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D2.2 Competence Centre Support Scheme Report

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List of Acronyms

Abbreviation / acronym	Description
CC	European Competence Centre
DG Grow	Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs
DMOs	Destination Management Organisation
EC	European Commission
ERRIN	European Regions Research & Innovation Network
ETC	European Travel Commission
ETOA	European Tourism Association
JRC	Joint Research Centre
LAU	Local Administrative Unit
NSO	National Statistical Office
NTO	National Tourism Office
NUTS	Nomenclature of Territorial Units for Statistics
SF-MST	Statistical Framework for Measuring the Sustainability of Tourism
STR	Short Term Rental
Т	Task
WP	Work Package

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Executive Summary

This deliverable is part of Work Package (WP) 2 of the D3HUB project, with the goal to provide a detailed account of the type of services and information flows that are foreseen within the first pilot phase of the Competence Centre (CC). Since the main objective of the D3HUB project entails the design and testing of a self-sustainable European Competence Centre to support tourism destinations and their ecosystem in their data-driven green and digital transition as well as to increase collaboration and knowledge transfer, the cornerstone of the CC are the services provided to European tourism destinations to support these transitions.

The support scheme described in this report is shaped by the envisioned role of a European CC within the existing tourism ecosystem and informed by insights from Destination Management Organisations (DMOs) and SMEs gathered via the surveys that were organised by the D3HUB consortium as part of WP2, and which were documented in D2.1.

The support scheme is structured around three key dimensions:

- i. Stages of competence building: from identifying destination challenges and data needs to applying insights and developing action plans;
- ii. Training approaches: including expert-led webinars, one-on-one mentoring, peer-to-peer learning, and the use of digital tools;
- iii. Training topics: organised into cluster-specific themes and cross-cutting areas relevant to all destinations.

Support is provided across the full competence-building journey: guiding destinations in formulating data-related challenges, identifying suitable data and tools, offering technical expertise for data analysis and generation of insights, and supporting evidence-based strategy development and action plans for a data-driven management approach.

A variety of training formats are offered. Group-based expert webinars deliver thematic and methodological insights, while one-on-one mentoring connects DMOs with internal or allied experts for tailored support. Peer-to-peer learning encourages the exchange of best practices through live discussions or shared resources on the CC's digital platform. Additionally, the CC provides an open-source dashboard to support data-informed decision-making.

Training topics fall into two categories. The cluster-specific themes align with D3HUB's four research pillars: managing the balance between residents and visitors, redistributing tourism flows in space and time, climate change mitigation and adaptation, and supporting emerging destinations to attract quality and sustainable tourism. Within each of these research areas, a number of subtopics are identified as part of the one-year work plan with the clusters, namely:

- Managing the balance between residents and visitors: (1) Analysing the effects of Short Term Rentals, (2) Measuring and monitoring resident perceptions, (3) Forecasting, (4) Carrying capacity of destination resources and communities;
- ii. Redistributing tourism flows in space and time: (1) Approaches for monitoring and measuring local and temporal visitor flows, (2) General metrics and indicators on sustainability and spatial concentration, (3) Interventions in visitor flow management, (4) Forecasting of visitor flows;
- iii. Climate change mitigation and adaptation: (1) Methods and measurement of emissions, (2) Actions to promote positive change in decarbonisation or adaptation, (3) Destination governance and connecting tourism adaptation to a broader destination agenda;
- iv. Supporting emerging destinations to attract quality and sustainable tourism: (1) Destination sustainability and resilience, (2) Branding and promotion of destinations through smart specialisation, (3) Future-proofing a destination through reskilling, upskilling, and local ownership.

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The cross-cutting topics – monitoring sustainability and resilience, and establishing public-private data sharing protocols and standards – address needs common to all DMOs. These are key to aligning with broader European initiatives, including the Common European Data Space for Tourism.

As the scheme is currently in use across 40 pilot destinations, it reflects the current implementation stage. A formal evaluation will follow the pilot phase to assess its effectiveness and relevance. The support scheme therefore remains adaptable, as flexibility and responsiveness to emerging needs are essential for any competence centre seeking to maintain impact and relevance in a fast-evolving landscape.

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1 Introduction

1.1 Purpose of the document

The main objective of the D3HUB project is to design, test, pave the way and sustain a self-sustainable European Competence Centre to support tourism destinations and their ecosystem in their data-driven green and digital transition as well as to increase collaboration and knowledge transfer between tourism stakeholders and tourism destinations. The core of the Competence Centre (CC) therefore consists of service provision to European tourism destinations within the framework of green and digital transitions. As part of Work Package (WP) 2 of the D3HUB project, this deliverable provides a detailed account on the type of services and information flows that are foreseen – and tested in the destination pilots – within the first phase of the CC.

The deliverable builds on previous tasks conducted in the project, specifically T2.1 – which conducted a baseline analysis of policy frameworks, monitoring policies, and initiatives for policy indicators – and T2.2 – which surveyed the information needs existing within European DMOs and SMEs through both a literature review, workshops, and a general survey (see also D2.1 of D3HUB). Furthermore, the deliverable borrows parts from WP3, T3.2 – on a methodology for measuring tourism sustainability – T3.3 – on establishing a common data approach for promoting public-private data sharing agreements and guidelines for standardisation – and T3.4 – on developing digital solutions, data visualisation and technical developments for data use and data sharing via an open standard dashboard. Finally, the support scheme dovetails with WP4, T4.3 and T4.4 on the pilot testing and validation, since these will serve as the testing grounds for the support scheme, both adopting the established methodological toolkit and providing validation feedback to tweak and optimise the service portfolio after the end of the pilot phase.

This deliverable outlines the rationale behind the support scheme services selected in this first phase and the specific mechanisms used to test these services in the pilots. By detailing these aspects, the document aims to illustrate how the services align with the overarching goals of the D3HUB initiative and the needs of European destinations, providing a basis for the CC business strategy.

1.2 Structure of the document

Following this introductory section, Section 2 discusses the preliminary identification of destination needs and preferences, as well as an evaluation of some of the existing initiatives in order to be able to position the D3HUB CC within the existing European tourism ecosystem.

Section 3 presents the main topic of the deliverable and introduces the D3HUB CC support scheme for European DMOs from the point of view of capacity building objectives, contents provided, and training approaches offered.

Section 4 highlights how the current service portfolio is adopted within the D3HUB pilot phase of WP4, which serves as a testbed for the operationalisation of the CC and will provide valuable feedback on the relevance of current services, potential implementation gaps, and suggested future improvements, providing a robust plan for future developments and potential expansion of services at a later phase.

Finally, Section 5 offers a conclusion of the report and outlines further steps to be taken with regard to the service portfolio within the timeline of the D3HUB project.

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2 Identification of destination needs and preferences

2.1 User needs assessment of DMOs and SMEs

T2.2 and the reported results in D2.1 had the objective to collect information on data requirements of European DMOs, as well as the required expert support for the implementation phase. The task combined a baseline analysis of existing studies and projects with the empirical results from an original EU-wide survey and D3HUB workshops, all of which are documented in D2.1 of the D3HUB project. In this section we briefly summarise and interpret the most relevant results of the survey and workshops, offering a basis for designing the support scheme. For a full overview of the needs assessment, interested readers are referred to D2.1.

2.1.1 Summary of D3HUB survey

The D3HUB survey on the information needs of DMOs and SMEs collected 226 responses across all EU27 countries, 56% of which identified as a Destination Management Organization (DMO) at local, regional, state/national or supranational level, and 44% as other stakeholders in the tourism system. The destination landscapes covered all types of landscapes, with a majority being identified as a urban-rural mix (38%), followed by rural nature (23%), city (18%), coastal (16%), and mountain (5%).

As indicated in Figure 1, about half of surveyed DMOs considered themselves to be ahead of other organisations when it came to skills and expertise in the context of data-driven, smart destinations. A comparatively larger amount of DMOs at regional and local level indicated being behind other organisations and thus potentially needing additional support. Since most survey respondents came from the project partners' networks, and the voluntary nature of the survey likely already includes a self-selection bias, we can expect that the participating organisations already had a higher than average interest in smart, data-driven tourism destination management, thus potentially implying that the wider EU tourism ecosystem still has a more significant need for skills and expertise.

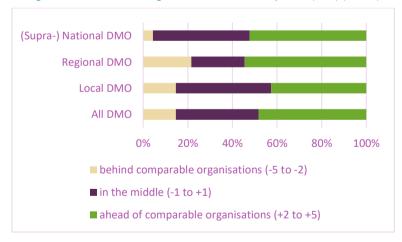


Figure 1: Assessment of organisation's skills and expertise (in %) (n=127)

Further survey questions assessed where support was needed the most, distinguishing between:

- Data & statistics: the access to raw data or aggregated statistics.
- **Tools**: access to software tools and platforms needed to analyse or visualise data and statistics.
- **Expertise**: the availability of human resources to professionally handle tools and data/statistics, including legal aspects.
- **Insights**: the ability of the organisation to generate knowledge and insights from data and statistics so that the right steps can follow.

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• **Action**: the ability of the organisation to actually put insights into action and implement adequate measures.

Figure 2 outlines the areas where DMOs appear to need most support. Interestingly, there seems little difference across the different steps of data-driven, smart destination management. DMOs indicate the highest need for support in 'Tools' and 'Action', i.e. in accessing software tools and platforms to analyse and visualise data, and in implementation of insights into actions and destination measures. Notwithstanding, 19% of DMOs indicate that they need very much support (score of 5) in all five steps, while 41% of DMOs need much support (score 4 or 5) in all five steps. Therefore, not only the DMOs who see themselves as being behind others in their skills and expertise require support and competence-building, and competences are largely sought across all five steps of data-driven destination development.

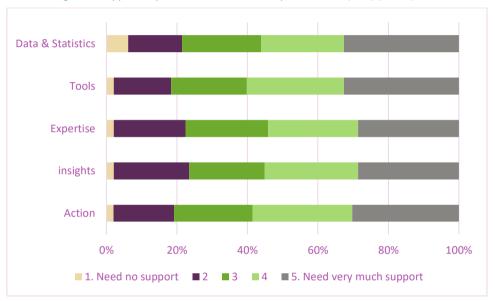


Figure 2: Support required across different steps and needs (in %) (n=127)

Acknowledging a potential need for competence building, the question then turns to the support formats that are preferred. Figure 3 provides important information for the service portfolio and indicates that, from the perspective of participating DMOs, all types of support format score high, with only in-person seminars somewhere in Europe and written tutorial being scored comparatively less favourably. There is a strong interest in online group-based formats, be it through interactive digital courses, online webinars, or video tutorials, as well as dashboards. Most of all, though, participants are interested in learning from best practices, which can, by themselves, be presented through multiple means.

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Figure 3: Rating of different support formats by DMOs (mean scores) (n=127)

A final question of the survey relevant to the support scheme is the question on content that the competence centre should ideally offer. As compared to Figure 3, the ratings offered to different proposed topics is more varied. Again, learning from best practices tops the list (65%), while also cataloguing of data, statistics and tools is seen as helpful by a majority of DMOs (58%), as well as support in measuring destination sustainability (57%). Three other aspects strongly relate to data sharing, namely the design and implementation of destination-wide data dashboards (54%), making use of the European Data Space for Tourism, and supporting the use of APIs for accessing open data (52%). Support in the statistical analysis of data is still found relevant by about half of the DMOs (50%) but all other proposed services score below 50% of agreement.

Table 1: Type of offer wanted by DMOs (in %) (n=127)

Type of Offer	N	%
Learning from best practices	82	65%
A catalogue of data, statistics and tools and their costs	74	58%
Support on how to measure the sustainability performance of destinations	73	57%
Support on how to design and implement destination-wide data dashboards	69	54%
Support on how to make use of the European Data Space for Tourism and other data spaces	69	54%
Collection of hands-on examples with success factors for smart tourism destinations	68	54%
Support on how to access open data using APIs	66	52%
Support on the statistical analysis of data	63	50%
Support on how to implement an action plan based upon the available data	61	48%
A talent map showing colleagues of DMOs who are experts in a specific field	55	43%
Support on legal aspects of data-driven destination management, in particular data	54	43%
Support on how to measure the performance of online advertising and social media activities	46	36%
Statistical data from accommodation statistics broken down by NUTS3 units	44	35%
Support on how to implement VR/AR technologies in tourism	39	31%
An overview of digital payment services for tourism destinations	36	28%

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2.1.2 Summary of D3HUB expert workshops

Supplementing the stakeholder surveys, two workshops were organised in order to allow for more indepth discussions to generate an understanding about the perspectives towards a future European CC, targeting European DMOs. Through a combination of a series of binary statements and a subsequent discussion in break-out groups, sentiments were collected on the needs of becoming a smarter and more data-driven destination, the existing data/expertise needs, and the preferred type of capacity-building activities.

Broadly speaking, the majority of participants did not perceive themselves as already being 'smart' and data-driven, with a recognised need for improvements. While both data and expertise were considered crucial, there was a general view that much data was already available for destinations, but expertise to adequately convert this data into actionable insights and initiatives was missing. Expertise was thus generally preferred over data, specifically in terms of (i) data analysis to support and sustain destination development strategies, (ii) data management and sharing on local level, (iii) providing an overview and understanding of available datasets, and (iv) the potential value of networks when negotiating with commercial data providers. Throughout, the value of learning from other destinations was highlighted.

The potential for a European CC was supported and its added value was linked to the creation of a community for exchanging experiences and good examples, particularly providing an overview of various European tourism initiatives and the development of interventions strategies based on data. This role as a network could be fulfilled by both on-site or in-person workshop formats and should be complementary to already existing regional, national and international initiatives. An important challenge – which has also been integrated in the selection process of the D3HUB pilots – that was mentioned by participants was the difference in data proficiency of DMOs, as well as the international comparability – or sometimes lack thereof – of data.

2.2 Evaluation of existing initiatives

The EU CC does not exist in a vacuum and needs to be situated within a diverse European ecosystem of DMOs, public and private data providers, regional, national and international network organisations, and a wide range of research agencies, consultancy and academia. As to not create a duplication of services, but instead support internal synergies, it is important to identify existing initiatives and position the CC's support services accordingly. The aim of the CC and its support scheme is not to supplant the current relationships but to strengthen and upgrade existing connections, with the exact positioning of the CC being an aspect of the business model that is to be developed.

As visualised in Figure 4, destinations are a key aspect of the tourism ecosystem and can take on multiple scopes: municipalities/cities, economic or tourist regions, provinces, counties, or countries. DMOs exist at different governance levels, with local, municipal DMOs at the level of Local Administrative Units (LAUs) being integrated in cooperative frameworks at more regional and national levels. Given the spatial dependency of tourism, tourism benefits and impacts are often most relevant at very local level. This originates a need for data, knowledge, and planning at lower scale. As shown by the pathways in Figure 4, destinations can collect data from both public (e.g., national statistical authorities, Eurostat, other governmental administrations), and private (e.g., mobile phone operators, credit card companies, booking platforms) providers. In order to visualise, interpret, and share data, destinations often adopt dashboards and similar data platforms, either developed internally within the DMO, or made available via commercial licences or free to use (e.g., EU Tourism Dashboard, TourMIS). These data platforms often ingest data that is provided by DMOs themselves, or that is publicly available from other data providers – potentially after some data conversions and calculations. Finally, destinations face many research questions that cannot be solved by readily available public or private data. Apart from internal research, DMOs therefore often resort to a tender process, whereby a study

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is granted to a research agency or consortium, with many consultancy firms operating within the sphere of tourism-related research. The outcome of such research projects might come in the form of a research report, new data, and/or a new methodological development that can further inform destination planning.

Crucially, since many European tourism destinations share somewhat similar challenges, as well as the potential of synergies in use of resources for marketing, management and data collection, networks between various destinations form an important part of the EU tourism ecosystem. These networks exist at regional, national and international level and can serve to share best practices, provide training activities, establish a common research agenda, conduct/outsource relevant research, and supply data, dashboards and other tools to member destinations for data visualization and benchmarking.

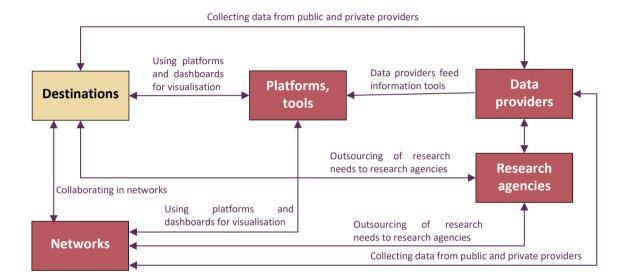


Figure 4: Schematic overview of tourism data ecosystem

Below we first continue the discussion on existing service providers in the DMO landscape, after which we outline the positioning of D3HUB within these existing networks.

2.2.1 Data providers

Data providers are at the core of supporting data-driven destination management and can consist of public authorities or private entities. A first important source of relevant destination data is data provided by national statistical authorities, or national statistical offices (NSO). These are governmental agencies that are responsible for collecting, analysing, and disseminating statistical data about a country, playing a crucial role in providing official statistics for a variety of sectors. NSOs also establish and maintain statistical standards and methodologies to ensure quality and comparability of data. Within the European Union, there is a close liaison between the different member state NSOs, and Eurostat which collects and processes data from the member states, ensuring consistency and comparability. While the majority of data are provided to Eurostat through the individual NSOs, and made available at NUTS1, and if possible NUTS2, NUTS3, or even LAU level, Eurostat also produces experimental statistics using new data sources and methods. A relevant example for tourism are the statistics on collaborative economy platforms (e.g., Airbnb, Booking.com), whereby the collaborative platforms share the data with Eurostat which then acts as a central hub to the NSOs.

Another relevant authority with regard to tourism data is UN Tourism which systematically collects tourism statistic from countries and territories in order to provide a comprehensive repository and benchmarking of statistical information related to the tourism sector. Similar to Eurostat, UN Tourism

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relies on the participation of member states, via a series of yearly questionnaires in line with the International Recommendations for Tourism Statistics, to collect and disperse data. As such they are not the original data owner or producer.

The World Travel and Tourism Council (WTTC) is a non-profit membership-based organisation, representing the travel and tourism private sector. Their research and data focus is on measuring the size and growth of the tourism industry and its contribution to economies, employment and society, and its environmental impact, in collaboration with Oxford Economics. The WTTC is therefore not a pure data provider but can equally be considered a network, as well as a research organisation.

Finally, the landscape of data providers also includes a large number of private entities, offering a varied range of commercial data useful for tourism destination management, such as visitor payments via credit cards, mobile phones and app use for locational data and visitor flows, data on airline bookings, information from property management systems, and so forth. Such data are most often available under commercial licence and can be purchased from different entities.

2.2.2 National and international networks

Given the variety of national and regional networks, this paragraph focuses solely on the most relevant cross-European networks.

The European Travel Commission (ETC) is a non-profit organisation representing the national tourism organisations (NTOs) of Europe, with 36 member boards cooperating through sharing best practices, generating market intelligence, fostering knowledge exchange, and collaborating in shared promotion. ETC supports members' information needs through a research portfolio that encompasses the monitoring of consumer and destination trends, conducting benchmarking studies – e.g., the NTO budget study, the collection of data on sustainability indicators – developing strategic guidelines on sustainability, and forecasting. The research agenda is steered by the Market Intelligence Committee, comprising of the research directors of the ETC members, ensuring that the research programme fits the needs of NTOs, as well as Europe as a whole. Research is both conducted in-house and through procurement of studies with international research agencies. Insights are shared via publications, videos, dashboards, webinars, and events, the latter often in collaboration with other partners such as UN Tourism, and Modul University (in particular in adopting the TourMIS dashboard).

While ETC operates at the level of European NTOs, City Destination Alliance (CityDNA) are a knowledge sharing alliance for European cities and urban regions. The knowledge groups are a cornerstone of the alliance, driven internally by members with the aim to share inspiration, best practices, and propose and produce joint projects. For 2025 the website of CityDNA highlights seven knowledge groups, all with a clear action plan, as outlined in Table 2.

Knowledge Action plan 2025 **Purpose** Groups Support DMOs in the development of city cards, City Cards Benchmarking survey aiming through strengthening a city card Expert meeting community and enhanced benchmarking, facilitated • Establishing strategy for beginners by surveys, meetings, and shared learnings. • Using AI in City Cards • Webinars and conversations **CVB** Positioning the meeting industry as a key • CVB Cafés linked to international meetings component of international economies and helping Discussion takeaways to shape future convention bureaus through best • CityDNA Summer School practices to strengthen a sustainable visitor economy, benefitting business clusters, academic, scientific and cultural communities. Marketing Contribute to the process to create awareness of • Webinars and learning sessions Communication positive aspects of tourism and the visitor economy • Study on digital marketing (with R&I)

Table 2: CityDNA Knowledge Groups and Action Plans (2025)

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	and support management strategies for online and offline channels.	Decentralisation communication kit and best practices.				
Research & Insights	Coordination of research activities within the CityDNA network, collaborating to initiative and exchange knowledge on market research, commission new research, and prepare and release reports.	 City tourism monitoring Sentiment, Short-term rentals, bookings, air traffic, residents' attitude Academic insights newsletter TourMIS workshop and international seminar 				
Sustainability	Supporting DMOs in accelerating the development and management of regenerative urban tourism destinations.	 Sustainability strategy for CityDNA Climate action project Study on sustainability KPIs with R&I Sustainability survey Sharing insights and best practices Target group webinars 				
Trend Room	Developing an in-house trend watching hub to discuss the future of the visitor economy, the resilience of cities, integrated place making and place branding, consumer behaviour, urban development and urban planning.	Scenario workshop Whitepaper on the lack of resources in destinations Digital trend talks				
Visitor experience	Share knowledge and know-how, research and insights with the objective to maximise the impact of visitor information services.	 Tourism Information Centres survey Tourism Information Centres clustering Visitor experience expert meeting Zoom conversations 				

As a third important network of European tourism destinations, the Network of European Regions for Competitive and Sustainable Tourism (NECSTouR) is a non-profit membership network operation at the level of European regions. In 2025, the network consisted of 49 regional authorities (NUTS1 and NUTS2 level), as well as 38 academic organisations, sustainable business associations and network, representing 22 European countries. The main aim of the organisation is to empower destinations through connecting local governance levels with the EU level, available financial instruments, academic organisations, and the private sector, through networking and capacity building. A central instrument in membership empowerment is the organisation's knowledge hub, consisting of three content providers: the Tourism of Tomorrow Lab, the Climate Hub, and the Governance Hub. The Tourism of Tomorrow Lab operates following a freemium model whereby all members have free access to key learnings and good practices while premium member destinations help set the research agenda and receive more bespoke coaching by a specialised team of tourism data analysts. The Climate Hub serves as a platform for knowledge sharing with expert-led training, selected best practices, guidelines on climate action plans, and tools and methodologies. Finally, the Governance Hub provides a space to benchmark and discuss destination challenges and solutions, primarily on topics of unbalanced tourism, conscious marketing, and political engagement.

The European Regions Research & Innovation Network (ERRIN) is somewhat similar to NECSTOUR in that it is aimed towards regional and local organisations, with the objective to assist in developing local innovation ecosystems and enhance research and innovation capacities. The organisation offers a platform for knowledge exchange and facilitates regional collaborations by supporting its approximately 120 network partners through the project development process and providing project opportunities. Thematically, similarly to CityDNA, ERRIN is organised around a number of Working Groups and Task Forces, covering thematic areas and overarching policy issues based on the network members' priorities and existing funding opportunities. Unlike NECSTOUR, ERRIN does not focus specifically on tourism as a strategic topic, however, there are some overlaps, particularly in the Working Groups on Smart Specialisation, Transport, and Cultural Heritage and Tourism. The latter Working Group supports members in the uptake of digital technologies and the development of skills

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and competencies, while facilitating the exchanges of good practices, particularly related to measures to mitigate tourist flows' environmental and social impacts, and encourage the transition towards sustainable cultural and tourism policies and practices.

The European Tourism Association (ETOA) is a member-driven trade association, primarily representing industry partners – from global brands to independent small businesses. While the primary focus is on trade representation of suppliers and tour operators, within its +1,100 member network, there is also a significant representation of over 120 DMOs from national, regional and city destinations in Europe. As such, the network supports public-private dialogue for better destination management through in-person and online networking opportunities, information on operational and regulatory situations and changes, and insights, webinars and research. The latter relating to providing information on demand trends and sentiments, operational perspectives and the values of tourism from a business perspective.

2.2.3 Research agencies and consultancy

In this paragraph, only a cursory overview is provided, since the landscape of research agencies and consultancy services is widespread and diverse, including large international consultancy companies, as well as local research institutes. Furthermore, universities and university companies can include research groups and individual researchers offering services to tourism destinations. Research agencies can operate individually or collaborate in temporary consortia, established with the aim to tackle a particular research question for a limited project duration.

A general characteristic of research agencies and consultants is that they do not tend to produce data ex ante but rather react on a call for tenders, issued by a government or organisation, inviting potential contractors to submit an offer to solve a particular identified research need. The type of services offered, and results received, can therefore vary and often does not lead to a continuous longitudinal data source, but rather culminates in a better understanding of a current state and potential contextual and causal effects.

2.2.4 Platforms, tools

Dashboards, data platforms and visualisation tools are widely used by European DMOs at various levels, with most NTOs operating their own sustainable destination dashboards. Apart from these individual initiatives, a few international efforts are noteworthy in their approach towards standardisation and benchmarking of tourism-related data.

The EU Tourism Dashboard¹, developed and maintained by the Joint Research Centre (JRC) and the Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW), offers a range of data and indicator visualisations that are considered relevant for the European tourism ecosystem and cover indicators for the green, digital, and socio-economic pillar, selected to promote and monitor the green and digital transition and support evidence-based destination policies and development strategies. Indicators are collected and harmonised from trusted sources at the highest possible territorial granularity which, depending on countries, regions, and indicators, can be NUTS1, NUTS2, or NUTS3.

The UN Tourism Data Dashboard² provides statistics and insights for inbound and outbound tourism globally, per world region and per country, with data covering tourist arrivals and overnights, tourist share of exports, contribution to GDP, source markets, seasonality, and accommodation capacity. While the dashboard offers reliable data for benchmarking, given the relative lack of granularity and the limitations in data available on socio-economic and environmental dimensions, its potential to support data-driven green and digital transition management is somewhat limited.

² https://www.unwto.org/tourism-data/un-tourism-tourism-dashboard

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¹ https://tourism-dashboard.ec.europa.eu/?lng=en&ctx=tourism

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3 Support scheme

This chapter provides a concise overview of the philosophy and proposed competence-building activities of the first phase of the European CC, both in terms of delivery methods/approach and in terms of topics. These activities are currently being tested and integrated in the D3HUB pilot phase (as will be discussed in Chapter 4).

3.1 Support at different stages of competence building

The CC support scheme is built around three levels of services, outlined in Table 3. The Established standards/Basic indicators assist in outlining more general datasets, collecting available data on European level, suggesting a methodology for mapping and monitoring sustainability and resilience, and providing an open source dashboard. These elements are freely accessible without deeper engagement with the CC and provide destinations with general guidelines. The R&D/Development Lab provides a more concentrated and focused engagement with individual destinations to assist in developing tailored approaches – in collaboration with external experts that are selected by the CC for their service quality. Finally, the provision of standards can operate at both a more general, informative level and at an individual level – when needing support in API development – and are focused on data sharing and data integration.

Table 3: Three levels of the service portfolio

Service level	Content
Established standards / Basic indicators	 Mapping/overview of relevant datasets for a destination Collecting indicators measured across regions based on available data Covering methodology to map and monitor sustainability and resilience Providing an open source dashboard to generate common knowledge
R&D / Development Lab	 Identifying good practices through peer-learning and documentation Collecting existing best practices and potentially develop new tools and methods (in collaboration with external experts) to answer unmet needs
Provision of standards	 Outlining standardised data sharing approaches and integration within existing dashboards Supporting the use of APIs and potential linkages with European Data Space for Tourism

Particularly within the second service level, in the R&D/Development Lab, the D3HUB CC aims to support destinations across the data analytics chain. Figure 5 summarily outlines the different aspects that are needed to support sustainable data-driven destination management, reflecting the flow from Data to Insights and ultimately Action.

1. Understanding needs: Prior to any data collection or insights generation, it is essential to properly understand existing needs and current challenges. Without a proper ex ante definition of objectives and research needs, data collection might be inefficient or ineffective and ultimately not generate actionable insights. The CC can support the framing of needs, through destination challenges, identification of research objectives, and drafting of research action plans both holistically and individually. Holistically, common destination challenges and needs can be identified through trend research, surveys, and workshops. This approach was exemplified in D3HUB through the international survey (see D3HUB D2.1 and Chapter 1 of this deliverable), and the D3HUB stakeholder poll on destination challenges (as described in

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D3HUB D4.1). These common destination challenges help to inspire a general topical research agenda (further discussed under 3.3). Individually, the CC helps to identify specific needs for individual DMOs through one-on-one intake interviews which serve to highlight the specific contexts of a destination and allow to finetune further capacity-building approaches. Within the D3HUB pilot phase, such individual approach was highlighted by the one-on-one interview sessions that were conducted with each of the participating pilot destinations, prior to the start of the pilot programme.

- 2. Data & Statistics: After defining a clear research scope through the destination needs and challenges, support is provided in identifying potential data sources and statistics. This can be in the form of outlining external data providers, and the costs and benefits of different data sources, but can also relate to support in the methodological collection of primary data (e.g., through surveys, web scraping tools). Within the D3HUB pilot phase, discussions on potential data sources are a central element of the peer-learning webinar activities, both through shared experiences and via the invitation of external experts and data owners.
- 3. Tools: Linked to the previous point, apart from identifying (raw) data sources, another crucial element of data-driven management is the use of tools both for data collection and for cleaning and transforming data into visualisations and insights. Therefore, the CC supports destinations in finding the right tools for their analytical needs, via shared peer-to-peer experiences, and expert insights. For instance, when discussing visitor flow analysis, various methods can be suggested to collect data on visitor numbers (e.g., LiDAR, pressure plates, mobile phone data).
- 4. **Expertise:** Expertise builds on Data & Statistics and Tools, and offers expert guidance in not just identifying what sorts of data, statistics and tools are available, but also in how these data can be collected, statistics can be calculated, and tools can be implemented from the point of view of specific destination needs. Furthering the previous example, through understanding of local destination realities, suggestions on the most appropriate measurement tools for visitor flow analysis can be made, supported by experts from D3HUB, or external consultants.
- 5. **Insights:** This step crucially transforms data into insights by overlaying data with context, correlation, causality, and comparisons. For instance, when analysing Short-Term Rentals in a destination, data & statistics relate to finding the information on accommodations and tourism bed nights from data providers, giving general data on quantities. Insights would then relate these quantities to spatial dispersion, gentrification/touristification, housing prices, etc. and identify potential effects of policy interventions. The CC assists in providing these insights through peer-learning, expert webinars, and hands-on coding examples.
- 6. **Action:** In order to be truly data-driven in its transition, a destination needs to leverage data and insights into strategic and operational actions. Within the context of data collection and interpretation, sufficient attention will also be paid on how knowledge is leveraged into new destination strategies and policies. Furthermore, the European CC foresees support for destinations in developing tangible action plans to ensure longevity and sustainability of the data-driven approach.

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Data **Statistics** Expertise Insights Understand-Action ing needs **Tools** (3) Which data and (4) How can data be (1) What are the (5) How can data are most transformed into tools challenges a he used for insights on drivers, appropriate destination is dealing destination (2) Which data can specific needs and causality, effects, management with? help solve these etc.? challenges? purposes and be challenges? Which shared across the tools can help to tourism collect and visualize ecosystem? data?

Figure 5: Providing services across spectrum of data-driven management

While Figure 5 provides a full overview of a data-driven destination management approach from conception to result, following the entire spectrum of services could be time-consuming and requiring a more significant investment of time and resources by both the CC and the participating DMO. It is recognised that not all prospective DMOs within the scope of the CC would require such complete level of services and there could also be an interest in providing a subset of these services that follow an easier implementation trajectory at a lower threshold.

3.2 Training approaches

In order for the training approach to lead to successful competence-building, a grounded pedagogical approach to training is important. Kolb (1984) proposed an experiential model of learning that still underpins much of the work of modern adult training providers. In his seminal publication, Kolb identifies four crucial aspects of an experiential learning cycle: (i) Concrete experience: engaging in an activity or experience; (ii) Reflective observation: reflecting on the activity or experience; (iii) Abstract conceptualisation: gaining knowledge or skills from the experience; (iv) Active experimentation: trying out and testing new skills and abilities. According to this sequence, experiences form the basis of observations and the reflections on these experiences encourage learning. New experiences become assimilated into prior knowledge, providing a new conceptual map. Through practicing new skills, they then become fully internalised. In practical training terms, capacity building can therefore be facilitated when the course content links to existing experiences of destinations, encourages reflection through comparative analysis, and assist the formation of new concepts via the provision of additional expertise and best practice learning, with successful approaches being supported via hands-on experimentation. The necessity to link learnings with background knowledge and existing conceptual maps is followed in the D3HUB CC through topic identification and workshop planning built on oneon-one intake interviews, and allowing for peer-learning mechanisms.

The setup of the training approach further follows three evolutions in educational paradigms: (i) Digital learning; (ii) Collaborative learning; and (iii) Self-determined learning. First of all, thanks to advances in information technology, teaching software, and global connectivity, learning has become increasingly place and time independent, giving rise to digital, non-linear learning opportunities. Secondly, collaborative learning practices have shown that retention of materials and depth of understanding is strengthened through collaborative, social processes. Finally, in self-determined learning models, participants are empowered to take control of their learning, with a focus on helping participants to set goals, plan actions, monitor progress, and adjust strategies as needed (Wehmeyer et al., 2000).

Various personal and non-personal approaches are offered to support DMOs in their data-related knowledge needs, whereby non-personal online approaches offer the advantage of significantly

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increasing the potential reach and limiting travel expenses – as well as associated travel emissions. Furthermore, from the survey conducted as part of Task 2.2 it was concluded that a majority of respondents are comfortable with online learning opportunities (see also Figure 3). Therefore, the service portfolio maximally adopts these online options through the various stages of capacity building, while adopting collaborative learning practices, learning-by-doing, and self-determined learning by offering one-on-one mentoring in co-developing action plans related to specific individual research goals. The D3HUB CC training approach can be grouped into five types: (i) webinars, (ii) peer-to-peer learning activities and collaborative platform, (iii) one-on-one mentoring and consultation, (iv) digital solutions, and (v) documentation of best practices.

3.2.1 Expert webinars on topics, data and/or methodologies

Webinars are developed around particular topics, data sources, and/or methodologies, combining best practices with novel tools and methods for data collection and interpretation. In the first phase of the CC, four priority topics are selected (see 3.3 for more information): (i) managing the balance between visitors and residents, (ii) redistributing visitor flows in space and time, (iii) climate change mitigation and adaptation, and (iv) supporting emerging destinations to attract quality and sustainable tourism. These virtual sessions invite academic and industry experts and practitioners to share their insights, providing a rich learning experience that bridges theoretical knowledge with practical applications. The online format offers a flexible and accessible way to engage participants from diverse geographical locations, making them ideal for capacity-building initiatives and general introductions to novel topics and methodologies. The webinars foster interactive discussions through Q&A sessions with the experts, encouraging active participation and discussion.

The expert webinars proposed by the CC can take two general forms:

- i. Lecture formats whereby an academic or industry expert, or a relevant practitioner, provides a general overview on a topic, methodology, or data collection approach, combining a strong theoretical foundation with practical real-life application examples.
- ii. Hands-on methodological labs whereby an academic or industry expert, or a relevant practitioner, showcases a data science solution to a specific research question, including workable datasets for a real destination, scripts, and a discussion of the analytical results. These webinars therefore take more of a learning-by-doing approach.

3.2.2 Peer-to-peer learning activities and collaborative platform

Peer-to-peer learning activities are a cornerstone of the capacity-building programme of D3HUB. Destinations that are linked based on shared needs and challenges are invited to present their own best practices and experiences in data-driven destination management and co-create solutions to communal issues. These activities promote a collaborative environment where participants can learn from each other's experiences, successes, and failures. By bringing together professionals from different contextual backgrounds, peer-to-peer learning encourages the exchange of diverse perspectives and innovative ideas.

In practice, these peer-to-peer learning activities take a similar online form as the earlier discussed expert webinars, with both the expert webinar sessions and the best practice presentations generally combined within a single session.

Within the D3HUB CC, two types of peer-to-peer learning activities are foreseen:

Cluster-specific peer-to-peer learnings whereby participants are organized across the four priority topics. Within each of the priority topics, multiple subthemes are identified and based on the intake interviews, destinations with recognised best practices were invited to present their own best practices to other participants of the cluster.

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ii. Cross-cluster meetings where pilot destinations from all clusters come together to allow for shared learnings across clusters/topics, in order to prevent encapsulation of knowledge within a cluster structure.

A collaborative platform further enhances these learning activities by providing a dedicated space for ongoing communication and resource sharing. Participants can upload documents, share links to relevant articles, and engage in discussions, ensuring that the learning process continues beyond the scheduled meetings. This platform also serves as a repository of best practices, case studies, and tools, making it easier for participants to access and apply the knowledge gained.

3.2.3 One-on-one mentoring and consultation

Particularly in the first stage of 'Understanding needs', one-on-one (online) consultation sessions with D3HUB experts help to understand local contexts, needs and opportunities, as well as current data availability and limitations. These sessions provide a personalized approach to capacity building, allowing for a deeper understanding of the unique challenges and opportunities faced by each participant. By engaging in direct conversations, mentors can gain deeper insights into the destination, cultural nuances, and specific data requirements, enabling them to provide tailored advice and support.

Such initial understanding directs further capacity-building approaches in a more tailor-made fashion. For instance, if a destination is struggling with data collection, the mentor can recommend specific tools and techniques to improve data gathering processes. Similarly, if a participant is interested in developing a particular skill, the mentor can suggest relevant resources, training programs, or even connect them with experts in that field. This personalised approach ensures that the capacity building efforts are aligned with the individual needs and goals of the participants, increasing the likelihood of successful outcomes.

3.2.4 Digital solutions

Dashboards provide a more indirect way of capacity building and learning and interpretation of the data can still remain challenging. However, dashboards can efficiently convey longitudinal and regional data and allow for quick comparisons while also providing context to build further insights on. These digital tools offer a visual and interactive way to present complex data, making it easier for users to understand trends, patterns, and correlations.

The D3HUB CC develops and provides an open standards dashboard for data visualization on the level of all participating pilot destinations, ensuring that the architecture of the dashboard can seamlessly interact with the EU Tourism Dashboard to further support benchmarking across European destinations and leverage existing systems so as to not create any redundancies. The visualisation will allow for comparisons among regions on economic, social, and environmental criteria, monitor improvements in destination sustainability and resilience, and be updated at least twice a year.

3.2.5 Documentation of best practices

The CC also functions as a resource for the collection and dispersion of best practices in data-driven destination management. While unable to provide deep content, such documentation inspires further learning through webinars and peer-learning opportunities. By curating a repository of successful strategies, case studies, and innovative approaches, the CC serves as a valuable resource for professionals seeking to enhance their knowledge and skills.

This documentation can cover a wide range of topics, including marketing strategies, customer experience enhancement, sustainability initiatives, a common methodology for measuring tourism sustainability, and data analysis techniques. Each best practice is accompanied by a brief description, key takeaways, and contact information for further inquiry, making it easy for users to access and apply

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the information. This not only supports individual learning but also encourages the adoption of proven methods across the tourism industry, contributing to overall capacity-building and improvement.

3.3 Preliminary topics of training activities

3.3.1 Cluster-specific topics

As has been outlined earlier in this deliverable, in the first phase of the CC it was decided to concentrate activities around four topical clusters, each concentrating on a different destination challenge. As discussed in D4.1 of the D3HUB project, an initial longlist of subjects of interest was drafted internally by consortium partners at the general assembly meeting in Marbella on 9-10 July 2024, reflecting own expertise and background knowledge and closely aligning with issues identified in contemporary literature on destination challenges (Dimanche & Andrades, 2024). The longlist was presented to the wider tourism ecosystem via a poll that was shared on the D3HUB LinkedIn channel in July and August, with the order of importance of the different proposed topics being as follows: (1) 'Managing the balance between residents and visitors' (19%), (2) 'Redistributing tourist flows in space and time' (18%), (3) 'Climate change mitigation and adaptation' (16%), (4) 'Improving the quality of employment, retention/attraction of talent and employment policies' (15%), (5) 'Supporting emerging destinations to attract quality and sustainable tourists' (14%), (6) 'Standard measurement guidance for sustainability plans' (10%), and (7) 'Dealing with short term rentals' (9%).

The D3HUB CC ultimately decided for a selection of the top three, as well as the fifth choice: 'Supporting emerging destinations to attract quality and sustainable tourists'. The reason for the inclusion of this cluster topic, as opposed to the slightly higher scoring topic on tourism employment is inspired by the fact that the CC needs to cater to various stages of development and data proficiency and a specific cluster aimed at emerging destinations is therefore preferable in this testing phase.

Each of the four content-based clusters is in its origin still broadly defined. The work programme that is developed and provided in each of the clusters provides a more focused overview of exact topics of capacity building that are currently offered and tested.

3.3.1.1 Managing balance between residents and visitors

Within the broad topic of managing the balance between residents and visitors, four subtopics are further developed in detail, through offering expert insights, hands-on experiences, and best practice sharing, presented in Table 4. On the first topic of Short Term Rentals (STRs), capacity-building insights are centred broadly around the identification of data sources and the possibilities for data collection, the effect of STRs on touristification and gentrification, as well as related successful and unsuccessful policy measures in terms of regulation and taxation, and the possible enabling opportunities of STRs to provide bed capacities around less developed tourist areas.

The second subtopic introduces the concept of measuring resident perceptions, which have become an increasingly important tool across tourism destinations to allow for the collection of data pertaining to social sustainability and local quality of life. Capacity building is provided on both conducting and analysing resident perceptions via different approaches, in particular the Resident Empowerment through Tourism Scale (RETS) and the Tourism Acceptance Score (TAS). These methodologies are supported by a hands-on methodological lab whereby data analytics are showcased to make sense of data through a factor-based structural equation model, and through zonal analysis of resident support clusters.

The third subtopic introduces a forward-looking approach to tourism planning and development via the provision of capacity building actions on the topic of forecasting. Methodologically, forecasting is approached both quantitatively – through the use of machine learning and Artificial Intelligence – and qualitatively – adopting a scenario planning approach, thereby offering insights for both destinations

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with a strong data availability, as well as giving a foundational basis to destinations that currently lack quantifiable data. The approaches are further clarified via a hands-on example, as well as the presentation of a few selected best practices.

A final subtopic within the cluster of managing the balance between residents and visitors, relates to the question of thresholds by introducing the concept of carrying capacity. Methodologies are provided for a resource-based perspective on carrying capacity, as well as an approach grounded in the socio-psychological literature on crowding perception, which is inherently more subjective and personal. Two case studies are further investigated through a peer-learning perspective of best practice applications of the concept.

Table 4: Subtopics of cluster on managing the balance between residents and visitors

	4. Subtopics of cluster of managing the balance between residents and visitors
Topic 1: Analysing the	effects of Short Term Rentals (STRs)
Expert insights	 Finding and collecting data on STRs (data providers, data sources) The role of STRs in touristification and gentrification Policy measures to manage STRs STRs as a potential enablers for developing tourism in rural areas
Hands-on methodological lab	Analysing the spatial characteristics of STRs and their potential for providing bed capacity around secondary/tertiary attractions and areas
P2P-learning	STR integration in destination data dashboards STR regulation and tax income
Topic 2: Measuring and	monitoring resident perceptions
Expert insights	 Collecting and analysing resident perceptions via the Resident Empowerment through Tourism Scale (RETS) Implementation of the Tourism Acceptance Score (TAS)
Hands-on methodological lab	 A structural equation modelling approach to analyse relationships between empowerment, impact, and tourism support A zonal and cluster-based analysis of tourism support
P2P-learning	 A practical destination application of the Tourism Acceptance Score Conducting a multi-stage resident survey to continuously measure perceptions
Topic 3: Forecasting	
Expert insights	 Machine learning and Artificial Intelligence approaches to forecasting Scenario planning for tourism futures
Hands-on methodological lab	Applying a quantitative forecasting model (data and programme needs)
P2P-learning	 Developing a supply-based platform to measure tourism capacity with Artificial Intelligence Auto-creation of audioguides and dedicated visitor routes
Topic 4: Carrying capac	ity of destination resources and communities
Expert insights	 Methods to assess crowding perception for residents and visitors Estimating resource carrying capacity Analysing tourism behaviour via spatial and open data
Hands-on methodological lab	Carrying capacity estimation of hiking trails via scraped data
P2P-learning	The governance of carrying capacity estimation in a UNESCO Biosphere Reserve Quantifying a carrying capacity for historic city destinations

3.3.1.2 Redistributing tourism flows in space and time

The second D3HUB cluster has a key focus on mapping and monitoring visitor flows in a destination. This can cover both very local initiatives (e.g., mapping and routing in National Parks and nature areas), and broader regional perspectives (e.g., spreading visitors outside of regional hotspots towards secondary cities and attractions). Insights are provided through a number of work sessions and

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specifically cover four interconnected topics, as presented in Table 5: (i) Approaches for monitoring and measuring local and temporal visitor flows, (ii) General metrics and indicators on seasonality and spatial concentration, (iii) Interventions in visitor flow management, and (iv) Forecasting of visitor flows.

The focal point of the cluster is to provide insights into the varied approaches for monitoring and measuring visitor flows, since the methodological variety in tools and data can potentially lead to significantly different data and the relevance of a specific method can therefore depend on local context and needs, as well as its potential for practical implementation. Subtopic 1 therefore covers a wide range of both local (e.g., LiDAR, smart cameras, beacons, infrared), and regional (e.g., mobile app/GPS-based data, mobile network data) resources, as well as looking at the potential of scraping methods for Point of Interest data and popular use times. These methods are introduced through a range of methodological experts, while supplementing this technical knowledge with practical destination examples through a peer-learning best practice approach.

A second, somewhat related, subtopic refers to the use of more general metrics and indicators on seasonality and spatial concentration and the integration of such metrics into multidimensional destination dashboards. This approach provides advantages in that it does not require technical measurement infrastructure or high-level mobility data, but is instead calculated on largely existing statistical indicators within sustainable tourism frameworks, thus offering lower-threshold applicability.

While the first and second subtopic relate to data collection methods, a third subtopic centres around management interventions for redirecting visitor flows through behavioural interventions, following nudging principles. A range of best practice examples are provided in using communication and information for visitor flow management, among which the use of online route maps and loyalty programmes, adopted by some of the participating destinations and shared in the peer-learning network.

The fourth subtopic similarly focuses increasingly on management and planning of visitor flows by adopting quantitative approaches to forecasting of visitor numbers and flows. Apart from providing novel methodologies adopting machine learning and artificial intelligence in forecast, empirical peer-learning examples showcase the potential of developing dynamic pricing systems based on such forecasts.

Table 5: Subtopics of cluster on redistributing tourism flows in space and time

Topic 1: Approaches for	monitoring and measuring local and temporal visitor flows								
Expert insights	 Introduction to visitor flow management (data gaps, interventions, and broad data source categories) Technical solutions and limitations of local sensor data Mobile network data solutions to visitor flow analysis Mobile app/GPS-based big data Data from Property Management Systems (PMS) Point of Interest data 								
Hands-on methodological lab	Practical application of Google's popular times								
P2P-learning	 Application of cameras, beacons, Wifi-tracking to map visitor flows Application of mobile network data by tourism destinations Collecting occupancy and pricing data from tourism stakeholders Data collection and monitoring tools for Protected Area Management 								
Topic 2: General metric	and indicators on seasonality and spatial concentration								
Expert insights	 Metrics and indicators for measuring seasonality and spatial concentration Sustainable indicators for visitor flow analysis 								
P2P-learning	Destination dashboard visualisation of seasonality and spatial concentration indicators								
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Topic 3: Interventions in visitor flow management							
Expert insights	Information and nudging						
P2P-learning	 Steering visitor flows through online route maps Loyalty programmes/Stamp reward systems for visitor nudging 						
Topic 4: Forecasting of	Topic 4: Forecasting of visitor flows						
Expert insights	Machine learning and Artificial Intelligence approaches to forecasting						
P2P-learning	Dynamic tourism pricing through current and forecasted data						

3.3.1.3 Climate change mitigation and adaptation

A third pillar of the D3HUB CC support scheme is supporting destinations in climate change mitigation and adaptation. The objective of the cluster is to equip destinations with necessary knowledge and tools for taking action in climate change, in those areas where DMOs are competent, and based on sound and real-time data. The work programme is structured around three main subtopics: (i) Methods and measurement of emissions, (ii) Actions to promote positive change in decarbonisation or adaptation, (iii) Destination governance and connecting tourism adaptation to a broader destination agenda. Expert moderators will guide destinations throughout all sessions to ensure uptake of activities within destination action plans.

The first subtopic that is covered in the D3HUB CC is aimed at providing a critical overview of different methodological approaches and tools that can be adopted to measure carbon footprints at the level of a tourism destination. Experts will provide both a comparative overview, and support destinations in a hands-on application of a user-friendly carbon calculation tool. Peer-to-peer learning sessions further facilitate the exchange of best practices and aim to establish consensus on practical, initial metrics.

The second subtopic refocuses from passive data collection to active mitigation and adaptation strategies, providing expert insights into enabling impactful actions and identifying the effects of destination market dependence — and potential alleviating market development strategies. These expert insights are further supported through facilitated peer-to-peer exchanges on effective or planned actions intended to promote decarbonisation or adaptation efforts.

Finally, the third subtopic of the climate change mitigation and adaptation cluster expands the implementation activities by including governance perspectives, linking climate change topics to a broader destination agenda, and incorporating industry stakeholders in climate action plans. Potential policy measures and strategic approaches are discussed both through expert insights and via peer-topeer exchanges.

Table 6: Subtopics of cluster on climate change mitigation and adaptation

Topic 1: Methods and measurement of emissions							
Expert insights	 General approaches to climate change measurement for DMOs Mapping methodologies, tools, and effective approaches to measure a destination's carbon footprint Introduction to indicators on tourism environmental sustainability for decision-making 						
Hands-on methodological lab	Estimation and comparison of carbon emissions of a destination's 10 top markets against length of stay, revenues, and season, adopting a user-friendly carbon calculation tool						
P2P-learning	 Peer-to-peer exchange on current measurement approaches related to climate change and sustainability Presentation of best practice case studies on DMOs adopting CO₂ emission measurement Exploration, sharing, and finalisation of practical, aligned metrics to enable work on decarbonisation 						
Topic 2: Actions to pro	Topic 2: Actions to promote positive change in decarbonisation or adaptation						
Expert insights	Approaches for enabling impactful actions						

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	Analysing the effects of market dependence							
P2P-learning	Peer-to-peer exchange on activities intended to promote positive change in terms of decarbonisation or adaptation							
Topic 3: Destination go	overnance and connecting tourism adaptation to a broader destination agenda							
Expert insights	Connecting climate change adaptation in tourism to broader destination agenda Engaging of industry stakeholders in climate action plans							
P2P-learning	Peer-to-peer exchange on policy measures, programmes, and projects already deployed at the destination to support climate adaptation							

3.3.1.4 Supporting emerging destinations to attract quality and sustainable tourism

The final cluster provides destinations with competencies on attracting tourists in a way that supports sustainable destination development. The cluster's learning content is based on expert interventions and peer-to-peer learning through best practice sharing, focusing on three main subtopics: (i) Destination sustainability and resilience, (ii) Branding and promotion of destinations through smart specialisation, and (iii) future-proofing a destination through reskilling, upskilling, and local ownership.

The first subtopic of the cluster introduces emerging destinations to sustainability frameworks and indicators and measurement approaches for destination resilience in order to support these destinations that often lack specific data in starting a limited data collection. Approaches to sustainable tourism measurement and monitoring of impacts are further exemplified through a collection of best practices, presented by participating destinations.

The second subtopic relates to attracting visitor types through customisation and leveraging unique destination aspects linked to authenticity, lifestyle, cultural identity, etc., proposing branding and communication and marketing approaches for a diversified, qualitative audience.

The third subtopic focuses on workforce skills needed for the development and growth of tourism in emerging destinations, particularly in areas that are experiencing an economic reconversion. The capacity-building work plan specifically introduces existing projects at European level, engaging with reskilling and upskilling of locals in order to support a resilient and sustainable tourism industry that provides tangible benefits to resident populations. Linked to the importance of local workforces is the notion of local ownership of both the tourism industries and the destination brand and image, with peer-to-peer learning examples highlighting successful strategies for engaging with local communities and acquiring broad political support for development initiatives.

Table 7: Subtopics of cluster on supporting emerging destinations to attract quality and sustainable tourism

Topic 1: Destination	sustainability and resilience
Expert insights	 Introduction to sustainability frameworks and relevance of sustainable indicators for emerging destinations The link between sustainability and resilience
P2P-learning	 Protecting natural areas and measuring visitor impact Environmental sustainability in island tourism Addressing short-term stays and data for sustainability Establishing a sustainable and responsible tourism as a Green Destination
Topic 2: Branding ar	nd promotion of destinations through customisation
Expert insights	 Branding in smart destinations Communication and marketing towards quality, low-impact visitors
P2P-learning	 Facilitated peer-to-peer discussion on challenges, opportunities, and approaches to adapt a destination's offer and use data to attract quality visitors Best practices on niche tourism branding and marketing: targeting food and cultural tourists Best practices on leveraging lifestyle identity, heritage identity, local excellence, and authenticity in destination branding

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	Best practices on extending the tourism destination product in time, audience diversification, and repositioning of the destination product
Topic 3: Future-prod	ofing a destination through reskilling, upskilling, and local ownership
Expert insights	 Introduction of the European Pact for Skills The PANTOUR pact for next tourism generation skills, addressing skills needs in the tourism ecosystem An overview of upskilling and reskilling strategies in tourism destinations
P2P-learning	 Facilitated peer-to-peer discussion on necessary (future) skills and resources for sustainable destination management Best practices on building internal capacity and achieving/leveraging political support Best practices on strategic planning and community inclusion/local engagement

3.3.2 General cross-cluster topics

Apart from the cluster-specific capacity building initiatives, the D3HUB CC also proposes horizontally integrated support across all clusters indiscriminately. These topics are considered crucial elements of the service portfolio and pertain to what was mentioned in Table 3 as established standards/basic indicators, and provision of standards. The cross-cluster support elements are: (i) introducing a common indicator framework to measure and monitor sustainability and resilience, and (ii) establish standards for public-private data sharing agreements and guidelines for standardisation of data in order to allow for future data integration between the CC and the European Tourism Data Space.

3.3.2.1 Methodology for mapping and monitoring sustainability and resilience

The proposed methodology for measuring, interpreting, and benchmarking sustainability across key dimensions of tourism destinations, is central to T3.1 and T3.2 of the D3HUB project. T3.1 provides an identification of current and potential complementary data sources to monitor relevant aspects assessing tourism sustainability, resilience, and competitiveness. T3.2 focuses on a common methodology for tourism sustainability indicators and is fully described in D3.1. It is therefore not the intention to repeat the extensive work conducted in this deliverable, but rather to summarise and highlight the main characteristics of the D3HUB approach, since the indicators are a key part of the destination support scheme, further linking with the D3HUB open data dashboard that is developed under D3HUB WP3.

Through D3.1 and its application within the support scheme, the CC presents a coherent and adaptable indicator set that supports destinations at different maturity levels and geographic scales, as well as providing recommendations for a consistent and comparable implementation, thus also including benchmarking potential. Within this work, D3HUB recognises current DMO approaches and existing data initiatives — particularly aligning with the UN Tourism Statistical Framework for Measuring the Sustainability of Tourism (SF-MST) — and leverages these in order to create synergies and avoid data multiplication and efficiency loss.

The methodology provides both generally relevant indicators across all European tourism destinations, as well as cluster-specific indicators, tailored to the specific needs and interests of each cluster topic. A full list of 68 unique indicators is proposed as a theoretically valid and multi-level set of indicators, covering the different dimensions of sustainability. Based on the unique challenges and opportunities of each D3HUB cluster, representing different key areas of sustainable tourism, the full list of indicators was revised to identify both general cross-cluster indicators and cluster-specific indicators.

To take into account the feasibility of data collection, with the 'ideal' list of 68 indicators having relevant current data gaps, D3.1 further identified a shortlist of general and cluster-specific indicators. This shortlist is part of the initial CC data collection approach, supporting participating destinations in collecting and visualising a first set of multidimension sustainability indicators, highlighted in Table 8.

Table 8: Shortlisted indicators for continuous monitoring and benchmarking

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General indicators	Cluster-specific indicators								
	Managing the balance between residents and visitors	Redistributing tourist flows in space and time	Climate change mitigation and adaptation	Supporting emerging destinations to attract quality and sustainable tourism					
 Average length of stay Visitor arrivals Nights spent Accommodation occupancy rate Average tourism expenditure Weight of tourism in employment 	Visitors per 100 residents Visitor satisfaction Women's participation in tourism employment	 Visitors per 100 residents Visitors per km² Seasonality of visitor arrivals (Gini Index) 	 Dependence on distant origins Tourism activity in high-quality environmental areas 	Dependency ratio on top source markets					

3.3.2.2 Public-private data sharing agreements and guidelines for standardisation

The D3HUB project and its objective to install a European CC can be seen in a broader approach towards supporting data-driven green and digital transformations in the European tourism ecosystem, further reflected in the investments made towards the Common European Data Space for Tourism. The CC will leverage earlier work within the DATES/DSFT initiatives and follow up with the advances of the DEPLOYTOUR project.

The CC will help to enhance the potential for data use and sharing within the tourism industry and encourage cooperation among stakeholders by offering guidelines for a common data approach, including semantics, technical interoperability, and governance. Through exemplary public-private data sharing agreements and digital standards and technologies, the CC will help ensure that destinations can fully leverage their data and link with other open data resources to generate higher-level understanding of a destination's tourism characteristics.

CC is analysing the different data sources of destinations and help them to establish a common standardised data system so that they converge on a common methodology that allows data sharing and analysis

Within the Support Scheme, we envisioned public-private data sharing agreements to first of all relate to improving the knowledge of destinations on negotiating with data providers and using private data for the public good (e.g. as there are good examples in Catalunya and Austria).

At this stage, and based on the data shared by the DMOs, these public-private data sharing agreements are not part of the relationship between the pilot destinations and D3HUB.

Within D3.2 agreements and guidelines for standardization will be analyzed in depth.

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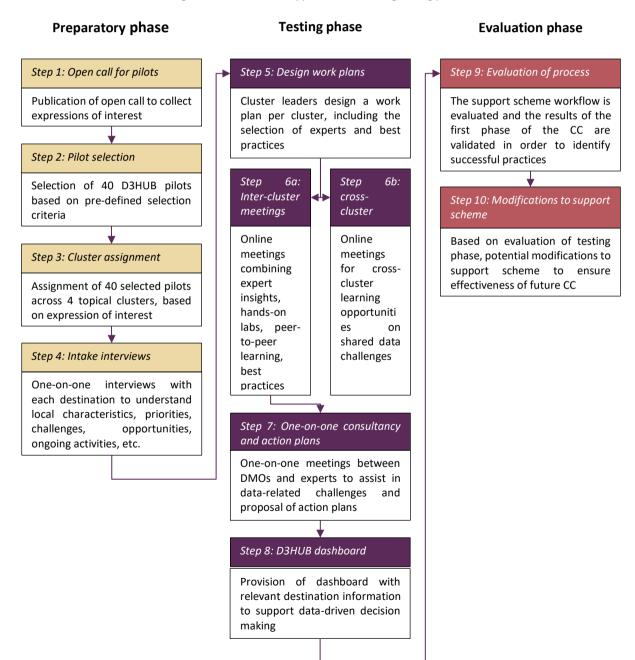


4 Integration of support scheme in pilot phase

4.1 Testing phase

The support scheme as presented in this document is being tested with 40 selected European DMOs (as introduced in D4.1 of D3HUB), organised across the four topical clusters, with the testing phase running from February 2024 to February 2025. This testing phase is the cornerstone of D3HUB WP4 and is meant to ensure that the service portfolio that is developed sufficiently covers the varied needs of DMOs at different scales and operating in different contexts. The flow of the testing phase of the support scheme is outlined in Figure 6, with the main activities of the support scheme taking place from Steps 4 to 8.

Figure 6: Flow chart of support scheme during testing phase



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The preparatory phase first set up an open call to collect expressions of interest, and select 40 pilots out of 68 eligible applicants that ensure variety in data proficiency, geography, governance level, etc. The intake interviews that followed up this selection process helped to understand the characteristics of the participating DMOs, as well as their backgrounds, current challenges, data availability, etc. Through these interviews, and based on prior literature review and internal knowledge, D3HUB cluster leaders designed a work plan for each cluster, proposing the subtopics presented before (see Chapter 3.3) identifying best practices, inviting relevant speakers to provide expert insights, and setting up a call for experts to identify independent professionals that could offer significant contributions and support the various activities of the project. Throughout the inter-cluster meetings and cross-cluster meetings, insights are provided via the various training approaches discussed in Chapter 3.2. Follow-up one-on-one consultancy possibilities between DMOs and D3HUB experts are then foreseen to build on the shared cluster meetings and assist in co-creating data-driven action plans, for instance by identifying relevant data sources and providers, connecting DMOs with interesting peers, proposing external experts, etc.

The action plans of each participating DMO are a central output during the testing phase, serving as a tool to help DMOs in applying their learnings to their own destination in a structured way. The action plans will ensure a continuation of a data-driven destination management approach, framed within particular destination challenges.

At a higher level, the D3HUB dashboard serves both the collection and visualisation of data, and highlights the understanding of opportunities for data-driven destination development and decision-making, while also potentially serving to showcase current gaps in data that would require further research activities.

4.2 Evaluation phase

As already included in Figure 6, in this first stage of the CC, the support scheme and service portfolio are still being tested and are therefore subject to change in case certain activities or learning formats are not seen as effective by the participating DMOs. This evaluation will take place at the end of the testing period, where both successful practices are validated and potentially unsuccessful approaches are analysed, modified and improved. The evaluation will have both an internal – within the D3HUB consortium – and an external – via the pilot participants – component, with the results being incorporated in D4.2 and D4.3 of the D3HUB project.

Apart from evaluating the competence-building processes, after finishing the testing phase the D3HUB consortium will also reflect on the topical cluster division, looking at opportunities to further expand the scope of topics that are being covered based on contemporary challenges, societal changes, and new needs.

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5 Conclusion and outlook

This deliverable set out the support scheme of the D3HUB CC as it is currently implemented in the pilot testing phase. The support scheme was drafted based on the role of a European CC within the already existing tourism ecosystem, as well as on the feedback provided by DMOs and SMEs based on the online surveys that were organized as part of WP2 of D3HUB (with the results highlighted in D2.1).

The support scheme is discussed across three dimensions: (i) the stages of competence building for which support is provided, (ii) the range training approaches provided, and (iii) the topics of training activities.

The CC provides support across all stages of competence building, from guiding the identification of destination challenges and relevant data-related research questions, to proposing relevant data, statistics and tools, providing expertise in data collection and indicator calculation, suggesting tools, methods and expertise to generate insights from data, and assist in the drafting of action plans on using data for destination management purposes.

Training approaches provided by the CC combine a variety of competence-building methods. Expert webinars on topics, data and/or methodologies provide expert insights and hands-on training experiences in a group-based context, while one-on-one mentoring and consultation links individual destinations to particular experts (which can be internal or allied with the CC) in order to provide tailor-made advise. Destinations are also provided with a platform to share their own best practices or learn from others through peer-to-peer learning activities, which can take on the form of a webinar or discussion format, or as a documentation of best practices shared via the CC online platform. As a final training approach, the CC provides digital solutions to destinations in the form of an open source data dashboard, which aims to further highlight the potential of data for evidence-based decision-making.

In terms of their contents, the training activities are divided in two broad groups: cluster-specific topics, and general cross-cluster topics. The cluster-specific topics are organised around the four proposed research themes: managing the balance between residents and visitors, redistributing visitor flows in space and time, climate change mitigation and adaptation, and attracting quality and sustainable tourism. For each of these topics, a range of subtopics were identified for the organisation of work plans. Furthermore, the CC supports two general cross-cluster topics that are deemed relevant across all DMOs, namely: monitoring and measuring sustainability and resilience, and public-private data sharing agreements and guidelines for standardisation. The former proposes sets of relevant indicators for destinations to track, monitor and benchmark the state of their destination in a robust and reliable manner, building on existing international frameworks. The latter is essential for the integration of the CC into the European projects on the Common European Data Space for Tourism and will provide valuable information to destinations on how to interact with this future data space.

While the deliverable highlights the current state-of-the-art as the support scheme is being implemented across the 40 pilot destinations, it is important to highlight that an evaluation phase will take place after the end of the pilot phase. In order to ensure that the CC support scheme is relevant, effective, and meeting the needs of European DMOs, the support scheme and service portfolio is still subject to change. This is ultimately inherent to all competence centres, since they need to reflect on contemporary needs and integrate best practices, thereby occasionally revising and updating the portfolio of support services that are offered.

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