

**GC2030**

**DANSK GOLF UNION**  
Spil med

**Golf Course 2030**

# Game Changer

Handbook for game-based  
learning exploring sustainable  
golf facility management



This handbook and game-based learning for sustainability in golf was developed as part of the project:

**WAVE (Water, Materials, Waste and Energy):  
Golf Course Maintenance of the Future With  
Less Impact on Nature and the Environment.**

Project lead organisation:

**DANSK GOLF UNION**  
Spil med

Special acknowledgement to  
Handbook and Game creator:

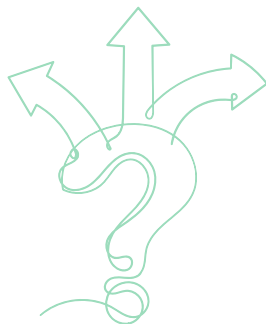
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This handbook is an introduction to facilitate a game-based learning process and the theoretical foundations behind it. The audience for the learning process are facility managers, course managers, board and committee members and all in the organisations which have an interest in enhancing sustainability in a golf club or similar organisation.

The handbook contains three games:

- **The Motivation game**
- **The WAVE game**
- **The Triple Bottom Line game**

# Game-Based Learning.



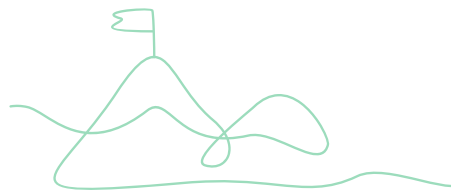
Game-based learning is an educational approach that uses game elements to teach specific skills, knowledge, or behaviours. It is found highly effective at many levels.

1. **Engagement and Motivation:** The enjoyment and immersion from games make learning feel less like a chore and more like a fun, rewarding experience.
2. **Active Learning:** This hands-on approach helps reinforce the material better than passive learning methods.
3. **Encourages Critical Thinking:** Many educational games require learners to think critically, strategise, and solve complex problems, enhancing their decision-making skills and ability to apply the learning in their own context.
4. **Personalised Learning:** This individual approach ensures that learners don't feel overwhelmed or under-challenged.
5. **Improved Retention:** Game-based learning often includes repetition and reinforcement, which helps learners retain information for a longer period. The interactive nature of games also makes the learning experience more memorable.
6. **Safe Environment for Experimentation:** Games offer a risk-free environment where learners can experiment, make mistakes, and learn from them without real-world consequences, which fosters a growth mindset and resilience.

In essence, game-based learning provides an engaging, effective, and interactive way to teach a variety of skills and knowledge, making it a valuable tool in modern education.

“You bring a complex subject down to earth and make it understandable and practical.”

Esben Hallundbæk Hansen, Director  
Odense Golf Club, Denmark



# The Motivation Game.

Once you are determined to apply sustainable initiatives to your golf club you will probably want to get started as soon as possible.

**However successful sustainable initiatives are those which are a core part of your organisation, not a project, but part of the operation. Therefore, you need to be aware of the organisational motivation for sustainability.**

My experience is that the more diverse the players who are playing the game, the better the dialogue and results you will get moving forward towards enhanced sustainability. This game will define and clarify the foundation for your future work. Work with what you have and not by aiming towards goals which might change in the process (Sarasvathy, 2008). The science, standards and knowledge are still under development and therefore call for entrepreneurial mind-sets which can work, develop and adjust in the process – so don't set specific goals.

The motivation game is based upon the research regarding intrinsic and extrinsic motivation (Fischer et.al., 2019). The game takes a step back from jumping into action mode, asking questions and ranking the current level of motivation in your golf club.

**Time: 15-20 minutes Players: 2-6**

**Tools: Motivation Game cards, post-it notes, a pen.**

## Steps to 'play':

1. Set a table with room for all, and make sure that you can all see and hear – a round table will be good.
2. Place the game pieces in a stack with questions facing down.
3. Draw a 😊 on one post-it and a ☹️ on another post-it.
4. Set a happy-scale, placing the two post-its 60-70cm apart, making room for the game questions between.
5. Draw the first question from the top and read it out.
6. Speak to each other about the question and rank it on your happy scale, placing it between the 😊 and the ☹️.
7. Repeat step 6 until all the questions are answered and ranked.
8. Look at your result – did something need to be adjusted based on the process?
9. What does the result mean? How does it feel?
10. The majority of the game pieces should be on the 😊 side of the scale or else you should start a process which will enhance your motivation.

This is a dialogue game, and can be played again and again. It establishes a mind-set and introduces a basis for a successful change management strategy towards enhanced sustainability in your golf club.









# The WAWE Game.

**W**ater, **mA**terials, **W**aste and **E**nergy (WAWE) are the words behind the game and the title of a GC2030 project.

**The project aims to gather best practices from golf clubs regarding the four areas in the title. The knowledge from the project is shared through videos and articles in relevant golf industry forums, in print and online.**

The game was developed as an interview tool, gathering best practices from greenkeepers, board members and managers. Applying and playing the game in more than 35 golf clubs in Denmark we found that the game is a strong tool for sharing knowledge and setting a baseline for the current level of carbon footprint and what kind of materials it takes to craft a great golf course. Secondly, we found that the game levels all management positions in the golf clubs' awareness of the current consumption in maintaining the course and club house.

The game starts out by defining the context in which the game is to be played. Which golf club, how old is it, how many holes, how many members, what are we proud of, how many greenkeepers and what kind of buildings are part of the golf club?

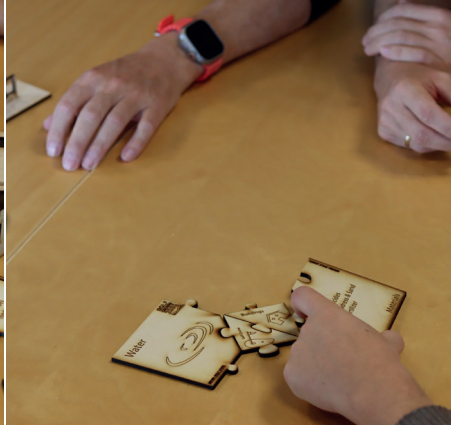
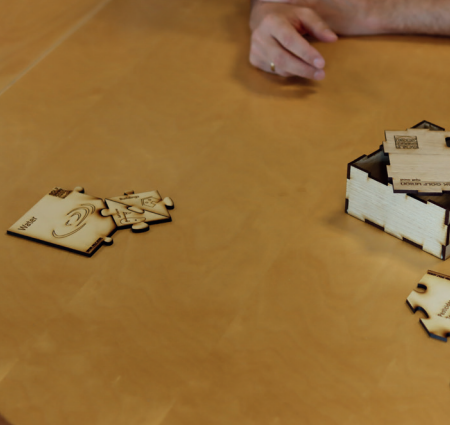
The next steps are a dialogue between the participants, sharing their knowledge about the current initiatives and actions being taken regarding water, waste, energy and material consumption during operation and the golf season. Focus on one theme at the time, giving everyone the opportunity to share and ask questions.

The game is designed like a puzzle and is to be played one piece at the time.

**Time: 1 hour Players: 2-6 Tools: The WAWE Game cards.**

## Steps to 'play':

1. Lay out the club shape. Discuss the club and make notes relevant to sustainability (approx. 10mins).
2. Lay down any one of the four sustainability pieces – water, waste, energy, materials. Discuss this subject and how it applies to your club/course. What problems, opportunities and actions do you see. Make notes (approx. 10mins).
3. Repeat step 2 for the other three sustainability pieces – discuss how this subject applies to your club/course. Make notes on key opportunities, threats or actions (approx. 10mins each).
4. Review your notes (approx. 10mins) and look for:
  - Common themes across the different sustainability topics.
  - Opportunities for improvements and action.
  - Areas where you might need to understand more about the subject or review again in more depth.







# The Triple Bottom Line Game.

This game is defined by one of the central frameworks in the definition of sustainability, The Triple Bottom Line (Norman & MacDonald, 2004).

**Triple Bottom Line (TBL), is a sustainability framework that evaluates an organisation's performance based on three key dimensions:**

- **People (Social):** This refers to the social impact of an organisation, focusing on the well-being of employees, customers, communities, and society as a whole. It includes considerations like fair labour practices, human rights, community engagement and social responsibility.
- **Planet (Environmental):** This measures the environmental impact of the organisation's operations, products or services. It includes efforts to reduce carbon emissions, energy consumption, waste, pollution, and the sustainable use of natural resources.
- **Profit (Economic):** Beyond traditional financial profitability, this refers to the long-term economic viability of the organisation, taking into account how it generates and distributes wealth. It also includes economic impacts on the broader economy and stakeholders.



The Triple Bottom Line emphasises a balance between these three aspects – social, environmental, and economic – encouraging organisations to operate sustainably and ethically, contributing to both their success and the well-being of the world.

The game is crafted in pieces which have the shape of a hexagon, starting with the Golf Club as the centre. The rest of the pieces in the game are activities and or elements of a golf club like driving range, greenkeeping, rough, etc. The players must rank the current value generated on a high/low scale on the triple bottom lines. The game contains many iterations and provides the players with a detailed map of the status in the golf club. With the mapping the players can select which areas to enhance and where to start.

This game is the most complex of the three games, but the more you play the better you will be. The game can be played every six months to provide the golf club with a longitudinal time life of new sustainable initiatives. Lastly it is a good introduction to new employees and board members to understand the current level of sustainability in the golf club.

**Time: 1 hour Players: 2-6**

**Tools: The Triple Bottom Line game cards, a large table, approximately 20 'playing pieces'.**

### Steps to 'play':

1. Read the perspective and theory of the Triple Bottom Line (see previous page) to help you rank and play by the right criteria.
2. Place the Golf Club piece in the middle of table.
3. Take one of the activity pieces and place it next to the Golf Club hexagon.
  - a. Rank the activity on the three bottom lines, using the high/low scale on the pieces.
  - b. Place a red, yellow or green piece on the activity.
4. Repeat step 3 with all the activity pieces you have in your golf club.
  - a. You can create your own activities with the blank hexagons if needed or preferred.
5. Once all the hexagons are set, you have an overview of the current sustainability in your golf club. Perhaps some of the first activities need adjustments based on your process.
6. Give a black piece to each of the players and vote for the activity he/she would like to enhance.
7. You should take pictures, making sure that your map is stored and can be remembered once the game is put away.

The game is a status game and will change over time, depending on your work in the golf club and who you play the game with.

I believe the strongest learning from the iterations in the game will be that the Triple Bottom Line becomes the variable for all future investments and action.





## Notes.



### Notes to maximise the benefit of these games to your club.

The games have been designed and with one specific goal – **to help those managing golf courses and facilities to discuss and plan for a sustainable future.**

Firstly, you will note that all **the games are intended to be played with others.** You might find that familiarising yourself with the games is helpful, but you will only achieve meaningful outcomes by discussing and exploring the games with fellow decision makers and stakeholders.

You might want to consider using these games in the following ways:

- **As part of strategic planning** (i.e. with management staff, board, committees and owners).
- **As part of management planning** (i.e. with club manager, course manager, director of golf).
- **As part of departmental planning** (i.e. within greenkeeping, clubhouse or golf operations departments).

And even...

- **In focus groups with your customers** (i.e. members, golfers).
- **With key organisations outside your club who you have an important relationship with** (i.e. community organisations, environmental bodies).

**There are no right and wrong results** and every golf course, club or facility will have a different outcome. If you are applying your learning from the games you will also find that outcomes will evolve and change. The aim is to facilitate conversations about sustainability, and help you discover what your priorities might be in the short, medium and long term.

# References.

**Fischer, C., Malycha, C. P., & Schafmann, E. (2019).**

*The influence of intrinsic motivation and synergistic extrinsic motivators on creativity and innovation.* Frontiers in psychology, 10, 137.

**Norman, W., & MacDonald, C. (2004).**  
*Getting to the bottom of "triple bottom line".* Business ethics quarterly, 14(2), 243-262.

**Sarasvathy, S. D. (2008).**  
*Effectuation: Elements of entrepreneurial expertise.*  
*In Effectuation.*  
Edward Elgar Publishing.



The R&A group of companies was formed in 2004 to take on The Royal and Ancient Golf Club of St Andrews' responsibilities for governing the Rules of Golf, staging The Open, golf's original championship, and developing the sport. The World Golf Museum in St Andrews is part of The R&A group.

Together The R&A and the USGA govern the sport of golf worldwide, operating in separate jurisdictions with a commitment to a single code for the Rules of Golf, Rules of Amateur Status and Equipment Standards. The R&A, through R&A Rules Ltd, governs the sport worldwide, outside of the United States and Mexico, on behalf of over 41 million golfers in 144 countries and with the consent of 159 organisations from amateur and professional golf.

The R&A has responsibility for running a series of world class amateur events and international matches in women's and girls' as well as men's and boys' golf. The R&A stages the ALG Women's Open and works with the DP World Tour to stage the Senior Open presented by Rolex.

The R&A is committed to investing £200 million over ten years in developing golf and supports the growth of the sport internationally, including the development and management of sustainable golf facilities. For more information, visit [www.randa.org](http://www.randa.org).



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