

# Greening up my sports club

A qualitative exploration of sustainability transformation at Dutch sports clubs

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Master thesis submitted to

Delft University of Technology and Universiteit Leiden  
in partial fulfilment of the requirements for the degree of

**MASTER OF SCIENCE**

in **Industrial Ecology**

Faculty of Technology, Policy and Management (TPM)  
Faculty of Science, Institute of Environmental Sciences (CML)

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To be defended in public on **December 13<sup>th</sup>, 2022**

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## Preface

My enrolment into the Industrial Ecology program was a result of my search for knowledge on helping mitigate climate change. As I learned more and more about the topic, I became more and more aware of the magnitude of the problems and the desperate need for rapid action. In the autumn of 2020 I therefore started a sustainability committee at my student scuba diving association in Leiden (Dutch: Leidse Studenten Duikvereniging, LSD).

From the start of this thesis project on, my approach was of a rather activist nature: if possible I wanted to save the world with the words I would conclude my master's programme with. As a generalist and highly interest-based learner, finding a thesis topic in itself however has been quite a lengthy and extensive process. Eventually, I figured that I had to find a topic that was as close to my heart and background as possible. Preferably also practically implementable, as I wanted to go 'out there' and start applying all the knowledge I had acquired over the years. Eager to make a positive difference as soon as possible, as the window for climate action is closing rapidly. After years of higher education I wanted to spread my wings outside academia, increasing my environmental handprint out there. Just one hoop to jump through remained; my master thesis.

One of the things I recall myself saying early on in the thesis process was 'I want to interview other Esthers': if I could become activated in my community, so could others. I am eminently grateful that I did not have to do the topic search, nor getting through the actual research process, entirely on my own. The research that is described in the next chapters gained its shape through various consultations with several parties who I all deeply appreciate, yet any flaws or misinterpretations are my own. With this piece of writing I wanted to provide you with an understanding on my personal involvement with the topic at hand.

I hope you enjoy reading this thesis,

Esther Blik

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## Abstract

The societal need for sustainability transformation is crucial in light of climate change, and the role of individual action and behavioural changes is considered critical in meeting the Paris agreement. Radical shifts in social norms are required, which could be achieved through reaching social tipping points. These tipping points could be reached earlier by focusing on 'greening' communities rather than individuals. Any type of social change however, needs initiation in one way or another. Knowing what makes people advocate for pro-environmental behaviour within their community or communities, could help initiate the needed sustainability transformation. A knowledge gap was found as the literature only partly covered this topic. Sports clubs in the Netherlands are popular and relevant community settings that are increasingly stimulated towards more sustainable practices, therefore this was the setting that was focused on in the study. An exploratory approach was taken to pinpointing which helping or facilitating conditions in sports clubs are experienced by individuals who make efforts in the sustainability transformation at their club. To do this, a conceptual model was created, taking a multi-level approach and combining the capability-opportunity-motivation-behaviour (COM-B) model with environmental citizenship. A total of 17 participants who considered themselves an initiative taker or achiever for sustainability at their sports club were consulted through semi-structured interviews. Elements of grounded theory were used to shape the analysis of the acquired data. The interview transcripts were coded and analysed using the COM-components of the conceptual model. The analysis shows that there is a multitude of factors that stimulate partaking in sustainability transformation at sports clubs, with community feel or communication, and (resulting) availability of skills and knowledge standing out. Limitations of the study included taking a rather broad approach, advising future studies to further deepening more self-contained dimensions. Recommendations for supporting organisations, policy makers and sports club members with environmental concerns, included communicating about concerns and providing support regarding sustainability transformations, among others.

## List of Abbreviations

ANBI	Public Benefit Organisation (Dutch: Algemeen Nut Beogende Instelling)
AR5 and AR6	Annual Report 5, resp. 6. Report by the IPCC
COP21	Conference of Parties, edition 21
DMP	Data Management Plan
ENEC	European Network for Environmental Citizenship
FGR	Forest Green Rovers football club
GDPR	General Data Protection Regulation
GHG	Greenhouse gas
GMM	General Members Meeting
HREC	Human Resources Ethical Committee
IPCC	Intergovernmental Panel on Climate Change (body of the UN)
KG	KlimaatGesprekken (an ANBI)
MITM	Man-in-the-Middle
TBAN	Think Big Act Now (an ANBI)
RFD	Research Flow Diagram
UN	United Nations
UNEP	United Nations Environment Programme

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# 1. Introduction

This chapter introduces you to the topics discussed throughout this thesis, and provides you with a general understanding of the research direction and purpose. It is subdivided into Setting the scene (1.1), Knowledge gap (1.2), Research angle and scope (1.3), Sports clubs and The Netherlands (1.4), Problem statement (1.5), and Relevance to Industrial Ecology (1.6).

## 1.1 Setting the scene

This subchapter describes the contextual background in which this study was designed. It is separated into four sections: Climate change and the need for rapid action (1.1.1), Finding hope in social tipping points (1.1.2), Community potential (1.1.3), and Think globally, act locally (1.1.4).

### 1.1.1 Climate change and the need for rapid action

Although global efforts are taken to mitigate climate change, current efforts and pledges are not nearly sufficient in maintaining a liveable planet for current and future generations. During the United Nations (UN) Climate Change Conference (COP21) in 2015, the so-called Paris Agreement was signed to substantially reduce global greenhouse gas (GHG) emissions. The most important take-away from this legally binding agreement was that the global average temperature rise this century has to be kept as close as possible to 1.5°C above pre-industrial levels (United Nations, n.d.). This limit is to secure ecosystem services<sup>1</sup> in the future (IPBES, 2016), among others.

The Intergovernmental Panel on Climate Change (IPCC) published their 6<sup>th</sup> Assessment Report (AR6) earlier this year (2022), emphasizing that the timeframe for climate change solutions is narrowing rapidly. In 2017, human-induced warming was approximately between 0.8°C and 1.2°C, increasing at 0.2°C per decade (IPCC, 2018). At the current rate, global warming is likely to reach 1.5°C between 2030 and 2052 (IPCC, 2022, p. 128, Box 1.1), overshooting this upper limit by up to 70 years. The United Nations Environment Programme, UNEP (2022) reported that with current policies and the implementation of present pledges, a temperature rise of 2.8°C respectively 2.4-2.6°C by the end of the century is projected: only an urgent, system-wide transformation before 2030 could get humanity back on track to reach the 1.5°C goal.

Therefore, further action over the next decade is considered critical for prevailing development practices, achieving planetary health and human well-being (IPCC, 2022, p. 101 & 2659). As numbers might remain somewhat abstract, a plot created by Otto (2020) is added to this section. Figure 1 depicts the rate of GHG-emission change per year (left axis) required, to achieve a specific increase in °C (right axis) by 2100 (time; horizontal axis). Especially when the annual change needed for meeting the Paris agreement is compared with emission changes that were made in the past, one can get a sense of the magnitude of the task at hand. To adhere to the purple line (to maintain the Paris agreement range), an unprecedented rate of change is required.

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<sup>1</sup> Ecosystem Services are functions of nature that humans need and use. Examples of these are pollination for crops, access to freshwater, among others.

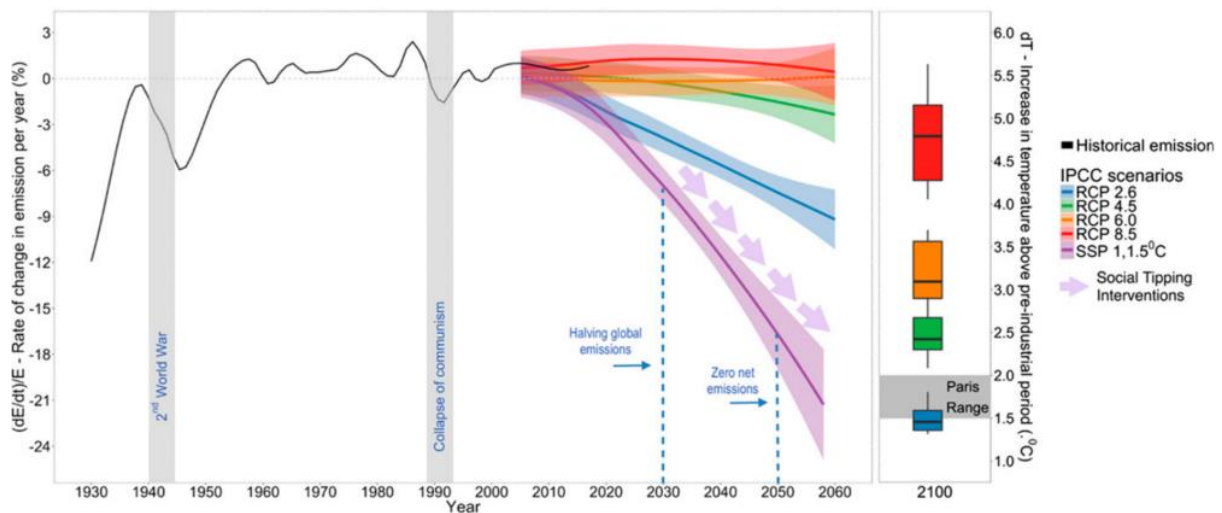


Figure 1 The rate of change in GHG-emissions over time required in relation to the IPCC temperature scenarios (adopted from Otto, 2020, Fig. 1). RCP stands for representative concentration pathways, SSP for shared socioeconomic pathways

### Sustainability transformation

The problem of climate change illustrates the current situation of unsustainability, and drives the societal need for transformation towards sustainability. Salomaa (2020) studied how the concept of sustainability transformation was used and defined in the scientific community: they concluded that it is still a relatively new term that needs further research.

This thesis defines sustainability transformation as the combination of the two words; sustainability & transition. Both can have several meanings (Hölscher, 2018; Roggema, 2014; Ruggerio, 2021). The term sustainability is inconsistently used, yet there is consistency in terms of referring to the three lines of the Triple Bottom Line (TBL): social, environmental and economic (Alhaddi, 2015), or 'people, planet, profit'. In this study, sustainability is understood as the most widely used definition for sustainable development: *"ensuring the needs of the present are met, without compromising the ability of future generations to meet theirs"* (United Nations, 1987). In this study, transformation follows the definition given by the Merriam-Webster dictionary: *"an act, process or instance of transforming or being transformed; to change in composition or structure, to change in character or condition"* (Merriam-Webster, n.d.-b). In studying sustainability change, the concepts 'transformation' and 'transition' are often used as synonyms even though they can describe varying degrees of change (Hölscher, 2018; Geels, 2002, as described by Salomaa, 2020). In this thesis, the terms are used interchangeably; sustainability transformation or transition here can thus be read as *'a change towards a state that ensures the needs of the present are met, without compromising the ability of future generations to meet theirs'*.

The need for sustainability transformation implies a need for behaviour change. An important difference between IPCCs' AR6 and its predecessor, AR5, is that behavioural aspects and insights from social sciences have now been incorporated. However, sustainability transformation remains less-studied in terms of social rather than biophysical dimensions (Salomaa, 2020, as described by IPCC, 2022, p. 1887). The IPCC (2022, p. 101 & 2659) acknowledges that in traditional scientific assessments of climate change, less attention was given to the role of social norms, lifestyles, power relationships and worldviews in enabling sustainable development, among others. To stay somewhat near the 1.5°C goal, various radical shifts in e.g. social norms, are required to allow the transitions needed (IPCC, 2022, p. 2580).

### 1.1.2 Finding hope in social tipping points

Radical change often occurs when a certain tipping point is reached: the point at which business-as-usual or the current state can no longer hold, and rapidly shifts into a different state. The Holocene's climate and environmental conditions allowed our species to develop and thrive (Rockström, 2009). Tipping points or cycle shifts are common and normal in nature (Gunderson, 2002), but for humans it is – for abovementioned reason– undesirable to reach tipping points that change ecosystems and the biophysical system of our planet. On the other hand, in terms of social systems, reaching a social tipping point currently appears to be a prerequisite for maintaining the Earth's systems.

Otto (2020) described several social tipping elements (STE) and related interventions (STI) that could drive rapid decarbonisation<sup>2</sup>. They found the social tipping of norms and values systems, e.g. recognising the moral implications of fossil fuel usage, to be a very slow process (> 30 years). Currently, 64% of people across 50 different countries consider climate change to be an emergency, according to the largest survey of public on climate change ever conducted (UNDP, 2021). Although 59% of these people said that the world should urgently do everything necessary in response to this (UNDP, 2021), 'should' is not the same as 'shall'.

Local and individual actions, as well as lifestyle and consumption pattern changes are considered critical in reducing urban communities' carbon footprints (as described by IPCC, 2022, p. 1191, Table 8.2, and p. 1518). A study by Centola (2018) found rather hopeful, experimental evidence for tipping points in social conventions. They concluded that when the size of minority groups reached a critical mass of roughly 25%, their influence on the majority could be tipped. In case a minority entails one that pushes for sustainability transformation, this is promising for upholding the Paris agreement.

### 1.1.3 Community potential

'The way things are done' can roughly be labelled as practices: they shape our everyday-lives, and social practices<sup>3</sup> inherently involve other people (Shove, 2012). Many daily actions are shaped by habits<sup>3</sup>, although in sustainability science, pro-environmental habits remain an underexplored research agenda (Linder, 2022). These pro-environmental practices and habits hold potential for sustainability transformation, because 'the way things are done' can influence the way 'other things' are done. In scientific literature, this phenomenon is also known as a spill-over<sup>3</sup> effect: for example, Lanzini (2014) found that 'green' purchase behaviour of individuals could increase their other Pro-Environmental Behaviours (PEB, explained in 2.1), such as recycling or making use of public transport.

People are social beings that tend to seek connection, creating communities and groups (Fiske, 2018). To some extent one could say that community or club members have a partially shared identity. Group identities are found to help turn environmentally-friendly group values into pro-environmental behaviour, although this conversion is considerably stronger in self-identities (Wang, 2021). Jans (2021) found that bottom-up pro-environmental initiatives in groups could enable pro-environmental social identity formation and corresponding behaviour. In other words; if change is initiated from within a group or community, it has the potential to accelerate transitioning towards more

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<sup>2</sup> Decarbonisation can be read as significantly reducing greenhouse gas emissions. Appendix A depicts a visual representation of the six STEs and related STIs in relation to each other, the estimated time required to be triggered, and the social structure layer they belong to (e.g. markets, technology, policies, norms).

<sup>3</sup> There is an extensive, and growing body of literature on this field of study, including related theories; I am merely slightly touching upon these topics in this thesis.

sustainable behaviour or practices among members. However, also when change is initiated by an external party this can have far-reaching sustainability transformation consequences for that community (an exemplary case study is described in 1.4.1). Group dynamics play an important role in promoting spill-over and sustained behaviour change for more sustainable lifestyles (Elf, 2019), and Rashid (2012) found that organisational factors significantly influence the spill-over process of pro-environmental behaviour.

Pro-environmental behaviour can have a snowball or butterfly effect through peers, starting with an individual change agent, the 'man-in-the-middle' (MITM) (Srinivasan, 2012). Bolderdijk and Jans (2021) noted pro-environmental minorities to be capable of paving the way to spontaneous social change, by changing private opinions, norm perceptions and offering social support for others. Srinivasan (2012) stated that environmental sustainability is achieved through cooperation with fellow (sub)group members and the day-to-day activities of people. Reaching social tipping points for sustainability transformation through groups or communities, would potentially be much faster than through individuals. These changes however, do need to be started or initiated by someone.

#### 1.1.4 Think globally, act locally

In the Preface (and Acknowledgements) it is mentioned that this research gained shape through several consultations with various parties, among others. Two of these are the Public Benefit Organisation<sup>4</sup> *KlimaatGesprekken* (KG) and *Think Big Act Now* (TBAN). KG is the Dutch branch of the United Kingdoms' climate outreach organisation 'Carbon Conversations', and organises workshop series that help partakers reduce their footprint and increase their environmental handprint (further explained in section 1.3.2). TBAN has a similar cause; their mission is to share effective ways to pursue a bright future for all by e.g. publishing (hand)books and teaching packs. With both organisations it was discussed which research directions could provide most pragmatic insights. TBAN (2022, March 23) stressed that learning how already environmentally active individuals could be activated to do this in different aspects of – or roles they have in – their lives, would be of great value. *KlimaatGesprekken* (2022, 18 May) alluded to the relevance of finding out the spark or drive that makes people move, so that more people could be mobilised. Both directions line up with the earlier described contextual background.

In line with the IPCCs emphasis on the criticality of individual and local actions, this thesis is written under the guise of 'think globally, act locally'. The Netherlands is one of the signatory partners of the Paris Agreement and is legally obliged to take climate action, making this spatial scope defensible as such. The previous subchapters and literature that is later described could apply to any world citizen. I, however, am a Dutch woman at heart living in the South-Holland province, and attempt to tackle issues from the cultural perspective and situation that I personally know best. Section 1.3.3 and 1.4.2 further elaborate on the situation in the Netherlands.

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<sup>4</sup> In Dutch: Algemeen Nut Beogende Instelling, ANBI

## 1.2 Knowledge gap

Based on the previous subchapter, the initial research topic entailed “individuals advocating for pro-environmental behaviour in group settings”. In line with my personal interests (see Preface), I wanted to unravel what caused or helped these individuals in showing this type of behaviour in an existing group or community; how and by who these ‘green’ initiatives emerged. Therefore, I conducted a literature study that allowed identifying a knowledge gap within this topic.

The literature study was done using Scopus: Table 1 lists search terms used, and the amount of results that were found. Referenced (first column) titles and papers that were found, are further listed in Appendix B. The relevance of the papers was estimated based on the extent to which their abstracts answered the questions posed in the earlier paragraph. A paper was read if it was considered relevant or somewhat relevant with that regards. Although some literature search results came quite close to answering the initial questions, none of them addressed the topic sufficiently, as they did not provide me with a clear answer. Some results of this literature search are explained below the Table.

Table 1 Initial literature study, using Scopus searching Article title, Abstract and Keywords.

Ref.	Keyword(s)	Results	Relevance
	individual AND club AND “green initiative” individual AND gild AND “green initiative” individual AND guild AND “green initiative” individual AND federation AND “green initiative” individual AND cooperative AND “green initiative” individual AND tribe AND “green initiative”	None	-
	individual AND association AND “green initiative”	2 docs	None
	individual AND union AND “green initiative”	1 doc	None
	individual AND society AND “green initiative”	4 docs	None
1.	individual AND club AND “pro-environmental”	<a href="#">10 docs</a>	1 relevant 4 somewhat
	individual AND gild AND “pro-environmental” individual AND guild AND “pro-environmental”	None	-
2.	individual AND federation AND “pro-environmental”	<a href="#">2 docs</a>	2 somewhat
3.	individual AND cooperative AND “pro-environmental”	<a href="#">10 docs</a>	2 relevant 4 somewhat 1 interesting
4.	individual AND association AND “pro-environmental”  AND advoca*	<a href="#">112 docs</a>  <a href="#">7 docs</a>	4 relevant 2 somewhat 1 interesting
	individual AND tribe AND “pro-environmental”	<a href="#">1 doc</a>	None
5.	individual AND union AND “pro-environmental”	<a href="#">17 docs</a>	2 somewhat
6.	individual AND society AND “pro-environmental”  AND advoca*	<a href="#">137 docs</a>  <a href="#">7 docs</a>	<refined>  1 relevant 3 somewhat 1 interesting
	individual AND club AND leisu* AND advoca*	<a href="#">1 doc</a>	
	environment* AND advoca* AND behavio* AND club	<a href="#">24481 docs</a> <a href="#">8829 docs</a> <a href="#">203 docs</a>	
7.	advoca* AND “pro-environmental” AND individu*	<a href="#">29 docs</a>	1 relevant 2 somewhat
8	advocating AND “pro-environmental behavi*”	<a href="#">3 docs</a>	2 interesting
	individu* AND start AND green AND club individu* AND start AND green AND association	None	
9.	“sport* club” AND eco* AND environment	<a href="#">338 docs</a> <a href="#">55 docs</a>	1 somewhat

			5 interesting
10.	"sport* club" AND change AND individu*	<a href="#">60 docs</a>	1 relevant 3 somewhat 1 interesting

Srinivasan (2012) attempted to highlight the motivations and contributions of individuals who help preserve global commons, and created a model in which a morally committed, altruistic opinion-leader ('Man-in-the-Middle') encourages pro-social behaviour among a larger group. They noted that external interventions could be limited to the identification of specific change agents, and the prompts or spread of pro-environmental behaviour (PEB) within existing social structures. It was concluded that the solution to the global problem of climate change could emerge from local motivations (Srinivasan, 2012). These motivations of everyday individuals were listed to mainly entail searching cost-effective and novel solutions that would improve the quality of their living. The focus of this paper however, was on consumption choices. Although consumption choices are highly relevant, they do not cover all dimensions in which PEB can occur (see 2.1).

Hauge et al. (2013) studied what factors increase the chance residents of housing cooperatives to agree on sustainability renovation, and listed ten guidelines<sup>5</sup> that contribute to this, by stimulating enabling factors and taking away barriers. To find these, they interviewed 30 individuals; professional advisors in cooperative housing associations, chairman/board members and residents across three case studies. Although their study concerns sustainability transformation and provides valuable insights regarding implementation, it did not shed light on the starting point or origin for this change. Among wildscape gardeners, Jones et al. (2021) studied how urban residents began and expanded their engagement and advocacy for pro-environmental behaviour within this community, and found up to 10 different, interconnected motivational reasons<sup>6</sup> for this. It however remains unclear to what extent these findings are generalisable to other communities, as several of the motivations are highly specific to the practice of (wildscape) gardening.

The analysis shows that the literature only partly covers the research topic, indicating a research gap with regards to what drives or helps individual change agents to advocate for sustainability formation within a community.

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<sup>5</sup> The ten guidelines by Hauge (2013): 1) be open about the plans, 2) invest plenty of time, 3) seek advice, 4) agree within the board, 5) involve people who create enthusiasm, 6) let the owners/residents take the floor, 7) take the owners' and residents' suggestions seriously, 8) provide information in small portions, 9) show financial calculations and consequences, 10) don't vote on the renovation until you are sure that shareholders are adequately informed.

<sup>6</sup> The ten motivational reasons by Jones et al. (2021): 1) beauty, 2) saving water, 3) fun, enjoyment of gardening, 4) wildlife, providing habitat 5) mutual refuge, sharing space with wildlife, 6) environmental motivations, 7) sense of place, reflecting the yard to the regional landscape, 8) norm change, 9) ease, 10) family.

### 1.3 Research angle and scope

After determining a knowledge gap, there are numerous ways to attempt bridging it. This subchapter elaborates on several direction choices that were made in the shaping of the study.

#### 1.3.1 Qualitative approach

The knowledge gap that was observed in 1.2 calls for a qualitative approach, as this allows for exploration and gaining a deeper understanding of certain phenomena (Creswell, 2018). As was mentioned in the Preface, there was also personal interest in taking a qualitative approach. Chapter 3 further explains and elaborates on the methods that are used in this study.

#### 1.3.2 Looking at the bright side

There is an increasing interest in moving toward a more positive and constructive approach regarding environmental impacts: 'handprint thinking' is the common foundation of this approach, and it has the potential to encourage doing good (Guillaume, 2020). It can be read as the counterpart of the well-known environmental footprint, which describes the negative impacts one has. In sustainability transformation studies, positive sustainability contributions are less-measured than negative impacts actions have (Dijkstra-Silva, 2022).

The earlier mentioned ANBIs KlimaatGesprekken (KG) and Think Big Act Now (TBAN), make use of this handprint thinking style, although TBAN uses the term EcoPositief (English: Eco Positive) for this. In line with handprint thinking and looking at the brighter side of occurrences, the focus of this research lies on enablers rather than barriers. Some barriers will inevitably come forward, yet due to time limitations these will not be thoroughly discussed.

#### 1.3.3 Dutch communities

As was mentioned in section 1.1.4, there is a Paris agreement-related and personal argument for focusing on The Netherlands, which is typically a country of clubs and associations (Dutch: verenigingsland). A 'vereniging' is a non-profit, legal entity that consists of like-minded individuals that want to achieve something together: practicing a hobby, participating in sports or representing shared interests, among others (*Setting up an association in the Netherlands*, n.d.). There are many different types of clubs and associations and it is prevalent that people hold various memberships concurrently and/or throughout their lives, often starting in childhood aside school. The Netherlands count over 40,000 associations and foundations (KVK, n.d.), and over 30% of Dutch people aged above 15 years old partake in club or association activities weekly (CBS StatLine, 2022). Given the potential of communities (1.1.3) and the popularity of clubs and associations in this country, it makes sense to focus on this type of community.

In 2021, consumer associations – focused on establishing and enforcing consumer rights– hold most members: 41.6% of Dutch people are affiliated with those (CBS StatLine, 2022). Opposed to this type of association, others are more aimed at establishing a sense of community surrounding a certain theme or practice. The second largest type in membership numbers entail sports clubs (34.9%), followed by environmental organisations (20.8%) (CBS StatLine, 2022). In 2020 there were over 26,100 sports clubs in the Netherlands (CBS, 2022, 11 February-b). As sports clubs are so common and popular in this country, looking at this type of community could hold great potential for sustainability transformation.

## 1.4 Sports clubs and The Netherlands

This subchapter provides insights on sustainability transformation in sports clubs and then describes the current situation of Dutch sports clubs.

### 1.4.1 Sustainability transformation in sports clubs

Section 1.1.3 referred to far-reaching consequences for a community after change for sustainability transformation was initiated. The community in question is that of the Forest Green Rovers (FGR) football club, situated in Gloucestershire, United Kingdom (UK).

#### Case study: Forest Green Rovers football club

The Forest Green Rovers (FGR) is a professional sports club that stands out in terms of sustainability. It was on the brink of bankruptcy when it got purchased by the owner of Ecotricity (a renewable energy company), under the condition that he got to decide its course and future direction. The club went 'green' instead of bankrupt and became the world's first climate neutral football club (UNFCCC, 2019). Thus, in addition to the earlier mentioned findings by Jans (2021) that bottom-up initiatives in groups could accelerate sustainability transitions, also 'outsiders' could play a role in this.

Papp-Vary (2022) conducted a case study on FGR and concluded that they not only performed well on all eight areas in which sports clubs could implement environmentally friendly practices (see Table 2), but also proved to take on an ambassador's function with regards to their fans and other sports clubs. Table 2 lists these eight categories and the solutions FGR applied to them (Papp-Vary, 2022). These categories will recur in Results section 4.2.5.

*Table 2 Green renewal of the Forest Green Rovers football club, adopted from Papp-Vary (2022)*

Category	Forest Green Rovers solution
Use of renewable energy sources	Stadium powered by 100% renewable energy
Energy efficiency	Use of solar panels Automated lawn mowing, using electric equipment
Water use efficiency	Organic lawn carpet
Environmentally friendly transport modes	Electric charging station The team uses 100% electric vehicles Promotion of cycling Promotion of car sharing and public transport for home and away supporters' tours
Waste management	Shirts made from bamboo waste and recycled plastic Composting and recycling of used lawn mats
Replacement of single-use plastics	100% recycled waste (creating a circular ecosystem)
Availability of plant-based or low-carbon foods	Providing only vegan food for fans and players
Communication, commitment to green goals	Complete 'greening' of the official club colours Promotion of actions to reduce the ecological footprint of supporters and reward well-performing supporters Involving sponsors and business partners with green values and organising joint actions and promotions with them

The UNFCCC (2019) emphasized that the club caused a spill-over effect to their fans, other sports clubs and local businesses, replicating FGR's green vision by e.g. adopting a plant-based diet or switching to more environmentally friendly means of transportation even in their life outside the club. This case study underlines the potential role of sports communities in sustainability transformation.



#### 1.4.2 Sports clubs in The Netherlands

In June 2018, the first National Sports Agreement (Dutch: Sportakkoord) was signed; *“Sport verenigt Nederland”*, pronouncing the ambition to make sports as fun, accessible and inclusive as possible (Alles over Sport, 2018). The agreement consists of six components that are further elaborated on: inclusive sport, sustainable sport, vital providers, positive sports culture, enjoying exercise from an early age, and top sports that inspire. The second ambition is most relevant to this thesis and was formulated as follows: *“we want to have a properly functioning and sustainable sports infrastructure. Wherever people engage in sport and exercise, facilities have to be properly organised”* (VWS, 2018). Note that their interpretation of ‘sustainability’ may refer more towards longevity or economic sustainability rather than the one earlier described in section 1.1.1. Provided that it is a much aspired target for clubs to reduce costs in favour of their members, the notion of sustainability often still aligns with the Triple Bottom Line (people, planet, profit). For example, an energy-neutral club house would benefit all three.

There are several parties and organisations that help sports clubs in becoming less energy-dependent, e.g. through knowledge-sharing or providing guidance. Examples of this latter are parties like ‘De Groene Club’, ‘SportNLGroen’, ‘SportStroom’, among others. With regards to knowledge-sharing, the ‘Duurzame Sportsector’ is an independent knowledge platform that aims at reducing CO<sub>2</sub>-emissions in sports to 49% by 2030 (compared to 1990) (Duurzame Sportsector, n.d.). They recently published the ‘Stappenplan sportverenigingen’, a sustainability roadmap manual for sports clubs, by Poot (2020). An even more recent example is the ‘Duurzaamheidsatlas’, as described by Heetkamp (2022, October 31). In the Duurzaamheidsatlas, sustainability innovations that have been performed by specific sports clubs are listed, so that interested other clubs could be inspired by this and reach out to neighbouring clubs in case they aspire making similar adjustments. Although sustainability transformation in sports clubs already receives quite some attention in the Netherlands, this attention is mainly directed at the technical (rather than social or psychological) aspects, and could be further intensified.

#### Dire straits

The main source of income and items of expenditure for Dutch sports clubs entail membership fees and accommodation expenses (rent, energy and water), respectively (CBS, 2022, 11 February-a). Due to the war in Ukraine, energy prices for households and organisations this year (2022) have doubled or even quadrupled, as can be seen in Figure 2. The orange line represents the electricity price and the blue line represents the gas price. Two green elements were added to the graph, indicating the kick-off meeting / start of the current thesis project, and the timeframe in which data was collected.

Energy prices caused several sports clubs to change their policies in as early as April 2022, when a football club in Venlo denied children to take a shower at their club after training sessions (Jeugdjournaal, 2022). A football club in Hazerswoude-Rijndijk reintroduced their shower plan, limiting the time spent under warm rays to 20 minutes per team (NOS Nieuws, 2022a). Other clubs considered taking similar measures but remained hesitant to act, due to their perceived social responsibilities. For example, a korfbal club in Alphen aan den Rijn recognised that members could be taking showers at the club to lower their own household energy bill and felt obliged to accommodate for that (NOS Nieuws, 2022a).

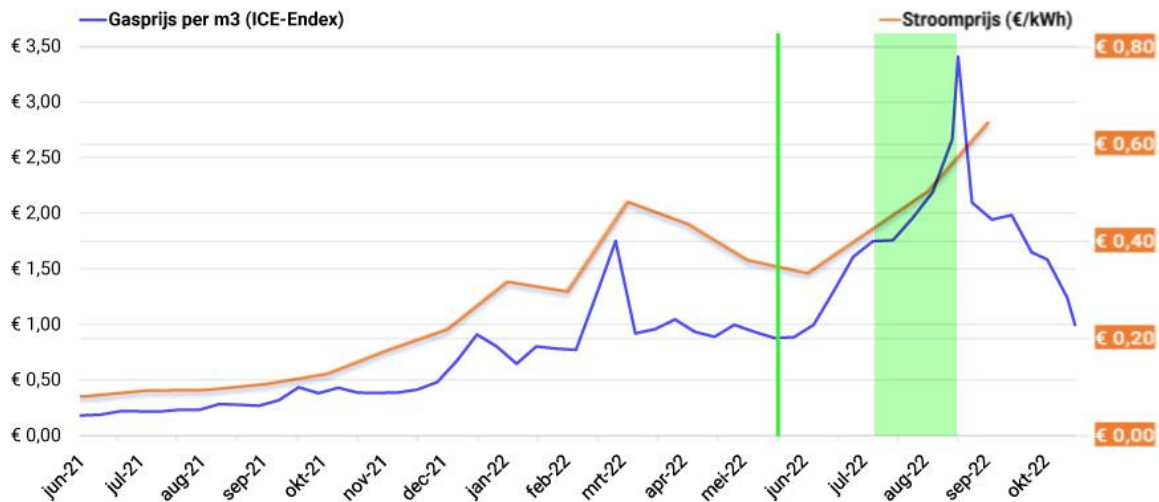


Figure 2 Gas and electricity prices in the Netherlands from June 2021 until October 2022, adopted from *Energievergelijk* (2022a, 2022b); adjusted.

Aside from increased energy prices, at the time of writing (November 2022) there has been hyperinflation of up to 17.1% for several months, pushing households towards increasing financial trouble (Meinema, 2022). A football club in Amsterdam feared that members would stop doing sports altogether due to increased membership fees, stressing the need for further sustainability and financial compensation for sports clubs (AT5, 2022). Around 59 percent of sports clubs boards think that members might no longer afford their membership fees (NOS Nieuws, 2022, November 17). Recent research indeed showed that about one fifth of the sporting population that had been confronted with increased energy prices, started exercising less or unsubscribed from their sports club altogether (NOS Nieuws, 2022b). NOS Nieuws (2022, November 29) reported that around 80,000 people have quit doing sports out of financial reasons, and 10% of amateur sports clubs consider closing their doors entirely for this same reason. Nonetheless and despite the social function these clubs fulfil, the Dutch government refuses to increase supporting measures (NOS Nieuws, 2022, November 29). The need to reduce energy usage and related costs in Dutch sports clubs is pressing.

Wicker and Thormann (2022) show that pro-environmental actions in sports positively effect members' well-being, and concluded that public health goals, individuals' well-being and protecting the natural environment go hand in hand. By transitioning towards more sustainable practices in sports clubs, not only the Paris agreement could be attempted to uphold, but Dutch sports could also become more accessible again. As was described in earlier sections, more advocators for change seem to be required to start these transitions, as it is not yet common practice to tackle issues from a sustainability perspective.

## 1.5 Problem statement

The societal need for sustainability transformation is crucial in light of climate change, and the role of individual action and behavioural changes is considered critical in meeting the Paris agreement (1.1.1). Radical shifts in social norms are required, which could be achieved through reaching social tipping points (1.1.2). These tipping points could be reached earlier by focusing on 'greening' communities rather than individuals, as climate action could spill-over to other members or aspects of life (1.1.3). Any type of social change however, needs initiation in one way or another. Knowing what makes people advocate for pro-environmental behaviour within their community or communities, could help initiate the needed sustainability transformation (1.1.4). A knowledge gap was found as the literature only partly covers this topic (1.2).

Sports clubs are common and popular community types in The Netherlands, which would benefit directly from sustainability transformation and could hold promising social change (1.3-1.4). There is growing interest in the greening of Dutch sports clubs, which is demonstrated by the Dutch Knowledge Centre for Sports and Movement opening a call for participants in qualitative research on sustainability transformation at sports clubs (Duurzame Sportsector, 2022, January 24). Their research is aimed at gaining insights as to how information provisioning could be improved, and directed at sports and policy advisors, club management, sports entrepreneurs, field administrators and neighbourhood sports coaches. Regular members however, could also initiate change. When focusing on any individual member who makes efforts in making their club more sustainable, broader insights could be gained as to what helps these members in this process. By taking an exploratory approach, possible openings can be identified and possibly copied to or stimulated in other clubs.

Studying the determinants of pro-environmental behaviour (PEB) in sports club members is a novel research niche (Thormann, 2021). Thormann (2021) conducted qualitative research in an attempt to explain the effects of environmental consciousness, income and gender on an individuals' PEB. Exhibiting PEB however does not necessarily imply advocacy, which could be used to push for more far-reaching changes. Moser (2019) concluded that in mobility programmes, formal social groups such as sports clubs indeed seem potentially effective motivators and multipliers for environment-friendly behaviour.

The purpose of this exploratory study is to gain an understanding of individuals who make efforts for sustainability transformation at their sports club, and what helps them in doing so.

### Research questions

Main research question:

*What characteristics or circumstances help change agents in different sports clubs to advocate for pro-environmental behaviour within their sports club?*

Sub questions:

1. What drives or motivates change agents in different sports clubs to advocate for pro-environmental behaviour within their sports club?
2. To what extent does environmental citizenship drive these individuals?
3. How can sports clubs create circumstances in which members are stimulated to pursue sustainability transformation in their club?

## Thesis outline

To answer the research questions, semi-structured interviews are conducted with members who make efforts for sustainability transformation in their club. The theoretical framework is further described in the next Chapter (2), as well as the creation and elements of the conceptual model (2.4). In Chapter 3, the methodology for data collection and analyses are elaborated on, and Chapter 4 lists the results derived from that approach. Chapter 5 discusses the synthesis of the results and reflects on the study that was conducted. The thesis concludes with Chapter 6, which answers the research questions provides recommendations.

### 1.6 Relevance to Industrial Ecology

This thesis is written in partial fulfilment of the requirements for the Master of Science (MSc) Industrial Ecology program at TU Delft and Leiden University. The International Society for Industrial Ecology (IS4IE) describes Industrial Ecology as the study of systemic relationships, intersecting multiple disciplines including that of natural sciences, social sciences and engineering, whilst building on concepts such as sustainable development (IS4IE, n.d.). The main focus of this study lies on behaviour (social sciences) for sustainability transformation. However, the technical system and natural environment are crucial elements of the story, both influencing and responding to the behaviour studied. This thesis is relevant to the field of Industrial Ecology as it reveals insights on the circumstances under which sustainability transformation emerges within Dutch sports clubs.

## 2. Theoretical framework

This chapter describes the lens through which the research questions are looked at and synthesises previous scientific work. It further explains relevant concepts and delineates the conceptual model that is used for the analyses. The chapter is subdivided into Pro-Environmental Behaviour (2.1), Behaviour models (2.2), Change agents within sports clubs (2.3) and the Conceptual model (2.4).

### 2.1 Pro-Environmental Behaviour

Reverting back to a the cross-reference in section 1.1.3 and the research questions (1.5), the term Pro-Environmental Behaviour (PEB) needs to be further explained. In this study, PEB is perceived as a possible consequence of certain characteristics, circumstances and drivers within an individual and their sports club, provided that the focus of the study is on how it occurs. There are several words or terms that describe the phenomenon or type of behaviour that this thesis refers to as PEB. Kurisu (2015) lists several of these alternative terms for PEB: e.g. ecological behaviour, responsible environmental behaviour, and environmentally significant behaviour. Stern (2000) described four types of the latter, in which 'influencing the actions of organisations to which they belong' (p. 410) was categorised in 'other environmentally significant behaviours'. As was described in the previous chapter, sports clubs are the type of organisation that is looked at in this study. Figure 3 depicts this element of focus of this study. The circles represent the different participants who share a certain experience: making efforts for sustainability, showing PEB inside their sports clubs.

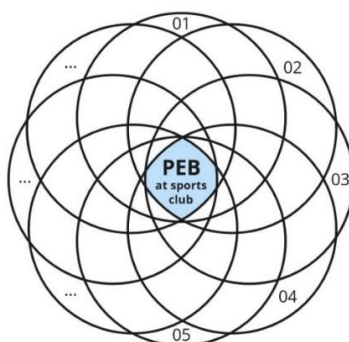


Figure 3 Visualisation of what resulting behaviour is focused on in this thesis

The term PEB consists of several components and there are various ways to measure the concept (Lange & Dewitte, 2019). In the current study, PEB can be read as 'anything that a person does or attempts that benefits ecological systems.' That interpretation may seem as a rather broad definition for the term PEB, yet it closely matches the main target of Kurisu (2015)'s book on this topic. He describes numerous examples of PEB, ranging from avoiding usage to zero-waste living; over 200 different PEBs are listed in their first chapter. All these items have been classified into their major targets, entailing the reduction of; greenhouse gases, air pollutants, water pollutants, resource consumption, disturbance of nature, and others (Kurisu, 2015, pp. 13-23).

Although Kurisu (2015, p. 4, Fig. 1.2) targets behaviours that '*actually contribute to or are perceived to contribute to environmental conservation,*' this thesis takes a broader approach and also includes behaviours that '*contribute to the cultivation of environmental consciousness.*' A reason for widening the term is that Thormann (2021) found that environmentally conscious sports club members behave more environmentally friendly, e.g. by using less impactful transportation modes travel to their club. Increasing environmental consciousness or raising awareness for the topic within a sports club is therefore included in the PEB definition in the current study.

## 2.2 Behaviour models

There are several drivers for different types of (whether or not pro-environmental) behaviour. Models are often used to study behaviour or phenomena, and can be seen as simplified versions of reality. There is an eminently extensive volume of literature on theories and models that attempt to explain the bedrock of individual human behaviour and behaviour change (Darnton, 2008). Stern (2000) determined four types of causal variables for environmentally significant individual behaviour: Attitudinal factors, external or contextual forces, personal capabilities and habits or routines. In their second chapter, Kurisu (2015, pp. 27-44) listed several influential factors on PEB, including; psychological factors such as norms, attitudes, affects and cognitive dissonances; cost and benefit factors in monetary terms or time and effort; knowledge factors; socio-demographics like gender, age or income; personality; and situational factors. Building on that, they listed a multitude of models that can be used in explaining or predicting PEB (pp. 52-61).

Given the multi-level approach that is taken in addressing the problem statement, it is desirable to use a theory or model that already has these elements embedded in it as a starting point for the analysis. Meanwhile, the research questions mentioned in subchapter 1.5, opt for a more open and exploratory approach regarding characteristics, circumstances or motivations that drive the behaviour. This subchapter describes the behavioural model that was eventually chosen to address tackle the research questions and then lists some of the models contending.

### 2.2.1 Chosen model for operationalisation: COM-B

The exploratory nature of this thesis asked for a relatively simple model that could be used as a basis for the operationalisation (see 3.3) and development of interview questions. An important goal in the writing of this thesis was to pinpoint which “knobs” a sports club could turn so that more members would come forward to make their club greener (sub research question 3). For these reasons, the core elements from the intervention framework for behaviour change by Michie et al. (2011) were chosen as the behaviour model. Their framework describes nine intervention functions and seven enabling categories for policy. At the basis of this ‘Behaviour Change Wheel’ lies the behaviour system, consisting of three essential conditions for behaviour: capability, opportunity, and motivation (see also Figure 4), or in short: COM.

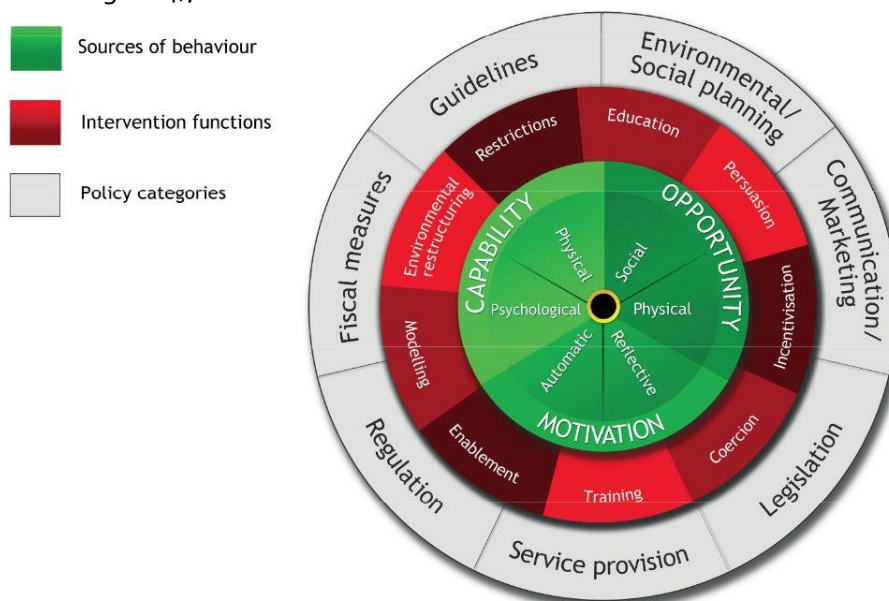


Figure 4 Behaviour Change Wheel, adopted from Michie et al. (2011). At the core is the behaviour system that was used.

The COM-B model is used as a starting point for operationalisation (discussed in subchapter 3.3), and later used to structure the results (discussed in subchapter 4.2). This approach imitates the way in which O'Donnell et al. (2022) used the COM-B model to qualitatively assess what helped (and hindered) the creation of smoke-free homes. The model closely resembles the MOA (Motivation, Opportunity, Ability) model which Kurisu (2015) listed as a model for PEB. It is described in the next section; its main difference is in the word (cap)ability. Capability is slightly broader, as it also entails the potential to do something: capability is simply a combination of capable + ability. The definitions used for the three COM-components were adopted from O'Donnell et al. (2022):

*Capability: Psychological or physical ability to enact the behaviour*

*Opportunity: Physical and social environment that enables the behaviour*

*Motivation: Reflective and automatic mechanisms that activate or inhibit behaviour*

As was elaborated on in the previous subchapter (2.1), the relevant behaviour (PEB in sports club) is defined as follows: *behaviours that contribute to, or are perceived to contribute to, environmental conservation or the cultivation of environmental consciousness.*

### 2.2.2 Contending theories

Before the COM-B model was chosen as basis for the analysis, several behavioural models were considered. One behavioural model that cannot remain unmentioned is the well-known Theory of Planned Behaviour (TPB), which has been extensively used in various research fields. According to TPB, (voluntary) human behaviour is driven by the intention and perceived control one has over this behaviour (Ajzen, 1991). Similar to TPB yet giving a more prominent role for habits and external factors is the Theory of Interpersonal Behaviour (TIB, depicted in Figure 5), which explicitly assumes that external factors can influence whether specific behaviour can be implemented, through the presence of facilitating conditions (Biely, 2022). In this sense, it is acknowledging that context, such as social structures, might moderate behaviour (Jackson, 2005, as described by Biely, 2022). This theory seems rather integral given the presence of personal or psychological mechanisms, as well as habits and social factors. However, the model remains rather linear as it does not imply that the behaviour shown in turn also affects its environment. Given that the current study inspects the behaviour of an individual who is a sports club member, interaction and reciprocity with(in) the club itself is assumed to be present and of influence to the behaviour.

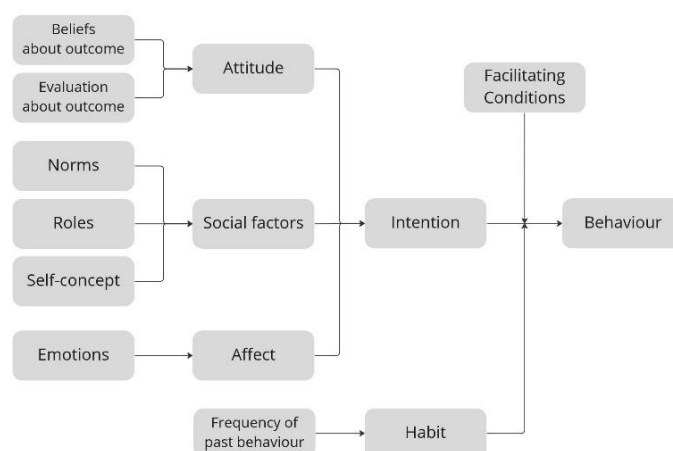


Figure 5 Theory of Interpersonal Behaviour (TIB) from Triandis (1977), cited after Jackson (2005), described by Biely (2022, p. 32).

Another integrated behavioural model that combines internal motivational variables with external contextual variables is the Motivation-Opportunity-Ability (MOA) model by Ölander and Thøgersen (as described by Jackson, 2005). As can be seen in Figure 6 and contrary to the TIB model, the MOA model does incorporate mechanisms in which the behaviour shown, feeds back into other elements of the model.

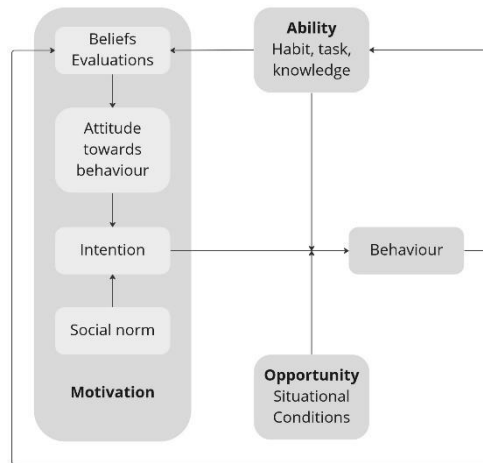


Figure 6 Motivation-Opportunity-Ability (MOA) model by Ölander & Thøgersen (1995), as depicted by (Jackson, 2005)

Although the MOA-model covered all elements deemed relevant for this study, I decided to switch to the COM-B model for two reasons. First, it was more simplified in the sense that the motivation component wasn't split into separate elements. Second, the COM-B model by Michie et al. (2011) was developed for behaviour change interventions, implying possibly higher useability for real-world situations (see Preface).

### 2.3 Change agents within sports clubs

There are various ways and approaches to study or describe phenomena. As was mentioned in the introduction chapter, the taken angle for this thesis is more from a social perspective rather than a technical one. Several levels are acknowledged to be present and of influence to the study, being; the individual, community, and society. In other words; a three-level or multi-level approach is taken, in which these three interconnected unities are distinguished. Each of these units could be seen and studied as systems on their own, yet they can never fully be seen separately: e.g. the individual is a member of one or multiple communities, where both take part in society, and developments in one level can impact the status quo in another. The approach taken, partially resembles –yet should not be mistaken for– the Multi-Level Perspective (MLP): a well-known theory in transition research. In the MLP, transitions are described to come about through interaction processes between and within three analytical levels; niches, socio-technical regimes and the socio-technical landscape (Geels, 2010). This study merely distinguishes between the individual, community and society, and focuses on individuals within sports clubs communities. More specifically, individuals who take efforts in sustainability transformation inside their sports club.

'Change agent' is a term that is often used to describe someone who enables or promotes change within certain groups. As was explicated in the Introduction Chapter, more of these people are desired to rise. Although each individual is unique, Schwartz (2012) identified ten universal personal values



that can be divided into four main dimensions: self-enhancement (SE), conservation (CONS), openness to change (OC) and self-transcendence (ST). Sarid and Goldman (2021) built on these dimensions and developed a value-based, three-level framework to gain a better understanding of the drivers in individuals to act as change agents, and the extent of change these individuals aspired. Figure 7 depicts their framework, in which they connect change agency for sustainability to Environmental Citizenship (EC).

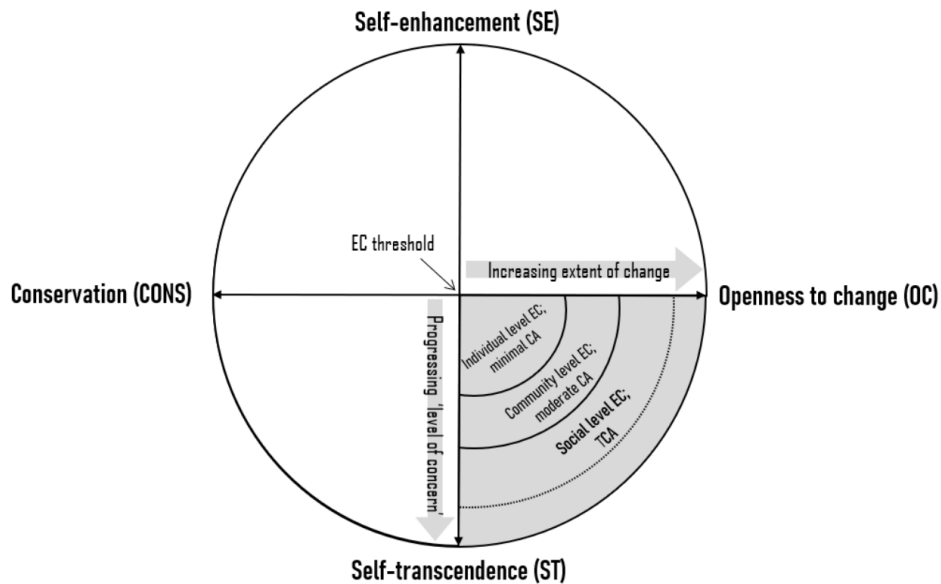


Figure 7 Three-level Environmental Citizenship framework by Sarid and Goldman (2021).

Two particular things stand out when further inspecting Figure 7. The first being that Sarid and Goldman (2021) consider the personal values 'openness to change' (OC) and 'self-transcendence' (ST) to play an important role in Environmental Citizenship (EC) and Change Agency (CA). With increased OC, one is less attached to 'business-as-usual', and could therefore advocate for more transformative changes. With increased ST (seeing things from a 'higher' perspective than ones' own), a higher level of concern can be experienced, likewise leading to a desire for more transformative changes. The second entails that the framework hints towards some level of progressiveness, as change agency and environmental citizenship are positively linked to one another. The depiction suggests that CA and EC shown by someone at the community level, could be expected to be preceded by similar behaviours at the individual level, as this aligns with their OC and ST values. Or put in other words; that CA for sustainability commences at the individual level.

Although the measuring of EC and CA concepts is still in its infancy, the three-level EC framework does offer a tool for investigating different levels of CA in various contexts (Sarid & Goldman, 2021). Hadjichambis and Paraskeva-Hadjichambi (2020) stress the importance of EC in sustainability research and developed the first Environmental Citizenship Questionnaire (ECQ). It measures nine different variables across 76 items: past actions, knowledge, conceptions, skills, attitudes, values, inside organisation, outside organisation, and change agency (Hadjichambis & Paraskeva-Hadjichambi, 2020). The need for an EC questionnaire had already been present, and this need only increased after the term had been defined. The definition of EC that is used in this study is adopted from the European Network for Environmental Citizenship (ENEC), which defines an environmental citizen as follows:

*The citizen who has a coherent and adequate body of knowledge as well as the necessary skills, values, attitudes and competences in order to be able to act and participate in society as an agent of change in the private and public sphere, on a local, national and global scale, through individual and collective actions, in the direction of solving contemporary environmental problems, preventing the creation of new environmental problems, in achieving sustainability as well as developing a healthy relationship with nature. An 'Environmental Citizen' is the citizen who exercises his/her environmental rights and duties, is able to identify the underlying structural causes of environmental degradation and environmental problems, and has the willingness and the competences for critical and active engagement and civic participation to address those structural causes, acting individually and collectively within democratic means and taking into account inter- and intra-generational justice. (ENEC, 2018, Defining "Environmental Citizen")*

The current thesis focuses on individuals who act as a change agents for sustainability at the community level. Assuming the framework of Sarid and Goldman (2021) is correct, at least some degree of Environmental Citizenship is expected to be found in those partaking in this study.

## 2.4 Conceptual model

A conceptual model was built to help answer the research questions (subchapter 1.5). This subchapter explains the conceptual model that was built upon the theoretical framework (2.1-2.3) and how these construct relate to one another. Table 3 lists the concepts that were used in shaping the conceptual model and Figure 8 visually depicts it.

*Table 3 Overview of the model, framework and questionnaire shaping the conceptual model and operationalisation (3.3)*

<b>Three-level EC Framework (2.3)</b> <i>(Sarid &amp; Goldman, 2021)</i>	<b>COM-B Model (2.2.1)</b> <i>(Michie et al., 2011)</i>	<b>Environmental Citizenship Questionnaire</b> <i>(Hadjichambis &amp; Paraskeva-Hadjichambi, 2020)</i>
Individual level <i>(of environmental citizenship, minimal change agency)</i>	Capability	Past actions* Knowledge
Community level <i>(of environmental citizenship, moderate change agency)</i>	Opportunity	Conceptions Skills
Social level <i>(of environmental citizenship, transformative change agency)</i>	Motivation	Attitudes Values
	(Pro-Environmental) Behaviour	Inside organisation Outside organisation* Change agency

*\* = Indicating possible spill-over (see 1.1.3 and 1.4.1)*

Column one in Table 3 lists the main components of the Three-level EC framework. The multi-levelness of the EC-framework in Figure 8, is depicted using three coloured spheres. The largest sphere (pink) represents society, in which the individual (yellow) as well as the sports club (blue) both take part. The spheres of the individual and the sports club (community) overlap because the interviewed participants are a member of their sports club. The borderlines of the spheres are dotted, as these lines are merely indicative. The same applies to the positioning of the individual and community sphere in relation to one another: for example, if the community encompasses a substantive part of that person's life, the spheres could overlap more. Environmental Citizenship is considered to be a characteristic of an individual, therefore it was added as a separate link that merely connects to the individual.

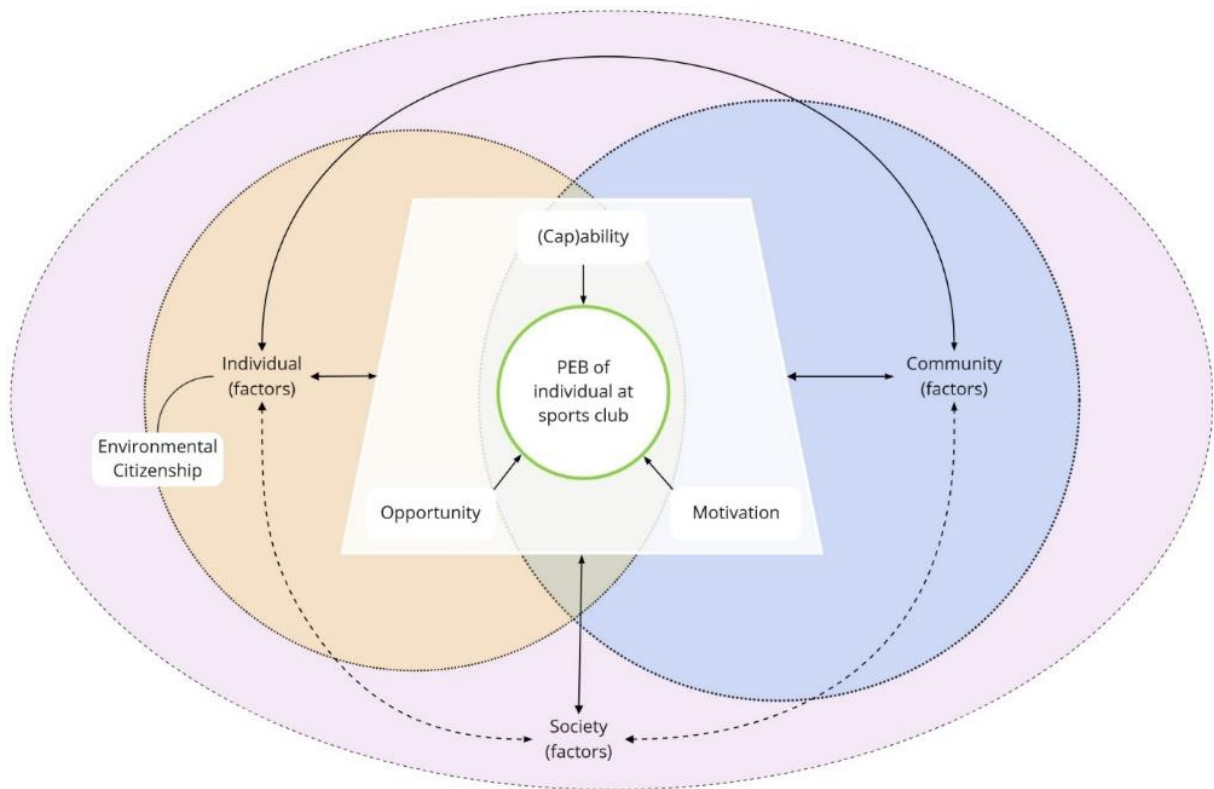


Figure 8 The multi-level conceptual model<sup>7</sup> that was used for the interviews and analysis of the data.

By using arrow headed lines, it is indicated that individual (factors), community (factors) and society (factors) can influence each other in a multidirectional way. The focus of this thesis is on the individual within the sports club. As a result, less attention is paid to the connections to society (factors), depicted by dotted lines rather than regular ones.

Column two in Table 3 lists the main components of the COM-B model. As was mentioned in section 2.2.1, that model is used as a starting point for data collection and to structure the results, imitating the approach that was used by O'Donnell et al. (2022). At the core of the Figure, a white trapezoid depicts the COM-(PE)B model. Given the aim and scope of this thesis, the COM-(PE)B components are drawn at the intersection of the individual and community spheres. It is hypothesised that the member's PEB could be influenced by all the components of the model: Environmental Citizenship (EC), individual (factors), community (factors), society (factors), and the COM-B components; capability, opportunity, motivation. To indicate this, all concepts are (indirectly) connected to the trapezoid. Note the bidirectionality of these connections: through these it is acknowledged that there is constant interaction between the different spheres.

Not everything that was mentioned in the earlier chapters found their way into the visualisation. Column three in Table 3 lists the nine different EC-variables that Hadjichambis and Paraskeva-Hadjichambi (2020) distinguished. It is coloured grey, as these variables are implicitly embedded along the other concepts. For example, knowledge and skills could be categorised under capabilities, and change agency under environmental citizenship. Although spill-over effects are mentioned in Table 3, these were not extensively studied in this thesis. How Table 3 and the dimensions of the conceptual model were eventually operationalised, is elaborated on in subchapter 3.3.

<sup>7</sup> Earlier sketches of the conceptual model can be found in Appendix C.

### 3. Methodology

This chapter describes which methodology was used for the current study. A qualitative research approach was chosen, as this allows for exploration and gaining a deeper understanding of certain phenomena or concepts (Creswell, 2018). An exploratory approach is preferred, as studying the determinants of pro-environmental behaviour (PEB) in sports club members is a novel research niche (Thormann, 2021). Aside from this, the eight constructs used in the conceptual model<sup>8</sup> (Figure 8) could differ greatly per individual- and sports club, making it close to impossible to cover all possible answers in a more quantitative survey format. The goal of this thesis is to gain an understanding of what helps individual sports club members in making sustainability efforts at their club (as was described in subchapter 1.5); qualitative research allows this.

There are several types of qualitative research and different methods that can be used. In this chapter, an overview and elaboration is given on the Research flow (3.1), Ethical aspects (3.2), Operationalisation (3.3), Data collection (3.4), Data analysis (3.5), and Validity and reliability (3.6).

#### 3.1 Research flow

Figure 9 depicts the general research flow diagram (RFD) of this study. The first block, Literature and scoping, have been discussed earlier (1.2, 1.3). In the coming (sub)chapters, a more elaborate description of the other different phases is given: Operationalisation (3.3), Data collection (3.4), Data analysis (3.5) and Results, Discussion, Conclusion and recommendations (4, 5, 6, respectively).



Figure 9 General Research Flow Diagram and time frame of the current study

Although not depicted in the RFD, at some points the thesis process was rather iterative as a lot was learned 'on the go'. After a literature and scoping study, the Human Research Ethical Committee (HREC) approved of the research setup, and interview protocol-writing could begin. Running parallel to the call for interviewees, two test interviews with peers were performed to try-out and refine the protocol. In the coding and analysis of the data, a looped approach was taken as advancing understanding of the data retrieved, progressively shaped the way I looked at the data. In section 3.5.2 this latter is further elaborated on.

<sup>8</sup> Environmental Citizenship, individual (factors), community (factors), society (factors), and the four COM-B components; (cap)ability, opportunity, motivation and Pro-Environmental Behaviour (PEB).

### 3.2 Human Research Ethics Committee (HREC)

Any research that is conducted with the involvement of human participants requires setting up a research design and acquiring approval of the Human Research Ethics Committee (HREC) (TU Delft, n.d.-b). Standard formats provided by TU Delft were used and modified to contain procedures and guidelines relevant to the current study. After consultation with the supervisors and one of the Faculty Data Stewards, three mandatory documents were sent in on June 2<sup>nd</sup>: the ethics review checklist, Data Management Plan (DMP) and the informed consent form (see Appendix D). The HREC approved the application tagged ID 2299, and labelled it as a minimal risk. The letter of approval listed four additional conditions, which were directly accommodated for (see Appendix D).

### 3.3 Operationalisation of concepts

To make concepts measurable, it is necessary to define variables. As could be deduced from the previous chapters, there are many different elements that can contribute to the behaviour that is being researched. Following the conceptual model (Figure 8) that was explained in section 2.4, seven dimensions were expected to play a role in showing Pro-Environmental Behaviour (PEB) of individuals at their sports clubs. These seven being: Environmental Citizenship, individual (factors), community (factors), society (factors), and the COM-B components; (cap)ability, opportunity and motivation.

As the focus of this study lies at the individual-community intersection, variables questioned were mainly related to these two levels. Although the societal dimension was not specifically operationalised for this same reason, it was nonetheless expected that societal factors would come up during the conversation if deemed relevant. The concept of Environmental Citizenship as such, was considered to merely apply to individuals and was therefore classified under individual factors.

Table 4 shows how the dimensions of the conceptual model (left column) were split into subdimensions (2<sup>nd</sup> column), and how these were operationalised into variables (3<sup>rd</sup> column) with corresponding interview questions (right column). Given the exploratory nature and open approach, interview questions were rather broad and purposively kept as open as possible, so that the answer of the participants would represent what came to mind and was considered most important to them.

Table 4 Operationalisation of concepts

Dimension	Subdimension	Variable	Interview question
(Cap)abilities	Of the individual	Psychological or physical capabilities	<i>What allowed you to do ...[PEB]? What capabilities or resources did/do you have?</i>
	Of the club		
Opportunities	For the individual	Physical or social opportunities	<i>Would you say there were opportunities that you took for yourself by addressing this?</i>
	For the club		<i>Were there opportunities for the club?</i>
Motivation	Of the individual	Reflective or automatic motivation	<i>Why do you work for sustainability within the association? What do you get in return? Why is this important to you?</i>
	Of the club		
Pro-Environmental Behaviour at the sports club	Operations	Actions taken	<i>What did/do you do in terms of sustainability at the club?</i>
	Involvement	Club factors	<i>How did you get involved in this? How did you handle ...? How did ... go?</i>
	Baseline	Norm/culture	<i>Were others already working on the topic? What was going on before you started?</i>

Individual factors or characteristics	Socio-demographics	Age and gender	<i>What are your age and gender?</i>
	Club membership	Occupation/background, mandate/responsibilities	<i>Could you tell something about yourself and your membership here?</i>
	Environmental citizenship	General recognition in definition (ENEC, 2018) + All items from checklist	<i>Would you describe yourself as environmentally conscious? In which items do you recognise yourself?</i>
	Spill-over effects	PEB in other roles	<i>Are you also committed to sustainability transformations in other places, outside the sports club? Would you?</i>
Community factors or characteristics	General impression	E.g. Current challenges	<i>Could you tell something about the club?</i>
	Support base	Club culture	<i>How are these initiatives received?</i>

Some cells in Table 4 are colour coded to depict their connection to the earlier described theoretical framework and conceptual model. The green cells stem from the COM-B's behaviour change wheel, which was described in section 2.2.1 and depicted in Figure 4. The light orange and light blue cells correspond with the colours that were used in the conceptual model's spheres (Figure 8), indicating the individual (factors) and community (factors), respectively. As was elaborated on in subchapter 2.4, the nine EC-variables by Hadjichambis and Paraskeva-Hadjichambi (2020) were considered to be implicitly embedded along the other concepts. The concept of Environmental Citizenship is emphasized using dark orange, and possible spill-over effects (marked add-on Table 3) are coloured grey.

Uncoloured cells represent subdimensions and variables that were added to gain a more general impression and understanding about the participants' specific situation. The interview protocol that was eventually used in the interviews is further elaborated on in section 3.4.2. Note that due to scoping reasons, society (factors) has not been operationalised as a separate dimension (earlier elaborated on in 2.4).

### 3.4 Data collection

The method selected to acquire data was that of semi-structured interviews: a well-known and frequently applied method in qualitative research. A total of 17 individuals were consulted to share their experiences and thoughts regarding sustainable transformation at their sports club. Making use of a semi-structured interview format allowed the conversations to flow naturally whilst surveying pre-determined topics/dimensions (Table 4), and created room for follow-up questions aligned with the participant's story. The following subsections describe Recruitment (3.4.1), Interview setting and protocol (3.4.2), as well as technicalities regarding Collected data (3.4.3).

#### 3.4.1 Recruitment

As could be seen in the research flow diagram (Figure 9), a mini survey (see Appendix E) and direct emails were sent out in an open call for interviewees. Any individual who considered themselves an initiative taker or achiever for sustainability at their sports club was eligible to sign themselves up and partake in the research. There is a self-selection sampling bias in this approach, affecting the generalisability of the results: some individuals are more prone to react to such calls in general, and the call itself requires reflective judgement on their fitness as partaker. Several communication and recruitment methods, depicted in Figure 10, were used to find a more sufficient amount of

interviewees (further elaborated on in subchapter 3.6). My recruitment strategy changed over time, as recruitment only sluggishly progressed where I was on a schedule.

<p><b>End of June. Undirected, national</b>          Email to Think Big Act Now          Email to KlimaatGesprekken          WhatsApp to KlimaatGesprekken coaches          WhatsApp to Industrial Ecology peers          LinkedIn post, public          Email to person I spoke with on a festival          Email to Duurzame Sportsector</p>	<p><b>Early July. Directed, regional</b>          Emails to sport clubs on Duurzame          Sportsector website as working towards sustainability, and in South-Holland</p>	<p><b>Mid and late July. Semi-directed, regional</b>          Emails to sport clubs situated in Leiden, Delft or Heeg*          Emails to referrals          WhatsApp to peers  <i>*Heeg was my holiday location</i></p>	<p><b>Eventual source of participants</b>          Via club email (n = 14)          Via referral (n = 1)          Acquaintance (n = 2)</p>
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Figure 10 Recruitment of participants. Scope, time path and result

*Undirected, national*

Recruitment started with an undirected<sup>9</sup> call with a national scope at the end of June (2022), making use of several platforms and collaborating parties to spread the message and mini survey (Appendix E). The first block in Figure 10 lists which parties were addressed and which platforms were used in this undirected, national approach. Making use of the networks and connections of these other parties allowed ‘fishing from several ponds’: a wider range of possible respondents could be reached or referred to via several channels. Although this first recruitment approach was intentionally kept as broad, open and generic as possible to increase generalisability, some wishful thinking was undoubtedly present in this decision. Where I had hoped that initiative takers would be queueing up to share their experiences or ‘green’ acquaintances’ contact information with me, this turned out not to be the case. Although no participant sign-ups came in via this way, it did provide me with one referral, and some redirecting tips from a project leader at Duurzame Sportsector.

*Directed, regional*

Given the disappointing proceeds of the undirected and open approach, a directed approach was taken in which I wanted to directly address sports clubs with potential participants. Due to the General Data Protection Regulation (GDPR), Duurzame Sportsector could not provide me with a list of sports clubs that were taking efforts or people I could reach out to. On their public website however, several clubs that ‘had become green’ were highlighted and reported on. Whilst looking up those clubs, reality kicked in regarding physical constraints: as I was keen to conduct all interviews face to face, visiting clubs all across the country would cost me heaps of scarce time and money. Therefore, I decided to only address clubs that were situated in the South-Holland province.

*Semi-directed, regional*

Because the amount of sports clubs that were publicly reported of as ‘greening up’ and situated in South-Holland was limited, I decided to shift to a semi-directed, regional approach. Provided that the province of South-Holland has over 1,150 sports clubs (Sportclub in Nederland, n.d.), I considered it justifiable to further narrow my spatial scope. Delft and Leiden were chosen as cities for several reasons. The master’s program is a joint degree of the two established universities, sports clubs situated there could be easily reached by bicycle, and both cities had a convenient website listing all sports clubs in their municipality.

<sup>9</sup> Simply putting the question ‘out there’, not addressing anyone or any sports club in particular.

Partially personalised, Dutch emails were sent to sports clubs mentioned on [www.sportenindelft.nl](http://www.sportenindelft.nl) (n = 93) and [www.sportstadleiden.nl](http://www.sportstadleiden.nl) (n = 70). The email template and list of addressed sports clubs can be found in Appendix F. Some more commercial and individual-targeted fitness or yoga/mindfulness clubs were skipped in this call, as my focus was more on sports communities. Not all football clubs were emailed, because I already had several conversations with football clubs scheduled and wanted my sample to be as diverse as possible in terms of sports type.

The emails asked whether they had any club member(s) who could be considered as an agent of change or go-getter towards more sustainable practices within the club, and if this person would be willing to participate in this research. As emails were addressed to club management, responses to my call were highly dependent on their reachability, responsiveness and judgement. The response-rate for my emails was rather low, and 27 clubs responded they considered themselves unfit to partake. As club managers and board members often also function as spokesperson, there is a possibility that the emphasis on the type of interviewee that I was looking for, was either read over or misinterpreted in the email. Out of the 17 people I spoke with, 11 held official positions in their club at the time of the interview.

### Eventual participants

As could be seen in the right block of Figure 10, a total of 14 participants was recruited through emails directed at sports clubs. One participant was recruited through a casual festival conversation referral, who coincidentally happened to be situated in the same province. Eventually, two acquaintances were approached to partake in the research, to increase the eventual number of participants and achieve a better balance in the age and gender groups. Figure 11 provides an overview of the age and gender of the participants, as well as the type and location of their sports clubs.

Age 20 - 39	Age 40 - 64	Age 65 - 80	Total	Types of sport clubs ( <i>Delft 8, Leiden 8, The Hague 1</i> ) Football (5), Rowing (2), Tennis (2), Athletics (1), Badminton (1), Bouldering (1), Scuba Diving (1), Hockey (1), Base- and Softball (1), Rugby (1), Windsurfing (1)
Male: 2 Female: 3	Male: 6 Female: 2	Male: 4 Female: 0	Male: 12 Female: 5	
<b>Total</b> 5	<b>Total</b> 8	<b>Total</b> 4		

Figure 11 Description of respondent set

### 3.4.2 Interview setting and protocol

There are several important stages in conducting interviews, as the nature of the questions, questioning techniques, listening and the interviewer-interviewee interactions are crucial to a successful outcome (Ryan et al., 2009). All but one interview were conducted in Dutch, the other in English. All interview sessions were audio-recorded. The setup for the interview was kept as equal as possible across all participants to increase ecological validity. All interviews were one-on-one, face-to-face and took place at the club house of the sports club the participant was a member of, so that surroundings were familiar and similar across the participants. I took efforts in establishing an informal atmosphere and making the participants feel at ease by taking a friendly and open attitude, looking interested, smiling and reassuring that there is no such thing as a wrong answer. By establishing a safe environment in which anything could be said, I reduced the chance of socially desirable answers and allowed participants to be honest.



Some people are simply more talkative than others: the sessions all took between 25 and 85 minutes, with most interviews between the scheduled 45-60 minutes. At the beginning of each interview, I explained the setup of the session to the participant, mentioned the protocol, and then had the informed consent form signed. In case an interview was interrupted and resumed, the last question before the interruption was repeated and the interview continued until all topics (see 3.3) were addressed.

I created and used a printed interview protocol that entailed an extensive list of everything that needed to be mentioned, done or asked (see Appendix G). The protocol also served as a note sheet during the interview to help memorise things the participant had mentioned earlier, allowing for asking suitable follow-up questions. The interview session was divided into five parts/blocks (see Figure 12): (1) practicalities, (2) introductory questions, (3) COM-B model and pro-environmental behaviour in other settings, (4) environmental citizenship, and (5) debriefing.

A voice recorder was used and operated in a way that saved three separate audio files for part 2, 3 and 4. As a back-up, I used a smartphone to record the entire session. The session build-up is depicted in the Figure below. The order of topics addressed within the introductory or COM-B block, as well as the follow-up questions used, varied across participants to allow the conversation to flow more naturally. The COM-B block however always started with discussing the behaviour, or 'what', and usually ended with the 'why' because the first was considered to be easiest to answer. After the first three official interviews, the protocol was slightly adjusted by adding an environmental citizenship (EC) checklist at the end rather than reading out the definition (2.3) and having the participant react to it. This was done to make the outcomes on the EC-concept more easily comparable to one another.



Figure 12 Interview session structure

3.4.3 Data collected

Three types of research data were collected through the interviews. First, general impressions of the conducted interviews, combined with the interview protocol note pages that were used to later visually scan for exclamation marks and underlined expressions. This latter was done as more recent interviews could colour the memories or impressions in older interviews. These captured salient points were later noted down as initial patterns perceived (3.5.1).

Second, as mentioned in the previous section, audio files were created to record the answers given. This data was transcribed using the automatic transcription function of Microsoft Office Word, each followed by a manual check to minimise mistakes and simultaneously generalise information that could make the transcripts be easily traceable to the participant or sports club at hand. For example, 'football' was turned into [sport], and 'Leiden' into [city]. One participant emailed an afterthought,

which was added to the end of their transcript. The modified transcripts were then used for the analysis (the method for this is described in 3.5.2).

Third, in the environmental citizenship block, participants were asked to fill in a checklist of 29 items, asking in which of these items they recognised themselves. As was mentioned in the previous section, this was only done with 14 participants. The checklist data was later digitised and analysed (3.5.3).

Aside from research data, personal contact information was gathered from anyone who wanted to be kept informed about the project. Interested people entered this data themselves, into Qualtrics, an online survey platform on which I had created a form.

### 3.5 Data analysis

This subchapter first explains what general approach was taken in data analysis, then further elaborates on the analyses of the three types of data mentioned earlier: Initial patterns perceived (3.5.1), Coded interview transcripts (3.5.2) and the Environmental Citizenship checklist (3.5.3).

An approach with main components of 'grounded theory' was taken in the processing and analysis of the data collected. As this method was designed to empirically translate real-world situations into theories (Oktaay, 2012), it could be used to answer the research questions mentioned in subchapter 1.5. In grounded theory, a theory is generated from the data of participants; the resulting theory is thus 'grounded' in the data. The left image in Figure 13 roughly visualises this process in grounded theory. The word 'code' is depicted several times: a code can be read as 'a word or phrase chosen in place of another word or phrase in order to communicate an attitude or meaning without stating it explicitly' (Merriam-Webster, n.d.-a).

Although the main purpose of this thesis was to gain insights on sustainability change agents in sports clubs, and not to develop an entirely new theory, it does uncover several themes and concepts derived from the research data. Through these latter, an answer could be deduced regarding the different characteristics or circumstances that help change agents in different sports clubs in making sustainability efforts within their sports club. The COM-B model was used to structure the data that was retrieved through the interviews (earlier described in section 2.2.1). The categories were therefore already decided upon, instead of composed based on codes. The right image in Figure 13 schematically visualises this adjusted approach of grounded theory.

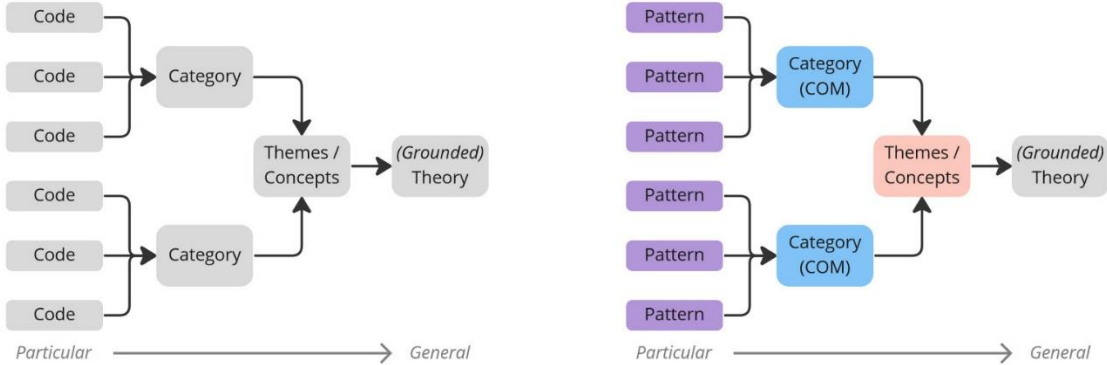


Figure 13 Left: Visualisation of grounded theory, adopted from Saldaña (2009, Figure 1.1). Right: approach taken in this thesis

Figure 14 depicts a simplified schematic on how the three types of collected data (purple blocks) were analysed. As the data was collected through interviews sessions, the construction of the interview protocol (left side) was also added to the image. As can be seen in the Figure, the initial patterns perceived are held against the COM-categories. The grey numbered blocks at the bottom of the image refer to subchapters and upcoming sections, which will further explain how these different data types were analysed.

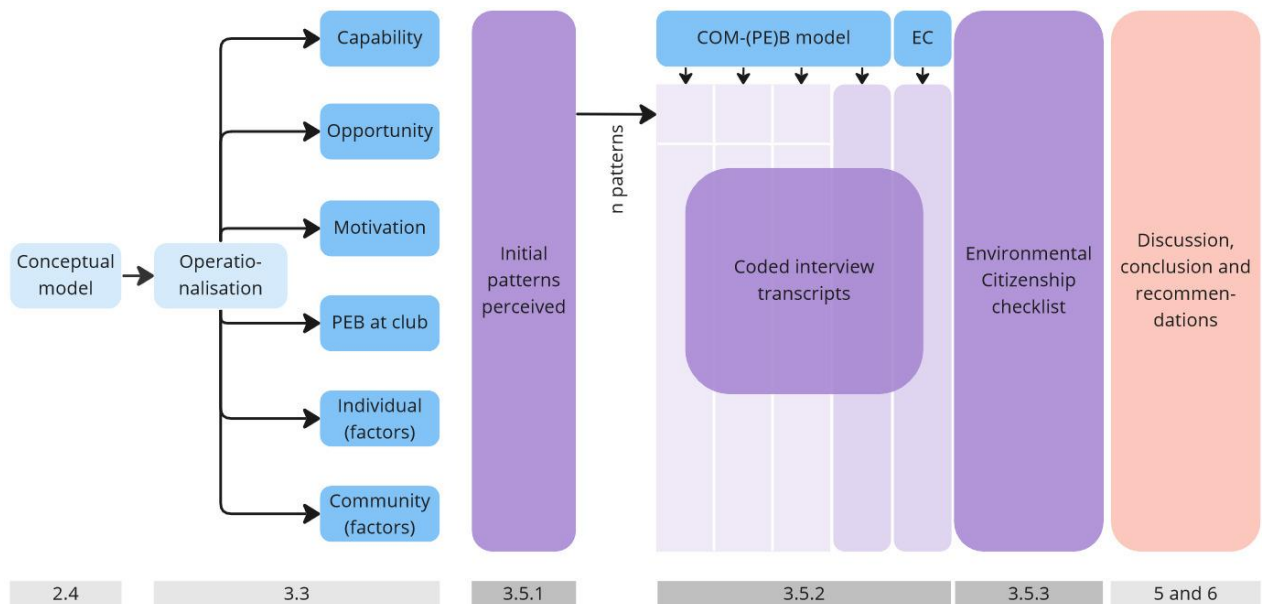


Figure 14. Schematic and simplified representation of the methods used for data analysis

### Software

ATLAS.ti is a data analysis software that offers a variety of tools for analysing qualitative data in meaningful ways (TU Delft, n.d.-a) and was used to review the transcripts. All 17 interview transcripts were uploaded into ATLAS.ti as separate documents. Each participant had its own number, counting from 01 until 17. Whenever one of such numbers is mentioned in later chapters, it is referencing to the corresponding participant. Relevant passages that receive a code are called 'quotes' or 'quotations' in ATLAS.ti. For example: "We could improve things that we wanted to improve. So we did a few basic things that we felt were easy to achieve" (o6, original), is a quote by participant o6 and has not been translated from Dutch first. Further usage of the separate tools within the ATLAS.ti software is elaborated on in the next sections.

#### 3.5.1 Initial patterns perceived

Over the course of data collection, several similar situations or expressions were noticed during the interviews. These initial patterns or re-occurring themes were considered to hold valuable information and hinted towards data saturation. Sometimes these were noted down on the interview protocol page, and were often at least mentally stored. Within ATLAS.ti, the Memos-functionality was later used to collect quotes that referred to these re-occurring themes (results of this can be found in subchapter 4.1). These found patterns were later used to hold against the coded interviews, to see if these patterns were somehow connected to elements of the COM-B model.

### 3.5.2 Coded interview transcripts

Coding data allows subtracting the essential and most relevant elements from the transcripts, by selecting passages and applying a code or tag to it. Although the coding process is described under Methods, it is primarily an interpretive act rather than a precise science (Saldaña, 2009, p. 15), and considered to be an analysis on its own (Saldaña, 2009, p. 18). Coding is a craft that demands having strong cognitive & thinking skills and possessing several personal attributes as a researcher, such as being organised, creative, flexible and able to deal with ambiguities (Saldaña, 2009, p. 36). There are multiple ways to code transcripts and go about it: several of these were attempted, resulting in a looped approach in which I repeatedly 'went back to the drawing table' to revise strategies that allowed me to (re-)classify the large amount of data. To provide insights on this process, this subchapter is divided into two parts: attempts and the eventual procedure used.

#### Attempts

Several try-outs and coding attempts took place. The first try started with open coding, following the witty advice 'if it moves, code it' (Richards & Morse, 2007 as described by Saldaña, 2009), resulting in 229 different codes after having processed only five interviews. Some example codes are 'acceptation after seeing benefits', 'bringing own vision into club' or 'annoyance about wasteful behaviour'. The sheer quantity of resulting codes after only five interviews, was considered to be a too time-consuming method. Therefore, I started over and deviated from taking an open approach. This was done to temper my natural diverging tendency, expecting to ease the analysis later on: I switched to a highly detailed, closed coding approach with three levels. In Table 5, an example of codes used for merely one dimension, PEB, are shown. After having processed six interviews at this level of detail, the analysis of at least 127 different codes in a later stadium would again be too time-consuming; yet another approach was taken.

Table 5 Example dimension (PEB) of a highly detailed coding attempt

Dimension	Subdimension	Code
Pro-Environmental Behaviour (PEB) at the club	Baseline / point of departure (Nijhof et al., 2022)	Inception phase (just started) Competitive (viable alternatives available) Synergy (establishing a new normal) Institutionalisation phase (new norm is set)
	Environmentally friendly operations (Sports Positive Summit, as described by Papp-Vary, 2022, p. 121)	Use of renewable energy sources Energy efficiency Water efficiency Environmentally friendly transport modes Waste management Replacement of single-use plastics Availability of plant-based or low-carbon food Communication and commitment to green goals
	Social involvement	Involvement of peers General members meeting (GMM) involved Board members/management involved Having (official) role, mandate or responsibility Involvement of external party
	Applied interventions (Michie et al., 2011)	Education Persuasion Incentivisation

		Coercion Training Restriction Environmental restructuring Modelling Enablement
	Current phase (Nijhof et al., 2022)	Inception phase (just started) Competitive (viable alternatives available) Synergy (establishing a new normal) Institutionalisation phase (new norm is set)

### Eventual procedure used

The main constructs of the conceptual model (described in subchapter 2.4) were eventually used as codes. To keep track of non-helping factors that were mentioned, an additional code named 'barriers' was added, even though these were not further studied.

Figure 15 is a visual representation of this simplified<sup>10</sup> approach. A total of nine codes was used to tag relevant passages in the transcripts, creating quotes. Quotes could receive multiple codes: this was frequently applied. An explanation of what was considered to fall under a certain code is listed in Table 6.

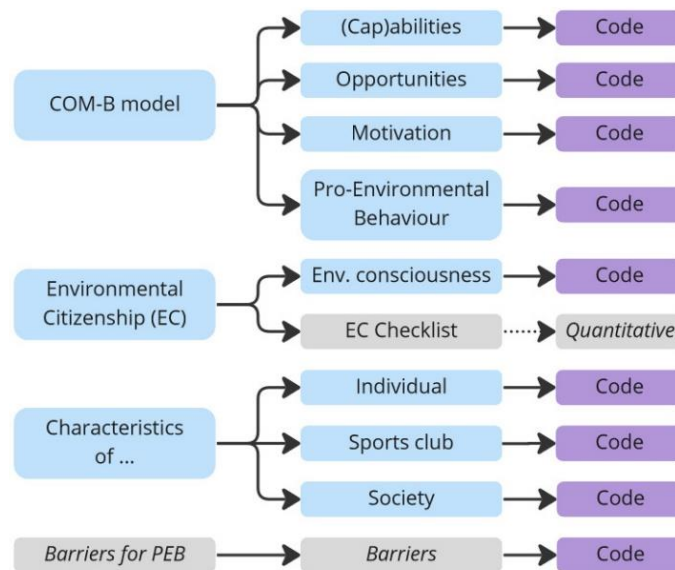


Figure 15 Codes deducted from the conceptual model and used in ATLAS.ti

Table 6 Explanation of codes used in the analysis of the transcripts

Code	Explanation
Capability	Necessary psychological and physical capabilities to make an outcome happen. E.g. resources, skills or knowledge that can be used in assessing, weighing and executing different options
Opportunity	External factors that either prompt certain behaviour or facilitate action
Motivation	The reason to move towards certain goals. Processes and thoughts that energise and direct behaviour

<sup>10</sup> In comparison with previous attempts.

Pro-Environmental Behaviour (PEB)	Anything that can be considered a step or preparative step towards a greener sports club
Environmental Citizenship (EC)	The extent to which the participant considers themselves to be environmentally conscious <i>Whichever items the participant checked on the EC Checklist (Quantitative measure)</i>
Personal characteristic	Specific to the participant. Own activities or life inside and outside the sports club, ways of approaching issues, educational or professional background, worldview, ... anything that relates to the participant themselves
Club characteristic	Specific to the sports club of which the participant is a member. Atmosphere, target audience, challenges and endeavours, ... anything that relates to the sports club specifically
Societal characteristic	Anything outside the sports club that could be of influence to the club or participant. Municipal bodies, other sports clubs, legislation, public opinion, ...
<i>Barriers</i>	<i>Non-helping factors, barriers or possible hassle</i>

After running through all 17 ~1 hour-long interview transcripts, over 900 quotations had been applied. Several codes had been applied hundreds of times. ATLAS.ti's Query Tool was used to export all quotations per code, so there were Excel exports tabs for quotes tagged 'capability', 'opportunity', 'motivation', 'PEB', 'EC', and so on. Not all of the codes mentioned in Table 6 were eventually further studied, partly due to time restrictions.

As was mentioned in section 3.5.1, the initial patterns perceived were then revisited and held against quotations in the tabs for the main variables of the COM-B model: capability, opportunity and motivation. In that sense they allowed for structuring the findings. Quotes that showed connections with those patterns were grouped and described per COM-variable, often supplemented with resembling or additional findings that did not fit any of the initial patterns. Although the analysis itself was done in Dutch, exemplary quotes were translated to English and put into a table at the end of the corresponding section. The translation of quotes was only done when these were used in the thesis.

All quotes tagged 'Pro-Environmental Behaviour' were inspected one by one again, to list which PEBs were shown by the participants and what the sports clubs had already done or were (planning on) looking into. The eight categories<sup>11</sup> mentioned in Table 2 were used to structure these PEBs.

Regarding environmental citizenship (EC), replies to the question 'would you describe yourself as environmentally conscious', were congregated and combined. During the interviews, that question was the final question before the EC checklist was handed to them.

### 3.5.3 Environmental Citizenship checklist

As mentioned earlier in 3.4.2 and 3.4.3, a checklist listing the main components of the environmental citizenship definition (2.3) was used to ask participants to what extent they recognised themselves in it. The checklist itself can be found at the end of Appendix G. Aside from a matrix showing all (un-)checked items per participant (Table 16), merely descriptive statistics were drawn (Table 15). This was done as the sample size (n = 14), especially compared with the amount of items (n = 29) measured, was too low to conduct a regression- or correlational analysis (Green, 1991). Visually inspecting that matrix, and combining it with the answers to the final interview question, allowed for identifying to what extent environmental citizenship was considered to drive these individuals.

<sup>11</sup> These eight categories being: Use of renewable energy sources, energy efficiency, water use efficiency, environmentally friendly transport modes, waste management, replacement of single-use plastics, availability of plant-based or low-carbon foods, communication, and commitment to green goals

## 3.6 Validity and reliability

### *Validity*

Validity refers to the extent to which results measure what they are supposed to measure (Middleton, 2019). There are various types of validity; multiple efforts have been made for establishing several of those.

With regards to external validity, 20-30 subjects should be consulted with in grounded theory research (Creswell, 2018). Although 25 is average, Thomson (2010) recommends planning 30, and their findings indicate that the scope of the research question, ability of the researcher and sensitivity of the phenomena can affect the point of theoretical saturation. Thematic saturation is an important aspect in determining the amount of participants; the point at which additional interviews do no longer add new emerging concepts (Patton, 2002). Due to time constraints and a rather disappointing response rate in the earlier stages of the participant recruitment process (section 3.4.1), the eventual number of interviewees was only 17. As was depicted in Figure 10 and described in 3.4.1, reaching out to two acquaintances was my least preferred and last applied strategy. By using mainly undirected recruitment strategies and standardised emails, similar recruits would respond to similar studies. The respondent set (Figure 11) is however quite diverse, resulting in higher generalisability.

When it comes to internal validity (counteracting the influence of other factors on what is measured), a detailed interview protocol was used to assure each participant received highly similar instructions and treatment. To reduce biased interpretations and assumptions of what was being said, given answers or told stories were often summarised to check whether I had understood them correctly. Given my personal attachment to the topic of study (see Preface), the amount of personal information shared before the interview started was always kept to a minimum so that my viewpoint would not influence the conversation later on. Concerning this, it is unfortunate that two of the participants already knew me personally and were aware of my efforts at the scuba diving club. To limit influences of my appearance, I wore the same outfit during all the interviews: beige trousers and a freshly ironed white shirt. As was mentioned in 3.4.2, all interviews took place at the facility of the participants' sports clubs; this was mainly done to have the participants feel more at ease in their natural surroundings.

### *Reliability*

Reliability entails the consistency in which a method measures something; applying the same method under the same conditions should give similar results (Middleton, 2019). A vast disadvantage of qualitative research is that it inherently suffers from unreliability and subjectivity. The way in which the conceptual model was created and operationalised, and how the data was retrieved, coded, analysed and interpreted were all shaped by my own interpretations. As could be read in the Preface, my personal involvement in and experiences with the topic is quite strong; other researchers would probably have seen different initial patterns or connections. Throughout the entire process however, I did consult and reflect with my supervisors frequently about taken approaches. Had resources been available, the coding process (section 3.5) itself could have been made more reliable by adding another coder. By keeping Table 6 next to the ATLAS.ti program as a guideline while coding, reliability was attempted to increment. Shifting from having participants reflect on the environmental citizenship definition (as was described in section 3.4.2), to having them fill in the checklist increased reliability and comparability on that dimension.

## 4. Results

This chapter describes the outcome of the analyses. To substantiate or justify these results, often a reference to the participant(s) who mentioned something is added to the statement. This is indicated by adding the participant number(s) at the end of a quote or comment. As was earlier mentioned in section 3.5, the participants are numbered 01 until 17. So if for example, participant 04, or participants 05, 07 and 13 made a certain comment, '(04)' respectively '(05, 07, 17)' is added at the end of that statement. First, the way in which the results are presented in this chapter is described, follow by the actual results from data collection.

The previous chapter visualised (Figure 14) and described how retrieved data would be analysed. Figure 16 is a more extensive follow-up on that image, indicating with grey boxes how this Results chapter is organised. In subchapter 4.1, the Initial patterns perceived are listed; in 4.2, the Coded interview transcripts are presented; and in 4.3, results on the Environmental Citizenship checklist are shown. As can be seen in Figure 16, subchapter 4.2 seems rather complex in comparison to the others.

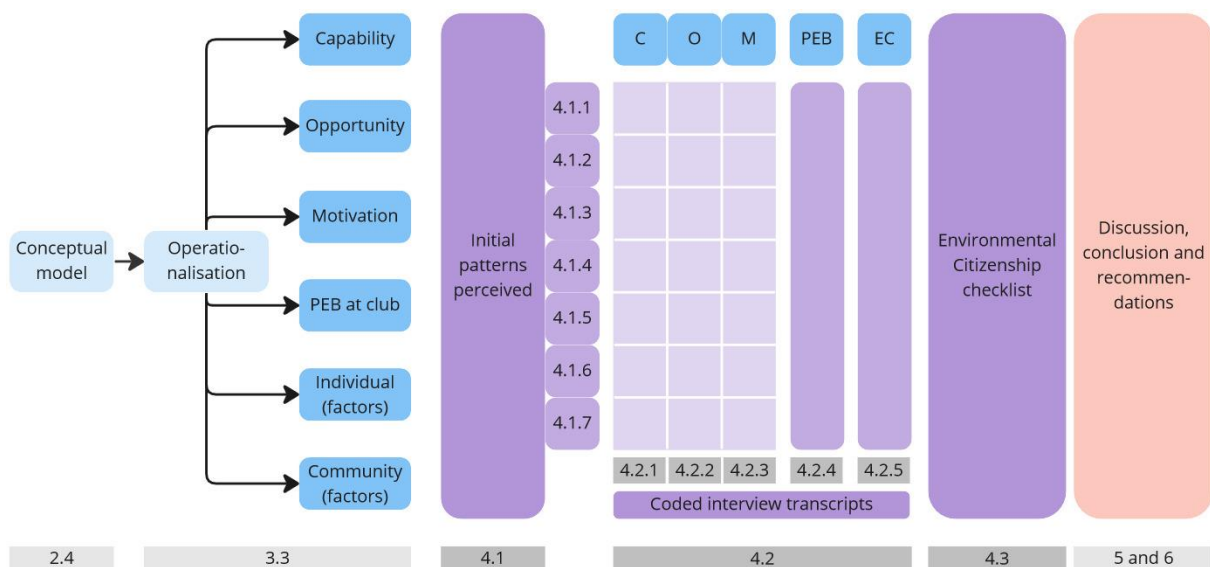


Figure 16 Schematic representation of the way in which the results from data analyses are presented. Figure 14

To answer the main research question<sup>12</sup>, three sub questions were formulated (subchapter 1.5). Table 7 lists these and in which section they are answered.

Table 7 Sub questions to answer the main research question

#	Research sub question (RSQ)	Answered in sections
1.	What drives or motivates change agents in different sports clubs to advocate for pro-environmental behaviour within their sports club?	4.2.1 - 4.2.3 Chapter 6
2.	To what extent does environmental citizenship drive these individuals?	4.2.6 and 4.3 Chapter 6
3.	How can sports clubs create circumstances in which members are stimulated to pursue sustainability transformation in their club?	Builds on RSQ 1 & 2 Chapter 6

<sup>12</sup> What characteristics or circumstances help change agents in different sports clubs to advocate for pro-environmental behaviour within their sports club? 40



## 4.1 Initial patterns perceived

As described in section 3.5.1, several recurring themes across participants were noticed while conducting the interviews, indicating possible importance in these sustainability transformations. These recurring themes contribute in gaining insights in the mechanisms that play a role and potentially provide prompts for speeding sustainability transformations in other sports clubs. A total of seven initial patterns were perceived and will be further elaborated: Getting started (4.1.1), Social identity (4.1.2), Low-threshold communication (4.1.3), *Zeitgeist* and looking forward (4.1.4), COVID-19 pandemic (4.1.5), Making use of resources (4.1.6), and Actively anticipating with obsolescence (4.1.7). What connections were found between these patterns and the COM-B model, is explained in subchapter 4.2.

### 4.1.1 Getting started

An observation was the way in which the participants' efforts for sustainability transition at the club had started: these showed similarities across some participants but also differed quite a lot in their composition. In Table 8, these main reasons mentioned for making efforts (rows) are shown per participant (columns). Cells that contain an 'o' show that a certain reason was mentioned by the corresponding participant. If a cell is left empty it means the participant had not mentioned that reason, and a minus '-' sign indicates that quite the opposite was considered true for that participant. If there was a clear order in two causes, the first present is indicated with '1' and the latter with '2': these numbers could also simply be read as 'o's. For ease of reading, the rows and columns are ordered by frequency of occurrence.

Table 8 Reasons mentioned for making sustainability efforts at their sports club, ordered by frequency of occurrence

Reasons mentioned for making efforts	Participant number																
	09	10	15	17	06	08	05	11	12	13	14	16	01	02	03	04	07
It is part of the role or responsibility one has	o	o	o	o	o		o			o	o		o	o	o	o	o
First felt benefits or urgency at home (spill-over)	o	o	o	o	o	o		o	o	o		o	o		o		
Mandated/feeling responsible and eager to act	o	o	o	o	o	o	o		o	o		o		o			
Social responsibility is part of being a sports club	o	o		o			o			o	o					o	
PEB question posed by (other) member to board			o			1		2	o		o	o					o
PEB question or request posed by board				o		2		1									
Having or writing a (personal) vision/ambition	o	o	o	o	o		o										
High presence led to ideas or 'parenting' urge	o		o		o								o		o		
Perceiving no risks in pursuing sustainability	o		o								o			o			o
Looked for a way to become more active at club				o		o		o	o								
Sustainability is in the 'genes of the club'		o					-					-				o	
Gained insights during to COVID-19 pandemic		o			-							o					

When looking at Table 8, there are a couple of things that stand out. In many participants 'sustainability' is part of their role and task package within the club, but that reason does not apply to all (08, 11, 12, 16). In them, it is noteworthy that they brought sustainability efforts to the club after having felt benefits or urgency of doing so at another place such as their home first. Some participants were explicitly looking for a way to become more active at their club (08, 11, 12, 17) and considered sustainability as an entry to do so. Where in two participants (04, 10) the topic of sustainability was seen as an integrated part of the club, two others (05, 16) emphasized that no attention to it at all had been paid by other club members in the past.

### 4.1.2 Social identity

A second observation is that self-identifying or self-labelling as a green/sustainable person appears not to be a prerequisite in advocating for pro-environmental behaviour in a sports club. Several participants sometimes jokingly emphasized that they are not necessarily a 'green knight or leftie' (02), 'early adopter on this topic' (07), 'greenfinch or Greenpeace member' (08), 'climate pusher' (09), 'extremely environmentally conscious person' (11), 'climate tiger' (16) or 'goat wool socks person' (17).

An explanation for this might be that the subjects try to maintain a social identity that matches the perceived social identity of the group they are part of (in this case the sports club). Nonetheless, some of these participants did mention that they also make sustainability efforts at home or in other social settings. Some also indicated a high sense of environmental consciousness and showed at least some level of environmental citizenship (further elaborated in section 4.2.6).

### 4.1.3 Low-threshold communication

A third salience was that low-threshold communication channels appear to be an important element in allowing sports club members to express their concerns or ideas regarding sustainability transformation. Maintaining a rather open and informal setting was found to more easily allow individual members to raise questions to club management. This informality allowed some to create a solid support base among members making taking green(er) efforts (05, 06, 10), and for others this warranted proposing action taking (16). Although informal communication often played a facilitating role, also formal channels proved to be of value, as in some sports clubs the topic of sustainability was first posed by the board (11, 17), or raised during a general members meeting (GMM) (08, 14). Familiarity with the members addressing or reacting to the issue, appears to make it easier to start or follow-up on club greening ideas. Table 9 lists quotes that illustrate the statements earlier mentioned.

Table 9 Quotes on low-threshold/accessible (in)formal communication (channels), translated

Informal communication	
05	"My experience is that on certain days, when there are competitions, you just have to mix with the people and just talk to them when they just feel comfortable and they can ask me anything. I already talk with everyone anyway and also on training days when the youth is training. That is the only way to get to know them and also to hear what is wrong, what is chafing, what they are angry about, what can be improved, so that's what I did." (05)
06	"I know how to sell it, I know our community will accept it. I feel comfortable in my community asking regular customers what they think, so I kind of developed a little poll in which I asked 10 people. Nine of them said they would be happy to pay 20 or 15 cents extra for a bio-product. (...) <sup>13</sup> Both of us, [other manager] and I always keep our door open for whether you have suggestions, whether it's just you want a casual talk, you want to get something off your chest. The door is open and this is what makes this place great. It is the contribution of the staff themselves." (06, original)
10	"So yes, we are very much looking for what is possible as a board and so what we do is as soon as we are a small step further, we will call the members together, we will present and express our first initial ambition. We know that it is successful, because we have already vented that a bit and looked at how people react to it" (10)
16	"I spoke to the chairman and secretary of or the treasurer I think, like hey, I have seen that this (energy usage) is quite high. Shall I take a look at that? They thought that was fine. (...) Well, the fact that it is very accessible here. The board is easy enough to approach and the club is small enough to just say it that way." (16)
Formal channels	
11	"At one moment there was an emailed request from the board: guys, please shower less, because the energy bill is too high. And I responded with some ideas to reduce the energy bill. There was someone else who also responded to that with other suggestions, which fit in nicely. Then we started thinking about what we could do. That's how it started" (11)

<sup>13</sup> In example quotations, (...) indicates that parts of the conversation or a quotation are omitted. This was done to maintain brevity and clarity in the examples. 42

17	"I was asked and maybe also because they wanted me, they thought: well if he gets sustainability in his portfolio then it will be even more fun for him, that's possible. (...) Because I was first asked for another position. President of youth [sport] and that is really yes, that is a lot of work and I didn't really feel like it. So it could also be that, maybe it was a bit of a chicken and egg story" (...) "And then I was asked if I wanted to do that, and I thought well, that's actually really fun to do, especially with that wallet: I like it" (17)
o8	"[other member] had actually been working on the idea of 'there should be a sustainability committee' for half a year. (...) That committee was addressed during the general members meeting (GMM), so it was arranged very quickly: They just asked, 'OK, is there someone who wants to do this? And I just knew that there would be a vote for such a committee, so I had directly said okay yes, I would very much like to do that. (...) Normally I'm just not interested in the GMM, but because I knew it was on the agenda, I came to offer myself for this position." (o8)
14	"The question started with 'can we install solar panels?', which was asked during a general members' meeting and I responded with I don't know, but we're going to investigate and then the question kind of turned out to be that we had a complete sustainability check done, instead of just researching: are solar panels a solution? (...) I think that because of the process, we as board have seized the suggestion on further sustainability, to delve into it even deeper. Because yes, I do not know if that would have happened as quickly, if no one had asked about it. Because we thought that we were already on the right path and we were already busy with things. But hey, if someone say, stokes up the fire under you, you might think; maybe we could do a little more and that's what happened I think." (14)

#### 4.1.4 Zeitgeist and looking forward

A fourth observation was that simply 'keeping up with recent times' or 'going with the flow of society' was frequently mentioned: "You just have to move with the times" (o1, o4, other participants stated something similar to this).

Some interviewees noted that the *zeitgeist*<sup>14</sup> helped with regards to sustainability, as it is a topic that receives quite some of attention in media and overall society. "Yes, what I say; it is really connected to society and the *zeitgeist*, isn't it. Inextricable, it can't be otherwise. (...) <sup>13</sup> That really helps" (10). Aside from simply keeping up, several participants emphasized that 'ruling is foreseeing'; they were constantly anticipating with developments in society and actively look for ways to stay on top of these.

#### 4.1.5 COVID-19 pandemic

As a rather drastic, world-wide event that affected organisations and everyone's life in one or multiple ways, it was close inevitable that the COVID-19 pandemic would remain unmentioned throughout the interviews. The pandemic appears to have influenced sustainability transitions at sports clubs in several ways. Two participants made clear that COVID shifted the priorities of the club towards crisis management, delaying planned sustainability investments (o6, 17).

Participant o6 noted that the period was demotivating: 'For me, COVID felt like it was going to be this thing that unified humanity towards a greater enemy, and that it would bring people together and understand the necessary of maintaining environmental stability (...) And I've noticed, OK, there was more trash than ever. (...) More shitty shows and conspiracies. (...) That kind of demotivated me. It was wrong of me to be demotivated, but it made me feel like nobody gives a shit. Nobody cares.' (o6).

On the other hand, participants 10 and 16, respectively, explicitly mentioned that COVID-19 could have actually provided them with new insights: "I think Corona may have been a realization moment for many people (myself included)<sup>15</sup> to start thinking and doing more about sustainability. (...) People may

<sup>14</sup> In Dutch: Tijdengeest

<sup>15</sup> Referring to the participant. I asked whether this general statement applied to themselves as well; yes. If text within a quote is between brackets: (like this), I have asked for clarification.

have been given more time and space to pay attention to the small things at home, and maybe that translates into a wider awareness and willingness to do things" (10); "A couple of years ago (during corona) I was a bit bored and then I also thought; can't we do something for that (sustainability)? Also because I once saw the budget at a members' meeting and saw how much money we spend on energy costs per year. (...) It could just, maybe unconsciously, happen that corona contributed to getting more involved" (16).

#### 4.1.6 Making use of resources

A sixth concept that stood out was that several sports clubs either strongly benefited from the knowledge, expertise, connections and/or professional careers of their members (Table 10, A), and/or having special connections with De Groene Club (Table 10, B). De Groene Club has been shortly mentioned in section 1.4.2, and is an organisation affiliated with NOC\*NSF<sup>16</sup> that offers subsidised energy scans, advice and guidance to sports clubs. At least six participants explicitly mentioned making use of the resources offered by NOC\*NSF / De Groene Club (02, 04, 05, 09, 14, 16) and one remarked that their club had looked into this but that their club had already taken more steps in sustainability transformation than these parties offered help in (17).

This finding suggests that knowing your members and their activities, careers or connections outside the sports club, can increase the usage of this potential. Parties like De Groene Club prove to be valuable in sustainability transformation, also to clubs that did not have a direct connection 'on the inside'.

Table 10 Quotations making use of resources (translated)

Specific in-house knowledge or connections	
A	"We have a member who has a handyman business, we have people within the association who are roofers. So we also have quite a few people in our own ranks who can do things." (02)
	"It just so happened that our chairman knew a constructor." (03)
	"I think that's the advantage of a club like ours that always had a link with TU Delft, or with people from that area." (04)
	"I know the aldermen (of the municipality), so therefore a bit of lobbying, just to see what's possible." (05)
	"He has a heat pump at home and he is very happy with it. He has also become more knowledgeable about that and he wants to use that knowledge to improve it here too." (11)
	"I have a chemical-technological background and I enjoy making these energy calculations." (11)
B	"One of the members of the accommodation committee knew the people of De Groene Club so that link was easily made. He works for the council and stuff. He already knew the beaten track for that." (14)
	"At one point they started with De Groene Club. Then we were lucky, you must have that luck, that someone in your club happens to be a project leader there. We have been involved from that moment on." (04)

#### 4.1.7 Actively anticipating with obsolescence

Whenever something had to be replaced or repaired anyway, participants mentioned that they would often tackle this thoroughly and sustainably right away. "Yes, you have to see it in such a way that it often comes down to 'natural moments'. For example, at one point we received artificial grass and that is automatically linked to getting new lighting, already being LED at that time. And there are more things that come along like that, such as boilers that break down; then we also directly look at more efficient boilers instead. I mean, if we have to choose anyway, let's do it like that" (02). One participant

<sup>16</sup> NOC\*NSF stands for the Dutch Olympic Committee\*Dutch Sports Federation and is the largest coordinating sports organisation in the Netherlands. 44

strongly emphasized the need for obsolescence or other benefits aside the goal of becoming more sustainably as a club: *"This cafeteria was renovated, not because we wanted to be sustainable, but because it was hideous. Then it was addressed. (...) But sustainability for the sake of sustainability, from scratch... then you come a long way, while now it actually went along with all those scheduled renovations"* (07).

## 4.2 Coded interview outcomes

As was described in section 3.5.2, several codes were used in analysing the data<sup>17</sup>. In the same section could be read that the seven initial patterns perceived (4.1) would be held against the assumed preceding dimensions of behaviour: Capabilities, Opportunities and Motivation. A data saturation approach is taken: following Saunders (2018), results presented in this subchapter are consistent with the research questions and the theoretical framework. To limit the length of this chapter, only one example quotation per statement is given, also when multiple participants purported similarly. Figure 17 provides a visual overview of the structure of this subchapter. It contains the same, but transposed columns that were earlier shown in Figure 16.

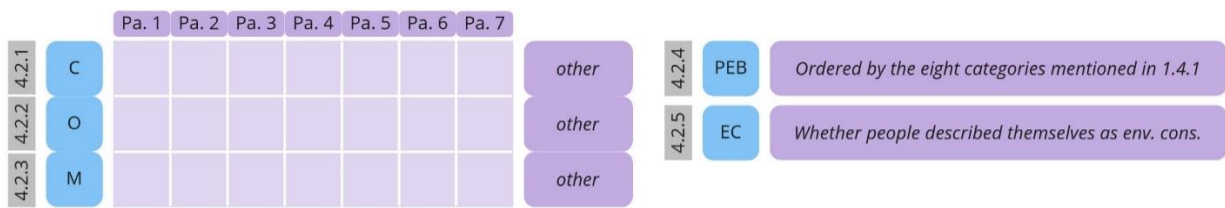


Figure 17 Structure of this subchapter. 'Pa.' stands for pattern; 'Pa. 1' thus refers to 'Getting started' (4.1.1)

This subchapter provides a description on whether or how these initial patterns relate to COM, and which other salient points were noted when zooming in on the COM elements (4.2.1-4.2.3). As was mentioned in 2.1, Pro-Environmental Behaviour (PEB) in this study is more perceived as a possible consequence of certain characteristics, circumstances and drivers within an individual and their sports club. The PEBs that were mentioned are summarised in section 4.2.5. The answers to the open question preceding the Environmental Citizenship (EC) checklist, are listed in section 4.2.6.

### 4.2.1 Capabilities

Various capabilities were found to be contributing to sustainability transformation in sports clubs. Capabilities were understood as *'necessary psychological and physical capabilities to make an outcome happen. E.g. resources, skills or knowledge that can be used in assessing, weighing and executing different options'*. Connections were found with patterns Getting started (4.1.1), Low-threshold communication (4.1.3), Making use of resources (4.1.6), Actively anticipating with obsolescence (4.1.7), and partially with *Zeitgeist* and looking forward (4.1.4).

Regarding making use of available knowledge or resources from inside or outside the club, the subchapter 4.1.6 earlier highlighted important elements that increase the capability to act. In line with

<sup>17</sup> These nine codes being: Capability, Opportunity, Motivation, Pro-Environmental Behaviour (PEB), Environmental Citizenship (EC), Personal characteristics, Club characteristic, Societal characteristic, and Barriers. An explanation of these codes can be found in Table 6.

that, networking skills appear to be of high value to and within clubs; having a good connection with the municipality (Table 11, A), being able to create a support base among your members (Table 11, B) or knowing which member best to approach for a certain task (Table 11, C) can help in getting plans off the ground. Low-threshold communication (channels) as mentioned in 4.1.3, facilitated some of these, as it allows for making a connection with parties who had (access to) these skills or knowledge.

In several interviews, a clear distinction was emphasized between those who executed or facilitated plans, and those who had the technical knowledge or skills (Table 11, D). Having both present takes away possible risks (Table 11, E). Although having at least some technical knowledge is required in making a club house more sustainable, curiosity and having an inquisitive mindset appear to often balance out possible deficits (Table 11, F). Other participants stated that they valued diving into the subject and learning more on the topic, gaining related skills at their club (Table 11, G).

By grasping the opportunity that comes with naturally occurring moments (4.1.7), reserved resources for e.g. a broken installation could be used to install a more sustainable installation instead of simply repairing or replacing the old one (Table 11, H). Making such a decision was done more easily by participants who had sustainability in their task package or had 'the power or mandate to do so' (Table 11, I), touching upon the way some participants had started making efforts in the first place (4.1.1). Knowledge on the cost-efficiency of energy-related measures frequently helped in authorising investments (Table 11, J).

Societal developments (4.1.4) were found to help to some extent but were not considered to be crucial for implementing changes; the atmosphere within the club however was (Table 11, K). This is noted with caution, as energy prices have increased quite drastically after the interviews took place (see Figure 2 in section 1.4.2), possibly shifting perspectives on this. Knowing the numbers and arguments for any intervention often turned out to be important in the convincing of other members or the GMM (Table 11, D, L).

Table 11 Capability quotations (translated)

A	<i>"That is our advantage: we do have all our entrances with the municipality. We know those, and we use them." (04)</i>
B	<i>"I try very hard to tell things from who I am, and why I think things are good for a club. Not for an individual, but for a club. And from that perspective you can, well, hopefully, slowly get people on board. A capability I use is the way of communicating and approaching people" (10)</i>
C	<i>"Asking people if they want to tackle that, and not getting in their way. My experience is that there are two ways you can move volunteers and the first is; when they come up with a plan or an idea, you don't burn it to the ground but ask questions about what exactly they want to achieve with it, and when they are really motivated, to give them the space to do it. And the other is that if you have a plan of your own but don't get around to do it yourself, ask people who you think have a similar vision and ask 'would you like to help with that?'" (14)</i>
D	<i>"For your study that is really the crux here. It is because that knowledge and expertise is present in the club. So we don't need consultancy firms, you name it all. Because whoever does it could do it himself. He also works at a company that does that. And, those are confidants, confidential advisers in the technical field. So from within, inside the club, that's a blessing. That's a blessing. (...) These are people who work. So they may be members of the club but they are not volunteers. They will have a proposal in no time. That is their world, but you have to facilitate that. So I facilitate it, and they invent it. I take it off their hands and I go to the GMM. I prepare it in the administrative technical sense, in the budget sense, and then finally in the implementation. They don't have time for that, because they have their work and all kinds of other things. That is also important, but you also need someone who just guides it all. So that's me." (07) "So I didn't physically do things myself, but I facilitated things to be done in that sense." (14)</i>
E	<i>"Because of that knowledge and expertise here at the club it is safe. I'm not taking any chances. The risk is not there because technically it's just the best of the best we get. (...) So in terms of execution I actually take... It takes me a lot of time, but I don't take the risk of failing. That risk is low, almost non-existent because of what I just said" (07)</i>

F	"I think one is knowledge, but if I don't have that knowledge, then I seek that knowledge." (04)
G	"I thought it was interesting to dive into because aspects were also discussed, because we have a mixed group, of which as a biologist I don't know much about e.g. the energy transition. (...) You also take that knowledge with you for your personal life. If I were to install Solar Panels myself, then I would now know a bit little better how I should do that." (12)
H	"There are more things that come along, like boilers that break down. Then we should look at some more efficient boilers, I mean if we have to pick a new one anyway, let's take efficiency into account as well." (02)
I	"Mainly because I'm the chair of the club. Yes and because I already had mandate from the GMM to do research." (14)
J	"Well, the business case for a heat pump is just very good, so I'm confident that it will work out." (11)
K	"It's not the installation agencies, not the flyers and the brochures. It is not the municipality that does that... That does not work. It's well-intentioned, political and all good, but it's background. It merely creates the atmosphere." (07)
L	"If you want to make an investment, you should always link a return question to it. It should always be there. You also get money back, so 2/3 you invest in the environment and 1/3 you get back. For a lot of people that's an acceptable ratio. We're not some shabby club, we have had a good financial policy here. I always start with that because you can want everything, but if there is no money then nothing will come of it." (09)

#### 4.2.2 Opportunities

Throughout the interviews it became clear that every now and then, opportunities presented themselves. Opportunities were understood as *'external factors that either prompt certain behaviour or facilitate action.'* Similar to Capabilities (4.2.1), connections were found with patterns Getting started (4.1.1), Low-threshold communication (4.1.3), COVID-19 pandemic (4.1.5), Making use of resources (4.1.6), Actively anticipating with obsolescence (4.1.7) and partially with *Zeitgeist* and looking forward (4.1.4).

Touching upon motivation (4.2.3), each participant was asked whether they had seen and taken opportunities for themselves and/or for the club by making efforts for sustainability. Several participants remarked that being able to work on sustainability transformation at their club was perceived as an opportunity for them to become more active in the club (Table 12, A), linking to 4.1.1. Having an official role or responsibility within the club allowed participants to bring their own vision regarding sustainability into the club as well (Table 12, B), this was an opportunity that was often seized. Also without having an official role, having a plan often lead to receiving mandate to act on ideas, which in turn both facilitated action (Table 12, C).

As was quite extensively described in section 4.1.6, many clubs either made use of expertise provided by NOC\*NSF / De Groene Club, or had members who had sustainability jobs outside the club: these opportunities were gratefully seized (Table 12, D). The availability of subsidies also allowed clubs to make investments (Table 12, E), although these were not always a prerequisite (Table 12, F). One participant mentioned that, although it was not their main reason to take measures, they were obliged by government legislation to annually report on reducing their energy usage, as they annually consume >50 000 kWh (Table 12, G).

Actively anticipating with obsolescence (4.1.7) facilitates making more radical changes to e.g. a club house, and is perceived to hold a lot of opportunity-potential (Table 12, H). This was stimulated by the fact that many sustainability improvements came with perceived additional benefits, such as better lighting or lower energy bills (Table 12, I). Having insights of the clubs energy expenses helped in at least noticing room for improvements (Table 12, J), again underlining the importance of communication from management to members (4.1.3). Spontaneous communication from members to management could also lead to taking that extra sustainability step as a board (Table 12, K, linked

to 4.1.1). Frequently meeting with fellow board members to discuss (future) developments in society (4.1.4) and how to prepare for those provided the opportunity to stay ahead of these (Table 12, L).

Regarding the appearance of opportunities, the COVID-19 pandemic (4.1.5) had varying effects; to some it offered the space to dwell and pick up on this new topic (Table 12, M) whereas others lost their momentum because of it (Table 12, N). Having things run stable and being able to prioritise can help in making efforts to make improvements (Table 12, O).

Table 12 Opportunity quotations (translated)

A	"I think first, because I really wanted to do something for the association, but that there just wasn't something for me until the start of or the proposal to set up a sustainability committee, there wasn't something interesting enough for me to commit myself to that. It just sparked my enthusiasm and my desire to make a difference in this committee." (08)
B	"I took my chance, because I also thought right away; then I will also do something with sustainability. So if that's what you mean by did you see opportunities; I thought yes, I'll put it right in. Because I think that every club should start thinking about that, so I seized the opportunity to immediately put sustainability on the agenda." (05)
C	"Because you can't just build anything, the building committee has to agree with it. The board also indicated that there is money available to realize initiatives, so yes, if you come up with a good plan, we will pay for it." (11)
D	"The KNVB started with the green club at some point. We were lucky that someone in your club happens to be a project leader there. Yes, we have been involved from that moment on." (04)
E	"Then we came to the Bosa subsidy scheme, which I had never heard of, and they finance that part." (10)
F	"we have money; we are in a period of growth, so that is also important. Government grants didn't help us over the threshold but it was a nice bonus." (07)
G	"It is of course a wish, but also a necessity. I think it might also be good for you to know that environmental measures have actually become mandatory for companies above 50,000 kWh from 2019 onwards. You then have an obligation to take energy-reducing measures, government information that has never really reached clubs very well." (02)
H	"Well, I think the opportunity is there and of course it comes for us. And, that has to do with us moving to a new club house. That, of course, is the opportunity to do it really, really rigorously. Because that is a change in itself that everyone has already accepted. That you are moving." (10)
I	"Of course, that saves quite a bit in consumption, you have the advantage of LED lighting. I think it consumes 35% less power. But you also have more light output. So it has double effects." (03)
J	"An opportunity was that I noticed that it (energy efficiency) was still underexposed here actually". (16)
K	"In my board year last year, we received an email from two members who had made a trip, I don't remember where, but they had compensated their CO2 and noted that it's actually not that expensive at all. Can't we look at that as a club? And I thought that was a really cool idea, so I kind of took the lead in that within our board." (15)
L	"What we do is really sit down twice a year: How can we look to the future? Is the world changing? But the world is changing, of course." (04)
M	"I think Corona may have been a realization moment for many people to start thinking and doing more about sustainability." (10)
N	"Yes actually the stupid thing is that because of all those annoying corona things I haven't really been able to make the investments I wanted and work out the plans and such." (17)
O	"At the time it had been running for about three and a half years, so it was running quite stable. The other managers did a great job at putting everything on track. And so for us it was fairly easy to transition into something; it gave us the opportunity to look deeper and see what we could change and how? We could improve things that we wanted to improve." (06, original)

### 4.2.3 Motivation

Motivation was understood as 'the reason to move towards certain goals. Processes and thoughts that energise and direct behaviour'. Connections were found with all seven patterns described in section 4.1.



Many different motivations were mentioned throughout the interviews, varying from intrinsic to extrinsic and from automatic to reflective. There is a strong link with 4.1.1; getting started in the first place. Reasons that were mentioned in Table 8, will not be extensively repeated here. The involvement and support of others was overall considered to be highly motivating (Table 13, A). Members that fulfilled an official role mentioned that they wanted to do their task properly and were sometimes stimulated to take a step further, by other members (Table 13, B).

Low-threshold communication 4.1.3 and ruling social norms (Table 13, C) appear to be facilitating factors in this. Although quite some participants made remarks on the absence of a certain social identity (4.1.2), a number of them did indicate that their efforts originated from a deep understanding of the urgency the problems and intrinsic motivation to do more about it (Table 13, D). Some participants took efforts because they simply felt responsible for something to happen (Table 13, E).

Many participants emphasized being interested in the topic of sustainability and enjoyed diving deeper into it as they considered it as both fun and important (Table 13, F). Cognitive dissonance – an inconsistency between what you think and what you do – regarding seeing the club as a social organisation, appears to drive or at least justify pro-environmental behaviour in some members (Table 13, G). This motivation could play a more prominent role in those who are responsible for club management.

Regarding 4.1.4 *Zeitgeist* and looking forward, general awareness about the issues helped in getting activated (Table 13, H). The pandemic also had differing impacts, also regarding motivation (see 4.1.5). Being able to make use of available resources (4.1.6) or perceiving support from those who manage these, increased motivation in several interviewees (Table 13, I, A). All interviewees had in common that they have a heart for their club and wanted to make efforts that would make life at the club even better (Table 13, J). With high presence at the club, often more room was created for adding own preferences or advancing it towards a more personal vision (Table 13, K).

#### 4.2.4 Actively anticipating with obsolescence

(4.1.7) was often a main driver behind improving the club house and making larger sustainability investments (Table 13, L). It is noteworthy that some efforts were more motivated through avoiding waste of resources or reducing the footprint (Table 13, M), whereas others were more motivated by eagerness to improve their positive impacts or handprint (Table 13, N).

Becoming (more) energy-independent as a club was a result that was often strived for, but the prospect of achieving other results (inspiring others, proving others wrong among others) was also mentioned to be aspired (Table 13, O), although one participant emphasized that even attempts for sustainability, were already seen as a success or result (Table 13, P). A final note on motivation entails the drive to work together, but also somewhat compete with other clubs, also in terms of sustainability. This drive often appeared derived from the clubs' general attitude to measure themselves against other sports clubs (Table 13, Q).

Table 13 Motivation quotations (translated)

A	<i>"Yes, especially that two other people respond and that we receive full support from the board. (...) And the co-announcement 'we have money available to do things: please go do something, because it's only going to get more expensive.' So that made us feel supported and yes motivated to do something." (11)</i>
B	<i>"Because this is my, because I said I will. I am accommodation manager. And as a property manager you have ambition and the ambition is to clean up this old mess. (...) So you start by saying, you want to renovate the cafeteria and the</i>

	<i>changing rooms; roofing and all that stuff. That has to happen, you want that. And then you go talk to those people that I was talking about. (...) In the area of sustainability they are on top of everything we do. They push that.” (07)</i>
C	<i>“It is quite a green park; every tile that is placed here creates resistance, so in that sense there are always people who keep me and the rest of the board on their toes. We are the greenest park in [city] and we want to stay that way, we are proud of that. We would like to keep it that way, although sometimes tiles are the easiest to maintain, so it's kind of give and take.” (14)</i>
D	<i>“Sustainability is very important to me. It is by far the greatest challenge we face as humanity. All other problems are derivatives of that, people are not yet fully aware of that. And whether it is a nitrogen problem, or climate or PFAS or microplastics or you name it... those are all tips of the iceberg. Of course we have already crossed the ecological limits so far that if we don't do much more about it, we're going to get in a lot more trouble. Yes, I think that is important for myself, for my environment, for my children, for humanity, you name it. That goes quite far. So that's where my passion comes from.” (17)</i>
E	<i>“Well, because no one else did it in the first place. For the money and also for the fact that we all have to improve sustainability a little bit. If those two go together then...” (16)</i>
F	<i>“Because personally I am also quite involved with it and find it very interesting to think sustainably. I would also like to do something with it later in my job or something like that. I really like it and it's important.” (15) “Apart from the fact that it's fun to do (...), our actions will hopefully ensure that the energy bill does not skyrocket, and with it the membership, because that could simply save tens of euros per member per year.” (11)</i>
G	<i>“It is a combination of. (...) Because as a club you cannot say that you are involved in society if you do not want to pay attention to sustainability, you simply cannot. And that's also why I've never really had any opposition from people. (...) I think sport is a social thing, and sustainability is also a social thing. There has to be a connection, whatever kind.” (09)</i>
H	<i>“I wouldn't have thought about it if the world could last another 100 years, you know, but the melting ice caps, that's a thing. The rising sea level. I'm not so afraid that we'll be under water, but the fact that it goes so fast, I think that's a thing, so to speak. So something has to be done there and well, again; the zeitgeist helps.” (10)</i>
I	<i>“Well, they do make resources available, like 'if you can enthuse a few people who want to pull that cart, just say what you need.' Those can be little things like sitting down for an evening and have a snack and drink, that's possible. It's small, but it's not like they say well 'go figure things out for yourself, it's your project.' No, they are behind it.” (05)</i>
J	<i>“You just want to improve a club. I think that everyone who spends a lot of time on the club and who has a heart for the club wants it to always go better.” (01) “I think that everyone's approach is positive, to change things where possible. Certainly because it simply also yields something for the club, apart from benefitting the environment.” (02)</i>
K	<i>“I am a vegetarian myself and I thought it was very important that more vegetarian food was cooked. (...) My life takes place here for a large part.” (01) “Well, I thought it was really cool that it was mostly my idea, and that it's really a thing now. (...) So yes, in itself an opportunity to bring a little bit of vision from myself into the club.” (15) “So then you take that to the next step and this was together with my fellow coach. We said; it would be nice if we could buy a decent cereal bar once we run in and are just hungry.” (10)</i>
L	<i>“It's timing. This canteen has been renovated, not because we wanted to become sustainable, but because it was hideous. Then it was addressed. Sustainability is not why we did it, but we closed it in. Then you see remodelling the dressing room: lock it in. The roof had to be renewed because it was 25 years old; put in the best insulation right away. (...) But sustainability for the sake of sustainability from scratch... then you come a long way, while now it actually went along with all those renovations.” (07)</i>
M	<i>“I just saw that too much food disappeared in the containers. I thought; 'you know that? That's not what it's for.'” (09) “I tried to get as many cans as possible rather than bottles because from what I understood, the recycling loop of cans is a lot longer than you would with glass. (...) The trip to bring them here to store is less carbon footprint.” (06, original)</i>
N	<i>“Well with bigger sustainability activities (...), it's also just nice to see that people actually do join in. That I think (...) I never actually saw that person before but they participated. You also bring back a bit of enthusiasm in the club.” (12)</i>
O	<i>“Just the wish that at some point... satisfaction? That the effort you put in will be rewarded in one way or another. I'd just love it if we come up with a tender next month that they'll just have those lights changed.” (08)</i>
P	<i>“You know, if nobody looked at the new glass jars we put out or the paper bin or the showing of a documentary, then I don't necessarily think we've failed terribly or anything. Then I'm glad we were able to put that down.” (12)</i>
Q	<i>“I don't need to be the frontrunner in that, but I do need to be in the Top 5. You have to know where you stand.” (04)</i>

#### 4.2.5 Pro-Environmental Behaviour

Pro-Environmental Behaviour (PEB) was understood as *'anything that can be considered a step or preparative step towards a greener sports club'*. As could be read in section 3.5.2, only mentioned capabilities, opportunities and motivations would be measured against the seven initial patterns described in 4.1. This section provides an overview on what types of PEB were most common among the interviewees and their sports clubs. In section 1.4.1, the case study on the Forest Green Rovers (FGR) by Papp-Vary (2022) was described. Table 2 in that same section showed what FGR had done in the eight areas. To structure this section, again these eight areas are used: Use of renewable energy sources, energy efficiency, water use efficiency, environmentally friendly transport modes, waste management, replacement of single-use plastics, availability of plant-based or low-carbon foods, and communication, commitment to green goals.

Aside from these eight categories, this section also lists two additional categories: 'other', and 'room for improvement', as not all PEBs mentioned fit within the other eight.

##### *Use of renewable energy sources*

Efforts are taken for installing (more) solar panels on club rooftops (01, 02, 03, 04, 09, 17), or looking into renewable heating sources such as heat pumps or geothermal options (07, 11). Switching to a more environmentally friendly energy supplier was also mentioned (12).

##### *Energy efficiency*

Reducing energy usage was one of the most frequently set sustainability targets. This was done in multiple ways: e.g. by replacing existing installations, machines or lights with more energy efficient ones (02, 03, 04, 05, 08, 09, 10, 14), making efforts for installing light sensors, timers or further insulating the club house (03, 06, 07, 14, 16), adjusting boiler or thermostat settings (05, 06, 07, 14, 16), requesting members to shower less (11), installing floor heating or infrared panels (07, 17), or having ambitious sustainability plans for a huge renovation or entirely new building in the (semi-)near future (10, 14, 16). Often subsidies such as BOSA or even European ones were used in the implementation of this (02, 03, 05, 09, 10), and frequently, energy scans via De Groene Club or a similar party (05, 14, 16) or done by themselves (11, 17), preceded larger club house adjustments. One participant noted the legislated obligation to annually report on taken efforts in reducing energy usage (02).

##### *Water use efficiency*

Some examined ways to reduce (tap) water usage for the watering of sport fields (09, 10, 14), whereas notes on shower configurations were also mentioned (10).

##### *Environmentally friendly transport modes*

There was one participant that emphasised they made efforts in making sure the club would remain easily reachable by foot or bicycle (13). Another participant tried to fight the overall reputation that the sports club was situated far from the city centre (04). One noted they had been looking into creating a hub for electric-vehicles at their premises, but that they had refrained from this because of the number of children walking around (17).

##### *Waste management*

Waste was in some cases reduced by adjusting canteen offerings to cater sufficiently but without spillage (06, 09). Several participants emphasized they worked on recycling different waste streams

as much as possible (05, 06, 09, 10, 12). Whenever reusing, repairing or refurbishing certain materials was possible, they preferred this over buying something new (06, 09, 10).

#### *Replacement of single-use plastics*

Plastic pollution was reduced mainly by focusing on the intake of plastic bottles (05, 09, 10), getting rid of straws (06), but also preventing rubber nurdles from leaving fields and leaching into surrounding nature (04, 17).

#### *Availability of plant-based or low-carbon foods*

Taking it somewhat broader by making canteen and shop offerings more environmentally friendly overall. E.g. by limiting packaging waste by selling fresh tea instead of bagged tea, reducing the amount of different types of meat sold, repelling brands like Nestlé and Coca-Cola and switching to more sustainable alternatives such as Tonys Chocolonely or Fritz Kola, respectively, and only selling non-food articles that are either organic or fair trade (06). Actively stimulating drinking tap water (09, 10, 13), and offering healthier and/or more plant-based alternatives (06, 10, 14, 15, 17).

#### *Communication and commitment to green goals*

Creating a (longer-term) plan and/or policy vision and/or institutionalising this, e.g. by making someone or a committee responsible for maintaining it (02, 05, 06, 08, 09, 11, 12, 14, 15, 17) was repeatedly mentioned by interviewees. Some interviewees mentioned stimulating those people who are responsible for club aspects that touch upon sustainability topics, to take things a step further or be more ambitious (01), whereas others pleaded to have building-suitability judged, for allowing more drastic measures like solar panels (03, 13).

Explaining to or communicating with members as to why certain choices or switches are scheduled or have been made, or discussing what else could be done (06, 10, 13), and taking things slowly or implementing things gradually (10, 14) were all usually well received by other club members.

#### *Other*

Many participants mentioned seeking connection or shared-benefits by approaching or negotiating with suppliers, advisors, other clubs and / or municipal bodies to help think along and reach an outcome that is best for both the club(s), as well as (local) society (02, 03, 04, 05, 06, 07, 08, 09, 10, 12, 15, 17).

Some participants mentioned taking on a personal exemplary role with regards to turning off lights, taking food scraps home, cooking plant-based at the club more often (01), or trying to educate / instruct members to behave more sustainably at the club (05, 06, 08).

One club looked into ways of compensating for CO<sub>2</sub>-emissions (15) and another in ways of increasing biodiversity (17). Some participants organised or facilitated the organisation of sustainability-related events such as clothes swapping, vegan lunches or barbecues, litter bingo or clean-ups (01, 06, 12, 15).

Purchasing longer-lasting and qualitative high products as club materials (04) and switching to local suppliers (06) were also mentioned. So was looking into switching to a more sustainable bank for holding club savings (12).

#### *Room for improvement*

Some participants mentioned there was room for improvement in their sustainability efforts. Two were related to communication: "*Whether the average parent really gets what we've done with*

sustainability... I think it would be nice if we could communicate a little more about that. (...) I think that's a bit of a 'neglected child', communication about our sustainability" (02), and "We should ask opinions much more frequently. (...) That's all fine, but creating support has become more important. (...) So you have to create much more support and that has been done much more consciously in recent years. We still need to take more steps in that direction, that's what we currently lack." (10).

One mentioned the wish to bring more structure in future maintenance and renovation-related plans so that sustainability could be easily incorporated in those endeavours, and that 'the hands to do things' were sometimes lacking in meeting desires (02). Another participant explicitly named the a strong interest in finding better water-saving systems for their sport fields (14).

#### 4.2.6 Environmental Citizenship

Table 7 at the beginning of Chapter 4, listed the three research sub questions, of which the second entails: 'to what extent does environmental citizenship drive these individuals?'. This question is implicitly answered by the data in the current section and the next, and will be elaborated on in Chapter 6.

Environmental Citizenship (EC) in this section was understood as 'the extent to which the participant considers themselves to be environmentally conscious'. The EC-checklist itself has been explained in earlier sections and can be found at the end of Appendix G. Before this checklist was handed to the participants, they were asked to reflect on the question as to whether they would describe themselves to be environmentally conscious. Their answers are listed in Table 14. The order of the participant quotations here, is the same as the order of participants listed in Table 16, in which the first had checked most EC-checklist items, and the last had checked least.

From Table 14 it is observed that being or acting environmental conscient is often experienced or described as a trade-off (13, 12, 15, 10, 08, 04, 16, 07, 11, 14) or ongoing journey (12, 15, 08, 16, 07, 06). The synthesis of the two different types of data on EC (coded interview transcript and the checklist) is described at the end of the next subchapter.

Table 14 Quotations of self-reflecting on environmental consciousness (translated), ordered by the occurrence in Table 16

"Yes absolutely. (...) I must say that I find it more and more difficult because of what you see happening around you. You see that what is happening in the field of climate, really beats all models, while many people saw them as too alarming and negative and so on. Well, we see that that's just... The opposite is true. (...) I read 5 newspapers a day, so I see it all coming at me all the time. So yes no, there are few moments that I am not involved in that in one way or another."	17
"Yes, I think so. It is true that I have flown an incredible amount, always, name a country where I have not been, but I just do that less now. (...) Now when I cycle home and I see a can, I always take it home; always. I have a car, but it's in the carport. Yes, you have a carport, so there must be a car there. Actually, we hardly ever use it except for vacations."	13
"Yes, yes. Environmentally conscious, there is a bit of awareness in it, of course. You don't need to have the lowest footprint to be environmentally aware. I often translate my behaviour into more conscious choices. (...) I recently became vegan, but before that I was a vegetarian for a long time. (...) So I often make environmentally conscious choices. I try to do it. I try to develop myself in that as well. Yes, certain aspects in which I just don't do that very well, for example with clothing. (...) So it's tough, because I'm quite a perfectionist, so I'd say yes, but you still have a long way to go, so to speak, you know. But maybe in comparison to the general population, I'm quite environmentally conscious. So I guess it's something like that."	12
"Yes, especially on a personal level I think, so for example I am a vegetarian. Yes, also for yogurt and such, I do replace that with Alpro, so that, for example, a little vegan is also possible, but not completely. I also try to be aware that you	15

<i>don't buy too much. You know, clothes second hand, so not everything. Those kind of things. Don't fly often. It's just for myself, I'm just consciously working on it and I try not to make too big an impact."</i>	
<i>"Yes. At home I am working on solar panels, and if I could I would put a windmill in my garden. I did persuade an old classmate of mine to put a windmill in their backyard. (...) Why? Because I always catch myself thinking about that, there's nothing wrong with that, but I think about everything: if I throw something away, use something... and I get annoyed when I see that other people treat the environment very badly. Then I think yes, well I'm more involved than that. And if I'm abroad, or as soon as I get the chance, I also like to be in nature."</i>	05
<i>"On the one hand yes, on the other hand I also choose what... I don't make it more difficult for myself than it is, let me put it this way. A little lazy in that perhaps, or to that extent; not everything has to give way. I just drive to work by car, where I could also just take the train. (...) It must fit into my life. So I'm environmentally conscious, sure, but not at all costs."</i>	10
<i>"Not in all respects, because I do drive a car, but I also go by train. So yes, in some respects I consider myself very environmentally conscious. But I just know that it could be better."</i>	08
<i>"Yes and no. I would always behave here at the sports club (...). If I take a plastic cup of coffee, and I will stand along the field, I would never throw it on the ground. Then I take it back and throw recycle it. On the other hand, when I look at home... (...) everything goes into the same bin."</i>	04
<i>"Yes. Because I've always lived accordingly, even before there was any policy at all. What I also found important in my youth is that you ensure that you add as few things as possible to something that you do not know what the solution is. It's a combination of something you think you shouldn't do and a combination of knowledge about it. Not that I immediately became a member of everything or something like that, that's less... My willingness to take action was on different levels, but I always loved the second use of things. I was involved in the circular economy long before the word existed, so to speak.(...)"</i>	09
<i>"Well, I have certainly been aware in recent years of the impact that we all have on the environment indeed. I don't want to say that I'm already there... I'm not a climate tiger in a sense that I'm doing everything I can, so to speak, but I am aware of it. Let me put it this way. No yes, I am aware of it. I did try to do something about it, but there are people who are much more active and far beyond me in my actions. That's, yes, that's what I just said, I think that's a choice."</i>	16
<i>"No. Well, on average and by that I mean from; I do separate paper and glass. No, I don't have an electric car, not yet. I'm certainly not a frontrunner in that regard. Okay well, I'm trying to indicate... I'm slowly starting to be a little more hesitant about flying (...). But in the sense of 'are you environmentally conscious'? Yes, I am, but that's not... I think it's a very difficult question, because I will never become a member of Milieudefensie or anything like that. I could never say to anyone else 'you must this or that, or I find this and this.' I never will. I have an opinion about everything, but not about it in the sense of... on the environmental side. I find that a very, very difficult area. Also because it is... Yes financially I could do it easily. Left or right and I've done it too, and now I'm going to tell others what to do, so they have to choose. I don't have to choose. That solar cell is not a choice, it is more a matter of well, do I want it or do I not want it? And it's kind of... gratuitous, so to speak, you know? Well, it's kinda... Nah, do you consider yourself environmentally conscious...? I'd give myself a 6.5 or 7, but I'm learning."</i>	07
<i>"Well not enormously. I might turn the heating down a bit, but not at 18, so to speak. But I am committed to using as little as possible within the limits of comfort. I'm not extremely environmentally conscious, but in a reasonable way."</i>	11
<i>"Selectively environmentally conscious. Yes. I'm on it, but not with everything I'm doing. There are also a lot of things I could leave behind to be even more environmentally conscious. But yeah, it's a bit like being a flexitarian, say. I am, in principle I am environmentally aware but every now and then it just doesn't work out. So in that sense I do my best. I am convinced that small initiatives and individuals that are environmentally aware, that is all very nice, but it's a drop in the ocean when the authorities who are responsible for this, do not take any measures."</i>	14
<i>"I would say as much as possible. It's really hard to be fully. It's really hard to be a perfectionist for sure. But I think it's OK to be... yeah you have to be imperfect until you manage to get better and so, I would say it's a moment. My mind is mostly education and the willingness to do something. And I think maybe the willingness to be content with less. I think that's major, if you're happy with less, then you can deal with less than it means less waste. It's fine to eat leftovers you know, you don't need a fresh meal every day."</i>	06 (original)

### 4.3 Environmental Citizenship checklist

In section 3.5.3, the use of the Environmental Citizen (EC) checklist at the end of the interviews was described; the results of this are presented here. This checklist contained 29 items deducted from the EC-definition by ENEC (2018), and was handed to participants 04-17 at the end of the session.

Table 15 provides descriptive statistics of the number of checked items per age and gender group. From merely looking at the descriptive statistics, it is remarkable that in the youngest group (20-39), the number of checked items is more than double in females in comparison to males. However, no statistical analyses were performed on these numbers because the sample size was too small, especially in comparison with the number of items. Therefore, although that remark cannot not be generalised, it might indicate an interesting starting point for future research on change agency across genders and age.

Table 15 Checklist descriptive statistics of checked items per age group and gender

				Minimum	Maximum	Mean	Standard Deviation
Age group	20-39	Gender	Female (n = 2)	25	25	25	0
			Male (n = 2)	12	12	12	0
	40-64	Gender	Female (n = 2)	17	18	18	1
			Male (n = 5)	12	29	19	7
	65-80	Gender	Female (n = 0)	.	.	.	.
			Male (n = 3)	13	28	18	8

Table 16 on the next page shows an overview of the checked items. The originally used, Dutch version of the checklist can be found in Appendix G. In case a participant (columns) recognised themselves in a checklist item (rows), the corresponding cell is coloured orange. If a participant did not check a specific item, the cell is white. The items are ordered, based on the total amount of checks they received from the 14 participants combined. Checklist item 9 'active on a local scale' was thus the only item that was checked by each of the participants. There are no surprises in that, given that the participants were interviewed because they were making these efforts at their local sports club. Also the participant numbers are ordered, based on the total amount of items they had checked: from many (left) to less (right). This two-folded ordering was done to increase readability and interpretability.

There are several things that stand out when looking at Table 16. When looking at the participants and the number of items they had checked, there is a relative large variation: from having checked only 12 items, up to having checked all 29 items. With six participants having checked less than half of the EC-items, the checklist-data suggests that meeting the full EC-definition is not a prerequisite for being pro-environmentally active in a sports club. Items that were most frequently checked, point towards a need in sports club change agents for; having at least some basic knowledge about environmental problems, feeling responsible towards future generations, and both willingness as competences for active engagement.

As was mentioned in the previous section (4.2.6), the order of participant quotes in Table 14 equals the order of participants in Table 16. In Table 14 it was observed that being or acting environmental conscient is often experienced as a trade-off or ongoing personal journey. When comparing the two Tables however, it is rather hard to draw clear conclusions.

Table 16 Environmental Citizenship checklist items that were checked (rows), ordered by level of occurrence. Per participant (row), ordered by their total amount of checked items. Translated from Dutch (see Appendix G).

#	Checklist item	17	13	12	15	05	10	08	04	09	16	07	11	14	06	Σ
9	Active on a local scale															14
1	Needed knowledge about environmental problems															13
25	Acting as an individual															13
16	Aimed at achieving sustainability															12
29	Taking justice for future generations into account															12
21	Willingness and competences for active engagement															12
7	Initiative in the private sphere															11
13	Collective actions															11
27	Acting within democratic means															10
4	Values and attitudes to help solve/mitigate env. problems															10
5	Skills and competences to take initiative															10
6	Values and attitudes to take initiative															10
2	Coherent and adequate knowledge about env. problems															10
28	Taking justice for the current generation into account															9
23	Willingness and competences for civic participation															9
14	Directed at solving current environmental problems															9
8	Initiative in the public sphere															9
3	Skills and competences to help solve/mitigate env. problems															8
22	Willingness and competences for critical engagement															8
18	Exercises environmental duties															8
12	Individual actions															8
24	Addressing structural/underlying causes of env. problems															8
26	Acting as a collective/group															8
15	Directed at preventing new environmental problems															7
17	Aimed at developing a healthy relationship with nature															6
20	Identifies underlying structural causes of env. problems															6
19	Exercises environmental rights															3
10	Active on a national scale															2
11	Active on a global scale															2
<b>Sum or total (Σ)</b>		29	28	25	25	23	18	17	17	14	13	13	12	12	12	



## 5. Discussion

The purpose of the current study was to identify helping and facilitating factors or characteristics, that enable sports club members in making efforts for sustainability transformation in their club. A three-level approach (individual, club, society) was taken, using the COM-B model to interview 17 change agents at various clubs about their experiences and green initiatives in their clubs. Elements from grounded theory were used as method to analyse acquired data and discover characteristics or circumstances that are considered to help these members. This chapter summarises and reports on Key results (5.1), and Further commentary and limitations (5.2).

### 5.1 Key results

This subchapter summarises the outcomes of the earlier explained combination of the initial patterns perceived (4.1.1-4.1.7) with the COM-components: capabilities, opportunities and motivation. Also, it reflects on the other constructs from the conceptual model: individual (factors) including Environmental Citizenship; community (factors); and societal (factors).

Table 17 summarises the earlier explained combinations and lists the key results from sections 4.2.1-4.2.3. Cells are coloured light green if the connection between the corresponding row and column was deemed present, and remained white if not. The same dark green as in the Operationalisation table (Table 4) was used for the first row. The added text in the cells is derived from the previous chapter and represent the main findings of the 21 combinations.

Table 17 Summarising the combination of the initially perceived patterns (rows) and COM-elements (columns) of the COM-B model

	Capabilities (4.2.1)	Opportunities (4.2.2)	Motivation (4.2.3)
<b>4.1.1 Getting started</b>	Sustainability as part of one's task package or having the resources or power to push through	Implementing one's own vision at the club or sustainability as a main reason to become active	Main driver for taking efforts, various motivations were given, some aligning with env. consciousness
<b>4.1.2 Social identity</b>	Possibly in the sense of Environmental Citizenship	Possibly more as having a greener club image	Feeling either responsible and/or env. conscious
<b>4.1.3 Low-threshold communication</b>	Working together as a team in which talents (or cap.) are being utilised	Open accounting and open culture increased urge or willingness to help	Involvement and support of others was considered to be highly motivating
<b>4.1.4 Zeitgeist and looking forward</b>	Helping in general understanding, but club atmosphere and norms weighed heavier	Frequently looking forward provides the opportunity to stay ahead of societal developments	Public awareness about env. problems helped in reducing resistance for changes
<b>4.1.5 COVID-19 pandemic</b>	Increased time to reflect upon current practices	Mixed. <i>'Never let a good crisis go to waste' - Churchill</i>	Mixed results
<b>4.1.6 Making use of resources</b>	Knowledge, know-how and skills are within the club, or can be accessed via external parties	Seized gratefully what is available from within and outside the club in terms of capabilities or e.g. subsidy	Especially motivating in case these involved (working with) others
<b>4.1.7 Actively participating with obsolescence</b>	Preparing for future renovations allows for embedding sustainability	Creates room for more radical sustainability changes to the club house	In general club house adjustments this was the main driver for change

### Individual factors

The 17 interviewees spoken with was a quite diverse group; both in age, gender and type of sports club they are member of (see also Figure 11 in section 3.4.1), implying that these characteristics do not necessarily play an important role in being a change agent for sustainability in Dutch sports clubs. The interviewees had in common that they all had a pro-active approach or go-getter attitude in one way or another: where room for improvement was seen, they did not hesitate to proverbially 'roll up their sleeves' and address this and/or do something about it.

Reverting back to the four types of causal variables for environmentally significant individual behaviour determined by Stern (2000) (mentioned in subchapter 2.2): across all participants, these were present in diverse extents. These four being: attitudinal factors, external or contextual forces, personal capabilities and habits or routines.

Regarding environmental citizenship (EC), data suggested that self-reportedly meeting the EC-definition by ENEC (2018), is not a prerequisite for being active in a pro-environmental way. This was probably due to the extensiveness of the definition, as all participants had checked 12 or more items out of 29. The data also showed that it was rather hard to draw clear conclusions on the self-reflective question regarding environmental consciousness (4.2.6), as answers were highly diverse and not always in corresponded with the number of items they had checked on the checklist.

In subchapter 2.3 it was stated that change agency (CA) and environmental citizenship (EC) could commence at the individual level and then 'grow' towards CA and EC at the community level. When asked about pro-environmental pursuits in other roles or aspects of participants' lives however, some contradicted this assumption as they merely took sustainability efforts inside their sports club.

### Community factors

Having (access to) technical skills and knowledge for e.g. sustainable renovations or purchasing more energy-efficient installations was considered required in executing sustainability ambitions. One participant practically paused the interview protocol to answer what it was, that had helped sustainability transformation at their club. Their statement could therefore not be omitted from this chapter: *"For your study that is really the crux here. It is because that knowledge and expertise is present in the club. So we don't need consultancy firms, you name it all. Because whoever does it could do it himself. He also works at a company that does that. And, those are confidants, confidential advisers in the technical field. So from within, inside the club, that's a blessing. That's a blessing"* (07: Table 11, D).

Bringing these knowledge and hard skills to the fore in clubs however, appears to require much softer skills such as communication and opening up to ideas of others. By this I mean two things: members are more prone to volunteer and use their talents at a club when they feel connected or 'have a heart' for their club, and sustainability transformation will only occur when members and management communicate with one another about their needs and ambitions.

Thus, two main things are deemed most important: a present community sense that helps members feel committed to and interested in volunteering to improve the club, and having (access to) required hard skills and knowledge.

The ten guidelines by Hauge et al. (2013) (discussed in subchapter 1.2), developed for agreeing upon renovation projects, appear surprisingly applicable to sustainability transformation in sports clubs as well. These ten being: 1) be open about the plans, 2) invest plenty of time, 3) seek advice, 4) agree within the board, 5) involve people who create enthusiasm, 6) let the owners/residents take the floor, 7) take the owners' and residents' suggestions seriously, 8) provide information in small

portions, 9) show financial calculations and consequences, 10) don't vote on the renovation until you are sure that shareholders are adequately informed.

### Societal factors

As was described in subchapter 3.3, societal factors were expected to come up during the interviews even though these were not explicitly operationalised. Several helping societal factors were indeed mentioned during the interviews, mainly: the *zeitgeist* (4.1.4) in which environmental issues are well-known problems that need to be solved; external resources (4.1.6) such as subsidies and technical assistance from supporting parties; and – although with mixed results – the COVID-19 pandemic (4.1.5) that disruptively demanded deviating from earlier common practices.

### Pro-Environmental Behaviour

With the PEBs of all participants and their sports clubs combined, all eight areas listed by Papp-Vary (2022) were touched upon. These eight areas being: Use of renewable energy sources, energy efficiency, water use efficiency, environmentally friendly transport modes, waste management, replacement of single-use plastics, availability of plant-based or low-carbon foods, and communication, commitment to green goals.

Several additional areas were mentioned: seeking connection or shared-benefits with other parties or clubs; taking on an educational role with regards to e.g. handling the club house; looking into ways of compensating CO<sub>2</sub>-emissions or increasing biodiversity; organising sustainability-related social events; or purchasing high-quality / fairtrade brands. With creative thinking

Communication (e.g. with other members or external parties) and commitment to green goals were often considered to hold room for improvement.

## 5.2 Further commentary and limitations

As could be read in the Preface, my personal involvement with the research topic was quite high. Several participants explicitly mentioned not being a 'climate tiger' or related term (see section 4.1.2). As Wang (2021) had found that self-identities were found to help in turning values into pro-environmental behaviour more strongly in comparison with group identities, I had expected the participants to express more of the first mentioned. Whereas I had adopted the self-identity of a 'climate tiger' or 'green knight or leftie' and appropriated it to myself over the years, there remains something about it. The words that were used could suggest some perceived level of extremism or oddness to them, which might feel to the participants as something that would distance them from their group identity. It could be that the participants try to maintain a social identity that matches the perceived social identity of the sports club as group; after all it is the community they love, that makes them want to make (sustainability) efforts.

As with any project, time and resources were limited: the acquired dataset is very rich, but not all valuable content could be extracted and used. This was partially caused by the inquisitive approach that was taken in the interview protocol: many other interesting dimensions (e.g. spill-over effects, social norms, among others) were also discussed during the sessions. Although elements from the grounded theory method were used, the sample size was too small (17 instead of ~30) and the interview protocol remained stable over the course of conversations rather than building on earlier answers.

Although barriers or hassle play a significant role when it comes to turning sustainable intentions into actual behaviour, limited to no attention was given to them in the current study. It would be advisable to use a more specified and specific approach in future interview protocols, focusing on one peculiar element. Something similar occurred in the coding process: It would be interesting to code and analyse the transcripts using a more standardised or prototypical approach.

The checklist that was used relied on self-reporting and only one member per sports club was interviewed, possibly limiting the reliability or generalisability of the results. Had I spoken with a different member, other focus points could have been mentioned.

My personal involvement and interests directed the research angle and scope to a large extent. I wanted the thesis to be a source of hope. For example, this thesis focused on the 'bright side', in line with handprint thinking. Although data was gathered regarding barriers that could hold valuable information, this data has not been analysed. By focusing on clubs that had already been successful in having someone advocate for PEB or work on sustainability transformation within their club, I had narrowed the 'participant pond' from which I could fish. Had this not been the case, possibly a more sufficient number of participant could have been reached for the use of grounded theory as method.

In the translation from English constructs to Dutch protocol and participants, back to English reporting, there could be some mismatches. I noticed this as the broad approach and open way of asking questions, resulted in several participants asking whether I could further elaborate on certain questions. Mostly this had something to do with the translation of the COM-B constructs. For example, the translation of 'capabilities' and 'opportunities' to Dutch can be done in several ways, and I tried to stay as close to the direct translation as possible. Something similar applied to the concept of environmental citizenship. The official Dutch translation of 'Environmental Citizen' is 'Milieubewuste Burger' (ENEC, 2018). The question preceding the checklist, on environmental consciousness, used the Dutch word 'Milieubewust'. In Dutch, the jump from 'to what extent do you consider yourself to be *milieubewust*', to 'please fill in this checklist on *milieubewust* burgerschap' was different than in English, in which environmental consciousness is seen as an element of EC.

As was mentioned in the section on recruitment, any individual who considered themselves an initiative taker or achiever for sustainability at their sports club was eligible to sign themselves up and partake in the research. The self-selection sampling bias of this approach was already mentioned there, as was the issue that sampling went through club management.

### *Future research*

In future studies it would be interesting to make use of a verified questionnaire such as the Environmental Citizenship Questionnaire (ECQ) by Hadjichambis and Paraskeva-Hadjichambi (2020) to determine the presence of such a construct. For recruitment, it would be interesting to go to sports clubs during regular club activities to interview people inside that sports club on the sustainability endeavours and green change agents, and build upon their answers, rather than blindly trusting club mailboxes and the judgment of who read the call for participants. There were several sports clubs that had responded to my call for participants but considered themselves to be unfit to partake. Looking into what made them consider themselves as unfit is also interesting. A touched upon but not further analysed concept is that of spill-over effects within the club or the individual. Future studies could look into that, as they possibly hold potential for reaching social tipping points.

## 6. Conclusion and recommendations

It is safe to conclude that there are several elements that can help turn individuals into members who make efforts for sustainability transformation at their club. This chapter first restates and answers the first two sub research questions and the main research question. The chapter finalises with an answer to the third sub question and other recommendations.

### *Sub research question 1*

*What drives or motivates change agents in different sports clubs to advocate for pro-environmental behaviour within their sports club?*

It was found that feeling connected to the club and having the intention to help improve it, was the primary indicated reason by participants to volunteer or contribute ideas. When sustainability is perceived as possible part of someone's role and corresponding task package within the club, or when members see potential to make a valuable contribution in the maintaining of their club (e.g. through deploying certain skills, knowledge or enthusiasm), they are prone to make sustainability efforts there. Findings show that support of or interest by others, e.g. fellow (board) members, can be perceived as highly motivating, stimulating or rewarding in this.

### *Sub research question 2*

*To what extent does environmental citizenship drive these individuals?*

Having at least basic knowledge about environmental problems, feeling responsible towards future generations, and both willingness as competences for active engagement, were the environmental citizenship elements that were most present among the interviewed participants. Although only few participants appeared to be driven by environmental citizenship, most were driven by other factors.

### *Main research question*

*What characteristics or circumstances help change agents in different sports clubs to advocate for pro-environmental behaviour within their sports club?*

A community feel in which club management and members are familiar with or trust one another, and a club atmosphere in which there is room for ideas and suggestions, help change agents in pro-environmental behaviour advocacy. Open and low-threshold communication, in which tackling global sustainability issues is connected to local benefits and the goals of the club were found to positively contribute in this.

### *Sub research question 3*

*How can sports clubs create circumstances in which members are stimulated to pursue sustainability transformation in their club?*

By aiming for establishing a club culture in which ideas and initiatives feel safe to address or start, and stimulating this by providing mental and/or financial support. Findings show that putting sustainability-related topics on the agenda, or talking/communicating about these topics, allows members to react on these and can bring about valuable resources such as expertise, skills or enthusiasm from within the club to work on issues. By involving members in decision-making processes or the development of solutions, general agency among members is perceived to increase as they gain ownership and control of the problem.

### *Recommendations for supporting organisations*

Although many are, not all sports clubs are blessed with resource full members or management. Clubs who would likely benefit most from having a sustainable club house, could be less indulged to take on an additional task such as sustainability. Translate global issues into local implications and provide practical information to help mitigate both. Emphasize the connection certain sports have with regards to climate change and explain the impacts it has on that sport (e.g. +1.5°C means a tremendous reduction in coral reefs, impacting scuba diving experiences), as it could increase a sense of urgency or relevance to the sports. Make sure to reach those clubs with hands-on, directly useable information on e.g. subsidies and energy scans, and (continue to) work together with them to meet their needs. For the more competitive sports; competitions, such as 'Duurzaamste Sportaccommodatie' or even leagues, in which these clubs could distinguish themselves from other clubs in a race to become greenest, were found to help. Keep sharing best practices and exemplary clubs to provide ambassadors and set a scene in which a sustainable sports club is the norm.

### *Recommendations for policy makers*

The perceived social responsibility of community sports was often found to be an important reason to make sustainability efforts as club management, as this was often considered to be 'part of the package'. Acknowledge and emphasize the societal importance plus related social responsibilities of sports clubs, not just in words but also with financial aids, so that this effect could be increased among other sports clubs.

Stimulate other green citizens initiatives that happen within your municipality as they set the right scene for pro-environmental behaviour. For example, two participants (o6, o8) unprovokedly referenced to a citizens initiative called 'De Grachtwacht', which organises weekly canal clean-ups in Leiden using canoes and sup boards. *"I found that to be easier, (...) given there's some green initiatives that happen (...). Initiatives like this or even just having a clean park with art in all of this, adds to the general idea of people maintaining their living environment healthy. So I think that made it easier for us to either sell products or advertise sustainable products"* (o6).

### *Recommendations for sports club members with environmental concerns*

Make use of the (in)formal communication channels in your club to express your concerns regarding this topic and ask questions about mitigation and club ambitions regarding this topic, or outspokenly support/applaud others who do so. Do not underestimate the influence you have as an individual. It was found that working towards sustainability solution can be perceived as fun, especially when doing so for a club you love, thus consider volunteering.

## Acknowledgements

Although any interpretations or mistakes present in this thesis remain my own, this thesis could not have been completed without the help of many others. I would hereby like to thank:

All 17 interviewees, for making time and sharing their experiences with me. Special thanks go to Katharina Biely and Gerdien de Vries for continuously helping me focus on the task at hand and get through the entire academic process. Thank you for preventing me from heading down yet another rabbit hole or opening a multitude of pandora's boxes.

To my partner Tom, family, in-law family, and friends I want to express my sincere appreciation for helping me get through the thesis creation process: I did not always show my best or most optimistic side there, and managed to battle or fight some of these demons thanks to your patience and support. I wholeheartedly promise you a good celebration after having graduated.

Irma Laponder and Tycho Jongenelen, thank you for helping me in improving my scientific writing.

I eventually managed to find a research direction that was suitable for me thanks to: Igor Nikolic, Hauke Ward, Udo Pesch, Stephanie Cap, Rutger Hoekstra, Nena Bode, Willemijn van Dolen, Katharina Biely, Gerdien de Vries, Alexander and Bartho (KlimaatGesprekken), Elise and Babette (TBAN), Tom Gudde and other people who were brave enough to ask about my progress.

## References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. [https://doi.org/https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/https://doi.org/10.1016/0749-5978(91)90020-T)
- Alhaddi, H. (2015). Triple bottom line and sustainability: A literature review. *Business and Management Studies*, 1(2), 6-10. <https://doi.org/doi:10.11114/bms.v1i2.752>
- Alles over Sport. (2018, December 17, 2019). *Sportakkoord: ambities voor de sport tot en met 2021*. Retrieved September 19, 2022 from <https://www.allesoversport.nl/thema/beleid/sportakkoord-ambities-voor-de-sport-tot-en-met-2021/>
- AT5. (2022, September 8, 2022). *Voetbalclub vreest dat sporten onbetaalbaar wordt* YouTube. Retrieved October 10, 2022 from <https://www.youtube.com/watch?v=oHH3toDBpe8>
- Biely, K. (2022). The Behavioral Perspective: Working paper 1. *Citation*, 1-133. <https://doi.org/10.4233/UIID:oFoA5234-EC1F-44B1-88D5-49D703814C2C>
- Bolderdijk, J. W., & Jans, L. (2021). Minority influence in climate change mitigation. *Current Opinion in Psychology*, 42, 25-30. <https://doi.org/10.1016/J.COPSYC.2021.02.005>
- CBS. (2022, 11 February-a). *Inkomsten sportclubs 2020 ruim 6 procent lager dan in 2018*. Retrieved 2022, 27 November from <https://www.cbs.nl/nl-nl/nieuws/2022/06/inkomsten-sportclubs-2020-ruim-6-procent-lager-dan-in-2018>
- CBS. (2022, 11 February-b). *Sportclubs; personeel, exploitatie, ledental, gebruik accommodaties*. Retrieved 2022, 27 November from <https://www.cbs.nl/nl-nl/cijfers/detail/70256NED?q=sportclubs>
- CBS StatLine. (2022, March 31). *Sociale contacten en maatschappelijke participatie*. Retrieved May 17, 2022 from <https://opendata.cbs.nl/statline/#/CBS/nl/dataset/82249NED/table?ts=1652716613440>
- Centola, D., Becker, J., Brackbill, D., Baronchelli, A. (2018). Experimental evidence for tipping points in social convention. *Science*, 360, 1116-1119. <https://doi.org/10.1126/science.aas8827>
- Creswell, W. J. C., D.J. (2018). *Research design: Qualitative, quantitative, and mixed methods approach*. Sage publications.
- Darnton, A. (2008). *GSR Behaviour Change Knowledge Review. Reference Report: An overview of behaviour change models and their uses*. <https://research.fit.edu/media/site-specific/researchfit.edu/coast-climate-adaptation-library/climate-communications/psychology-amp-behavior/Darnton.-2008.-Behaviour-Change-Models-Overview.pdf>
- Dijkstra-Silva, S., Schaltegger, S., Beske-Janssen, P. (2022). Understanding positive contributions to sustainability. A systemic review. *Journal of Environmental Management*, 320. <https://doi.org/doi.org/10.1016/j.jenvman.2022.115802>
- Duurzame Sportsector. (2022, January 24). *Oproep: deelnemers gezocht voor onderzoek duurzaamheid in de sport*. <https://www.duurzamesportsector.nl/nieuws/oproep-deelnemers-gezocht-voor-onderzoek-duurzaamheid-in-de-sport/>
- Duurzame Sportsector. (n.d.). *Over Duurzame Sportsector*. Retrieved 30 November 2022 from <https://www.duurzamesportsector.nl/over-ons/>
- Elf, P., Gatersleben, B., Christie, I. (2019). Facilitating positive spillover effects: New insights from a mixed-methods approach exploring factors enabling people to live more sustainable lifestyle. *Frontiers in Psychology*, 9(JAN). <https://doi.org/10.3389/fpsyg.2018.02699>
- ENEC. (2018). *Defining "Environmental Citizen"*. <https://enec-cost.eu/environmental-citizen/>
- Energievergelijk. (2022a). *Gasprijs - Gasprijs grafiek*. In *Gasprijs-stand-24-oktober-2022.jpg* (Ed.), (pp. De grafiek laat zien hoe de kale gasprijs zich op de gasbeurs de laatste tijd heeft ontwikkeld).
- Energievergelijk. (2022b). *Stroomprijs - Stroomprijs grafiek*. In *Stroomprijs-CBS-kaal-per-kWh.jpg* (Ed.), (pp. Een grafiek van de kale variabele leveringsprijs voor stroom in 2021 en 2022 volgens cijfers van het CBS).



- Fiske, S. T. (2018). *Social beings: core motives in social psychology*. John Wiley & Sons.
- Geels, F. W. (2010). Ontologies, socio-technical transitions (to sustainability), and the multi-level perspective. *Research Policy*, 39(4), 495-510. <https://doi.org/https://doi.org/10.1016/j.respol.2010.01.022>
- Green, S. B. (1991). How Many Subjects Does It Take To Do A Regression Analysis. *Multivariate Behavioral Research*, 26(3), 499-510. [https://doi.org/10.1207/s15327906mbr2603\\_7](https://doi.org/10.1207/s15327906mbr2603_7)
- Guillaume, J. H. A., Sojamo, S., Porkka, M., Gerten, D., Jalava, M., Lankoski, L., Lehikoinen, E., Lettenmeier, M., Pfister, S., Usva, K., Wada, Y., Kummu, M. (2020). Giving legs to handprint thinking: Foundations for evaluating the good we do. *Earth's Future*, 8(e2019EF001422). <https://doi.org/https://doi.org/10.1029/2019EF001422>
- Gunderson, L. H., Holling, C. S. (2002). *Panarchy: Understanding Transformations in Human and Natural Systems*. Island Press.
- Hadjichambis, A. C., & Paraskeva-Hadjichambi, D. (2020). Environmental Citizenship Questionnaire (ECQ): The Development and Validation of an Evaluation Instrument for Secondary School Students. *Sustainability* 2020, Vol. 12, Page 821, 12(3), 821-821. <https://doi.org/10.3390/SU12030821>
- Hauge, Å. L., Thomsen, J., & Löfström, E. (2013). How to get residents/owners in housing cooperatives to agree on sustainable renovation. *Energy Efficiency*, 6(2), 315-328. <https://doi.org/10.1007/s12053-012-9175-5>
- Heetkamp, J. (2022, October 31). *De Duurzaamheidsatlas: voorbeelden van verduurzaming bij sportaccommodaties*. Duurzame Sportsector. Retrieved 1 November 2022 from <https://www.duurzamesportsector.nl/artikel/de-duurzaamheidsatlas-voorbeelden-van-verduurzaming-bij-sportaccommodaties/>
- Hölscher, K., J. M. Wittmayer and D. Loorbach. (2018). Transition versus transformation: What's the difference? *Environmental Innovation and Societal Transitions*, 27, 1-3.
- IPBES. (2016). *Summary for policymakers of the methodological assessment of scenarios and models of biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. S. o. t. I. S.-P. P. o. B. a. E. Services.
- IPCC. (2018). *Framing and Context*. (Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty, Issue. [https://www.ipcc.ch/site/assets/uploads/sites/2/2022/06/SR15\\_Chapter\\_1\\_HR.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2022/06/SR15_Chapter_1_HR.pdf)
- IPCC. (2022). *Climate Change 2022: Impacts, Adaptation and Vulnerability*. Cambridge University Press.
- IS4IE. (n.d.). *What is industrial ecology?* Retrieved 29 November 2022 from <https://is4ie.org/about/what-is-industrial-ecology>
- Jackson, T. (2005). *Motivating Sustainable Consumption*. <https://coolclimate.berkeley.edu/files/coolclimate/Jackson+2005+-+Motivating+sustainable+consumption.pdf>
- Jans, L. (2021). Changing environmental behaviour from the bottom up: The formation of pro-environmental social identities. *Journal of Environmental Psychology*, 73. <https://doi.org/https://doi.org/10.1016/j.jenvp.2020.101531>
- Jeugdjournaal, N. (2022, May 6, 2022). *Deze kinderen mogen niet douchen bij hun voetbalclub* YouTube. Retrieved October 24, 2022 from <https://www.youtube.com/watch?v=HRgF7BjwKW4>
- Jones, M. S., Teel, T. L., Solomon, J., & Weiss, J. (2021). Evolving systems of pro-environmental behavior among wildscape gardeners. *Landscape and Urban Planning*, 207, 104018. <https://doi.org/https://doi.org/10.1016/j.landurbplan.2020.104018>
- KlimaatGesprekken. (2022, 18 May). In A. Groen, van den Broeke, B. (Ed.).
- Kurusu, K. (2015). *Pro-Environmental Behaviors*. Springer. <https://doi.org/10.1007/978-4-431-55834-7>
- KVK. (n.d.). *De vereniging*. Retrieved 29 November 2022 from <https://ondernemersplein.kvk.nl/de-vereniging/>

- Lange, F., & Dewitte, S. (2019). Measuring pro-environmental behavior: Review and recommendations. *Journal of Environmental Psychology*, 63, 92-100. <https://doi.org/https://doi.org/10.1016/j.jenvp.2019.04.009>
- Lanzini, P., Thøgersen, J. (2014). Behavioural spillover in the environmental domain: An intervention study. *Journal of Environmental Psychology*, 40, 381-390. <https://doi.org/10.1016/j.jenvp.2014.09.006>
- Linder, N., Giusti, M., Samuelsson, K., Barthel, S. (2022). Pro-environmental habits: An underexplored research agenda in sustainability science. *Ambio*, 51(3), 546-556.
- Meinema, A. (2022). Hyperinflatie: het verhaal van armoede, stijgende schulden en miljardensteun. NOS. <https://nos.nl/artikel/2450739-hyperinflatie-het-verhaal-van-armoede-stijgende-schulden-en-miljardensteun>
- Merriam-Webster. (n.d.-a). Code. <https://www.merriam-webster.com/dictionary/code>
- Merriam-Webster. (n.d.-b, 1 November 2022). Transformation. Merriam-Webster.com dictionary. Retrieved November 5, 2022 from <https://www.merriam-webster.com/dictionary/transformation>
- Michie, S., Van Stralen, M. M., & West, R. (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science*, 6(42). <https://doi.org/10.1186/1748-5908-6-42>
- Middleton, F. (2019). *Reliability vs. Validity in research: Difference, types and examples*. Scribbr. Retrieved 2022, November 9 from <https://www.scribbr.com/methodology/reliability-vs-validity/>
- Moser, C., Frick, V., Seidl, R., Blumer, Y. B. (2019). Teaming up for sustainability: Promoting sustainable mobility behaviour through sports clubs in Switzerland. *Energy Research & Social Science*, 89-97. <https://doi.org/https://doi.org/10.1016/j.erss.2019.02.016>
- Nijhof, A., Wins, A., Argyrou, A., & Chevrollier, N. (2022). Sustainable market transformation: A refined framework for analyzing causal loops in transitions to sustainability. *Environmental Innovation and Societal Transitions*, 42, 352-361. <https://doi.org/10.1016/J.EIST.2022.01.010>
- NOS Nieuws. (2022a). *Nieuw douchebeleid bij sportclub door stijgende rekening: 'Soppie erover en klaar'* [Video]. NOS. <https://nos.nl/video/2447719-nieuw-douchebeleid-bij-sportclubs-door-stijgende-rekening-soppie-erover-en-klaar>
- NOS Nieuws. (2022b). *Stijgende prijzen spelen sporters parten: 'Sommige leden kwamen niet meer'*. NOS. <https://nos.nl/artikel/2451200-stijgende-prijzen-spelen-sporters-parten-sommige-leden-kwamen-niet-meer>
- NOS Nieuws. (2022, November 17). *Minister bezorgd over energiekosten sportclubs: "We moeten het samen doen"*. Retrieved 17 November 2022 from
- NOS Nieuws. (2022, November 29). *Kabinet tast niet dieper in de buidel voor sportverenigingen in nood*. Retrieved 29 November 2022 from <https://nos.nl/artikel/2454329-kabinet-tast-niet-dieper-in-de-buidel-voor-sportverenigingen-in-nood>
- O'Donnell, R., McCulloch, P., Greaves, L., Semple, S., & Amos, A. (2022). What Helps and What Hinders the Creation of a Smoke-free Home: A Qualitative Study of Fathers in Scotland. *Nicotine & Tobacco Research*, 24(4), 511-518. <https://doi.org/10.1093/NTR/NTAB228>
- Oktay, J. S. (2012). *Grounded theory*. Oxford University Press.
- Otto, I. M., Donges, J.F., Cremades, R., Bhowmik, A., Hewitt, R.J., Lucht, W., Rockström, J., Allerberger, F., McCaffrey, M., Do, S.S.P., Lenferna, A., Morán, N., van Vuuren, D.P., Schnellhuber, H.J. . (2020). Social tipping dynamics for stabilizing Earth's climate by 2050. *Proceedings of the National Academy of Sciences*, 117(5), 2354 - 2365. <https://doi.org/https://doi.org/10.1073/pnas.1900577117>
- Papp-Vary, A. F., Farkas, M. (2022). *The world's first carbon neutral football club: the case study of Forest Green Rovers* Economic and Social Development (Book of Proceedings), Aveiro.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods (3rd ed.)*. Sage publications.
- Poot, M. (2020). *Stappenplan sportverenigingen. Hoe maak je van het verduurzamen van je sportaccommodatie een succesvol project?*

- [https://www.kenniscentrumsportenbewegen.nl/kennisbank/publicaties/?stappenplan-sportverenigingen&kb\\_id=25183&kb\\_q=stappenplan](https://www.kenniscentrumsportenbewegen.nl/kennisbank/publicaties/?stappenplan-sportverenigingen&kb_id=25183&kb_q=stappenplan)
- Rashid, N. R. N. A., Wahid, N. H. A. (2012). Positive spillover of pro-environmental behaviour phenomenon: The influence of organizational and family factors. *International Proceedings of Economics Development and Research*, 56(16), 79-83.
- Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F. S., Lambin, E. F., ... & Foley, J. A. (2009). A safe operating space for humanity. *Nature*, 461, 472-475. <https://doi.org/https://doi.org/10.1038/461472a>
- Roggema, R. (2014). Incremental Change, Transition or Transformation? Optimising Change Pathways for Climate Adaptation in Spatial Planning. 91-115.
- Ruggerio, C. A. (2021). Sustainability and sustainable development: A review of principles and definitions. *Science of the Total Environment*, 786, 147481.
- Ryan, F., Coughlan, M., & Cronin, P. (2009). Interviewing in qualitative research: The one-to-one interview. *International Journal of Therapy and Rehabilitation*, 16(6), 309-314. <https://doi.org/10.12968/ijtr.2009.16.6.42433>
- Saldaña, J. (2009). *The Coding Manual for Qualitative Researchers*. SAGE Publications.
- Salomaa, A. J., S. (2020). How to assess sustainability transformations: A review. *Global Sustainability*, 3(E24). <https://doi.org/doi:10.1017/sus.2020.17>
- Sarid, A., & Goldman, D. (2021). A Value-Based Framework Connecting Environmental Citizenship and Change Agents for Sustainability—Implications for Education for Environmental Citizenship. *Sustainability 2021, Vol. 13, Page 4338, 13(8), 4338-4338*. <https://doi.org/10.3390/SU13084338>
- Saunders, B., Sim, J., Kinstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H., Jinks, C. (2018). Saturation in qualitative research: exploring its conceptualization and operationalization. *Quality & Quantity*, 52(4), 1893-1907.
- Schwartz, S. H. (2012). An Overview of the Schwartz Theory of Basic Values. *Online Readings in Psychology and Culture*, 2(1), 2307-0919.
- Setting up an association in the Netherlands*. (n.d.). Dutch Point of Single Contact for entrepreneurs. Retrieved September 19, 2022 from <https://business.gov.nl/starting-your-business/choosing-a-business-structure/association/>
- Shove, E., Pantzar, M., Watson, M. (2012). *The dynamics of social practice: Everyday life and how it changes*. SAGE Publications Ltd.
- Sportclub in Nederland. (n.d.). *Sportclubs Zuid-Holland*. Retrieved 27 November 2022 from <https://www.sportclub-in.nl/zuid-holland>
- Srinivasan, S. (2012). Inducing pro-environmental behaviour: moral suasion, reciprocal altruism and the Man-in-the-Middle. *International Journal of Green Economics*, 6(1), 37.
- Stern, P. C. (2000). Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues*, 56(3), 407-424. <https://doi.org/10.1111/0022-4537.00175>
- TBAN. (2022, March 23). In B. Porcelijn, van den Berg, E. (Ed.).
- Thomson, S. B. (2010). Sample size and grounded theory. *Thomson, SB (2010). Grounded Theory-Sample Size. Journal of Administration and Governance*, 5(1), 45-52.
- Thormann, T. F. W., P. (2021). Determinants of pro-environmental behavior among voluntary sport club members. *German Journal of Exercise and Sport Research*(51), 29-38. <https://doi.org/https://doi.org/10.1007/s12662-020-00700-8>
- TU Delft. (n.d.-a). *ATLAS.ti*. Retrieved 2022, 19 June from <https://software.tudelft.nl/461/>
- TU Delft. (n.d.-b). *Human Research Ethics*. <https://www.tudelft.nl/en/about-tu-delft/strategy/integrity-policy/human-research-ethics/>
- UNDP. (2021). *Peoples' Climate Vote*. <https://www.undp.org/publications/peoples-climate-vote>
- UNEP. (2022). *Emissions Gap Report 2022: The Closing Window — Climate crisis calls for rapid transformation of societies*. <https://www.unep.org/emissions-gap-report-2022>
- UNFCCC. (2019). *Creating the greenest football club in the world - Forest Green Rovers | United Kingdom*. Retrieved May 28, 2022 from <https://unfccc.int/climate-action/momentum-for->

[change/climate-neutral-now/creating-the-greenest-football-club-in-the-world-forest-green-rovers](#)

United Nations. (1987). *Report of the World Commission on Environment and Development (A/42/427/EN)*. <https://digitallibrary.un.org/record/139811>

United Nations. (n.d.). *About the Secretariat*. <https://unfccc.int/about-us/about-the-secretariat>

VWS. (2018). *The National Sports Agreement*. Den Haag: Ministerie van Volksgezondheid, Welzijn en Sport Retrieved from

[https://www.kenniscentrumsportenbewegen.nl/kennisbank/publicaties/?the-national-sports-agreement&kb\\_id=24166&kb\\_q=sportakkoord](https://www.kenniscentrumsportenbewegen.nl/kennisbank/publicaties/?the-national-sports-agreement&kb_id=24166&kb_q=sportakkoord)

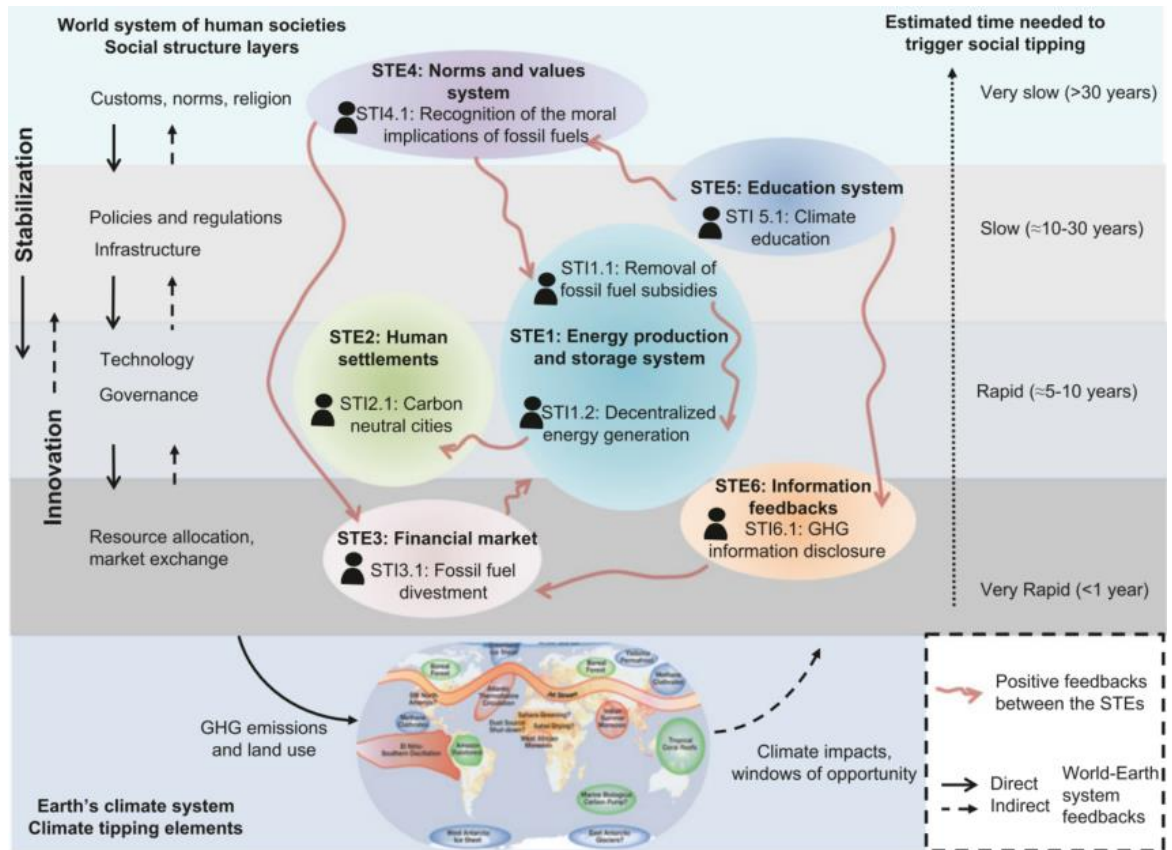
Wang, X., Van der Werff, E., Bouman, T., Harder, M. K., Steg, L. (2021). I am vs. we are: how biospheric values and environmental identity of individuals and groups can influence pro-environmental behaviour. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021618956>

Wicker, P., & Thormann, T. F. (2022). Well-being of sport club members: the role of pro-environmental behavior in sport and clubs' environmental quality. *Sport Management Review*, 25(4), 567-588. <https://doi.org/10.1080/14413523.2021.1991688>

# Appendices

## Appendix A: Social-Tipping Elements and Interventions, by Otto (2020)

Figure representing Social tipping elements (STEs) and associated social tipping interventions (STIs) with the potential to drive rapid decarbonization in the World–Earth system, adopted from Otto (2020). Referred to in section 1.1.



## Appendix B: Scoping study found titles

Referred to in section 1.2.

### Found titles

1. 2021. Determinants of pro-environmental behavior among voluntary sport club members ([article](#))  
*The results reveal that environmentally consciousness members behave more environmentally friendly, supporting the theory of planned behavior.*  
**>> Somewhat relevant**  
2021. Well-being of sport club members: the role of pro-environmental behavior in sport and clubs' environmental quality ([article](#))  
*The results of regression analyses show that pro-environmental actions in sport have a positive effect on members' well-being. (...) Collectively, these findings suggest that protecting the natural environment goes hand in hand with individuals' well-being and public health goals in the field of mental health.*  
**>> Somewhat relevant**  
2020. The organisation of community football, a barrier to environmental change ([article](#))  
*Findings: The ownership and management of football facilities provides for a low level of independent decision making by clubs and negates the encouragement of pro-environmental activity. Practical implications: Strategies for increased environmental activity in football need to look beyond individual clubs and volunteers to the way the sport is organised.*  
**>> Somewhat relevant**  
2012. Inducing pro-environmental behaviour: Moral suasion, reciprocal altruism and the Man-in-The-Middle ([article](#)) DOUBLE  
*Individuals make consumption choices relating to living styles, travelling or in preferring products or services over others. The median individual's willingness to align with a cooperative group and to bear the costs that would accrue distant benefits, and having a sizable number of such willing individuals representing the median, would determine eventual environmental outcomes. This paper draws on the resources of Environmental Economics, Game Theory, Behaviouristic Psychology and Oriental Philosophy to present an informal social network approach to achieving pro-environmental outcomes. The model begins with a morally committed, altruistic opinion-leader, 'the Man-in-the-Middle', inducing anonymous altruism among a group of marginal consumers, who in-turn induce reciprocal altruism through moral suasion among a larger group of price-conscious and reticent consumers. Cumulatively these agents encourage conformity and pro-social behaviour in society, whose members otherwise fear being ostracised.*  
**>> Relevant**  
2010. Football and climate change: Strange bedfellows or a means of going beyond the usual suspects in encouraging pro-environmental behavioural change? ([article](#))  
*(...) examining the role that community can play in tackling climate change. It does this through a case study analysis of a community-based pro-environmental behavioural-change campaign (...). the paper goes on to suggest that by focusing on the individual as the appropriate unit of change, much current policy fails to incorporate the contextual constraints that may limit an individual's ability to adopt behavioural change regardless of their willingness to do so.*  
**>> Somewhat relevant**
2. 2018. Environmental Behavior Among Russian Youth: The Role of Self-direction and Environmental Concern ([article](#))  
**>> Somewhat relevant** (federation because of Russian federation)  
2012. Interactions Between a Collectivist Culture and Buddhist Teachings Influence Environmental Concerns and Behaviors in the Republic of Kalmykia, Russia ([article](#))  
*This study demonstrates the potential for wider cultural context to have an enduring influence on environmentally relevant behaviors (in this case, collectivism limited the perception of individual agency), and demonstrates that engaging with the local cultural and social context (such as religious views) can support conservation interventions.*  
**>> Somewhat relevant**
3. 2020. Pro-environmental behavior as a signal of cooperativeness: Evidence from a social dilemma experiment ([article](#))  
*Pro-environmental behavior has social signaling value. Previous research suggests that enacting pro-environmental*

behaviors can signal certain personal characteristics, such as social status and trustworthiness, to others. Using an incentivized experiment, we show that people known to behave pro-environmentally are expected to be more cooperative, are preferred as cooperation partners, and elicit more cooperation from others. The presence of pro-environmental individuals may thus motivate others to exert more effort towards reaching cooperative goals, even in situations where individual and group goals are at odds (i.e., social dilemmas). However, people who behaved pro-environmentally were actually no more cooperative than those performing fewer pro-environmental behaviors.

>> **Somewhat relevant**

2015. Reputation and household recycling practices: Field experiments in Costa Rica ([article](#))

>> **Not relevant but interesting** (shame & pride in effectiveness PEB)

2014. Moving from outsider to insider: Peer status and partnerships between electricity utilities and residential consumers ([article](#))

*It is proposed that an energy utility can be highly successful at peak demand reduction by becoming a community member and a peer to residential consumers and developing the necessary trust, access, influence and partnership required to create the responsive environment to change.*

>> **Somewhat relevant**

2014. Spouses' time allocation to pro-environmental activities: Who is saving the environment at home? ([article](#))

*It was further revealed that family structure determines participation in pro-environmental activities.*

>> **Somewhat relevant** (structure/group variables)

2013. How to get residents/owners in housing cooperatives to agree on sustainable renovation ([article](#))

*Success criteria and barriers are found on the societal level as well as on the organizational/individual level.(...)*

*Based on the results of the study, ten guidelines that contribute to more successful decision making processes and increase the chances of sustainable energy efficient renovation in housing cooperatives are presented.*

>> **Relevant** (organisation vs individual & criteria)

2012. Harnessing the power of reputation: Strengths and limits for promoting cooperative behaviors ([article](#))

*When individuals help others, they receive reputational benefits (or avoid reputational costs), and this gives people an incentive to help. Such findings can be applied to promote many kinds of helping and cooperation, including charitable donations, tax compliance, sustainable and pro-environmental behaviors, risky heroism, and more.*

*Despite the potential advantages of using reputation to promote positive behaviors, there are several risks and limits.*

>> **Somewhat relevant** (reputation in group as variable?)

2012. Inducing pro-environmental behaviour: Moral suasion, reciprocal altruism and the Man-in-The-Middle ([article](#)) DOUBLE

*Individuals make consumption choices relating to living styles, travelling or in preferring products or services over others. The median individual's willingness to align with a cooperative group and to bear the costs that would accrue distant benefits, and having a sizable number of such willing individuals representing the median, would determine eventual environmental outcomes. This paper draws on the resources of Environmental Economics, Game Theory, Behaviouristic Psychology and Oriental Philosophy to present an informal social network approach to achieving pro-environmental outcomes. The model begins with a morally committed, altruistic opinion-leader, 'the Man-in-the-Middle', inducing anonymous altruism among a group of marginal consumers, who in-turn induce reciprocal altruism through moral suasion among a larger group of price-conscious and reticent consumers. Cumulatively these agents encourage conformity and pro-social behaviour in society, whose members otherwise fear being ostracised.*

>> **Relevant**

4. 2021. I Am vs. We Are: How Biospheric Values and Environmental Identity of Individuals and Groups Can Influence Pro-environmental Behaviour ([article](#))

*Our findings show the relevance of personal- and group-level factors in understanding pro-environmental behaviour in both individualistic and collectivistic countries, which has strong theoretical and practical implications, particularly for developing international strategies to promote pro-environmental actions across the world.*

>> **Relevant** (personal vs group level factors)

2021. Community perceptions and pro-environmental behavior: The mediating roles of social norms and climate change risk. ([article](#))

*we examined whether individuals' attachment to their community and perceptions of their community's resilience were related to the extent to which individuals perceived norms related to pro-environmental action within close others, and in turn, whether these social norms are associated with perceptions of climate change risk and subsequent willingness to engage in pro-environmental behavior. Mediation analyses indicated that, first, descriptive*

and prescriptive norms for pro-environmental behavior, and then perceptions of climate change risk, serially mediated the association between community attachment and resilience and willingness to engage in social advocacy and tax support to adapt to climate change in their community.

**>> Relevant**

2021. Demographic, Attitudinal, and Social Factors That Predict Pro-Environmental Behavior ([article](#))  
*The present research identifies several individual demographic factors (age, education, and political ideology) as well as various attitudinal and social factors, such as ecological worldview, social identity, and place attachment, and explores their relationship with pro-environmental concern and behavior. The results of this synthesis indicate that there are complex and dynamic associations between these demographic, attitudinal, and social factors, and environmental variables.*

**>> Somewhat relevant**

2020. Nature contact, nature connectedness and associations with health, wellbeing and pro-environmental behaviours ([article](#))

**>> Interesting**

2019. Is searching for meaning in life related to civic engagement?: Individual- and society-level moderators ([article](#))  
*(...) the association between the search for meaning (in terms of thinking about meaning and purpose of life) and pro-environmental engagement was stronger when people held stronger values of openness to change (vs. conservation) and prioritized environmental wellness.*

**>> Somewhat relevant** (individual / society level)

2017. I Am Not Like You, But I'm Also Going by Bike: The Conspicuous Consumption Effect of a Dissociation Reference Group on Observer's Engagement in an Environmental Cause ([article](#))  
*It was found that conspicuous consumption could be perceived positively. There is evidence showing that the environmental cause evaluation of the observer is more positive if the observed individual belongs to a dissociation group.*

**>> Relevant**

2011. The Dragons of Inaction: Psychological Barriers That Limit Climate Change Mitigation and Adaptation ([article](#))  
*Although many individuals are engaged in some ameliorative action, most could do more, but they are hindered by seven categories of psychological barriers, or "dragons of inaction" limited cognition about the problem, ideological worldviews that tend to preclude pro-environmental attitudes and behavior, comparisons with key other people, sunk costs and behavioral momentum, discredence toward experts and authorities, perceived risks of change, and positive but inadequate behavior change. Structural barriers must be removed wherever possible, but this is unlikely to be sufficient.*

**>> Relevant** (individual)

5. 2021. Pro-environmental behavior: Social norms, intrinsic motivation and external conditions ([article](#))  
*The results suggest that two-pronged policies, which take into account intrinsic motivation and external conditions, are needed to reach a high observance rate in the population in the short and in the long term. (8 PEBs)*

**>> Somewhat relevant**

2019. The Role of Information Sources and Providers in Shaping Green Behaviors. Evidence from Europe ([article](#))  
*Our results suggest that the use of eco-information sources and trust in different providers significantly affect green behaviors of EU citizens towards a 'truly' circular economic system.*

**>> Somewhat relevant**

6. 2021. Testing a tridimensional model of sustainable behavior: self-care, caring for others, and caring for the planet ([article](#))  
*Results suggest sustainability, understood as a chain of interdependences between the individual, society, and nature, begins with self-care and continues with caring for others, and with caring for the biosphere, which, in turn, affords for a more sustainable environment for the individual.*

**>> Somewhat relevant**

2021. Evolving systems of pro-environmental behavior among wildscape gardeners ([article](#))  
*We used a social-ecological systems (SES) framework to examine behavior change among urban residents in Colorado who had received wildscape gardening certification and training. These findings offer the first SES understanding of how urban residents begin and expand their engagement in wildscape gardening and advocacy.*



>> **Relevant** (+ methode + KlimaatGesprekken?)

2021. The use of social networking sites and pro-environmental behaviors: A mediation and moderation model ([article](#))

*Results indicate that the exposure to climate change-related information on SNSs has a direct positive effect on users' pro-environmental behaviors ( $\beta = 0.299, p < 0.01$ ).*

>> **Not relevant but interesting**

2020. Motivating individuals for social transition: The 2-pathway model and experiential strategies for pro-environmental behaviour ([article](#))

*The 2-pathway model provides important theoretical insights into the link between mindfulness and sustainable lifestyles, as well as the interface between environmental behaviours and well-being. By recognising and investing in the relational capacities of individuals, we might be able to promote a society that prioritises self-actualisation over self-interest.*

>> **Somewhat relevant**

2019. Enhancing the adaptive capacity for urban sustainability: A bottom-up approach to understanding the urban social system in China ([article](#))

*The results demonstrated how, in a Chinese context, the urban social system can be understood and urban sustainability can be promoted through environmental adaptation supported by joint efforts from governments, businesses, society and individuals.*

>> **Somewhat relevant** (bottom up approach)

7. 2018. Activating employee's pro-environmental behaviors: The role of CSR, organizational identification, and environmentally specific servant leadership ([article](#))

*Key findings show that perceived CSR has both a direct and an indirect influence, through organizational identification, on pro-environmental behavior. The results also lent support for the interactive effect of environmentally specific servant leadership with CSR in predicting employee pro-environmental behaviors.*

>> **Somewhat relevant**

2017. Corporate Social Responsibility and pro-environmental behaviour: Organisational identification as a mediator ([article](#))

*Perceived CSR has both a direct and an indirect influence, through organisational identification, on pro-environmental behaviour.*

>> **Somewhat relevant**

2012. Beyond individual behaviour change: the role of power, knowledge and strategy in tackling climate change ([article](#))

*Looks at 2 types of engagement (individual behaviour change, versus 'advocate collective social action'. Results. Firstly, powerlessness is shown to be a crucial experience, whatever the respondents' engagement. Secondly, 'strategy scepticism' seems to be a more important obstacle for engagement than 'climate scepticism'. Thirdly, many respondents express significant resistance towards being 'conditioned' by awareness-raising campaigns. Fourthly, a 'gap' is observed between respondents' analysis and their strategy proposals.*

>> **Relevant**

8. 2020. Tell me what is on the line and make it personal: Energizing Dutch homeowners through message framing ([article](#))

*The results indicate that the effect of outcome framing on pro-environmental behavioural intentions depends on the point of reference employed in a message as well as on a recipient's regulatory focus.*

>> **Not relevant but interesting**

2015. Are wildlife recreationists conservationists? Linking hunting, birdwatching, and pro-environmental behavior ([article](#))

*We tested the hypothesis that wildlife recreationists are more likely than non-recreationists to voluntarily engage in different types of PEB, grouped as conservation behaviors and environmental lifestyle behaviors. (...) We found wildlife recreationists - both hunters and birdwatchers - were 4-5 times more likely than non-recreationists to engage in conservation behaviors, which included a suite of activities such as donating to support local conservation efforts, enhancing wildlife habitat on public lands, advocating for wildlife recreation, and participating in local environmental groups. Moreover, effects were additive; hunter-birdwatchers had the greatest likelihood of engaging in all types of conservation behaviors. On the other hand, engagement in environmental lifestyle behaviors such as recycling, energy conservation, and green purchasing were roughly comparable among all types of wildlife*

recreationists and non-recreationists.

>> **Not relevant but interesting**

9. 2021. Determinants of pro-environmental behavior among voluntary sport club members ([article](#)) DOUBLE  
*The results reveal that environmentally consciousness members behave more environmentally friendly, supporting the theory of planned behavior.*

>> **Somewhat relevant**

2020. Social Entrepreneurship and Corporate Social Responsibility in Team Sport Clubs: Two Cases from Sweden and Finland ([article](#))

*Small and large sport clubs, in big cities or in the countryside, need to respond to external pressures created by social, financial and environmental factors.*

>> **Not relevant but interesting**

2019. Community sports clubs: are they only about playing sport, or do they have broader health promotion and social responsibilities? ([article](#))

*It is concluded that for sport clubs to be socially responsible organisations, their focus should be on fulfilling obligations that meaningfully impact their community, before devoting scarce resources to activities beyond their immediate capacity.*

>> **Not relevant but interesting**

2016. Can't play, won't play: longitudinal changes in perceived barriers to participation in sports clubs across the child-adolescent transition ([article](#))

*Perceived barriers to sports participation change rapidly in childhood and adolescence. Future interventions aiming to increase sports participation in children and adolescents should target specific age groups, should consider the rapid changes which occur in adolescence, and aim to address prominent barriers from across the socioecological model.*

>> **Not relevant but interesting**

2013. Factors affecting competitiveness of services provided by sports clubs: A case of Kaunas City sports clubs ([article](#))

*The main reasons for the importance of internal factors affecting the competitiveness of sports club services are the clients' personal interests and meeting their social needs, and the importance of the external factors is determined by the state and the values established in the society.*

>> **Not relevant but interesting**

2012. Causes of Change in Sports Clubs-Findings from a Multi-Level Study ([article](#)) DOUBLE

*The results confirm the population ecology assumptions of stable core characteristics with highly malleable-that is, adaptable-peripheral characteristics in existing sports clubs. Furthermore, they suggest that organizational change takes place primarily on the population level, that is, through the replacement of sports clubs.*

>> **Not relevant but interesting**

10. 2019. Teaming up for sustainability: Promoting sustainable mobility behaviour through sports clubs in Switzerland ([article](#))

*Social norms impacted team members' decisions to travel by car less frequently. In contrast, individual participants' car use to attend gym sessions was not affected by the programme. We conclude that formal social groups such as sports clubs are potentially effective multipliers and motivators for environment-friendly mobility programmes.*

>> **Somewhat relevant**

2018. Diversity work in community sport organizations: Commitment, resistance and institutional change ([article](#))

*While individual champions are critical to the promotion of diversity, persistent tensions and resistance arise when they seek to translate the language of diversity into institutional practice and culture change*

>> **Relevant**

2017. Promoting energy-saving behaviour: formal social groups as promising middle actors for municipal interventions ([article](#))

*Our evidence suggests that formal social groups are promising middle actors for energy conservation campaigns and that city governments should engage more often with these groups to communicate with residents.*

>> **Somewhat relevant**

2012. Finnish sports club as a mirror of society ([article](#))

*some of the broader societal changes are clearly paralleled by changes in sports clubs, such as ageing, social*

*differentiation, urbanization, higher levels of education and other cultural changes.*

**>> Somewhat relevant**

2012. Causes of Change in Sports Clubs-Findings from a Multi-Level Study ([article](#)) DOUBLE

*The results confirm the population ecology assumptions of stable core characteristics with highly malleable-that is, adaptable-peripheral characteristics in existing sports clubs. Furthermore, they suggest that organizational change takes place primarily on the population level, that is, through the replacement of sports clubs.*

**>> Not relevant but interesting**

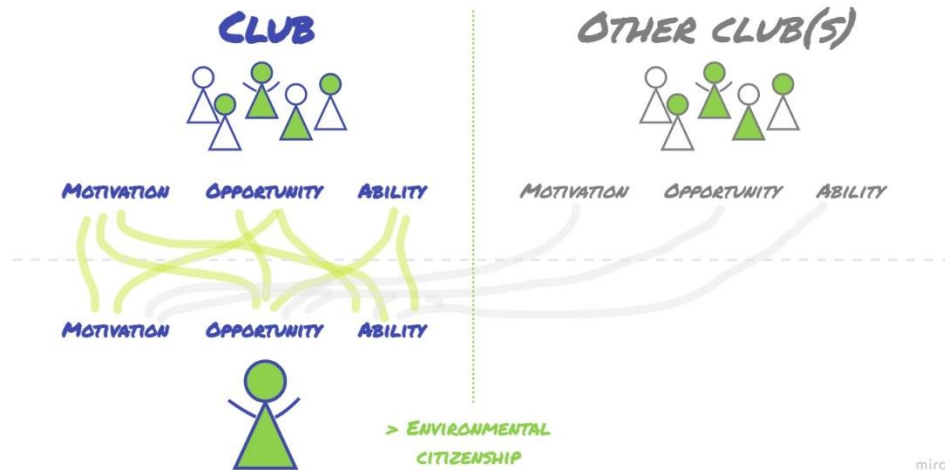
## Appendix C: Earlier versions of the conceptual model

Referred to in section 2.4.

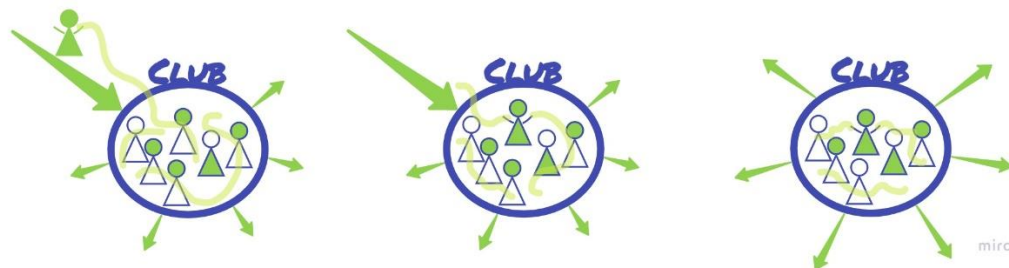
The first drawing was created to function as legend for the second drawing. The blue outline represents being a member of the sports club. Green filling indicates the (potential) presence of pro-environmental citizenship. The raised arms indicate advocacy and light green refer to the facilitating conditions that are a main part of the study.



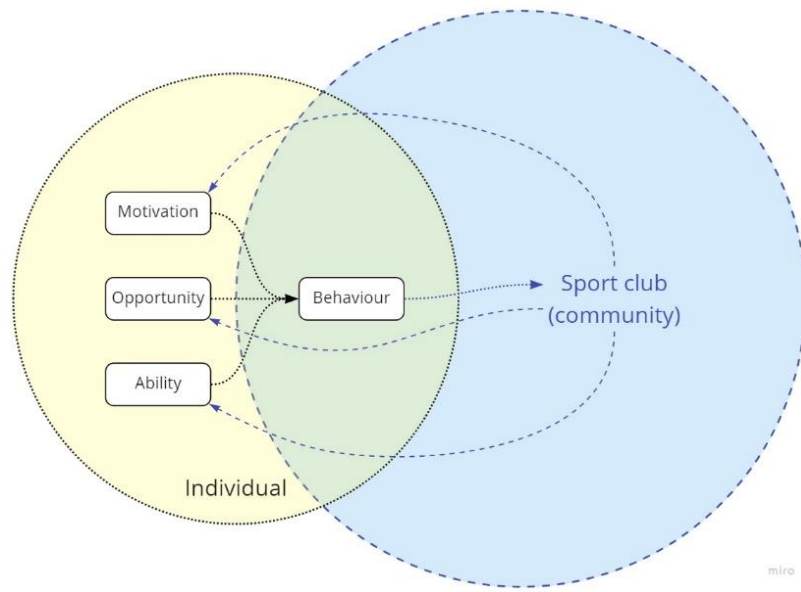
The second drawing includes possible spill-overs in other clubs or communities.



There was interest in finding out where change in the club had actually originated from, provided that in the Forest Green Rovers football club, radical change had initially come from an outsider.



Eventually the image below was drawn to indicate which elements would be used as a basis. Note that the MOA-model was used here, whereas later on I switched to the (similar) COM-B model.



## Appendix D: Human Research Ethics Committee documents

Referred to in section 3.2. The ethics review checklist, data management plan, informed consent form and summaries of the transcripts can be found in separate documents.

Ethics checklist	HREC 1 of 3 Ethics Review Checklist_signed GdV.pdf
Data Management Plan	HREC 2 of 3 Data Management Plan.pdf
Informed Consent	HREC 3 of 3 Informed Consent (Dutch)
Transcript summaries	ebliek_transcript summaries.pdf

Letter of approval:

Date 13-Jun-2022  
Contact person Dr. Cath Cotton, Policy Advisor Academic Integrity  
E-mail c.m.cotton@tudelft.nl



Human Research Ethics Committee  
TU Delft  
(<http://hrec.tudelft.nl/>)  
Visiting address  
Jaffalaan 5 (building 31)  
2628 BX Delft  
Postal address  
P.O. Box 5015 2600 GA Delft  
The Netherlands

*Ethics Approval Application: Individuals advocating for Pro-Environmental Behaviour in sport associations  
Applicant: Blied, Esther*

Dear Esther Blied,

It is a pleasure to inform you that your application mentioned above has been approved.

Please note that this approval is subject to your ensuring that the following conditions are fulfilled:

- 1) The privacy issues if a data breach were to occur are reflected on in more detail.
- 2) The transcription software that is used to transcribe the interviews is approved by either the Data Steward or the Privacy Team.
- 3) The collaborating research partners do not have access to the raw data.
- 4) The institutional @student.tudelft.nl e-mail address is used.

We advise a precautionary approach: in principle we advise not to publish transcripts – and if it's necessary to do so care must be taken to make sure that transcripts are not only "anonymous", but not identifiable. Where it is felt that transcripts or transcript summaries must be published, we advise that where possible the transcript/summary itself should be approved by participants or it is confirmed by the TU Delft Privacy Team that this is not necessary.

Good luck with your research!

Sincerely,

Dr. J.J van den Dobbelsteen  
Vice chair HREC  
Faculty 3mE

Accommodation of additional conditions:

- 1) Adding a sentence to the Opening Statement respectively Informed Consent form.  
*"Mocht zich onverhoopt toch een databreuk voordoen dan wordt iedereen - waarvan in deze vragenlijst contactinformatie is verzameld - hiervan op de hoogte gesteld."*  
*"In het geval van een datalek zal u hiervan op de hoogte worden gebracht en melding gedaan bij [databreach@tudelft.nl](mailto:databreach@tudelft.nl)."*
- 2) Having consulted with the privacy team and data steward before using the MS Word (Office license of TU Delft) transcription function.
- 3) Access to files was limited to myself and Gerdien only.
- 4) In contacting sports clubs and (potential) interviewees, the institutional e-mail address was used (e.c.blied@student.tudelft.nl)

## Appendix E: Mini Survey

Referred to in section 3.4.1. It was created using Qualtrics and used to find interviewees.

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U wordt uitgenodigd om deel te nemen aan een onderzoek genaamd "Verenigingsverduurzaming". Dit onderzoek wordt uitgevoerd door Esther Blik van de TU Delft en Universiteit Leiden.

Het doel van het onderzoek is het in kaart brengen door wie en waardoor duurzame initiatieven binnen sportverenigingen zoal tot stand komen. Het doel van deze vragenlijst is om te achterhalen welke personen mogelijk geïnterviewd kunnen worden. Het invullen zal ongeveer 3 minuten in beslag nemen. De data zal gebruikt worden voor het contacteren van deze individuen opdat zij geïnterviewd kunnen worden. U wordt gevraagd om informatie te delen over duurzame initiatieven/initiatiefnemers binnen uw eigen of een bij u bekende sportvereniging.

*Dit onderzoek is goedgekeurd door de ethische commissie. Zoals bij elke online activiteit is het risico van een databreuk aanwezig. Wij doen ons best om uw antwoorden vertrouwelijk te houden. We minimaliseren de risico's door enkel gebruik te maken van datasoftware die goedgekeurd is door TU Delft en toegang tot de data te beperken. Mocht zich onverhoopt toch een databreuk voordoen dan wordt iedereen - waarvan in deze vragenlijst contactinformatie is verzameld - hiervan op de hoogte gesteld.*

*Na afloop van het onderzoek wordt de data uit deze mini-survey verwijderd, dit zal omstreeks december 2022 gebeuren. Het kan zijn dat het project een vervolg krijgt. De data wordt dan maximaal 1 jaar langer bewaard. De data zal in dat geval omstreeks december 2023 worden verwijderd.*

Uw deelname aan dit onderzoek is volledig vrijwillig, en u kunt zich elk moment terugtrekken zonder reden op te geven. U bent vrij om vragen niet te beantwoorden. De contacten die u deelt in deze survey zullen worden geïnformeerd over de reden van de benadering voor een interview.

Uitvoerende onderzoeker: Esther Blik (contact: E.C.Blik@student.tudelft.nl)  
Verantwoordelijke onderzoeker: Gerdien de Vries (contact: G.deVries-2@tudelft.nl)

Door op akkoord te klikken stemt u in met de bovenstaande Opening Statement.

Akkoord

### 1. Om welke verduurzamende vereniging gaat het?

Wat is de naam van de vereniging?

Welke sport wordt hier beoefend?

In welke stad bevindt zich deze sportvereniging?

### 2. Kunt u kort omschrijven wat er op het gebied van verduurzaming gebeurt/is gebeurd binnen deze vereniging of hoe ver zij al is in het verduurzamen?

*Denk hierin bijvoorbeeld aan fase; er is geen interesse / er is interesse / is begonnen / is goed op weg / vormt een voorbeeldfunctie voor andere verenigingen*  
*Of denk aan verschillende vlakken waarop vergoed kan worden; gebouw, mobiliteit, voeding, materieel, ...*

### 3. Bent u zelf (een van) de duurzame initiatiefnemer(s) bij de betreffende vereniging?

Ja	Ja
Nee	Nee
<p>3A. Wat zijn uw contactgegevens?</p> <p>Wat is uw naam? <input type="text"/></p> <p>Wat is uw emailadres? <input type="text"/></p>	<p>3B. Bent u bereid om de contactgegevens van de duurzame initiatiefnemer te delen zodat contact met diegene kan worden gezocht voor een interview?</p> <p><i>Indien diegene benaderd zal worden voor een interview dan zal hierbij uiteraard ook de reden van benadering voor het onderzoek aan deze persoon worden toegelicht.</i></p>
←	Ja
→	Nee / Weet ik niet
	<p>Wat zijn diens contactgegevens?</p> <p>Wat is de naam van de initiatiefnemer? <input type="text"/></p> <p>Wat is het emailadres van de initiatiefnemer? <input type="text"/></p>
	←
	→



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100%



Universiteit  
Leiden

Nederlands

4. Hoe bent u bij deze vragenlijst of dit onderzoek terechtgekomen?

Direct contact met de hoofdonderzoeker (Esther Bliet)

Via de stichting KlimaatGesprekken

Via de stichting Think Big Act Now

Anders, namelijk;

Zeg ik liever niet



0%

100%



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Nederlands

Wilt u nog een andere vereniging invoeren?

Ja (in het einde-vragenlijst bericht kunt u de link naar deze survey vinden)

Nee (de vragenlijst wordt gesloten)



## Appendix F: Approached sports clubs by email

Referred to in section 3.4.1. A template of the emails that were sent, followed by a list of all the clubs that were approached via sportenindelft.nl and sportstadleiden.nl.

### Email template

Subject: Bezig met verduurzaming/vergroening?

Beste **[naam vereniging]**,

Via de website **[naam website]** kwam ik achter het bestaan van jullie club/vereniging. Ik vroeg mij af of 'duurzaamheid' een thema is binnen jullie vereniging en of er iemand binnen **[naam vereniging]**, actief bezig is met de verduurzaming van jullie club. Als dat het geval is dan zou ik namelijk graag met diegene in gesprek raken!

Momenteel ben ik voor de master Industrial Ecology (Universiteit Leiden en TU Delft) bezig met mijn scriptie. Deze wijd ik aan sportverenigingsverduurzaming. Ik ben met name benieuwd naar wat er allemaal aan bijdraagt dat er binnen een vereniging (een of meerdere) individuen opstaan die de club groener (willen) maken. Om dit in kaart te brengen ben ik op zoek naar deze initiatiefnemer(s) of kartrekker(s) van binnen de vereniging, zodat ik diegene/hen hierover kan interviewen. Het gaat om een 1-op-1 interview van pakweg 1 uur.

Het ultieme doel van deze gesprekken en mijn scriptie is om de kans groter te maken dat ook bij andere verenigingen omstandigheden kunnen worden gecreëerd die ertoe leiden dat hun club gaat verduurzamen.

Zou **[naam vereniging]** mij kunnen helpen in het vinden van mogelijke gesprekspartners? Ik heb een mini survey aangemaakt waarin ik contactgegevens van initiatiefnemers verzamel: [https://tudelft.fra1.qualtrics.com/jfe/form/SV\\_1QVUzG4sN0dZoDI](https://tudelft.fra1.qualtrics.com/jfe/form/SV_1QVUzG4sN0dZoDI). Jullie zouden me met mijn scriptie kunnen helpen door de survey in te vullen of deze verder te verspreiden.

Alvast bedankt en een warme groet,  
Esther Blik

### Approached clubs

Name sports club (Delft)	Type of sport	Name sports club (Leiden)	Type of sport
Queen's Delft	Aerobics & Fitness	Lightning Leiden	American Football
Aikido Stichting Delft	Aikido	Leiden Atletiek	Atletiek
Atletiekvereniging AV'40	Atletiek	Road Runners Club (LRRC)	Atletiek
BC Delft	Badminton	BC Merenwiek	Badminton
B.R.C. De Buitenhof Delft	Badminton	BV Drive	Badminton
Badminton Instuif Buitenhof	Badminton	Dropouts	Badminton
Sweti Day	Badminton	BC Veglo	Badminton
DAS Delft	Basketbal	BS Leiden	Basketbal
RPV Delft	Beweeglijke conditie	ZZ Leiden	Basketbal
Boksvereniging Delft	Boksen	LUSV	Basketbal

Delfts Bleau	Boulderen	Klim- en Bergsport (NKBV)	Bergsport
Revolt Climbing	Boulderen	Sportcentrum Sahinbas	Boksen
Bowling Vereniging 't Karrewiel	Bowlen	Boulderhal kunststof	Boulderen
B.C. Gisolf	Bridge	Bowlingvereniging Zuid West	Bowlen
De Gaech	Bridge	Circus Miloco	Circus
Delftse Bridge Club (DBC)	Bridge	Ajax-Cricket	Cricket
One Down Delft (ODD)	Bridge	SDA Leidance	Dansen
Prometheus Bridge Club	Bridge	Leidse Dartvereniging (LDV)	Darts
Buitensportvereniging Durf	Buiten	Leidse rij- en jachtclub (LRJC)	Dierensport
Delftse Damclub DOS	Dammen	VTV Leiden	Divers
Dancin' Delft	Dans	GSV De Sleutels	Divers
Dansschool Wesseling	Dansen	Gymsport Leiden	Gymnastiek
Darts in Delft	Darts	Saturnus	Handbal
Scuba Libre	Duiken	Leidse Hengelaarsbond	Hengelsport
Aqua Delfia	Duiken	L.V.V. de Hackleplayers	Hengelsport
Women Love Health studio	Fitness and health	L.H.C. Roomburg	Hockey
Delftse Gymnastiek Vereniging Sparta	Gymnastiek	Biento	Honk- en softbal
DOK-Delft	Gymnastiek	Leiden Lions	Ijshockey
HBSV Frederik Hendrik	Handboogschieten	Moko-Ryu	Judo
HBSV Willem Tell	Handboogschieten	LKV Rijnland	Kano
Reineveld	Handboogschieten	Daidokan Karate	Karate
Loopclub Felix	Hardlopen	Jurojin	Kickboksen
AV De Koplopers	Hardlopen	KZ Danaïden	Korfbal
DIJC-Bertus	Hardlopen	LCKC Pernix	Korfbal
D.H.C. Hudito	Hockey	LKV Sporting Trigon	Korfbal
Ring Pass Delft	Hockey	LKV Crescendo	Korfbal
Blue Birds	Honk- en softbal	KSV Rijnland	Kunstschaatsen
Origin Sport	Judo, Bootcamp, Boxen	Leicrosse	Lacrosse
Budo Gouweleeuw	Judo, Jiu Jitsu en Yoga	Budokan Leiden	Martial arts
Kyokushin Delft	Karate	Mushindojo	Martial arts
Kamakura Delft	Karate	SPG Leiden	Paardrijden
West Coast Shotokan Karate-Do	Karate	Die Leythe	Roeivereniging
Delftsche Kegelbond (DKB)	Kegelen	Diok Rugby	Rugby
C.K.V. Excelsior	Korfbal	IJvereniging Leiden	Schaatsen
Fortuna	Korfbal	AEW Schermen	Schermen
CKV DES	Korfbal	SDW Diving	Schoonspringen
Wireless Outdoor Workouts	Outdoor	Indoor Hardrijclub Leiden	Shorttrack
Midi Petanque	Petanque	Rijnlandse Skivereniging	Skien
Delftse Reddingsbrigade (DRB)	Reddingsbrigade	LTTV Scylla	Tafeltennis
D.S.R. Proteus-Eretes	Roeien	Docos	Tafeltennis
De Delftsche Sport	Roeien	Tai Chi Chuan vereniging Sung	Tai Chi
Rugby Club Delft (RCD)	Rugby	T.P.V. Zuid-West	Tennis
SRC Thor	Rugby	T.P.C. Unicum	Tennis
D.S.S.V. Effe Lekker Schaatsen (ELS)	Schaatsen	Qravel	Tennis
KunstIjsbaan Vereniging (DKIJV)	Schaatsen	T.C. De Leidse Hout	Tennis
DCSV Christelijke Schaakvereniging	Schaken	L.T.V. De Merenwijk	Tennis
De Delftsche SchaakClub	Schaken	T.C. Roomburg	Tennis
Schermervereniging Prometheus	Schermen	T.C. Stevenshof	Tennis
'Doel Treffend'	Schietsport	GGV Volleybal	Volleybal
Nautilus Delft	Scouting (water)	Donar	Volleybal
S.V. Delft Ski	Skien	V.C. Merenwijk	Volleybal
Squash Delft	Squash	Groen-Wit	Volleybal
DHC	Tafeltennis	SKC Volleybal	Volleybal
DVC	Tafeltennis	Leidse Reddingsbrigade	Watersport
TTV Phoenix	Tafeltennis	De Kooihaven	Watersport
Tennisvereniging GPD	Tennis	De Zijl Zwemsport	Watersport
Delftse Tennisbond (DTB)	Tennis	Watersportvereniging WVL	Watersport
TV Tanthof	Tennis	Swift (LRTV)	Wielrennen
Team Gouwe Sports	Vechtsport	E.L.S.Z.W.V. Aquamania	Zwemmen

Wing Chun	Vechtsport	Leidse watervrienden	Zwemmen
Nekose Delft	Vechtsport		
REDEOSS	Veelsport; beperkingen		
D.V.V. Delft	Voetbal		
Vitesse Delft	Voetbal		
Delfia Hollandia Combinatie (DHC)	Voetbal		
sv DHL	Voetbal		
v.v. Ariston'80	Voetbal		
Delftsche Voetbalclub (DVC)	Voetbal		
Sport en Plezier (vv SEP)	Voetbal		
S.V. Wippolder	Voetbal (+ Zaalporten)		
D.S.V. Full Speed	Voetbal en Tennis		
DSV Concordia	Voetbal, cricket, golf, tns		
Volksdansvereniging Radost	Volksdansen		
Kratos 'o8	Volleybal		
Roze Blok	Volleybal		
VOLCANO	Volleybal		
VVV Delta	Volleybal		
d'Elft	Waterpolo, zwemmen		
Delftse Watersport Vereniging (DWSV)	Watersport		
W.S.D. Plané	Windsurfen		
Infinity Defense	Zelfverdediging		
Delftse Watervrienden (DWV)	Zwemmen		
Naturistische Zwemvereniging (NZD)	Zwemmen		

## Appendix G: Interview protocol

Referred to in section 3.4.2, below is the interview protocol that was used. The Environmental Citizenship checklist is added at the end of the protocol and was printed on a separate A4.

### Interviewprotocol

#### Opening

- Bedanken voor tijd en medewerking.
- Volg een protocol om zeker te weten dat alles aan bod komt.
- >>> Mag ik "je" zeggen?
- Hoe deze sessie eruit ziet
  - Introductie van onderzoek en het interview
  - Instemmingsformulier samen doornemen + ondertekenen
  - Start audio-opname: In totaal 3 opnames, en 1x back-up op mobiel die doorloopt
  - Algemene vragen. *Introductie over jou en de vereniging.*
  - Inhoudelijke / onderzoeksvragen, waarin ik een aantal concepten wil uitvragen.
  - Definitievraag
  - Afronding interview
- Tussendoor veel ruimte voor vragen en opmerkingen en mag altijd terugkomen of aanvullen op eerdere onderdelen
- >>> Opzet duidelijk?

#### Introduceren van het onderzoek en het interview

- Context van onderzoek
  - Masterscriptie Industriële Ecologie aan Universiteit Leiden en TU Delft.
  - Ik hoop er een positieve, wetenschappelijk onderbouwde bijdrage mee te leveren aan een duurzamere samenleving.
- Focus van onderzoek
  - Psychologie: het individu. Binnen communities.
  - Sportverenigingen omdat community. En NL = verenigenland; veel potentie (~35%)
- Doel onderzoek
  - Doel: **In kaart brengen door wie duurzame initiatieven binnen sportverenigingen zoal tot stand komen. Ik kijk vooral naar wat deze mensen daarin helpt, of waar ze gebruik van maken.**
  - Door erachter te komen wat er allemaal aan bijdraagt dat er binnen een vereniging individuen ontstaan die de club groener maken hoop ik andere verenigingen (of groepen) handvatten te geven om vergelijkbare omstandigheden te creëren
  - In kaart brengen aan de hand van bestaande theorieën en concepten, ik kijk o.a. naar kansen (opportunity), kunnen/vermogen (capability) en motivatie.
  - Kijk niet heel erg naar wat er exact is gerealiseerd, maar vooral naar hoe dit is gebeurd en wat hieraan heeft bijgedragen
- Wij zitten nu hier
  - Mini survey /mailcontact
  - [Naam vereniging] is bezig (geweest) met verduurzamen
  - Jij bent een (van de) initiatiefnemer(s) binnen [naam vereniging]
  - Ik ben erg benieuwd naar jouw perspectief en ervaringen en hoop daar met dit interview een goed beeld van te krijgen
- >>> Vragen of opmerkingen over het onderzoek of het interview?

#### Doornemen instemmingsformulier (informed consent)

- Keuze informed consent: >>> Voorlezen of liever zelf lezen?
- >>> Vragen of opmerkingen over het instemmingsformulier?
- Dan start ik nu de audio-opname en gaan we naar het eerste deel van het interview

#### [START AUDIO-OPNAME]

- Datum, opname 1.

#### Introductie vereniging + respondent

- Eerst twee categorische vragen om later mijn respondentenset te kunnen omschrijven
  - Wat is jouw leeftijd?*
  - Welk gender mag ik noteren: Man / Vrouw / Anders / Zeg ik liever niet*
- Kun je kort iets over de sportvereniging vertellen?
  - Aantal leden (ongeveer), doelgroep, sport*
  - Gemiddelde week op de sportvereniging/sfeer of focus*
  - Hoelang bestaat de vereniging al*
- Kun je iets over jezelf en jouw lidmaatschap hier vertellen?
  - Wanneer lid geworden? Waardoor besloot je je in te schrijven?*
  - Mate van eigen activiteit binnen de vereniging?*
  - Bepaalde rollen of functies gehad?*
  - Vanaf het begin van uw lidmaatschap al actief?*
  - Wat betekent het lidmaatschap voor jou?*
- Ik start even een nieuwe opname voor het volgende gedeelte

[STOP AUDIO-OPNAME]

[START nieuwe AUDIO-OPNAME]

- Datum, opname 2.
- Inhoudelijke vragen (5 hoofdonderwerpen)
  - Gedrag: *Wat je binnen de vereniging gedaan hebt gekregen of al gebeurde*
  - Capaciteit/vermogen/bekwaamheid (Capability): *Wat bracht je in staat om*
  - Gelegenheid/kansen: *gepakte kansen die werden geboden of gecreëerd*
  - Motivatie: *waarom je je op deze manier inzet binnen de vereniging*
  - Milieuburgerschap

#### Inhoudelijke vragen – Gedrag

- Kun je aangeven wat jij op het gebied van duurzaamheid gedaan hebt/doet binnen de club?
  - Ligt daarin nadruk op specifieke problemen? (biodiversiteit, plastics, klimaat, ...)*
  - Volgorde van deze projecten/initiatieven?*
  - Hoe ben je hierbij betrokken geraakt? Initiator van het initiatief?*
  - Hoe heb je [het eerste initiatief] aangepakt? Hoe ging dat bij de hierop volgende?*
    - Hoe wordt hierop gereageerd / het ontvangen door de vereniging?*
- Voordat je ... deed, wat gebeurde er al op het gebied van duurzaamheid binnen de vereniging?
  - Waren anderen er al mee bezig?*
  - Lopen er nu nog andere initiatieven?*
  - Toekomst; meer projecten in de pijplijn? Wie zijn hierbij betrokken? Jouw rol hierin?*
- Zijn er ook duurzaamheidsprojecten waar je zelf mee aan de slag wilde, niet gelukt of van de grond gekomen? *(eigen focus ligt op wat er wel is gelukt dus niet teveel op doorvragen)*
  - Waar denk je dat dat door kwam?*
- Vind je dat er nog andere projecten zouden moeten worden gestart?
- Wil je nog iets anders kwijt over gedrag binnen de vereniging?

#### Inhoudelijke vragen – Capaciteit/Vermogen/bekwaamheid; (Cap)ability

- Focus op individu; in termen van jouw eigen capaciteiten, je mentale en fysieke vermogen, en het eerste duurzaamheidsproject dat je binnen de vereniging oppakte.
- Wat stelde jou in staat om het eerst genoemde initiatief op te zetten?
- Welke middelen had je, die ervoor zorgde(n) dat je [het eerste initiatief] kon opzetten?
  - Tijd, bepaalde kennis, geld, energie, macht, charme, ...*
  - Bepaalde vaardigheden die van pas kwamen?*
  - Verschilde dat per initiatief? Verschilde het per initiatief wat hierin belangrijk was?*
- Hoe kwam(en) die van pas?
- Heeft de vereniging hierin geholpen? Had zij dit kunnen doen?*

- Welke middelen, of wat voor iets had nog meer kunnen helpen? Waardoor had het eventueel eerder of beter gekund?*
- Wil je nog iets anders kwijt over jouw eigen capaciteiten, mentaal/fysiek vermogen?

#### **Inhoudelijke vragen – Gelegenheid/kansen; Opportunity**

- Focus op jezelf binnen de vereniging; de fysieke en sociale omgeving
- Wat bracht jou binnen de vereniging in de gelegenheid om ... op te zetten/door te voeren?
  - Zijn er kansen die je voor jezelf hebt gegrepen?*
  - Waardoor waren die er?*
- Zijn er kansen die je voor de vereniging hebt gegrepen?
  - Waardoor waren die er?*
  - Wan welke gelegenheid/heden heb je gebruik gemaakt?*
- Waardoor kwam dit/kwamen deze initiatieven van de grond binnen de club denk je?
  - Werkte de omgeving mee? Direct of met vertraging?*
  - Wat zou het eventueel gemakkelijker hebben gemaakt?*
  - Is er in jouw optiek ook sprake van gemiste kansen?*
- Wil je nog iets anders kwijt over kansen/gelegenheden?

#### **Inhoudelijke vragen – Motivatie; Motivation**

- Waarom zet je je in voor duurzaamheid binnen de vereniging?
  - Wat krijg je ervoor terug?*
  - Waarom is dit belangrijk voor je?*
  - Wat draagt bij aan jouw motivatie om ermee door te gaan?*
- Zet je je ook op andere plekken, dus buiten de vereniging, in voor verduurzaming?
  - In andere rollen, zoals vriendengroepen, thuis, op het werk, andere gemeenschappen of vereniging, ...*
  - Waarom wel/niet?*
    - *Wel: In welke rol begon het? Zullen er meer volgen denk je?*
    - *Niet: Denk je dat hier verandering in kan komen? Waardoor?*
- Wil je nog iets anders kwijt over de motivatie?

**[STOP AUDIO-OPNAME]**

**[START nieuwe AUDIO-OPNAME]**

- Datum, opname 3.

#### **Inhoudelijke vragen – Milieuburgerschap; Environmental Citizenship**

- Bijna aan het eind van het interview gekomen
- Zou je jezelf omschrijven als milieubewust?
  - Waarom wel of niet?*
- Ik heb een definitie gevonden van de "Milieubewuste burger" en heb deze uitgesplitst in kernbegrippen. Lijst van gemaakt, benieuwd in welke aspecten hiervan je jezelf herkent.
- >>>> Lijst en pen aangeven, mag er de tijd voor nemen.
- Wil je verder nog iets kwijt over milieuburgerschap?

#### **Afronding**

- Dat was de laatste vraag. We zijn bij het eind van het interview gekomen.
- Ben ik nog dingen vergeten te vragen of zijn er dingen die ... echt nog van het hart moeten?
- Dan stop ik nu de recorder en bedank ik ... hartelijk voor ... tijd!

[STOP AUDIO-OPNAME]

- Ik ga aan de slag met transcriberen en analyseren
- Verwacht eind kalenderjaar klaar te zijn
- Op de hoogte gebracht worden hiervan?
  - Zo ja; QR code scannen of wordt later toegestuurd (emailadres opslaan)
- Ken je misschien nog iemand anders die ik zou kunnen spreken?**
- Nog vragen of onduidelijkheden?
- Afscheid nemen.

*De "Milieubewuste burger"*

*Graag aankruisen welke op jou van toepassing zijn.*

- Nodige kennis over milieuproblematiek
- Samenhangende en behoorlijke kennis over milieuproblematiek
- Vaardigheden en competenties om milieuproblemen tegen te gaan
- Waarden en attitudes om milieuproblemen tegen te gaan
- Vaardigheden en competenties om initiatief te nemen (*in het tegengaan van milieuproblemen*)
- Waarden en houding om initiatief te nemen (*in het tegengaan van milieuproblemen*)
- Initiatief in de private sfeer
- Initiatief in de publieke sfeer
- Actief op lokale schaal
- Actief op nationale schaal
- Actief op mondiale schaal
- Individuele acties
- Collectieve/gezamenlijke acties
- Gericht op het oplossen van huidige milieuproblemen
- Gericht op het voorkomen van nieuwe milieuproblemen
- Gericht op het bereiken van duurzaamheid
- Gericht op het ontwikkelen van een gezonde relatie met de natuur
- Vervullen van milieuplichten
- Uitoefenen van milieurechten
- Identificeren van onderliggende/structurele oorzaken (*van milieuproblemen*)
- Bereidheid en competenties voor actieve betrokkenheid
- Bereidheid en competenties voor kritische betrokkenheid
- Bereidheid en competenties voor burgerparticipatie (*deelnemen aan het maatschappelijk leven*)
- Adresseren van onderliggende/structurele oorzaken (*van milieuproblemen*)
- Handelend als individu
- Handelend als collectief/groep
- Handelend op democratische wijze
- Rechtvaardigheid binnen de huidige generatie
- Rechtvaardigheid naar toekomstige generaties