in general, and digitalization. Aside from the various interviews conducted which have already been discussed during the focus groups per country. There were additional mentions for instance in Germany, expanding the curriculum framework for trainees/students by varying teaching methods to make the curriculum flexible to match up to the changing demands of the tourism sector. On skills, participants highlighted the need to focus on technical skills, green skills, soft skills, interpersonal skills and evidently on upskilling and reskilling. The issue of allocation of funding to provide free training for trainees from governments be it local or regional was also expressed as being a challenge for the sector as a direction towards the future.

Additionally, China emphasizes the development and management of tourism destinations and hotel careers, while Belgium focuses on post-COVID changes, including a shift toward sustainability. Germany is concerned with the high cost of curriculum development, driven by individual needs and copyright protection, and views digital skills as a key future priority. Italy, Portugal, Spain, and Greece share concerns about preparing for the future, with a focus on green and digital skills, sustainability, and environmental issues.

6.2 Converting TNA to learning objectives

The TNA developed by partners of the TourX project provides in-depth information about the state of the tourism sector. It discusses issues surrounding the sector after COVID-19 and analyzes some sampled countries to represent the sector. The theoretical aspects based on literature, focus groups and interview discussions contribute to learning objectives that can be implemented to develop effective measures for upgrading the sector into a more thriving one. This TNA highlighted that the tourism industry is primarily focused on three main concerns as learning objectives: sustainability; digitalization and technology; and management.

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Sustainability

Generally, the Sustainable Development Goals (SDGs), set by the United Nations in 2015, provide a global framework for sustainability. These 17 goals cover a range of issues, from eliminating poverty and hunger to combating climate change and ensuring access to clean water and education. Sustainability in practice includes eco-friendly tourism that minimizes environmental impact and supports local communities, sustainable agriculture that protects the environment and ensures fair labor, and green energy that uses renewable sources like solar, wind, and hydro to reduce reliance on fossil fuels. With this, sustainability is a crucial aspect that deals with the tourism sector, many tourism professionals need a better understanding of sustainability principles, environmental conservation, and eco-friendly practices in tourism.

Sustainability is becoming a key focus and crucial in the tourism sector, driven by travelers' growing concern for environmental issues like climate change and biodiversity loss. Tourists now seek eco-friendly options, such as responsible wildlife tourism, eco-lodges, and low-impact tours. However, balancing economic growth with sustainability is challenging, especially for regions heavily reliant on tourism, such as small islands and coastal destinations, which are vulnerable to environmental degradation from over-tourism. In addition, training programs are coupled with sustainable practices, such as educating staff and tourists on the essence of conservation, waste reduction, and renewable energy use. Upskilling, reskilling, and green skills form part of ensuring sustainability in the tourism sector.

Digitalization and Technology

Digital skills or technology are important in all sectors, particularly in the tourism sector. Digital technology has transformed the tourism sector, changing how people book trips, experience destinations, and make payments through platforms like Airbnb and Booking, which streamline guest reservations and improve service delivery. The development of AI, big data, and blockchain have reshaped business operations, while the COVID-19 pandemic has accelerated digital adoption. It has introduced contactless check-ins, virtual tours, and remote services. However, smaller businesses struggle to adopt these technologies due to their limited resources or digital skills, which has resulted in widening the gap between larger and local businesses. To stay competitive, the tourism professionals need training in digital tools, from booking platforms and chatbots to data analytics and blockchain for management. They need digital marketing skills, such as social media engagement and search engine optimization (SEO) as they are essential for attracting new customers. Accessible digital training for remote communities, supported by governments and NGOs, can help bridge this gap and ensure smaller businesses benefit from digitalization. Upgrading digital skills can improve employees' work and customer service. Effective customer service skills, technical skills, and interpersonal skills all form part of skills that assist in the effective utilization of digitalization.

Management

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Modern tourism management faces complex challenges, including adapting to new technologies, managing consumer shifts, ensuring sustainability, and navigating global events. Managers must balance short-term profits with long-term sustainability, ensuring growth does not harm local environments or cultures. Effective management is key to success for every small and large business, with strategic planning and sustainable practices being vital. There should be training for tourism management focusing on areas like strategic planning, financial management, marketing, sustainability, and digital tools. Leadership and change management skills are essential for guiding teams through transitions and crises. Collaboration with local stakeholders is also crucial for creating sustainable tourism. To make training accessible, online platforms must offer flexible and affordable courses that can assist small businesses and rural tourism professionals to gain essential skills. Governments can support this by subsidizing training or incentivizing businesses to invest in employee development, ensuring competitiveness in a rapidly evolving market such as the tourism sector.

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7. Recommendations for integrating upskilling/reskilling into VET programs

The insights gained from the TNA reveal the urgent need to address skills gaps within the tourism sector, driven by rapid technological advancements, sustainability demands, and evolving market expectations. Vocational Education and Training programs must prioritize upskilling and reskilling to equip individuals with the competencies required to adapt to these changes while fostering workforce resilience and employability.

These recommendations build upon the findings and emphasize aligning learning objectives with industry needs, leveraging practical and experiential learning approaches, and utilizing European Union initiatives and funding mechanisms. By integrating these strategies, VET programs can create a skilled workforce capable of meeting current and future demands in the tourism sector. Collaborative efforts with industry stakeholders, innovative curriculum designs, and a focus on lifelong learning are essential to achieving these goals and ensuring the sector's long-term sustainability and competitiveness.

7.1 Aligning learning objectives with market needs

To ensure that VET curricula remain aligned with the tourism industry's evolving demands, institutions across TOURX partner countries must actively integrate skill-mapping processes, develop sector-specific modules, and implement flexible pathways that cater to the diversity within the tourism sector. By incorporating these approaches, VET programs can more effectively prepare students for the rapidly changing requirements of the tourism workforce.

Comprehensive skills mapping and industry consultation

Establishing a dynamic and iterative skills-mapping process is vital for VET programs to stay relevant. By collaborating with tourism businesses, industry bodies, and regional stakeholders, VET institutions can identify high-demand skills and address critical gaps. Skills such as digital marketing, CRM systems proficiency, and sustainable tourism practices are increasingly indispensable for modern tourism professionals.

In TOURX partner countries, many institutions have implemented mechanisms to consult regularly with industry stakeholders, including regional tourism boards and local employers. For instance, Portugal has developed structured consultations with national tourism bodies to integrate skills in digital marketing and eco-tourism into VET programs. Similarly, in China, large-scale data collection on industry trends has helped tailor programs to meet the needs of digital and eco-conscious travelers. These consultations ensure that curricula remain aligned with regional tourism strategies, such as integrating sustainable practices in eco-sensitive regions or prioritizing digital engagement for urban tourism hubs.

Collaboration between VET providers and stakeholders has led to the introduction of cutting-edge modules focusing on emerging areas such as data analytics, customer experience, and

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green tourism. In Belgium, partnerships with local tourism businesses have helped institutions offer targeted training in multilingual customer service, addressing the needs of high-tourism cities like Brussels. This approach ensures that graduates possess both foundational competencies and advanced skills, enabling them to succeed in diverse tourism environments.

Development of sector-specific learning modules

VET programs have started to incorporate sector-specific learning modules that reflect the diverse roles and specializations within tourism. Modules focusing on digital skills, customer service excellence, or sustainable tourism practices have become standard, often including case studies, simulations, and real-world applications to enhance students' preparedness for professional environments. Across TOURX partner countries, examples illustrate how institutions are prioritizing sector-specific skills relevant to their regional markets, preparing students for roles in areas like seasonal tourism, heritage conservation, and sustainable hospitality.

For instance, practical training in digital marketing and CRM software has been added to several programs to meet demand in roles that require active engagement with online platforms and customer analytics, like in Spain and Italy. In countries like Greece, where seasonal tourism peaks are prevalent, institutions have developed modules in event management and temporary accommodation services, addressing the specific needs of the local economy. These efforts ensure that students are prepared for high-demand roles and that their training aligns with local labor market requirements.

In China, VET institutions have partnered with technology providers to offer hands-on experience with platforms frequently used in the tourism sector, such as online booking systems and social media management tools. This collaboration helps students gain practical expertise, bridging the gap between theoretical knowledge and workplace application. By aligning learning objectives with the tools and technologies prevalent in the industry, VET programs enhance the job-readiness of their graduates.

Flexible learning pathways and customizable curricula

Given the diversity within the tourism industry, offering flexible learning pathways allows students to pursue specific interests while meeting industry demands. VET programs across TOURX partner countries have increasingly adopted modular structures that allow for both specialization and adaptability, addressing specific sub-sectors like digital services, eco-tourism, and event management. This approach not only enhances student employability but also strengthens alignment with local labor market demands.

Many programs now offer pathways that enable students to specialize in skills relevant to specific regional needs, such as sustainable tourism in eco-sensitive regions or culinary tourism in areas known for gastronomic experiences. For instance, students in mountainous regions may follow pathways focusing on alpine tourism or adventure travel, while those in coastal areas may specialize in marine tourism or sustainable coastal practices. These flexible options not only enhance employment opportunities but also equip graduates to meet distinct market demands. Additionally, a modular curriculum structure allows institutions to quickly adapt to emerging

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trends, such as shifts toward digitalization and sustainability, ensuring the VET program remains responsive and relevant.

7.2 Practical Upskilling/Reskilling Approaches

Integrating practical and experiential learning approaches into VET programs can help students acquire the applied skills needed for the tourism sector. Practical training not only enhances their adaptability but also prepares them for immediate entry into the workforce.

Work-based learning, internships, and apprenticeships: Establishing structured work-based learning opportunities, such as internships and apprenticeships, enables students to apply theoretical knowledge in real-world settings. Dual learning models, such as those in Germany and Belgium, demonstrate the effectiveness of combining on-the-job training with classroom learning. These partnerships with tourism-related businesses and hotels provide valuable industry exposure and can be expanded to include opportunities in niche areas such as heritage tourism, digital travel services, and sustainable tourism.

For instance, in Portugal, partnerships with eco-tourism ventures provide students with real-world experience in managing environmentally conscious operations. Similarly, China collaborates with technology firms to offer apprenticeships focusing on digital tourism tools, such as online booking systems and customer analytics platforms, ensuring students gain practical expertise in technology-driven tourism.

Simulation-based training and virtual learning platforms: Utilizing simulation-based training for skills like crisis management, customer service, and digital tools equips students with hands-on experience in controlled environments. This approach is especially useful in preparing students for high-stakes or high-interaction roles, where adaptability and problem-solving are essential. Virtual reality or augmented reality (AR) simulations can also offer practical training in soft skills, such as conflict resolution and cross-cultural communication. For example, tourism VET programs in Spain and Germany have integrated VR tools to train students in managing diverse customer interactions, enabling them to navigate international tourism markets effectively. These technologies not only enhance skill acquisition but also provide a cost-effective alternative to resource-heavy physical simulations.

Focus on soft skills development and multilingual training: Beyond technical training, soft skills such as customer service, communication, and cultural sensitivity are crucial for the tourism industry. Multilingual training is especially valuable in highly internationalized tourism markets like those in Spain, Germany, and Belgium, where employees often interact with diverse clients. Programs should include workshops, role-playing exercises, and interactive modules to strengthen these soft skills, making graduates more adaptable to varied client needs. This type of training builds a service-oriented workforce capable of delivering high-quality experiences to tourists from different backgrounds.

Continuous professional development opportunities: To support lifelong learning, VET institutions can offer post-graduation upskilling programs, such as short courses and certifications in emerging areas like digital transformation and eco-friendly tourism practices.

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These opportunities allow alumni to update their skills as industry standards evolve, fostering a mindset of continuous learning and enabling employees to remain competitive in their roles. For example, in Portugal, short courses focus on enhancing digital skills for mid-career professionals, covering areas like social media marketing and data analytics. Germany has introduced certification programs on sustainable tourism operations, enabling employees to contribute to green initiatives within the sector. These continuous learning pathways not only empower professionals to remain competitive but also enhance the overall resilience and adaptability of the tourism workforce. Likewise, this approach supports the broader EU goal of encouraging professional development throughout one's career, which enhances both workforce stability and individual career advancement.

7.3 Incorporating European Union initiatives and funding

To support the effective integration of upskilling and reskilling in VET programs, leveraging European Union funding and initiatives is essential. These resources can significantly enhance the capacity of VET institutions to offer updated, industry-aligned programs and ensure that training initiatives remain inclusive, sustainable, and accessible.

European Social Fund (ESF) and EU Skills Agenda

Aligning VET curricula with the EU Skills Agenda, which focuses on digital, green, and inclusive skills, opens access to ESF funding. The ESF aims to equip people with the necessary skills for modern jobs, supporting investments in education, skills, and lifelong learning. Through ESF funding, VET programs can develop new digital and sustainable tourism modules, expand digital infrastructure, and support professional development for instructors. ESF funding also enables institutions to form partnerships with local businesses, integrating work-based learning opportunities that reflect current industry demands.

For example, by aligning with the EU Skills Agenda, VET institutions in partner countries have introduced modules on sustainability and digital skills in response to ESF's emphasis on fostering employability in green and digital sectors. This approach not only addresses immediate labor market needs but also positions VET programs to contribute to broader EU goals of sustainable economic growth and social inclusivity. In Italy, funding has supported the introduction of eco-tourism training in Tuscany, preparing students to manage tourism operations with environmental responsibility. Similarly, Belgium has leveraged ESF resources to enhance digital customer engagement training, aligning with the sector's shift toward technology-driven service delivery.

European Skills Agenda Key Actions

Pact for Skills: Facilitates partnerships in strategic sectors, including tourism, to foster large-scale upskilling and reskilling initiatives.

Strengthening Skills Intelligence: Provides data-driven insights into skill demands, guiding VET programs in tailoring curricula to address gaps in areas such as digital marketing and eco-tourism.

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Promoting Individual Learning Accounts and Micro-Credentials: Encourages lifelong learning and adaptability by helping individuals document and validate their skills, enhancing employment opportunities across the EU.

Erasmus+ for Cross-Border Collaboration and Exchange

The Erasmus+ program supports international partnerships and exchange opportunities, enhancing the quality of vocational education and training across Europe. Through Erasmus+ grants, VET institutions can engage in collaborations with international partners, fostering the exchange of best practices, new teaching methodologies, and specialized tourism training approaches. For both students and instructors, Erasmus+ offers opportunities to experience tourism training in different EU contexts, enriching their understanding of international industry standards and practices.

Erasmus+ also provides funding for job shadowing, professional development courses, and placements, allowing students to gain hands-on experience in diverse tourism environments. For instance, students from Spain participating in Erasmus+ exchanges in Germany benefit from exposure to Germany's dual training model, which emphasizes work-based learning. Similarly, Greek students gain insights into sustainable tourism practices by working in eco-focused tourism destinations in other EU countries. These cross-border exchanges foster cultural understanding and broaden student adaptability, critical skills for a tourism industry serving global customers.

Funding for digital and sustainable initiatives

The EU's emphasis on digital transformation and sustainability aligns closely with the future direction of the tourism industry. Targeted funding is available for VET programs to enhance their digital capabilities and integrate sustainable practices into their curricula. These funds enable VET institutions to invest in technology and resources like e-learning platforms, simulation software, and online training materials, allowing students to acquire essential digital skills in an interactive environment.

Sustainability funding supports the development of eco-tourism modules, environmental management, and green operations, providing students with the competencies needed in a sector increasingly oriented towards environmental responsibility. VET programs in Italy, for example, have used EU funding to establish specialized training for sustainable tourism practices in regions with high eco-tourism potential, such as Tuscany. Similarly, digital initiatives in Belgium have introduced online training in digital customer engagement tools, reflecting the shift towards digital service delivery in tourism.

Green skills initiative

With sustainability becoming a priority in EU policy, leveraging the Green Skills Initiative helps VET institutions develop specialized training programs that emphasize eco-tourism and environmental management. This initiative allows VET programs to implement modules on waste management, renewable energy, and low-impact tourism practices, enabling students to align their skills with the EU's green transition goals. Through these initiatives, VET institutions are

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equipped to work closely with environmentally conscious tourism providers, reinforcing sustainability as a core component of tourism training.

For instance, tourism programs in Greece have integrated green skills training into their curriculum, focusing on coastal and heritage site preservation, which are critical in a region with a high volume of eco-conscious tourists. Additionally, the Green Skills Initiative supports partnerships between VET institutions and sustainable tourism organizations, enhancing experiential learning opportunities in conservation-focused tourism roles. These partnerships prepare students for emerging roles in environmental stewardship, crucial for a sustainable tourism industry.

European Skills Passport for the Hospitality Sector

The European Hospitality Skills Passport, developed in collaboration with HOTREC and EFFAT, addresses language barriers and facilitates skill recognition within the EU's hospitality sector. Available on the EURES portal, this tool enables workers to document skills acquired from education, training, and work experience in a format accessible across EU member states. The Skills Passport aids VET graduates in securing positions by making their competencies easily recognizable to employers in different countries, supporting labor mobility within tourism and hospitality sectors.

This passport is particularly beneficial in high-mobility tourism sectors, where cross-border skills recognition is critical. For example, a graduate from a Belgian VET program with multilingual customer service training can more easily secure employment in another EU country, using the European Hospitality Skills Passport to validate their qualifications. This tool not only facilitates a more integrated labor market but also supports the EU's goals of social inclusion and workforce mobility.

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8. Case studies and best practice examples

The tourism sector in Europe is a crucial component of the economy, creating a significant number of job opportunities. However, the rapid evolution of technology and the impacts of events like the COVID-19 pandemic have emphasized the need for continuous upskilling and reskilling. An overview of key tools and programs designed to meet these needs, along with effective strategies that have demonstrated success, is presented here.

In **Germany**, the dual-training model has been a cornerstone of VET, blending theoretical instruction with on-the-job training in collaboration with industry partners. This model has proven highly effective in equipping students with hands-on experience while meeting the specific needs of employers in the tourism and hospitality sector. For instance, partnerships with leading hotel chains like Marriott and Hilton ensure that trainees gain exposure to real-world scenarios, preparing them for management and operational roles.

In **Spain**, the focus on incorporating digital competencies into VET curricula has been particularly impactful. Through collaboration with technology providers, students gain proficiency in online booking platforms, social media management, and digital marketing strategies. This initiative has significantly improved employment outcomes, especially in regions with high tourism demand, such as Catalonia and the Canary Islands.

In **Italy**, efforts have been directed toward sustainable tourism practices. Training programs emphasize environmental management and eco-tourism, aligning with the European Green Deal. These initiatives are supported by partnerships with regional tourism boards and local enterprises, fostering a culture of sustainability and responsible tourism. For example, Veneto's regional VET programs have incorporated modules on waste reduction and renewable energy utilization in hospitality settings.

In **Greece**, regional adaptability is a key feature of tourism training. Programs are tailored to local economic and cultural contexts, with a strong emphasis on language skills and customer service excellence. This approach addresses the specific needs of popular tourist destinations, ensuring that the workforce is well-equipped to handle diverse visitor demographics.

Spain's Initiatives in Tourism Training

In Spain, the State Public Employment Service (SEPE) and the State Foundation for Training in Employment (Fundae) have launched a comprehensive training program for the tourism sector. This initiative is part of the National Plan for Recovery, Transformation, and Resilience, with a budget of EUR 40 million. It focuses on professional promotion and personal development to enhance the competitiveness of the tourism industry and help it recover from the pandemic (CEDEFOP, 2021b).

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European Year of Skills 2023

The European Commission has designated 2023 as the European Year of Skills to emphasize the importance of reskilling and upskilling, particularly in the context of the green and digital transitions. This initiative aims to address the skills gap, focusing on inclusivity and gender balance. Key frameworks supporting these efforts include the European Skills Agenda, the Pact for Skills, and the Digital Skills and Jobs Coalition. The European Social Fund Plus (ESF+) and the Recovery and Resilience Facility are among the main funding sources for these initiatives (commission.europa.eu).

8.1 Effective Strategies for Upskilling and Reskilling

Digital Skills Development

A comprehensive digital training program covering e-commerce, data analysis, and cybersecurity is a concrete strategy to address the evolving needs of the tourism sector. The digital revolution has significantly transformed this industry, making proficiency in digital tools and platforms essential for employees. Training programs focused on these areas ensure that the workforce can effectively leverage technology to enhance customer experiences and improve operational efficiency, as highlighted by sources like PANTOUR and Twissen. This approach not only equips employees with necessary skills but also supports the sector's overall growth and adaptability (nexttourismgeneration.eu). Countries like Italy, Spain, Portugal, Greece and Germany through its interview and focus groups discussed more on digitalization as it is the fast concept thriving in a lot of industries particularly the tourism sector.

Lifelong Learning and Micro-Credentials

The implementation of **micro-credentials** has emerged as a flexible and scalable solution for upskilling and reskilling in the tourism sector. These credentials allow learners to acquire specific skills in a short period, making them particularly valuable in addressing rapidly changing industry demands. For instance, Portugal has introduced micro-credential programs focusing on digital tools for tourism, such as using AI in customer engagement and mastering analytics platforms for market insights. These programs have been instrumental in filling immediate skills gaps while offering a pathway to more comprehensive qualifications.

Micro-credentials represent a compact form of educational achievement focused on specific learning outcomes that a learner has successfully acquired. These outcomes are assessed based on clear and transparent criteria. Structured to provide learners with precise skills and knowledge, micro-credentials cater to specific needs within society, personal development, culture, or the job market. The learner owns these credentials, which can be shared or even aggregated into broader qualifications. They are supported by rigorous quality assurance measures that maintain their integrity and value (EFT Report 2022).

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A concrete strategy for keeping employees' skills up to date involves offering micro-credentials and short courses. These flexible learning options are particularly advantageous for employees who may lack the time or resources for long-term education. Micro-credentials provide targeted learning opportunities that can be quickly applied in the workplace, ensuring that skills remain current and relevant. This approach allows for continuous skill development, which is essential in adapting to the ever-evolving demands of the industry, as noted by McKinsey & Company. (mckinsey.com).

Lifelong learning initiatives in **Belgium** exemplify how continuous education can sustain a competitive workforce. Programs encourage workers to return to VET institutions to update their skills, particularly in digitalization and sustainable practices. This is supported by partnerships with local governments and EU funding schemes, ensuring that training remains accessible to all segments of the workforce.

A notable example of lifelong learning integration is the "Skills for Tourism Excellence" initiative in **China**, a TOURX partner country. This program combines short-term training modules with opportunities for international internships, enabling participants to gain global perspectives while developing critical skills. The program's emphasis on adaptability and innovation ensures that workers remain relevant in an increasingly competitive market.

Collaboration with Educational Institutions

A practical strategy involves partnering with universities and vocational schools to develop tailored training programs that align with industry needs. This collaboration ensures that the training provided is based on the latest research and best practices, creating a workforce equipped to handle current and future challenges. By aligning educational programs with industry requirements, employers can ensure that employees are well-prepared and possess relevant skills. This approach also fosters a strong connection between theoretical knowledge and practical application, enhancing overall productivity and job readiness (nexttourismgeneration.eu).

The PANTOUR project is a European initiative designed to standardize and improve tourism management education across the continent (Next Tourism Generation, 2022). It focuses on integrating essential digital and green skills into the training curricula to better prepare the workforce for the evolving demands of the tourism industry. By fostering a collaborative approach with educational institutions, industry leaders, and policymakers, PANTOUR aims to develop comprehensive training programs that support a sustainable and adaptable tourism sector. This project is crucial in helping the industry navigate current challenges and ensuring it remains resilient and forward-thinking.

The PANTOUR project has developed several key resources to enhance skills in the tourism sector. These include:

1. **Skills monitoring system**: This system provides structured insights into skills gaps and future needs within the tourism and hospitality sectors.

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2. **Country skills profile reports**: These reports offer comprehensive analyses of the tourism landscape, workforce capabilities, and skill needs for various European countries.
3. **NTG skills reports**: Focused on digital, social, and green skills, these reports combine primary and secondary research to address skills development in the tourism industry.

These resources support informed decision-making for businesses, policymakers, and educational institution.

Use of Incubators and Accelerators

An effective strategy involves supporting startups and SMEs through incubators and accelerators that offer access to new technologies and innovative business models. This approach helps smaller businesses remain competitive by enabling them to adopt cutting-edge practices. Additionally, it fosters a culture of continuous improvement and learning, which is essential for adapting to the rapid changes in the tourism sector. By providing these resources and support systems, incubators and accelerators play a crucial role in enhancing the agility and resilience of small businesses, ensuring they can thrive in a dynamic market environment.

For instance, the Tourism Innovation Incubator (TII) in Barcelona exemplifies this approach. TII offers startups in the tourism sector access to mentorship, funding, and networking opportunities. By connecting businesses with industry experts and resources, TII facilitates the development of crucial digital and green skills. This support enables startups to innovate and grow, thus contributing to a more dynamic and sustainable tourism industry. Through initiatives like TII, small tourism businesses can effectively navigate and capitalize on market changes, maintaining their competitiveness and fostering long-term success (Twissen, 2021).

Government and Business Collaboration

A strategic approach to enhancing workforce capabilities involves creating public-private partnerships to fund and implement upskilling and reskilling initiatives. By combining the resources and expertise of both the public and private sectors, the impact of training programs is maximized. Governments can contribute funding and policy support, while businesses offer practical insights and training opportunities that are directly relevant to their operations. This collaboration ensures that training programs are well-funded, aligned with industry needs, and effective in equipping workers with the skills required to succeed in a rapidly changing market. Such partnerships are vital in fostering a resilient and adaptable workforce (McKinsey, 2022).

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9. Impact of upskilling and reskilling on tourism sector recovery and growth

Vocational Education and Training programs are fundamental to building a skilled, adaptable workforce within the tourism sector. By combining classroom learning with practical, hands-on experience, these programs ensure that workers are equipped with the competencies needed to excel in modern tourism roles. Many VET courses emphasize industry-relevant skills, such as digital marketing and customer service, which are critical for attracting and retaining customers. This practical approach allows students to apply what they learn directly to real-world situations, boosting their effectiveness and confidence on the job.

Collaboration with industry partners, including hotels, travel agencies, and tour operators, enhances VET's effectiveness by providing students with on-the-job training in actual work environments. Such partnerships ensure that VET training is aligned with current industry standards, making students more job-ready and responsive to market needs. Additionally, VET supports lifelong learning with flexible options, such as online courses and short-term credentials, enabling current workers to stay competitive and adapt to new technologies and trends without taking extended breaks from their careers.

In focusing on both technical and interpersonal skills, VET programs foster a workforce that is both skilled and customer centric. This dual emphasis is vital for maintaining a competitive tourism sector that can meet the demands of a fast-changing industry landscape, particularly as the sector recovers from recent global disruptions and looks toward sustainable growth.

Enhanced competitiveness

Strategically upskilling and reskilling the workforce through VET programs significantly enhances the competitiveness of the tourism sector, both locally and internationally. As tourist destinations worldwide compete to attract travelers, TOURX partner countries benefit from a well-trained workforce that can deliver high-quality, customer-centric experiences, contributing to the sector's reputation and growth.

In countries like **Germany** and **Belgium**, the dual training model, which integrates practical apprenticeships with classroom-based learning, has proven effective in rapidly building critical skills in digital literacy, customer service, and CRM systems. This model allows students to develop applicable skills that meet industry standards, preparing them to make immediate contributions upon entering the workforce. This hands-on approach is particularly beneficial in high-interaction tourism roles where digital and customer engagement skills are essential for providing a seamless guest experience. These skills are further supported by EU initiatives such as the **European Skills Passport**, which enables cross-border skills recognition, facilitating labor mobility and allowing VET-trained professionals to work across EU nations with minimal barriers. This labor mobility is especially valuable in high-tourism regions like Brussels, where demand for multilingual and culturally sensitive staff is crucial to meeting international clientele's needs.

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In regions with high seasonal tourism, such as **Greece** and **Italy**, VET programs have tailored their curricula to focus on skills that enhance adaptability and quality in seasonal roles. By training workers in areas such as adaptable customer service, event management, and digital booking systems, these programs equip employees to handle peak seasons with ease, ensuring that visitors receive consistent, high-quality service. Seasonal workers trained in these adaptable skills help maintain a region's reputation as a reliable and enjoyable destination, strengthening the area's competitiveness in attracting repeat visitors and maximizing revenue during peak periods.

Moreover, countries like **Spain** have implemented specific digital training modules within VET programs to meet the demands of an increasingly online tourism industry. With a strong focus on online marketing and data analytics, Spanish VET programs prepare workers to manage digital customer interactions and online booking platforms. This digital proficiency positions Spanish tourism businesses to reach broader markets, particularly international visitors, and enhances their competitive edge by offering responsive and personalized online customer experiences. This commitment to digital training aligns with the European Union's goals of building a digitally capable workforce, supporting both individual employability and industry-wide competitiveness.

In **Portugal**, the development of practical and adaptable VET pathways has emerged as a significant strategy to address workforce shortages in the tourism sector. Programs supported by the National Agency for Qualification and Vocational Education and Training (ANQEP) offer double certifications, combining secondary education with vocational training. These courses emphasize skills such as hospitality management, digital marketing, and language training, particularly for immigrant workers who make up a growing segment of the workforce. By addressing language barriers and integrating workers into local communities, these programs strengthen Portugal's ability to meet the labor demands of a rapidly expanding tourism sector.

Finally, in **China**, the vocational education system leverages digital platforms and extensive resource libraries to address skills gaps in tourism. With initiatives such as the "Digital Education Strategy Action," the country has built a robust infrastructure, including 1,200 professional resource libraries and thousands of online courses. These efforts focus on cultivating expertise in areas such as digital tourism services, crisis management, and eco-tourism. By integrating technology and innovation into training, China ensures that its workforce is prepared to meet global tourism demands. Additionally, the emphasis on personalized and international services, including multilingual communication and cross-cultural competencies, directly enhances the competitiveness of Chinese tourism destinations.

Sustainability and innovation

Sustainability has become a core pillar in the tourism industry, as travelers increasingly seek eco-conscious destinations and services. Upskilling and reskilling in sustainable practices enable tourism professionals to integrate environmentally responsible practices into their work, supporting both ecological conservation and business sustainability. TOURX partner countries have taken significant steps to incorporate green skills into VET programs, aligning with EU environmental targets and fostering innovation across the tourism sector.

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In **Italy** and **Spain**, VET programs have introduced sustainability-focused training that includes waste management, resource conservation, and environmental impact reduction. This training empowers tourism workers to implement green practices that minimize environmental footprints while enhancing the appeal of their destinations to eco-conscious tourists. Italy, for example, focuses on sustainable practices in regions like Tuscany, where preserving the landscape and promoting sustainable wine tourism are integral to the area's appeal. By training workers in these specialized sustainable practices, Italian VET programs contribute to long-term tourism viability while supporting EU-wide sustainability goals.

Greece has also seen increased integration of green tourism modules in VET programs, especially in regions like the Cyclades, where tourism can strain natural resources. These modules cover eco-tourism, coastal preservation, and sustainable hospitality practices, preparing professionals to manage resources responsibly. This focus on environmental stewardship is particularly crucial in protecting Greece's cultural and natural assets, which are major tourism draws. Sustainable training not only enhances the visitor experience but also positions Greek tourism businesses to benefit from the growing eco-tourism market segment. Meanwhile, **Portugal** has made strides in incorporating sustainability principles into its VET curricula. Programs supported by the National Agency for Qualification and Vocational Education and Training (ANQEP) include modules on energy efficiency and sustainable operations, preparing workers to handle the dual challenges of environmental conservation and high visitor demand in regions like Lisbon and the Algarve.

Supported by the **Green Skills Initiative**, VET programs across TOURX partner countries gain access to EU funding dedicated to green education. This initiative allows institutions to develop curricula that teach renewable energy management, sustainable operations, and low-impact tourism. In **Belgium**, VET programs leverage this funding to collaborate with local tourism boards and eco-focused organizations, building training modules that encourage sustainable practices in urban and rural tourism. As a result, students are well-prepared to contribute to the industry's transition towards a more environmentally friendly model, driving both sustainability and innovation across the sector. Similarly, **Portugal** leverages EU funding to introduce micro-credentials focused on sustainable business management, ensuring that workers are prepared to meet the demands of a rapidly changing industry.

The shift towards digital transformation within tourism further drives innovation. VET programs that integrate technology-based skills, such as data analytics, virtual engagement, and CRM systems, equip workers to implement modern solutions that enhance operational efficiency and reduce costs. In **Germany**, for example, VET curricula include training on digital tools that support eco-friendly operations, such as digital booking platforms and virtual tours. Likewise, **China** has emphasized the use of digital learning platforms to promote sustainable practices in tourism, such as reducing waste through digital booking systems and introducing virtual eco-tourism experiences. These initiatives reflect a global trend where digital transformation and sustainability go hand in hand, offering innovative ways to meet market demands while preserving environmental resources.

Long-term economic benefits

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Upskilling and reskilling in the tourism sector provides substantial long-term economic benefits by enhancing service quality, fostering workforce retention, and stabilizing regional economies. By creating a skilled, adaptable workforce, VET programs contribute to positive visitor experiences, driving repeat visits and long-term revenue generation. This stability is particularly significant for regions that rely heavily on tourism as a primary income source.

For example, in **Spain** and **Italy**, where tourism significantly contributes to the national economy, VET programs that focus on digital customer engagement and sustainable practices contribute to long-term economic resilience. By consistently training employees to meet changing industry demands, these countries foster a workforce that supports high service standards and sustainability. This focus on quality and environmental stewardship helps attract eco-conscious and returning visitors, promoting stable economic growth.

Additionally, VET upskilling initiatives support job retention by offering clear pathways for career advancement, reducing turnover, and enhancing employee job satisfaction. Seasonal workers in high-tourism regions, such as the Balearic Islands in Spain or the Amalfi Coast in Italy, benefit from specialized training that increases their likelihood of returning for future seasons. This workforce stability reduces recruitment and training costs for tourism businesses, supporting regional economies that depend on a reliable tourism workforce.

In **Portugal**, VET programs supported by the ANQEP address both labor market demands and workforce inclusion. Initiatives such as dual certification programs integrate secondary education with vocational training, equipping workers with specialized skills in areas like hospitality and green tourism. These efforts not only contribute to long-term workforce stability but also enhance economic resilience in regions that rely heavily on tourism, such as Lisbon and Porto.

Programs like the **European Social Fund** and **Erasmus+** provide essential funding that strengthens VET programs and supports cross-border collaboration. ESF funding enables tourism-focused VET institutions to enhance their curricula, invest in digital infrastructure, and foster industry partnerships. Erasmus+ extends these benefits by supporting exchanges and partnerships that allow VET institutions to learn from international best practices. This access to additional funding and collaborative opportunities helps VET programs incorporate cutting-edge training methods, such as digital simulations and sustainable management practices, making the tourism sector more resilient to global changes and economic challenges. For example, Chinese vocational training centers collaborating with Erasmus+ programs have shared insights on integrating sustainability and digital innovation into VET, enhancing global perspectives in training methodologies. This cross-border collaboration enriches VET offerings, equipping tourism workers to address complex challenges in a rapidly evolving sector.

In **China**, the integration of digital education platforms with industry-specific VET programs demonstrates the value of innovative approaches in driving economic resilience. Tourism training programs emphasize crisis management, virtual tourism services, and advanced customer engagement techniques, ensuring that the workforce can adapt to technological and market shifts. These initiatives contribute to the sustained growth of China's tourism industry while aligning with international sustainability and digitalization goals.

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By aligning with EU initiatives and sustainability goals, TOURX partner countries like **Germany** and **Belgium** access funding and investment for digital transformation and green projects. These funds allow VET institutions to enhance their programs, supporting a tourism sector that not only meets current standards but also adapts to future demands. This financial alignment strengthens regional economies, supports stable employment, and promotes sustainable growth across the EU's tourism sector.

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10. Conclusion

The TourX project, through Deliverable 3.2.2, has provided a comprehensive analysis of tourism-related VET programs across partner countries, identifying strengths, challenges, and opportunities for strategic enhancement. The insights derived from this study underline the critical role of upskilling and reskilling in meeting the rapidly evolving demands of the tourism industry.

The evolving landscape of tourism highlights the need for well-structured, future-oriented VET systems. Across partner countries, integrating digital, customer-focused, and sustainability skills has become a cornerstone for enhancing workforce readiness and sectoral resilience. This focus reflects broader global trends in digital transformation, eco-consciousness, and an emphasis on service excellence.

The analysis revealed significant variations in the structure and focus of VET programs among TOURX partner countries. This diversity provides unique strengths while also highlighting areas for improvement. For instance, Germany and Belgium's dual training models have proven highly effective in equipping students with immediately applicable skills through close industry collaboration. In contrast, countries like Greece and Spain, which rely more on school-based systems, would benefit from integrating hands-on training opportunities to better align with the operational realities of the tourism sector. Similarly, regions with significant seasonal tourism, such as Italy and Spain, demonstrate the value of adaptive training modules that equip workers to navigate fluctuating demands while maintaining high service standards.

The increasing importance of sustainability in tourism presents an unparalleled opportunity for VET programs to champion green practices. Countries like Italy, Spain, and Greece have made significant strides in incorporating eco-tourism, resource conservation, and sustainable hospitality into their curricula. However, a more universal and coordinated approach is needed to ensure that all partner countries meet rising traveler expectations for sustainable experiences while supporting the broader environmental goals of the European Union.

Digital skills remain a key focus, underpinning modern tourism operations from marketing and customer engagement to operational efficiency. The adoption of technology-based training, as seen in Germany, Spain, and Portugal, underscores the value of equipping workers with competencies in online platforms, data analytics, and virtual tools. These advancements improve customer experiences and contribute to operational sustainability by reducing waste and streamlining processes.

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The economic impact of robust VET systems is far-reaching. By fostering career progression, reducing workforce turnover, and enhancing service quality, these programs provide stability to regional economies that heavily depend on tourism. Countries that integrate micro-credentials and lifelong learning into their VET offerings, such as Portugal, further strengthen their capacity to adapt to emerging trends and maintain workforce competitiveness.

This deliverable provides a series of highly significant findings that reflect the current state of tourism-related VET programs across partner countries. These findings serve as a foundation for subsequent TOURX activities and work packages, ensuring that research and analysis directly contribute to practical applications.

As part of Work Package 3 (WP3), these insights will play a crucial role in shaping the tools and frameworks developed for tourism VET. The next phase, Work Package 4 (WP4), will focus on testing and refining these tools through pilot initiatives, ensuring their effectiveness and alignment with industry needs. This phase will provide valuable feedback for fine-tuning methodologies before wider implementation.

Beyond this, Work Package 5 (WP5) will ensure the long-term impact of TOURX by promoting policy recommendations, strengthening VET excellence, and facilitating the transferability of TourX solutions to new regional and sectoral contexts. This transition from research and development (WP3) to testing (WP4) and ultimately to systemic impact and policy implementation (WP5) reflects the project's commitment to fostering sustainable, adaptable, and innovative VET frameworks.

In conclusion, the integration of forward-thinking VET strategies across partner countries is pivotal for the tourism sector to thrive in a competitive and rapidly evolving global environment. By focusing on adaptability, collaboration, and innovation, VET programs can ensure a skilled, sustainable, and resilient workforce. Overall, these integrated strategies are essential for adapting to evolving tourism demands and securing long-term industry competitiveness and sustainable growth.

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Appendix A

	Languages	Soft skills	Green skills	Digital skills	Future trends	Sector dynamics	Graduate tracking education	Training in Tourism	Course content	Funding system	Inclusion and accessibility
Germany		Need to be highly stressed as personal contact is fading away due to digitalization	Sustainable tourism that can aid reduce resource consumption	Crucial aspect to be considered in the modern tourism sector	Focus on sustainable tourism and digitalization to reduce resource consumption		The creation of a digital platform where students can share career progress		Introduce of sustainable tourism management to address the demand for eco-friendly travel	The state should be able to release funds to support SMEs	
Belgium			Sustainability is emerging, so there is a need to develop green skills	Digital skills are crucial				Collaboration with regional tourism associations and other schools in Europe is crucial for offering valuable experiences			
Greece	Foreign language proficiency is essential	Teamwork, communication, time management, problem-solving, and flexibility are crucial	A growing priority	Essential to enhance efficiency, sustainability, and customer engagement	AI-driven customer service, smart tourism solutions, eco-conscious travel and immersive technologies		Digital platform to track employment trends, skills development, and career progress	Training should be free for employees, flexible, and aligned with industry needs	Should integrate soft, digital and green skills with practical knowledge	Business struggle to invest in staff training due to seasonality	
Italy	Emphasis on English and German language skills	An essential competence	Environmental pratices should be adopted (circular cooking, reusable crockery and cutlery, collective shuttles for	An essential competence	Digital marketing, reception, check-in and facilities management	Job shortages and seasonality create instability		Training in tourism is crucial, but the shortage of jobs and seasonality makes it unappealing for new students	Must complement professional career with marketing, promotion, and management skills...	Insufficient funding	Important to be inclusive with the variety of social backgrounds and ensure accessibility for disabled tourists

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			guest transport, etc.)								
Spain	Important for industry professionals	Necessary for excellent service		Crucial for sustainable tourism	Mastery of AI, data analytics, and emerging technologies			Training programs should focus on sustainability customer service, and technology		Government collaborates with businesses for work-based learning. Funding remains insufficient	
China	Increasingly important	Crucial to thrive: communication, teamwork and adaptability	Linked to technological advancements in the sector	Help businesses create more competitive products	Green, low-cabron tourism, customized services, and AI-driven digital transformation	Staying informed about industry trends is essential		Important for building experience and broadening perspectives	Essential to integrate advanced concepts and case studies from domestic and international contexts		
Portugal	Strong demand for German and, particularly French	Important for professionalism	In early development, but new generations are motivated and aware of sustainability	Need to adapt to the advances of the industry	Sustainability is an increasing priority	Personal interaction remains key, but virtual check-ins will rise in the next five years		It should keep up with the industry trends	Needs a more practical approach	Budget constraints persist	

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