TRAINING PACK

Tourism&VET in tourism advancing circular – exploring the possibilities

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MODULE 1 Starting Circularity

Introduction

The idea of the Circular Economy (CE) has become an important way to solve global sustainability problems. The CE aims to change the traditional economic model from a “take, make, waste” approach - where resources are used and then thrown away - to a more sustainable system where resources are used more efficiently, waste is reduced, and materials are kept in use for longer periods (Ellen MacArthur Foundation, 2020).

Tourism is one of the fastest growing industries in the world and plays an important role in economic development. However, it also places great pressure on natural resources, ecosystems and local communities. For example, the tourism sector is responsible for about 8% of global greenhouse gas emissions, leading to problems such as resource depletion, waste and damage to biodiversity (Lenzen et al., 2018). These challenges show why it is crucial for tourism to move towards more circular practices.

This module will introduce the basic principles of the Circular Economy and explain how these ideas can be applied to tourism. Through examining current tourism practices and exploring new ideas, students will gain a deeper understanding of how CE can help make tourism more sustainable.

The main goal of this module is to help learners fully understand the Circular Economy (CE) and how it can bring positive changes to the tourism industry. The Circular Economy is different from the usual way we make and use products. Instead of taking resources, using them, and throwing them away, CE focuses on reusing, recycling, or repurposing resources. This approach is becoming more important as industries like tourism face environmental and social problems, such as wasting resources and harming ecosystems.

Given the complex and multifaceted nature of the tourism industry, covering accommodation, transport, food, leisure, etc., the aim of the module is to provide students with a theoretical and practical framework to critically address circularity concepts and apply them in tourism contexts. The content of this module is designed to enable students not only to understand the fundamental principles of the Circular Economy, but also to critically evaluate and apply circular solutions adapted to real-world scenarios within tourism destinations, businesses and tourism-related ecosystems in general.

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Objectives

The main objective of this module is to provide students with a solid understanding of the basic principles of the Circular Economy (CE) and how these principles can be applied to the tourism industry. In this context, the module aims to ensure that students acquire the necessary knowledge to conceptualize, design and implement circular economy practices that can address key challenges in the tourism sector. This understanding will be built through a structured examination of fundamental CE concepts, including resource efficiency, waste reduction and closed-loop systems, which are essential for the creation of sustainable solutions.

Students will also explore the connection between circularity and tourism, focusing on how tourism activities, such as transportation, accommodation and food services, contribute to resource consumption, waste and environmental impact. Through this exploration, the module will encourage students to critically evaluate existing practices in the tourism sector and recognize areas where circularity can be applied. This will involve identifying key opportunities for sustainable innovation and transformation.

In addition, the module aims to guide students in understanding the systemic changes needed to move towards a circular tourism model. It will offer insights on how these changes can be implemented at different levels of the tourism industry, from small businesses to large-scale destinations. The overall objective is for students to develop the ability to identify effective circular solutions and apply them strategically in real tourism contexts, thus contributing to the ongoing transformation of the sector towards sustainability.

Learning outcomes

Learning Outcome 1: Analyze the current state of tourism and its environmental impact.

The first key learning outcome is to analyze the current state of tourism and its environmental impact. Tourism, being one of the largest and fastest growing global industries, has a significant environmental footprint. In 2019, tourism accounted for approximately 10% of global GDP, contributing to economic growth worldwide. However, this growth has come with considerable environmental costs.

Tourism has a high demand on natural resources, such as water, energy and land, all of which can lead to the exhaustion of local resources. For example, hotels, resorts and restaurants consume large amounts of water and energy and, in popular tourist destinations, this demand can surpass local supply. In addition, transportation, particularly air travel, is a major contributor to greenhouse gas emissions, accounting for about 8% of global emissions (Lenzen et al., 2018). The carbon footprint of tourists, especially flights, worsens global warming and climate change.

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The tourism industry also generates significant waste, such as single-use plastics, food waste and packaging. This waste often ends up in landfills, damaging ecosystems and polluting oceans, rivers and forests. In addition, the high demand for natural landscapes can lead to environmental degradation. For example, overcrowding in popular tourist destinations can damage ecosystems such as coral reefs or wildlife habitats, while the development of tourism infrastructure can contribute to land-use changes that threaten biodiversity.

In this learning outcome, students will explore the negative environmental impacts of tourism through case studies, research articles and real-world examples. They will learn how various aspects of tourism, such as accommodation, transportation, food consumption and recreational activities, contribute to environmental degradation. This analysis will be an essential step in identifying areas for improvement and conceptualizing circular solutions to mitigate these impacts.

Learning Outcome 2: Identify the benefits of adopting a Circular Economy model in the tourism sector.

The second learning outcome focuses on identifying the benefits of adopting a Circular Economy model in the tourism sector. By understanding the principles of CE and the environmental impacts of current tourism practices, students will be able to identify how Circular Economy strategies can help reduce the industry's ecological footprint and improve sustainability.

The Circular Economy model offers a number of benefits for the tourism sector, both environmentally and economically. Some of the main advantages are:
Resource conservation: By adopting circular practices, tourism businesses can reduce their consumption of natural resources. For example, hotels can reduce water and energy consumption through energy-efficient appliances, water-saving technologies and waste-to-energy systems. These measures can help businesses reduce costs and operate more sustainably, while conserving essential resources.

Waste reduction: By prioritizing waste reduction, reuse and recycling, tourism businesses can reduce the amount of waste they produce, preventing it from ending up in landfills. This can include strategies such as offering guests reusable water bottles instead of single-use plastic or implementing waste sorting systems that separate recyclable materials from general waste.

Reducing carbon emissions: The tourism sector's significant contribution to global carbon emissions can be mitigated by adopting circular practices. For example, by using sustainable transportation, such as electric vehicles, or promoting local tourism to reduce long-distance travel, tourism businesses can reduce their carbon footprint. In addition, by using renewable energy sources and reducing energy consumption in buildings, tourism operations can reduce their overall emissions.

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Cost savings: Circular practices can result in long-term cost savings for tourism businesses. For example, reusing products, repairing rather than replacing, and improving resource efficiency can reduce operating costs. These savings can be passed on to customers or reinvested in sustainable initiatives, creating a competitive advantage for businesses.

Improved reputation and customer loyalty: As more travelers become aware of the environmental impact of tourism, demand for green and sustainable travel options increases. By adopting the principles of the Circular Economy, tourism businesses can attract customers who prioritize sustainability, enhancing their reputation and building customer loyalty.

Long-term sustainability: Implementing Circular Economy strategies can help tourism businesses prosper over the long term by protecting the natural resources on which they depend. By focusing on sustainability, tourism destinations can ensure that they will remain viable and attractive to tourists for years to come, without exhausting their local resources or damaging the environment.

Content

Definitions and principles of Circular Economy

The Circular Economy (CE) is a transformative model that challenges traditional and unsustainable methods of production and consumption. In essence, the Circular Economy aims to create a restorative and regenerative system, in which resources are used efficiently, waste is minimized, and the value of products, materials and resources is retained in the economy for as long as possible (Ellen MacArthur Foundation, 2020).

In contrast to the traditional economic model, which is based on a linear approach, the Circular Economy is designed to close the loop of product life cycles. This approach aims to reduce dependence on finite resources, prevent pollution and conserve natural ecosystems (Stahel, 2016). By ensuring that materials and products are continuously recycled, the circular economy not only mitigates negative environmental impacts, but also creates long-term economic opportunities. This model stands as a potential solution to the environmental challenges of resource exhaustion, excessive waste and pollution (Geissdoerfer et al., 2017).

In the Circular Economy, products and materials are no longer treated as disposable, but as valuable assets to be reused, repaired, remanufactured or recycled, which helps to maintain the flow of resources and products within the economy. Through this process, the Circular Economy aims to minimize the extraction of raw materials and reduce the environmental costs associated with production, thus promoting a more sustainable and regenerative approach to industrial activities (Bocken et al., 2016).

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Key principles of the Circular Economy

There are three key principles at the heart of the Circular Economy: reduce, reuse and recycle. These principles are designed to ensure that resources are used as efficiently as possible, and waste is minimized throughout the life cycle of products (Ellen MacArthur Foundation, 2013).

Reduce: The principle of reduce refers to minimizing the amount of resources and energy used in the creation and consumption of goods. It aims to reduce environmental impact by reducing the consumption of raw materials, energy and water during the production phase (Bocken et al., 2016). This principle calls for more efficient manufacturing processes and the design of products that use fewer materials and generate less waste. For example, companies can redesign products to have fewer parts or use materials whose production consumes fewer resources (Ellen MacArthur Foundation, 2020).

In addition to minimizing material inputs, the principle of reducing also includes limiting the production of waste throughout the product's life cycle. By optimizing the production process, companies can minimize their environmental footprint, reduce costs and create more sustainable products. This can involve reducing packaging, using renewable resources and eliminating harmful chemicals in production.

Reuse: The principle of reuse focuses on extending the useful life of products and materials by using them several times before discarding them. Rather than throwing items away after their initial use, the goal is to find new ways to use them, either for the same or a different purpose (Bocken et al., 2016). This principle encourages companies and consumers to keep products for as long as possible, reducing the need to buy new items and conserving the resources needed to create them.

Examples of reuse include repairing broken products, reconditioning old machines for later use, or finding new applications for old materials. For example, in the textile industry, old clothes can be reused to create new fashion items or other products, instead of being sent to landfills. Reuse not only helps to conserve natural resources but also reduces the energy costs associated with the production of new products (Stahel, 2016).

Recycling: Recycling involves the process of converting waste materials into new products, avoiding the loss of valuable materials. It allows materials such as metals, plastics, paper and glass to be reprocessed and reused in the manufacture of new items. Recycling not only conserves raw materials but also reduces energy use and greenhouse gas emissions compared to the extraction and processing of new raw materials.

For example, when paper is recycled, it can be turned into new paper products, saving trees and reducing energy consumption. Similarly, aluminium cans can be recycled several times without losing quality, making them one of the most efficient materials for recycling. Recycling reduces

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the need to extract and harvest raw materials, which can have negative environmental and social impacts.

Although recycling is crucial to the circular economy, it is considered the last resort after maximizing reduction and reuse. Importantly, recycling still requires energy and resources, making it less efficient than waste reduction and product reuse (Geissdoerfer et al., 2017).

Comparison with the traditional linear model

The traditional linear model of production and consumption follows a simple process: take, make, dispose. In this model, natural resources are extracted from the environment, used to create products, and then discarded after use. This unidirectional process has been the dominant economic system for centuries and has contributed to the overexploitation of natural resources, increased pollution and massive waste generation.

In the linear model, resources are considered inputs to be consumed, and products are designed with the expectation that they will eventually be discarded. Once a product has reached the end of its useful life, it is often sent to landfills or incinerators, where it can generate environmental pollution and contribute to climate change. This model is wasteful and unsustainable because it does not take into account the limited nature of resources and the environmental costs of their disposal (Stahel, 2016).

On the other hand, the Circular Economy aims to break this cycle by introducing a more sustainable system. Instead of throwing away products once they have been used, the Circular Economy encourages companies and consumers to rethink the way products are made, used and disposed of. The key difference lies in how resources and products are treated:

In the linear model, once a product has been manufactured and consumed, it is thrown away, which generates waste and exhausts resources. This process causes exhaustion of raw materials, increases pollution and generates high carbon emissions.
In the circular economy, products are designed with their entire life cycle in mind, from production to elimination. The focus is on keeping products in use for as long as possible, repairing and reusing them, and ensuring that materials are recovered through recycling. This creates a closed-loop system in which waste is minimized, and resources are continuously reintegrated into the economy.

The Circular Economy reduces dependence on finite resources and minimizes waste, helping to reduce environmental degradation. By maintaining the value of products, materials and resources within the economy, the Circular Economy ensures minimization of environmental impact and promotes long-term sustainability.

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In summary, the key differences between the traditional linear model and the Circular Economy are as follows:

Linear model:
Follows a “take, make, dispose” approach.
Resource extraction generates waste and pollution.
Products are designed to be thrown away after use.
Waste and pollution are the end result of the process.

Circular economy:
Follows a “reduce, reuse, recycle” approach.
Resources are continuously recycled, reducing the need for new raw materials.
Products are designed to be durable and reusable.
Waste is minimized and materials are reused or recycled.

GROUP DYNAMICS AND **CASE STUDY ACTIVITIES** FOR THE KEY PRINCIPLES OF THE **CIRCULAR ECONOMY IN TOURISM**:
Group Dynamic: "Hotel waste detective"
Objective: Identify sources of waste and propose solutions.
Activity:
Divide students into small groups.
Give each group a case scenario of a hotel struggling with waste issues (e.g., excessive plastic use, food waste, single-use amenities).
They act as "waste detectives" and must identify three major waste problems and propose circular solutions (e.g., refillable shampoo dispensers, composting organic waste).
Groups present their findings and solutions.

Case Study: "Zero-Waste hotel challenge"
Case: A boutique hotel wants to become zero-waste in one year.
Task:
Students analyze the hotel's current waste generation.
Propose strategies like partnering with suppliers for sustainable packaging, using digital check-ins, and repurposing furniture.
Each group presents their action plan with a timeline.

Group Dynamic: "Eco-Hotel swap market"
Objective: Learn how to extend product lifecycles.
Activity:
Groups represent different hotel departments (housekeeping, kitchen, reception, etc.).
Each team gets "waste items" (e.g., old linens, broken furniture, leftover soap).

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They must come up with creative ways to reuse, repurpose, or recycle the items rather than discarding them.
Example: Old linens turned into reusable shopping bags; soap scraps melted into new bars.
Teams share ideas, and the most innovative wins.

The current state of tourism and its environmental impacts

Tourism is one of the world's largest and fastest growing industries, generating significant economic benefits. However, as the sector continues to expand, it has come under increasing environmental impact due to its growing levels. This section will discuss the current state of global tourism, the negative environmental effects it causes, and provide examples of tourism destinations that are particularly affected.

In recent years, tourism has grown significantly. According to the United Nations World Tourism Organization (UNWTO), international tourist arrivals reached 1.5 billion in 2019, more than doubling from 2000 (UNWTO, 2020). This increase in travel has been driven by factors such as more affordable air travel, the rise of digital booking platforms and the growth of the middle class in emerging markets.

Tourism's contribution to the global economy is also notable. The tourism sector accounts for about 10% of global GDP and provides employment for millions of people worldwide (WTTC, 2020). This makes tourism an essential part of the economy, especially in countries that depend heavily on it as a source of income. However, despite its economic benefits, tourism also carries significant environmental costs.

Although tourism creates jobs and drives economic growth, it also has a number of negative environmental effects. Some of the most significant are **carbon footprint, pollution and biodiversity loss.**

Carbon footprint

Tourism's carbon footprint is one of its most pressing environmental problems. The tourism industry accounts for about 8% of global greenhouse gas emissions, with transportation-especially air travel-being the largest contributor (Lenzen et al., 2018). Airplanes, in particular, release large amounts of carbon dioxide (CO2) into the atmosphere, contributing to global warming and climate change.

In addition to air travel, other forms of transportation, such as buses, cars, and cruises, also contribute to the carbon footprint. As more people travel and the number of tourists increases, the sector's carbon emissions continue to rise. This growing environmental impact highlights the need for more sustainable transportation options and to reduce travel-related emissions.

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Pollution

Tourism also generates significant amounts of pollution. The use of single-use plastics, such as bottles, containers and straws, is common in tourist destinations, leading to the accumulation of waste and pollution. In many tourist areas, especially those that attract large numbers of visitors, these plastics end up in rivers, oceans and landscapes, harming wildlife and ecosystems.

For example, in coastal destinations, plastic waste often ends up in the ocean, contributing to the global plastic pollution crisis. This pollution not only degrades the natural beauty of tourist destinations but also poses serious risks to marine life. Marine creatures, such as turtles, fish and seabirds, often mistake plastic waste for food, resulting in injury or death.

Biodiversity loss

The increasing number of tourists visiting natural habitats and protected areas has resulted in the loss of biodiversity in many regions. Natural environments, such as coral reefs, rainforests and wildlife habitats, are particularly vulnerable to the pressures of tourism. Visitors can unknowingly damage these ecosystems by disturbing wildlife, disturbing sensitive plant species or contributing to deforestation.

For example, Australia's famous Great Barrier Reef has been severely affected by tourism. Coral reefs are fragile ecosystems that are easily damaged by pollution, rising temperatures and physical contact by tourists. Overfishing and the direct impact of boats and anchors on the reef are also major threats to the region's biodiversity. The degradation of the reef is a harsh reminder of how tourism can negatively affect vital natural resources.

In addition, wildlife tourism, such as safaris, dolphin watching or whale watching, can alter animal behaviour and contribute to habitat loss. In some cases, the presence of large numbers of tourists can disrupt migratory patterns, cause stress to animals, and even lead to species decline.

Tourism has long been a vital sector for Europe, making a major contribution to the economy. However, the continent's most popular destinations are also suffering from the adverse environmental effects of mass tourism. The following are examples of European destinations particularly affected by these challenges.

Venice, Italy

Venice, one of Europe's most iconic cities, is an excellent example of how mass tourism can damage a destination. With more than 25 million visitors a year, the city faces constant pressure on its infrastructure. The canals, which are central to Venice's charm, are affected by pollution from boat traffic, including tourist gondolas and larger vessels such as cruise ships. Boat engines release pollutants into the water, contributing to the degradation of water quality and threatening aquatic ecosystems.

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The tourist flow also affects Venice's historic architecture. The vibrations caused by the movement of large cruise ships in the lagoon contribute to damage to building structures and the gradual sinking of the city. In addition, the massive flow of visitors generates significant amounts of waste, which can overwhelm local waste management systems. The city's narrow streets, small bridges and limited public spaces exacerbate the problem of overcrowding, diminishing the quality of life for residents and the visitor experience.

Barcelona, Spain

Barcelona has become a major tourism hub in Europe, attracting some 12 million visitors per year (UNWTO, 2019). However, the tourism boom has caused significant stresses on the city's environment and local communities. One of the main concerns is over-tourism, where the high density of visitors disrupts the daily lives of residents. Popular areas such as Las Ramblas and the Gothic Quarter experience extreme crowding, leading to noise pollution, litter and rising rental prices.

The environmental repercussions are also evident. Barcelona's coastal beaches suffer erosion due to the high number of visitors, and the amount of waste left behind by tourists poses problems for proper disposal. In addition, air pollution has increased in the city, partly due to the increase in bus, cab and car traffic used by tourists.

Dubrovnik, Croatia

Dubrovnik, often referred to as the “Pearl of the Adriatic,” is a UNESCO World Heritage Site that has experienced a dramatic increase in tourism, in part due to its use as a filming location for the popular television series Game of Thrones. In 2019, the city welcomed more than 1.4 million visitors, many of whom arrived via cruise ships (Butler, 2019).

The sheer number of tourists has put immense pressure on the city's infrastructure, especially its historic Old Town. The narrow streets are often crowded, causing the centuries-old stone pavements to wear down. Waste management is another critical problem, as the old town has difficulty coping with the amount of garbage left behind by tourists.

In addition, cruise tourism has major environmental implications. Large ships docked in Dubrovnik release greenhouse gases and other pollutants into the air and water. These emissions contribute to climate change and damage the local marine ecosystem. Efforts have been made to limit the number of cruise ships that can dock each day, but problems remain in balancing tourism with sustainability.

GROUP DYNAMICS AND CASE STUDY ACTIVITIES FOR “THE CURRENT STATE OF TOURISM AND ITS ENVIRONMENTAL IMPACTS”:

Sustainable vs. Unsustainable Tourism (Case Study and Debate)

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Objective: Compare real-world examples of sustainable and unsustainable tourism.
Instructions:
Assign each group a real-world case study (e.g., Venice's over-tourism, Bali's plastic waste crisis, Costa Rica's eco-tourism model).
Groups analyze their case:
What are the environmental impacts?
How do local communities respond?
What solutions exist?
Half of the class argues in favor of strict regulations, and the other half defends tourism's economic benefits.

Tourist Role Play (Perspective-Taking & Discussion)
Objective: Understand different perspectives on tourism's environmental impact.
Instructions:
Assign students different roles:
Tourist
Hotel manager
Environmental activist
Local business owner
Government official
Each group discusses a **scenario** (e.g., a beach is being damaged by mass tourism).
Groups propose a compromise that balances tourism and environmental protection.

Benefits of transitioning to a Circular Economy Model in tourism
The tourism industry is one of the most dynamic sectors of the global economy, but also one of the most resource intensives. The transition to a Circular Economy (CE) model offers significant opportunities to address the environmental, economic and social challenges presented by traditional tourism practices. By moving from a linear "take-make-dispose" approach to a regenerative system, the tourism sector can ensure long-term sustainability while maintaining its economic viability. This section outlines the benefits of adopting a Circular Economy model in tourism, focusing on the economic, environmental and social advantages.

Economic advantages
Cost reduction - The Circular Economy promotes the efficient use of resources by reducing waste and reusing materials. For example, hotels that adopt circular practices, such as using energy-efficient appliances, implementing water-saving technologies or recycling waste, can significantly reduce operating costs. A study by the Ellen MacArthur Foundation (2020) concluded that circular practices in hospitality can reduce costs by up to 20% through energy and water efficiency measures alone.

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Similarly, tourism businesses that invest in renewable energy, such as solar panels, experience lower long-term energy costs. Airlines and tour operators can also save money by optimizing fuel efficiency and implementing digital ticketing systems, which reduce paper waste and associated costs.

Increased efficiency - Circular Economy practices drive innovation and efficiency in the tourism sector. For example, hotels and resorts can adopt closed-loop systems, such as composting food waste to create compost for gardens. This not only reduces waste management costs but also adds value to the business by improving sustainability credentials.

Environmental benefits

Resource conservation - Tourism is highly dependent on natural resources such as water, energy and land. Circular practices help conserve these resources by encouraging businesses and travelers to minimize their consumption. For example, sustainable tourism accommodations often use rainwater harvesting systems and energy-efficient lighting, which reduce dependence on external resources.

Circular economy principles also promote the use of renewable resources. For example, green resorts may replace single-use plastics with biodegradable alternatives or provide reusable items such as glass water bottles. These efforts help preserve ecosystems and reduce the environmental footprint of tourism activities.

Climate change mitigation - One of the most critical environmental benefits of transitioning to a Circular Economy in tourism is its role in reducing greenhouse gas (GHG) emissions. The tourism sector currently accounts for approximately 8% of global GHG emissions, largely due to transportation, energy consumption, and waste generation (Lenzen et al., 2018). Circular strategies, such as promoting low-carbon travel options (e.g., trains instead of planes) and the use of renewable energy sources, can significantly reduce emissions.

In addition, circular practices such as waste reduction and recycling prevent waste from being sent to landfills, where it generates methane, a potent greenhouse gas. For example, tourism businesses that compost organic waste instead of sending it to landfills contribute to reducing methane emissions and climate impact.

Social impact

Sustainable employment generation - The transition to a Circular Economy creates opportunities for new types of jobs and skills. For example, industries such as ecotourism and green building design require workers trained in sustainable practices. Jobs related to recycling, waste management and renewable energy facilities also appear as part of the circular transition.

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In addition, the adoption of circular principles often benefits local communities by encouraging small-scale sustainable businesses. Local entrepreneurs can thrive in circular systems by offering eco-tours, creating sustainable handicrafts or managing local recycling initiatives. These businesses often prioritize long-term community well-being over short-term profits.

Improving local quality of life - A Circular Economy model emphasizes community engagement and resource regeneration, which directly improves the quality of life for residents in tourism destinations. For example, by minimizing waste and pollution, circular practices contribute to clean air and water, making destinations healthier for both residents and visitors.

Circular tourism also prioritizes the conservation of cultural heritage and natural landscapes. For example, initiatives that limit over-tourism in fragile ecosystems, such as the Alps or Santorini, protect these areas for future generations while ensuring that local communities do not suffer from overcrowding, noise pollution or resource exhaustion.

Examples of circular economy benefits in action
Scandic Hotels (Nordic countries)
Scandic Hotels has embraced circularity by reducing food waste, saving energy and eliminating single-use plastics. Its food waste reduction program uses smart technology to control and minimize leftovers, saving costs and reducing environmental impact (Ellen MacArthur Foundation, 2020).

Eco-tourism in Slovenia
Slovenia, a leader in sustainable tourism, integrates circular principles by promoting eco-lodges, local food production and sustainable transportation options. The country has experienced an increase in tourist satisfaction and economic benefits while preserving its natural landscape (UNEP, 2020).

GROUP DYNAMICS AND **CASE STUDY ACTIVITIES** FOCUSED ON THE **BENEFITS OF TRANSITIONING TO A CIRCULAR ECONOMY MODEL IN TOURISM**.
Sustainable Hotel Role Play
Objective: Experience decision-making in transitioning to a circular economy.
How it works:
Assign each student a role (e.g., hotel manager, sustainability consultant, guest, investor, local government official).
Present them with a **scenario**: A traditional hotel is transitioning to a circular economy model, but faces challenges (e.g., high initial investment, resistance from staff, lack of guest awareness).
Each participant must defend their perspective while working towards a collective solution.

Debate on the benefits of a Circular Economy in tourism
Objective: Explore different perspectives on the benefits of a circular economy in tourism.
Divide students into two teams:

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Team A: Argues that transitioning to a circular economy is essential for the tourism industry.
Team B: Argues that it is too costly and impractical.
After the debate, facilitate a discussion on real-world challenges and solutions.

Methodology: Design Thinking

Design thinking is a process for creative problem-solving that helps teams move past the first "good ideas" and discover creative solutions. The design thinking approach encourages a holistic view where uncertainty and ambiguity are welcomed and embraced to consider all sides of a problem. A design mindset can be applied to any life situation, and it aids in developing innovative ideas by considering the bigger picture and allowing that to shape our decisions as we move forward.

Design thinking consists of five key stages:
Empathize – Understanding users' needs, challenges, and motivations.
Define – Clearly identifying the problem based on insights gathered.
Ideate – Brainstorming creative solutions without limitations.
Prototype – Developing small-scale models of possible solutions.
Test – Gathering feedback and refining solutions before implementation.

In order to encourage participants and teams to generate creative solutions to complex problems or develop proposals, highly collaborative activities are carried out, such as:

Group work: promotes user-centered design, critical thinking, and teamwork.
Best practices for group work:
Diverse Team Composition: Mix different skills and perspectives for richer ideas.
Open Communication: Encourage active listening and constructive criticism.
Iterate Quickly: Don't aim for perfection initially; refine based on feedback.
User-Centered Focus: Always prioritize the end-user's needs and experiences.
Engage in Visual Thinking: Use sketches, sticky notes, and digital tools to visualize concepts

Debate techniques: used to foster critical thinking, diverse perspectives, and creative problem-solving. Debate can be particularly useful to challenge assumptions, refine ideas, and ensure solutions are well-developed.
Techniques for Debate in Design Thinking:
Devil's Advocate → One team member challenges assumptions and points out flaws in an idea.
Pro-Con Lists → Debating both sides of an idea before deciding on its potential.
Role Reversal → Team members switch perspectives to understand different viewpoints.
Silent Debate → Ideas are written down and countered in writing before verbal discussion.
Pitch & Defend → Each team presents their solution and defends it against critiques.

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Debate topics and ideas for discussing the circular economy in tourism:
Should eco-certifications and regulations for tourism businesses be mandatory to promote circular economy practices?
Should tourists bear more responsibility for reducing environmental impacts, or is it solely the industry's responsibility?
Can luxury tourism and circular economy principles coexist, or are they fundamentally opposed?
Should tourism destinations impose strict waste management rules on visitors and businesses?

Analysis of case study: is a method used to explore complex issues, events, or problems in real-life situations. This method helps in understanding real-world scenarios, providing a thorough evaluation, and offering practical solutions, making it a great tool for both academic and professional purposes.

Steps to follow in analysis of case study:
1. Understand the Case
Read: Go over the case study carefully to understand the context and issues presented.
Identify key players: Focus on the people or organizations involved and their roles.
Note important facts: Highlight significant events, or decisions that could influence the outcome.
2. Define the Problem
Clarify the main issue: Identify the central challenge or problem presented in the case.
Recognize contributing factors: Consider underlying causes, not just the symptoms.
3. Analyze the Case
SWOT Analysis: strengths, weaknesses, opportunities, and threats related to the case.
Stakeholder analysis: interests and goals of the different stakeholders involved.
Contextual factors: Take into account any external factors (economic, social, cultural, etc.) that may impact the situation.
4. Develop Possible Solutions
Brainstorm several possible solutions or approaches to solve the problem.
Evaluate each solution: Assess each alternative's feasibility, risks, and potential outcomes.
5. Make Recommendations
Select the most effective solution based on your analysis.
Justify: Provide clear reasoning for why you think the chosen solution is the best one.
Implementation: Think about how the solution could be practically implemented, including resources needed.
6. Draw conclusions
Summarize Findings: Briefly recap the problem, analysis, and recommended solution.
Learnings: Identify any lessons or insights that can be applied in future cases.
7. Present the Analysis
Structure your case study analysis clearly—introduction, analysis, solutions, and conclusion.
Be concise and logical: Ensure your arguments are well-supported and easy to follow.

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Why use Design Thinking in our project?

Applying Design Thinking to a Circular Economy project can be highly effective for several reasons:

User-Centered Approach: Ensures solutions are practical, desirable, and meet the needs of guests, staff, and the local community.

Encourages Innovation: Helps participants think beyond traditional models and create sustainable solutions.

Focuses on Problem-Solving: Identifies key environmental and operational challenges in tourism and develops targeted solutions.

Iterative & Flexible: Encourages continuous improvement to refine eco-friendly initiatives in tourism.

Examples of issues and circular solutions to debate (or brainstorm for other solutions):

Waste management

Issue: Tourism generates substantial waste, including food waste, single-use plastics, and non-recyclable materials.

Circular Solution: Establishing zero-waste tourism initiatives, promoting reusable or biodegradable packaging, and encouraging waste-to-energy systems to reduce landfill contributions.

Carbon emissions

Issue: Transportation (flights, cruises, etc.) and energy-intensive tourism activities contribute significantly to greenhouse gas emissions.

Circular Solution: Supporting carbon offset programs, utilizing electric or hybrid transportation, and promoting local tourism to reduce travel distances.)

Overtourism

Issue: Excessive tourism in specific areas leads to overcrowding, environmental damage, and diminished quality of life for residents.

Circular Solution: Encouraging distributed tourism through virtual reality experiences, promoting lesser-known destinations, and capping visitor numbers to protect natural and cultural assets

Food waste

Issue: Restaurants, hotels, and cruise ships in the tourism sector generate large amounts of food waste.

Circular Solution: Implementing systems to repurpose food waste into compost or animal feed, and adopting smarter inventory management to reduce surplus.

Loss of biodiversity

Issue: Development of tourist infrastructure often encroaches on natural habitats, threatening wildlife and ecosystems.

Circular Solution: Promoting nature-based solutions, eco-tourism, and conservation tourism models that fund habitat restoration and protect biodiversity.

Linear consumption models in hospitality

Issue: Traditional "take-make-dispose" practices in hospitality lead to high resource use and waste.

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Circular Solution: Encouraging hotels and resorts to adopt circular models like leasing furniture, recycling materials, and using refillable products.

Self-reflection and take-aways with open question

Self- reflection

As we explore the concept of the circular economy in tourism, we can realize how important it is to rethink the way the industry operates. Tourism is one of the largest global industries, yet it has significant environmental and social impacts. From waste generation to excessive water and energy consumption, traditional tourism models often harm the very destinations they promote. The circular economy offers a solution by focusing on sustainability, resource efficiency, and waste reduction.

One key takeaway would be that circular tourism isn't just about recycling—it's about designing waste out of the system entirely. This means hotels, restaurants, and attractions should prioritize reusing materials, sourcing locally, and finding innovative ways to extend the life cycle of products. Small actions, such as reducing single-use plastics or choosing eco-friendly accommodations, can have a significant impact.

While working in tourism industry, there are challenges to be faced in balancing sustainability with guest experience. For example, some guests may not initially appreciate energy-saving measures like limited air conditioning or reusable towels. However, raising awareness and involving guests in sustainable practices—such as offering incentives for low water consumption—can help change attitudes.

This reflection also makes us consider our role as travelers. In the future, we will have to be more mindful of our choices, supporting businesses that adopt circular economy principles. We also believe that governments and businesses should work together to implement policies that encourage sustainable tourism.

Overall, this topic helps in changing the perspective on tourism. Instead of seeing sustainability as a limitation, we can view it as an opportunity for creativity and positive change. A circular economy approach ensures that tourism benefits not only businesses but also local communities and the environment. Moving forward, we hope to contribute to a more responsible tourism industry, whether as a traveler or a professional in the field.

Take-aways with open question

Waste is a design flaw – The circular economy focuses on eliminating waste through smart design and reuse.

Example: Some hotels have started composting food waste or repurposing old linens into cleaning cloths.

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Questions:
How can tourism businesses prevent waste rather than just managing it?
How can hotels and tourism businesses redesign their operations to minimize waste?

Local sourcing strengthens communities – Using local products reduces carbon footprints and supports small businesses.
Example: Eco-lodges in Costa Rica serve farm-to-table meals using ingredients from nearby organic farms.
***Question*:**
What barriers might businesses face when trying to rely solely on local suppliers?

Sustainability enhances guest experience – Educating and involving guests in eco-friendly practices can make their stay more meaningful.
Example: Some resorts offer discounts to guests who opt out of daily housekeeping to save water and energy.
Question*: How can hotels make sustainability attractive rather than an inconvenience for guests?*

Energy and water efficiency are key – Smart resource management reduces environmental impact.
Example: Hotels in the UAE use solar panels and water recycling systems to reduce consumption.
Questions*:*
What role do government regulations play in encouraging or enforcing energy efficiency?
What innovative solutions can be used to make hotels and resorts more energy-efficient without sacrificing guest comfort?

Collaboration is essential – Governments, businesses, and travellers must work together for circular tourism to succeed.
Example: Amsterdam has introduced city-wide circular economy initiatives, including sustainable tourism policies.
Questions:
How can small businesses collaborate to create a stronger circular economy network?
What policies or incentives could encourage more businesses to adopt circular economy principles?

Tourists influence the industry – Travelers' choices drive sustainability efforts.
Example: Many airlines now offer carbon offset programs, allowing passengers to contribute to environmental projects.
Questions:
How can tourists ensure that businesses are genuinely sustainable rather than engaging in greenwashing?
As a traveler, what habits could you adopt to support the circular economy in tourism?

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Technology can accelerate circularity – Innovations help businesses track and reduce their footprint.

Example: Some hotels use AI-powered energy management systems to adjust lighting and temperature based on occupancy.

Question*: What are some emerging technologies that could further improve circular tourism?*

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MODULE 2 Principles of Circularity

Introduction

Module 2, **"Principles of Circularity,"** provides a foundational understanding of circular economy principles and their application in the tourism and Vocational Education and Training (VET) sectors. This module aims to bridge the gap between theoretical concepts and real-world implementation by examining strategies that enable a transition from a linear economy to a circular economy within tourism.

The circular economy is underpinned by three core principles, commonly known as the **three R's: Reduce, Reuse, and Recycle**. These principles serve as the guiding framework for transforming our traditional linear economy, where goods are made, used, and disposed of, into a circular one that is restorative and regenerative by design. Circular economy principles, such as **waste minimization, resource efficiency, lifecycle thinking, and regenerative systems,** will be explored in-depth to provide participants with actionable knowledge. These principles are crucial in addressing the environmental challenges that tourism and hospitality industries face, such as **high resource consumption, waste generation, and pollution.**

Through this module, participants will gain insights into how circular business models, innovative tourism solutions, and policy frameworks support sustainability in tourism. The module incorporates case studies, best practices, and interactive activities to equip learners with the necessary tools to analyze, implement, and advocate for circularity in their professional fields.

One of the central approaches integrated into the learning process is **Design Thinking**, which encourages **creative problem-solving and collaboration** in developing sustainable tourism strategies. Participants will work through real-life challenges and apply circular principles to develop innovative, practical solutions.

By understanding and applying circular economy concepts, future tourism professionals will be better prepared to contribute to a more sustainable and resilient industry. The knowledge gained from this module will support them in assessing current practices, proposing improvements, and implementing circular economy strategies that enhance long-term sustainability and profitability in tourism and VET environments.

This module will also highlight the latest trends in circularity within tourism, **including digitalization for waste reduction, eco-design for accommodations, and sustainable mobility solutions**. Learners will examine how leading tourism organizations successfully implement circular economy principles and identify the key factors contributing to their success.

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Ultimately, this module aims to provide a comprehensive foundation for participants to understand, adapt, and implement circularity in tourism, ensuring long-term environmental, social, and economic benefits.

The purpose of Module 2 is to equip professionals in the tourism and VET sectors with a solid understanding of the principles of circularity and their practical applications. By fostering a mindset shift **from linear to circular models**, the module aims to:

Enhance knowledge: Provide participants with a comprehensive understanding of Circular Economy principles and their relevance to sustainable development in tourism.
Encourage innovation: Utilize Design Thinking methodologies to enable creative problem-solving and the development of innovative solutions.
Promote application: Guide participants in applying circularity principles to real-world scenarios within their professional contexts, focusing on reducing environmental impacts and improving resource efficiency.
Foster collaboration: Encourage stakeholder collaboration to identify and implement circular strategies, contributing to a more sustainable and resilient tourism sector.

By the end of this module, participants will be prepared to critically assess existing practices, identify opportunities for circularity, and design innovative strategies that align with the goals of a Circular Economy, ensuring long-term benefits for both the tourism and VET sectors.

Objective

Understand the principles of the circular economy and their application in tourism.
The primary objective of Module 2 is to enable participants **to understand and effectively apply the principles of a Circular Economy**, ensuring long-term benefits for both the tourism and Vocational Education and Training (VET) sectors. By the conclusion of this module, participants will:
Grasp foundational principles: Develop a thorough understanding of the core principles of circularity, including resource efficiency, waste reduction, and lifecycle thinking.
Adapt to sector-specific Needs: Learn to tailor these principles to the unique challenges and opportunities within the tourism and VET sectors.
Foster sustainable practices: Cultivate strategies that promote sustainability, enhance resource utilization, and reduce environmental impact.
Build resilience: Through circular approaches, strengthen tourism and VET systems' ability to adapt to changing environmental and economic conditions.

This module serves as a critical step in equipping participants with the tools and knowledge required to drive the transition to a Circular Economy in their respective fields.

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Learning Outcomes

By the end of Module 2, participants will achieve the following learning outcomes:

Learning Outcome 1: Understanding Circular Economy principles

Participants will gain a comprehensive understanding of the fundamental principles of the Circular Economy and their application in the tourism and VET sectors. This learning outcome focuses on equipping learners with a deep knowledge of circularity, highlighting its significance in transforming tourism into a more sustainable and regenerative industry. The module will begin by introducing the core concepts of a Circular Economy, such as waste prevention, resource efficiency, lifecycle thinking, and regenerative tourism. Participants will explore how these principles contrast with traditional linear economic models, contributing to excessive resource depletion, environmental pollution, and unsustainable consumption patterns.

Through case studies and real-world examples, learners will analyze the challenges posed by linear tourism models, such as over-tourism, single-use plastics, high carbon footprints, and inefficient supply chains. They will examine how adopting circular strategies, such as closed-loop systems, renewable energy integration, eco-friendly accommodations, and sustainable tour operations, can mitigate negative environmental and social impacts.

A key component of this outcome is understanding the various stages of a product or service lifecycle within tourism, from raw material extraction and production to distribution, consumption, and end-of-life management. By evaluating material flows, energy consumption, and waste generation at each stage, participants will develop the ability to assess sustainability gaps in current practices and propose circular solutions.

Furthermore, the module will introduce participants to global policies, frameworks, and best practices that support the transition to a Circular Economy in tourism. Learners will explore initiatives such as the European Green Deal, UNWTO Sustainable Tourism Framework, and ISO standards for sustainable tourism. Case studies of pioneering tourism organizations implementing circular economy models—such as zero-waste hotels, regenerative travel companies, and carbon-neutral resorts—will provide inspiration and practical insights.

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Source: https://www.unwto.org/tourism4sdgs

By the end of this section, participants will be able to critically assess the role of circular economy principles in the tourism industry, articulate their benefits, and identify strategic approaches for integrating sustainability into business models, supply chains, and operational strategies. They will leave with a strong foundation in Circular Economy thinking, enabling them to contribute effectively to sustainable tourism development and drive innovation in the sector.

Learning Outcome 2: Applying Design Thinking for circular solutions

Participants will develop skills in applying Design Thinking methodologies to identify challenges and generate innovative, circular solutions. Design Thinking is a problem-solving approach that encourages user-centred innovation, creativity, and sustainability in developing solutions for circular economy challenges in tourism. Participants can apply structured frameworks to assess issues, prototype solutions, and implement circular business models using this method.

Stages of Design Thinking in sustainable tourism

Empathize: Participants will learn how to conduct research and engage with stakeholders to understand their needs, motivations, and challenges related to circularity in tourism. This step will involve interviewing industry professionals, tourists, and local communities to identify sustainability gaps.

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Define: After gathering insights, participants will learn how to synthesize their findings to clearly define circular challenges in tourism. These could include issues such as excessive resource consumption in hotels, food waste in hospitality, or inefficiencies in sustainable transport options.

Ideate: Participants will engage in structured brainstorming sessions to generate creative ideas that promote circular economy principles in tourism. Using tools such as mind mapping and collaborative innovation workshops, they will develop multiple potential solutions to real-world sustainability challenges.

Prototype: To test their ideas, participants will create tangible prototypes of circular solutions, such as designing sustainable tourism itineraries, developing eco-friendly accommodation concepts, or proposing circular packaging solutions for the food and beverage industry.

Test: Finally, participants will present their prototypes to peers, mentors, and industry professionals for feedback. Through iterative testing, they will refine their concepts, ensuring feasibility and effectiveness in the tourism sector.

Hands-on workshops and practical application

This module will incorporate hands-on workshops where participants will work on real-world case studies to reinforce design thinking methodologies. These workshops will involve collaboration with tourism businesses, sustainability experts, and local communities to develop practical circular solutions. Participants will also engage in role-playing exercises where they take on the perspectives of different stakeholders, such as hotel managers, policymakers, or tourists, to better understand circular challenges from multiple viewpoints.

Case study exploration

Participants will analyze businesses implementing circularity through Design Thinking, such as hotels reducing plastic waste through refillable amenities, tour operators designing low-carbon experiences, and travel companies integrating circular procurement strategies. These examples will showcase the practical impact of Design Thinking in creating sustainable business models.

By the end of this section, participants will have a deep understanding of how Design Thinking can be applied to solve sustainability challenges in tourism. They will be equipped to generate, test, and refine innovative circular solutions, making them valuable contributors to the future of sustainable tourism.

Learning Outcome 3: Evaluate and Improve Practices

Participants can critically assess current tourism practices and identify opportunities to incorporate circular economy strategies for long-term sustainability. This learning outcome

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focuses on developing a systematic approach to evaluating sustainability in tourism and formulating evidence-based recommendations for improvement.

Conducting sustainability audits of tourism operations

Participants will learn how to assess the environmental impact of various tourism activities, from accommodation and transportation to food services and tour operations. They will gain practical experience using sustainability audit tools to measure resource consumption, waste production, carbon emissions, and the effectiveness of existing circular initiatives.

Using circular economy assessment tools

Participants will be introduced to key assessment tools such as carbon footprint calculators, lifecycle analysis methodologies, and sustainability benchmarking systems to quantify and track sustainability performance. These tools will help participants evaluate the efficiency of tourism operations, identify areas where circular principles can be integrated, and track improvements over time.

Developing actionable recommendations

After conducting audits and assessments, participants will be guided through the process of developing concrete recommendations for waste reduction, sustainable sourcing, and circular supply chains. This section will emphasize practical implementation strategies, stakeholder collaboration, and the feasibility of different interventions in various tourism settings.

Collaboration with stakeholders

Sustainable tourism requires a multi-stakeholder approach involving policymakers, business owners, local communities, and customers. Participants will learn strategies for effective stakeholder engagement, from forming partnerships with local suppliers to advocating for policy changes that promote adopting a circular economy in tourism.

Project proposals and action plans

To solidify their learning, participants will create detailed project proposals and action plans outlining how circular economy principles can be incorporated into real-world tourism businesses. These plans will include sustainability goals, key performance indicators (KPIs), timelines, and projected impacts, ensuring participants are well-equipped to implement their knowledge in professional settings.

By the end of this section, participants will have gained the ability to conduct in-depth sustainability assessments, develop strategic recommendations, and collaborate effectively to drive circular transformation in the tourism sector. Their enhanced critical thinking and problem-solving skills will enable them to contribute to a more resilient, responsible, and forward-thinking industry.

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Content

TOPIC 1: Lifecycle thinking and sustainable tourism

Understanding how tourism products, services, and infrastructures impact the environment throughout their lifecycle.
Focus on assessing material flows, energy use, and waste generation from procurement to end-of-life stages.
Participants will explore how tourism activities affect the environment and society throughout their lifecycle. The focus is identifying high-impact areas and redesigning services to reduce environmental footprints.

Introduction to lifecycle assessment (LCA) in tourism
This section introduces the Lifecycle Assessment (LCA) concept and its significance in evaluating the environmental impacts of tourism activities from inception to disposal.
Best practice example:
The Life Cycle Initiative has developed methodologies to assess and reduce tourism's environmental impacts, focusing on food waste reduction and energy efficiency.
LIFECYCLEINITIATIVE.ORG

Evaluating energy, water, and material use in tourism
Participants will learn to assess the consumption patterns of energy, water, and materials in tourism operations and identify key areas for improvement.
Best practice example:
The QO Hotel in Amsterdam employs a modular design for rooms and furniture, allowing for easy repair, refurbishment, and replacement. This extends the lifecycle of its components and reduces waste.
QO Amsterdam, a LEED Platinum hotel

Case study analysis of hotels, transportation, and attractions
This content involves analyzing real-world case studies to understand the application of LCA in various tourism sub-sectors.
Best practice example:
A comprehensive review of LCA studies in tourism highlights strategies like eco-labelling and digitalization to achieve sustainability.
WITPRESS.COM

TOPIC 2: Waste minimization and resource optimization

Strategies to reduce resource consumption in tourism include sustainable procurement, eco-design, and digitalization.
Approaches to eliminating single-use plastics, food waste, and inefficient resource management.
This topic highlights waste reduction techniques, resource efficiency measures, and smart consumption habits to support a circular economy in tourism.

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Sustainable procurement and eco-design in tourism

This section covers strategies for sourcing sustainable materials and designing tourism products and services that minimize environmental impact.

Best practice example:

The Ritz Carlton in Charlotte, North Carolina, expanded its rooftop garden to provide fresh produce for its restaurant, reducing the need for transported goods and minimizing waste.

RITZCARLTON.COM

Strategies for reducing food waste in hotels and restaurants

Participants will explore methods to minimize food waste through better inventory management, portion control, and donation programs.

Best practice example:

Hurtigruten, a Norwegian cruise line, implemented a closed-loop system for composting food waste. The waste is then used to enrich soil at local farms that supply the cruise line.

CNTRAVELER.COM

Digitalization as a tool to reduce waste and optimize resources

Digitalization plays a pivotal role in transforming the tourism industry. It enhances operational efficiency, reduces waste, and optimizes resource management. By integrating digital tools, tourism enterprises can minimize their environmental footprint while simultaneously improving guest experiences.

Best practice example:

Reducing paper usage through digital solutions

Adopting digital technologies enables tourism businesses to significantly reduce paper consumption. Traditional practices, such as printing brochures, menus, and invoices, contribute to substantial paper waste. By transitioning to digital alternatives, establishments reduce their environmental impact and streamline operations. For instance, implementing electronic billing and digital check-in/check-out processes eliminates the need for physical paperwork, leading to a more sustainable and efficient workflow. This shift conserves natural resources and aligns with the growing consumer demand for eco-friendly practices.

Optimizing resource management with digital tools

Beyond reducing paper waste, digitalization aids in the efficient management of other resources. Smart energy management systems, for example, utilize sensors and automation to adjust energy usage based on occupancy, ensuring that energy is not wasted in unoccupied spaces. This approach lowers energy consumption and reduces operational costs. Additionally, virtual concierge platforms provide guests digital access to information and services, minimizing the need for printed materials and enhancing the overall guest experience.

TOURISMNI.COM

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Best practice example: DigitalGuest's paperless solutions

DigitalGuest, a company specializing in digital solutions for the hospitality industry, offers a platform that enables hotels to reduce paper waste significantly. Their services include digital menus, electronic guest directories, and mobile check-in/check-out systems. By adopting these tools, hotels can eliminate the need for printed materials, thereby decreasing their environmental footprint. Moreover, these digital solutions enhance guest satisfaction by providing real-time updates and personalized services directly to their devices. This technology integration supports sustainability initiatives and meets the modern traveller's expectation for seamless, tech-driven experiences.

DIGITALGUEST.COM

TOPIC 3: Regenerative systems and Circular business models

Moving beyond sustainability towards regeneration by restoring ecosystems, promoting biodiversity, and enhancing local communities. Implement circular business models such as service-based models, sharing economy initiatives, and upcycling solutions. Participants will learn how circular economy models can sustain and regenerate environments and communities while maintaining profitability.

Circular business models in tourism

Exploring business models prioritising resource efficiency, such as the sharing economy and product-as-a-service.

Best practice example:

The Good Hotel in London repurposed a former detention centre into a floating hotel with upcycled interiors, emphasizing sustainability and social responsibility.

GOODHOTELLONDON.COM

Regenerative tourism practices

This section focuses on tourism practices that actively restore and enhance natural and social systems.

Best practice example:

Grootbos Private Nature Reserve in South Africa integrates regenerative design by restoring degraded landscapes while building eco-friendly accommodations.

GROOTBOS.COM

Implementing upcycling and product-as-a-service solutions

Participants will learn to implement upcycling initiatives and shift from product ownership to service-based offerings.

Best practice example:

Lush Cosmetics introduced "naked packaging" for its travel-size products, eliminating single-use plastics by designing solid versions of soaps, shampoos, and lotions.

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WEARELUSH.COM

Methodology:

Group work & collaborative learning

Enhancing knowledge through peer learning

Participants will engage in group discussions and collaborative brainstorming sessions to explore the three core principles of the Circular Economy: **Reduce, Reuse, and Recycle.**

Each group can research and present different case studies of sustainable tourism practices, highlighting how circular principles are applied in real-world scenarios.

Problem-solving through practical case studies

Groups will analyze real-life sustainability challenges in tourism (e.g., over-tourism, resource inefficiency, and hotel waste management).

Using Design Thinking methodologies, participants will identify problems, brainstorm circular solutions, and propose practical applications in the tourism sector.

Hands-on group projects for circular innovation

Teams will work on creating a Circular Tourism Action Plan, focusing on how businesses can transition from a linear to a circular model.

Each group will be responsible for a different aspect of circularity, such as waste reduction in hospitality, circular supply chains in tour operations, or digitalization for sustainability.

The final deliverable will be a group presentation of the action plan, during which each team will share its findings and strategies.

Collaborative workshops & stakeholder engagement

Participants will engage in interactive workshops where they role-play different stakeholders (e.g., hotel managers, policy-makers, travellers) to understand the diverse perspectives and challenges in implementing circular economy strategies.

This activity enhances their ability to negotiate, develop partnerships, and implement feasible circular solutions.

Encouraging critical thinking through debates & reflection

Groups will read research articles and debate on the impact of current tourism practices on sustainability.

Each group will present their viewpoint, with some arguing from a business-as-usual perspective while others advocate for a fully circular tourism model.

This encourages critical reflection on how to balance profitability with environmental responsibility.

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Strengths of using group work & collaborative thinking

Encourages active participation and deeper learning – Instead of passively absorbing knowledge, learners engage through hands-on application.

Promotes diverse perspectives – Working in teams allows participants to learn from each other's experiences and expertise.

Develops problem-solving and innovation skills – Teams apply Design Thinking to tackle real-world tourism challenges.

Improves teamwork and communication – Collaboration fosters leadership skills and the ability to work effectively with others.

Prepares participants for real-life circular economy implementation – Many circular tourism initiatives require multi-stakeholder collaboration, which is practiced in this method.

Module 2 uses Group Work and collaborative Thinking to **build knowledge and skills** and **empower participants to develop solutions that can be implemented in real-world tourism operations**. These methodologies ensure that future tourism professionals are equipped to drive sustainable changes in their industries.

Debates & discussions

Exploring key circular economy concepts through debate

Participants will be assigned different perspectives on circular economy topics, such as "**Should all tourism businesses be required to implement circular economy strategies?"**

Some participants will argue from a **business perspective,** focusing on profitability and operational challenges, while others will advocate for **environmental sustainability and regulatory enforcement**.

This method enhances **critical analysis skills** and fosters a deeper understanding of the **circularity's economic, environmental, and social impacts** on tourism.

Case study-based discussions

Groups will analyze **real-world examples of circular economy implementation in tourism** and discuss their success factors and challenges.

Examples could include:

Eco-friendly hotels adopt zero-waste policies.

Circular food waste management initiatives in cruise ships.

Sustainable transport solutions such as electric shuttle services in tourist destinations.

Participants will then **debate the effectiveness** of these strategies and propose ways to improve their impact.

Ethical dilemmas in circular tourism

Participants will engage in **ethical debates** on issues such as:

Should luxury tourism be held accountable for environmental degradation, even if it contributes to local economies?

How can tourism balance **economic benefits** with **environmental responsibility?**

Should tourists pay an **environmental impact fee** when visiting eco-sensitive locations?

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These discussions will **enhance decision-making skills** by considering multiple perspectives.

Policy and regulation debates
Participants will evaluate **existing policies on circular tourism** and debate whether they are effective.
Topics may include:
Should governments enforce stricter regulations on waste management in tourism?
Are voluntary sustainability certifications enough, or should they be mandatory?
Groups will propose **policy recommendations**, encouraging innovative solutions and regulatory frameworks.

Design Thinking and debate integration
Using **Design Thinking methodologies**, teams will **brainstorm circular solutions** and then debate the feasibility of their proposals.
Example activity:
Challenge: Design a circular business model for an eco-lodge.
Debate: Teams argue whether upcycling, digitalization, or waste reduction strategies would have the greatest impact.
This fosters **collaborative problem-solving** and prepares participants **for real-world application.**

Strengths of using debates & discussions in Module 2
Encourages active engagement – Participants take ownership of learning by critically analyzing arguments.
Promotes critical thinking – Discussions challenge assumptions and help learners develop well-reasoned perspectives.
Enhances communication skills – Participants learn to articulate complex ideas, defend positions, and negotiate solutions.
Facilitates peer learning – Different viewpoints provide diverse insights, enriching the learning experience.
Bridges theory with real-world application – Practical case studies make circular economy principles more tangible and relevant.

By incorporating Debates & Discussions into Module 2, participants will develop the skills needed to **advocate for circular economy principles**, assess **sustainable tourism strategies**, and **contribute to policy discussions** on sustainability in the tourism sector. This method **ensures dynamic learning and prepares future tourism professionals** to make informed, responsible decisions.

<u>Analysis of case studies on tourism and Circular Economy</u>
The **case study analysis** method is a powerful learning approach that provides participants with **real-world insights** into how circular economy principles are applied in the tourism sector. By examining successful initiatives, challenges, and strategies, learners can develop a **deeper**

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understanding of circularity, identify **key takeaways**, and **apply best practices** in their professional environments.

Learning from real-world applications
Participants will study **successful implementations of circular economy principles** in tourism-related businesses. Case studies will include **hotels, tour operators, transportation services, food and beverage providers, and destination management organizations** with integrated circularity. Examples: **Zero-waste hotels, upcycling initiatives in hospitality, and circular food systems in tourism businesses**.

Comparative analysis of different circular strategies
Groups will compare different case studies **from various tourism sectors** and identify the most effective strategies. For example, analyzing **hotel waste reduction initiatives** versus **sustainable mobility solutions in tourism transport.** This allows participants to **evaluate diverse approaches** and determine **which can be adapted** to their specific business or region.

Problem-solving through case-based discussions
After reviewing case studies, participants will **discuss the challenges and limitations** businesses face implementing circular economy practices.
Example discussion questions:
What were the biggest barriers to implementation?
How were they overcome?
How can these strategies be adapted to different tourism settings?
These discussions help participants develop **critical thinking skills** and **realistic sustainability strategies.**

Hands-on application through group work
Each group will **present a case study**, summarizing key circular practices, challenges, and lessons learned. Groups will then **propose improvements** to the existing circular strategies, encouraging them to **apply problem-solving skills**. Example: A case study on **eco-hotels** could lead to brainstorming new **sustainable service offerings** such as **product-as-a-service business models**.

Developing circular business proposals inspired by case studies
After analyzing multiple case studies, participants will be tasked with **creating their own circular business model.** This could involve **redesigning an existing tourism business** or developing a **new concept inspired by best practices** in the field. Example: A team might propose a **"Zero-Waste Tourism Resort"** using best practices from **circular hospitality initiatives**.

Strengths of using case study analysis in Module 2
Provides practical, real-world insights – Participants learn from businesses successfully implementing circular strategies.

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Encourages critical thinking – Participants analyze successes and challenges to refine their understanding of circular principles.
Enhances problem-solving skills – Discussions and evaluations help learners develop actionable solutions for tourism businesses.
Encourages creativity and innovation – Teams generate new ideas and improvements based on existing circular business models.
Promotes collaboration and engagement – Learners work together to dissect cases, exchange ideas, and develop sustainability solutions.

The **Analysis of case studies method** is a key component of Module 2: Principles of Circularity. It ensures that **future tourism professionals and VET learners** understand how circular strategies are applied **in real-world tourism settings**. Participants **gain the knowledge and skills** necessary to **transition the tourism sector toward a more circular and sustainable future by studying, discussing, and applying lessons from best practices.**

Strengths of the Design Thinking approach:
Encourages problem-solving and creativity.
Promotes hands-on learning with real-world applications.
Supports collaborative and interdisciplinary teamwork.
Focuses on user-centered innovation and sustainability.

Self-reflection and takeaways with the open question

Self-reflection

The Principles of Circularity in Tourism and VET presented in Module 2 provide a comprehensive and structured approach to embedding sustainable practices in the tourism industry. By exploring circular economy principles, lifecycle thinking, and resource efficiency, this module fosters a fundamental shift in how tourism professionals approach sustainability. Reflecting on the contents and methodologies used, several key insights emerge regarding the importance of circular economy integration, **the role of education and training, and the practical challenges in transitioning toward circular tourism models.**

One of the module's most impactful aspects is its focus on **real-world applicability.** Case studies, group work, and interactive debates enable participants to bridge the gap between theoretical knowledge and practical implementation. By examining **successful examples of circular tourism models,** such as zero-waste hotels, regenerative tourism projects, and digitalization for waste reduction, participants gain a deeper appreciation of the challenges and benefits of adopting circularity in the industry. This reinforces the need for **hands-on learning experiences** where future tourism professionals can experiment with sustainability solutions.

Moreover, the emphasis on **Design Thinking** as a problem-solving tool is particularly insightful. This methodology encourages **innovation, creativity, and user-centred solutions,** helping

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learners develop **practical strategies aligning with environmental goals and business sustainability**. The structured approach to **identifying challenges, brainstorming solutions, prototyping ideas, and testing their feasibility** ensures that circular economy concepts are **not just theoretical discussions but actionable strategies that can be implemented in real-world tourism businesses.**

However, one of the key **challenges** in integrating circular economy principles in tourism lies in **behavioural change and adoption resistance**. Many businesses still operate within a linear model due to cos**t concerns, lack of awareness, or regulatory constraints.** Through debates and discussions, participants engage with **counterarguments against circular economy adoption**, allowing them to understand the **barriers and potential solutions** to widespread implementation. This method fosters **critical thinking** and **equips future professionals with the skills to advocate for change** within their organizations and communities.

Finally, the self-reflection process highlights the importance of **continuous learning and adaptation** in the field of sustainable tourism. Circular economic trends and innovations constantly evolve, requiring professionals to **stay informed about new policies, technological advancements, and emerging best practices.** By incorporating **open discussions and take-away questions**, this module promotes an ongoing engagement with sustainability issues beyond the classroom setting, encouraging participants to become lifelong advocates for circular tourism.

Take-aways with the open question

A key takeaway from this module is the **role of collaboration and stakeholder engagement** in advancing circular tourism. Many of the strategies discussed require the active participation of multiple actors, including policymakers, local businesses, and tourists themselves. The **group work methodology** incorporated into the module simulates this collaborative approach by encouraging participants to develop solutions through teamwork and shared knowledge. This reflects the reality that **circular tourism cannot be implemented in isolation but requires systemic changes across supply chains and business models.**

In conclusion, **Module 2 provides a well-rounded foundation for understanding and implementing circular economy principles in tourism**. Combining case studies, collaborative projects, and structured debates ensures that participants develop **theoretical knowledge and practical problem-solving skills**. However, the successful transition to a circular economy in tourism will depend on **commitment, stakeholder cooperation, and the ability to overcome economic and behavioural challenges**. This module serves as a stepping stone toward **empowering future tourism professionals** with the tools and mindset needed to drive meaningful change in the industry.

Circular Economy is the future of tourism – Transitioning from a linear to a circular model is essential for reducing environmental impact, increasing efficiency, and ensuring long-term sustainability in tourism.

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Question: How can tourism businesses effectively transition from a linear to a circular economy, and what barriers might they face in the process?

Collaboration is key – Circular tourism requires the engagement of multiple stakeholders, including policymakers, businesses, local communities, and tourists themselves. Success depends on collective efforts.

Question: What role does collaboration among stakeholders (policymakers, businesses, local communities, and tourists) play in implementing circular economy practices in tourism?

Real-world application matters – Learning through case studies, debates, and group projects enhances the ability to apply circular principles professionally, making sustainability efforts more effective.

Question: How can real-world applications like case studies and best practices help businesses and professionals integrate circular principles effectively?

Design Thinking is a powerful tool – Encouraging creativity and problem-solving through Design Thinking helps develop innovative circular business models that align with sustainability and profitability.

Question: In what ways can Design Thinking help create innovative and profitable circular business models in the tourism sector?

Behavioural change is a major challenge — Many businesses and individuals resist circular practices due to cost concerns and a lack of awareness. Education, policy incentives, and best-practice sharing are crucial to overcoming these barriers.

Question: What are the biggest challenges to adopting circular economy practices in tourism, and how can they be addressed through policy, incentives, and education?

Technology can optimize circularity – Digitalization, smart resource management systems, and eco-friendly innovations help tourism businesses optimize operations and reduce waste, improving overall efficiency.

Question: How can digitalization and smart resource management systems optimize circularity in tourism operations and improve efficiency?

Continuous learning is essential — Circular economy practices and sustainability trends evolve rapidly. Tourism professionals must stay updated on emerging technologies, policies, and innovative business models to remain competitive and impactful.

Question: Why is continuous learning essential in the field of circular tourism, and how can professionals stay updated on emerging sustainability trends?

Circular Tourism enhances guest experience – Implementing sustainable practices, such as zero-waste policies, digitalization, and regenerative tourism experiences, aligns with the growing demand for eco-conscious travel.

Question: How do sustainable tourism initiatives, such as zero-waste policies and regenerative tourism models, impact guest experiences and industry profitability?

By reflecting on these open-ended questions, participants in Module 2 can actively engage in **critical thinking, discussion, and real-world application**, ensuring that they become active contributors to a **more resilient and responsible tourism industry**.

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MODULE 3 Product and services

Introduction

With the increasing emphasis on the circular economy, the tourism sector must transition from traditional linear models of production and consumption to more sustainable, circular approaches. This requires businesses to rethink how they design, deliver, and manage their products and services.

The primary objective of this module is to provide learners with a comprehensive understanding of how circular economy principles can be integrated into the design, development, and management of tourism-related products and services. Participants will explore innovative approaches that promote sustainability while maintaining high-quality customer experiences. The module aims to foster critical thinking, creativity, and problem-solving skills in addressing environmental and economic challenges in tourism.

The module encourages learners to adopt a new perspective on product and service management, shifting from a traditional linear model—where resources are extracted, used, and discarded—to a circular approach that prioritizes reuse, recycling, and regeneration. Through this shift, businesses can not only reduce their ecological footprint but also unlock new economic opportunities and foster innovation. The module emphasizes the importance of integrating sustainability into product and service development from the outset, ensuring that circularity becomes an integral part of business strategies rather than an afterthought.

The module addresses two main topics, as follows:
Topic 1: The role of Circular Economy in product and service development
Topic 2: Developing sustainable and circular product and service strategies

Learning Outcomes

Learning Outcome 1: to Understand the role of Circular Economy in product and service development

Learners understand how shifting from a linear economy (take-make-dispose) to a circular model (reduce-reuse-recycle) can create sustainable, long-lasting products and services in tourism, hospitality, and transportation.
Learners can identify the environmental, economic, and social benefits of circular product and service strategies, such as reduced operational costs, enhanced brand reputation, and increased customer engagement in sustainable tourism experiences.

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Learning Outcome 2: to Develop sustainable and circular product and service strategies

Learners can design eco-friendly and resource-efficient products and services that integrate circular economy principles, such as zero-waste accommodations, responsible travel experiences, and circular food systems in tourism and hospitality.
Learners understand how sustainable and circular product and service strategies (e.g., Triple Bottom Line, Cradle to Cradle, Industrial Symbiosis) can transform the way tourism businesses operate sustainably.
Learners can apply best practices for sustainable sourcing, service innovation, and waste management to minimize negative environmental impacts while ensuring high-quality customer experiences.

By achieving these learning outcomes, learners will be prepared to drive sustainable transformations in tourism and related industries, aligning business practices with environmental responsibility and long-term resilience.

Content

The role of Circular Economy in product and service development

The circular economy (CE) is an economic system aimed at eliminating waste and promoting the continual use of resources. In the tourism and related industries, applying CE principles to both products and services is essential for sustainable development. However, distinguishing between products and services is crucial to implementing effective circular strategies.

Defining and differentiating between products and services

In the context of tourism and its related industries, it is essential to distinguish between products and services. Products are tangible items that can be manufactured, stored, transported, and sold. In tourism, examples of products include souvenirs, hotel toiletries, packaged food items, and travel gear. These items are physical, can be owned by a consumer and can be produced in advance and stored. Services are intangible and involve an experience or an activity provided by businesses to customers. Examples in tourism include accommodation, guided tours, transportation, dining experiences, and recreational activities. Services cannot be stored or owned; they are consumed at the point of delivery and rely heavily on customer interaction. Services are typically produced and consumed simultaneously and are often more adaptable and customized than products, as they cater to specific customer needs in real-time.

The distinction between products and services is crucial when considering sustainability in the tourism industry. While products generate waste and require resource-intensive production, services can be optimized to reduce environmental impact through efficient resource utilization and circular economic principles.

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Understanding the life cycle of a product and service

A life cycle analysis (LCA) is the act of measuring the environmental impact of a product or service throughout its life cycle, from the resources used to create the product or service, across its use by the user, to it's final end of life destination. An LCA measures the environmental impacts of each distinct part involved in creating and using products and services, such as energy used in production, fuel used in transport, and end-of-life ecological costs. The circular economy in tourism focuses on extending the lifecycle of products and enhancing the sustainability of services.

Life cycle of a product in tourism

Raw Material Extraction – Resources such as plastics, wood, and metals are extracted to manufacture tourism-related products. Production & Manufacturing – Products such as travel essentials, souvenirs, and packaging materials are produced. Distribution & Retail – The manufactured products are transported and sold to consumers. Usage – Tourists use products such as toiletries, travel kits, and packaged goods. Disposal or Recycling – Products either end up as waste or are recycled to extend their lifecycle and reduce environmental harm.

Life cycle of a service in tourism

Design & Planning – Services like accommodation, tour packages, and dining experiences are designed to meet consumer needs. Marketing & Booking – Tourists book services through various channels, including digital platforms. Service Delivery – The core experience occurs, such as hotel stays, transportation, or guided tours. Experience & Feedback – Customers provide feedback that can enhance future services. Continuous Improvement & Optimization – Sustainable tourism services integrate waste reduction, energy efficiency, and improved resource management.

Application of Circular Economy principles

The Circular Economy is a regenerative system aimed at minimizing waste and making the most of resources. In the tourism sector, applying circular economy principles ensures sustainability, reduces environmental impact, and enhances the long-term economic viability of tourism businesses.

Key concepts of Circular Economy in tourism

Resource Optimization – Utilizing materials efficiently and reducing waste production. Product Lifecycle Extension – Designing tourism products for durability and reuse. Closed-Loop Systems – Ensuring that waste materials are repurposed or recycled. Sustainable Service Models – Transforming services to reduce environmental footprints.

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Methodology

Brainstorming sessions

Objective: Encourage learners to identify key sustainability challenges in tourism and generate ideas for circular economy solutions.

Activity: Divide participants into groups and assign them different aspects of tourism (hotels, transport, restaurants, souvenirs, etc.). Have them list wasteful practices and brainstorm sustainable alternatives.

Expected outcome: A broad understanding of circular economy applications in tourism.

Interactive workshops

Objective: Deepen understanding of the life cycle of products and services through hands-on activities.

Activity: Conduct a mapping exercise where learners create life cycle diagrams for tourism products (e.g., hotel toiletries) and services (e.g., guided tours), identifying opportunities for sustainability improvements.

Expected outcome: Learners grasp life cycle analysis (LCA) and its role in sustainability.

Case study analysis

Objective: Examine real-world applications of circular economy principles.

Activity: Provide case studies on sustainable tourism businesses implementing circular economy strategies (e.g., eco-hotels, zero-waste restaurants, sustainable travel gear brands). Ask learners to analyze the business models and discuss their effectiveness.

Expected outcome: Ability to identify successful circular economy practices and their impact.

Practical exercises

Objective: Encourage hands-on application of circular economy concepts.

Activity:

Waste audit exercise: Participants track and analyze waste production in a simulated hotel or restaurant setting and propose solutions.

Sustainable design challenge: Groups design a tourism product (e.g., reusable travel kit) with sustainability and circular principles in mind.

Expected outcome: Practical experience in identifying and solving sustainability challenges.

Industry expert panels & guest lectures

Objective: Gain insights from professionals applying circular economy principles in tourism.

Activity: Invite sustainability managers, eco-hospitality leaders, and waste management experts to discuss trends and best practices.

Expected outcome: Exposure to real-world applications and networking opportunities.

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Group project: Circular Economy proposal
Objective: Apply knowledge to develop actionable circular economy initiatives.
Activity: Groups create a proposal for implementing circular economy strategies in a specific tourism business (e.g., an eco-friendly hotel or sustainable tour package). They present their ideas and receive feedback.
Expected outcome: Critical thinking, teamwork, and presentation skills while creating practical sustainability solutions.

Reflection and feedback session
Objective: Consolidate learning and encourage continuous improvement.
Activity: Participants reflect on key takeaways through guided discussions or journaling. Feedback is collected on the module's effectiveness.
Expected outcome: Reinforced learning and iterative improvements for future sessions.

Developing sustainable and circular product and service strategies
Key theoretical models
The concept of sustainability in product and service development is rooted in the principles of the circular economy, which emphasizes resource efficiency, waste reduction, and closed-loop systems. Key theoretical models include:

The triple bottom line (TBL) framework (People, Planet, Profit).
The Triple Bottom Line (TBL) is a sustainability framework that helps organizations integrate sustainable practices by focusing on three key elements:
People (Social responsability): This aspect considers a business's social impact on stakeholders, including employees, customers, communities, and supply chain partners. It aligns closely with corporate social responsibility (CSR) and aims to promote social equity both within and beyond the organization.
Example: Community-based Tourism. Initiative: A tourism company works closely with local communities to develop and manage tourist experiences, ensuring that a significant portion of the revenue benefits the local population. *Outcome*: Promotes cultural preservation, job creation, and community empowerment.

Planet (Environmental sustainability): This focuses on minimizing environmental harm and maximizing ecological benefits. Businesses assess their impact through strategies like product lifecycle assessments and emissions reduction initiatives.
Example: Sustainable Tourism Practices. ***Initiative***: An eco-resort in a tropical destination focuses on minimizing its environmental impact by using renewable energy sources, reducing water consumption, and implementing waste-recycling programs. The resort might also engage in wildlife conservation projects. *Outcome*: Reduces the carbon footprint of tourism activities and contributes to local environmental conservation efforts.

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Profit (prosperity): Beyond traditional financial gains, this refers to the broader economic contributions a company makes, such as job creation, responsible tax practices, and overall societal benefits.
Example: Promoting Off-Season Tourism. ***Initiative***: A destination promotes off-season tourism to reduce overcrowding and ensure a more consistent income for local businesses throughout the year. This also helps in managing the environmental impact during peak periods. ***Outcome***: Maximizes revenue for local businesses while spreading the economic benefits of tourism across the year and minimizing the strain on local infrastructure.

By maximizing all three bottom lines, organizations are more likely to have a positive impact on the world while still improving financial performance. The triple bottom line concept suggests that business outcomes cannot be measured by just the financial bottom line. Instead, they must also consider the well-being of people and the planet. This means organizations that adopt TBL frameworks are accountable to all stakeholders—not just shareholders.

Combining the 3 Ps in Practice:
A tourism company that operates on the Triple Bottom Line might:
Ensure fair wages (People) for local guides and hotel staff. Minimize waste and use renewable energy in its operations (Planet). Maximize profits by targeting eco-conscious tourists who prefer to support sustainable practices (Profit). By integrating these practices, tourism businesses can achieve long-term success while contributing positively to society, the environment, and their bottom line.

Green certifications: Certifications like the Living Building Challenge and WELL Building Standard integrate Cradle to Cradle principles, encouraging regenerative design and closed-loop material cycles.
Innovative materials: Sustainable materials like biodegradable insulation and modular construction systems allow for easy disassembly and recycling, reducing waste.
Furniture and fixtures: Cradle to Cradle principles are used to create disassemblable, repairable, or refurbishable furniture, extending product lifespan and minimizing waste.
Non-toxic materials: Using non-toxic materials in interiors improves indoor air quality and promotes occupant well-being.
Sustainable products: Companies like Interface, Shaw Industries, and Herman Miller design products that can be disassembled and recycled, reducing waste.
Circular business models: Leasing or take-back programs help companies manage their products, ensuring proper recycling or repurposing.

These real-world examples show the transformative potential of Cradle to Cradle design, helping create a sustainable, regenerative future by promoting responsible resource use and eliminating waste.

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Industrial symbiosis

Industrial Symbiosis is a sustainability strategy that fosters resource exchange, waste reduction, and energy efficiency across industries. Originally applied to manufacturing, it can enhance tourism through collaboration between businesses and local industries, promoting circular economy principles. The goal is to replicate nature's self-sustaining cycles rather than the traditional linear flow of materials in the economy.

Key Aspects of Industrial Symbiosis include:
Technological innovation to address environmental challenges.
Life cycle perspectives to avoid overlooking design aspects.
Dematerialization and eco-efficiency to reduce resource consumption.
Shifting from minimizing waste at individual facilities to reducing waste across the entire system.

Industrial symbiosis pathways involve:
Using wastes and by-products as feedstocks for other industries.
Recycling metals, converting wastes to energy, and recycling post-consumer waste.

Some examples of how industrial symbiosis can be integrated into tourism:

1. Resource and waste sharing between hotels and local farms.

Example: Hotels and resorts can collaborate with local farms to exchange organic waste. For instance, a hotel can provide food waste and organic matter (e.g., vegetable scraps) to local farms for composting, which can then be used to enrich soil for growing fresh produce. In return, the farm can supply fresh, locally grown produce to the hotel, reducing the carbon footprint of food transportation.
Outcome: This creates a closed-loop system, where food waste is turned into valuable compost, benefiting both the hotel and the local farming community, and reduces the environmental impact of waste and transportation.

2. Water recycling and sharing between hotels and aquatic parks

Example: Hotels and nearby aquatic parks can share water resources. A hotel could partner with a local water park to exchange excess water used in hotel cooling systems, such as in air conditioning or pools, for the water needs of the park. In turn, the park can use treated or purified water from the hotel for its own operations.
Outcome: This reduces overall water consumption in the area, conserving an important natural resource while ensuring that both the hotel and water park maintain operations efficiently.

3. Recycling materials from tourism products and souvenirs

Example: Souvenir shops or local artisans in tourism areas can use waste materials from nearby industries or hotels (e.g., scrap metals, old textiles, or plastic bottles) to create new, upcycled tourism products or crafts. For instance, discarded plastic bottles can be used to create handmade jewellery or decorations.

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Outcome: This supports local economies, reduces waste, and promotes eco-conscious tourism products, aligning with sustainable tourism practices.

4. Energy efficiency through collaboration between hotels and local renewable energy providers

Example: Hotels could partner with local renewable energy providers (e.g., wind or solar farms) to source clean energy. At the same time, the hotels might offer to host renewable energy infrastructure, such as solar panels on rooftops or wind turbines on hotel grounds, in exchange for discounted rates or energy credits.

Outcome: This reduces the reliance on fossil fuels in the tourism sector, supports clean energy initiatives, and helps businesses reduce their operational carbon footprints.

5. Collaborative transportation solutions for tourists

Example: Hotels, tour operators, and transportation companies can collaborate on a shared transportation system, such as electric shuttle buses or bicycles, to serve tourists. These vehicles can be used for multiple purposes, such as taking visitors to local attractions or airport transfers, while being powered by clean energy sources.

Outcome: This reduces traffic congestion, minimizes the environmental impact of transportation, and enhances the sustainability of the tourism destination.

By adopting industrial symbiosis principles, tourism and related industries can collaborate to minimize waste, optimize resource use, and foster sustainable, closed-loop systems that benefit the environment, local communities, and the economy.

Circular product design in tourism

Circular product design in tourism focuses on reducing waste and extending the lifecycle of products by adopting sustainable practices. By designing products that can be reused, repaired, or recycled, the tourism industry can reduce its environmental impact while creating positive experiences for travelers.

Key elements of circular product design in tourism

Sustainable materials

Definition: Using biodegradable, recycled, or sustainable materials to create products that do not harm the environment and can be decomposed or repurposed at the end of their life cycle.

Applications in Tourism:

Eco-friendly Souvenirs: Instead of mass-producing souvenirs from plastic or non-recyclable materials, use alternatives like bamboo, wood, recycled metals, or plant-based plastics. For example, local artisans could create unique, handcrafted souvenirs that are biodegradable or made from recycled materials.

Furniture & Fixtures: Hotels and resorts could design their furniture using sustainable materials such as reclaimed wood or upcycled fabrics, contributing to the circular economy by reducing waste in the hospitality sector.

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Clothing & Apparel: Eco-conscious clothing brands can design travel gear (like t-shirts, jackets, or bags) using organic cotton, hemp, or recycled polyester, which has a lower environmental footprint.
Food Packaging: Restaurants and food vendors within tourist areas could switch to biodegradable or edible packaging materials, reducing plastic waste.

Benefits:
Reduces the need for virgin resources and minimizes environmental degradation.
Encourages the use of local, eco-friendly materials that are often more sustainable.

Modular design
Definition: Creating products that are easy to repair, update, or replace parts of rather than being discarded when they break down or become outdated.
Applications in Tourism:
Accommodation Furniture: Modular furniture in hotels and vacation rentals allows pieces to be replaced or repaired without discarding the entire item. For example, beds or chairs with removable parts like cushions, arms, or frames that can be swapped out as needed.
Travel Gear: Luggage and accessories designed with replaceable parts, such as wheels, zippers, or straps, make it easier for travellers to maintain their products instead of buying new ones when a part breaks.
Electronics and Gadgets: Tourism-related electronics, such as cameras, headphones, or GPS devices, can be designed to allow easy replacement of batteries or other components rather than requiring disposal of the entire product once it stops working.
Vehicle Rentals: Some car rental or bike-sharing companies might offer modular vehicles that are easy to upgrade, repair, or replace parts, reducing the overall waste generated from broken or outdated models.

Benefits:
Extends the lifespan of products, reducing the demand for new resources.
Promotes a culture of repair, reducing the overall waste stream.
Enhances product durability, ensuring that tourists get long-lasting and high-quality experiences.

Minimal packaging
Definition: Reducing or eliminating excessive packaging in favor of more sustainable options, often by offering refillable or reusable alternatives to single-use packaging.
Applications in Tourism:
Refillable Water Bottles: Many tourist destinations now encourage the use of refillable water bottles instead of selling single-use plastic bottles. Some places even offer water refill stations to reduce plastic waste.
Reusable Bags and Containers: Hotels, resorts, and tour companies can provide guests with reusable bags or containers for shopping or carrying personal items, reducing the need for disposable plastic bags.

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Sustainable Hotel Amenities: Instead of offering single-use toiletries in plastic bottles, hotels can offer bulk refillable stations or solid products like shampoo bars, which eliminate the need for packaging altogether.
Eco-Friendly Packaging for Food and Drink: Instead of serving food and drinks in disposable containers, many tourist destinations, food stalls, or cafes are opting for biodegradable, compostable, or reusable packaging. Even better, offering guests the option to bring their own containers or cups for take-out food can significantly reduce packaging waste.

Benefits:
Dramatically reduces the environmental impact of packaging waste.
Promotes sustainable behavior among tourists and businesses.
Helps meet increasing consumer demand for eco-friendly and waste-free experiences.

Circular product design in tourism focuses on creating a more sustainable and waste-reducing environment by using eco-friendly materials, designing for repairability and reuse, and minimizing packaging. These approaches not only benefit the environment but also improve the tourist experience by offering unique, long-lasting, and thoughtful products. The tourism sector, by adopting these practices, can play a significant role in advancing sustainability and contributing to a circular economy.

Principles of Circular Product Design in tourism

a) *Design for longevity*
Objective: Extend the lifespan of tourism-related products and services.
Example: Hotels designing durable, high-quality furniture and amenities that can be refurbished or repurposed at the end of their life cycle.
b) *Design for reusability and repairability*
Objective: Create tourism products that can be reused or easily repaired rather than disposed of.
Example: Clothing brands catering to tourists (e.g., outdoor clothing, swimsuits) that offer take-back schemes to recycle or repurpose worn-out garments.
c) *Design for disassembly*
Objective: Enable easy disassembly of products and services to recover materials and reduce waste.
Example: Electric shuttle buses or bike-sharing systems that can be upgraded or disassembled for parts when they are no longer in use.
d) *Using renewable and sustainable materials*
Objective: Choose materials that are renewable, non-toxic, and biodegradable.
Example: Eco-conscious accommodations: Hotels using sustainable materials such as bamboo flooring, organic cotton linens, or recycled materials for construction and decor.
e) *Waste reduction and resource recovery*
Objective: Minimize waste generated by tourism operations and recover valuable resources.
Example: Hotels implementing zero-waste policies, such as reducing single-use plastics, composting organic waste, and recycling materials.

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Circular Product Design process in tourism

a) *Assessing the current product or service lifecycle*

Key Considerations: Evaluate the entire life cycle of existing tourism products and services, from resource extraction to disposal. Identify key areas for improvement.

Example: For a hotel, assess energy consumption, water usage, waste generation, and the lifecycle of consumables (e.g., soaps, shampoos, linens).

b) *Redesigning the product or service*

Goal: Use circular economy principles to redesign products/services with a focus on sustainability.

Example: A hotel chain can redesign its room service packaging to be entirely compostable or shift to a "product as a service" model for furniture and amenities, where the hotel leases the furniture and returns it to the manufacturer for repair or recycling.

c) *Sourcing sustainable materials*

Goal: Select materials that have a lower environmental impact, are recyclable, or come from sustainable sources.

Example: Choosing locally sourced organic materials for furniture, bedding, or restaurant menus to minimize carbon footprint and support local economies.

d) Designing *circular business models*

Goal: Implement business models that support product reuse, recycling, and resource sharing.

Example: Leasing Programs: Offer travelers the option to lease high-quality luggage or equipment rather than purchasing it.

e) *Creating synergies with other sectors*

Goal: Collaborate with local industries (e.g., agriculture, waste management, or energy) to create a circular value chain.

Example: A hotel collaborating with local farmers to compost food waste, or a tourism company that partners with local artisans to create upcycled souvenirs.

Benefits of circular product design in tourism

Environmental Impact: Reduces resource consumption, waste generation, and carbon emissions.

Economic Opportunities: Circular models can reduce costs through resource efficiency and create new business opportunities (e.g., refurbishing or leasing models).

Social Responsibility: Fosters positive social impact by supporting local communities, promoting fair labour practices, and reducing the environmental footprint.

Enhanced Brand Value: Tourism businesses adopting circular design principles can differentiate themselves in the market, attracting eco-conscious consumers and improving their reputation.

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Challenges and solutions

Challenge: High initial costs for redesign and sourcing sustainable materials.

Solution: Businesses can leverage government incentives, grants, or industry partnerships to offset initial costs.

Challenge: Difficulty in measuring the effectiveness of circular models.

Solution: Use sustainability metrics, such as carbon footprint, waste diversion rate, and resource recovery, to track progress and demonstrate value.

Circular Product Design in Tourism offers a comprehensive framework to create products and services that are not only eco-friendly but also economically viable and socially responsible. By focusing on the principles of circularity—designing for longevity, reuse, repair, and resource recovery—tourism businesses can contribute to a more sustainable future, reduce their environmental impact, and create new opportunities for growth. Circular design in tourism not only enhances the value of the tourism experience but also fosters greater community involvement and environmental stewardship.

Circular service models in tourism

Circular service models in tourism focus on creating experiences and services that contribute to sustainability, reduce waste, and improve the overall environmental impact of tourism-related activities. By incorporating circular principles, businesses and destinations can enhance the tourist experience while ensuring long-term benefits for the planet.

Main components of circular service economy models in tourism

Eco-friendly accommodations

Eco-friendly accommodation goes beyond traditional hospitality services by incorporating sustainable practices into every aspect of the guest experience. These accommodations prioritize energy efficiency, resource conservation, and minimizing environmental impact.

a. *Energy-efficient infrastructure*

Solar Panels and Renewable Energy: Many eco-friendly hotels and resorts install solar panels or wind turbines to power their facilities, reducing their reliance on non-renewable energy sources. By harnessing solar energy, these accommodations minimize their carbon footprint and offer guests a more environmentally conscious stay.

Smart Lighting and HVAC Systems: Energy-efficient technologies like LED lighting, motion-sensor lighting, and smart heating, ventilation, and air conditioning (HVAC) systems help reduce energy consumption. For example, lighting that automatically adjusts based on room occupancy ensures no electricity is wasted.

Water Conservation Systems: Installing water-saving devices such as low-flow showerheads, dual-flush toilets, and water-efficient landscaping minimizes water waste and ensures that resources are used more efficiently.

Benefits:

Significant reduction in energy consumption and carbon footprint.

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Long-term cost savings for businesses and a more sustainable guest experience.
Guests become more aware of the environmental initiatives and are often willing to support such practices.

b. *Biodegradable toiletries in refillable dispensers*

Refillable Dispensers: Instead of single-use plastic bottles of shampoo, conditioner, and soap, many hotels now offer refillable dispensers for toiletries. This eliminates the need for excessive packaging waste and allows guests to enjoy quality products without contributing to plastic pollution.

Biodegradable Toiletries: Some accommodations provide toiletries made from natural, biodegradable ingredients that are safe for the environment. These products typically come in paper or glass packaging to further reduce plastic waste.

Benefits:

Reduces the environmental impact of plastic waste and packaging.
Encourages a zero-waste mindset and more sustainable guest behavior.
Improves the quality of products offered, as guests tend to appreciate natural, organic, and eco-friendly options.

Green transportation

Transportation plays a significant role in the carbon footprint of tourism. Green transportation models focus on reducing emissions and promoting sustainable travel options.

a. *Electric vehicle (EV) rentals and shared transport systems*

Electric Car Rentals: Some car rental services now offer electric vehicle options, allowing tourists to explore destinations without contributing to air pollution. These EVs are often powered by renewable energy sources, ensuring a truly green travel experience.

Electric Bike and Scooter Rentals: In urban tourist areas, renting electric bikes or scooters provides a sustainable way for visitors to get around while reducing traffic congestion and carbon emissions.

Shared Mobility Systems: Ride-sharing platforms or public transport systems that utilize electric or hybrid vehicles are becoming increasingly popular in tourist destinations. These systems make it easier for tourists to access green transportation without needing to rent traditional, gas-powered cars.

Benefits:

Decreases carbon emissions and air pollution, making destinations more sustainable.
Offers travelers eco-friendly alternatives to conventional transportation.
Supports cities in their efforts to transition to more sustainable, low-emission transport systems.

b. *Carbon offset programs to mitigate travel emissions*

Offsetting Carbon Emissions: Many tourism companies, including airlines, tour operators, and accommodations, offer guests the option to offset their travel-related carbon emissions. These

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programs typically involve investing in renewable energy, reforestation, or energy efficiency projects to compensate for the emissions produced during travel.
Sustainable Travel Campaigns: Some destinations have launched campaigns to encourage tourists to participate in carbon offset programs. For example, a hotel or tour operator might include the cost of carbon offsetting in the price of a booking, making it easy for travelers to reduce their environmental impact without much effort.

Benefits:
Helps mitigate the environmental effects of travel by balancing out emissions through eco-friendly projects.
Provides travelers with a simple way to participate in sustainability efforts.
Supports global initiatives to combat climate change and reduce overall emissions.

Food and beverage sustainability
The food and beverage industry in tourism can have a significant environmental impact, from food waste to packaging waste. Sustainable practices in this area help reduce the carbon footprint and waste generated by dining and hospitality services.

a. *Farm-to-table sourcing and food waste reduction strategies*
Local Sourcing: Farm-to-table initiatives focus on sourcing food directly from local farms and suppliers, ensuring that ingredients are fresh, seasonal, and sustainably produced. This reduces the carbon footprint associated with long-distance transportation of food products and supports local economies.
Sustainable Seafood and Ethical Meat: Hotels and restaurants in the tourism industry are increasingly sourcing sustainable seafood, organic produce, and ethically raised meat. Certifications like MSC (Marine Stewardship Council) for seafood or organic labels for produce ensure that food is responsibly sourced.
Food Waste Reduction Programs: Many tourism destinations are adopting strategies to reduce food waste, such as portion control, donating unused food to local charities, or composting food scraps. Restaurants and hotels may also repurpose leftovers into new dishes, reducing waste and maximizing resource use.

Benefits:
Supports sustainable farming and ethical food production practices.
Reduces food waste and minimizes the carbon footprint of food production.
Enhances the quality of the dining experience by offering fresh, local, and ethically sourced options.

b. *Composting organic waste and eliminating plastic packaging*
Composting Organic Waste: Hotels, restaurants, and tourist attractions can establish composting programs for organic waste, such as food scraps, coffee grounds, and yard trimmings. This

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organic waste is turned into nutrient-rich compost, which can be used to improve soil quality and reduce landfill waste.

Eliminating Plastic Packaging: Many tourism-focused restaurants, food vendors, and accommodations are transitioning away from single-use plastic packaging. Instead, they use biodegradable, compostable, or reusable packaging options. This includes eliminating plastic straws, cutlery, and food containers in favor of paper, bamboo, or edible alternatives.

Zero-Waste Dining: Some tourism businesses operate on a zero-waste principle, where all food scraps are either composted or reused in creative ways, ensuring that nothing goes to landfill.

Benefits:

Significantly reduces plastic waste and supports the shift toward a circular economy.

Diverts food waste from landfills and promotes the use of organic matter for composting.

Helps raise awareness among tourists about the importance of sustainable food practices.

Principles of circular service models in tourism

Product as a Service (PaaS): Transition from ownership to access-based models (e.g., rental, leasing, or sharing services). *Example: Bike and e-scooter rentals, hotel furniture leasing instead of purchasing.*

Sharing & collaborative consumption: Encourage shared use of tourism infrastructure and assets to reduce redundancy. *Example: Shared electric shuttle buses between hotels and attractions.*

Resource efficiency & regeneration: Minimize energy, water, and material consumption while promoting renewable resources. *Example: Hotels using closed-loop water recycling systems and renewable energy sources.*

Design for longevity & reuse: Services should incorporate durable, repairable, and upgradable products. *Example: Modular hotel furniture that can be refurbished instead of replaced.*

Reverse logistics & take-back systems: Establish collection systems for used products to be reused, repaired, or remanufactured. *Example: Return programs for hotel linens, uniforms, or tourism gear for refurbishment.*

Local & circular sourcing: Prioritize locally sourced, recycled, or upcycled materials to support regional economies. Example: Hotels sourcing upcycled furniture or restaurants using surplus food ingredients.

Waste-to-value innovation: Convert waste into new products or energy to close resource loops. *Example: Converting food waste into biogas or repurposing plastic waste into souvenirs.*

Smart & digital integration: Leverage technology to track resource use, optimize operations, and reduce waste. *Example: Smart sensors in hotels to monitor energy and water consumption in real time.*

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Circular service process in tourism

Design & planning: Incorporate circular principles from the start (e.g., modular, repairable, and upgradable infrastructure). *Example: Hotels designed with modular furniture for easy refurbishment.*

Sustainable procurement & resource optimization: Source locally, prioritize renewable materials, and minimize waste. *Example: Restaurants using surplus food redistribution systems or upcycled decor.*

Efficient service delivery*:* Implement resource-sharing models to reduce consumption and waste. *Example: Shared electric shuttle services between hotels and tourist attractions.*

Consumer engagement & awareness: Encourage responsible consumption through education and incentives. Example: Eco-certifications for hotels that minimize plastic waste and energy use.

Collection & reverse logistics: Establish take-back systems for used materials, ensuring reuse and recycling. *Example: Hotels collecting used linens for refurbishment instead of disposal.*

Refurbishment, remanufacturing & upcycling: Extend the lifespan of products through repair, refurbishment, and repurposing. *Example: Old furniture being repurposed into unique decorative elements.*

Waste-to-resource transformation*:* Convert unavoidable waste into new products or energy. *Example: Food waste from restaurants transformed into biogas or compost.*

Continuous monitoring & improvement: Use digital tools and data analytics to track sustainability performance. *Example: Smart hotel systems monitoring water and energy consumption.*

Challenges and solutions in circular service models in tourism

While circular service models offer sustainability benefits, their adoption in tourism faces challenges. Here are some key obstacles and potential solutions:

High initial investment costs

Challenge: Transitioning to circular systems (e.g., renewable energy, waste management infrastructure) requires significant upfront capital.

Solution: Access green financing, government incentives, and public-private partnerships to offset costs.

Lack of awareness & consumer participation

Challenge: Tourists may not prioritize sustainability or understand circular models.

Solution: Implement educational campaigns, rewards for eco-friendly behaviors, and transparent sustainability reporting.

Supply chain complexity

Challenge: Sourcing local, sustainable products can be difficult due to fragmented supply chains.

Solution: Develop regional supplier networks and collaborate with sustainable vendors.

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Limited infrastructure for waste & resource management

Challenge: Inadequate recycling, waste-to-energy, and water treatment facilities in some destinations.

Solution: Invest in local waste management innovations and establish partnerships with circular economy providers.

Circular service models in tourism focus on providing sustainable, environmentally friendly services that reduce waste and carbon emissions. By incorporating energy-efficient accommodations, green transportation options, and food and beverage sustainability, tourism businesses can create a more eco-conscious and resource-efficient travel experience. These models not only benefit the environment but also enhance the reputation of tourism businesses by attracting eco-minded travelers who value sustainability in their experiences.

Self-reflection and takeaways

Questions for self-reflection

How do circular economy principles reshape the way products and services are designed in tourism and related industries?

Can you identify any businesses or tourism experiences you have encountered that already integrate circular economy concepts? What makes them stand out?

How can I apply the knowledge of product and service management in my field?

How will learning about circular product and service design influence your approach to sustainability in your career?

What role do you see yourself playing in driving circular innovation in tourism and hospitality?

In an era of rapid technological advancement, how can companies ensure that their products and services remain relevant and competitive in the market?

Key takeaways

Circular product and service innovation requires a fundamental rethink of waste, resource efficiency, and customer experience.

Tourism stakeholders must collaborate to develop solutions that preserve cultural heritage and local ecosystems while ensuring high-quality visitor experiences.

Circular solutions not only reduce environmental impact, but can also create new revenue streams (e.g., upcycled souvenirs, sustainable accommodation offerings, resource-efficient services).

Sustainable tourism fosters brand loyalty and attracts conscious travellers who seek environmentally responsible options.

Everyone in the tourism industry—from business owners to travellers—has a role in supporting and adopting circular economy principles.

Small changes, such as reducing single-use plastics or designing services that encourage reuse and regeneration, can create significant long-term impact.

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MODULE 4 Challenges and Solutions

Introduction

The transition to a circular economy in tourism presents both **opportunities and challenges**. While the **adoption of circular practices** can lead to **significant environmental and economic benefits, various obstacles hinder their effective implementation**. Module 4 explores these challenges and provides solutions that facilitate the transition towards a more sustainable tourism sector. Understanding and addressing these barriers is crucial for **tourism businesses, policymakers, and educators** who aim **to foster a circular economy mindset and implement innovative strategies** that ensure long-term sustainability.

One of the key focus areas of this module is **overcoming financial and resource-related barriers**. The implementation of circular economy principles requires **investments in sustainable infrastructure, workforce training, and new business models**. However, **financial constraints, limited access to funding, and market resistance** often prevent tourism enterprises, especially small and medium-sized enterprises (SMEs), from adopting sustainable practices. By analyzing economic challenges and showcasing financial support mechanisms, this module provides learners with an understanding of available solutions, such as **funding programs, circular business models, and cost-effective implementation strategies.**

The second part of the module highlights the importance of **equipping professionals with the right skillset** to support a circular transition. The demand for green skills is rising, yet there are gaps in vocational education and training (VET) programs that hinder the development of a workforce prepared to implement circular practices. This module examines the **key competencies needed, from resource efficiency and waste management to collaboration and digital skills**, and explores **strategies to enhance training, upskilling, and stakeholder engagement.**

Another crucial component of this module is enhancing **collaboration between stakeholders** in the tourism sector. Transitioning to circular practices requires cooperation among **businesses, policymakers, educational institutions, and local communities**. However, fragmented policies, conflicting interests, and resistance to change often create barriers to effective partnerships. This module will explore ways to foster **cooperation, align policy and business interests, and leverage digital tools** for knowledge exchange and skill development.

By **integrating theoretical knowledge with practical applications**, Module 4 provides a comprehensive understanding of the challenges and solutions related to circular tourism. Learners will engage in **case studies, group discussions, and interactive workshops** that reinforce their ability to apply circular economy principles in real-world scenarios. This approach ensures that they are not only **aware of the barriers** but are also equip**ped with the tools and strategies** to overcome them, making circular tourism a viable and impactful reality.

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Objective

The primary objective of this module is t**o equip learners with the knowledge, skills, and tools** necessary to **identify and address the challenges hindering the transition to a circular economy in tourism.** Through a structured **exploration of financial, educational, and collaborative barriers,** learners will develop an **in-depth understanding** of the systemic issues preventing the widespread adoption of circular practices. By analyzing **real-world case studies and engaging in interactive discussions**, learners will enhance their ability to **propose and implement effective solutions** that promote sustainability.

Furthermore, this module aims to **strengthen the competencies** needed to facilitate circular tourism. Learners will acquire **practical skills in financial planning for sustainable initiatives, strategies for developing green skills, and methods to foster multi-stakeholder collaboration.** By the end of the module, participants will be able to **critically assess challenges, develop tailored solutions, and contribute to the transformation** of tourism into a more resource-efficient and sustainable sector.

Learning Outcomes

Learning Outcome 1: Understanding financial barriers and implementing Circular Economy solutions

Upon completing this module, learners will develop a **deep understanding of financial barriers** that hinder the adoption of circular economy principles in tourism. They will explore the **challenges associated with high initial investment costs, limited access to funding, and uncertainties surrounding the return on investment (ROI)** for circular business models. By analyzing **real-world case studies**, learners will identify common financial constraints faced by tourism enterprises, particularly SMEs, and evaluate the factors contributing to financial hesitancy when implementing sustainability initiatives.

This learning outcome will also provide **practical insights into financial support mechanisms** that can aid the transition toward a circular economy. Learners will assess the role of **EU funding programs, national grants, and local subsidies** in providing financial assistance for businesses seeking to implement circular practices. In addition, alternative financing solutions, such as **impact investing, crowdfunding, and public-private partnerships**, will be explored as viable options to overcome financial limitations.

A significant focus will be on developing skills to conduct **financial planning for sustainability projects**. Learners will examine **cost-effective implementation strategies**, such as **phased investment approaches, resource efficiency audits, and leveraging technology** to optimize operations. By the end of this module, they will be able to propose **financial strategies** tailored to different types of tourism businesses, ensuring that sustainability measures align with long-term financial stability and growth. Through interactive discussions and case-based learning,

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participants will gain the ability to **assess financial risks, justify investments** in circular economy practices, and **support the financial viability** of sustainable tourism.

Learning Outcome 2: Acquiring green skills and strengthening workforce readiness for Circular Tourism

Another key learning outcome of this module is to enhance the skills necessary for implementing circular economy principles within the tourism industry. Learners will develop an **understanding of the core competencies** required to transition towards circular tourism, including **resource efficiency, sustainable procurement, and waste management**. By analyzing industry trends, learners will assess the increasing demand for green skills and the role these competencies play in ensuring the resilience and competitiveness of tourism businesses.

This outcome will also focus on the **barriers to green skills development**, including **gaps in vocational education and training (VET) programs, limited employer investment in sustainability training, and resistance to change** within the industry. Through structured analysis, learners will identify **strategies** to integrate circular economy principles into professional training, enhance awareness among tourism operators, and facilitate knowledge transfer between stakeholders.

Practical training methods will be emphasized, including **interactive workshops, case study analysis, and industry speaker sessions** to expose learners to real-world applications of green skills in tourism. By the end of the module, learners will have the ability to **design and implement training initiatives that promote circular economy skills,** ensuring that tourism professionals are well-equipped to drive sustainability within their organizations. This learning outcome will empower participants to **advocate for policy changes, collaborate with educational institutions** to improve VET curricula, and **foster a culture of continuous learning** and adaptation to emerging sustainability trends.

Content

Understanding the financial barriers in circular tourism

The implementation of circular economy principles in tourism necessitates investments in sustainable infrastructure, workforce training, and advanced technology. However, several financial barriers impede this transition. One of the most significant challenges is the **high initial investment costs** associated with circular solutions. Many tourism businesses must allocate considerable capital for energy-efficient infrastructure, comprehensive waste management systems, and sustainable procurement processes. These expenses often deter businesses, particularly small and medium-sized enterprises (SMEs), from taking the first steps toward sustainability.

Another major obstacle is the **limited access to funding**. SMEs frequently encounter difficulties in securing financial support due to a lack of awareness about available grants, subsidies, and

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financial instruments tailored to circular initiatives. Without adequate knowledge of these resources, businesses struggle to fund their sustainability transformations. Moreover, **uncertainty in return on investment (ROI)** further exacerbates hesitancy in adopting circular solutions. Since many circular economy practices require long payback periods, businesses may perceive the financial risk as too high and delay implementation. Additionally, **market resistance** presents a challenge, as circular products and services are often perceived as more expensive. This perception can lead to reluctance from both consumers and industry players, creating further obstacles to mainstream adoption and long-term profitability in circular tourism.

Economic benefits of circular tourism

Despite the financial barriers, circular tourism offers significant economic benefits that enhance long-term profitability and sustainability. One of the key advantages is **cost savings through efficiency**. By integrating circular practices such as **waste reduction, energy efficiency, and water conservation,** businesses can significantly lower their operational expenses over time. **Reducing reliance on single-use materials** and **optimizing resource consumption** translates into direct financial gains for tourism operators.

Another substantial benefit is the **competitive advantage** that circular tourism can provide. With an increasing number of tourists actively seeking sustainable travel options, businesses that incorporate circular economy principles can position themselves as **attractive destinations**. By marketing their commitment to **sustainability, businesses** can distinguish themselves from competitors and appeal to environmentally conscious travelers. Furthermore, **regulatory compliance** plays a crucial role in the economic benefits of circular tourism. Many governments offer **financial incentives, subsidies, and tax reductions** to businesses adopting sustainable practices. By ensuring compliance with environmental regulations, businesses can **avoid penalties and access additional funding opportunities** that support their circular initiatives.

Lastly, circular tourism creates **new revenue streams** by introducing innovative business models. The adoption of serv**ice-based tourism, upcycling initiatives, and the resale of refurbished products** presents opportunities for businesses to diversify their income sources. These models not only contribute to sustainability but also **enhance financial resilience** by generating **additional profits** through **innovative resource utilization**.

Solutions and strategies for overcoming financial barriers

Overcoming financial barriers in circular tourism requires a strategic approach that leverages **funding opportunities, innovative business models, and cost-effective implementation methods**. One of the most effective strategies is **utilizing financial support mechanisms.** Businesses can actively explore **EU funding programs, national grants, and local subsidies** specifically designed to promote sustainability in tourism. Additionally, forming **partnerships with local municipalities and private investors** can enable co-financed projects, reducing the financial burden on individual enterprises. Alternative financing methods such as **crowdfunding**

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and impact investing also present viable options for businesses looking to secure funds for sustainable tourism initiatives.

Another critical strategy is the **adoption of circular business models** that reduce financial strain. The **product-as-a-service (PaaS)** approach allows businesses t**o lease essential equipment**, such as **solar panels or water purification systems**, instead of purchasing them outright. This minimizes initial costs while enabling access to sustainable technology. Shared economy practices further support financial efficiency by allowing businesses to collaborate in resource-sharing efforts, such as **joint laundry services or transportation solutions**. Additionally, implementing **take-back and repair services for old furniture, appliances, and equipment** can significantly reduce expenses while promoting sustainability by extending product lifecycles.
Cost-effective implementation strategies also play a pivotal role in facilitating circular tourism adoption. Businesses can implement circular economy practices in a phased manner, starting with low-cost initiatives such as **conducting waste audits and monitoring energy usage.** This gradual approach allows organizations to assess the benefits of sustainability investments without committing large sums upfront. **Collaboration with educational institutions** provides another opportunity for cost savings. By partnering with VET institutions, businesses can gain **access to research, innovation, and workforce training at reduced costs**. Finally, **leveraging digital tools** such as **smart meters, AI-based efficiency monitoring, and data-driven resource optimization** can help businesses minimize waste and improve operational efficiency, ensuring long-term sustainability and profitability.

Case study analysis & group debate
To help learners understand real-world financial challenges and opportunities in circular tourism and to develop critical thinking by evaluating business strategies and funding mechanisms, facilitator can provide students with case studies of tourism businesses that have successfully overcome financial barriers to implementing circular solutions:
Assign students into small groups to analyze key aspects of the case studies
What financial challenges did the business face?
What funding mechanisms were used?
What was the economic impact of adopting circular solutions?
Groups will present their findings, followed by a facilitated debate on the most effective financing strategies.

Example: It showcases how a small tourism business with limited resources can innovate and implement circular economy practices. **B&B De Arend** is a family-run bed & breakfast and tea room in Nieuwpoort, Belgium. Facing high energy costs and waste issues, the owners sought to become more sustainable despite financial constraints. In 2020, they won a €10,000 voucher from an EU-funded project (FACET) to fund a sustainability audit and engineering support GOODTOURISMBLOG.COM. This support was crucial in overcoming upfront cost barriers. These changes have reduced the B&B's environmental footprint while sparking interest among guests and peers. The owners deliberately placed the new battery units in a visible hallway to start

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conversations with visitors about sustainability. By proving that even a small tourism SME can implement cutting-edge circular solutions, B&B De Arend serves as inspiration for other businesses.

Methodology

Debate – Policy vs. Business responsibility

To encourage students to consider different perspectives on responsibility for financing circular transitions:

Assign half the class to argue that the government should provide stronger financial support for circular economy initiatives, while the other half argues that businesses should take more initiative in self-financing sustainability efforts.

Provide supporting resources, including policy documents, business success stories, and financial reports.

Each side presents arguments, followed by a moderated discussion where participants attempt to find a balanced solution.

These methods ensure that students not only understand theoretical aspects but also engage in **practical problem-solving and critical discussions**, preparing them for real-world decision-making in sustainable tourism.

Example: **The Balearic Islands** (a major Spanish tourism destination including Mallorca, Ibiza, Menorca) enacted one of Europe's first comprehensive circular economy laws for tourism in 2021. The regional government launched a €55 million program to push tourism businesses toward sustainable practices. This top-down approach came in response to mounting waste and resource pressures from mass tourism. The new Balearic Sustainable Tourism Law introduced strict requirements and incentives for circular practices in hospitality TRAVELWEEKLY.CO.UK. *Ban on Single-Use Plastics*: Hotels, restaurants, and bars must eliminate many disposable plastic items. Single-use plastic plates, cutlery, cups, straws, toiletry bottles, etc., are banned in favor of reusable or biodegradable alternatives. Businesses that violate the ban can face fines. *Resource Efficiency Mandates*: Accommodation providers are required to optimize water and energy use. For example, hotels must install water-saving devices like dual-flush toilets and low-flow taps, and they must measure and report water consumption. Using rainwater or renewable energy sources can even boost a hotel's star rating under the new rules. Older oil-fired boilers have to be replaced with cleaner gas or electric systems to cut carbon emissions. *Local Sourcing and Waste Reduction*: Tourism businesses are urged (and in some cases required) to procure more locally produced food and goods, supporting the local economy and reducing transport emissions. The law also includes initiatives to reduce food waste in hotels and restaurants, complementing the ban on plastics. Each measure is designed to move the tourism sector toward a circular model (minimizing waste and recirculating resources). *Interplay of Government and Business*: This case underscores significant interplay between policy and business action. On one hand, the government took the lead – making sustainability essentially a compliance issue by law. The President of the Balearics emphasized that these measures aim to foster "a more inclusive and sustainable" tourism model and encourage public–private collaboration in line with

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EU green recovery funds. In effect, the policy compels even reluctant businesses to invest in circular solutions, ensuring sector-wide participation.

Key green skills for the Circular Economy in tourism

A successful transition to a circular economy in tourism requires **professionals equipped with the right set of skills** to implement and sustain sustainable practices. One of the most essential competencies is **resource efficiency and waste management**, which includes the **ability to assess and reduce resource consumption** within tourism operations. Professionals must understand **waste management principles such as recycling, upcycling, and composting**, along with the skills required to **conduct waste audits and implement effective reduction strategies**. **Sustainable business models and circular innovation** are also crucial in developing circular economy tourism. Professionals need to grasp innovative economic models like **product-as-a-service, the sharing economy, and sustainable procurement**. Additionally, **integrating local and circular supply chains** is essential, along with an **awareness of financial incentives and sustainable funding mechanisms** that can support circular economy implementation.

Digital and technological skills play a key role in sustainability efforts. Competence in using **digital tools for resource tracking and efficiency monitoring**, such as **smart meters and AI-based analytics**, is becoming increasingly valuable. Moreover, **understanding blockchain technology can enhance transparency** in sustainable supply chains, while knowledge of **digital platforms for sustainable tourism promotion** and **guest engagement** is essential for driving awareness and participation in circular economy practices.

Collaboration and stakeholder engagement are fundamental to advancing circular tourism. Professionals must be able to **work with local communities, suppliers, and policymakers** to promote circular initiatives effectively. Developing **partnerships with educational institutions** can facilitate skills exchange and knowledge transfer, while **understanding consumer behavior** is crucial in implementing strategies that encourage sustainable choices among tourists.

Environmental communication and awareness are also essential competencies. Tourism professionals must be able to educate both staff and tourists on sustainable practices, apply **skills in sustainability marketing and responsible tourism promotion**, and **use effective communication techniques** to advocate for policy changes and industry shifts towards sustainability.

Barriers to skills development in Circular Tourism

Despite the growing demand for circular skills in the tourism sector, several obstacles hinder their widespread development and adoption. One significant challenge is the **lack of integration of circular economy principles into vocational education and training (VET) programs**. Many tourism-related curricula do not yet include comprehensive **content on sustainability, resource efficiency, or circular economy practices**, leaving graduates unprepared for the evolving needs of the industry.

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Limited training opportunities for professionals present another barrier, as many existing tourism employees lack access to upskilling programs focused on circular economy practices. Without **structured and widely available professional development programs**, it becomes difficult for workers to acquire the necessary skills to transition towards sustainable tourism.

A further challenge is **insufficient awareness and incentives among employers**. Many businesses may not recognize **the value of circular economy skills or lack motivation to invest in training** for their employees. Without clear financial or operational benefits, employers may deprioritize sustainability training, preventing industry-wide skill development.

Resistance to change is another critical obstacle. Some tourism professionals perceive circular economy principles as **too complex, costly, or disruptive to established business models**. This reluctance to adopt new approaches can slow down the adoption of sustainable practices across the sector.

Fragmented knowledge transfer also creates barriers to skill development. A **lack of collaboration between VET institutions and tourism businesses** limits the opportunities for practical skill-building. Without **strong industry-academic partnerships**, the dissemination of best practices and hands-on training experiences remains restricted, making it difficult for professionals to acquire the competencies needed for a circular economy transition.

Strategies for developing circular skills in tourism

Developing a skilled workforce capable of driving circular tourism requires a multi-faceted approach. One of the key strategies is **integrating circular economy training into VET programs**. Educational institutions should embed sustainability principles within **hospitality, tourism, and business courses** to ensure that students gain foundational knowledge in circular practices. Developing **modular courses on resource efficiency, sustainability, and circular innovation** can provide targeted learning opportunities, while partnerships with circular businesses can offer hands-on training and apprenticeships that prepare students for real-world applications.

Workplace upskilling and reskilling programs are equally important in equipping current tourism professionals with circular economy competencies. Employers should offer continuous professional development programs focused on sustainability and circularity. **Flexible learning platforms, including online workshops and training modules**, can help industry professionals gain knowledge at their own pace. Additionally, incentives such as **certifications and financial support for training** can encourage greater participation in upskilling initiatives.

Collaboration between stakeholders is crucial to the success of circular tourism skill development. **Governments, businesses, and educational institutions** must work together to define and standardize circular skills, ensuring that the industry is aligned in its approach to sustainability. Tourism boards and sustainability organizations should take the lead in **creating**

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guidelines for circular economy skill development, while international partnerships can facilitate the **exchange of best practices and innovative training models** that can be applied across different regions.

Leveraging technology for skill development can further enhance accessibility and engagement in training programs. Digital learning tools such as **interactive e-learning modules and virtual reality simulations** can provide **immersive learning experiences for students and professionals** alike. **Online sustainability platforms** can serve as hubs for connecting tourism professionals with experts, knowledge resources, and networking opportunities. **AI-driven learning pathways** can help personalize skill development by adapting course content to individual needs, ensuring that professionals receive the most relevant training for their roles in the circular economy.

For implementing second topic of the module the use of those pedagogical methods are proposed:

Interactive workshop: Developing green skills in tourism

With the objective to provide learners with hands-on experience in applying circular skills in tourism settings interactive workshop can be played out:

Introduce key green skills using presentations and real-world examples.

Divide participants into groups and assign each a specific CE challenge (e.g., reducing food waste in hotels, optimizing water use in resorts).

Groups brainstorm solutions and create action plans.

Each group presents their strategy, and facilitators provide feedback.

Reflect on the workshop outcomes and discuss how these skills can be implemented in real-life scenarios.

Example: **My Green Butler** is an innovative platform designed to enhance environmental awareness among tourism and hospitality professionals through gamified online training. The program encourages responsible and sustainable actions by engaging participants in interactive learning modules. It exemplifies how digital technologies can be leveraged to improve well-being and promote behavioral change, benefiting both the environment and society; PANTOUR.

Workshop Format: *Gamification Elements*: Incorporates game-like features to make learning about sustainability engaging and interactive. *Practical Modules*: Offers practical online learning modules that focus on real-world applications of sustainable practices in hospitality. *Behavioral Change Focus*: Aims to instill sustainable habits among employees by demonstrating the positive impact of their actions. *Outcomes*: Participants gain a comprehensive understanding of sustainable hospitality practices, leading to improved environmental performance in their respective organizations. The training also fosters a culture of continuous improvement and responsibility towards sustainability.

Industry speaker session: Learning from circular tourism experts

With the objective to expose learners to real-world experiences and insights from professionals in circular tourism the session can be implemented in 4 steps:

Step 1: Invite speakers from sustainable tourism businesses, government agencies, or VET institutions.

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Step 2: Speakers share their experiences, best practices, and challenges in adopting CE skills.
Step 3: Participants engage in a Q&A session, discussing specific skill development needs.
Step 4: A guided discussion follows to connect the insights to learners' professional aspirations and training pathways.

These methods ensure that learners not only gain theoretical knowledge but also develop **practical competencies** that can be applied directly in the tourism sector, fostering a skilled workforce for a sustainable future.
Example: **Global Sustainable Tourism Council (GSTC) Webinar Series** offers a series of webinars featuring expert speakers who provide in-depth analyses of sustainable tourism practices, including the implementation of circular economy principles in the tourism industry. These sessions are designed to educate and inspire tourism professionals by sharing insights, case studies, and best practices from around the world. GSTCOUNCIL.ORG.
Session Format: Expert Presentations: Industry leaders and sustainability experts present on various topics related to sustainable and circular tourism. Interactive Q&A: Participants have the opportunity to engage with speakers through question-and-answer sessions, facilitating deeper understanding. Resource Sharing: Access to presentation materials and additional resources to support ongoing learning.

Outcomes: Attendees gain valuable insights into the latest trends and strategies in sustainable tourism, enabling them to apply circular economy concepts within their own organizations and destinations.
Enhancing Collaboration Between Stakeholders for a Circular Tourism Economy

The role of stakeholder collaboration in circular tourism
A successful transition to a circular economy in tourism depends on effective cooperation between key actors. **Tourism businesses** play a vital role by implementing circular economy practices in their operations, such as waste reduction, sustainable procurement, and energy efficiency. They collaborate with **suppliers, customers, and waste management firms** to close resource loops and adopt circular business models that benefit both the environment and economic sustainability.

Policymakers and local governments contribute by **developing regulatory frameworks** that incentivize circular economy adoption. They **provide funding and tax incentives** for sustainable tourism initiatives and ensure that policies align with regional and national circular economy strategies. Their role is crucial in creating an enabling environment for sustainable tourism practices.

VET institutions and educational bodies support the circular transition by **incorporating circular economy principles into tourism curricula**. They offer **training programs and knowledge-sharing platforms** that equip tourism professionals with the necessary skills. Additionally, they

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facilitate research and innovation in sustainable tourism practices, ensuring that the workforce is prepard for the evolving industry demands.

Local communities and NGOs are essential stakeholders in circular tourism. They engage in **community-led initiatives** such as **eco-tourism and sustainable cultural heritage projects**. As advocates for responsible tourism and environmental conservation, they provide feedback and collaborate with businesses to ensure **inclusive and ethical tourism development**. Their involvement ensures that circular tourism benefits local populations and preserves cultural heritage.

Technology and innovation providers enhance circular tourism by developing digital solutions for circular economy implementation. They create tools for resource tracking and sustainable tourism platforms, supporting businesses with smart technologies to optimize waste management and energy use. By enabling transparency in supply chains through blockchain and AI-driven data analytics, they help businesses improve their sustainability efforts and ensure accountability.

Collaboration among these stakeholders is crucial to building a resilient and sustainable tourism industry. Effective partnerships facilitate knowledge exchange, align economic and regulatory interests, and drive the adoption of circular economy principles. By working together, businesses, policymakers, educational institutions, communities, and technology providers can create a tourism sector that is both environmentally responsible and economically viable.

Barriers to stakeholder collaboration

Despite the clear benefits of collaboration in advancing a circular tourism economy, several significant barriers hinder effective partnerships and slow down the transition to sustainable practices. One of the primary challenges is the **lack of awareness and knowledge** sharing among stakeholders. Many tourism businesses, policymakers, and local communities do not have a comprehensive understanding of circular economy principles or the potential advantages of integrating sustainability into their operations. This **knowledge gap** creates hesitation and reduces willingness to engage in collaborative efforts. Without a strong foundation of awareness, stakeholders may struggle to identify common goals and align their strategies for sustainable tourism development.

Another key barrier is the **presence of fragmented policies and regulations** across different national and regional levels. While some governments have introduced policies that promote circular practices in tourism, inconsistencies between jurisdictions often create confusion and hinder implementation. Regulatory misalignment leads to uncertainty for businesses that operate across multiple regions, making it difficult for them to adopt standardized circular economy measures. In many cases, policy frameworks do not adequately address the specific needs of tourism businesses, resulting in a lack of clear guidelines for adopting sustainable practices.

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Conflicting interests and priorities further complicate stakeholder collaboration. Businesses in the tourism sector are primarily driven by profitability and operational efficiency, while policymakers focus on regulation and long-term sustainability goals. This divergence in objectives can lead to misalignment, where businesses perceive sustainability requirements as financial burdens rather than opportunities for growth. Without mechanisms to bridge these differences, cooperation between the public and private sectors remains weak, slowing progress toward a circular economy.

Limited funding and resources pose another critical challenge to effective collaboration. Many small and medium-sized tourism enterprises lack the financial capacity to invest in circular innovations or sustainability-focused training for their employees. Similarly, local governments and educational institutions often face budgetary constraints that limit their ability to provide financial incentives, research opportunities, or technical support for circular economy projects. The absence of dedicated funding streams for sustainability initiatives results in slow adoption rates and prevents the large-scale implementation of circular tourism solutions.

Resistance to change is a final and deeply rooted barrier. Both tourism operators and consumers are often reluctant to move away from traditional business models and established consumption patterns. Many businesses fear that implementing circular economy practices will disrupt their current operations, require significant upfront investments, or fail to generate immediate returns. On the consumer side, tourists may be unwilling to adjust their behaviors, such as reducing waste, participating in sustainable travel programs, or paying a premium for eco-friendly accommodations. Overcoming this resistance requires targeted education, incentives, and gradual implementation strategies that make circular tourism a more attractive and accessible option for all stakeholders.

Strategies to enhance collaboration for Circular Tourism

Enhancing collaboration for circular tourism requires the establishment of multi-stakeholder platforms where businesses, policymakers, and educators can co-design circular solutions. These platforms facilitate cooperation by enabling the exchange of knowledge, best practices, and case studies. Online hubs dedicated to sustainability provide valuable resources and guidance, while forums and conferences offer networking opportunities for stakeholders to build relationships and align their efforts toward circular economy principles.

Aligning policy and business interests is another critical strategy for strengthening collaboration. Policymakers should introduce incentives and simplified regulations that facilitate the transition to circularity for tourism businesses. At the same time, tourism associations can advocate for sustainability policies that minimize administrative burdens while still promoting environmental responsibility. Active participation from businesses in regulatory discussions ensures that their perspectives are incorporated into policy frameworks, creating a balance between economic growth and sustainable development.

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Joint training and capacity-building initiatives play a crucial role in equipping stakeholders with the necessary skills for circular tourism. Collaboration between VET institutions and businesses allows for curriculum development that integrates circular economy principles into education. Apprenticeship and internship programs focused on sustainability provide practical experience for future professionals, while joint training sessions for tourism staff, policymakers, and local communities enhance collective knowledge and readiness for circular economy implementation.

Leveraging technology for transparency and efficiency can further strengthen collaboration in circular tourism. The use of blockchain technology enables the tracking and validation of sustainable supply chains, ensuring accountability and promoting responsible sourcing. AI-driven sustainability reports provide measurable insights into circular economy progress, helping stakeholders identify areas for improvement. Digital platforms designed for real-time collaboration facilitate seamless communication and coordination, streamlining the implementation of circular economy projects.

Public-private partnerships (PPPs) are another effective approach to fostering collaboration. By co-funding circular economy initiatives, governments and businesses can share the financial burden and accelerate the adoption of sustainable practices. NGOs and academic institutions contribute expertise and research, supporting the successful implementation of circular solutions. Municipalities play an important role in facilitating partnerships between tourism stakeholders and local communities, ensuring that circular economy benefits extend to all levels of society. By combining resources, knowledge, and efforts, stakeholders can work together to transform the tourism industry into a model of sustainability and resilience.

For implementing second topic of the module the use of those pedagogical methods are proposed:

Simulation game: Multi-stakeholder negotiation on Circular Tourism

To provide learners with an immersive experience in stakeholder collaboration and negotiation facilitator can organize multi-stakeholde negotitation:

Assign roles (e.g., tourism business owner, government official, VET institution representative, NGO leader, tourist) and present a scenario where stakeholders must develop a circular tourism strategy for a destination.

Participants engage in negotiations, balancing economic, environmental, and social interests.

Each team presents their proposed solutions, followed by an analysis of the challenges and benefits of collaboration.

Example: **The Mangal Play** is a role-playing simulation game designed to promote dialogue among diverse stakeholders involved in managing social-ecological systems, such as tourism in sensitive environments. Participants adopt roles ranging from government officials to local community members, engaging in negotiations to balance environmental conservation with economic interests. This immersive experience enhances understanding of complex stakeholder

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dynamics and the challenges inherent in achieving consensus on sustainable tourism practices. Frontiers.
Simulation Format: *Role Assignment*: Participants are assigned specific stakeholder roles within a fictional yet realistic scenario involving tourism development and environmental management. *Negotiation Rounds*: Stakeholders engage in structured negotiations, discussing proposed policies or projects that impact the environment and local communities. *Decision-Making*: The game culminates in a collective decision-making process, where participants vote on proposed actions, reflecting the complexities of real-world policy formulation. *Outcomes*: Participants gain firsthand experience in multi-stakeholder negotiations, developing skills in communication, empathy, and strategic thinking. The game fosters a deeper appreciation for the diverse perspectives and interests that influence sustainable tourism initiatives.

These methods provide learners with **hands-on experience in collaboration**, ensuring they understand the complexities of multi-stakeholder engagement in circular tourism. By applying these strategies, future professionals will be better equipped to drive sustainable change in the industry.

Group discussion and reflection
To encourage students to critically analyze the importance of stakeholder collaboration, students can be asked to present real-world examples of successful and unsuccessful collaborations in circular tourism:
Divide students into small groups and assign them different case studies.
Each group discusses key takeaways and identifies factors that led to success or failure.
Groups share insights in a larger discussion, drawing parallels to their own regional contexts.
Example: **Stakeholder Engagement in Sustainable Tourism Planning through Serious Gaming.** This initiative utilizes serious gaming as a tool to facilitate stakeholder engagement in sustainable tourism planning. By simulating real-world scenarios, participants engage in group discussions and reflections on the complexities of tourism development, environmental sustainability, and community involvement. The approach encourages collaborative learning and the co-creation of strategies that balance economic growth with ecological preservation. ResearchGate (https://www.researchgate.net/publication/361270804_Stakeholder_engagement_in_sustainable_tourism_planning_through_serious_gaming).
Discussion Format: *Scenario Exploration*: Participants explore simulated scenarios that present challenges in sustainable tourism planning, prompting analysis and discussion. *Collaborative Dialogue*: Stakeholders share insights, experiences, and perspectives, fostering a comprehensive understanding of the issues at hand. *Reflective Practice*: The sessions conclude with reflective exercises, encouraging participants to consider how the insights gained can be applied to real-world contexts. *Outcomes*: The group discussions and reflections enhance participants' abilities to navigate the multifaceted nature of sustainable tourism planning. They promote critical thinking, mutual understanding, and the development of actionable strategies that incorporate circular economy principles.

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Self-reflection and takeaways with open question

Throughout this module, learners will have the opportunity to assess their own understanding of circular economy challenges and solutions within the tourism sector. By engaging in discussions, case studies, and interactive exercises, they will **reflect on the extent to which financial, educational, and collaborative barriers impact the adoption of circular practices**. Self-reflection will allow learners to **evaluate their readiness to implement circular economy principles in their professional environment** and **consider how their personal and professional choices can contribute to sustainability.** Through **guided questions and group interactions,** participants will also **identify areas for further learning and improvement,** fostering a continuous growth mindset in circular tourism.

By the end of this module, learners will have gained an **in-depth understanding of the challenges and opportunities** associated with circular tourism. Key takeaways include the import**ance of financial planning for sustainability, the need for workforce development in green skills, and the role of collaboration** in overcoming circular economy barriers.
Open questions for further discussion include:
What financial mechanisms can be further developed to support SMEs in their transition to circular tourism?
How can vocational education and training (VET) institutions better integrate circular economy principles into their curricula?
What incentives can policymakers introduce to encourage stronger collaboration between businesses and local communities?
How can technology be leveraged to enhance transparency and efficiency in circular tourism initiatives?
What are the key barriers to changing consumer behavior towards more sustainable tourism choices?

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MODULE 5 Design Thinking Methods for Circularity

Introduction

This module equips learners with the use of Design Thinking in relation to the concepts of the circular economy. Design Thinking is a human-centered methodology that integrates empathy, creativity and iteration as core elements in problem solving.

The module aims to provide an understanding of the application of this approach to improving sustainability and circularity in the tourism sector, but which can also be used in other areas, for example in business and community development. Learners will become aware of how Design Thinking principles and methods can be harnessed to rethink wasteful product life cycles and develop useful systems for solving problems related to the circular economy.

The module encourages learners to transform their perspective on the use of Design Thinking focus towards adopting the principles of the circular economy. It mainly focuses on how they will transform the principles of environmental sustainability resource reduction, material reuse and recycling into innovative practices through the use of Design Thinking.

The module addresses three main topics, as follows:
Topic 1: Design Thinking Framework.
Topic 2: Specific Design Thinking principles that can be applied in the Circular Economy.
Topic 3: Design Thinking methods&tools that can be used in the Circular Economy in the tourism sector.

Learning outcomes

Learning outcome 1: to understand the Design Thinking framework

Learners can explain the five key stages of the Design Thinking process and their relevance for problem solving in circular economy initiatives.
Learners understand how the iterative, human-centered approach of Design Thinking could promote sustainable innovation in tourism.

Learning outcome 2: to apply Design Thinking methods and tools to foster circularity in tourism

Learners are familiar with practical Design Thinking tools and methods (e.g. journey mapping, rapid prototyping, co-creation) to design circular tourism experiences and services.
Learners understand how to develop and test resource-efficient, circular tourism solutions.

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Content

Design Thinking framework

Design Thinking is a structured, human-centered approach to solving problems through an iterative process.

The approach consists of five main phases: empathize, define, ideate, prototyping and testing. Each phase helps tourism organizations find sustainable, circular solutions by focusing on user needs. The integration of circularity in tourism is more specific, for example, services are reimagined, resource use is optimized and environmental impact is minimized, without reducing the quality of the experiences offered to tourists.

a) What is phase 1 - Empathize - stakeholders' needs and concrete sustainability challenges are understood and understood.
The perspectives of different key actors (travelers, local communities, hospitality providers, environmental organizations) are first understood by tourism businesses.
Methods such as interviews, observations and surveys help to identify these perspectives and existing needs.
Example: Resort guests are surveyed to find out their opinions on sustainable tourism practices, such as reducing single-use plastics or offering local, eco-friendly tours.

b) What is Phase 2 - Define - the main problem is identified in a circular context.
Information gathering is followed by formulating the sustainability challenge as clearly as possible in a practical, actionable manner.
Specific, solvable problems are now targeted, such as reducing food waste in hotels or optimizing water use in tourist facilities, not problems that are too broad or too general.
Example: A tour operator formulates the specific problem: "How can we change our all-inclusive packages to reduce food waste without decreasing quality and customer satisfaction?"

c) What is Phase 3 - Ideate - more circular ideas/solutions are generated.
In this phase, brainstorming creates diverse ideas to solve the defined problem, focusing on circularity principles such as reuse, resource efficiency, and regeneration.
Applicable ideas, such as implementing deposit-return systems for reusable containers or designing "zero waste" tourism activities, can be born from out-of-the-box options.
Example: a beach resort proposes as possible options for eliminating single-use plastics: refillable water stations, bulk toiletry dispensers, or rewarding guests for adopting reusable containers.

d) What is phase 4 - Prototype - a tangible model is created, i.e. a small-scale version of a proposed solution is developed to test its viability before it is fully implemented.
This phase helps organizations verify the proposed circular solution in a controlled environment, with low risks and the possibility of perfecting the idea, before its extensive application.

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Example: A hostel might prototype a “circular lodging” model where furniture and decor are made from recycled materials, and biodegradable toiletries are provided in refillable dispensers. Feedback is solicited from a small group of guests before rolling it out to multiple rooms.
e) What is Phase 5 - Testing - Evaluate and Refine Circular Solutions, involves testing the prototype (see Phase 4) with real users to gather feedback and refine the solution.
Iterative testing ensures that not only is the solution functional, but also appealing, and that the tourism experience incorporates circularity.
Example: A tour operator creates a “Sustainable Adventure Package,” featuring electric vehicle transportation, locally sourced meals, and eco-friendly accommodations. Guest feedback refines the offering so that it meets both environmental expectations and lived experiences.

How Design Thinking supports circular tourism:
Tourism experiences can be redesigned and improved: Design Thinking is used to create tourism experiences that do not harm the environment, while supporting local culture and economy.
Waste reduction strategies are improved: through Design Thinking, efficient waste management solutions can be found (plastic-free travel packages, circular food supply chains, etc.).
Sustainable behaviors are encouraged: businesses, when they understand tourists’ motivations and barriers, are able to propose services that naturally encourage circular practices; thus, circular tourism becomes more attractive and accessible.
The application of the Design Thinking framework facilitates the transition from traditional to a regenerative circular economy, and tourism is beneficial in the long term for both people and the environment.

Group Activity: "Tourism Circularity Brainstorm"
Objective: To help learners understand how Design Thinking can be used to create circular solutions in tourism through a quick, interactive brainstorming session.

Steps:
1. Form small groups (5 minutes)
Divide participants into groups of **3-5 people**.
Each group picks a **tourism setting** from a list (e.g., hotel, beach, national park, cruise ship, ski resort).
2. Identify a circularity challenge (5 minutes)
Each group **identifies one key waste or sustainability issue** in their chosen setting.
Example challenges:
Too much **food waste** in all-inclusive hotels.
Excessive **plastic waste** at beaches.
High **energy consumption** in ski resorts.
3. Quick brainstorming (10 minutes)
Each group writes down **at least 3 ideas** for making their tourism setting more circular.
Encourage simple, creative, and feasible ideas.
Example solutions:

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Hotels providing **smaller portion sizes** or a "food sharing" fridge.
Beaches installing **refillable water stations** to eliminate plastic bottles.
Ski resorts using **solar-powered lifts** to cut energy waste.
4. One-minute pitch (5 minutes per group)
Each group **presents one idea** in **1 minute**.
The other groups give **one quick suggestion** to improve it.
5. Reflection discussion (5 minutes)
What was **surprising** about this exercise?
Did this activity change how you view **waste and sustainability** in tourism?
How could **tourism businesses apply these ideas** in real life?

Specific Design Thinking principles that can be applied in the Circular Economy

Principle no. 1. Human-Centered Design: Putting stakeholders at the center of circular solutions:
Tourism is a sector built primarily around people (travelers), but also other key stakeholders (local communities, businesses, and policymakers). Circular solutions are only successful if they are based on the needs, motivations, and behaviors of all these stakeholders. that Solutions are practical, desirable, and widely accepted through Human-Centered Design.
Possible ways to apply the principle in tourism:
• Understanding travelers' motivations for eco-friendly tourism choices.
• Engaging communities in local sustainable tourism initiatives with economic and cultural benefits.
• Creating circular tourism services with companies, suppliers, and authorities.

Example – Redesigning hotel facilities for circularity - a sustainable resort in Bali (Desa Potato Head) used this principle, interviewing guests about toiletry waste. They found that most guests use their own products instead of the mini shampoo bottles provided by the hotel, which often end up in landfills. Circular solution: Instead of single-use miniatures, the hotel installed refillable dispensers with high-quality, locally-made organic products, reducing waste and supporting local businesses.

Principle no. 2. Systems Thinking: Seeing the bigger picture in Circular Tourism
Circular solutions in tourism should not be isolated fixes but part of a broader system that connects materials, services, and stakeholders. Systems thinking helps tourism businesses recognize how their operations affect and are affected by the entire supply chain, environment, and local economy.
Possible ways to apply the principle in tourism:
•Designing circular supply chains that prioritize local, reusable, and regenerative resources.
• Identifying waste streams and finding ways to turn waste into resources.

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• Partnering with multiple stakeholders (e.g., hotels, tour operators, government agencies) to create closed-loop solutions.

Example – A Circular dining experience in a tourist destination:

A coastal restaurant in Portugal (Il Gallo d'Oro - a Michelin-starred restaurant located in Funchal, Madeira) realized that using products brought from long distances was its main sustainability challenge. By applying systems thinking, they redesigned their operations to:

- use locally sourced ingredients, local and seasonal produce, to reduce transport emissions and support local farmers.
- promote sustainable food sources and culinary diversity, including incorporating seaweed into their dishes.

Principle No. 3 Experiment with ideas: prototyping and testing circular solutions

Circular solutions need to be prototyped, tested and adapted continuously to be successful. Tourism businesses need to test ideas, get feedback and refine solutions before implementing them on a large scale.

Possible ways to apply the principle in tourism:

• Piloting zero-waste tourism services before implementing them in all locations.
• Testing incentive programs that encourage tourists to participate in circular practices.
• Collecting real-time data to measure the impact of circular initiatives and adjust accordingly.

Example – Testing a circular accommodation model:

A boutique hotel in Amsterdam (Hotel Jakarta) introduced solar panels and a sustainable climate control system. This was done in stages, by testing and getting feedback from tourists.

By testing first, the hotel reduced risk and ensured that their circular initiatives were aligned with both sustainability goals and guest expectations.

Practical exercise: "Circular tourism redesign challenge"

Objective: to help learners apply **Design Thinking principles** (human-centered design, systems thinking, and iterative experimentation) in a **real-world tourism context**, focusing on circular economy solutions.

Steps:

1. Form small groups (5 minutes)

Divide participants into groups of **3-5 people**.

Each group chooses a **tourism business type** from a list (e.g., hotel, restaurant, beach club, tour operator, ski resort).

2. Identify a circularity challenge (5 minutes)

Each group **identifies one key sustainability issue** in their chosen business.

Examples:

Hotels → Too many **single-use plastics**.

Restaurants → High **food waste**.

Tour operators → Overuse of **fossil-fuel-based transport**.

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3. Apply the three Design Thinking principles (15 minutes)

Each group applies the three principles to generate circular solutions:

a) **Human-centered design** (5 minutes)

Think about the **main users** (tourists, staff, local communities).

What **habits, needs, and pain points** do they have?

Example: If tourists don't use refill stations at a resort, why? Maybe they don't trust the water quality.

b) **Systems thinking** (5 minutes)

Identify how the issue connects to **larger systems** (supply chains, tourism trends, local infrastructure).

Example: If a restaurant has food waste, is it because of **portion sizes, menu planning, or customer habits**?

c) I**terative experimentation** (5 minutes)

Develop a **small prototype or test idea** to improve circularity.

Example: A hotel tests offering **water filters in rooms** instead of selling bottled water.

4. Present & discuss (5 minutes per group)

Each group gives a **1-minute pitch** of their solution.

The facilitator asks: **"How would you refine this further?".**

Design Thinking methods and tools that can be used in the Circular Economy in the tourism sector

• Journey mapping for sustainable tourism experiences is a Design Thinking method that helps identify each touchpoint a tourist experiences along their journey. Through this method, the customer experience can be evaluated and redesigned so that each stage (e.g., from booking to actual departure on the trip) is optimized. The method shows opportunities for waste reduction (such as digital records instead of paper tickets), resource efficiency (e.g., energy-efficient accommodations), and responsible consumption (e.g., promoting local green businesses).

• Empathy mapping is a method that allows understanding the needs, desires and pain points of customers, based on a visual representation of their experience. It involves direct interaction with different users (tourists, local community members, etc.) to gather information about their experiences, motivations and expectations.

Tourism companies can identify specific environmental behaviors and consumption patterns. More sustainable experiences can be created, by understanding sensitive concerns about waste, transportation and resource use. Also, the method can indicate tourists' preferences for circular practices (e.g. eco-friendly accommodation, sustainable dining options).

• Circular product-service systems is a method that combines products and services to create value in a circular manner. In tourism, businesses can use the method to create integrated offerings with a focus on resource sharing and sustainability. For example, tourism services can

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organize rental modes (e.g. bicycles, eco-friendly equipment) or resource sharing platforms (e.g. shared transport, local guides). This reduces waste while providing consumers with a circular experience.

• Rapid prototyping for circular services: rapid prototyping tools such as mockups or pilot programs help tourism companies test circular economy ideas before implementing them on a large scale. For example, hotels can first try out prototype models of zero-waste rooms or in-room recycling initiatives to gather feedback and refine the solution. The method facilitates experimentation first, evaluating prototypes and then modifying them based on real customer feedback.

• Co-creation workshops: co-creation is a method for collaboratively developing circular tourism products by bringing together stakeholders such as local communities, tourists and environmental experts. Workshops bring together diverse groups to design solutions together. For example, a co-creation workshop focuses on a sustainable tourism package that reduces carbon footprint, supports local artisans and educates tourists on sustainable practices.

• Sustainability audits and feedback loops: Design Thinking's emphasis on testing and iteration is expressed through sustainability audits – assessing resource use, waste management and circular practices of a tourism business. Conducting regular audits and collecting feedback from tourists facilitates improvement, continuous adaptation of circular strategies and beneficial changes.

Group activity: "Step into their shoes – Circular tourism challenge"
Objective: to help learners **deeply understand stakeholder perspectives** (tourists, employees, local communities) using **Empathy mapping** and then generate **circular solutions** based on real needs and behaviors.

Steps:
1. Form small groups and assign a tourism challenge (5 minutes)
Divide participants into **groups of 3-5 people**.
Each group **draws a card** (or picks from a list) with a **specific circularity challenge** related to tourism.
Examples of circularity challenges:
Beach resorts → Tourists overuse single-use plastics (straws, cups, toiletries).
Mountain hotels → High water and energy consumption for heating/cooling.
Tour operators → Visitors use polluting transport (e.g., gas-powered buses, rental cars).
Campsites and Eco-lodges → Guests struggle with waste sorting & composting.
Cultural tourism sites → Increased foot traffic is damaging historic landmarks.
2. Create an Empathy map (15 minutes)
Instructions:
Each group **chooses a key stakeholder** affected by their circularity challenge:

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Tourists
Hotel/Restaurant/Tour employees
Local community members
Groups **draw a large Empathy map** divided into 4 sections:
Says – What do they express openly?
Thinks – What are they thinking but not saying?
Does – What actions do they take?
Feels – What emotions are they experiencing?
Interactive element!
One participant **acts as a tourist/local/employee** and others **interview** them.
The "tourist" (or stakeholder) **reacts based on the scenario** and the rest fill in the map.
Example for beach resort and single-use plastics:
Says: "I love this place, but I need my coffee on the go."
Thinks: "Why don't they offer better alternatives?"
Does: Uses plastic straws and cups because they are provided.
Feels: Unaware or guilty about their impact but doesn't know an easy alternative.
3. Generate circular solutions (10 minutes)
Based on the **Empathy map**, groups brainstorm **solutions** that match **stakeholder needs and behaviors**.
Use **SCAMPER (Substitute, Combine, Adapt, Modify, Put to another use, Eliminate, Reverse)** to create ideas.
Example solutions for beach resort and plastics:
Substitute: Offer reusable bamboo cups with discounts for refills.
Modify: Introduce an **"Eco deposit"** – guests receive a reusable bottle and get money back when they return it.
4. Present and role-play (5 minutes per group)
Each group **presents** their solution and explains how the Empathy Map **influenced** their idea.
Bonus: They act out a real-life scenario using their solution (e.g., a guest checking into the resort and receiving their bamboo cup).

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Self-reflection and take-aways with open question

Questions for self-reflection

Design Thinking in practice:

How are the skills to create circular solutions in tourism improved based on the Design Thinking framework? Which Design Thinking principles do you find particularly useful in adopting circularity? Why?

How will Design Thinking help you look at challenges from a new perspective? Are there any "aha" moments when you realize that a different approach could be more effective?

Which steps in the Design Thinking process would you prioritize for the specific context you have in mind?

Take-aways:

Embracing circularity for long-term sustainability - circularity is not just a trend.

Design Thinking as a problem-solving approach: an invaluable one.

Holistic approach to tourism challenges is needed for addressing the interconnected nature of tourism.

Personal empowerment in shaping a circular future - everyone can contribute to the shift toward circularity.

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DIGITAL SELF-LEARNING TOOLS&METHODS

1. **XMind (Mind mapping and idea structuring)**

https://xmind.app/

XMind is a mind mapping tool that helps organize thoughts, create study outlines, and visually connect concepts. It's useful for learners who prefer visual learning and need to structure complex topics.

How to use it?

Create visual mind maps to break down complex topics, linking ideas together; use it to outline key concepts from textbooks, articles, or online courses; develop study guides by organizing information in a structured way for revision.

2. **Glasp – Web annotation and summarization tool**

https://glasp.co/

Glasp is a web highlighter that allows users to highlight, save, and annotate online articles, PDFs, and videos. It's great for learners who need to collect and review important information efficiently.

How to use it?

Highlight key ideas from research papers, blogs, and educational websites; organize and review saved notes in a personal knowledge library; share insights with peers and integrate them into study materials.

3. **Carbon footprint calculator**

www.carbonfootprint.com

The calculator helps to track and reduce carbon emissions 'at source' as much as possible and to compensate for unavoidable emissions - via carbon offsetting - to render activities to be net zero carbon/carbon neutral. With this action, users protect both environment and their own businesses/ education centers. Better sustainability credentials allow the users to maximise commercial opportunities (from both sales tender and operational savings), enhance their brands, engage stakeholders and make theirs better businesses or education centers.

How to use it?

Start choosing if you want to calculate your own footprint or your business at https://www.carbonfootprint.com/calculator1.html and follow the steps puting your numbers - you will need to be prepared with bills for energy and gas consumption, have idea about your travels, incl. spending on fuel for your car (if applicable).

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4. **NaturalReader – Text-to-Speech for learning**

https://www.naturalreaders.com/

NaturalReader is a text-to-speech (TTS) tool that converts written content into audio. It's perfect for auditory learners, language learners, or anyone who prefers listening to study materials rather than reading.ç

How to use it?

Convert PDFs, textbooks, and notes into audio to listen while commuting; improve retention by combining reading and listening.

5. **Notion: Your personalized learning hub**

https://www.notion.com/

Notion is an all-in-one workspace that combines note-taking, project management, databases, and wikis. It's incredibly versatile and allows users to create personalized learning systems.

How to use it?

Notion is a flexible workspace for organizing all your learning materials. Create databases for resources, detailed notes, and personalized study schedules. Track progress and build a centralized hub for all your self-study needs.

6. **Anki: Master memorization with spaced repetition**

https://apps.ankiweb.net/

Anki is a powerful flashcard program that uses spaced repetition to optimize learning and memory retention. It's ideal for memorizing facts, vocabulary, and other information.

How to use it?

Anki uses spaced repetition to optimize memory retention for any subject. Create custom flashcard decks or download shared ones for efficient learning. Review scheduled cards daily to master facts and vocabulary with ease.

7. **CANVA**

https://www.canva.com/

Canva is a powerful online graphic design platform that enables users to create a variety of visual content, including presentations, infographics, posters, social media graphics, and even videos. Designed for both beginners and professionals, Canva offers an intuitive drag-and-drop interface, making it accessible to users without prior design experience. The platform provides thousands of pre-made templates tailored for different purposes, from educational materials to business reports and marketing visuals. Canva also includes a vast library of royalty-free images, illustrations, icons, fonts, and videos, allowing users to create high-quality designs without needing external resources. Beyond its design tools, Canva also serves as a learning platform by offering free online courses and tutorials that teach users how to create visually appealing

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content. These courses cover topics such as branding, social media marketing, and visual storytelling, making Canva an excellent tool for self-learning and digital skill development.

How to use it?

To start using Canva, simply create a free account by signing up with your email, Google, or Facebook. Once logged in, explore a wide range of ready-made templates designed for various purposes, such as presentations, infographics, worksheets, and reports. After selecting a template, you can customize it effortlessly by dragging and dropping elements like text, images, icons, and charts. If you're working on a project with others, Canva allows real-time collaboration, enabling multiple users to edit and refine the design together. When your creation is complete, you can download it in formats like PDF, PNG, or JPG, or share it instantly through a link or social media.

8. **Coursera**

https://www.coursera.org/

Coursera is one of the most renowned online learning platforms, offering a vast collection of free and paid courses developed by prestigious universities and institutions worldwide, including Harvard, Stanford, Yale, and MIT, as well as industry leaders like Google, IBM, and Meta. It provides learners with access to high-quality, university-level education in a flexible and accessible format, making it an excellent resource for digital self-learning. The platform covers a wide range of subjects, including business, technology, data science, design thinking, sustainability, and circular economy topics. Learners can choose from individual courses, specializations, professional certificates, and even full degree programs, making Coursera suitable for both personal development and career advancement. Each course is carefully structured, typically consisting of video lectures, reading materials, quizzes, peer-reviewed assignments, hands-on projects, and discussion forums. Some courses also include graded assessments that help learners evaluate their progress. While many courses are available for free, an optional paid version provides certificates of completion, which can be valuable for professional credentials and job applications.

How to use it?

To start using Coursera, visit the website and create a free account using your email or Google login. Once signed in, explore the vast catalog of courses by searching for a specific subject or browsing categories such as business, technology, sustainability, or design thinking. Each course page provides details about the syllabus, instructors, duration, and available certifications. Learning on Coursera is flexible, allowing you to watch video lectures at your own pace, read supplementary materials, and complete quizzes or assignments when ready. Many courses also feature discussion forums where learners can interact with peers, ask questions, and share insights.Upon course completion, certificates can be downloaded and shared on LinkedIn or included in a resume to showcase new skills.

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9. **UNWTO Tourism Online Academy**

https://www.unwto-tourismacademy.ie.edu/

An online learning platform which provides self-paced online courses from the best universities in the world at an affordable price. It mainly focus on concepts, areas of interest and fundamental principles related to tourism, hospitality and destination management industries.

How to use it?

Begin by selecting courses that align with your learning goals in tourism. Break down each module into key concepts and use online tools to highlight important topics, such as sustainable tourism, digital transformation, or destination management. Take detailed notes and organize them into study guides or outlines for easier revision. As you progress through the course materials, apply the knowledge gained to real-world scenarios to reinforce your learning. Regularly review and test your understanding using the platform's quizzes and assignments, ensuring you retain the information and stay on track with your self-study objectives.

10. **Cloud Assess**

https://cloudassess.com/

Cloud Assess is a cloud-based digital learning platform and assessment system. It's designed to streamline skills development for both learning managers and learners. Cloud Assess is one of the top virtual learning environments that provides an inclusive interface and bespoke learner app to make the learning journey seamless.

How to use it?

Start by creating a personalized learning plan that outlines your goals and areas of focus. Engage with interactive modules and assessments to build your knowledge and skills step by step. Break down complex topics by completing quizzes and using feedback to guide your progress. You can track your learning journey, revisit areas of difficulty, and set new objectives based on your performance. Additionally, use the platform's tools to organize and review content, ensuring a comprehensive understanding of each subject for effective self-study and growth.

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