The Circular Economy: Moving from theory to practice

TOOL 1

Practical guidelines

Content

Introduction to Guidelines

These practical guidelines are realised within the ERASMUS+ transnational project "ADVANCE CIRCULAR - Linking Tourism Industry with VET to embrace circularity," implemented in the four countries of the project partnership: Romania, Spain, Bulgaria, and Slovenia.

The project aims to foster innovative circular approaches and tools in the tourism sector and its related areas through transnational cooperation and knowledge transfer by linking vocational education and training to this sector.

The guidelines aims to provide practical measures and recommendations for companies and vocational education and training (VET) institutions in the tourism sector to transition towards circular economy practices and to offer a model Action Plan tailored for both companies and VET institutions to embrace circularity in their operations and training programs.

The scope of these guidelines encompasses two main sections:
- ➥ *Guidelines for Companies*: This section focuses on businesses within the tourism industry and related sectors, such as hospitality, food services, travel agencies, and packaging industries. It provides actionable insights into how these entities can integrate circular economy practices into their operations.
- ➥ *Guidelines for VET Institutions*: This section targets educational organizations that specialize in tourism-related training, offering strategies to incorporate circular economy concepts into their curricula and training programs.

Benefits of these Guidelines

Experts from both tourism companies and VET institutions can utilize these guidelines as a resource for:
- ✓ Understanding the principles and practices of the circular economy.
- ✓ Identifying opportunities for implementing circular strategies within their operations or educational programs.
- ✓ Developing tailored action plans that align with their specific organizational goals related to sustainability.

- ✓ Professionals in the tourism sector can utilize these guidelines to enhance their operational practices, reduce waste, and improve resource efficiency, ultimately leading to increased competitiveness and sustainability.
- ✓ Educators can adopt these guidelines to develop training programs that equip students with the necessary skills and knowledge to implement circular economy practices in their future careers.
- ✓ Engaging stakeholders in discussions about the benefits and challenges of transitioning to a circular economy.
- ✓ The guidelines can inform policy frameworks aimed at promoting sustainable tourism practices at local, national, and international levels.

The Tool 1 has the following components:

- ✓ definition and principles of Circular Economy;

- ✓ benefits of adopting Circular Economy Practices in the VET industry;

- ✓ benefits of adopting Circular Economy Practices in the Tourism industry;

- ✓ Measures and Recommendations for Companies and one Model Action Plan in the Tourism Industry & Related Industries to embrace circularity in business (8 measures and recommendations were defined and described in detail);

- ✓ Measures and Recommendations for VET Institutions and one Model Action Plan linked to Tourism Industry & Related Industries to embrace circularity in training (8 measures and recommendations were defined and described in detail).

The guidelines aim to outline practical measures and recommendations that can be implemented to promote sustainability and resource efficiency. They are designed to address the specific needs of the tourism sector, which is increasingly recognizing the importance of adopting circular principles in its operations. This document aims to bridge the gap between theoretical concepts of circular economy and their practical applications, offering actionable insights for stakeholders in both sectors.

1. DEFINITION AND PRINCIPLES OF CIRCULAR ECONOMY

The term Circular Economy (CE) has gained significant traction among researchers, policymakers, and business managers, highlighting a societal shift towards resource-efficient practices. CE aims to replace traditional linear models of production and consumption with closed-loop systems that prioritize reuse, recycling, and sustainability (EMF 2015). This new economic model not only offers competitive advantages for businesses but also benefits the environment, as emphasized by EU strategies like the European Green Deal, which seeks to create a resource-efficient economy (EU Commission 2020).[1]

Circularity serves as a strategic framework for the tourism sector, focusing on minimizing environmental impacts such as waste, pollution, and CO2 emissions. The circular economy aims to decouple economic growth from resource consumption, presenting an opportunity for tourism to adopt sustainable and resilient practices.[2]

The shift toward a circular economy in tourism is expected to progress faster than previous industry transformations. This transition has strong political support—for instance, the European Union is actively working toward a circular economy to enhance sustainability and competitiveness. Additionally, unlike past changes that often faced public resistance, there is increasing societal pressure on tourism businesses to adopt climate-neutral practices.

Image: DXC Technology (https://www.weforum.org/stories/2022/01/5-circular-economy-business-models-competitive-advantage/)
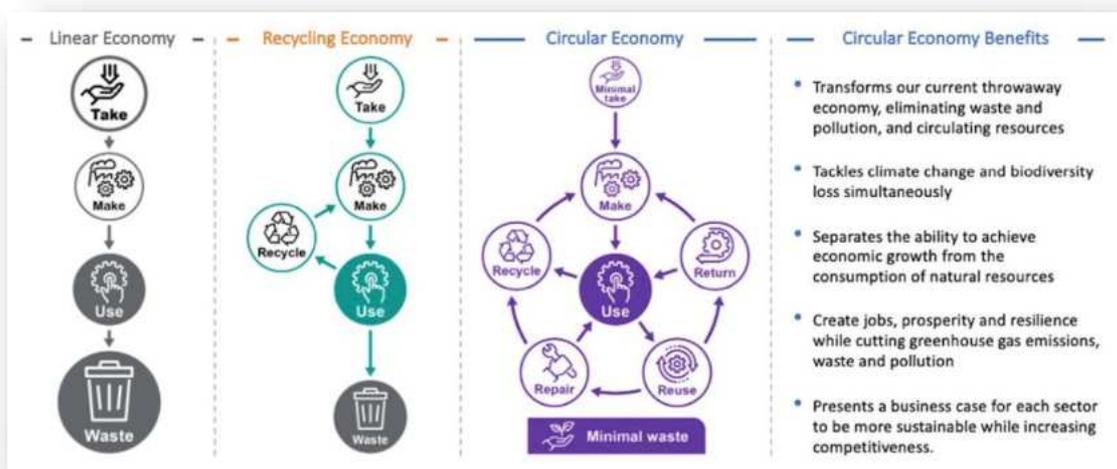
1.1. Definitions of Circular Economy

There are different definitions reported in the literature that aim to grasp the main features and characteristics of CE.[3]

The Ellen MacArthur Foundation [4] defines it as follows: *The circular economy is a system where materials never become waste and nature is regenerated. In a circular economy, products and materials are kept in circulation through processes like maintenance, reuse, refurbishment, remanufacture, recycling, and composting. The circular economy tackles climate change and other global challenges, like biodiversity loss, waste, and pollution, by decoupling economic activity from the consumption of finite resources.*

The circular economy is based on three principles, driven by design:
- ✓ *Eliminate waste and pollution*
- ✓ *Circulate products and materials (at their highest value)*
- ✓ *Regenerate nature*
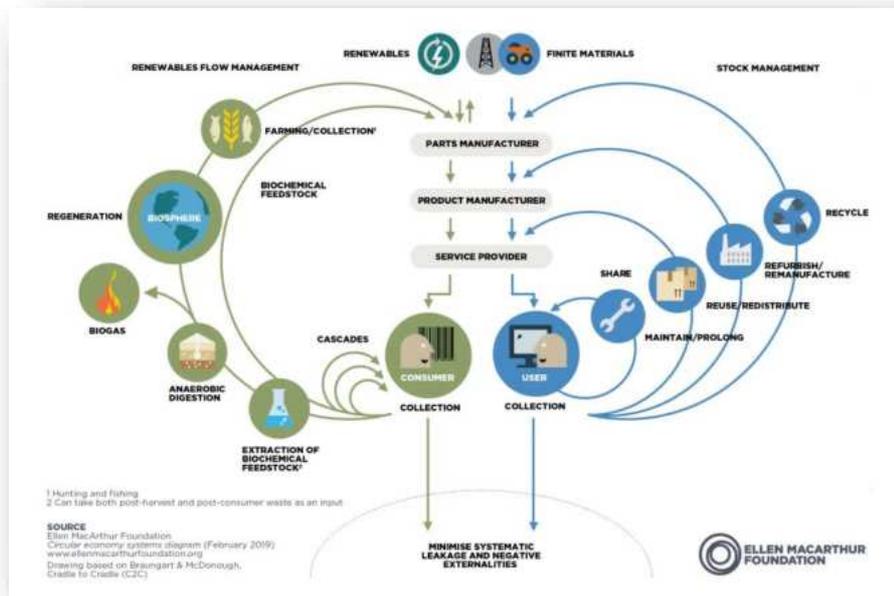
Rodriguez et al. (2020) [5] defined CE as what *'can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing and recycling.'* However, these features focus on the physical elements, and according to the 7P principle of service marketing (product, price, place, promotion, people, process, physical evidence), it can also be grasped in tourism.

Kirchherr et al.'s (2017) [6] broader definition gave a real insight into tourism. The concept represents the spatial, destination-level approach of tourism: *a circular economy describes an economic system that is based on business models which replace the 'end-of-life' concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes, / thus operational at the micro level (products, companies, consumers), meso level (eco-industrial parks) and macro level (city, region, nation and beyond), to accomplish sustainable development, which implies creating environmental quality, economic prosperity, and social equity, to the benefit of current and future generations".*

Sorin and Einarsson (2020) [7] describe the circular economy as *a practical "toolbox," while the United Nations' Sustainable Development Goals (SDGs) serve as a framework for communication and metrics.* Both frameworks aim to achieve the ultimate goal of sustainability.

As Nedyalkova (2018) [8] states that the *circular economy functions as a model for applying sustainable principles, highlighting a clear and strong connection between circular practices and the SDGs.*

Frodermann (2018) [9] argues that transitioning from a linear to a circular economy necessitates a fundamental shift in mindset across all economic dimensions, encompassing not only products but also production and organizational processes (Aryal, 2020; Frodermann, 2018).

Building on this perspective, Kocsis (2018) [10] emphasizes that human and social dimensions are equally critical, proposing that responsible sustainability serves as a vision and that environmentally sustainable entities inherently support social futures. This viewpoint underscores the significance of social sustainability and the circular economy in tourism, particularly in addressing evolving consumer needs and demand patterns.

UNEP's [11] circularity approach describe the **circular economy** as an alternative to the traditional linear economic model of "take, make, dispose," which has led to significant negative environmental impacts within the tourism sector. Instead of depleting resources and generating waste, a circular economy aims to **minimize resource use** and **maximize resource recirculation**, creating a closed-loop system that benefits both the environment and the economy.
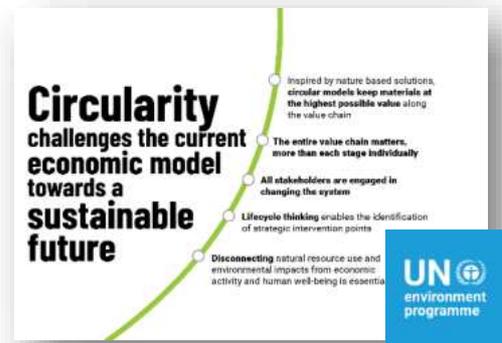
The World Economic Forum defines the circular economy as: "*an industrial system that is restorative or regenerative by intention and design. It replaces the end-of-life concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse and return to the biosphere, and aims for the elimination of waste through the superior design of materials, products, systems, and business models."* [12]

1.2. Key Principles of Circular Economy

UNEP's circularity approach is based on key principles categorized into four levels, ranked from most to least impactful.

The first category, **"guiding principle,"** focuses on **"reduce by design."** The second category, **"user-to-user,"** includes the principles of **"refuse," "reduce,"** and **"reuse."** The third category, **"user-to-business,"** covers **"repair," "refurbish,"** and **"remanufacture."** Finally, the fourth category, **"business-to-business,"** encompasses **"repurpose"** and **"recycle."**
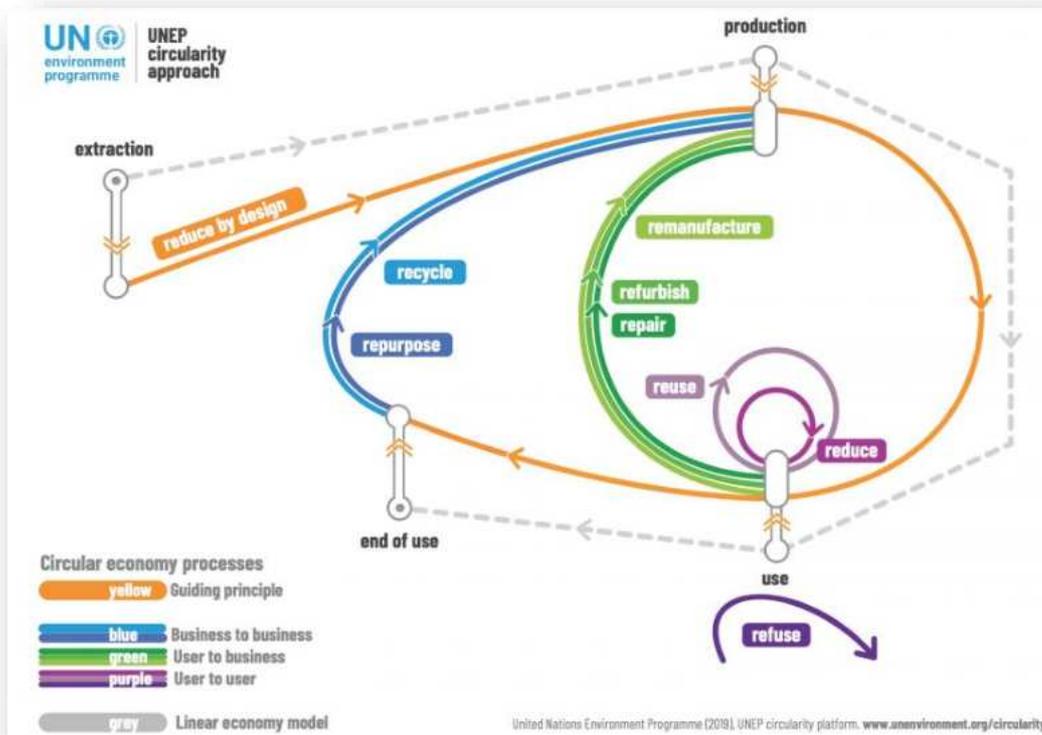
The UNEP circularity approach emphasize that a collaborative effort from policymakers, tourism businesses, and tourists is essential to effectively apply these principles and transition the tourism industry towards a circular economic model that minimizes environmental impact while maximizing economic and social benefits.

Nine circular economy principles need to be considered for a more sustainable tourism:

1. Guiding Principles:

✓**Reduce by design:** This foundational principle advocates for minimizing material consumption, particularly virgin raw materials, from the outset of product design. This can be applied in the tourism sector through the construction of eco-friendly accommodations, optimizing travel routes for resource efficiency, and crafting tourism experiences with minimal environmental impact.

2. User-to-User Principles:

✓**Refuse:** This principle encourages consumers to consciously reject products that are harmful to the environment. For tourists, this could mean refusing single-use plastics, opting for reusable water bottles, and avoiding souvenirs made from unsustainable materials.

✓**Reduce:** This principle urges individuals to reconsider their consumption habits and minimize their environmental impact. Tourists can embrace this by packing light, conserving water and energy in accommodations, and choosing sustainable transportation options.

✓**Reuse:** This principle emphasizes using products multiple times without major modification. In tourism, this translates to using reusable bags and containers, refilling water bottles, and selecting accommodations that prioritize reusable items.

3. User-to-Business Principles:

• **Repair:** Repairing products extends their lifespan, thereby reducing the need for replacements. Tourists can choose to repair damaged belongings instead of discarding them, while tourism businesses can implement repair programs for equipment and furniture.

✓**Refurbish:** Refurbishing involves upgrading or restoring products to enhance their functionality or aesthetic appeal. Hotels can refurbish rooms and furniture instead of replacing them, while transportation providers can refurbish vehicles to prolong their operational life.

✓**Remanufacture:** This principle involves disassembling and rebuilding products to a like-new condition using salvaged components. This can be applied to tourism infrastructure, such as remanufacturing furniture and equipment.

4. Business-to-Business Principles:

✓**Repurpose:** Repurposing involves finding new uses for discarded products or materials. For instance, hotels can repurpose old linens into cleaning rags or donate used furniture. Construction materials can be similarly repurposed.

✓**Recycle:** Recycling involves transforming waste materials into new products. Though less impactful in terms of value retention, recycling is crucial for waste reduction and material recovery. Tourism businesses should implement comprehensive recycling programs, and destinations need to invest in robust recycling infrastructure.

2. BENEFITS OF ADOPTING CIRCULAR ECONOMY PRACTICES IN TOURISM INDUSTRY

Adopting circular economy practices in the tourism industry offers numerous benefits that align with sustainable development, environmental conservation, and economic growth. These practices involve reducing resource consumption, reusing materials, and redesigning systems to minimize waste and maximize efficiency.

The following are some key benefits:

❖ Environmental Sustainability

- *Reduction in Resource Consumption*: By reusing resources like water and energy, and adopting renewable energy sources, tourism businesses can significantly reduce their ecological footprint.

- *Waste Minimization*: Practices such as recycling materials, managing food waste effectively, and avoiding single-use plastics help in lowering environmental impact.

- *Climate Action*: Circular strategies reduce carbon emissions by improving energy efficiency and transitioning to low-carbon alternatives.

❖ Economic Advantages

- **Cost Savings**: Implementing resource-efficient systems, such as renewable energy and waste recycling, reduces operational costs in the long term.

- **Job Creation**: Circular tourism stimulates green job creation in areas such as renewable energy, recycling industries, and eco-friendly services.

- **Resilience and Competitiveness**: Circular models enhance resilience against resource scarcity and align businesses with growing consumer demand for sustainable travel options.

❖ **Social and Cultural Benefits**

- **Local Community Engagement**: Circular tourism promotes the use of local resources, supports community-based tourism, and fosters economic opportunities for local populations.

- **Cultural Preservation**: Sustainable tourism practices protect and promote local heritage, ensuring its longevity and reducing the degradation of cultural sites.

- **Education and Awareness**: Circular tourism initiatives often engage travelers and local communities in sustainability education, fostering a culture of environmental stewardship.

❖ **Innovation and Business Opportunities**

- **Eco-innovation**: Encourages the development of new technologies and practices, such as smart tourism solutions that monitor sustainability indicators (e.g., energy use, food waste).

- **Differentiation in the Market**: Businesses adopting circular models can attract environmentally conscious travelers, improving brand image and market positioning.

❖ **Policy Alignment**

- **Support for Global Goals**: Circular tourism aligns with the United Nations Sustainable Development Goals (SDGs), particularly goals related to responsible consumption and production (SDG 12) and climate action (SDG 13).

- **Regulatory Compliance**: Many governments are pushing for greener practices, and adopting circular economy models helps businesses meet these evolving regulatory standards.

Benefits for Stakeholder

Tourism Businesses:	*Tourism Destinations*:	*Tourists*:
Embracing circular economy principles can enhance competitiveness through innovation and new revenue opportunities.	Implementing circular practices can improve sustainable development outcomes, create jobs, and foster inclusive local value chains.	The circular economy empowers travelers to make positive contributions, encouraging purposeful travel and behavior changes that benefit the entire tourism ecosystem.

CONCLUSION

By integrating circular economy principles, the tourism industry can contribute to environmental protection, economic development, and social well-being, ensuring its sustainability for future generations.

Photo source: *https://www.sciencedirect.com/science/article/pii/S2352550921000567*

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3. BENEFITS OF ADOPTING CIRCULAR ECONOMY PRACTICES IN THE VET INDUSTRY

The adoption of circular economy principles within the Vocational Education and Training (VET) sector yields multiple advantages that align with environmental, economic, and social sustainability objectives. These practices promote the efficient utilization of resources while fostering the development of essential competencies required for emerging green economies.

Photo source: https://trans-edu.net/course/index.php?categoryid=5

The following are key benefits associated with integrating circular economy principles in VET:

➡ *Enhancing Sustainability and Resource Efficiency*. Circular economy principles prioritize the reuse, repair, and recycling of resources. By incorporating these practices into VET curricula, institutions promote sustainable practices among students and reduce waste generated in the educational process.

Photo source: https://www.linkedin.com/pulse/sustainable-development-goals-resource-efficiency-syed-hamza-shakil-cqw0e/

➥ *Improving Economic Resilience.* VET programs focused on circular economy skills prepare students for jobs in emerging sectors like renewable energy, sustainable manufacturing, and eco-design. This aligns workforce capabilities with market demands for sustainability, creating economic stability.

➥ *Innovating Teaching and Learning Models.* Incorporating circular economy concepts into VET can lead to innovative training methodologies, such as hands-on learning in repair workshops or upcycling projects. These approaches enhance practical learning experiences and creativity among students.

➥ *Supporting Regional Development.* Circular economy-focused VET programs can drive local development by enabling students to engage with community-based projects, such as local waste management initiatives or circular business models. This fosters stronger ties between education and regional industries.

➥ *Addressing Skills Gaps.* Circular economy industries require specialized skills in areas like reverse logistics, materials management, and sustainable design. By integrating these skills into VET, institutions bridge existing skills gaps and boost employability.

Photo source: https://www.worldoftvet.com/blog/bridging-the-skills-gap

➥ *Aligning with Policy Goals.* Many governments and international organizations, including the European Union, emphasize the transition to circular economies. VET programs that adopt these practices help institutions align with such policies, attracting funding and partnership opportunities.

➥ *Creating Social Impact.* VET institutions can lead in building awareness about sustainability among youth and communities, empowering individuals to make environmentally conscious decisions in their personal and professional lives.

➡ ***Reducing Operational Costs.*** Circular practices within VET institutions - such as using refurbished equipment, promoting digital over paper materials, and efficient energy usage - can lower operational expenses, setting an example for sustainable institutional management.

Photo source: https://conquestcreatives.com/benefits-of-a-circular-economy/

CONCLUSION

By adopting circular economy practices, VET institutions contribute to sustainable development, equip learners with future-ready skills, and strengthen their own relevance in a changing economic landscape.

Customizing Circular Economy Programs:
Tailoring Solutions to Organisational Needs

Photo source: https://circulareconomyalliance.com/cea-blogs/customizing-circular-economy-programs-tailoring-solutions-to-organisational-needs/

4. MEASURES AND RECOMMENDATIONS FOR COMPANIES IN THE TOURISM INDUSTRY & RELATED INDUSTRIES TO EMBRACE CIRCULARITY IN BUSINESS

The transition towards a circular economy has become a critical objective for businesses worldwide, particularly in the tourism and related industries, which are significant contributors to global resource consumption and environmental impact. Traditional linear economic models—based on the "take-make-dispose" approach—result in excessive waste generation, depletion of natural resources, and increased carbon footprints. In contrast, circular economy principles advocate for resource efficiency, waste minimization, and the regeneration of natural systems through sustainable business practices.

In the tourism sector, integrating circularity involves strategies such as sustainable procurement, waste reduction, energy efficiency, water conservation, and responsible visitor management. Related industries, including hospitality, transportation, and food services, also play a crucial role in fostering circular business models that promote long-term environmental, social, and economic sustainability. However, achieving circularity requires a combination of regulatory frameworks, industry collaboration, technological innovation, and stakeholder engagement.

This chapter explores key measures and strategic recommendations for companies in the tourism and related industries to adopt circular business practices. By implementing circular economy principles, businesses can enhance their competitiveness, reduce operational costs, and contribute to the broader goals of sustainable development and environmental conservation.

Objective

The main goal of this measure is to minimize waste generation and enhance resource efficiency by adopting circular practices throughout the business or training environment.

By reducing, reusing, and recycling waste, the measure aims to create a closed-loop system that significantly decreases the environmental footprint of operations, aligns with circular economy principles, and fosters sustainable development.

Description

This measure involves minimizing waste generation, managing waste responsibly, and enhancing resource efficiency by adopting circular practices. Businesses can conduct waste audits, set reduction goals, and implement strategies like preventing single-use items, introducing reusable alternatives, and establishing recycling and composting systems. Training staff and engaging customers with incentives further support these efforts. Y
By reducing waste, businesses conserve resources, cut costs, and align with circular economy principles, ensuring materials remain in use and minimizing environmental impact.

Benefits

- **Reduces waste sent to landfills and incinerators.**
- **Conserves natural resources by promoting reuse and recycling.**
- **Lowers carbon emissions and ecological footprint.**
- **Cuts costs by reducing the purchase of disposable items.**
- **Lowers waste disposal and handling expenses.**
- **Improves resource efficiency, leading to long-term financial savings.**
- **Enhances brand reputation through visible sustainability efforts.**
- **Engages employees and customers in positive, eco-friendly practices.**
- **Promotes a culture of responsibility, innovation, and collaboration.**

Key Considerations

- *Initial Costs and Resources*: Setting up waste separation systems, composting facilities, or reusable alternatives may require upfront investment.
- *Staff Training and Engagement*: Employees need clear guidance and training to adopt new waste reduction practices effectively.
- *Guest Participation*: Encouraging customers or guests to follow waste reduction practices may require clear communication and incentives.
- *Local Recycling and Composting Infrastructure*: Availability and reliability of local waste management facilities can impact the success of recycling and composting initiatives.
- *Monitoring and Data Collection*: Regular tracking of waste metrics is essential but may require additional tools or resources for accurate reporting.
- *Regulatory Compliance*: Ensure alignment with local waste management laws and sustainability standards.
- *Supplier Collaboration*: Partnering with suppliers to minimize packaging waste or provide reusable alternatives is critical and may require negotiation.
- *Customer Expectations*: Changes, such as eliminating single-use items, may initially face resistance from customers accustomed to convenience.

Resources

- *Waste assessment tools: EPA's Instructions on Conducting waste assessments: Provides comprehensive guidance on identifying and analyzing waste streams within facilities*. (https://www.epa.gov/smm/instructions-conducting-waste-assessments?utm_source)

- *Recycling and composting guides: Zero Waste International Alliance: Offers resources and standards for achieving zero waste goals.* (https://zwia.org/?utm_source)

- *Sustainability Certifications; Green Key: An eco-label awarded to tourism establishments that adhere to sustainable practices. (*https://www.greenkey.global/)
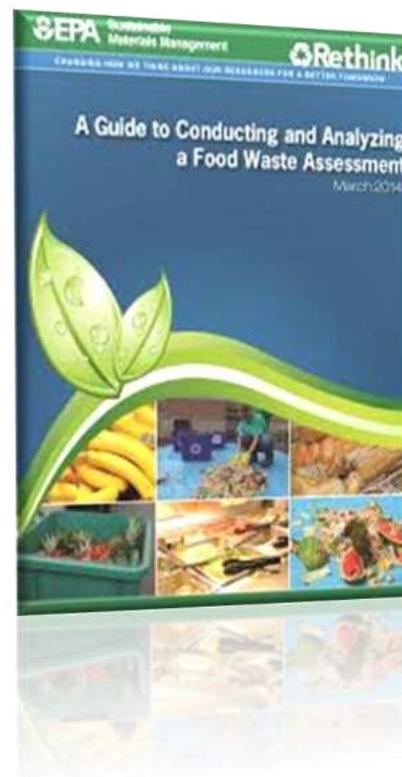
4.2. Adopt Sustainable Resource Management

Objective

The main goal of this measure is to optimize the use of natural resources, such as water, energy, and raw materials, by implementing efficient, renewable, and sustainable practices. It supports the adoption of circularity by reducing resource depletion, minimizing waste, and closing the loop on resource use through strategies like recycling, renewable energy adoption, and efficient resource allocation.

By fostering responsible consumption, businesses and training programs can significantly lower their environmental impact while enhancing long-term resilience and cost efficiency.

Description

This measure focuses on optimizing the use of water, energy, and raw materials through efficient, sustainable, and renewable practices. It involves conducting resource audits to identify areas for improvement, implementing technologies like smart meters and energy-efficient systems, and transitioning to renewable energy sources such as solar or wind power.

Water-saving techniques, such as low-flow fixtures and rainwater harvesting, further enhance efficiency.

Sustainable procurement practices that prioritize recycled, renewable, or locally sourced materials are also key. These efforts support circularity by reducing resource extraction, minimizing waste, and ensuring materials and energy remain in use for longer cycles, ultimately promoting both environmental sustainability and cost savings.

Benefits

- **Reduces resource depletion and conserves natural ecosystems by minimizing water, energy, and raw material usage.**

- **Decreases greenhouse gas emissions through the use of renewable energy and energy-efficient systems.**

- **Lowers operational costs by improving energy and water efficiency and reducing waste.**

- **Enhances financial resilience through long-term savings from sustainable procurement and resource optimization.**

- **Builds a positive reputation as an environmentally responsible business, attracting eco-conscious customers and stakeholders.**

- **Helps meet legal and environmental standards, avoiding fines and enhancing readiness for future sustainability regulations.**

- **Drives innovation through the adoption of cutting-edge sustainable technologies, creating a competitive advantage in the market.**

Resources

- *Energy and Water Management Systems - Smart Meters: Devices that provide real-time data on energy consumption, enabling efficient monitoring and optimization.* (https://www.ibm.com/topics/smart-meter?utm_source)

- *Building Energy Management Systems (BEMS): Integrated systems that control and monitor building energy usage, enhancing efficiency.* (https://www2.deloitte.com/us/en/insights/industry/power-and-utilities/smart-energy-management.html?utm_source=)

- *Sustainability Certifications and Standards*:

  - ISO 14001 (Environmental Management Systems): An international standard providing a framework for effective environmental management practices. (https://www.iso.org/standards/popular/iso-14000-family?utm_source)

  - LEED Certification: A globally recognized certification for green building practices, promoting sustainable design and operations. (https://www.tuv.com/world/en/leadership-in-energy-and-environmental-design-%28leed%29.html?utm_source)

Key Considerations

- *Initial Investment Costs:* Transitioning to renewable energy, installing energy-efficient systems, and implementing water-saving technologies may require significant upfront financial investment.

- *Infrastructure and Technology Availability:* Access to sustainable technologies, such as solar panels or water recycling systems, may vary depending on the location and supplier networks.

- *Staff Training and Engagement:* Employees may need training to effectively manage and operate new sustainable systems and adopt resource-efficient practices.

- *Data Collection and Monitoring:* Implementing resource audits and tracking efficiency improvements requires reliable tools and processes, which may demand additional resources or expertise.

- *Balancing Sustainability and Customer Expectations:* Customers may initially resist changes that affect convenience, such as reduced energy usage for heating or cooling, requiring clear communication and awareness-building efforts.

4.3. Promote the Use of Local and Seasonal Products

Objective

The main goal of this measure is to reduce the environmental impact of sourcing and transportation by prioritizing locally produced and seasonally available goods. By shortening supply chains and minimizing reliance on imported or out-of-season products, businesses can reduce carbon emissions, support local economies, and enhance resource efficiency.

This practice aligns with circularity by fostering sustainable consumption patterns, reducing waste, and promoting a resilient local production ecosystem that benefits both the environment and the community.

Description

This measure focuses on sourcing goods, particularly food and materials, from local producers and prioritizing items available in their natural growing seasons. By reducing transportation emissions, minimizing packaging waste, and supporting local economies, businesses can significantly lower their environmental impact. Implementation includes updating procurement policies, partnering with regional suppliers, and offering seasonal menus or products to customers.

Benefits

- **Reduces carbon emissions by shortening supply chains and minimizing transportation.**
- **Decreases reliance on resource-intensive production methods for out-of-season goods.**
- **Supports local farmers, artisans, and businesses, strengthening the regional economy.**
- **Reduces procurement costs by avoiding expensive imported or non-seasonal products.**
- **Builds stronger relationships with local communities and enhances regional resilience.**
- **Encourages customers to engage with and appreciate local culture and traditions.**
- **Minimizes waste by sourcing fresh, perishable goods that match seasonal availability.**
- **Offers fresher, higher-quality products that align with customer demand for sustainability and authenticity.**

Resources

- *Local Farmers' and Producers' Networks: Platforms like LocalHarvest or regional agricultural associations that connect businesses with local suppliers.* (https://www.localharvest.org/)

- *Seasonal Availability Guides: Online resources or apps like Seasonal Food Guide (seasonalfoodguide.org) to identify products available locally by season.* (https://seasonalfoodguide.org/)

- *Sustainable Procurement Tools: Tools like WRAP's Food Procurement Guidance to help businesses integrate sustainability into sourcing practices.* (https://www.wrap.ngo/)

- *Community Partnerships: Collaborations with local farmers' markets, cooperatives, and small-scale producers to ensure a steady supply of fresh, seasonal goods.* (https://www.ams.usda.gov/local-food-directories/farmersmarkets)

Key Considerations

- *Seasonal Availability*: Limited availability of certain products during off-seasons may require menu or product adjustments and flexibility in offerings.

- *Supplier Reliability:* Local producers may face challenges in meeting consistent demand or maintaining quality standards, particularly during extreme weather or disruptions.

- *Cost Variability:* While local sourcing can reduce some costs, seasonal variations and smaller-scale production might result in higher prices for certain items.

- *Logistics and Infrastructure*: Businesses may need to establish new supply chains and logistics systems to source directly from local producers.

- *Customer Education and Expectations:* Some customers may expect year-round availability of certain items, requiring clear communication about the benefits of seasonal and local sourcing.

4.4. Encourage Circular Economy in Transportation

Objective

The main goal of this measure is to promote sustainable transportation practices that minimize environmental impact by reducing emissions, optimizing resource use, and adopting innovative circular approaches. This involves prioritizing shared, electric, or renewable-powered transportation solutions and extending the lifecycle of transportation assets through maintenance, reuse, and recycling.

By integrating these practices, businesses and training programs can reduce their carbon footprint, enhance efficiency, and support the broader transition to a circular economy, creating more sustainable and resilient systems.

Description

This measure focuses on reducing the environmental impact of transportation by adopting sustainable and circular practices, such as using electric or renewable-powered vehicles, promoting shared mobility solutions, and optimizing logistics to reduce waste and emissions. Implementation involves transitioning to low-emission or zero-emission fleets, establishing partnerships with shared transport providers, and maintaining vehicles through repair, refurbishment, and recycling programs to extend their lifecycle.

Businesses can also encourage sustainable travel by providing incentives for customers to use public transportation or bicycles. This measure aligns with circularity by minimizing resource use, reducing emissions, and ensuring transportation assets remain functional and valuable throughout their lifecycle, contributing to a more sustainable mobility ecosystem.

Benefits

- **Reduces greenhouse gas emissions and air pollution by transitioning to electric or renewable-powered vehicles.**

- **Conserves resources through repair, refurbishment, and recycling of transportation assets.**

- **Lowers operational costs over time by improving fuel efficiency and reducing maintenance expenses through sustainable vehicle management. Creates new business opportunities in shared mobility and sustainable transport services.**

- **Improves public health by reducing air pollution and noise**

levels in urban areas. Enhances accessibility and affordability of transportation options through shared mobility solutions.

- **Maximizes the use of vehicles and infrastructure, reducing waste associated with underutilized transport systems. Demonstrates commitment to sustainability, attracting eco-conscious customers and stakeholders.**

Resources

- *Sustainable Mobility Frameworks: European Platform on Sustainable Urban Mobility Plans (ELTIS): Provides guidelines and best practices for developing sustainable urban mobility plans, promoting efficient and eco-friendly transportation systems*. (https://blogs.worldbank.org/en/transport/defining-role-transport-circular-economy?utm_source)

- *Vehicle Lifecycle Management Tools: International Material Data System (IMDS): A global standard used by the automotive industry to manage and track materials, facilitating recycling and reuse of vehicle components.* (https://www.mdpi.com/2071-1050/14/14/8951?utm_source)

- *Sustainable Transport Assessment Tools: Sustainable Urban Transport Project (SUTP): Offers resources and tools for assessing and implementing sustainable transport solutions in urban areas, including policy guidelines and case studies*. (https://www.ellenmacarthurfoundation.org/climate-change-and-a-circular-economy-for-transport?utm_source)

Key Considerations

- *High Initial Investment*: Transitioning to electric or renewable-powered fleets and establishing charging or fueling infrastructure may require significant upfront costs.

- *Availability of Infrastructure*: The success of sustainable transport initiatives depends on access to reliable charging stations, repair facilities, and shared mobility systems, which may vary by location.

- *Behavioral Change:* Encouraging customers and employees to shift to sustainable transport options, such as shared mobility or public transit, may require extensive awareness campaigns and incentives.

- *Supply Chain and Maintenance Challenges:* Ensuring the availability of recycled or refurbished vehicle components and establishing efficient repair and maintenance networks can be complex and resource-intensive.

Tackling climate change with a circular economy for mobility

4.5. Design for Longevity and Upcycling

Objective

The main goal of this measure is to extend the lifespan of products and materials by prioritizing durability, repairability, and the ability to repurpose or upcycle them into new uses at the end of their lifecycle. This approach reduces waste, minimizes the need for virgin materials, and fosters a circular system where resources remain in use for as long as possible.

By designing with longevity and upcycling in mind, businesses and training programs can support circularity through sustainable resource management, cost savings, and innovation, creating a more resilient and environmentally friendly operation.

Description

This measure focuses on designing products, materials, and infrastructure with durability, repairability, and upcycling potential as core principles. It entails choosing high-quality, sustainable materials that can withstand long-term use and ensuring components can be easily repaired, replaced, or repurposed.

Businesses can implement this by adopting modular designs, using renewable or recycled materials, and collaborating with suppliers and designers to create products that are easy to disassemble and reuse.

Practical steps include creating maintenance programs to extend product lifecycles, setting up collection systems for used items, and providing customers with resources to repair or repurpose products.

By integrating longevity and upcycling into their designs, businesses can enhance sustainability, reduce costs over time, and align with growing consumer demand for environmentally responsible practices.

Benefits

- **Reduces waste sent to landfills by extending product lifespans and repurposing materials.**

- **Conserves natural resources by minimizing the demand for virgin materials.**

- **Lowers costs over time through reduced material consumption and repairable designs.**

- **Creates new revenue streams by selling upcycled products or offering repair and refurbishment services.**

- **Encourages a culture of sustainability and innovation among employees and customers.**

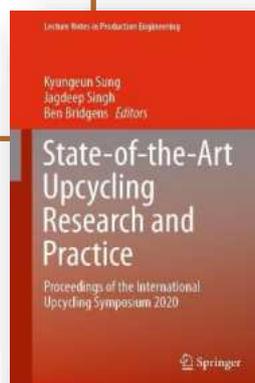- **Builds consumer trust and loyalty by demonstrating commitment to environmental responsibility.**

- **Positions businesses as leaders in sustainable practices, appealing to eco-conscious consumers and partners.**
- **Drives creativity in product design and business models, fostering competitive advantages in the market.**

Resources

- *Redress Design Award Academy: Offers comprehensive resources on sustainable fashion design, including guides on designing for longevity and upcycling techniques.* (https://www.redressdesignaward.com/academy/resources/guide/design-for-longevity?utm_source)

- *Ellen MacArthur Foundation's Circular Design Guide: Provides practical methods and case studies to help designers create products aligned with circular economy principles, emphasizing durability and upcycling.* (https://flynn-product-design.com/post/designing-for-the-circular-economy-creating-products-for-reuse-and-regeneration?utm_source)

- *"State-of-the-Art Upcycling Research and Practice" by Springer: A detailed publication exploring current research and practical applications in upcycling, offering insights into sustainable design practices.* (https://link.springer.com/book/10.1007/978-3-030-72640-9?utm_source)

Key Considerations

- *Initial Design and Development Costs:* Creating durable, repairable, and upcyclable products may require higher upfront investment in materials and design processes.

- *Supply Chain Collaboration:* Sourcing high-quality or sustainable materials and ensuring compatibility with repair and upcycling processes may require close partnerships with suppliers.

- *Consumer Behavior:* Customers may not prioritize durability or may lack the skills or tools to repair or upcycle items, necessitating education and support initiatives.

- *Logistics for Collection and Upcycling:* Establishing systems for collecting and processing used products for upcycling or refurbishment can be resource-intensive and logistically challenging.

- *Regulatory and Standardization Challenges:* Compliance with environmental standards and ensuring products meet safety and quality regulations while being repairable and upcyclable can be complex.

Lecture Notes in Production Engineering

Kyungeun Sung
Jagdeep Singh
Ben Bridgens *Editors*

State-of-the-Art Upcycling Research and Practice

Proceedings of the International Upcycling Symposium 2020

Springer

Objective

The main goal of this measure is to raise awareness and foster active participation among staff and guests in circular economy practices. By providing education on sustainability principles and engaging stakeholders in practical actions, businesses can create a shared commitment to reducing waste, conserving resources, and adopting circular solutions.

This measure supports the adoption of circularity by embedding sustainable behaviors into daily operations and interactions, ensuring that both employees and customers contribute to creating a more responsible and resource-efficient system.

Description

This measure focuses on raising awareness and encouraging active participation in circular economy practices among employees and guests. It involves training staff on circular principles and integrating sustainability initiatives into guest experiences through workshops, signage, and interactive programs. Businesses can incentivize eco-friendly behaviors, such as waste reduction or responsible consumption, and use feedback systems to drive continuous improvement.

By fostering collaboration and commitment, this measure embeds circularity into the organization's culture, ensuring both staff and guests contribute to reducing waste, conserving resources, and promoting sustainable practices.

Benefits

- **Promotes responsible behaviors, reducing waste generation and resource consumption.**

- **Encourages the adoption of sustainable practices, leading to a lower overall environmental footprint.**

- **Increases efficiency by empowering staff to identify and implement cost-saving sustainable practices.**

- **Enhances customer loyalty and attracts eco-conscious consumers, driving revenue growth.**

- **Builds a culture of sustainability, fostering pride and engagement among staff and guests.**

- **Strengthens community ties by showcasing commitment to environmental and social responsibility.**

- **Positions the business as a leader in sustainability, appealing to stakeholders and partners.**

- **Ensures lasting change by embedding circular economy principles into organizational practices and customer habits.**

Resources

- *Sustainable Hospitality Alliance: Provides comprehensive training materials and best practices tailored for the hospitality industry to promote sustainability among employees and guests.* (https://sustainablehospitalityalliance.org/maximise-guest-participation/?utm_source)

- *Green Key Certification Program: Offers guidelines and resources for environmental education and engagement, assisting businesses in achieving sustainability certifications and enhancing guest involvement.* (https://www.greenkey.global/stories-news-1/2015/12/10/communicating-sustainability-to-guests?utm_source)

- *AWorld Platform: Delivers interactive tools and programs designed to engage employees in sustainability initiatives, fostering a culture of environmental responsibility within organizations.* (https://aworld.org/engagement/employee-engagement-sustainability-4-key-things-to-know/?utm_source)

Key Considerations

- *Resistance to Change:* Some staff or guests may be hesitant to adopt new sustainable practices, requiring clear communication and incentives to overcome reluctance.

- *Resource Availability:* Developing training programs and guest engagement materials may require time, financial resources, and expertise in circular economy principles.

- *Consistency Across Stakeholders:* Ensuring that all staff and guests, including temporary or short-term participants, consistently engage in sustainability initiatives can be challenging.

- *Effective Communication:* Simplifying complex circularity concepts and tailoring the message to different audiences (staff vs. guests) is essential for effective engagement.

- *Measuring Impact:* Tracking the success of education and engagement efforts, such as behavioral changes or resource savings, requires appropriate tools and metrics, which can be resource-intensive.

4.7. Incorporate Circularity into Business Models

Objective

The main goal of this measure is to integrate circular economy principles into the core of business operations, shifting from linear models of production and consumption to systems that prioritize resource efficiency, waste reduction, and regeneration.

By embedding circularity into business strategies, such as designing for reuse, offering product-as-a-service models, or enabling recycling and upcycling, organizations can create long-term value while reducing their environmental impact.

This supports the adoption of circularity by fostering innovation, improving sustainability, and aligning operations with the principles of resource conservation and closed-loop systems.

Description

This measure involves redesigning business strategies to align with circular economy principles, ensuring resources are kept in use for as long as possible and waste is minimized. It entails adopting practices such as offering products-as-a-service (e.g., rentals or subscriptions), implementing take-back or refurbishment programs, and prioritizing the use of renewable or recycled materials in production. Implementation requires rethinking supply chains, engaging stakeholders, and fostering innovation to create closed-loop systems.

This approach is highly relevant to circularity as it transforms the traditional linear "take-make-dispose" model into one that emphasizes resource efficiency, waste reduction, and environmental sustainability, ensuring long-term business resilience and value creation.

Benefits

- **Reduces resource extraction and waste generation by keeping materials and products in use longer.**

- **Lowers carbon emissions through efficient use of resources and closed-loop systems.**

- **Generates new revenue streams through innovative business models like leasing, renting, or product-as-a-service.**

- **Reduces costs over time by reusing materials and minimizing waste disposal expenses.**

- **Strengthens customer loyalty and trust by demonstrating a commitment to sustainability and environmental responsibility.**

- **Creates opportunities for local job growth in areas like recycling,**

refurbishment, and sustainable product design.

- **Increases business resilience by reducing dependence on volatile raw material markets and supply chains.**

- **Encourages creative solutions and partnerships, driving competitiveness and positioning the business as a leader in sustainability.**

Resources

- *Ellen MacArthur Foundation's Circular Business Toolkit*: Provides comprehensive resources, including case studies and practical guides, to help businesses transition to circular models.
(www.ellenmacarthurfoundation.org)

- *Circular Economy Business Model Canvas*: An adaptation of the traditional Business Model Canvas, this tool assists in designing and visualizing circular business strategies.
(https://ecologing.newzenler.com/home-eng)

- *BS 8001:2017 Framework for Implementing the Principles of the Circular Economy in Organizations*: A British Standard providing guidelines for organizations to implement circular economy principles effectively. (https://www.bsigroup.com/)

Key Considerations

- *Initial Investment and Transition Costs:* Adapting existing business models to circular systems may require significant upfront investments in technology, infrastructure, and staff training.

- *Supply Chain Complexity*: Establishing closed-loop supply chains or sourcing sustainable materials may involve logistical challenges and require collaboration with multiple stakeholders.

- *Customer Adaptation:* Customers may need time to adjust to new business models, such as product-as-a-service or take-back programs, which may differ from traditional consumption patterns.

- *Measurement and Accountability*: Developing metrics to track circularity performance and ensuring transparent reporting can be complex but is essential for demonstrating progress and value to stakeholders.

BS 8001: 2017
A new standard for
the Circular Economy

Find out more today

4.8. Measure and Report on Sustainability Metrics

Objective

The main goal of this measure is to track, evaluate, and transparently communicate the environmental, social, and economic impacts of business or training operations. By monitoring key sustainability metrics such as resource use, waste generation, and emissions, businesses can identify areas for improvement, demonstrate accountability, and align with circular economy principles.

Regular reporting supports the adoption of circularity by fostering data-driven decision-making, ensuring continuous improvement, and building trust with stakeholders through transparent communication of progress and achievements.

Description

This measure involves systematically tracking key sustainability indicators, such as resource consumption, waste generation, carbon emissions, and circularity performance, to assess the environmental, social, and economic impacts of operations. Implementation includes identifying relevant metrics, collecting data using tools like sustainability dashboards or lifecycle assessment software, and analyzing results to inform decision-making. Regularly publishing sustainability reports, aligned with recognized frameworks like the Global Reporting Initiative (GRI) or the Circularity Gap Reporting Initiative, ensures transparency and accountability.

This practice is highly relevant to circularity as it enables businesses to evaluate progress, identify opportunities for improvement, and communicate efforts to stakeholders, fostering trust and reinforcing commitment to a circular economy.

Benefits

- **Identifies inefficiencies in resource use and waste management, enabling targeted improvements to reduce environmental impact.**
- **Supports the transition to circular practices by highlighting areas where resources can be reused or emissions reduced.**
- **Enhances cost efficiency by revealing opportunities to optimize resource use and reduce waste-related expenses.**
- **Improves access to green financing and sustainability grants through transparent reporting and demonstrated impact.**

- **Builds trust and credibility with customers, employees, and stakeholders by showing accountability and commitment to sustainability.**
- **Encourages employee engagement and awareness of sustainability goals, fostering a culture of responsibility.**
- **Facilitates adherence to sustainability regulations and standards, reducing the risk of non-compliance penalties.**
- **Provides actionable data to guide strategic decisions and strengthen the business's position as a sustainability leader in the market.**

Resources

- *Global Reporting Initiative (GRI) Standards:* Provides comprehensive guidelines for sustainability reporting, helping organizations disclose environmental, social, and governance (ESG) performance. (https://www.globalreporting.org/)

- *SASB Standards*: Offers industry-specific standards to identify, manage, and report on sustainability topics that impact financial performance. (https://sasb.ifrs.org/)

- *CDP Disclosure System*: Enables companies to measure and manage their environmental impacts and disclose this information to stakeholders. (https://www.cdp.net/en/)

Key Considerations

- *Data Collection Challenges:* Gathering accurate and consistent data across operations can be complex and resource-intensive, especially for businesses without established systems.

- *Selection of Metrics*: Identifying the most relevant and impactful metrics to measure, aligned with circularity and business goals, requires careful planning and expertise.

- *Integration with Existing Systems*: Incorporating sustainability measurement into existing business processes and technologies may require significant adjustments and investment.

- *Stakeholder Expectations*: Reporting must balance transparency with simplicity to meet diverse stakeholder needs, from investors to customers, without overwhelming them with technical details.

- *Ensuring Actionable Insights*: The data collected must lead to actionable insights and tangible improvements rather than just fulfilling reporting requirements, ensuring continuous progress toward circularity.

5. MEASURES AND RECOMMENDATIONS FOR VET INSTITUTIONS LINKED TO TOURISM INDUSTRY & RELATED INDUSTRIES TO EMBRACE CIRCULARITY IN TRAINING

The adoption of circular economy principles is increasingly recognized as essential for fostering sustainability across various industries, including tourism and its related sectors. As the tourism industry faces growing environmental challenges, there is a pressing need for Vocational Education and Training (VET) institutions to integrate circular economy concepts into their curricula. By doing so, they can equip future professionals with the skills and knowledge necessary to implement sustainable business models, optimize resource use, and minimize waste generation.

VET institutions play a crucial role in shaping a workforce capable of driving the transition from traditional linear economic models to circular approaches. This transition involves not only technical training in resource efficiency, sustainable supply chain management, and eco-innovation but also the development of a circular mindset among students and industry professionals. Effective circular training programs must incorporate interdisciplinary approaches, digital tools, and industry collaboration to ensure practical, real-world applications.

This chapter outlines key measures and strategic recommendations for VET institutions to embrace circularity in their training programs. By embedding circular economy principles in vocational education, these institutions can enhance employability, support the tourism industry's sustainability goals, and contribute to the broader agenda of environmental and economic resilience.

5.1. Integrate Circular Economy Principles into Curriculum

Objective

Transform educational content to comprehensively teach circular economy concepts, focusing on resource efficiency, waste minimization, and sustainable practices that align with the tourism sector's needs.

Description

This involves a comprehensive revision of the course materials and teaching modules to include basic and advanced topics on the circular economy. Key topics may include life cycle analysis of tourism products, waste reduction strategies, sustainable supply chain management and green design principles.

Collaborate with industry experts and sustainability professionals to ensure that course content remains relevant and reflects the latest industry standards and technological developments. This could involve workshops, guest lectures and the joint development of case studies that showcase real-world applications.

Benefits

- **Improves students' practical knowledge of sustainability, preparing them for roles in environmentally conscious organizations.**
- **Promotes a culture of innovation as students learn to think critically about resource management and circular solutions.**
- **Provides a competitive advantage for students in a job market that increasingly values environmental responsibility.**

Resources

- *Ellen MacArthur Foundation: Offers case studies, teaching resources, and frameworks on the circular economy.* (https://www.ellenmacarthurfoundation.org/)

- *UNESCO's Education for Sustainable Development: Guides for integrating sustainability into education systems.* (https://www.unesco.org/en/sustainable-development/education)

- *Circular Economy Teaching Toolkit: A repository of practical teaching tools and resources.* (http://circulareconomytoolkit.org/Toolkit.html)
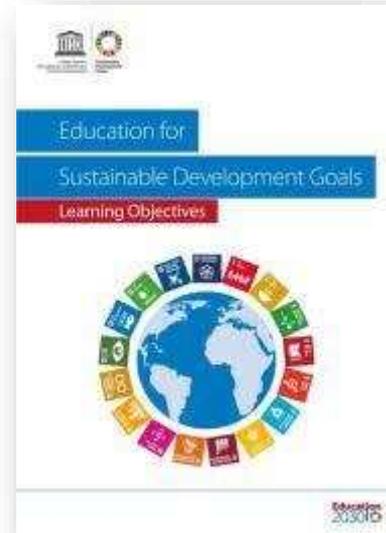
Key Considerations

- **Regular updates** are essential to keep the curriculum aligned with evolving circular economy practices.

- **The potential need for faculty training** to effectively deliver updated content.

- **Securing funding and institutional support** for curriculum development.

5.2. Develop Industry Partnerships

Objective

Establish collaborative relationships with sustainable tourism businesses and organizations to bridge the gap between theoretical learning and practical application.

Description

Collaborate with industry partners that apply circular practices to provide students with exposure to real-world challenges and solutions. These partnerships can take the form of structured internships, field trips, sessions with guest speakers and collaboration on sustainability projects. In addition, these partnerships can be leveraged for content co-creation, where industry professionals contribute to course development or provide input to align curriculum with market demands.

Benefits

- **Exposes students to practical applications of circular economy principles, enhancing employability.**
- **Provides experiential learning opportunities, such as case studies and hands-on projects.**
- **Strengthens the institution's network within the tourism and sustainability sectors, promoting long-term collaboration.**

Key Considerations

- Maintaining strong, ongoing relationships requires continuous engagement and communication.
- Matching industry requirements with educational objectives can be a challenge.

Resources

- *LinkedIn: Platform for networking and connecting with sustainability professionals.*
  (https://www.linkedin.com/feed/)

- *Tourism Declares a Climate Emergency: A community of tourism organizations working towards climate action.*
  (https://www.tourismdeclares.com/)

- *European Travel Commission (ETC): The ETC promotes Europe as a sustainable tourism destination.*
  (https://etc-corporate.org/)

5.3. Implement Hands-On Projects

Objective

Encourage experiential learning through hands-on projects that challenge students to solve problems related to the circular economy within the tourism sector.

Description

Design project-based learning experiences in which students work on real-world sustainability challenges, such as developing zero-waste tourism initiatives, designing green accommodations, or optimizing resource use for hospitality services.

These projects should be structured to encourage teamwork, research and innovative thinking, with opportunities to present results to peers or industry stakeholders.

Benefits

- **Develops critical thinking, problem solving and collaboration skills.**
- **Reinforces theoretical knowledge by applying it in practical and meaningful contexts.**
- **Encourages creativity and innovation in the search for solutions for sustainable tourism.**

Key Considerations

- Ensure that projects are feasible within the academic calendar and available resources.
- Provide adequate mentoring and support for students to successfully complete their projects.

Resources

- *Eco-Schools: Offers frameworks and support for project-based environmental education.* (https://www.ecoschools.global/)

- *European Commission Life Program: Funding and support for sustainability projects.*

(https://wayback.archive-it.org/12090/20210412123959/https://ec.europa.eu/easme/en/)

- *Green Project Management (GPM): Tools for managing and delivering sustainable projects.* (https://www.greenprojectmanagement.org/)

5.4. Incorporate Sustainability into Assessments

Objective

Ensure that understanding and application of sustainability principles is a central component of student assessments.

Description

Design assessment methods that require students to demonstrate their understanding of circular economy concepts through practical work. Examples include developing business plans for sustainable tourism enterprises, creating resource management strategies, or conducting impact assessments of tourism operations. Assessments may also include reflective journals on the application of green practices in tourism environments.

Benefits

- **Builds a deeper understanding of sustainability by requiring students to apply concepts in practical contexts.**
- **Encourages innovative thinking and strategic planning for real-world scenarios.**
- **Prepares students to be proactive in identifying and implementing circular solutions.**

Key Considerations

- Ensure a balance between academic expertise and practical relevance.
- Ensure fairness and consistency in the qualification of innovative solutions.

Resources

- *Green Skills Online Courses: Modules for learning about sustainable tourism and business practices.* (https://www.bigga.org.uk/education/continuing-professional-development/free-online-green-skills-courses.html)

- *OER Commons: Open-access resources for creating sustainability-focused assessments.* (https://oercommons.org/)

- Sustainability Assessment Frameworks: For example, the Sustainable Tourism Criteria. (https://www.gstcouncil.org/)
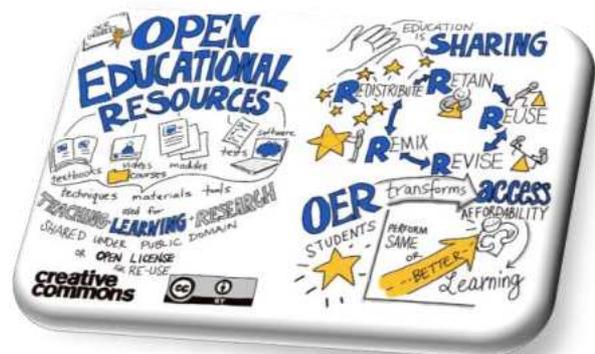
5.5. Train Educators on Circularity

Objective

Provide educators with comprehensive training and resources to effectively teach the principles of the circular economy, ensuring that they can inspire and equip students with the skills necessary for sustainable practices in the tourism sector.

Description

Organize professional development programs, workshops and training sessions focused on the circular economy and sustainability. Educators should learn how to integrate these concepts into their teaching methods, using case studies and interactive activities to engage students.

Continuous learning opportunities, such as webinars and online courses, should also be offered to keep educators up to date on the latest trends in sustainability.

Key Considerations

- Requires investment in training resources and continuous professional development.
- Ensure training is practical and aligned with real-world applications

Resources

- *Circulab: Offers resources and workshops tailored for educators to understand and teach the circular economy.*
(https://circulab.academy/courses/explore-the-circular-economy/)

- *FutureLearn: Provides free and paid courses on sustainability and circular economy education.*
(https://www.futurelearn.com/)

- *The Sustainability Literacy Test (Sulitest): A global assessment tool to measure sustainability knowledge among educators and students.*
(https://www.sulitest.org/)

Benefits

- **The educators gain confidence and experience in teaching circular economy content.**
- **Creates a well informed curriculum capable of fostering a culture of sustainability.**
- **Improves the overall quality of education by integrating current and impactful topics.**

5.6. Promote Circularity in Institution Operations

Objective

Demonstrate leadership in sustainability by transforming the institution into a model of circular economy practices, showing real applications for students.

Description

Implement strategies such as reducing energy consumption, optimizing waste management and using sustainable materials for operations. Examples include conducting energy audits, installing solar panels, encouraging paperless practices, and creating a recycling and composting program on campus.

These initiatives can be used as educational opportunities, with students participating in or observing these practices in action.

Benefits

- **Reduces the environmental footprint and operating costs of the institution.**
- **Provides a living example of circular economy practices for students and staff.**
- **Enhances the institution's reputation as a leader in sustainability.**

Key Considerations

- Initial costs may be high, but long-term benefits usually outweigh them.
- Requires involvement of administrative and facilities staff for proper implementation

Resources

- *Green Building Council: Offers guidelines and certification programs for sustainable infrastructure.* (https://worldgbc.org/)

- *EcoCampus: An environmental management system designed for higher education institutions to promote sustainability.* (https://ecocampus.uk/)

- *Energy Star Portfolio Manager: A tool to help institutions measure and manage energy use and emissions.* (https://www.energystar.gov/buildings/benchmark)

5.7. Encourage Student-Led Initiatives

Objective

To empower students to lead and carry out their own sustainability projects, fostering innovation and responsibility while reinforcing circular economy concepts.

Description

Create opportunities for students to develop and manage projects that address the challenges of the circular economy, such as designing environmentally friendly tourism itineraries, organizing sustainability awareness campaigns, or implementing waste reduction initiatives on campus. Institutions can support these efforts by providing access to funding, faculty mentoring and platforms to showcase their work.

Benefits

- **Promotes a sense of ownership and leadership among students.**
- **Generates creative, student-driven solutions to sustainability challenges.**
- **Enhances the learning experience by putting theory into practice.**

Key Considerations

- Projects should be aligned with the curriculum and have clear objectives and measurable outcomes.
- In order for a project to be successful, it is essential to provide it with adequate support and resources.

Resources

- Youth Climate Leaders: Connects young people with climate-related projects and provides mentorship. (https://www.redeycl.org/)

- The Pollination Project: Offers daily seed grants for social change and sustainability initiatives. (https://thepollinationproject.org/)

- Ashoka: Supports young changemakers and social entrepreneurs through funding and resources. (https://www.ashoka.org/es-es)

GREENHOUSE
From The Pollination Project

5.8. Evaluate and Adapt Training Programs Regularly

Objective

To continuously evaluate and improve training programs to ensure that they remain relevant and effective, incorporating feedback from students, educators and industry partners.

Description

Develop a feedback system to collect the opinions of all parties involved in the training process. Use surveys, focus groups and performance data to evaluate the impact of the curriculum and teaching methods. Based on the results, update content and teaching methods to reflect the latest developments in the circular economy and industry needs. This approach helps maintain program alignment with evolving sustainability standards.

Benefits

- **Keeps training programs up to date and in line with industry practices.**

- **Encourages continuous improvement, increasing the overall quality of education.**

- **Establishes stronger connections between education and labor market needs.**

Key Considerations

- Requires a structured process of collecting and analyzing feedback.

- Updating curriculum and methods can be resource intensive.

Resources

- *SurveyMonkey: A user-friendly tool for creating and distributing surveys to gather feedback.*

  (https://www.surveymonkey.com/)

- *Eduflow: A learning management system designed for creating interactive and adaptable training programs.* (https://www.eduflow.com/)

- *UN SDG Academy: Offers a variety of resources on sustainable development and can inspire updates to educational content.* (https://sdgacademy.org/)

6. ANNEX

6.1 Action Plan for Tourist Organizations. How to promote Circular Economy

The transition to a circular economy is essential for the long-term sustainability of the tourism industry, which is highly dependent on natural resources and vulnerable to environmental degradation. Tourist organizations play a pivotal role in this transformation by adopting and promoting circular practices that minimize waste, optimize resource efficiency, and foster sustainable consumption patterns among visitors and stakeholders.

A well-structured action plan is crucial for guiding tourist organizations in implementing circular economy principles. This involves strategies such as sustainable procurement, waste management, energy and water conservation, eco-friendly infrastructure, and responsible tourism promotion. Additionally, collaboration with local communities, policymakers, and industry stakeholders is essential to creating a supportive ecosystem for circular initiatives.

The separately presented model plan provides a comprehensive action plan outlining key measures that tourist organizations can take to promote circular economy practices effectively. By integrating circularity into their operations and marketing strategies, these organizations can enhance their environmental responsibility, strengthen their competitiveness, and contribute to the broader goals of sustainable tourism development.

6.2. Action Plan for VET Institutions. How to promote Circular Economy

The transition towards a circular economy is a key objective in achieving sustainable development, requiring a shift from traditional linear economic models to resource-efficient and regenerative systems. Vocational Education and Training (VET) institutions play a crucial role in this transformation by equipping future professionals with the skills and competencies necessary to implement circular economy principles across various industries, including tourism and its related sectors.

Integrating circular economy concepts into VET curricula involves more than just technical training; it requires fostering a mindset that prioritizes sustainability, innovation, and resource optimization. This can be achieved through interdisciplinary learning approaches, collaboration with industry stakeholders, hands-on training, and the incorporation of digital tools that support circular business models. Furthermore, VET institutions must lead by example, implementing circular practices within their own operations to serve as a model for students and industry partners.

The model plan, presented separately, outlines a structured action plan for VET institutions to effectively promote the circular economy in education and training. By adopting these measures, VET institutions can enhance the employability of graduates, support businesses in their sustainability transition, and contribute to the broader objective of environmental and economic resilience.

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ACTION PLAN FOR TOURIST ORGANIZATIONS

HOW TO PROMOTE CIRCULAR ECONOMY

Introduction

This Action Plan serves as a comprehensive model designed specifically for tourist organizations. It aims to support strategic planning, implementation, and evaluation of actions to adopt circular economy principles across various operational areas. The plan is structured to be adaptable and aligned with the unique circumstances of each organization. It provides clear examples and practical guidance to promote sustainability and circularity in the tourism sector.

GOAL 1

Integrate Circular Economy Principles into Core Operations

ADVANCE Circular

Goal 1

Action 1: Conduct Waste Audits and Implement Reduction Programs

Responsible
Sustainability Unit/Operations Team

Priority Level
High

Expected Outcome
Reduction in waste sent to landfills by 30% within one year.

Timeframe
6 months (January-June)

Resources
Audit templates, training sessions for staff, and partnerships with recycling facilities.

Status
Completed

Notes
Audit templates, training sessions for staff, and partnerships with recycling facilities.

ADVANCE Circular

Goal 1

Action 2: Optimize Resource Efficiency

Responsible
Resource Management Team

Priority Level
High

Expected Outcome
Implementation of water-saving and energy-efficient technologies in all facilities.

Timeframe
8 months
(February-September)

Resources
Smart meters, low-flow fixtures, and renewable energy installations.

Status
Completed

Notes
Collaborate with local green technology providers to enhance implementation.

ADVANCE Circular

Goal 1

Action 3: Develop Staff Training on Circular Practices

Responsible
Human Resources/Sustainability Teams

Priority Level
Medium

Expected Outcome
100% of staff trained on circular economy principles.

Timeframe
4 months
(March-June)

Resources
External trainers, interactive workshops, and e-learning modules.

Status
Completed

Notes
Focus on real-world applications such as sustainable procurement and waste management.

GOAL 2

Promote Sustainable Partnerships and Supply Chains

Goal 2

Action 1: Establish Partnerships with Local Producers

Responsible

Procurement Team

Priority Level

High

Expected Outcome

Partnerships with at least 10 local suppliers offering seasonal and sustainable products.

Timeframe

6 months
(April-September)

Resources

Local producer directories and procurement policy updates.

Status

In progress

Notes

Ensure transparency and fair pricing agreements.

Goal 2

Action 2: Collaborate on Circular Projects with Industry Stakeholders

Responsible
Business Development Team

Priority Level
Medium

Expected Outcome
At least three joint initiatives promoting circular tourism practices.

Timeframe
1 year (March-February)

Resources
Networking platforms, project funding, and stakeholder engagement tools.

Status
In progress

Notes
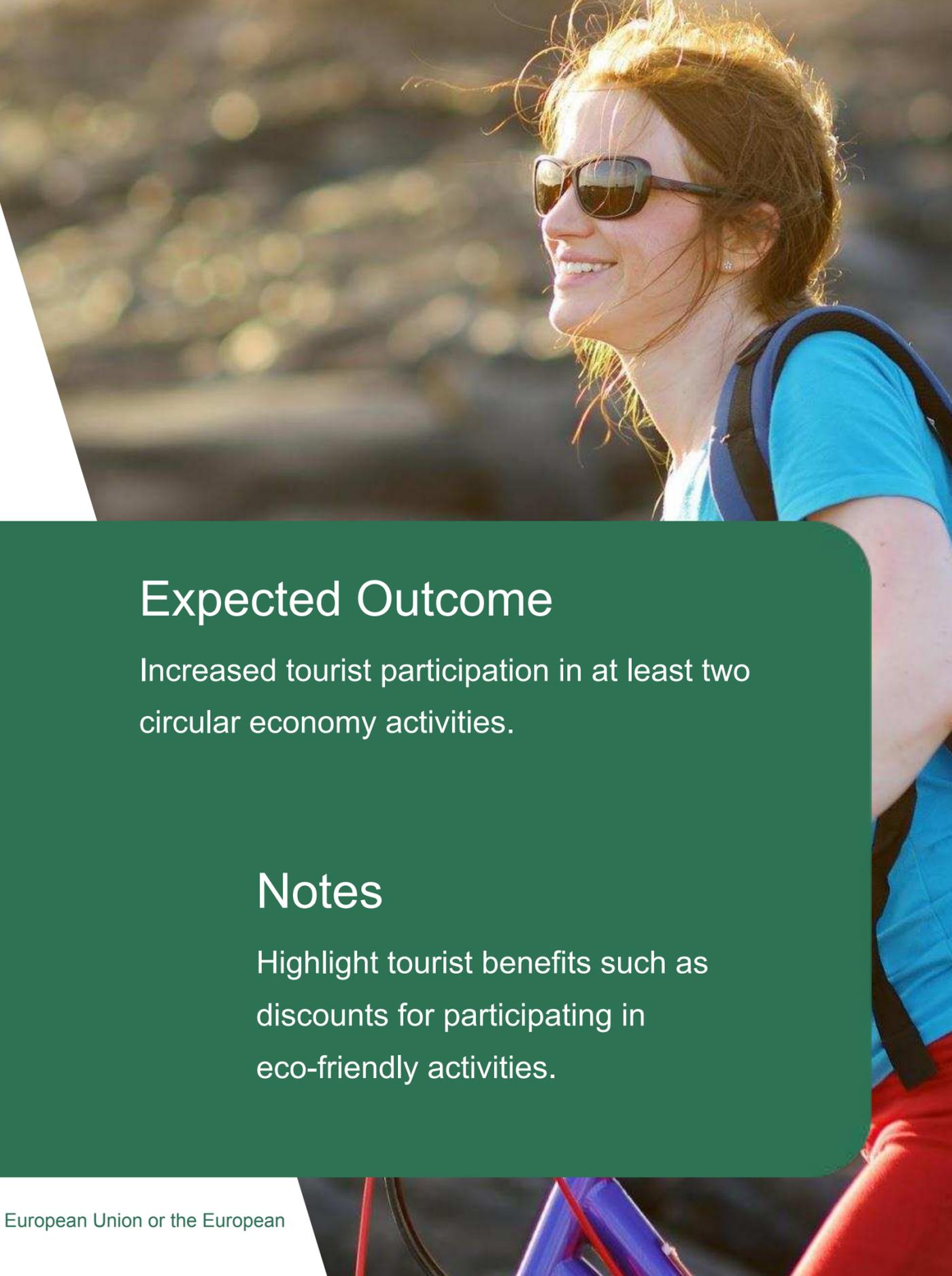Include initiatives such as zero-waste festivals or eco-tourism packages.

ADVANCE Circular

Goal 2

Action 3: Engage Tourists in Circular Initiatives

ADVANCE Circular

Responsible

Marketing and Experience Teams

Priority Level

Medium

Expected Outcome

Increased tourist participation in at least two circular economy activities.

Timeframe

6 months (July-December)

Resources

Incentive programs, interactive educational content, and marketing campaigns.

Status

In progress

Notes

Highlight tourist benefits such as discounts for participating in eco-friendly activities.

GOAL 3

Measure, Report, and Improve Sustainability Performance

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Goal 3

Action 1: Develop Key Sustainability Metrics

Responsible
Sustainability Analytics Team

Priority Level
High

Expected Outcome
Establishment of baseline data and annual targets for resource efficiency and waste reduction.

Timeframe
4 months (January-April)

Resources
Sustainability dashboards and data collection tools.

Status
in progress

Notes
Metrics should align with global reporting frameworks like GRI or SDGs.

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Goal 3

Action 2: Publish Annual Sustainability Reports

Responsible
Team 1

Priority Level
Medium

Expected Outcome
Transparent reporting of achievements and areas for improvement.

Timeframe
Annually (Ongoing)

Resources
Report templates, design software, and stakeholder feedback mechanisms.

Status
In progress

Notes
Emphasize success stories and plans for future initiatives.

Goal 3

Action 3: Continuously Review and Adapt Practices

Responsible
Management Team

Priority Level
High

Expected Outcome
Periodic updates to the Action Plan based on performance reviews and stakeholder input.

Timeframe
Every 6 months Ongoing

Resources
Internal review meetings, feedback surveys, and industry benchmarking.

Status
In progress

Resources
Ensure adaptability to emerging trends and technologies.

Conclusions

This Action Plan provides a structured pathway for tourist organizations to integrate circular economy principles into their operations. By focusing on waste reduction, sustainable partnerships, and continuous improvement, the plan fosters long-term environmental, economic, and social benefits. Its adaptability ensures relevance across diverse organizational contexts, empowering the tourism sector to lead in sustainability and circular innovation.

ACTION PLAN
FOR VET INSTITUTIONS

HOW TO PROMOTE
CIRCULAR ECONOMY

Introduction

This Action Plan serves as a comprehensive model designed specifically for VET institutions connected to the tourism sector. It aims to support the strategic planning, implementation, and evaluation of actions for adopting circularity across various areas and domains within an organization. The plan is structured to be adaptable and grounded in the unique and specific circumstances of each individual VET institution. The elements provided in this Action Plan are intended to serve an illustrative and explanatory purpose, offering clear examples to guide institutions in their efforts.

Co-funded by the European Union

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GOAL 1

To increase the readiness of staff and students to adopt circular practices in the organization and in everyday life

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Goal 1

Action 1: Design project-based learning experiences in which teachers and students work together on real-world sustainability challenges

Responsible
Team 3

Priority Level
High

Expected Outcome
At least 5 projects developed - real contexts, for the transfer of theory into practice in circularity

Timeframe
7 months (January-July)

Resources
Specific challenges identified to be solved; mixed teams of teachers and students; time allocated for research, project design and implementation

Status
Completed

Notes
For instance: developing zero-waste tourism initiatives, designing green accommodations

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Goal 1

Action 2: Organizing of at least 3 training programs for VET school teachers and instructors focused on Circular Economy principles and specific practices

Responsible
Team 1

Priority Level
High

Expected Outcome
At least 12 trained VET school teachers and instructors

Timeframe
6 months (February-July)

Resources
Training provider(s) in CE; financial resources to pay for the 3 programs

Status
In progress

Goal 1

Action 3: Building a portfolio of resources available to teachers and students - case studies, examples, best practices, interactive activities

Responsible
Team 3

Priority Level
Medium

Expected Outcome
1 Portfolio of resources

Timeframe
6 months (September-February)

Resources
A mixed team of 2 teachers and 2 students to collect and analyze portfolio elements; time allocated for the action

Status
Completed

Notes
The portfolio should include materials to help plan lessons, informative videos and more to inspire and raise awareness of circularity and sustainable development

GOAL 2

To integrate the principles of the circular economy into the curriculum and pedagogical practices

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Goal 2

Action 1: Including in the first phase, in at least two subjects in the curricula at least three modules and topics related to circularity

Responsible
Team 1

Priority Level
High

Expected Outcome
three modules and topics related to circularity prepared&included in courses

Timeframe
12 months (September-August)

Resources
A mixed team of 4 teachers to build the modules; time allocated for the action

Status
In progress

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Goal 2

Action 2: Analysis of the best-suited teaching and learning approaches to develop circular economy skills through and in these courses

Responsible
Team 2 correlated
with Team 1

Priority Level
High

Expected Outcome
Completed analysis -
concrete proposals for
pedagogical approaches to
be used in the institution

Timeframe
3 months
(September-November)

Resources
A mixed team of 2
teachers; time allocated
for the action

Status
In progress

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Goal 2

Action 3: Initiating dialog and co-learning between tourism industry and VET institution to enhance collaborative capabilities

Responsible
Team 3

Priority Level
Medium

Expected Outcome
At least 4 partnerships concluded

Timeframe
6 months
(September-February)

Resources
solid contacts and relationships with firms and companies in the sector; draft partnership agreements

Status
completed

Notes
In this way, the institution's network in the tourism and VET sector is strengthened, promoting long-term collaboration.

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GOAL 3

to integrate more strategic use of ICTs and open educational CE resources, in two directions:
a) in the training of teachers and instructors;
b) in the training of learners

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Goal 3

Action 1: Training of at least 10 teachers and instructors in ICT use

Responsible
Team 4

Priority Level
High

Expected Outcome
10 trained teachers, who act as resource persons for their other colleagues

Timeframe
2 months (June-July)

Resources
Training provider(s) in ICT; financial resources to pay for the 3 programs

Status
Completed

Notes
The 10 teachers trained in ITC have the role of ToT, to support colleagues in integrating ICT tools in teaching and assessment activities

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Goal 3

Action 2: Revising course materials and teaching practices to include ICTs and open resources

Responsible
Team 1

Priority Level
High

Expected Outcome
1 concrete, measurable proposal

Timeframe
4 months (September-December)

Resources
A mixed team of 2 teachers; 1 external expert specialized in ICT in education; financial resources for this experttime allocated for the action

Status
In progress

Notes
1 specialized external expert is used to develop a well-founded and easy-to-apply proposal in the VET institution

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Goal 3

Action 3: Increasing the use of learning platforms, social media or virtual classrooms in teaching and learning circularity

Responsible
Team 1

Priority Level
High

Expected Outcome
The use of at least 2 online platforms; monthly running of at least 2 virtual classes

Timeframe
12 months
(September-August)

Resources
Online platforms; lesson plans and didactic materials for virtual classes; infrastructure and equipment

Status
In progress

Conclusions

The Action Plan provides a well-rounded approach to embedding circular economy principles within VET institutions by combining practical learning experiences, curricular integration, and digital resource utilization. The structured and strategic alignment with real-world sustainability challenges ensures that both educators and students are equipped to drive circularity in the tourism sector. As the initiatives progress, continuous monitoring and collaboration with industry stakeholders will be crucial to achieving long-term impact and fostering a culture of sustainability within education and the broader community.

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