CROCUS
Cross-Border Cultural and Creative Tourism in Rural and Remote Areas

Framework for 'empathising' and 'defining' phases

D4.1

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D4.1 FRAMEWORK FOR 'EMPATHISING' AND 'DEFINING' PHASES

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ACRONYMS AND ABBREVIATIONS

CCT	Cultural and creative tourism
RRA	Rural and remote areas
SBMC	Sustainable business model canvas

1 EXECUTIVE SUMMARY

The deliverable defines the framework for the first two phases of *Design Thinking*, *Empathising* and *Defining*, in relation to the living labs of the CROCUS project. CROCUS adopts a responsible design thinking approach, building on the principles of reflexivity, anticipation, inclusion and responsiveness, to as it seems most suitable for achieving the project aim, to foster the development of sustainable and inclusive cultural and creative tourism and cross-border cooperation in rural and remote areas.

Design thinking is an interactive and iterative process consisting of five 'modes': empathising, defining, ideating, prototyping, and testing. *Empathising* refers to understanding the needs, challenges, and values of users. In CROCUS, the empathising phase will begin with the collection and analysis of data and information about the specific needs, challenges, and capacities of the each of the eight cross-border areas. The analysis of the primary and secondary data collected in the empathising phase will be the basis for *designing* the parameters for the new business models, which will be presented to, and refined on the basis of feedback from, local stakeholders. The *ideating* phase takes place in a workshops (one on each side of the border) and will engage a range of CCT stakeholders, citizens and policymakers in discussions and idea-generation regarding the development of new, sustainable CCT business model prototypes. Drawing on the input from this phase, the core development team will develop the ideas into *prototypes* and present them using the sustainable business model canvas tool.

In the *empathising mode* data will be collected to understand the social, economic, environmental and institutional contexts, cultural and natural heritage and capacities of the cross-border area as well as the needs and perspectives of local businesses, citizens and tourists. The research teams will collect secondary data and analyse relevant indicators (including tourism statistics, environmental, social, economic and CCT indicators). Furthermore, primary data will be collected through questionnaire surveys and interviews, participation will be on a voluntary basis. The research team for each lab will undertake surveys of citizens, businesses, and tourists to establish their engagement with CCT, understand the impacts of existing tourism activities on local communities, and identify the needs and priorities of different stakeholder groups regarding CCT development. The sustainable business model canvas is the recommended framework to structure data collection in the emphasizing phase.

In the *define phase* of the design thinking process adopted by CROCUS, the living lab context analysis providing an in-depth understanding of the needs, challenges, and potential of each cross-border area will be the starting point. The synthesis report will be discussed with the core development group for each lab during 'definition' workshops (one definition workshop per living lab). The definition workshops in the individual living labs are recommended to use the SBMC as the basis for defining the directions which then lead to the outline of the parameters in the prototyping phase.

Living labs provide the framework for the activities involved in the various phases of design thinking. Living labs can be defined as an approach to innovation in which all stakeholders in a product or service participate directly in the development process. The document provides a brief overview of the main characteristics of the eight living lab areas to understand the context of the CROCUS project and explain the process of establishing the living labs.

2 INTRODUCTION

2.1 Aims

The aim of this deliverable is to define the framework for the first two phases - *Empathising and Defining* - of *Design Thinking* in relation to the living labs of the CROCUS project. As the project aims to foster the development of sustainable and inclusive cultural and creative tourism and cross-border cooperation in rural and remote areas, the design thinking approach is deemed as most suitable as it adopts a holistic view. CROCUS adopts a responsible design thinking approach, building on the principles of reflexivity, anticipation, inclusion and responsiveness. The aim of the design thinking process in CROCUS is the development of more sustainable cultural business models. Furthermore, design thinking supports sustainable tourism planning as the process involves those closest to the problem, and their concerns and needs are heard and addressed. This also ensures that the outcomes of the process are solutions that are mutually accepted by the partners involved. Design thinking ensures a bottom-up approach which is a key component of sustainable tourism development.

Design thinking is an interactive and iterative process consisting of five 'modes': empathising, defining, ideating, prototyping, and testing. *Empathising* refers to understanding the needs, challenges, and values of users. The empathising phase will begin with the research team collecting data and analysing the specific needs, challenges, and capacities of each cross-border area through interviews with key CCT stakeholders, as well as surveys of citizens, businesses and tourists regarding their needs and preferences. The analysis of the primary and secondary data collected in the empathising phase will be the basis for *designing* the parameters for the new business models, which will be presented to, and refined on the basis of feedback from, local stakeholders.

The *Empathising* phase aims to facilitate the processes that contribute to the understanding of the specific needs and challenges of stakeholders represented in the living labs, as well as the values and capacities of the cross-border areas. This phase incorporates secondary data collection and primary research involving key informant interviews with CCT experts and a questionnaire-based survey aiming to assess the needs and preferences of local businesses, local communities and tourists. The sustainable business model canvas is the recommended framework to structure data collection in the emphasizing phase.

In the *Defining* phase, the analysis of the secondary and primary data will enable the core development team for each living lab to *define* the parameters for the new business models, which will be presented to, and refined on the basis of feedback from, local stakeholders.

Following the empathising and defining phases, which are the subject of this deliverable, the design thinking process continues with the *ideating* phase, which takes place in a workshops (one on each side of the border) and will engage a range of CCT stakeholders, citizens and policymakers in discussions and idea-generation regarding the development of new, sustainable CCT business model prototypes. The workshops will be run by a local facilitator, selected by the living lab coordinator, who is familiar with the area. The process will be based on inclusive and participatory tools, such as placemaking sketches, participatory systems mapping and persona role playing. Here the research teams will draw in particular on the experience of consortium partner Group NAO, which has long experience with community

engagement in destination development. Drawing on the input from this phase, the core development team will develop the ideas into *prototypes* and present them using the sustainable business model canvas tool. Each living lab will produce two sustainable CCT business model prototypes, which will be refined following feedback workshops in each border region. The core development teams will also develop roadmaps for piloting, promotion, and future cross-border cooperation so that the *testing* phase of the design thinking process can be implemented after the end of the project. Knowledge and experience developed through the living labs will be synthesised to produce good practice guides, a toolkit and training aid, citizen resources pack and policy scenarios that will contribute to the exploitation of the project's results and ensure long-term impact.

3 Living Labs

Living labs provide the framework for the activities involved in the various phases of design thinking. Living labs can be defined as an approach to innovation in which all stakeholders in a product or service participate directly in the development process (Fernstein et al, 2008). The framework for CROCUS living labs is described in D2.1, but a brief description is provided here to provide the theoretical foundations which enable the understanding of the context where the framework for empathising and defining will be used.

3.1 Characteristics of living labs

Living labs are defined by Fernstein et al (2008) as an approach to innovation in which a variety of stakeholders in a product or service participate directly in the development process. The European Network of Living Labs (ENoLL) defines living labs as 'open innovation ecosystems in real-life environments using iterative feedback processes throughout a lifecycle approach of an innovation to create sustainable impact. They focus on co-creation, rapid prototyping & testing and scaling-up innovations & businesses, providing (different types of) joint-value to the involved stakeholders' (ENoLL, 2024, np).

Living labs provide the framework for open innovation where real life-issues are addressed through co-creation involving stakeholders representing the business, civic and academic spheres (Brown, 2008; Hagy et al, 2017). On the one hand, the involvement of a wide range of stakeholders ensures addressing the issues in their complexity, and the value created - co-produced – by different kinds of stakeholders gets better acknowledged due to a sense of (shared) ownership.

Effective co-creation results in network growth and innovation, with resource availability being both a requirement and a perceived benefit of this co-creation (Dickinger and Kolomoyets, 2024). All actors actively create and receive value by integrating the resources, both their own and those of the other actors. To ensure engaging the right actors, there must be a clear understanding of how the individual actors perceive and communicate value, and what constitutes a public or collective value in the given context at the time of the operation of the living lab, providing the framework for value creation (Chandler & Lusch, 2015). However, the effectiveness of the co-creation process is influenced by various factors, including the nature of the participants involved, their motivations, a sense of shared purpose, and the existence of the co-creation space (Haug and Mergel, 2021, Puerari et al., 2018).

The emphasis is on the focus of co-creation as process where the solution(s) get developed together with those stakeholders closest to the problems and who are the users of the outcome / product. Therefore, it is crucial that living labs involve a wide range of stakeholders to ensure the representation of diverse aims, knowledge and capacities. The open and user-centric nature of living labs ensures an environment where the power differences between the different actors with their different needs, experiences and competencies are reduced. (Dickinger and Kolomoyets (2024).

Requirements for value co-creation in living labs

Dickinger and Kolomoyets (2024) analysed six different living labs to assess the requirement for successful co-creation, based on the participants' experience. They identified four key areas which impact of the effectiveness of value co-creation in the living labs: actors, motivation to engage, structure and required infrastructure. Involving the "right" participants is crucial for successful value co-creation, which relates to engaging actors who have time and capacity to contribute to the progress of the living lab. Sustaining engagement in the co-creation processes of the living labs may prove difficult over time, actors need to be kept motivated, primarily by constantly reminding them about the personal and common (shared) benefits that participation in the living lab brings. Well-structured living lab meetings employing engaging techniques and methods are a necessary precondition of successful operation of living labs. Involving the 'right' actors is also crucial to ensure variety and complementarity of the available resources, as resources and their integration are prerequisite for value co-creation (Koskela-Huotari & Vargo, 2016). Individual actors in the living labs bring some kind of resources or even a set of resources that can be utilised for co-creation in the living lab.

3.1.1 Living labs in CROCUS

At the heart of CROCUS is a process of cross-border cooperation to prototype sustainable CCT business models in eight living labs, which will be established in cross-border RRA, comprised of two neighbouring border regions, and led by a local living lab coordinator. The project focuses specifically on cross-border areas, which have been selected to ensure coverage of:

- all four EU macro-regions
- a range of different types of rurality, from rural areas close to cities to extremely remote regions
- different types of tangible and intangible cultural heritage that can become part of placemaking processes.

The location of the living labs, consortium partner responsible, border regions and countries involved, type of cultural heritage and degree of rural remoteness for each border region (NUTS 3 level) is shown in Figure 1.

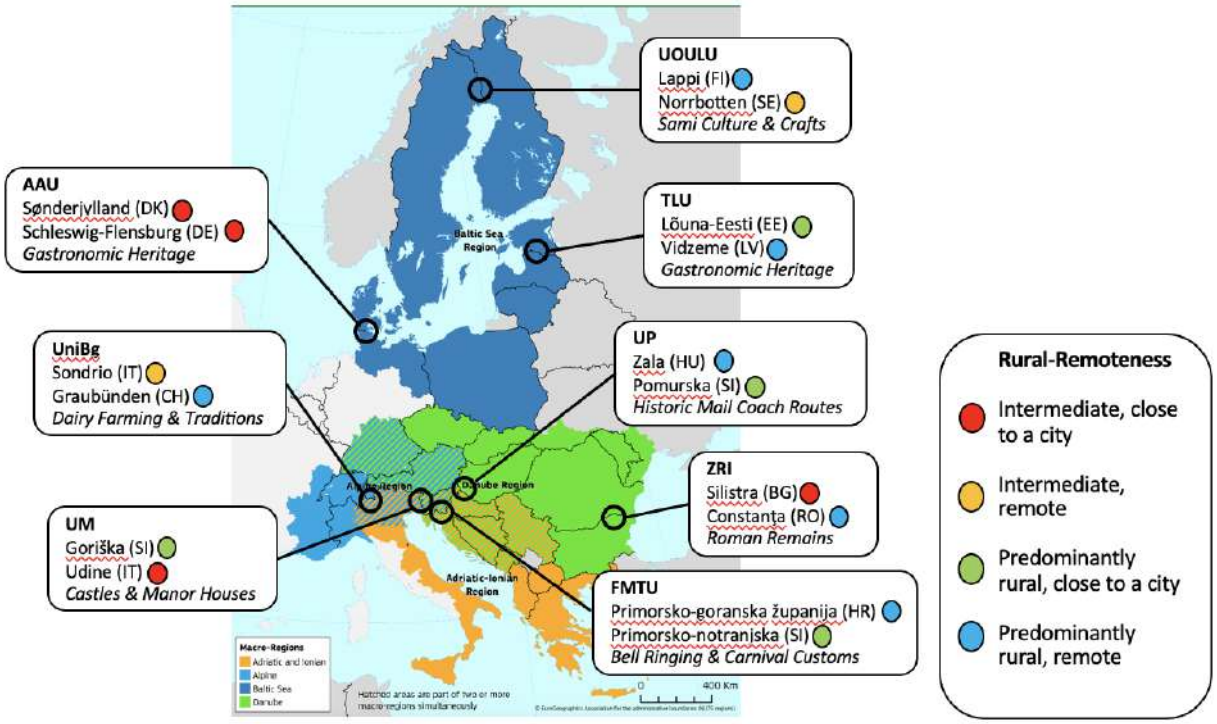

Figure 1 Location of CROCUS Living Labs

Characteristics of the individual living Labs

Sønderjylland-Schleswig (Denmark-Germany)

The *Living Lab* area Sønderjylland-Schleswig covers the border region between Denmark and Germany, a predominantly flat rural area with some medium-sized towns along the North Sea and Baltic coasts. The area has a rich cultural heritage that reflects the geographical contrasts between the western sea-dominated Wadden Sea coast, the longstanding traditions in trade and industry in the eastern towns, and the marks of a tumultuous history at intersecting outskirts of German and Danish spheres of interest. Cultural tourism centres on a number of resources, including:

- Built heritage along the Wadden Sea that reflects centuries of living with and of the massive forces of the North Sea, including dikes, lighthouses and rural architecture
- Heritage associated with trade, including the main trading place of the vikings at Haithabu/Hedeby by Schleswig, the prosperous east-coast towns from Schleswig to Haderslev, and the major trading route taking cattle from Denmark towards Germany
- A rich gastronomic heritage reflecting the landscape (e.g. oysters) and history (massive coffee tables)
- Traditional sports such as ring riding that have evolved into local festivals celebrating horses and highly skilled riders, young and old
- A history of conflict, with fortifications and battle grounds from the vikings to the 19th century, and the physical infrastructures created during the second world war

The CROCUS living lab in this cross-border region will focus on gastronomic tourism. Both north and south of the border, leisure tourism is a highly seasonal activity, with active coastal tourism in the summer and quiet winters with limited visitation. While spending time at the sea is clearly a major attraction along the east coast and on the many islands in the Wadden Sea, the presence of gastronomic and other cultural experiences provides important supplementary reasons to visit the area.

Mulgimaa - North Vidzeme (Estonia-Latvia)

The Living Lab area consists of Mulgi parish (vald) in Estonia and Mazsalaca, Rūjiena, Naukšēni and Burtnieku, four parishes (pagasts) of the larger North Vidzeme area in Latvia. Mulgimaa (Estonia) and North Vidzeme (Latvia) became separated only in 1922, with the establishment of national borders after the two countries gained independence. Previously, in the late 19th century, the common area had been characterised by large farmstead manors, innovativity, relative wealth and high self-esteem of its inhabitants. In the political turmoil of the mid-20th century the conditions changed, and the areas became marginalised. Nevertheless, in Estonia, farm manors gradually rose to a prominent position in the cultural memory as symbols of a bygone golden era of the inter-war republic and the "Estonian way" of living. A similar observation can be made on the Latvian side – it is a cultural-historical environment rich with manor houses and sacral sites.

The shared history and experiences between the areas, now separated by national borders, are reflected in rural architecture, especially the large farmstead manors ('häärber' in Estonian), and traditional food, such as the potato and barley groats mash, and *kama*, a mixture of roasted barley, rye, oat and pea flour. Mulgimaa is known as the birthplace of a variety of foods that are now considered Estonian national dishes, while Mulgi foodways still also constitute an important part of the people's living heritage. In 2023, the Institute of Mulgi Culture proposed Mulgi porridge to be included in UNESCO Intangible Cultural Heritage List. The international committee will make the decision by the end of 2024. Other contemporary heritage values in the region are the Mulgi language, regional folk costumes, and patterns.

The region in Northern Latvia has preserved some of Livonian culture, however, most of the representatives of this Finno-Ugric ethnic group have faded away and the language is spoken very rarely by very few people. Regarding typical products and activities, Mazsalaca is famous for its apiculture (offering visitors an insight into bee life, wax extraction, and resin casting), and Rūjiena boasts an ice cream factory, one of the largest ice-cream producers in the country.

The areas would benefit from collaboration with neighbouring regions, municipalities, and organisations: sharing resources, knowledge, and best practices strengthens community resilience and capacity. Engaging young people in community activities and supporting schools, extracurricular programmes, and vocational training would help to retain youth. In cross-border cooperation, it is also important to bridge the gap between generations that communicate in different languages: due to both Estonia and Latvia being post-Soviet countries.

Matulji - Ilirska Bistrica (Croatia-Slovenia)

In Croatia, the project will cover areas within the municipality of Matulji and neighboring municipalities that are territorially part of Primorsko-goranska County. This county is located in western Croatia and includes the north-eastern part of the Istrian peninsula, the Kvarner islands, the Croatian coast and Gorski Kotar, with the county centre being the city of Rijeka. Part of the municipality of Matulji is located in the inland of Opatija, while the other part is located in the rural area of Ćićarija. The area covered by the CROCUS project is located in the northern part of the county and in the northern part of the municipality of Matulji.

On the Slovenian side, it primarily concerns the area of the municipality of Ilirska Bistrica, which belongs to the Primorska region and the Notranjsko-kraška statistical region. This area is located in the south of Slovenia, southwest of Ljubljana, and is neighbouring to the state border with Croatia.

The most significant elements of the cultural and historical heritage on both the Croatian and Slovenian sides, besides ethnographic architectural heritage and sacral objects, are carnival customs. These areas have old carnival customs and bell ringers, the bell ringers of Kastavština and Matulji were added to the UNESCO Representative List of the Intangible Cultural Heritage of Humanity in 2009.

The main challenges lie in motivating the local population, especially those actively preserving traditions, to actively engage in the realization of this project, and adequately presenting the long-term benefits that the project should contribute to, both economically and socially, to the development of this border region. The aim is to develop cultural and creative tourism in line with sustainability principles, respecting the local, indigenous, and authentic. Such tourism development should give significance to the local community as an active participant in its creation, as well as a key beneficiary of the benefits that its development brings.

Sondrio – Graubünden (Italy-Switzerland)

The province of Sondrio holds a significant tangible and intangible heritage. Agricultural activities, gastronomy, and associated traditions represent crucial resources for this territory and its inhabitants, including notable cheese production with high-altitude pastures offering peak-quality grass for the animals, while vinyards are located on the south-facing slopes, and apple orchards thrive thanks to the Breva wind from the lake. The main tourist activities revolve around mountain tourism: skiing and snowboarding in the winter and excursions in summer. Outdoor activities and sports competitions are carried out on pastures, hiking trails and terraces.

The mountainous region of Kanton Graubünden, located in eastern Switzerland, characterised by its diverse and dramatic landscapes, including high peaks, deep valleys, and numerous alpine lakes. The Rhine and Inn rivers flow through the canton, contributing to its breathtaking scenery and fertile valleys. The canton is notable for its linguistic diversity, with German, Romansh, and Italian being the official languages. Moreover, it is known for its rich traditions, which are reflected in its architecture, festivals, and customs. The region boasts numerous historical sites, including mediaeval castles, churches, and ancient ruins. Annual events like the Chalandamarz, a traditional spring festival, and the Engadin Ski Marathon, attract visitors and celebrate local heritage.

The canton is home to world-renowned ski resorts such as St. Moritz, Davos, and Arosa, which attract visitors year-round for skiing, snowboarding, hiking, and mountain biking. The natural landscapes, combined with luxury hotels and wellness resorts, make Graubünden a premier destination for tourists seeking both adventure and relaxation. The annual World Economic Forum held in Davos also brings a significant influx of international visitors and business leaders, further boosting the local economy.

Agriculture remains an important economic sector in Graubünden, despite the challenging alpine terrain. The canton is known for its high-quality dairy products. Viticulture also thrives in the lower valleys, producing wines that are well-regarded both domestically and internationally.

The difficulties the province of Sondrio and the Kanton Graubünden face, especially in relation to the safeguarding of local food heritage and local agri-food chains, extend beyond the commonly cited

external pressures of globalization. The high average age of entrepreneurs and employees is one of the main challenges, especially in marginalized areas with minimal generational turnover. Additionally, rural firms suffer from inadequate infrastructure, which limits their market access. Furthermore, despite established networking practices among companies and territorial stakeholders, expanding collaborations and strengthening partnerships remain challenging. Persistent difficulties in collaboration highlight the need for secure and inclusive processes to reinforce territorial collaborations and socio-economic inclusivity. Ensuring stable and long-term collaboration is essential for the sustained development of these territories.

Dobrudzha / Dobrogea (Bulgaria-Romania)

Dobrudzha (Dobrogea) is an area which spans between Bulgaria and Romania, locked between the Danube Delta, the Black Sea and the lower hills of the Balkan Mountain. Dobrudzha spreads across more than 15 000 sq km in both Bulgaria and Romania, it has rich and turbulent history.

Although the Dobrudzha region nowadays is split between two countries, its history, culture and traditions originate from common roots. The region is divided into Northern Dobrudzha (currently part of Romania) and Southern Dobrudzha (currently part of Bulgaria). The name originates from a medieval governor, called Dobrotitsa, while in the ancient age the region was mostly known as Scythia Minor and later as Moesia Inferior (Roman time). The lower Danube, which forms a natural border between Bulgaria and Romania once was the Roman empire frontier to the north (part of the Roman limes). Therefore, along the river, in the region of the Delta and in Dobrudzha region there are numerous archeological and historic heritage and remains. Dobrudzha is also the home of the Hamangia culture that flourished around 5000 BC and predates Sumerian culture. However, many of those findings still need further promotion and product development to serve as prominent tourist attractions.

The rich cultural and historical heritage of Dobrudzha is evident in its array of landmarks scattered across the region. Here, tradition meets modernity through a vibrant array of cultural, musical, art festivals, and other events. Dobrudzha's culinary scene is equally noteworthy. The local cuisine offers a variety of dishes that highlight the distinctive flavours of the region. These elements—the rich cultural heritage, picturesque landscapes, diverse festivals and events, stunning architecture, and delectable cuisine—represent significant potential for the development of cultural tourism in Dobrudzha. By innovatively utilising these resources, Dobrudzha can attract tourists appreciating the local flavours, thus fostering local economic growth and preserving the unique cultural heritage for future generations.

Zala - Pomurske (Hungary-Slovenia)

The Mura Region, located in the northeast of Slovenia, is predominantly a prolific agricultural area with one of the highest crop production in the country, but due to its geographical position and inferior infrastructure the region has the lowest GDP per capita in Slovenia and the highest rate of registered unemployment.

Moravske Toplice is a popular spa town, Radenci is also well-known for its mineral water Randenska and its thermal spa. Besides the spas, further natural resources are utilized in for active tourism products, Lake Bukovnik and its surroundings offers a Forest Learning Path, an orchid park, an adventure park and a fairy tale park. The House of Crafts in Dobronak aims to preserve the cultural heritage of the bilingual area, the revitalisation of the old handicrafts, carrying forward the customs and promoting the development of tourism in this area.

Similarly on the Hungarian side, both natural and cultural resources provide the foundations for tourism products. The Kerka Lagoon offers fishing and rafting and an educational path and there are numerous hiking and cycling opportunities in the area. Family fairy tale parks, a converted barn serving as a touristic event centre and Inkey Manor House in Nagyrécse offer cultural and creative opportunities.

The Living Lab area has a tradition of cross-border cooperation, the natural and cultural attractions of three settlements along the former mail coach route were amalgamated into a tourism product, and some elements of the cooperation are still active ten years after the project has finished. The products developed during the project included various length hiking trails, bicycle tours, horseback riding and geocaching opportunities, and the establishment of the TELE-KA-LAND family fun park with multiple locations. Furthermore, viewpoints and rest areas for horseback and pedestrian tourists were built.

Torniojokilaakso - Tornedalen (Finland-Sweden)

The region is located at the border of Finland and Sweden, in the provinces of Lappi (Lapland) in Finland, and Norrbotten in Sweden. It is based on the Torne River Valley. Administratively, the municipalities covering the region in Sweden are Haparanda, Kiruna, Pajala and Övertorneå, and in Finland Enontekiö, Kolari, Muonio, Pello, Tornio and Ylitornio. The Living Lab focuses specifically on, but is not limited to, the municipalities of Ylitornio (FI) (population 3 765 in 2023) and Övertorneå (SE) (population 1 965 in 2023).

The northern part of the region is inside the Sámi home area, the Sápmi, where the only indigenous people in the European Union are living in. They have distinctive cultures, identities, and languages.

The region is named after the Tornio/Torne River running through the valley into the Gulf of Bothnia, the Baltic Sea. The region became known in the second half of the 18th century by the scientific expeditions and following academic discoveries and reports. These visiting scholars included French geodesic mathematician de Maupertuis, the Italian explorer and composer Acerbi, Swedish botanist Carl von Linné, and Swedish astronomer Andres Celsius, for example.

The main population and economic centers of the region are the (twin) cities of Haparanda and Tornio. The region has its own dialectic form of the Finnish language called meänkieli, meaning 'our language', and there is a common Finnish culture that has become known by the Swedish name Tornedalen. The people, the Tornedalian, are considered as a minority group native to the Torne Valley region, who have their own flag combining the colors of the Finnish and Swedish flags.

The main livelihoods in the region are based on public sector, tourism, forestry, mining, services, and reindeer herding. In the twin cities of Haparanda and Tornio the tourism economy is strongly based on cross-border shopping possibilities. The rest of region's tourism products are linked to cultural tourism and nature-based tourism, the main attraction elements being fishing culture (Kukkolankoski/Kukkolaforsen), Aavasaksa Imperial Cottage, Lake Villages, Arctic Circle, midnight sun and northern lights, and the Sámi culture, for example.

There are cultural tourism routes and the Northern Lights Road (Revontultentie, FI, Norrskensvägen, SE), the latter is 620 kilometers long, connecting the region to Norway and the Arctic Sea. In addition, there are local routes, such as Maupertuis trail based on the French Royal Academy of Sciences expedition in

1739 led by mathematician Pierre Louis Moreau de Maupertuis; the objective of the expedition was to find out the exact shape of the Earth.

Overall, regional and local tourism products have a clear focus on cultural and heritage tourism, supported by historical and academic dimensions and connections to nature-based tourism.

Goriška - Udine (Slovenia-Italy)

Goriška, also known as Nova Gorica is located a town in western Slovenia, on the border with Italy. Culture plays a key role in the life of the town: one of the three national theatres of Slovenia can be found in Nova Gorica, and Kromberk Castle is the home to the Regional Museum Goriški Muzej, Nova Gorica and Gorizia on the Italian side of the border are designated as the European Capital of Culture in 2025.

Several castles and mansions in the region serve touristic purposes, operate as tourist attractions on their own right, provide venues for local events, host workshops and operate as a restarurant. Rihemberk Castle operates as a local museum, Loze Castle is a unique historic and architectural treasure waiting to be restored, Mansion Ozeljan offers ceramic workshops, local events and is a pizzeria at the same time, while Mansion Zemoni is well known for its culinary excellence.
The close-by Vipava Valley is rich in natural resources. The mild climate makes the area ideal for agricultural activities, especially for the cultivation of different kinds of fruits, and the Vipava Valley is also renowned for its high-quality white wines.

Udine on the Italian side of the living lab area is located in northeastern Italy, known for its rich history, vibrant culture, and beautiful architecture. Key attractions include Udine Castle and various museums showcasing local art and history, and the city also offers regional culinary delights.

Part of the cultural offer of Udine and its surroundings are similar to the Slovenian counterpart, many castles can be found in the area, but these are more geared to touristic utilization. Castle of Villalta is a multifunctional event venue equipped with a kitchen and a conference room that makes the castle suitable to serve larger scale events as well. Furthermore, it also offers accommodation services. Similarly, Villa Caiselli offers accommodation and hosts events, it is a popular venue for weddings and is also renowned for its gastronomic offer. The Castle of Cassacco can be visited by appointment only, but with prior notice the castle welcomes educational and exclusive visits, and its conference room is also available for events, where catering can also be provided.

3.1.2 Living lab establishment process

Living labs will be established with a core development team including key stakeholders from both sides of the border. The core development team for each living lab will comprise a small group of key stakeholders from the regions on each side of the border. Each living lab will be managed by a living lab coordinator (with resources budgeted for this task). This will be an individual with a well-established network, experience of cross-border cooperation projects and knowledge of the local circumstances. They will be selected by the research team associated with each living lab. The living lab coordinator will work closely with the rest of the core development team to identify the needs and challenges of the area, identify participants for future workshops, selecting venues, etc. Ensuring that both border regions

involved in the living lab are equally represented and have their concerns and interests addressed will be critical to the success of the labs. The management of cross-border living labs involves challenges related to the language, institutional set-ups, geographical distance between partners, etc. CROCUS aims for a balance of activities on either side of the border in each lab so that local stakeholders can participate in their own language with the core development team coordinating cross-border activities and involving key stakeholders where appropriate. It is also important to emphasise the specificity of the border regions and the neutrality of the living lab coordinators. Each cross-border area will have its own needs and challenges, and the precise form and organisation of the labs will vary accordingly, but the core development teams will include both male and female members. A preliminary selection of the cultural heritage with most potential for cross-border CCT cooperation has been made in consultation with CCT stakeholders in the living lab areas, but this may be adjusted if necessary. It will be critical to involve the key stakeholders related to type of cultural heritage that is in focus in each lab to ensure local ownership and exploitation of the results after the end of the project. The exact number and nature of these stakeholders will vary but could include businesses, cultural institutions, or community groups. Each lab will establish its own terms of reference to guide their work and ensure a common understanding.
It will be critical to involve the key stakeholders related to type of cultural heritage that is in focus in each lab to ensure local ownership and exploitation of the results after the end of the project. The exact number and nature of these stakeholders will vary, and each lab will establish its own terms of reference to guide their work and ensure a common understanding.

On the basis of the SmartCulTour experiences, Fidelbo et al (2023, p 124-125) make a number of concrete recommendations for the set-up of living labs on sustainable cultural development:

- Clearly define characteristics and ambitions at the start of the project
- Appoint a local lab manager
- Work in local languages
- Embed the living lab into already existing structures
- Adapt participation methods to local contexts
- Ensure flexibility in planning
- Establish governance frameworks and legal clarity on ownership of lab results
- Ensure clear division of roles and responsibilities
- Set up effective and efficient monitoring system and common frameworks for evaluation
- Provide participants with a roadmap for future action
- Ensure inclusion of local communities, cultural groups, government entities, tourism operators, NGOs and academia.

These recommendations have guided the planning of the CROCUS living labs.

3.1.3 Identification of stakeholders for the Living labs

The Project Workshop held in Veszprém in September 2024 focused on identifying key stakeholders for the Living labs, provided a conceptual framework for the types of stakeholders of cultural and creative tourism, with special attention to rural and remote areas along national borders.

The following types of stakeholders were considered important for the successful operation of the Living labs in a cultural tourism and rural context:

Education sector

- Universities (including university students for their innovative approach)
- Colleges
- Schools

Governmental sector

- National, regional and local tourism authorities
- Regional councils
- Regional development agencies
- National parks
- Chambers of commerce
- Private-Public Partnerships in the field of tourism and culture

Business Sector

- Accommodation
- F&B
- Tour Operators & Travel Agencies
- Visitor Attractions
- Destination Management Organizations
- Local artists
- Craftsmen
- Creative hubs
- Cultural institutions

Civic sector

- Associations and NGO in the field of cultural and creative tourism
- Wine and gastronomy routes
- Clubs
- Local action groups

The Living labs will heavily rely on the core development team, comprising a small group of key stakeholders from the regions on each side of the border. These teams will include a minimum of 6 persons from the Living Lab area - 3 from each side of the border - and the Coordinator and at least one researcher from the CROCUS project team. The core development team is set up ideally achieving a balance between male and female participants, as well as diversity in relation to age, and other social differences.

Appointing a living lab coordinator

Each living lab will be managed by a living lab coordinator. This will be an individual with a well-established network, experience of cross-border cooperation projects and knowledge of the local circumstances. They will be selected by the research team associated with each living lab in the early months of the project.

The living lab coordinator will help the research team identify and recruit other members of the core-development team. The living lab coordinator will work closely with the rest of the core development team to identify the needs and challenges of the area, identify participants for future workshops, selecting venues, etc. Ensuring that both border regions involved in the living lab are equally represented and have their concerns and interests addressed will be critical to the success of the labs. Each cross-border area will have its own needs and challenges, and the precise form and organisation of the labs will vary accordingly, but the core development teams will include both male and female members. A preliminary selection of the cultural heritage with most potential for cross-border CCT cooperation has been made in consultation with CCT stakeholders in the living lab areas, but this may be adjusted if necessary.

4 Design Thinking

4.1 Design thinking in CROCUS

CROCUS adopts a responsible design thinking approach to the operation of its living labs, building on the principles of reflexivity, anticipation, inclusion and responsiveness. The aim of the design thinking process in CROCUS is the development of more sustainable cultural business models. Design thinking is a form of human-centred problem solving that takes the form of an interactive and iterative process through which products, processes or services can be designed (2008; Seitz, 2020). It consists of five 'modes': empathising, defining, ideating, prototyping, and testing.

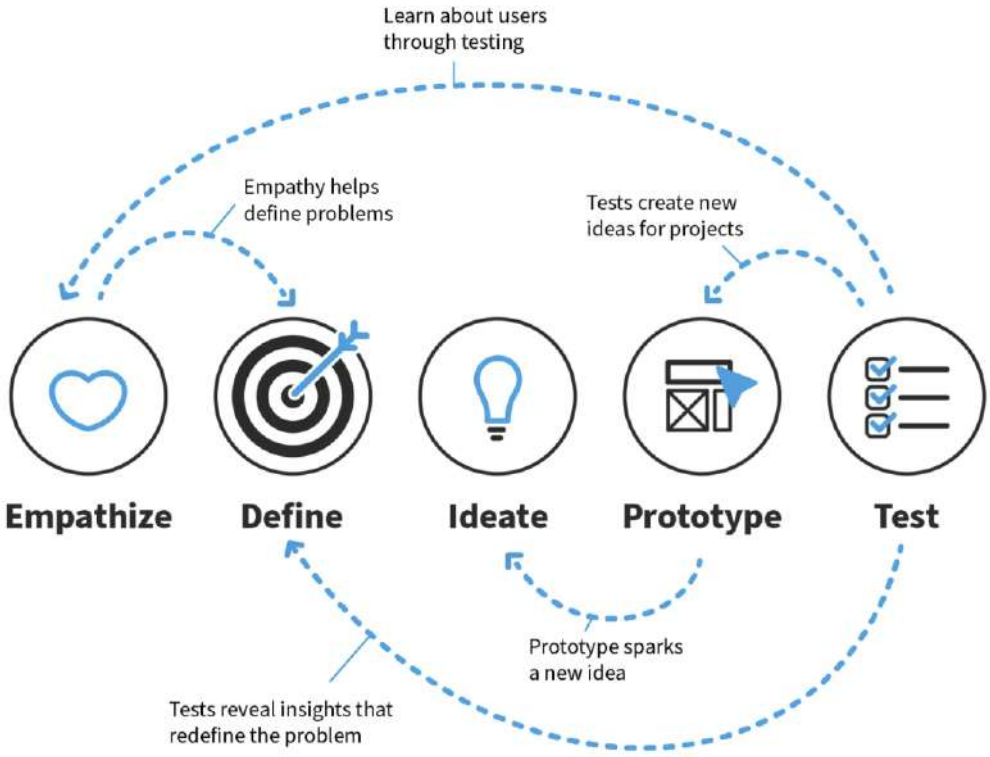

Figure 2 Design thinking process. Source: Interaction Design Foundation, CC BY-SA 4.0

The empathising phase will begin with the research team collecting data and analysing the specific needs, challenges, and capacities of each cross-border area through interviews with key CCT stakeholders, as well as surveys of citizens, businesses and tourists regarding their needs and preferences. The analysis of the primary and secondary data collected in the empathising phase will be the basis for designing the parameters for the new business models, which will be presented to, and refined on the basis of feedback from, local stakeholders. The ideating phase takes place in workshops (one on each side of the border) and will engage a range of CCT stakeholders, citizens and policymakers in discussions and idea-generation regarding the development of new, sustainable CCT business model prototypes. The workshops will be run by a local facilitator, selected by the living lab coordinator, who is familiar with the area, and the process will be based on inclusive and participatory tools. Following the ideation workshops, the core development team in each living lab will then use the material produced develop two draft business model prototypes in dialogue with other stakeholders. The prototypes will take the form of sustainable business model canvases that summarise the main value proposition, partners, resources, customer segments, communication channels, revenue, costs, and eco-social costs and benefits. The final part of the prototyping process will be to lay the groundwork for long-term project sustainability by developing roadmaps for piloting and future promotion of the new business models. The last mode of design thinking is testing the prototype developed as a result of co-creation processes during the previous modes, however testing is not part of the CROCUS project.

4.2 Empathising

Empathising refers to understanding the needs, challenges, and values of users (Müller-Roterberg, 2017). At the heart of the phase is the series of tasks that aim to understand the physical and emotional needs, the values and challenges of people within the context of the issue addressed with design thinking.

In the CROCUS project the empathising mode aims to understand the needs, challenges and possibilities in relation to the type of cultural and/or creative tourism that the living lab focuses on. Furthermore, CROCUS also aims to unveil the potential resources for developing the cultural and creative tourism in these areas, as well as the barriers that unable the desired level of utilization of resources that are already available. CROCUS is committed to fostering CCT development with consideration for heritage conservation issues and the capacity of the local environment and communities. Understanding the values of the stakeholders is crucial to ensure the socio-cultural sustainability of the business model to be developed in the individual living labs.

Empathising is necessary as the problems researchers try to solve are rarely their own, they are those of a particular group of people. It is essential to gain empathy for who they are and what are important to them. Direct engagement with people reveals information about their thought processes and values. The stories people share and their self-reported are powerful indicators of their core beliefs about the world. Effective designs are rooted in a deep understanding of these beliefs and values (Müller-Roterberg, 2018).

To empathize the researcher must be able to connect with people and seek their stories. Observation may be a useful technique enabling the researcher to see users and their behaviour in the context of

their lives. Observations in relevant contexts can provide additional value to interviews. Some of the most impactful insights arise from observing a gap between what someone says and what they actually do. Others can come from unexpected workarounds that a person has developed, which the interviewees might not have considered worth mentioning during a conversation. (Hasso Platner Institute of Design, n.d.)

Engaging is another technique used in the empathising phase, which some consider identical to 'interviewing' however, it should really feel more like a conversation rather than an interview with a series of questions, sometimes rigorously structured. The researcher should allow the actor being engaged in the conversation deviate from the set questions. When conducting qualitative interviews, the researcher aims to gain an insight into the respondents' perspectives and experiences in relation to a specific topic (Müller-Roterberg, 2018).
It is possible to combine observation and engagement. The researcher should engage in conversations within someone's home or workplace, where many stories are reflected in their surroundings, which may inspire further questions.

4.2.1 Empathising in CROCUS

In the CROCUS project the empathising mode aims to understand the existing situation from the point of view of the various stakeholders. The different stakeholders may have differing views on the existing situation as they may have different interests, tourists may assess the existing cultural and creative resources differently to local citizens, local authorities or tourism service providers. Likewise, the challenges will also manifest in different forms for the different stakeholders, therefore the analysis of the contexts, resources and capacities of the living lab areas needs to include the experiences and views of citizens, policymakers, businesses and tourists.

Rural areas in general are diverse in relation to landscape and climate, demography, socio-economic development, and peripherality, and the same is true for the living lab areas in the CROCUS project. Therefore, they have different needs and face different challenges in relation to sustainable development. The level of utilization of cultural resources (e.g. castles and manor houses) may show significant differences on the two sides of the border in the same living lab, which necessitates a deeper understanding of the values and challenges within the different contexts.

The framework of the sustainable business model canvas provides a suitable structure for the secondary and primary research to be carried out in the empathising phase, since the living labs will focus on business model innovation. (D2.1 of Work Package 2 provides detailed information on the sustainable business model canvas (SBMC)). The SBMC incorporates

- key partners
- key resources
- key activities
- value propositions
- customer segments
- customer relationships
- channels

- cost structure
- revenue streams
- eco-social costs
- eco-social benefits.

Data and information relating to the individual building blocks should provide sufficient basis for defining the challenges and possibilities regarding the development of new sustainable business models for cultural and creative tourism development in the living lab areas.

In summary, the empathising phase will begin with the research team collecting data and analysing the specific needs, challenges, and capacities of each cross-border area through interviews with key CCT stakeholders, as well as surveys of citizens, businesses and tourists regarding their needs and preferences.

Secondary data collection

The core development team for each lab will together identify other important stakeholders and sources of data so that the researchers can investigate the social, economic, environmental, and institutional contexts, cultural and natural heritage and capacities of the cross-border area as well as the needs and perspectives of local businesses, citizens and tourists. The research teams will collect secondary data and analyse relevant indicators (including tourism statistics, environmental, social, economic and CCT indicators) building on the prior work of the H2020 SPOT project (https://www.spotprojecth2020.eu). Table Y shows the secondary research indicators that will be collected for each side of the border in each living lab area. The research team acknowledges that for some indicators there might not be available statistical data in some countries, that some of the groupings might differ across countries, or data for other indicators beyond those in Table Y might be available in some countries but not available in others.

Table 1 Secondary research indicators

Indicator	Subdivision / remark	Unit of measurement
Geographic indicators		
Area size		Square kilometres
Share of protected sites		Percentage
Share of Natura2000 sites		Percentage
Main protected natures sites / nature parks	Names	Number
Demographic indicators		
Number of inhabitants	Structure by biological sex (men/women)	Number
Age groups	Ages <15, 15-29, 30-44, 45-64, 65+ (or other grouping as available in the particular country)	Number and Percentage
Demographic changes	Changes in the number and age group shares in the population	Number and Percentage

	in the last 10 years or other timeframe based on available data	
Share of population with higher education		Percentage
Religious structure of population		Percentage
Economic indicators		
Region's GDP		Local currency and in Euro
Average income	Monthly or annual data as available	Local currency and in Euro
Unemployment rate		Percentage
Employment sectors	Share of people employed in primary (agriculture, forestry, fisheries, mining), secondary (industry) and tertiary (services) sectors	Percentage
Tourism indicators		
Economic contribution of tourism		
Share of the population working in tourism		Percentage
Contribution of tourism to the economy	Percentage of regional GDP	Percentage
Tourist resources		
Number of cultural routes (by Council of Europe)		Number and list
Number of cultural objects	Museums/art galleries/UNESCO sites/religious sites/historical sites/ commemoration sites/ war monuments/archaeological sites/other	Number
Main cultural attractions	Top 5 cultural attractions	List
Local/regional festivals		Number and list
Number of visitors at visitor attractions	Could be specified by attraction as available	Number
Accommodation statistics		
Number of accommodation establishments and beds		Number
Structure of accommodation establishments	By size, category, type, municipality and other groupings as available	Share
Average size of accommodation establishments	By category, type, municipality and other groupings as available	Number of beds/rooms

Number of accommodated guests	By month/year as available	Number
Number of overnights	By month/year as available	Number
Occupancy of accommodation establishments	By month/year as available	Percentage
Average stay	By month/year as available	Number of overnights
Revenue from overnight stays	By month/year as available	Local currency and Euro
Average revenue from one guest	By month/year as available	Local currency and Euro
Average revenue from one overnight	By month/year as available	Local currency and Euro
F&B statistics		
Number of F&B outlets		Number
Accessibility		
Transportation accessibility of the destination	Transport infrastructure to and within the destination: airports, ports, roads.	List
Destination promotion		
Number of local/regional DMOs		Number and list
Number of dedicated local/regional tourist promotion websites		Number and list
Tourism demand characteristics		
Number of tourists in the destination	Dynamics for the last 5 years	Number
Structure of tourists	By biological sex, month, domestic/ international, country/ nationality, and other grouping as available	Percentage

Primary data collection

The research team for each lab will undertake surveys of citizens, businesses, and tourists to establish their engagement with CCT, understand the impacts of existing tourism activities on local communities, and identify the needs and priorities of different stakeholder groups regarding CCT development. Primary data will be collected through questionnaires and interviews. Participation will be voluntary. Ethics approval for the primary research will be obtained by the research team based on the internal rules of each project partner.

Questionnaire survey

The questionnaire will facilitate the collection of quantitative data for subsequent statistical analysis. The research population includes local citizens, tourism-related businesses and tourists who have visited the LL area. The cover page of the questionnaire will provide the relevant research information such as CROCUS project presentation, aim of the research, anonymity, voluntary participations, respondents'

right to withdraw from the research, ethics approval, data protection and data use, etc. Respondents will need to explicitly agree to participate in the research by answering a relevant question. The questionnaire will include a filter question that will redirect the respondents to the questions relevant to the respective respondent group. Some questions will be common for all 3 groups and will allow comparison across respondent groups. Other questions will be specific for each respondent group within a living lab area. Additionally, most questions for the 3 respondent groups will be the same for all 8 living lab areas to allow comparisons across LL areas. However, each LL will be able to add a block with additional questions for each respondent group that will be specific for that particular LL to reflect on the characteristics of the local LL area. The questionnaire will be translated to the languages of all countries in the LL areas. The links to the questionnaire will be distributed via social media, face-to-face (e.g. the researchers contacting potential respondents with tablets), or email. The questionnaire will be anonymous and no personal identifying information will be collected.

It is anticipated that the sample will include 100 citizens, 30 tourism-related businesses and 100 tourists in each cross-border area, so that a wide range of perspectives are included in the empathizing stage. The sample will, as far as possible, be gender-balanced and include citizens and tourists from different age groups, and socio-economic backgrounds. Given the importance of 'silver' tourists in relation to CCT, particular efforts will be made to include tourists in the 50 and 60+ age groups. The researchers will aim to involve tourism-related businesses from various tourism sectors (e.g. accommodation, F&B, visitor attractions, travel agencies, etc.). Finally, the sample should include approximately equal number of respondents from both sides of the border. It is recommended that not minimum 40% and maximum 60% of respondents in each living lab come from one of the two countries in it.

Interviews

Qualitative data will be collected via interviews. The research population includes CCT stakeholders such as cultural organisations/associations, entrepreneurs, and local stakeholders who can provide insight into local issues and challenges (e.g., local authorities, regional development agencies, business associations, trade unions, environmental groups). The aim will be to interview stakeholders who can provide and help formulate the 'problem context' in relation to social, economic, environmental and heritage conservation issues. This is critical to developing CCT as part of broader placemaking that takes account of sustainability issues in a holistic way. The expected sample size is minimum of 16 CCT stakeholders (8 on each side of the border). To ensure confidentially of interviewees, their names and organisations will be anonymised in subsequent reports and publications stemming from the research. The research team can video or audio record the interviews based on the preferences of interviewees. The recordings will be managed as per the Data Management Plan of the CROCUS project.

In relation to both the questionnaire and stakeholder interviews, the research teams will pay particular attention to the carrying capacity of different parts of the cross-border areas. This will include the environmental (physical resources), social (from host community perspective) and behavioural (visitor perceptions of over-crowding) capacity.

The primary and secondary data will be synthesised to provide in-depth understanding of the needs, challenges, and potential of each cross-border area, which will comprise the **living lab context analysis.** The synthesis report will be discussed with the core development team for each lab during 'definition' workshops that will set the parameters for the prototyping phase. The researchers' analysis will enable the core development team to define the parameters for the new business models, which will be presented to, and refined on the basis of feedback from, local stakeholders.

4.3 Defining phase

In the transition from empathy work to drawing conclusions, it is essential to process and synthesize all the information collected during secondary and primary research and everything that was observed to understand the overall picture and identify key issues. Unpacking this information allows the researcher to initiate that process, sharing the findings with other designers and represent the crucial elements visually (Hasso Platner Institute of Design, n.d.). It is recommended to display the information and observations with visual aids, including photos, post-it notes with quotes or any other materials that convey impressions and information about your users. This marks the start of the synthesis process, leading into the 'Define' phase.

The defining phase of the design process is all about bringing clarity and focus to the design space. In this phase all the information collected during the empathising phase is interpreted, it involves the process of synthesizing all the information gathered in the empathising phase, to discover potential connections and patterns. The aim of the define phase is to draft a meaningful and actionable problem statement, which should be a guiding statement that focuses on insights and needs of a particular user or users.

The defining phase is essential to the design process, as it culminates in the researcher's point of view (POV), which clearly articulates the problem at hand. The POV identifies the right challenge to tackle, informed by a deeper understanding of people and the problem space. The Defining phase also serves to synthesize the diverse findings into impactful insights (Hasso Platner Institute of Design, n.d.).

This phase provides the time and frame for the researcher to reflect on what emerged during the conversations and observations with people, and to assess whether a pattern has emerged from the overall information and data set. By exploring the reasons behind a person's behaviour or feelings, the researcher connects the respondents' experiences to a broader context. The researcher should aim to develop a clear understanding of the type of user involved in the design thinking process and should synthesize and identify a focused set of need that are crucial to address. Work to articulate the insights you've gained through the synthesis of the information collected during your empathy and research efforts. Finally, combine these three elements—user, need, and insight—into an actionable problem statement that will guide your design process moving forward (Müller-Roterberg, 2018)

Clustering the information and finding themes are key steps in the process. Visualising the information and data with post-it notes, photos, etc. will help to organize and group the ideas and eventually to identify the most significant or recurring themes. Once the significant themes are identified, a problem statement can be crafted. The problem statement should reflect on the following questions: 1) What is the problem? 2) Who is affected by the problem? 3) Where does the problem occur? 4) Why is it important? (Hasso Platner Institute of Design, n.d.)

A clearly defined and articulated point of view will lead into the ideation phase. A useful transition step is to generate a list of brainstorming topics that emerge from the problem statement. These topics usually represent different facets of the overall challenge. When entering the ideation stage, the researcher can select from these different topics and explore several of them to find the best focus that enables the group to generate a substantial number of compelling ideas (Hasso Platner Institute of Design, n.d.)

4.3.1 Defining phase in CROCUS

The defining phase of the design thinking process adopted by CROCUS, the living lab context analysis providing an in-depth understanding of the needs, challenges, and potential of each cross-border area will be the starting point. The synthesis report will be discussed with the core development group for each lab during 'definition' workshops (one definition workshop per living lab). As the living labs operate in different context, have different needs, values and face different challenges, the definition workshops should accommodate a broad framework for the following ideation processes, and for setting the parameters for prototyping.

The sustainable business model canvas is the recommended structure for secondary and primary data collection in the empathizing phase as it enables the understanding of the existing situation, values, challenges and opportunities in various contexts. In Work Package 2, based on the analysis of the literature review CROCUS partners identified a wide range of business models that are currently employed in cultural and creative tourism in rural and remote areas.

With the elaboration of the CCT business model ideal types in D2.2, the CROCUS project has a significant knowledge base that could be utilized in the defining phase. The definition workshops in the individual living labs are recommended to use the ideal types as the basis for analysing existing business models related to the cultural resources that are the focus of the living lab, and associated challenges and opportunities in the cross-border region. The core development teams should on the basis of the synthesis report of their living lab decide whether they should focus on tailoring one or some of the key elements of an existing business model to their individual needs and values, such as offering new value propositions, better exploiting existing channels to reach customers or finding new streams of revenue. However, the framework must ensure enough flexibility to address specific issues which are unique to the living lab, such as the challenges of indigenous population or the high average age of entrepreneurs that impacts on the innovation capacity of the area.

The outcome of definition workshop will provide the input for the ideating phase and set the parameters for prototyping.

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