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Environmental protection methods in sport events

Green sport – Erasmus+ sport 2024 project

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What is environmental protection

- ▶ **Environmental protection**, or **environment protection**, refers to the taking of measures to protecting the natural environment, prevent pollution and maintain ecological balance.
 - ▶ Objectives include the conservation of the existing natural environment and natural resources and, when possible, repair of damage and reversal of harmful trends. (https://en.wikipedia.org/wiki/Environmental_protection)
 - ▶ Main areas of environmental protection: water, air, waste management, energy, biodiversity
 - ▶ Environmental sustainability focuses on preserving the environment for future generations and improving the quality of life.
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Impact of sport activities

- ▶ Sport activities, while promoting health and physical fitness, can also significantly **impact the environment** through various activities like travel, energy consumption, waste generation, and land use changes. These impacts contribute to climate change, pollution, and habitat loss.
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Negative Impacts of Sport on the Environment



Carbon Emissions:

Major sports events, including those involving international travel, generate substantial carbon emissions from transportation, energy usage, and waste generation.



Waste Generation:

Sports events and related activities produce large amounts of waste, including packaging, food waste, and promotional materials, which can end up in landfills and contribute to methane emissions.



Water Consumption:

Sports fields, golf courses, and other facilities require significant amounts of water for irrigation and other purposes, potentially straining local water resources.



Negative Impacts of Sport on the Environment

- ▶ **Energy Consumption:**

Facilities like stadiums and arenas require large amounts of energy for lighting, heating, cooling, and powering equipment, contributing to climate change.

- ▶ **Deforestation and Land Use Change:**

Construction of sports facilities can lead to deforestation, habitat destruction, and loss of biodiversity.

- ▶ **Pollution:**

Activities like skiing and snowmobiling can disrupt fragile ecosystems and contribute to air pollution



Examples of Environmental Impacts of Sport events

- ▶ Major sporting events, such as the Olympics or World Cup, can **generate significant amounts of waste, energy use, and carbon emissions**. As an illustration, the 2014 World Cup held in Brazil resulted in emissions of over 2.7 million tonnes of carbon dioxide equivalent, primarily from transportation and energy consumption. Such events can also lead to habitat destruction, loss of biodiversity, and pollution.
- ▶ The 2018 **Russia World Cup** released 2.16 million tons of carbon dioxide
- ▶ The 2006 **Super Bowl in Detroit** produced 500 tons of the greenhouse gas carbon dioxide from transportation and utility usage
- ▶ **A typical NFL game**, for instance, produces approximately **35 tons of waste**. Air travel for both players and spectators generates a significant amount of greenhouse gas, especially for major international events



Policy on sport sustainability

- ▶ The EU actively promotes sustainable practices within the sports sector, aligning with the **European Green Deal** and other **sustainability initiatives**. This includes encouraging Member States to develop national strategies for sustainable sport, and urging sports organizations to establish and monitor their carbon footprints. Key documents and policies include the **EU Work Plan for Sport**, which emphasizes socio-economic and environmental dimensions, and the European Commission's "**Sport Sector Playbook**,,.



Policy on sport sustainability - documents

- ▶ **EU Work Plan for Sport:**

This document, updated periodically, includes sustainability as a key priority, focusing on promoting environmentally friendly sports practices and facilities.

- ▶ **European Green Deal:**

The EU's ambitious plan to achieve carbon neutrality by 2050, which requires all sectors, including sports, to adopt sustainable practices.

- ▶ **"Sport Sector Playbook":**

A comprehensive guide for sports organizations, federations, and stakeholders to adopt eco-friendly practices and reduce their carbon footprint.

- ▶ **National Strategies for Sustainable Sport:**

The EU encourages Member States to develop national strategies for sustainable sport, aligning with the European Green Deal and promoting sustainable practices.



Policy on sport sustainability – Key Themes and Priorities

- ▶ **Green Sport:**

Promoting sustainable practices in sports facilities, events, and operations, reducing the sector's environmental footprint.

- ▶ **Education and Awareness:**

Educating the sports community about sustainability and encouraging environmentally responsible behavior.

- ▶ **Infrastructure:**

Investing in sustainable and accessible sports infrastructure.

- ▶ **Carbon Footprint Reduction:**

Encouraging sports organizations to establish and monitor their carbon footprints, and to implement measures to reduce them.

- ▶ **Innovation and Digitization:**

Utilizing technological advancements to improve the sustainability of sport



Sport and environmental awareness

- ▶ Sport is a powerful tool that can raise awareness, promote sustainable practices, **and create positive impacts** on the environment.
- ▶ Organisations working in sports for development have a **vital role in imparting knowledge and skills to young people, athletes, and communities on environmental education and sustainability in their programs.** For example, programs that incorporate eco-friendly practices, such as using renewable energy sources, recycling, and reducing carbon emissions, can create a long-lasting positive impact on the environment.
- ▶ **Sport can also be an effective tool** in combating threats to the environment. A healthy lifestyle and physical activity are encouraged through sports. It can **promote sustainable modes of transportation**, such as cycling or walking, which can reduce carbon emissions and improve air quality. Furthermore, sports can **inspire individuals and communities** to take action on environmental issues, through volunteering, activism, and community engagement.



Sport and environmental awareness

- ▶ To mitigate negative impacts, sports organisations and event planners can **adopt sustainable practices**, such as using renewable energy, reducing waste, and promoting eco-friendly transportation. Athlete voices can also be utilised to **raise awareness and advocate for environmental causes**. Athletes can use their platform to draw attention to environmental issues, promote sustainable practices, and engage with fans and communities.
- ▶ Challenges such as limited funding and resources, lack of awareness and education, and limited stakeholder engagement must be overcome. **Collaboration with relevant stakeholders** such as civil societies, the private sector, and to a larger extent the governments can create innovative solutions, leverage resources, and share best practices.



Sport and environmental awareness

- ▶ Access to relevant data, tools, and networks is essential for evidence-based programming, monitoring and evaluation, and knowledge sharing. **Innovative solutions** such as technology, gamification, and social media can be utilised to engage audiences and **promote sustainable behaviors**.
- ▶ Sports can make a **significant contribution to environmental sustainability**, but it requires the collective effort of all stakeholders. Sports organisations, athletes, governments, and civil society must work together to adopt sustainable practices, leverage the power of sports, and create a sustainable future for all.

(taken from <https://www.sportanddev.org/latest/news/advancing-environmental-sustainability-through-sports>)




Main areas of environmental protection

- ▶ Water
 - ▶ Air
 - ▶ Energy
 - ▶ Waste management
 - ▶ Biodiversity
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Impact of mass events on the environment

- ▶ **Carbon Emissions:** Travel (especially air travel) to and from events, energy consumption in stadiums and facilities, and waste generation all contribute to significant carbon footprints. For example, the 2020 Tokyo Olympics were estimated to have emitted 2.3 million metric tons of CO₂, primarily from transportation.
 - ▶ **Resource Consumption:** Events require substantial water and energy for operations, including irrigation, heating, and cooling, which can strain local resources, especially in areas with water scarcity.
 - ▶ **Waste Generation:** Mass events generate a large amount of waste, including food packaging, promotional materials, and other discarded items, which can end up in landfills and contribute to greenhouse gas emissions.
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PART II



METHODS FOR REDUCING THE ENVIRONMENTAL IMPACT AT SPORTING EVENTS



Reducing the impact on the environment

- ▶ **Sustainable Transportation:** Promoting public transportation and cycling, encouraging eco-friendly travel options, and developing efficient infrastructure can help reduce the carbon footprint of events.
 - ▶ **Energy Efficiency:** Utilizing renewable energy sources, implementing energy-efficient building designs, and optimizing energy consumption in stadiums and facilities can reduce overall emissions.
 - ▶ **Waste Reduction and Management:** Implementing comprehensive waste management strategies, including recycling, composting, and reducing packaging, can minimize the environmental impact of events.
 - ▶ **Sustainable Infrastructure:** Designing and constructing facilities with environmental sustainability in mind, utilizing recycled materials, and minimizing land use can reduce the negative impacts of construction.
 - ▶ **Water Management:** Implementing water-saving technologies, promoting water conservation measures, and ensuring responsible water use can help reduce strain on local water resources.
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WATER MANAGEMENT




- ▶ Sustainable water protection involves **minimizing water usage** through efficient practices and safeguarding water quality. This includes reducing waste, using recycled water, and protecting ecosystems.
- ▶ Water conservation is a critical component of sustainable water management. This strategy involves reducing water use through the implementation of water-efficient practices, such as **using low-flow fixtures, installing rainwater harvesting systems, and using drip irrigation systems.**
- ▶ Sustainable water practices at sporting events involve minimizing waste, conserving water resources, and promoting responsible hydration habits. This includes promoting **reusable water bottles**, implementing **hydration stations**, and using **water-efficient fixtures** in event facilities.



Methods for Sustainable Water Protection 1


➤ **Minimizing Single-Use Plastics and Promoting Reusable Hydration**

- **Ban single-use plastics:** Many events are moving away from providing disposable plastic bottles, instead encouraging attendees to bring their own reusable bottles.
 - **Implement refill stations:** Providing access to water refill stations allows attendees to conveniently fill their reusable bottles throughout the event
 - **Promote reusable cups:** Using reusable cups for beverages can also reduce waste significantly.
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Methods for Sustainable Water Protection 2

► Conserving Water Resources


- **Water-efficient fixtures:** Using low-flow toilets, faucets, and showers in event facilities can significantly reduce water consumption
 - **Smart irrigation systems:** For sports fields, using smart irrigation systems that monitor soil moisture and water needs can optimize watering practices and prevent overwatering.
 - **Zoning for sun and shade:** In sports fields, separating sunny and shady areas into different irrigation zones allows for more precise watering, preventing overwatering of shaded areas.
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Methods for Sustainable Water Protection 3

▶ Promoting Sustainable Hydration Habits

- **Education and awareness:** Organizers can educate attendees about the importance of responsible hydration and the environmental impact of single-use plastics.
- **Water availability:** Ensuring ample access to clean and safe drinking water throughout the event can encourage attendees to hydrate responsibly.
- **Local sourcing:** Sourcing drinks and food locally can reduce the environmental impact of transportation and support local businesses



AIR MANAGEMENT – CARBON EMISSIONS

- ▶ Air management in mass sporting events involves various strategies to **mitigate the impact of increased pollution** and **ensure a safe environment** for attendees, athletes, and officials. These include monitoring air quality, encouraging low-emission transportation, implementing energy management, and reducing vehicle traffic.
 - ▶ To reduce the **carbon footprint** of mass sporting events, organizers should focus on sustainable transportation, renewable energy, waste management, and reducing energy consumption within the venue. This includes promoting active travel, using renewable energy sources, implementing comprehensive recycling programs, and ensuring venues are energy-efficient.
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Methods for Sustainable Air Protection 1

➤ Sustainable Transportation

- **Encourage active travel:** Promote walking, cycling, and public transportation for attendees.
- **Provide shuttle services:** Offer efficient and low-carbon transportation options between venues and transportation hubs.
- **Partner with public transport:** Integrate the event with local public transportation systems to minimize individual car usage.
- **Reduce emissions from team travel:** Encourage teams to travel by train or buses instead of flying.



Methods for Sustainable Air Protection 2



Renewable Energy:

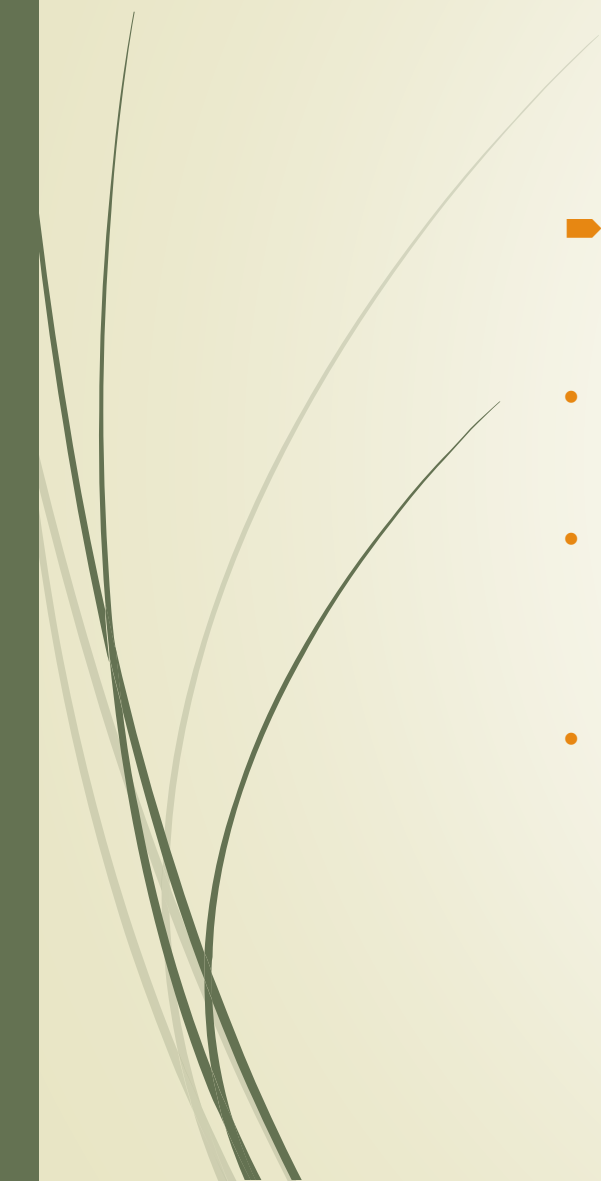
- **Utilize renewable sources:** Power the venue with solar, wind, or other renewable energy sources.
- **Install solar panels:** Generate electricity directly on-site, reducing reliance on fossil fuel-based power grids.
- **Consider energy-efficient infrastructure:** Design venues with energy-saving measures, such as smart lighting and efficient heating/cooling systems



Methods for Sustainable Air Protection 3



Energy Efficiency and Venue Design:

- **Optimize venue design:** Consider energy efficiency, lighting, and ventilation in the design of new venues or renovations.
 - **Promote energy-saving behaviors:** Encourage attendees to conserve energy by turning off lights, adjusting temperatures, and using energy-efficient appliances.
 - **Use smart technologies:** Implement smart lighting systems and energy management tools to optimize energy consumption
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Methods for Sustainable Air Protection 4

► Collaboration and Awareness

- **Involve all stakeholders:** Engage with sponsors, organizers, athletes, and attendees to foster a culture of sustainability.
- **Promote the event as a sustainable initiative:** Highlight the event's commitment to sustainability and educate attendees about the importance of reducing carbon emissions.
- **Partner with local communities:** Engage with local businesses and organizations to build a shared commitment to sustainability.
- **Use the platform to raise awareness:** Athletes and sports stars can use their platform to promote climate action and encourage others to reduce their carbon footprint.
- **Carbon offsetting:** Explore carbon offsetting programs to mitigate the carbon footprint of the event.



WASTE MANAGEMENT



- ▶ To reduce the environmental impact of mass sporting events, **waste management is crucial**. Effective strategies include implementing a waste hierarchy, promoting reuse and recycling, and utilizing innovative packaging solutions. Sports organizations should also engage stakeholders, monitor their impact, and continuously improve their waste management practices.
- ▶ **Sustainable waste management** in mass sporting events involves minimizing waste generation, maximizing recycling and composting, and promoting responsible disposal. This includes using **biodegradable or compostable materials** for food packaging and cups, providing **ample recycling bins** with clear labeling, encouraging the **use of reusable water bottles** and containers, and offering composting stations.



Waste Management Principles for Sustainability


- ▶ **Waste Hierarchy:** Prioritize reducing waste generation, then reusing materials, recycling them, and finally, if necessary, disposing of waste responsibly.
- ▶ **Reuse and Recycling:** Encourage the reuse of items like glass bottles and reusable tableware. Implement efficient recycling programs for various materials, including packaging and food waste.
- ▶ **Innovative Packaging:** Adopt innovative packaging solutions that are recyclable, compostable, or reusable. This can include biodegradable food containers, recycled bottles, and reusable merchandise packaging



Sustainable Waste Management Methods 1



Waste Reduction

- **Use biodegradable/compostable materials:** Opt for food packaging and cups made from sustainable materials that can be composted.
 - **Reduce single-use items:** Encourage the use of reusable water bottles and containers by providing refill stations and promoting the use of reusable cups.
 - **Digitalize:** Replace physical tickets and programs with digital alternatives.
 - **Minimize waste from vendors:** Work with food vendors to reduce packaging and waste generation.
 - **Supply chain sustainability:** Ensure that products used at the event are produced in a sustainable manner.
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Sustainable Waste Management Methods 2

► Recycling and Composting

- **Clear waste sorting stations:** Provide clearly marked bins for different waste types (recyclables, compostables, non-recyclables) to make it easy for attendees to dispose of waste properly.
- **On-site composting:** Implement composting programs for organic waste generated during food preparation and consumption.
- **Strategic bin placement:** Position bins strategically at key points throughout the venue and along race courses to maximize participation.
- **Hand-sorting:** Implement hand-sorting to recover any mis-sorted materials.



Sustainable Waste Management Methods 3

▶ Promoting Responsible Disposal

- **Clear signage and communication:** Educate participants and spectators on proper waste disposal methods and the importance of recycling and composting.
- **Involve volunteers:** Engage volunteers to assist with waste sorting and education.
- **Partner with local waste management services:** Collaborate with local waste management services to ensure proper processing of waste materials.
- **Track waste:** Monitor waste generation and disposal to identify areas for improvement.



Sustainable Waste Management Methods 4



General Principles:

- **Implement comprehensive recycling programs:** Provide clearly marked recycling bins and promote waste reduction through education and awareness
- **Minimize single-use plastics:** Encourage attendees to bring reusable water bottles and use reusable containers for food and beverages.
- **Explore composting and anaerobic digestion:** Manage food waste responsibly and reduce methane emissions from landfills.
- **Use recycled and sustainable materials:** Choose materials for venue construction and event supplies that are environmentally friendly and reusable.



Sustainable Waste Management Methods 5




- ▶ **General Principles:**

- **Food Waste Reduction:** Donating surplus food to those in need, using it for composting or animal feed, and minimizing food waste during event catering are important steps.
- **Sustainable Merchandise:** Offer merchandise made from sustainable materials or with reduced packaging, and encourage fans to reuse or recycle these items.
- **Technology:** Utilize technologies like smart bins, waste sorting systems, and data analytics to improve waste management efficiency and track performance.
- **Circular Economy Principles:** Embrace the principles of the circular economy, which aim to minimize waste and maximize resource use.



FOOD AND BEVERAGES


- ▶ Sustainable practices for food and beverages at sporting events can significantly **reduce environmental impact** and promote a more responsible approach to event catering. These include **minimizing waste, sourcing locally**, offering plant-based options, **using reusable containers**, and implementing recycling programs.



Food and beverages – Sustainable Methods 1

▶ Sourcing Locally and Sustainably


- **Local sourcing:** Choose local vendors and suppliers to reduce transportation emissions and support local businesses. This also ensures freshness and the use of seasonal ingredients.
- **Plant-based options:** Offer a variety of plant-based options to reduce the environmental impact of animal products, which often have a higher carbon footprint.
- **Sustainable certifications:** Seek out suppliers that have sustainable certifications, such as organic, fair trade, or locally sourced labels.
- **Seasonal menus:** Develop menus that feature seasonal ingredients, minimizing the need for long-distance transportation and supporting local farmers.



Food and beverages – Sustainable Methods 2

▶ Reducing Food Waste:

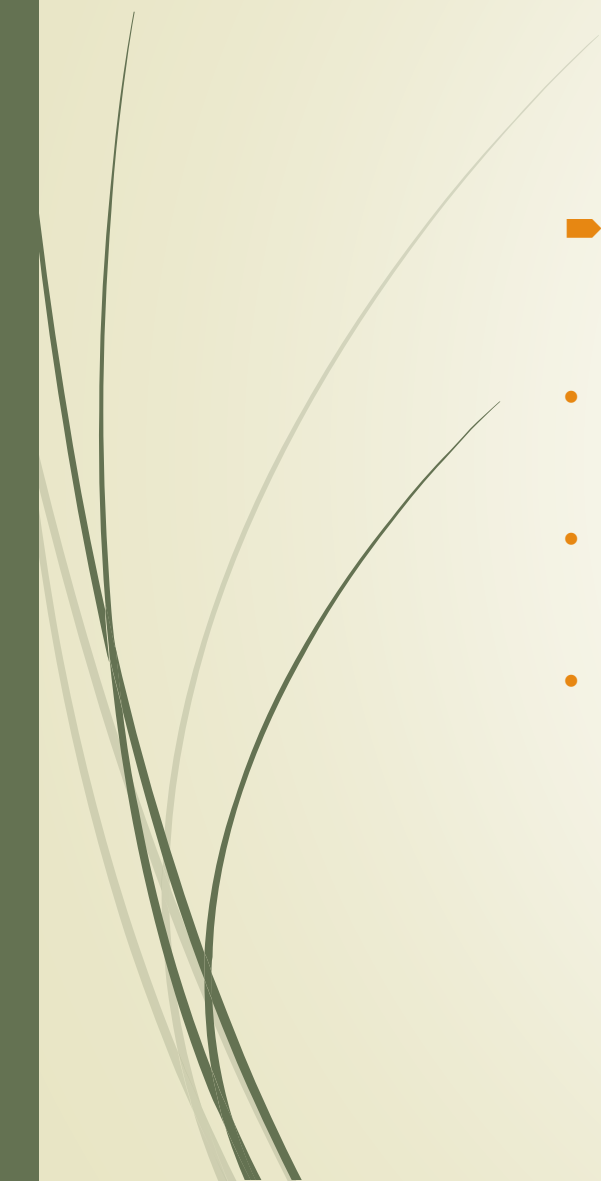
- **Demand-driven catering:** Adjust catering based on accurate attendee numbers and potential food preferences. This helps prevent overproduction and ensures that food is consumed, reducing waste.
- **Proper storage and handling:** Implement proper storage and handling procedures for food and beverages to minimize spoilage and prevent waste.
- **Waste management:** Have adequate waste management systems in place, including composting, recycling, and proper disposal of non-recyclable waste.
- **Reusable containers:** Promote the use of reusable containers for food and beverages to reduce the amount of single-use packaging.
- **Educational campaigns:** Educate attendees about the importance of reducing waste and the benefits of responsible consumption.




Food and beverages – Sustainable Methods 3




Promoting Healthy Eating:

- **Healthy options:** Offer a variety of healthy food and beverage choices, including fruits, vegetables, and whole grains.
 - **Water refill stations:** Provide water refill stations to encourage attendees to bring reusable water bottles and reduce plastic waste.
 - **Educate attendees:** Provide information about the benefits of healthy eating and sustainable food choices.
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Food and beverages – Sustainable Methods 4

- ▶ **Reduce, reuse, recycle:** Implement a comprehensive reduction, reuse, and recycling program for all materials used at the event.
 - ▶ **Ban single-use plastics:** Eliminate single-use plastics where possible, such as straws, cups, and utensils, and replace them with reusable or compostable alternatives.
 - ▶ **Energy conservation:** Implement energy-saving measures, such as using LED lighting and reducing energy consumption in catering operations.
 - ▶ **Water conservation:** Implement water-saving measures, such as using low-flow fixtures and reducing water usage in catering operations.
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Circular economy

- ▶ Circular economy methods in sport focus on **extending the lifespan** of resources and **reducing waste**. This can be achieved through practices like reusing, repairing, and recycling sports equipment, as well as promoting sustainable infrastructure and energy consumption.



Circular economy – Sustainable methods in sport 1



Extending Product Lifespan

- **Secondhand and Rental Markets:** Establish platforms for buying, selling, and renting used sports equipment, allowing for increased access and reducing the need for new purchases.
 - **Repair and Remanufacturing:** Encourage repair of damaged equipment instead of discarding it, and explore remanufacturing processes to refurbish and reuse materials.
 - **Durability and Quality:** Prioritize the design and use of durable and high-quality materials to minimize the frequency of replacement.
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Circular economy – Sustainable methods in sport 2



Circular Business Models

- **Product-as-a-Service:** Shift from selling products to offering services like rental or subscription models, encouraging continuous use and reducing waste.
 - **Sharing Resources:** Collaborate with other organizations to share resources like equipment and facilities, maximizing utilization and reducing duplication.
 - **Symbiotic Ecosystems:** Develop partnerships with other businesses to create circular value chains, where waste from one organization becomes a resource for another
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Circular economy – Sustainable methods in sport 3



Promoting Awareness and Participation

- **Education and Engagement:** Educate athletes, coaches, and fans about the importance of circular economy principles.
 - **Incentives and Rewards:** Offer incentives for participating in circular economy initiatives, such as recycling programs or using second-hand equipment.
 - **Collaboration and Partnerships:** Encourage collaboration between sports organizations, manufacturers, and local communities to promote circular practices.
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HOW TO MAKE YOUR ACTIVITIES MORE ECO-FRIENDLY - resume

- Use digital communication (websites, social media, e-tickets) rather than printed materials (fliers, programs, paper tickets).
- Use electric vehicles for staff, participant, and spectator transportation.
- Maximize public transportation to and from event venues.
- Incorporate eco-friendly cleaning products and practices.
- Use recyclable or compostable food ware and utensils.
- Provide recycling bins next to or in place of trash receptacles.
- Buy locally sourced food and beverages.
- Reuse supplies and equipment.
- Use sustainable materials for products and supplies.
- Use renewable energy to power venues.
- Conserve water and other natural resources.
- Cooperate with vendors and partners that have eco-certificates



Environmental sport certificates and programs

- ▶ There are some initiatives that provide certification labels for environmentally friendly sport practices and organizations:
 - **Friend of the Earth:** Offers certification for sustainable sports
 - **Green Key:** Certifies establishments with sustainability practices
 - **Eco Sports:** educational and certification program for sport staff and clubs
 - **UNFCC:** United Nations Framework Convention on Climate Change – educational programs and certifications
 - **CNSCN:** Carbon-neutral sport clubs network
 - **Dekra** Sustainable Sports Certificate
 - **LEED:** certification for green building design
 - **Green Business Bureau:** Program of green seal approval for organizations in the program




Sponsors and corporate responsibility

- ▶ In the spirit of Green Sport, clubs can emphasise their **green practices** and look for sponsorships among organizations that pride themselves in their environmental responsibility and **support environmentally-friendly activities and practices**
- ▶ Aligning your clubs with **initiatives of existing corporations and organizations**, promoting the initiatives in your social communications



Community work and social media

- ▶ Clubs are invited to work towards **raising awareness on the importance of environmental protection** and eco-friendly activities through their community communications, on their websites and in their social media.
 - ▶ **Daily work** with young athletes can also include a part on environment and sustainability.
 - ▶ As everywhere, it is best to **lead by example!**
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