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Human-centred decision support for the common good: a combination of participatory foresight methods

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ABSTRACT

This paper explores innovative approaches to decision-making for the common good by addressing the challenges posed by participatory foresight techniques such as backcasting and the Delphi method. Our paper is a methodological evaluation of our research that focused on how a more sustainable future vision on the world of sports could replace the currently highly commodified industry that not so long ago had a clear function in providing a good life to humans. This paper aims to contribute to the decision support literature on how the combinations of participation and deliberation with different policy-oriented foresight methodologies entailing both lay and expert knowledge can advance the understanding of values that underpin common good decisions. At the same time, these processes can also uncover concrete actions and policy interventions that can transform current economic and social processes, moving them beyond the utilitarian logic of our realities.

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Backcasting; common good; decision-support; Delphi; foresight; sport

1. Introduction

Etzioni (2014, p. 1) in the introduction to his book on the common good moves beyond defining the common good as the aggregation of public and private goods and even beyond seeing it as something that benefits everyone and no one at the same time. He poses the question of why we should consider its use value and why not take it as valuable in its own right: ‘the right thing to do by itself, for itself – which surprises only those who claim that we always have an ulterior motive’. As this approach moves radically away from the weighing of utilities in our decisions, we need new ways to understand decision-making and assign values that see beyond personal or collective human gains and losses.

In this article, we propose that there are two main means that support us well in addressing these problems: deliberations through participation (Blacksher et al., 2012; Cohen, 2005; Habermas, 1984), and vision-based decision-making (Loebbecke et al., 1997),

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Deliberation is 'a free and reasoned agreement among equals' (Cohen, 2005, p. 347) whereby participants aim at reaching a consensus not influenced by authority and are given the space to express their opinions without fearing repercussions; substantiating their pro or con arguments by providing reasons; with no one being singled out from the discussions. Since pursuing the common good necessitates unconventional forward-thinking, research techniques must be guided by innovative approaches. A suitable strategy in this context is the so-called mixed method, which combines two foresight methodologies. The first technique is called backcasting, meaning a form of strategic planning wherein a desirable future state is first imagined, and then the necessary actions to get there are identified backwards (Quist et al., 2011; J. Robinson, 2003). The second is the Delphi methodology, which is a process for reaching a consensus or forecast on a particular topic by systematically gathering and distilling the knowledge and opinions of a group of experts through a series of organised surveys and feedback rounds (Nowack et al., 2011; Sumsion, 1998). With a methodological mixture of debate and participation, we chose to incorporate expert perspectives through Delphi research because those who advocate for the benefits of discussion and participation claim that adding expert information enhances decision-making (McCubbins & Rodriguez, 2006). This fulfilled the objective of contacting the professionals among the stakeholders to help them have a deeper understanding of the goals and values of the lay group so they could formulate their own perspectives. While our research experiences in the past (Géring et al., 2018; Kiss et al., 2018) substantiate that consensus on common values can emerge through participatory lay processes, we decided to take this consensus forward and include expert opinions through a Delphi study. Bearing in mind that expert knowledge also has its limitations (Pomerol, 2022), we propose that this combination of participatory backcasting together with expert Delphi can contribute to a decision support system that is capable of advancing the common good.

We propose an evaluation framework using the seven values (1. Inclusivity and right to participation 2. Impactful contribution and decision influence 3. Sustainability through recognising diverse needs 4. Proactive engagement and stakeholder involvement 5. Empowerment through participatory design 6. Information accessibility for meaningful participation 7. Transparent communication of decision impact) of public participation published by the International Association for Public Participation (IAP2, 2021) and applied to five phases (1. Process design 2. Selection of participants 3. Process facilitation 4. Data compilation 5. Follow-up of output/results) in our participatory research process. While honestly reflecting on how far we managed to take these values into consideration in our own research, we provide inputs for other researchers to consider these perspectives when planning research on topics on the common good. It also shows clearly the opportunities and limitations of a research design that uses this combination of participatory backcasting and Delphi.

For this paper – being of a methodological nature – the central topic of the backcasting and Delphi processes is only interesting insofar as to establish its relevance to the topic of the common good. In a world where the role of the economy should be to provide a good life for all within planetary boundaries (O'Neill et al., 2018) it is important to establish what values can guide us in the different spheres of our lives that take into account a) how they contribute to a good life; b) how they enable a fair distribution of resources facilitating such a good life for all members of our human societies; and c) how they can do all this by

staying within the carrying capacity of the planet. Such a transition requires a major shift away from the atomistic, individualistic approaches of market-based solutions towards the nurturing of the common good through collective, democratic processes (Hickel, 2019). Our research focused on the world of sports and how a more sustainable future vision could replace the currently highly commodified industry that not so long ago had a clear function in providing a good life to humans. The thematic results of our backcasting research have also been published (Köves, Szathmári, et al., 2021) and the results of the Delphi study are currently being published.

This paper aims to contribute to the decision support literature on how the combinations of participation and deliberation with different policy-oriented foresight methodologies entailing both lay and expert knowledge can advance the understanding of values that underpin common good decisions. At the same time, these processes also uncover concrete actions and policy interventions that can transform current economic and social processes that move beyond the utilitarian logic of our realities. The paper also offers a framework to evaluate the participatory design of such a research process.

Besides this introduction, our paper consists of three main parts. In the next section, we will introduce the methodological details of foresight research. This is followed by our sustainable sports research and an evaluation of the methodological experience assessed through identified core values showing the strengths and weaknesses of our showcased approach. The discussion will provide arguments both for critiques and validation.

2. Research methodology

Rotmans et al. (2000) advocate for participatory vision development to include diverse perspectives. In this context, a qualitative approach was adopted, emphasising a combination of deliberation and participation, employing techniques such as backcasting (J. Robinson, 2003) and the Delphi method (Sumsion, 1998). For participatory backcasting to be effective, stakeholders must convey their grasp of the problem at hand, as well as their needs, future goals, and potential paths to accomplishing them. Thus, Quist et al. (2011) outline five main phases of an interactive backcasting effort:

- (1) Setting the strategic problem.
- (2) Creating the future vision.
- (3) Backcasting analysis.
- (4) Outlining the future alternative and schedule for follow-up.
- (5) Executing the plan of action.

Backcasting can be used as the foundation for the Delphi expert panel to create a vision, normative scenarios, and steps for action in relation to the creation of the common good.

The Delphi technique is a useful and widely used method for incorporating the opinions of various stakeholder groups, objectively generating visions, and developing a structured dialogue about the viability and adaptation options. According to Sumsion (1998) and Nowack et al. (2011) a Delphi study's steps include:

- (1) Selection of Experts: Identify and invite a panel of experts knowledgeable about the subject matter.

- (2) Initial Survey: Distribute the first round of surveys to gather individual opinions and insights from the experts.
- (3) Feedback and Iteration: Compile the responses, anonymise them, and provide a summary to the panel. Then, send out subsequent rounds of surveys, incorporating feedback from previous rounds and refining the questions as needed.
- (4) Consensus Building: Continue the iterative process until convergence or consensus is reached among the experts regarding the topic under investigation.
- (5) Analysis and Reporting: Analyse the final results, highlighting areas of agreement or disagreement, identifying key insights, and presenting the findings in a comprehensive report.
- (6) Validation (Optional): Depending on the context, the results may undergo validation through additional methods such as peer review or validation with external stakeholders.

When combined with scenario-based backcasting, these two techniques help communities, organisations, and legislators navigate the complexities of sustainability, identify creative solutions, and develop a plan for transitioning to more environmentally friendly practices (Wright et al., 2013). Backcasting scenarios can benefit from regular feedback and flexibility because the Delphi method is iterative. To accomplish these objectives, the Delphi method involves experts and stakeholders in collaborative, well-informed decision-making, whereas backcasting provides a visionary framework for goal setting.

The futuring research can be divided into three interconnected phases (see Figure 1). Firstly, a backcasting workshop should be organised with a lay panel. Secondly, Delphi’s expert panel use the outputs of the backcasting, i.e. the vision, normative scenarios, and action steps for the common good as an input to deepen and validate and thirdly, they

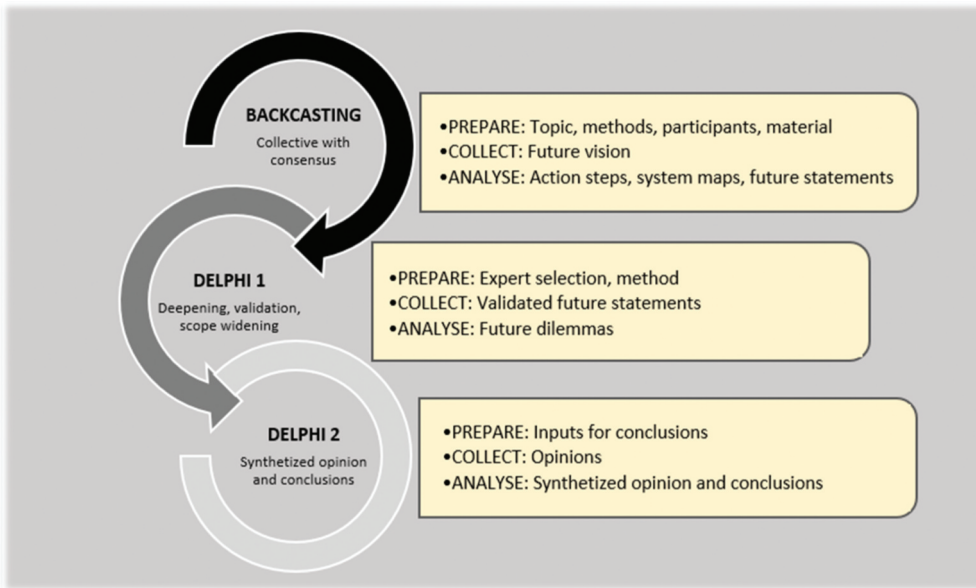


Figure 1. The content components of the three-phase research methodology.

refine their opinions on the results. Decision-supporting foresight methodologies are structured approaches designed to systematically study future possibilities, helping decision-makers anticipate, prepare for, and respond to potential future scenarios or outcomes. These methodologies employ various tools, techniques, and frameworks to gather information, analyse trends, identify drivers of change, and explore alternative futures, thereby assisting organisations in making informed decisions and developing robust strategies to navigate uncertainty and complexity in the long term. These methods involve expert involvement and help identify desirable and achievable future scenarios.

3. Evaluation using our specific sport research through the lenses of core values

In our particular research case, we assessed elite sport sustainability (Szathmári, 2017) in the framework of the common good with an eye towards a specific goal. In the first phase, we chose a group of fifteen master's students interested in sports management for a three-day workshop that followed a backcasting process to collect comprehensive data for determining critical perspectives for a sustainable vision of elite sports. We used a variety of participatory techniques within the process such as story cubes, imagination games, world cafés, modified futures wheels (Brown, 2010; Glenn, 2009), and participatory systems mapping (Király et al., 2016). As a result, students created a two-page vision of sustainable elite sport; six charts detailing the backcasting steps; and a systems map with 53 variables. (For more in-depth methodological details from Phase 1 see Köves, Szathmári, et al., 2021.)

The Delphi expert research was built on these. As a Delphi sample must include top experts in the field from as many different fields as possible, the survey used convenience sampling, a type of nonprobability sampling that is appropriate for Delphi (Thompson, 2013). The vast majority of those in the sample were well-known and respected industry experts with extensive professional networks to gather as many diverse and well-reasoned perspectives as possible.

The context of our research provided us with some boundary conditions which we had to incorporate into our research methodology. The students chose to participate in this research – organised as an intensive 3-day course – voluntarily and so did the experts of the two rounds of the Delphi questionnaires. This deliberate choice and the experienced autonomy of the participants offered an open and trustful, safe space for honest opinions, provoking ideas, inspired discussions, and even debates. This freedom controlled by the methodological frames created the engagement of the research participants both in real-time and online. The 'rules of the game' – the process of the backcasting and that of the Delphi rounds were transparent, and openly communicated, which facilitated the meaningful participation accepting its highly time-consuming nature. Three expert groups were considered: sport federation members, who typically organise international sporting events; sport media representatives; and academic scholars, who frequently study sport-related issues. The Delphi study required the participation of 21 experts from Estonia, Hungary, India, Italy, Norway, Spain, and the United Kingdom, including 9 senior representatives from national sports federations, 7 delegates from the sports media, and 5 academic scholars (see Table 1). We aimed to meet the criteria

Table 1. The characteristics of members of the Delphi panel.

	Gender	Field	Work experience (Years)
1	Male	Sports manager	30
2	Female	Sports media representatives	14
3	Male	Sports manager	21
4	Male	Sports media representatives	12
5	Female	Sports media representatives	20
6	Male	Sports media representatives	10
7	Male	Sports manager	20
8	Male	Academic experts	30
9	Male	Elite athlete	20
10	Male	Academic expert	12
11	Male	Academic expert	16
12	Male	Academic expert	34
13	Male	Academic expert	10
14	Female	Elite athlete	12
15	Female	Elite athlete	10
16	Male	Elite athlete	11
17	Male	Elite athlete	10
18	Male	Elite athlete	12
19	Female	Sports manager	30
20	Female	Elite athlete	12
21	Male	Elite athlete	15

established by Keeney et al. (2011). Using digital communication between researchers and participants, anonymity was maintained. In the second and third phases, expert feedback on the scenarios (such as their viability and alignment with a sustainable vision) was sought. The repeated round was designed to allow experts to revise the scenario descriptions with new insights, responses, and critiques. Unlike a traditional Delphi study, this method allows descriptions to be changed between rounds. Although reaching consensus is an important part of data interpretation, the primary goal of the Delphi technique needs not to be merely about reaching a common agreement (Von Der Gracht & Darkow, 2010). The second phase took place in the spring of 2023, where the panel of experts was given an overview of the main backcasting findings, and an open-ended survey was conducted. To deepen, validate, and expand the challenges, the panel was asked to address questions and statements about a sustainable vision of elite sport to combat climate change. Following this round of responses, the third phase included another survey with updated descriptions of the dilemmas in the summer of 2023 to provide the Delphi panel with a comprehensive perspective. The panellists were instructed to respond to each question appropriately, and there was plenty of time for open-ended comments (Sumsion, 1998). The exemplary key findings can be summarised around three main topics (see Table 2).

Our goal is to demonstrate how foresight approaches including both expert as well as lay knowledge may enhance the comprehension of values underlying actions that serve the common good, so in this section, we use The International Association for Public Participation's (IAP2, 2021) recommendations as a reflective framework to evaluate the combination of decision-supporting foresight methodologies we used in our research.

We evaluate these seven principles in the following five phases we deem important in the participatory research process:

Table 2. The exemplary key findings from the application of backcasting and Delphi steps.

		<i>Process steps</i>		
		BACKCASTING Lay consensus	DELPHI 1 Expert statement	DELPHI 2 Expert consensus
<i>Exemplary topics related to future visions</i>	Sports and technology	Technology is as an ally enabling the visions to come true and makes sports more enjoyable	Advances in information and communication technology can assist construct more socially sustainable systems and alleviate the increasing ecological burdens placed on sports.	Technology is nebulous; its application determines its outcome. Only when we include humanity in addition to technology will technological advancement be genuinely achieved.
	Human and athlete's role in sports	Athlete should advance social and environmental responsibility through exemplary and motivated behaviour.	Goal-oriented, performance-driven careers may coexist together, and athletes can 'function' as balanced individuals who set an example for more sustainable lifestyles for future generations.	Athletes' perceptions and treatment must improve if professional sports and athletes are to have a more sustainable future. Instead of concentrating on impersonal results-centricity, the emphasis should be on changing this and placing people at the centre.
	Nature and sport interconnectedness	Sharing economy as the most well-known green alternative is highly relevant in the world of sports.	The sharing economy can play a significant role in promoting sustainability in sports by leading to the more efficient use of resources and reducing waste.	When sharing economy solutions are used to overcome challenges like the trade-off between durability and performance, sports systems become more sustainable.

- (1) *Process design*: involves planning and structuring the research activities with active involvement and input from all relevant stakeholders or with the view of ensuring active participation of stakeholders.
- (2) *Selection of participants*: identifying and recruiting individuals or groups who have a stake in the research topic, ensuring diverse perspectives and meaningful representation.
- (3) *Process facilitation*: guiding and supporting effective communication, collaboration, and engagement among participants to ensure a dynamic and inclusive deliberative environment.
- (4) *Data compilation*: systematically gathering, organising, and summarising the information collected through collaborative efforts, incorporating diverse perspectives and experiences.
- (5) *Follow-up of output/results*: disseminating findings, obtaining feedback from participants, and collaboratively determining further actions or interventions based on the research outcomes.

Our evaluation aims to provide an overview of how the seven selected principles of participation appeared in the various stages of our research. [Table 3](#) provides

Table 3. The core values of public participation in different process phases during our backcasting-Delhi research (darker colouring cells indicate better fit).

	Process design	Selection of participants	Process facilitation	Data compilation	Follow-up of output/results
1. Inclusivity and Right to Participation					
BACKCASTING	Lay knowledge	No effect on students selection, can take part	Continuous cooperation, feedback	With students	Academic paper/presentation
DELPHI	Expert knowledge	Developed and developing countries, quality of expertise, no gender/age	Continuous cooperation, feedback	Final conclusion by researchers	Planned academic materials and feedback
2. Impactful Contribution and Decision Influence					
BACKCASTING	Have partly influence	Students (public) with potential as future decision-makers	Public voice as influential raw data	Vision and action steps, system map with collaboration	Original opinion incorporated, but later modified
DELPHI	Have influence	Decision-makers	Based on public opinion	Consensus creation partly with experts	Opinion incorporated
3. Sustainability through Recognizing Diverse Needs					
BACKCASTING	Have voice	Diversity randomly guaranteed	Have a freedom to add needs and personal interest	Flexible space for diverse need	Diverse interest freely included in vision via consensus
DELPHI	Have voice	Diverse but (only) expert pool	Semi-structured questions	Structured data-compilation process	Consensus is not a common goal
4. Proactive Engagement and Stakeholder Involvement					
BACKCASTING	Topic is around environment and future	No direct focus on it	Structure around key vulnerable stakeholders	Focus on future vision and sustainability	Key communication and results on vulnerable stakeholders
DELPHI	Topic is around environment and future	No direct focus on it	Structure partly around key vulnerable stakeholders	Focus on key topics around sustainability	Key communication and results on vulnerable stakeholders
5. Empowerment through Participatory Design					
BACKCASTING	No input from participants on process design	Voluntary subject	Full live interactions on how they participate	Full live interactions on how they participate	Opportunity in feedback and input giving
DELPHI	No input from participants on process design	Snowball effect	Online interactions	Online interactions	Opportunity in feedback and input giving
6. Information Accessibility for Meaningful Participation					
BACKCASTING	Available online and offline before and during participation	Available online and offline before and during participation	All information available prompt	All information available prompt	Researcher's filtered information online
DELPHI	Available online	Shared responsibility, options to choose to participate	Researcher's filtered information online later	Researcher's filtered information online	Researcher's filtered information online
7. Transparent Communication of Decision Impact					
BACKCASTING	Clear impact goal-setting	Common knowledge gathering	Impact feedback in different phase of the process	Continuous cooperation, feedback	Policy recommendation is in progress, scientific dialogue generation

(Continued)

Table 3. (Continued).

	Process design	Selection of participants	Process facilitation	Data compilation	Follow-up of output/results
DELPHI	Clear impact goal-setting	Validating with experts	Impact feedback in different phase of the process	Online cooperation, opportunity of giving feedback	Policy recommendation is in progress, scientific dialogue generation

a summary for this with three different shades, the darker colours showing a better fit to the principles.

In the following subsections, we give detailed explanations of the core values and evaluate how far our research could meet these core values.

3.1. Inclusivity and right to participation

Public participation is founded on the principle that individuals or communities affected by a decision possess the inherent right to be actively involved in the decision-making process. Our research methodology prioritised inclusivity and the right to participation by actively involving students and a diverse expert panel through participatory techniques and iterative feedback. As significant financial resources or personal intrinsic commitments would have been required to carry out an exhaustive three-day investigation, in our case it was a sensible choice to accredit a university elective course entitled ‘The Sustainable Future of Sports’ to recruit student participation. This of course restricted the options for participant selection. However, we tried to improve effective public engagement by the judicious selection of experts (based on gender, age, geography, and level of experience), or even by including them in the process. However, due to contact and availability constraints, the gender and age attributes in our Delphi did not match the necessary criteria.

3.2. Impactful contribution and decision influence

The goal of public involvement is to guarantee that stakeholder inputs have actual influence on the decision-making process. This value emphasises the guarantee that public participation will not be symbolic and will have a substantial impact on the outcomes. Our research demonstrated the value of impactful contribution and decision influence through the combined use of participatory backcasting and Delphi methods, involving stakeholders in envisioning a sustainable future for sports and synthesising diverse expert opinions to inform future actions. This research also demonstrated a commitment to translating the backcasting results into actionable plans, reinforcing the idea that participants’ contributions will shape real-world outcomes. The original results from the backcasting process were published paying careful attention to conveying the ideas of lay participants. However, later on, these outputs were altered and partially forfeited by the Delphi expert panel and

hence the original contributions of the students can get lost by the end of the process. In a participatory process, it is advisable to include a validation round in the follow-up phase on results and outputs. In our case, this could not be done as students were unavailable once researchers had finished tidying up all the results. However, this is still an open possibility with the experts.

3.3. Sustainability through recognizing diverse needs

Public participation promotes sustainable decisions by acknowledging and effectively communicating the diverse needs and interests of all participants, including decision-makers. This creates ownership of the results and hence the sustainability of adhering to the final decisions. This value underscores the importance of understanding and integrating a broad range of perspectives to create decisions that benefit the entire community. Diversity can be primarily ensured when choosing participants. However, some diversity of needs and interests may be lost due to practical constraints as happened in our case.

3.4. Proactive engagement and stakeholder involvement

Public participation actively seeks out and facilitates the engagement of individuals or groups potentially affected by or interested in a decision. This value emphasises the proactive nature of making all stakeholders heard and fostering an environment where their input is valued and considered. Our research topic: 'vision of Sustainable Sport in the Future' focuses on two groups of stakeholders that are particularly vulnerable and rarely listened to: the environment and future generations. While topic selection and process facilitation improved focus on those silent stakeholders, the structured Delphi process only partially took them into account. In our research, sample selection has also not guaranteed this wide range of needs and interests.

3.5. Empowerment through participatory design

Public participation encourages input from participants not only during the decision-making phase but also in the design of the participatory process. This value highlights the empowerment of individuals by allowing them to shape and influence how they engage in the decision-making process. Our experience indicates that the researchers' knowledge and sensitivity are required in the early stages, such as the process design and participation selection, which are frequently carried out without the participants' involvement. Additionally, creating an open facilitation space at later stages when participants can influence the process itself increases participants' sense of empowerment. This open facilitation we tried to introduce within the limited timeframe we had. In previous projects, however, we had the opportunity to involve stakeholder umbrella organisations (Köves, Veress, et al., 2021) from the onset of the project and this ensures the application of this value much better.

3.6. Information accessibility for meaningful participation

Public participation is committed to providing participants with the necessary information to engage meaningfully in decision-making. This value underscores the importance of transparency, ensuring participants can access relevant and comprehensible information to make informed contributions. Participants had access to prepared materials both before and throughout the study, and during facilitation, we consciously made sure that even in an educational setting we did not imply what students should say. In the back-casting part of the process, live facilitation allowed for quick clarification questions, in the second and third phases of the research Delphi experts were not interconnected and hence had no such options.

3.7. Transparent communication of decision impact

Public participation values transparent communication by informing participants about how their input influenced the final decision. This value emphasises accountability and ensures that participants understand the impact of their contributions, fostering trust in the participatory process. During the participatory process, clear impact goals had been set, common knowledge and expert validation had been obtained, and continuous feedback was provided. However, decision impact is limited to the scientific dialogue this research created. Trying to improve the impact of research on policy-making and using policy-relevant recommendations is still in progress.

4. Discussion and conclusion

The evaluation of our methodological experience using the core values shows the strengths and weaknesses of our approach. In this concluding discussion, we provide arguments both for critiques and validation of our participatory research process. We highlight the importance of meaningful participation; the role of the researchers – including their positionality with the reflected biases in their decision-making; and the outcome, which was created with a mutually constructed aim to serve the common good both within the process and through the outcome.

The facilitators/researchers had a crucial role in this research process. With their personal and professional positionality, they provided credibility, authenticity, and legacy to the research process (Grant et al., 2008). None of them acted as a neutral participant, they were consciously reflecting on their values and perceived biases as academics. Within the research team, we had foresight experts, ecological economists, a world-class athlete at the beginning of her academic career, and a practitioner of sport broadcasting, all with strong scientific and personal motivation to foster the vision of sustainable sports. These contextual biases and reflected projections were consciously and openly incorporated in the design, in the analysis and also in the dissemination of the results.

The outputs of the research are manifold. Overall, the lay participants' proposals lacked consideration for the reality that technological advancements frequently come with significant environmental consequences (Kerschner et al., 2018) and were very technoptimistic. The involvement of expert knowledge enabled us to have a more complex description by adding that technology is nebulous; its application determines its outcome

and the common good relation. In a similar vein, the futuring process modifies the role that humans and athletes themselves are advised to play. Applied to the previously provided case, we can observe that the pragmatic approach of elite athletes is well illustrated by the fact that their individual well-being (Szathmári, 2021) has never been discussed (Köves, Szathmári, et al., 2021). The expert panel had a consensus that athletes' perceptions and treatment must improve if professional sports and athletes are to have a more sustainable future. It is consistent with Szathmári and Kocsis's (2022) suggestion that instead of concentrating on impersonal results-centricity, the emphasis should be on placing humans at the centre of attention. The concept of sharing economy and social sharing (Nagy & Krátki, 2024) received a lot of attention from the lay group as a means of encouraging environmentally and socially friendly practices in sports in the future. It is in line with expert and academic opinion as the sharing economy has been promoted by Heinrichs (2013) as a potential contemporary route to sustainability.

Thanks to the international embeddedness of the research participants and some conference presentations and podcast dialogues, inspiring international discussion on the sustainability of sports was generated based on the results of this research. Through the innovative pedagogical implementation of the participatory foresight methods, new competencies were developed among the lecturers. With the involvement and engagement of the empowered participants, new skills and competencies of the students were also developed (Gáspár et al., 2021). Academic papers and citations are the scientific measures of the outcomes, and policy recommendations could serve as the practical impact of the research. The results can be implemented as building blocks for the common good through the human-centred approach of the research process while also giving voice and sharing the responsibility for the passive/silent stakeholders such as future generations and nature.

One of the limitations of our study is closely connected to the follow-up aspect. Participatory organising (Bayley & French, 2008) of the research design was an option, but it was limited to the research's specific logic. There was room for far greater levels of involvement, particularly regarding the validation of findings, as expert and participatory follow-up enhances the reasonable conversation without expecting the scientific publication (Beiderbeck et al., 2021). One main criticism that can be drawn is that the research methodology used to implement the Core Values of Public Participation may not have been fully inclusive and diverse in terms of participant selection. To be valuable overall, different viewpoints and even conflicting views must be 'encountered' (Nikolova, 2014). While the human role is intrinsic in this process (Ystgaard & De Moor, 2023) and the methodology prioritised inclusivity and the right to participation, the choice to accredit the backcasting part of the research as a university elective course may have restricted the options for participant selection. Additionally, due to availability constraints, the gender and age attributes in the Delphi process did not match the necessary criteria (O. C. Robinson, 2014) and the semi-structured character of the research process may have resulted in some diversity of requirements and interests being lost. Therefore, there may be limitations to the inclusivity and diversity of perspectives in the research process, which could impact the effectiveness of the decision-making outcomes.

In this study, we intended to showcase one possible combination of participatory foresight methods, namely backcasting and Delphi to suggest its wider application in decision-making processes that promote the Common Good. We also suggested an evaluation framework to help define and identify important participatory values pertinent

to such a research context, as well as establishing how different stakeholders can be involved at different points in research; how to guarantee their active participation in decision-making; and how to incorporate mechanisms for continuous reflection and feedback. By applying human-centred design principles and involving diverse perspectives, these tools can lead to more sustainable and equitable outcomes that benefit our research community. We only wish we had developed this evaluation tool before our project.

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