CIRCULAR ROADMAP FOR GRASSROOTS GOLF CLUBS STRATEGIC IMPLEMENTATION REPORT

GOLF 4 CIRCULARITY

Golf 4 Circularity

Friends of Bulgarian Golf

CIRCULAR ECONOMY RESEARCH CENTER

École des Ponts business school

GOLF AUSTRIA

Co-funded by the European Union

Project: 101133954 — GOLF 4 CIRCULARITY ERASMUS-SPORT-2023

Document Information

Project Title - Golf 4 Circularity

Project number - 101133954 GOLF 4 CIRCULARITY ERASMUS-SPORT-2023

General introduction

The GOLF 4 CIRCULARITY project (Project: 101133954 — Erasmus+ Sport 2023) is a European initiative co-funded by the Erasmus+ Programme of the European Union. It brings together seven partner organizations across sport, education, and research to develop, pilot, and disseminate an innovative, sustainable sports-educational model for golf.
The project's core mission is to embed the principles of sustainability, inclusion, and circular economy into grassroots and youth golf. Through a combination of theoretical education, practical application, and digital innovation, the program equips coaches, club managers, and young players (ages 14–19) with the knowledge, skills, and mindset to lead the sport towards a greener and more inclusive future.

Circular Roadmap for Grassroots Golf Clubs Strategic Implementation Report

Co-funded by the European Union

1.Introduction & context

Grassroots golf clubs have a unique opportunity to pioneer sustainability by integrating circular economy principles into sports training and event organization. GOLF 4 CIRCULARITY - an Erasmus+ initiative - was established to infuse sustainability and circular economy practices into grassroots golf, with a focus on educating young golfers. In essence, sustainable golf means operating a club in an environmentally, socially, and economically responsible way: promoting responsible land use, reducing ecological footprints, and creating value for local communities. This Circular Roadmap provides a step-by-step guide for clubs to implement the GOLF 4 CIRCULARITY model in their activities and strategies. It is structured in four key phases - Planning, Operational readiness, Implementation, and Legacy - and uses the United Nations Sustainable Development Goals (SDGs) as a guiding framework throughout. By following this roadmap, clubs can contribute to global goals such as Quality education (SDG 4), Sustainable communities (SDG 11), Responsible consumption & production (SDG 12), Climate action (SDG 13), and more, all while enhancing the sustainability, inclusivity, and youth engagement in the sport.

Why circular economy in golf? A circular economy approach in sports aims to design out waste, keep resources in use, and regenerate natural systems. For golf clubs, this means everything from using recycled or renewable materials in facilities, to rethinking event logistics to minimize waste, to educating players about environmental stewardship. Projects like GOLF 4 CIRCULARITY demonstrate that combining sports with education can promote sustainable practices and skill development in young athletes. By aligning with circular economy principles, clubs not only reduce their environmental footprint but also create new opportunities for community engagement and innovation in training. For example, one GOLF 4 CIRCULARITY initiative introduced a mobile eco-golf facility powered by solar energy and built with recycled materials, offering a hands-on platform to promote environmental awareness and inclusivity in sport. This kind of innovation shows that golf can be a vehicle for teaching eco-conscious behavior and inspiring the next generation of golfers to "play with purpose".

Using the SDGs as a framework: The UN SDGs provide a holistic lens to plan and evaluate club initiatives. In this report, each phase of the roadmap highlights how actions align with relevant SDGs. For instance, integrating sustainability education into youth training supports SDG 4: Quality

Co-funded by the European Union

Education, promoting gender equality and inclusive participation supports SDG 5 and SDG 10, improving resource efficiency in club operations advances SDG 12: Responsible Consumption & Production, and climate-focused actions (like reducing carbon emissions from travel or energy use) contribute to SDG 13: Climate Action.

By mapping club efforts to these global goals, grassroots clubs can connect local actions to a broader purpose, motivating stakeholders and attracting support. Furthermore, governments and sports federations increasingly encourage SDG alignment; for example, in Ireland a new Sustainable Sports Programme provides a toolkit to help clubs act on biodiversity, water, energy, and travel - areas critical to both club operations and SDGs. This roadmap will similarly emphasize practical actions in those areas, ensuring that even small clubs can contribute to sustainability in meaningful ways.
Following is a structured guide through the four phases of implementation. Each phase includes key objectives, actionable steps (with an emphasis on sustainability, inclusivity, and youth engagement), and suggestions for practical tools or resources (drawn from initiatives like the Eco Golf Design Lab and the Circular Golf Minds educational program). Implementation tables and checklists are provided where appropriate to help clubs organize their actions. By adopting this Circular Roadmap, grassroots golf clubs can transform their practices and legacy – making golf not only a game enjoyed today, but also a platform for positive environmental and social impact for the future.

Phase 1: Planning the Circular Roadmap
Objective: Establish a strong foundation and vision for circular economy integration. In this phase, the club assesses its current situation, engages stakeholders (including youth), and drafts a strategic plan (the "Circular Roadmap") aligned with relevant SDGs. Careful planning ensures that subsequent actions are targeted, inclusive, and achievable.

1.1 Form a green team and define vision
Begin by securing leadership commitment and forming a dedicated sustainability working group (a "Green Team"). This team should include club managers, coaches, facility staff, players, and importantly some youth representatives or junior members. Involving young people from the start is vital - it brings fresh ideas and aligns with GOLF 4 CIRCULARITY's focus on youth innovation. Together, the Green Team will define a vision and goals for the club's circular economy journey. This vision should reflect the club's context (size, resources, community) and tie into SDGs. For example, a club might set a vision to "transform our club into a zero-waste, energy-efficient, and inclusively accessible golf community by 2030, contributing to SDG 12 and SDG 13."

Co-funded by the European Union

1.2 Baseline assessment (current state analysis)

Perform a thorough baseline assessment of the club's current operations and events from a sustainability perspective. This includes:

- Resource use audit: Measure or estimate the club's usage of energy (electricity, fuel),

water, and materials. Identify major sources of waste (e.g. single-use plastics, food waste, broken golf equipment) and carbon emissions (e.g. lawn mowers, clubhouse heating/cooling, travel to events). This audit aligns with SDG 12 (resource efficiency) and SDG 13 (emissions reduction).

- Course and facilities review: Assess course maintenance practices (water irrigation,

fertilizer and pesticide use, biodiversity on the course) and facility infrastructure (clubhouse, training areas). Note any sustainable features (e.g. solar panels, efficient irrigation) and areas for improvement (e.g. old lighting, lack of recycling bins). Consider biodiversity on the course - are there areas for wildlife habitat or native planting? (This ties to SDG 15: Life on land.)

- Community & stakeholder input: Gather input from members, staff, and community

partners. Survey them about their priorities (e.g. are members interested in recycling programs, carpooling to events, etc.?). Engage local environmental groups or sustainability experts for insights. Early stakeholder engagement builds buy-in (supporting SDG 17: Partnerships).

- Inclusivity check: Review who participates in your club's activities. Are there groups

underrepresented (e.g. girls, kids from certain schools or disadvantaged areas, people with disabilities)? Understanding this baseline helps set goals for inclusive growth (aligning with SDG 5: Gender equality and SDG 10: Reduced inequalities).

Document the findings to identify gaps and opportunities. For example, the audit might reveal the club generates a high volume of plastic bottle waste at tournaments, or that few girls participate in junior training. These findings will directly inform the action plan.

1.3 Identify focus areas and align with SDGs

Using the baseline results, the Green team should pinpoint key focus areas for circular economy integration. Common focus areas and their SDG linkages include: Waste reduction & recycling (SDG 12), Energy efficiency & renewable energy (SDG 7, SDG 13), Water conservation (SDG 6, SDG 15), Biodiversity and course ecology (SDG 15), Sustainable procurement (SDG 12), Inclusive participation (SDG 4, SDG 5, SDG 10), and Education & awareness (SDG 4, SDG 13). Prioritize areas based on impact and feasibility – for instance, a club with an old clubhouse might focus on energy savings, while a club that hosts frequent junior tournaments might prioritize waste-free events and youth education.

Co-funded by the European Union

Each chosen focus area should have a clear goal (quantitative if possible). Examples: “Reduce landfill waste by 50% in 1 year,” “Achieve 100% elimination of single-use plastics at our events,” “Cut irrigation water use by 30% over two years,” “Double the number of girls and disadvantaged youth in our golf clinics next season.” Aligning goals with SDG targets gives them greater legitimacy and context.
The table below illustrates how a club’s focus areas can translate into concrete initiatives aligned with SDGs:

Focus area	Planned initiative (example)	Relevant SDGs	Tools/Resources
Waste reduction	Introduce recycling & composting bins; eliminate single-use plastics at clubhouse and events.	SDG 12 (Responsible consumption) SDG 13 (Climate action)	Municipal recycling guides; Waste audit toolkit; “Green event” checklist.
Energy & emissions	Retrofit clubhouse with LED lighting and efficient appliances; explore installing a small solar panel system. Encourage carpool or shuttle for tournaments.	SDG 7 (Affordable and clean energy) SDG 13 (Climate action)	Energy audit (maybe via utility company); Government incentives for solar; Carpool app for club members.

Co-funded by the European Union

Water & biodiversity	Optimize irrigation (use weather-based controllers, rainwater harvesting); create native wildflower areas on the course to support pollinators.	SDG 6 (Clean water) SDG 15 (Life on land)	Guidelines from GEO Foundation on sustainable golf; Consult local conservation groups on native plants.
Inclusivity & access	Launch a "Golf for All" outreach program – free monthly clinic for local youth, girls, and children from disadvantaged communities; adapt part of course or practice area to be wheelchair-friendly.	SDG 4 (Quality education) SDG 5 (Gender equality) SDG 10 (Reduced inequalities)	Partnerships with schools/youth clubs; Grant for adaptive sports equipment; Diversity & inclusion training for coaches.
Education & awareness	Implement Circular Golf Minds mini-program: incorporate STEM topics into golf training (e.g. physics of the golf swing workshop). Host an annual Eco-Golf Day where juniors showcase sustainability projects (e.g. artwork from recycled golf balls).	SDG 4 (Education) SDG 12 (Responsible consumption) SDG 13 (Climate action)	Content from *Circular Golf Minds* curriculum (STEM in sports); Eco Golf Design Lab activities for hands-on learning.

Co-funded by the European Union

Table 1: Focus Areas with Example Initiatives, SDG alignment, and resources. Each club should tailor these to its context.

1.4 Develop the Circular action plan

With focus areas identified, the next step is to develop a detailed Circular Action Plan (the core of the Circular Roadmap document). This plan should outline specific projects, timelines, responsibilities, and required resources. For each initiative (like those in Table 1 or others chosen), document: What will be done, Who will lead it (e.g. coach, facilities manager, youth leader, volunteer team), When (timeline or frequency), and How (which tools or budget needed). It's useful to create an implementation timeline covering short-term (next 3-6 months), medium (6-12 months), and long-term actions (1-3 years). Ensure quick wins are included to build momentum (e.g. installing recycling bins can be done in a month, whereas a solar panel installation might be long-term).

Importantly, integrate Eco Golf Design Lab and Circular Golf Minds concepts into the plan: For instance, schedule a design workshop with junior members where they brainstorm and co-create solutions (this echoes the Eco Golf Design Lab approach of youth co-designing infrastructure). Such a workshop might result in creative outputs like a prototype of a biodegradable tee or a plan for a mini-golf course made of reused materials. The plan should also include educational sessions drawn from Circular Golf Minds - e.g. quarterly seminars linking golf and environmental science, or on-course activities where students measure their ball's flight and discuss the physics involved. These educational efforts ensure that circular economy thinking is embedded in the club's culture and training syllabus, not just in operations. The primary purpose of the Circular Golf Minds program is to bridge sports and interdisciplinary STEM education, so adapt that purpose locally by having coaches or volunteer teachers deliver fun lessons on topics like ecology on the golf course, math in scoring statistics, or engineering in golf club design.

While crafting the plan, consider any policies or guidelines the club should adopt. For example, create a Sustainable Event Policy (mandating waste sorting, sustainable catering, etc. for all events) and a Diversity & Inclusion Policy (committing to outreach and equitable access). These policies formalize the club's commitment and can be shared with members and sponsors. Also plan for budget or funding needs: some actions save money (energy savings) while others need investment (e.g. new equipment or training materials). Investigate grants or local government programs for sports and sustainability; many municipalities or sports federations offer support for clubs going green. (In one national example, sports bodies collaborated to produce toolkits and training for clubs to act on sustainability in areas like energy and water).

Co-funded by the European Union

Finally, the action plan should specify KPIs (Key Performance Indicators) for each focus area to track progress (e.g. monthly waste volume, energy bills, number of new youth participants, etc.) and a method for regular review. With a solid plan in hand, the club can move confidently into making it a reality.

1.5 Case study & Inspiration

To bolster the planning, look at examples of success. For instance, the Gaelic Athletics Association (GAA) in Ireland implemented a Green Clubs Programme (2019-2025) that saw over 230 local sports clubs undertake sustainability projects. Key learnings were that grassroots programs thrive when supported by clear toolkits and top-level guidance - which is exactly what your Circular Roadmap provides for your club. Additionally, global golf initiatives like the GEO Foundation's sustainability standards and the R&A's Golf Course 2030 project show that the sport is moving in this direction. Sustainable golf practices are gaining momentum globally, promoting stewardship and resource conservation. Your club, through careful planning, is about to join these pioneers and set an example that others can follow.

With the Planning phase complete, you should have: a committed team, a clear set of circular initiatives mapped to club priorities and SDGs, and a written action plan (Circular Roadmap) ready to guide the next steps. The groundwork is laid – now it's time to prepare the club for action.

Phase 2: Operational readiness & Capacity building

Objective: Prepare the club's people, infrastructure, and processes to implement the Circular Roadmap. In this phase, the club builds capacity through training and secures the necessary tools and operational changes so that initiatives can roll out smoothly. Essentially, this is the "getting ready" stage - ensuring everyone knows their role, and any needed resources or systems are in place.

2.1 Educate and train staff & volunteers

A critical step is to educate the club's staff, coaches, and volunteers about the circular economy principles and the new initiatives. Host a "Sustainability Induction" workshop to introduce the Circular Roadmap to all involved. In this session, explain the why (benefits to club, community, environment, alignment with SDGs) and the what/how of planned changes. Use engaging materials - for example, slide decks, videos, or hands-on demonstrations – to cater to different learning styles. (The Circular Golf Minds program materials can be helpful here, as they are designed to present information in multiple formats (visual, auditory, kinesthetic) to enhance understanding.) Emphasize that this is a collective effort: each person, from groundskeeper to coach to event organizer, has a role in achieving the goals.

Specific training activities might include:

Co-funded by the European Union

- Workshops for coaches: Show coaches how to incorporate sustainability and STEM topics into their training sessions. For example, a coach could integrate a mini-lesson on calculating a carbon footprint of a golf trip, or use the physics of a golf swing to illustrate a science concept. By doing this, training becomes richer and supports both sports and educational development of youth. Coaches should also learn how to encourage eco-friendly behaviors among players (like not littering on the course, respecting wildlife, etc.).
- Briefings for grounds and facility staff: Train the maintenance crew on any new practices (e.g. new waste sorting procedures, composting of grass clippings, using organic fertilizers or integrated pest management on the course). If new equipment or infrastructure will be used (say, a rainwater harvesting system or solar-powered cart), ensure staff know how to operate and maintain them.
- Volunteer training: If volunteers will help (common in event organization), brief them on the sustainability guidelines for events – e.g. how to manage waste stations, or how to run an Eco Golf Design Lab activity booth for kids. The Eco Golf Design Lab concept can be introduced as a fun feature in events where volunteers guide youth in creative recycling or design challenges related to golf. Volunteers might need pointers on facilitating these creative sessions (focusing on positive messaging and safety while handling materials).
- Youth leaders engagement: Identify enthusiastic juniors who can be "Green ambassadors." Provide them a special training (or perhaps have them attend a session of the Circular Golf Minds educational content) so they understand sustainability basics and can champion them among their peers. These youth ambassadors can help lead by example and even co-host parts of events or workshops, which builds their leadership skills (and ties into SDG 4: quality education, by developing skills).

By the end of training, all personnel should clearly understand the new practices and feel empowered to contribute. If possible, supply quick-reference guides or checklists (laminated sheets at the clubhouse or digital notes) – for instance, a "Sustainable Event Checklist" for event planners, or a "Eco Coaching Tips" list for coaches.

2.2 Infrastructure and resource preparation

Next, ready the infrastructure and resources needed for implementation:

- Install/upgrade facilities: Implement small facility upgrades that enable sustainability. For example, set up color-coded recycling and compost bins around the clubhouse and course (with clear signs). Install a water refill station to discourage single-use bottles. Ensure energy-efficient lighting and devices are in place (as planned in Phase 1).

Co-funded by the European Union

If pursuing on-site renewable energy (like a solar panel on the roof), this phase is time to complete installations or schedule them. Likewise, if irrigation changes or habitat areas (butterfly garden, etc.) are planned, prepare the ground now (perhaps schedule it during the off-season or a maintenance day).

- Procure sustainable materials: Source and purchase any materials needed for upcoming activities. This may include: reusable items (e.g. sets of reusable cups/plates for events, rather than disposables), recycled-content equipment (such as range balls or tees made from biodegradable materials if available), or creative supplies for youth workshops (like used club parts, old golf balls, scrap cardboard for design lab projects). Ensure event merchandise or prizes, if any, are sustainable - e.g. trophies made of recycled wood or locally crafted goods.
- Develop toolkits & curriculum: Prepare the educational and operational toolkits that will be used. For example, assemble the content for a junior Circular Golf Minds curriculum: lesson plans or activities on topics like “Golf and Climate Change” or “Math on the Golf Course.” This could be a simplified version of the formal program – the idea is to have ready modules to plug into coaching sessions or school outreach visits. Similarly, if the club is going to offer an Eco Golf Design Lab workshop, gather the toolkit for that: e.g. design templates, challenge prompts (like “design a mini-golf hole using only recycled items”), basic tools (scissors, tape, etc.), and safety guidelines. (The GOLF 4 CIRCULARITY project plans to create toolkits for replicating its mobile eco-golf facility and design lab in other regions, which your club can adapt if available.)
- Set Up Monitoring Systems: Since tracking progress is key, decide how you will measure and record data. This could be as simple as a spreadsheet for monthly utilities and waste, or using apps (for example, some clubs use the GEO Foundation’s online platform to input sustainability data). If the club has a weather station or uses any tech in training, consider using it for environmental monitoring too (e.g. tracking rainfall for irrigation planning). Create a dashboard or visual chart to display progress in the clubhouse - seeing improvements (like waste reduction or number of new juniors joining) will motivate everyone.

2.3 Policy and process integration

Update the club’s policies and standard operating procedures to embed the new practices. For instance:

- Write a short sustainability policy that formally states the club’s commitment to circular economy principles and lists the focus areas (energy, waste, etc.). Circulate this to all members and staff or post it on the notice board and website. This makes the commitment public and transparent.

Co-funded by the European Union

- Incorporate sustainability into event planning processes. Create an Event Planning Template that includes sections for environmental considerations (catering must use compostables, transportation plan included, etc.) and community considerations (e.g. inviting a local school or ensuring gender-balanced participation). Going forward, every event or tournament organized by the club should follow this template.
- Revise procurement procedures: add criteria to favor eco-friendly products and local suppliers. For example, when ordering uniforms or equipment, choose vendors who use recycled materials or offer take-back programs (this supports circular economy loops).
- Safety and accessibility procedures: If changes have been made to facilities (say, creating a new footpath, or using different cleaning products), ensure these meet safety standards and are accessible. If inviting new groups (like children with disabilities), make sure you have appropriate safeguarding and inclusion policies in place.
- Assign roles: Ensure each initiative has an owner. For example, assign a Recycling Coordinator (maybe a volunteer or junior member tasked with monitoring bins and educating peers), or an Energy Champion (someone to watch energy use and suggest optimizations). Role clarity will make operations smoother.2.4 Communication and engagement before launch Operational readiness isn't just internal - it's also about informing and exciting the wider club community. Before full implementation, announce the upcoming changes to club members, parents, and local stakeholders:
- Launch communication: Send a newsletter or host a club meeting to share the Circular Roadmap vision and upcoming activities. Highlight how these changes benefit everyone – for instance, cleaner environment, cost savings that can be reinvested in the club, new learning opportunities for youth, and the pride of contributing to global goals. Make the message positive and inspiring.
- Member pledge: Encourage members to support the initiative. You could introduce voluntary "Green pledge" for members – simple commitments like "I will bring a reusable water bottle" or "I will carpool to club events when possible." Small personal actions, when aggregated, amplify the impact.
- Community partnerships: Reach out to local schools, NGOs, or sponsors to let them know about your plans. You might arrange partnerships such as a local waste management company providing educational signage, or a community garden group helping with native plant advice. Engaging external partners now can provide extra resources and publicity when you start implementation (plus it aligns with building SDG 17 partnerships).
- Trial run: If feasible, do a small-scale dry run of one of the initiatives to test readiness. For example, hold an internal "sustainable practice day" where for one practice session you

Co-funded by the European Union

- implement all the new measures (set up the waste stations, have coaches do a mini STEM lesson, etc.). Observe what works and what issues arise. Use this to fine-tune procedures before major events or full rollout.

By the end of Phase 2, the club should be operationally ready: everyone is trained, facilities and materials are in place, and the community is aware. The club essentially has the engine warmed up and the map in hand – now it's time to drive the change forward through full implementation.

Phase 3: Implementation of the circular initiatives

Objective: Execute the planned initiatives in both daily training activities and event organization, embedding circular economy practices into the fabric of the club's operations. In this phase, plans become actions – from how practice sessions are run to how tournaments are hosted. It's crucial to maintain enthusiasm, troubleshoot challenges on the fly, and record progress.

3.1 Integrate sustainability into daily training

On an everyday basis, coaches and members should start living the circular principles. Here's how training sessions and routine club life can reflect the new approach:

- Eco-friendly practice habits: Make it standard practice that all players come to training with reusable water bottles (perhaps the club provided branded ones to everyone to kick-start this). Set up a station for water refills. Encourage walking or cycling to practice; if juniors rely on parents driving, organize a carpool rota or "bike train" from local schools. This reduces travel emissions (addressing SDG 13).
- Green skills in coaching: Coaches incorporate short sustainability tips or tasks in each session. For example, start or end practice with a 5-minute eco-talk or task: one day, a junior golfer (maybe a Green Ambassador) can share a fact about recycling golf balls; another day, everyone spends 5 minutes collecting any litter on the range or fixing extra pitch-marks on greens (taking care of the course). These small actions instill stewardship values.
- Circular Golf Minds activities: Introduce interdisciplinary learning during training. Perhaps once a week, replace part of the golf drill with a fun STEM activity related to golf – this keeps it fresh. For instance, use a portable launch monitor to let kids record their swing speeds and distances, then have them calculate whose shot was most energy-efficient or discuss the aerodynamics of a golf ball. Through such hands-on learning, abstract concepts become tangible. Another idea is to have a "design challenge day" where instead of normal practice, kids work in teams to design a mini obstacle or training aid from random recycled materials (tape, boxes, old clubs) - effectively a mini Eco Golf Design Lab every now and then. This fosters creativity and teamwork, mirroring the co-creative spirit of the Eco Golf Design Lab workshops in the GOLF 4 CIRCULARITY project.

Co-funded by the European Union

- Inclusivity in training: Implementation means ensuring who is training also reflects inclusivity goals. Actively use any new programs (like the “Golf for All” clinic) to bring in diverse participants. For example, if a monthly free clinic for local youth is on the plan, make sure it’s well advertised and happens on schedule. Assign volunteer mentors to newcomers to make them feel welcome. Over time, as more girls or minority youth join, integrate them into regular training squads so that diversity becomes normal at the club. Coaches should be mindful to give equal attention and encouragement to all, and possibly adapt training methods to different needs (this could mean using larger, softer balls from youth golf programs for very young or differently-abled kids, ensuring everyone can participate).
- Sustainable course maintenance in practice: As part of training, older juniors or interested members might occasionally join the greens staff in sustainability projects - e.g. a weekend workshop on planting trees or creating a compost area for grass clippings. This not only is educational but also helps with labor. When players understand the work that goes into maintaining a sustainable course, they develop respect for it (e.g. they learn why certain rough areas are left un-mowed for habitat). Some clubs have done “junior greenkeeper for a day” initiatives to build this connection.

Throughout this process, celebrate small wins to keep motivation high. If one week everyone remembered their reusable bottles or the new carpool system cut parking lot traffic by 30%, acknowledge it in the club’s social media or notice board. Maybe a “Team Green Player of the Month” award can be introduced for a junior who exemplifies sustainable behavior or helps others. The goal is to embed these practices until they become second nature at daily trainings.

3.2 Organize sustainable golf events

Events - be it a weekly junior tournament, an annual club championship, or a community fun day - are where many aspects of the circular approach come together visibly. Implement the sustainable event guidelines developed in earlier phases at each event, and use events as showcase opportunities for the club’s commitment. Key actions include:

- Planning and procurement: Weeks before the event, ensure all materials and vendors meet your sustainability criteria. Order any food and refreshments from local suppliers (farm-to-table if possible) to support local economy and reduce transport (SDG 11). Use the club’s inventory of reusable or compostable serving ware. If trophies or medals are needed, consider creative circular options (like awards made from reclaimed wood, or usable goods like a potted plant trophy). Communicate with suppliers about reducing packaging or providing take-back for any products (aligned with circular procurement philosophy).

Co-funded by the European Union

- Promotion and registration: When advertising the event, highlight it as a "green event." Encourage participants to register electronically (no paper) and to travel sustainably. For a tournament, consider offering small incentives for those who carpool or cycle (e.g. a free extra bucket of range balls for anyone who shows up by bike). If you expect visitors from other clubs, provide information on public transport or share rides. Also, cap event participant numbers to what the club can handle sustainably - avoid the temptation to overcrowd just to maximize entries. Quality over quantity will ensure a better experience and less strain on resources.
- Event day operations: On the day, implement visible sustainability measures: have clearly labeled waste/recycling stations with volunteers (perhaps junior members) guiding people on what goes where. Zero single-use plastic should be a rule – give all players a refillable bottle or have them bring their own, and provide bulk water coolers for refills. Use electric golf carts or pushcarts instead of petrol carts (or encourage walking). If the event is a tournament, maybe make a creative rule like a "2-stroke bonus for any team that finds and recycles 3 lost golf balls during the round" - a fun way to clean up the course! For a community open day, incorporate the Eco Golf Design Lab corner: a spot where kids (and adults) can try building a mini-golf hole or a golf-themed craft from recycled junk. This was effectively used in the GOLF 4 CIRCULARITY mobile eco-golf setup, which had an educational trailer and a mini-golf course made of recycled materials to engage participants in circular practices.
- Inclusivity & accessibility: Make events welcoming to all. Ensure the scheduling and format consider different groups (e.g. if a family day, have parent-child scramble format; if a youth event, include categories for both boys and girls, and possibly a beginner-friendly tee option). If you have participants with disabilities, ensure the course has accommodations (like allowed to tee off closer, or use assistive devices). Assign volunteers or staff to specifically welcome any community groups you invited (such as a local youth center or school team). Representation matters: invite a diverse range of people to present awards or speak about sustainability, showing that golf is for everyone.
- Education & advocacy: Use the platform of the event to spread awareness. You can have signboards around the venue linking golf actions to SDGs (e.g., a poster: "We planted native trees on our course - contributing to SDG15 Life on Land by providing bird habitat"). Or have a brief segment in the opening or closing ceremony where a junior ambassador explains what the club is doing and why (a proud moment for them and persuasive for the audience). If any notable outputs have come from your juniors' projects - say a student group did a science project on reducing golf's carbon footprint - display it. Leverage social media to share highlights (pictures of the event's green practices, tagging initiatives like #Golf4Circularity or #SustainableGolf).

Co-funded by the European Union

- Tracking and Feedback: During the event, quietly track metrics that matter. Count how many plastic bottles were avoided, measure roughly how much waste was recycled vs. trash, note the participation numbers of various demographics. Conduct a quick satisfaction or awareness survey to see if attendees noticed the sustainability efforts. (For example, ask players, "Did you find the eco-friendly measures improved your experience?") This feedback is gold for refining future events and also for reporting achievements in the next phase.

Case in point, by implementing these measures, your club might emulate some of the best practices being advocated internationally. Leading golf events are beginning to adopt sustainability charters, and grassroots events can do it too. The LIV Golf league's recent sustainability strategy hinted at detailed roadmaps for sustainable tournamentsimages.livgolf.com, and while that's a large-scale example, the principles scale down: energy saving, waste elimination, community benefit. Your club's events will not only reduce harm but actively promote a culture of eco-friendly sports.

3.3 Continuous engagement and problem solving

As implementation progresses, it's important to keep the engagement loop going and address challenges:

- Regular check-ins: The Green team should meet periodically (e.g. monthly) to review how training and events are progressing with the new practices. Share observations from coaches ("Are kids responding well to the STEM activities? Too hard? Too easy?"), from maintenance staff ("Is the new irrigation schedule working?"), and from members ("Anyone complaining about changes, or praising them?"). Use these to tweak the approach. This is adaptive management.
- Mentorship & external support: Don't hesitate to seek advice. Perhaps connect with other clubs in the GOLF 4 CIRCULARITY network or those who have done Green Club programs. A virtual community of practice might exist (indeed, Golf4Circularity had a virtual community group on social media for idea sharingfacebook.com). Exchanging tips or even friendly competitions (like which club can save more energy per member) can spur improvement.
- Celebrate milestones: Implementation isn't all work – celebrate successes. Host a mid-year "Sustainability BBQ" or fun event when a significant milestone is hit (e.g. 1000th plastic bottle avoided, or one year of accident-free walking golf without using carts, etc.). At these celebrations, reinforce the purpose and thank those involved, especially the youth volunteers and staff who are championing the changes. Positive reinforcement keeps everyone invested.
- Media and storytelling: Share your journey. Perhaps invite local press to an event, or write

Co-funded by the European Union

- a piece for the community newsletter about what the club is doing. This not only gives recognition to participants, but also pressures other clubs (friendly pressure) to consider doing the same. It positions your club as a leader, which can attract new members who value sustainability. Youth members might be encouraged to document their experience (blog, video journal) which is a great exercise in communication and can be shared on the club's platforms. Remember, every story of a junior golfer learning about solar panels through golf, or a community coming together to clean a pond on the course, is powerful advocacy for the circular economy in sports.

By the end of Phase 3, your club will have transformed many of its routines. The key is that these changes become habitual and integrated into the club's identity. Implementation is not a one-week affair but an ongoing process where each practice and each event is another opportunity to improve and reinforce the circular mindset. Now, having implemented numerous actions, the club will accumulate results and lessons – which feeds into the final phase: ensuring a lasting legacy and continuous improvement.

Phase 4: Legacy, evaluation and continuous improvement
Objective: Cement the gains made by the initiative, evaluate its impact relative to goals and SDGs, and ensure that the circular economy approach leaves a lasting legacy at the club and in the community. This phase is about making the new practices sustainable in the long run (institutionalized) and sharing the benefits forward, including preparing for future cycles of improvement.

4.1 Measuring impact and reflecting on goals
Begin by assessing what has been achieved. Using the KPIs established in Phase 1 and the data collected during Phase 3, evaluate progress quantitatively and qualitatively:

- Environmental impact: How much waste was diverted from landfill over the season? How many plastic items were avoided? Calculate any reductions in water use or energy bills – for instance, "the club reduced its energy consumption by 20% this year, saving €X and cutting emissions, contributing to SDG13." If you introduced renewables, estimate the clean energy generated. For carbon footprint, some clubs use tools to estimate emissions from operations and can report a percentage reduction. Even if exact numbers are hard to get, any measured improvement (like a smaller dumpster bill or fewer fuel fill-ups for mowers) counts.
- Social impact: Track changes in participation and inclusivity. E.g., number of junior members before vs. after (did it grow due to the new programs?), percentage of female juniors or participants from different backgrounds (did it improve? by what margin?). Document stories: maybe a testimonial

Co-funded by the European Union

from a new participant who joined through the outreach clinic, or a young coach who emerged as sustainability champion. These stories indicate progress on SDG4, SDG5, SDG10 (education and inclusion goals).

- Educational outcomes: If you ran Circular Golf Minds activities, gather feedback from youth - did their interest in science or environment increase? Some might have school projects or improved academic engagement thanks to the program. One could even correlate if those in the program show improved problem-solving skills or confidence (anecdotal evidence from coaches or parents). This speaks to building well-rounded individuals ready to contribute beyond golf.
- Community and legacy outputs: List any tangible legacies: Did the club create any lasting infrastructure (e.g. a rainwater harvesting system, a solar panel, a new footpath, a wildlife garden)? Are these being maintained and used? Also, note outreach: how many community events were held, any partnerships formed (e.g. with a school or eco-organization), and outcomes of those (like a school adopting some of your practices, or a joint tree planting yielding X trees planted). If the Eco Golf Design Lab produced something like a set of mobile mini-golf obstacles or educational kits, and you donated or installed them in local parks or schools, document that. The GOLF 4 CIRCULARITY project aimed to implement the best youth-designed outputs in 12 communities and leave the infrastructure for continued use – similarly, your club should ensure any physical legacy (equipment, materials, improvements) remains accessible and beneficial beyond the project timeline.

Once data is collected, compare against the goals set in Phase 1. It's rare to hit everything 100%, but seeing which goals were met or exceeded and which fell short is instructive. For example, maybe you reached the waste reduction target but struggled with increasing female participation – or vice versa. Reflect openly on the reasons: were some targets too ambitious, or were there external factors (e.g. a drought year made water-saving hard)? This honest evaluation is not about blame, but about learning.

4.2 Institutionalizing the circular model

To ensure legacy, the club should integrate successful practices into its standard operations permanently:

- Update club governance: Make the Green Team or sustainability committee a standing committee of the club (if it isn't already). Include sustainability progress as a regular agenda item in board meetings or annual general meetings. This ensures oversight continues.
- Maintain policies: Those policies created (on sustainable events, procurement, etc.) should be maintained and updated as needed, and new club officers or staff should be briefed on them as part of onboarding.

Co-funded by the European Union

- Essentially, treat sustainability guidelines like you treat the club's code of conduct or safety rules – an inherent part of how you do business.
- Budget for sustainability: Allocate a small annual budget (if possible) for sustainability initiatives (even after any external project funding ends). This could cover replacing efficient appliances over time, buying trees to plant each Arbor Day, or subsidizing those outreach clinics. If the changes saved money (often energy and waste measures do), consider ring-fencing a portion of savings into this budget – a virtuous cycle.
- Continuous training: Institutionalize the education aspect. For example, make the Circular Golf Minds-style modules a permanent fixture in your junior academy curriculum. New coaches should be introduced to these methods so they continue using them. Perhaps partner with a local school or university to periodically run workshops (keeping content fresh and engaging). This keeps the educational legacy alive and evolving.
- Toolkits and knowledge sharing: Codify your club's experience into a simple toolkit or case study that can be shared. Document the steps and tips in a way that new club members or even other clubs can follow. For instance, create a "Grassroots Golf Sustainability Starter Guide" based on what you've learned, and publish it on your website or send it to the national golf federation. This not only cements your legacy as a leader but contributes to the broader movement. (Recall that the project's approach was to create replicable models and toolkits for others – your club can mirror this on a smaller scale.)

4.3 Community legacy and partnerships

Beyond the club itself, consider how the initiative's legacy can benefit the wider community and future generations:

- Youth development: The youth who participated have gained skills and awareness that they carry forward. Some might become "sustainability champions" in their schools or pursue studies/careers in environmental fields or engineering, inspired by Circular Golf Minds. Track if any participants choose such paths – that's a powerful legacy! Perhaps one of your junior golfers will later lead sustainability efforts in another club or start a related initiative. Encourage them to do so, and offer mentorship or a platform for them to speak about their experiences.
- Ongoing community events: Make certain new events a tradition. If the Eco-Golf Day or community clean-up tournament was successful, schedule it annually. This consistency builds tradition and further cements the relationship with the community. Over years, a simple event can become a local highlight that draws attention to sustainability (for example, a "Green Open Day" every Earth Week).

Co-funded by the European Union

- Collaboration and scaling: Continue to collaborate with partners from Phase 2 and 3. If you worked with a local NGO or school, explore expanding the partnership. Maybe your club can help another nearby club or a school set up a mini golf facility from recycled materials (using your experience from the design lab). By scaling out horizontally, the impact grows. You could even challenge neighboring clubs to a "sustainability contest" in good spirit – who can achieve GEO certification first, or who can engage more youth in STEM learning through golf? Use friendly rivalry to spread the circular model.
- Recognition and support: Seek recognition for your club's efforts - not for vanity, but to highlight what's possible. Apply for any local or national sustainability in sport awards. For instance, some golf associations or city councils have awards for eco-friendly clubs. Recognition can attract new members or sponsors who share the values, providing resources to sustain and expand the programs. Moreover, it helps mainstream the concept of circular economy in sports.

4.4 Continuous improvement cycle

A circular economy approach calls for continuous improvement – the end of one cycle should feed into the start of the next. After evaluating Phase 4, roll insights into a refreshed planning phase for the next season: update the Circular Roadmap with new goals (or higher targets). Perhaps now that the basics are covered, the club can tackle more advanced ideas (like aiming for a formal sustainability certification, or introducing a Product-as-a-Service concept where equipment is leased and returned, aligning with emerging circular business models). Encourage innovative ideas, possibly via another youth hackathon or design lab to generate Version 2.0 initiatives. (Indeed, GOLF 4 CIRCULARITY organized youth hackathons to crowdsource ideas for eco-friendly, inclusive golf, which could be replicated at the club level.) By treating the roadmap as a living document that evolves, the club avoids stagnation and continues leading.

Finally, reflect on the broader significance: your club's journey contributes, in its own small but meaningful way, to reimagining sports for sustainability. It exemplifies how local action can align with global goals. Golf, often perceived as a traditional sport, has shown it can innovate – by adopting solar power, teaching kids about ecology, reusing materials, and embracing diversity, all within the love of the game. In conclusion, the legacy of your Circular Roadmap is twofold: tangible environmental and social benefits in your community, and an inspirational model for others. By implementing the GOLF 4 CIRCULARITY approach through careful planning, capacity building, active implementation, and legacy planning, your grassroots club proves that even at the smallest levels, sport can drive sustainable development and circular economy principles in action.

Co-funded by the European Union

GOLF 4
CIRCULARITY

Co-funded by
the European Union

Project: 101133954 — GOLF 4 CIRCULARITY ERASMUS-SPORT-2023

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency. Neither the European Union nor the European Education and Culture Executive Agency can be held responsible for them.