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Articles

Development of the sustainability strategy at the Baden-Wuerttemberg Cooperative State University (DHBW), Germany

Sviluppo della strategia di sostenibilità presso l'Università Statale Cooperativa del Baden-Württemberg (DHBW), Germania

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Abstract

This paper provides an overview of approaches to develop sustainability strategies in the university context and aims to contribute a participatory strategy development process in universities. In addition to the presentation of generic sustainability strategies and the process for developing a sustainability strategy, quality criteria for well-founded sustainability strategies are explained and the specifics of sustainability strategy development at universities will be examined. Using the example of the Baden-Wuerttemberg Cooperative State University (DHBW) in Germany as a university with an interlocked theory-practice transfer, a detailed description of its sustainability strategy development process is given. This is followed by a critical reflection on the strategy process and an indication of how the sustainability strategy will be implemented at the DHBW. The paper concludes with an outlook on further research in this context.

Keywords: sustainability; strategy development; universities; sustainability strategy; Baden-Wuerttemberg Cooperative State University (DHBW).

Sintesi

Il contributo fornisce una panoramica degli approcci utili a sviluppare strategie di sostenibilità nel contesto universitario. Esso intende contribuire allo sviluppo di strategie partecipative nelle università. Oltre a presentare in termini generali le strategie di sostenibilità, vengono illustrati i criteri di qualità alla base di strategie di sostenibilità e le specificità correlate all'higher education. Utilizzando l'esempio dell'Università statale cooperativa del Baden-Württemberg (DHBW) in Germania, caratterizzata da una forte interconnessione tra teoria e pratica, il contributo intende analizzare il processo di sviluppo della strategia di sostenibilità realizzato nel contesto universitario del DHBW. Segue una riflessione critica sul processo strategico e un'indicazione sugli sviluppi futuri della strategia di sostenibilità presso il DHBW. Il contributo si conclude con una prospettiva su ulteriori ricerche in questo ambito.

Parole chiave: sostenibilità; sviluppo strategico; università; strategia di sostenibilità; Università statale cooperativa del Baden-Wuerttemberg (DHBW).

1. Introduction

Universities play a key role in the teaching of socially relevant topics, as they train future specialists and managers and can have a direct influence on important social topics by shaping the content of their courses (Stifterverband, 2022b; HRK, 2018). As an organization, a university also has a direct impact on the students, its staff and other stakeholders who perceive the university as a place of learning or work (Stifterverband, 2022a; HRK, 2018; Rotondo et al., 2024). It is therefore all the more important that universities and, in particular their staff do not continue with "business as usual" as climate polluters, but instead take on responsibility and contribute to sustainability in their everyday lives, thus assuming a pioneering role for and in society (Thierry et al., 2023).

In addition to the core areas of research and teaching, the so-called *Third Mission* therefore also plays an important role for universities. This term encompasses all interdependencies and mutual interactions between higher education institutions and participants outside the academic environment, such as communities, the economy or society (Roessler et al., 2015; CHE, n. d.). The commitment to the *Third Mission* encourages universities to take into account societal needs and trends, such as climate change or sustainable development in general, also in their core tasks (CHE, n. d.; Lippold, 2024).

Against this background, universities are faced with the challenge of enabling students to think and act sustainably and to take this knowledge into the professional world so that future generations can find a future worth living (BMZ, n. d.). It is necessary to give equal consideration to all three dimensions of sustainability equally (ibidem). Sustainability therefore needs to be taught not only in the sustainability-specific courses of study, but must also be anchored in all curricula (Shephard, 2015). The development and implementation of a sustainability strategy can help to make the relevance of sustainability clear to all members of the university and other stakeholders, to guide the university's sustainable orientation and to implement sustainable development effectively.

The integration of sustainability at universities in their specific fields of action, namely teaching, research, transfer and university operations, has become increasingly important in recent years. This is evidenced by the increased sustainability efforts and the growing number of sustainability strategies developed and published by universities (Stifterverband, 2022b). Overall, the development is still in its infancy and further commitment is needed to fully implement sustainability in all areas of the university in a holistic approach, also called Whole Institution Approach (Schopp et al., 2020).

2. Development of sustainability strategies at universities

2.1. Definition & Differentiation of generic sustainability strategies

According to the Bundesministerium für Umwelt, Naturschutz, nukleare Sicherheit und Verbraucherschutz (BMUV), the basis of a sustainability strategy is an integrative, holistic approach and means that the interactions of the three sustainability dimensions economy, ecology and social issues must be taken into account (BMUV, n. d.). If this is not considered, long-term viable solutions cannot be achieved (Baumast & Pape, 2022). Against this background, a sustainability strategy therefore aims at a development that is ecologically justifiable, economically efficient and socially balanced. Incorporating sustainability dimensions into all corporate or organizational decisions and processes is therefore the main task of a sustainability strategy (Bertelsmann Stiftung, 2014).

According to the German Sustainability Code of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), a sustainability strategy describes the handling of relevant sustainability issues in a company (GIZ, n. d.). It determines the direction of a company and serves as a basis for orientation in the formulation of future measures and in the making of decisions by all organizational members and stakeholders (Sassen, 2023). Integration into an existing overarching corporate or organizational strategy is advisable in order to clarify links between different areas and to show that it is not a strategy alongside the actual organizational strategy, but that all action is geared towards sustainability (Emrich, 2015).

According to Baumast & Pape (2022) and Pufé (2017) the three generic sustainability strategies efficiency, consistency and sufficiency can be distinguished, whereby the principle of sufficiency must always be achieved. If it is not possible, the principle of consistency and last the principle of efficiency must be proposed (Pufé, 2017).

2.2. Process for developing a sustainability strategy

The development of a sustainability strategy requires a systematic approach, whereby various internal or external stakeholders can be integrated. Successful implementation can take place in different ways (Sassen, 2023).

The following process steps are mainly based on Baumast & Pape (2022), Sassen (2023) and Sailer (2024) and describe a general approach:

In order to assess one's own situation and that of the competition, an analysis and evaluation of the company's own strategic starting position, also referred as a sustainability assessment, is first necessary (1st. step; Figure 1). In order to classify one's own competencies, goals, values, weaknesses and strengths as well as opportunities and risks, for example, a SWOT analysis can be carried out to describe the current situation and provide options for action for the design of the sustainability strategy (Lippold, 2024). Conducting a materiality analysis can help to disclose all sustainability aspects and identify areas of action with which the greatest possible influence on corporate sustainability is taken (Sassen, 2023). It is also necessary to define a common understanding of sustainability (1st. step; Figure 1). At the same time, this provides the framework for the strategy's action. With the subsequent formulation of a common sustainability mission and vision, a desirable target image can be developed with regard to the predefined understanding of sustainability (2nd. step; Figure 1) (ESDN, n. d.); (Lozano, 2024) (Temel et al., 2021). This can also be linked to the 17 goals of the United Nations (17 SDGs). In the next step, medium- and long-term qualitative and quantitative goals are formulated using the SMART rule to flesh out mission and vision (3rd. step; Figure 1) (Sassen, 2023).

Baumast & Pape (2022) and Sassen (2023) formulate the following further steps: once the objectives have been set, concrete measures must be defined which support the achievement of the objectives and which may vary depending on the environmental, economic or social orientation (4th. step; Figure 1). It must be checked which measures are suitable for achieving goals in your own organization and which effort is appropriate. In addition to the strategic long-term measures, it is often recommended not to ignore the short-term measures, such as the implementation of small sub-projects that require little effort but have a big impact or visibility. The so called *quick wins* or *low hanging fruits* can contribute significantly to the motivation of all organizational members and thus to the implementation of the strategy (Sassen, 2023). To achieve credibility and the willingness to implement, detailed implementation planning is essential. The decision on where

sustainability management is positioned within an organization, both hierarchically and organizationally, must also be made at this point; including the allocation of clear responsibilities (4th. step; Figure 1). The continuous reporting and communication of the small measures and major milestones and the definition of key figures help to make the change process visible and the goals set for it objectively measurable afterwards (GIZ, n. d.). After the initial implementation of the sustainability strategy, it is advisable to continuously pursue the goals and measures through appropriate audit tools (Baumast & Pape, 2022). This is important in order to accelerate the further development of the strategy, to be able to respond to new findings, challenges or opportunities and to be able to identify and eliminate causes of incorrect strategy implementation (5th. step; Figure 1) (Sassen, 2023). After that, the new starting situation must be analyzed (1st. step; Figure 1). The strategy development process is therefore to be understood as a cycle (PDCA approach = plan-do-check-act) (Sassen, 2023).

Figure 1 shows an overview of the development steps of a sustainability strategy.

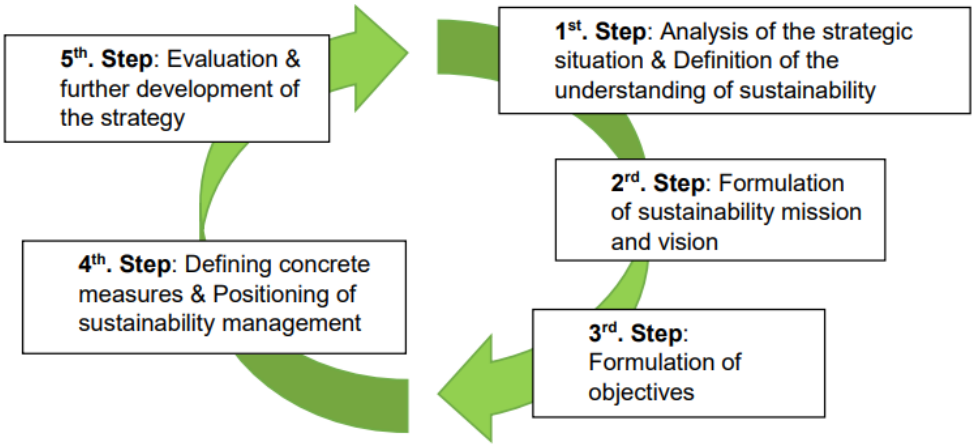

Figure 1. Steps to develop a sustainability strategy (own presentation based on Sassen, 2023; Sailer, 2024; Baumast & Pape, 2022).

2.3. Quality criteria of a sustainability strategy

With reference to the steps listed in Chapter 2.2, which are included in Figure 2, additional quality criteria can be derived from the literature for the development of a sustainability strategy:

As a requirement to build a successful sustainability strategy, it is described that the strategy is supported by senior administrative level (Lozano, 2024); (Temel et al., 2021). In addition, a cross-thematic and cross-structural conception of the strategy is important, as a coordinated change must take place in numerous structures and areas (Emrich, 2015). The participation of various stakeholders in the preparation and implementation, as well as the further development of the strategy, is also of great importance (Bertelsmann Stiftung, 2014). Besides to human resources, a corresponding budget and suitable programs are also necessary (ibidem).

In addition, according to Sassen (2023) raising awareness of sustainability issues, for example through appropriate further training offers, is fundamental in order to sensitize

employees to sustainability issues so that they align their actions accordingly. Rewards or incentive systems can help promote sustainable behavior.

Figure 2 summarizes the quality criteria already mentioned in Chapter 2.2 and additionally listed in Chapter 2.3.

Bundled quality criteria for sustainability strategies
• Analysis of the initial situation
• Common definition of sustainability/sustainable development
• Development of a common mission and vision
• Setting targets and setting indicators to measure targets
• Concretization of objectives by formulating measures
• Assignment of clear responsibilities
• Support from the highest level
• Demonstrate thematic interrelationships and interactions (horizontal integration)
• Classification of the strategy into higher levels (vertical integration)
• Possibility of participation
• Adequate resources (budget, staff, etc.)
• Reporting & Communication
• Monitoring of the implementation by means of audit tools & further development of the strategy
• Raising awareness through further education and training
• Rewards and incentive systems to promote sustainable behavior

Figure 2. Bundled quality criteria for sustainability strategies (own presentation based on Lozano, 2024; Temel et al., 2021; Sassen, 2023; Lippold, 2024; Emrich, 2015).

2.4. Sustainability strategy development at universities

Universities have already recognized the existing challenges in terms of sustainability and their relevance and have responded to them in part by adopting a sustainability strategy. According to a survey conducted by the Stifterverband University Barometer and the Heinz-Nixdorf-Stiftung (Stifterverband, 2022a), around 25% of the 160 universities surveyed have a sustainability strategy. Nearly two thirds of respondents are planning to set up a sustainability strategy. This shows that the need for a strategic anchoring of sustainability at universities has already arrived (Stifterverband, 2022a).

Universities are individual economic institutions that require sustainable management as well as social actors, that make a contribution to society through education for sustainable development. So they are first faced with the decision whether to align their sustainability strategy internally with their organizational structure and at the same time externally in the sense of a ‘university for sustainable development’ or initially focus on one goal (Müller-Christ, 2020). The ‘map of a sustainable university’ developed by Müller-Christ (2015) can be helpful in decision-making.

The Stifterverband (2022b) mentions the significance of support from the management level of the university and prioritized handling by decision-makers as important success factors in establishing a sustainability strategy. In addition, the participatory involvement of students, teachers, researchers and employees in university administration as well as the integration of cooperation partners from society and business play an important role in a successful sustainability strategy. Long-term, yet flexible structures help to make sustainability strategies not only temporary and selectively effective, but also to set long-term framework conditions. It is important to consider the ecological, economic and social

dimensions equally.

Anchoring sustainability as a guiding principle in all fields of action and at all levels of universities, also known as the Whole Institution Approach, has proven to be particularly effective and, in addition to learning and teaching, also includes for example the fields of governance and operations (Schopp et al., 2020). According to a recent study by the National ESD Monitoring, students and teachers who experience a holistic approach to sustainability at their educational institution feel more motivated to make their own contribution to greater sustainability and also describe their behavior as more sustainable (Holst et al., 2024).

According to the Stifterverband (2022b), the topics of communication and exchange are also essential for the success of a sustainability strategy. In order to allow all participants to participate in the transformation process, suitable communication channels must be established in order to visualize milestones and to appreciate them together. A sustainability report can also be helpful. At the same time, the exchange with other universities is important in order to classify one's own work and to be able to continuously develop it in exchange with good practice examples. This can also increase the commitment and cooperation of the employees (ibidem).

The strategy development process must be closely linked to the development of forward-looking objectives and corresponding measures. Conducting a potential and competition analysis as part of a SWOT analysis can help to methodically accompany the transformation process (ibidem). The concrete designation of responsibilities for the implementation of the measure, promotes the identification and commitment of the participants with their field of action. Large strategic, but also cultural and organizational questions can only be answered by dividing them into targeted measures and recommendations for action at the working level, which at the same time enables identification with the abstract concept of sustainability (ibidem).

In a nine-year study at the University of Minho in Portugal in 2009-2017, seven principles were identified that were helpful in implementing the university's own sustainability strategy and can underline the success factors mentioned above (Ramísio et al., 2019):

1. mixed top-down and bottom-up management model (countercurrent) with the involvement of a Vice-Rector for Infrastructure and Sustainability who supported the strategic relevance of sustainability;
2. inclusion of all areas dealing with sustainability;
3. programs for the efficient use of resources, whereby the focus on individual, few resources were expedient;
4. accompanying communication and reporting;
5. network building and integration for exchange and mutual learning;
6. participatory coordination of priorized sustainability issues;
7. defining certain rules for the university's internal sustainability policy.

According to HOCH-N, a joint project for the promotion of sustainable development at German universities funded by the Bundesministerium für Bildung und Forschung (BMBF), the four principles of action *process orientation*, *participation*, *communication* and *persistence and long-termism* have proven their worth in supporting sustainability activities at universities and can therefore also be applied in the establishment of sustainability strategies (Bohrmann et al., 2020).

3. Development of a sustainability strategy at the DHBW

3.1. Presentation of the DHBW

The Baden-Wuerttemberg Cooperative State University (DHBW) was founded in 1974 as a vocational academy at the time and was converted into a dual university in 2009 (DHBW, n. d.d). With over 34,000 students, it is the largest university in Baden-Wuerttemberg (DHBW, n. d.c). With a total of more than 220,000 alumni and more than 10,000 graduates annually, it produces the most academics in Germany every year (DHBW, n. d.c; DHBW, n. d.d).

As a decentralized University of Applied Sciences with the central headquarter in Stuttgart in Germany, the DHBW is organized as a state university with nine study academies and three associated campuses at 12 locations in Baden-Wuerttemberg (DHBW, n. d.c). The four faculties of Economics, Technology, Health and Social Affairs offer more than 34 Bachelor's degree programmes and over 100 fields of study (DHBW, n. d.d).

The DHBW is a dual studies university with a dual study model in all degree programs, in which students regularly switch between theoretical phases at the university and practical phases at one of the now 9,000 partner companies and thus there is a close theory-practice integration (DHBW, n. d.c). In addition to the approximately 800 professorships, more than 10,000 practical lecturers are employed at the DHBW (DHBW, n. d.d).

Since 2014, 27 dual master's programmes can be studied at the university's own Center for Advanced Studies (CAS) (DHBW, n. d.d). The Centre for Higher Education Didactics and Lifelong Learning (ZHL) is its own further education academy and is also located here. The Centre offers learning and training opportunities for a total of over 2,500 employees at all sites, but also for all companies or social organizations (DHBW, n. d.e); (DHBW, n. d.b).

With more than 440 partner universities from more than 70 countries and as a founding member of the first European University of Cooperative Education (EU4Dual), which has existed since 2023, the DHBW is also internationally networked and recognized (DHBW, n. d.a; DHBW, 2023a).

Figure 3 shows the above data & facts in a compact form.

Attribute	**Characteristics at the DHBW**
Land	Baden-Wuerttemberg; Germany
Year of foundation	1974 as a vocational academy at the time
Study academies incl. campus (12 locations)	Stuttgart incl. Campus Horb, Mannheim, Karlsruhe, Heilbronn, Mosbach incl. Campus Bad Mergentheim, Lörrach, Heidenheim, Villingen-Schwenningen, Ravensburg incl. Campus Friedrichshafen
Number of students	More than 32,000 students at all locations
Number of graduates per year	More than 10,000 alumni
faculties	Economy, Technology, Health, Social Affairs

Number of degree programs and fields of study	More than 50 degree programs and more than 100 fields of study for Bachelor's and Master's students
Number of dual partner companies	Approx. 9,000 dual partner companies
Number of partner universities	More than 440 partner universities from more than 70 countries
Number of employees	More than 2,500 employees, including around 800 professorships
Number of dual lecturers	More than 10,000 dual lecturers

Figure 3. Data & Facts DHBW (own presentation based on DHBW, n. d.c; DHBW, n. d.d; DHBW n. d.a).

3.2. Starting point & Objective

In 2018 the German Rectors' Conference (HRK) issued a recommendation to establish a *culture of sustainability* in universities, based on the 17 SDGs adopted by the United Nations in 2015 (HRK, 2018). In addition to formulate a guiding idea, the aim was also to propose concrete implementation steps (ibidem).

At the DHBW, the topic of sustainability was dealt with for the first time in October 2020 in the context of a Senate session and the decision was made to further develop the topic (Internal Source DHBW, 2020a). In this context, it was also decided to set up a *Sustainability Steering Committee*, which would be the central body defining the sustainability strategy and policy. It was planned to record the status quo of sustainability and evaluate sustainability potentials with subsequent DHBW-wide target formulation. In order to achieve the objectives, it was planned to recommend a suitable catalogue of measures to the senior management of DHBW (Internal Source DHBW, 2020b).

The Fourth Law amending higher education law, which entered into force at the end of 2020, also enshrined sustainability and climate protection as important tasks at universities in Baden-Wuerttemberg in the law and thus underpinned their importance (MWK, 2020).

In January 2021, there was a virtual kick-off event on the conception of the so-called Green Offices (GOs) at the DHBW, which are intended as an interface between administration and students interested in sustainability (Internal Source DHBW, 2021a). More than 70 interested parties took part in the kick-off event. In addition to students, professors and employees of the administration of different study sites of the DHBW, representatives of the network N were also present. The network provided insights into how sustainability is being implemented at other colleges and universities. As an example, the establishment of a GO at Maastricht University was presented. It was also discussed that the experience of other universities cannot be transferred to the dual study model due to the high number of lectures at the DHBW and therefore other ways of participation or involvement of students in the GOs must be found (Internal Source DHBW, 2021d).

The first steering committee meeting in March 2021 addressed not only the steering committee objectives but also the orientation towards the 17 SDGs (Internal Source DHBW, 2021e). By fully striving for sustainability, the DHBW can, in addition to the core tasks of research and teaching relevant to universities, also fulfil the mission of the Third Mission and help to have a transformative effect on society (Rotondo et al., 2024).

In order to anchor the topic of sustainability in the organizational and structural development of the Cooperative State University, it was planned to define corresponding measures in the Structural and Development Plan (SEP) 2021-2025 in order to develop concrete projects and milestones (DHBW, 2022a). The measures described in the SEP demonstrate a holistic approach in the sense of the Whole Institutions Approach (DHBW, 2021).

At the second steering committee meeting in September 2021, the decision to draw up sustainability guidelines defining the amount for sustainable development at the DHBW was recommended (Internal Source DHBW, 2021f). In order to achieve a high level of acceptance, it was decided that short and concise guiding principles should be formulated in a broad participatory development process (ibidem).

In addition to the GOs, it was recommended that a local working group has been set up at each study site in order to promote sustainability activities at each location (ibidem).

With the inauguration of Prof. Dr. Martina Klärle as President of the DHBW on 1st February 2022, the topic of sustainability was given high priority in the *10-point plan* formulated by her. Point nine specifies the sustainability strategy concretely and demonstrates a holistic approach (Klärle, 2022). This manifested the desire to develop a sustainability strategy.

3.3. Procedure & Implementation

An online kick-off event in July 2022 started the participatory development process of the sustainability strategy with 140 registrations from all nine locations, including the three campuses (67% employees, 31% teachers, 2% students) (DHBW, 2022a). Spontaneously, other interested parties joined, so that a total of about 175 participants accepted the invitation (Internal Source DHBW, 2024c). The aim of the event was to develop sustainability goals and measures and to cluster them into corresponding fields of action. First, the status quo of sustainability at the DHBW was shown. The wealth of existing sustainability efforts at the DHBW became visible (DHBW, 2022a). In the virtual brainstorming, the participants were able to collect location-specific goals and associated measures in addition to cross-location goals. A total of around 70 sustainability goals and almost 300 sustainability measures have been developed (Internal Source DHBW, 2022a). The event served as a prelude to a series of workshops on the joint development of the DHBW's sustainability strategy with the aim of defining a *culture of sustainability* (DHBW, 2022a).

After evaluating the results of the kick-off date, the following ten fields of action were first identified and further revised in the development process (Internal Source DHBW, 2022b):

- teaching;
- research/ transfer;
- building infrastructure/ operational energy;
- mobility;
- communication;
- carbon footprint;
- nutritional health;
- new work;
- diversity;
- procurement and disposal.

In a digital follow-up workshop at the end of October 2022, almost 100 people came together (70% employees, 28% teachers, 2% students) (Internal Source DHBW, 2024c). After presenting the interim results of the goals and measures from the kick-off event in July and the areas of action derived from it, the content of the workshop was to further specify, supplement weight and prioritize the goals and measures (DHBW, 2022b). For this purpose, the participants were randomly divided into so-called *Breakout Rooms*. An initial timetable for the adoption of the strategy was also presented (Internal Source DHBW, 2022c).

After the participants made the scores of the sustainability targets, the goals were sorted according to their scores. The score ranged from 206 points (main objective) to 100 points (non-main objective) (Internal Source DHBW, 2022g). Figure 4 shows the Top 10 targets descending from the highest score. The objective of *empowering students to think holistically* was seen by the participants as the most important goal and shows that sustainability therefore requires a holistic view.

No.	Target	Dots
a)	DHBW empowers students to think holistically.	206
v)	All students have sustainability building blocks in the curriculum.	182
o)	At DHBW, mindfulness in dealing with each other is given.	177
l)	DHBW aims to achieve CO2 neutrality by 2030.	174
c)	Through its contributions, DHBW has a social impact on sustainable development with dual partners.	170
p)	Digitization of processes and agile and mobile working leads to reduction of bureaucracy and reduction of business trips.	169
q)	DHBW offers work-life balance and is gender-responsible.	167
n)	DHBW offers a health-promoting work environment.	164
b)	DHBW turns students into ambassadors of a sustainable lifestyle.	162
u)	Environmentally protective waste disposal concepts have been agreed.	156

Figure 4. Top 10 targets sorted by points (Internal Source DHBW, 2022g, p. 2).

For the further definition of the target, digital deep dive workshops took place throughout DHBW for each field of action in the period between December 2022 and January 2023 (DHBW, 2022b). As a result, a broad participation could be achieved. After 85 registrations (62% employees, 35% teachers, 3% students), there were a total of 160 participants at all workshops, some of whom participated in up to seven field-of-action workshops (Internal Source DHBW, 2024c).

In order to further deepen the workshop results and to prepare a joint draft of the sustainability strategy, the DHBW invited all interested parties to attend the *Sustainability Strategy Convention* (so-called *N-Convention*) for the first time in March 2023 (DHBW, 2023b). Content included the central tasks of the DHBW and the illustration of interfaces that have proven to be important in the context of the sustainability strategy and that are based on the 17 SDGs. Among the 60 workshop participants (46% employees, 48% lecturers, 6% students) were also the President of the DHBW, the Chairman of the Supervisory Board, Vice-Presidents and the Chancellor, which reflects the high importance of sustainability at the DHBW (Internal Source DHBW, 2024c).

The results collected in the N-Convention were summarized by an internal group of authors, consisting of representatives of employees, teachers and students, in a first draft of the sustainability strategy and four overarching fields of action were formulated (Internal Source DHBW, 2023c; Internal Source DHBW, 2023e):

- teaching;
- research and transfer;
- education;
- university operations.

All employees and students of the DHBW were subsequently invited to comment on the finalized draft strategy in autumn 2023 in the Moodle discussion forum (Internal Source DHBW, 2023d). The comments were integrated by the internal working group into the final version of the sustainability strategy (Version of 8th February 2024). For example, the fields of action were revised and reallocated again and the topic *Governance and Constancy* was renamed *Participation, Communication and Governance* (DHBW, 2024a):

1. teaching and further education;
2. research and transfer;
3. infrastructure, building and resource management.

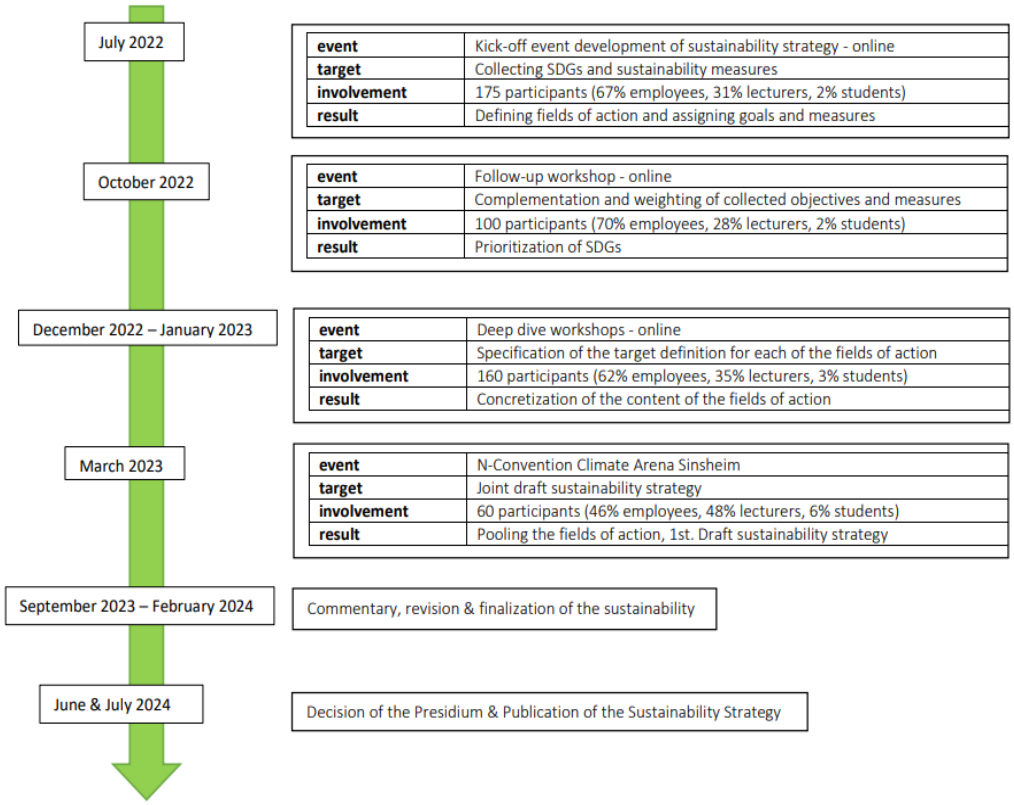

Figure 5. Sustainability strategy – key milestones (own presentation based on Internal Source DHBW, 2024c).

Following approval by the Senate in May 2024, the sustainability strategy entered into force by decision of the Presidium on 11th June 2024 (ibidem). The strategy development process

therefore took around 20 months from the first kick-off date in July 2022 to the finalization of the final strategy version in February 2024.

In July 2024, the President of the DHBW informed all staff, teachers and students about the publication of the sustainability strategy (Internal Source DHBW, 2024d). By sending the strategy, everyone was also given access to the large number of working papers of the development process. At the same time, the strategy was handed over to the Minister of Science, Research and the Arts of the State of Baden-Wuerttemberg (DHBW, 2024b).

The sustainability strategy is based on the 17 SDGs and covers all university areas of teaching and research, university operations and partnerships with external partners. The aim of the strategy is to integrate the SDGs into the actions and self-image of the DHBW and to contribute to a holistic sustainable transformation (ibidem). Important content of the strategy paper is for example that all courses of study integrate the SDGs that are suitable and feasible for the course of study into the curriculum on their own (DHBW, 2024a). The strategy can be downloaded publicly on the DHBW homepage.

The most important milestones of the sustainability strategy development process are shown in Figure 5.

3.4. Critical reflection of the strategy development process & Outlook

Following the publication of the strategy, the strategy development process was reflected on from various perspectives with the sustainability officer of the DHBW in order to optimize future strategy participatory processes (Internal Source DHBW, 2024e).

- Partizipation

During the development process of the sustainability strategy, all affected stakeholder groups at the DHBW, such as students, teachers or employees as well as some of the dual partners, had the opportunity to participate. In total, more than 200 stakeholders have contributed to the development of the strategy. The group of students in particular was hardly represented at the events. Involving this group is challenging due to the dual study model and the associated short time spent at the university, combined with a lack of time availability. Conflicting schedules or inadequate communication about the strategy development process were also suspected. Another reason for the low level of participation may be that the students do not see themselves as multipliers. This has not yet been evaluated. Overall, the widest possible and continuous involvement of the participants was perceived as very positive.

- Perception & Response

The lively discussion on the content of the sustainability strategy has led to increased attention and awareness among all stakeholders, which has also been positively evaluated. The response to the publication of the sustainability strategy was relatively low and it would be more effective to actively seek feedback from stakeholders.

- Timing & Transparency

There were long intervals between the workshops and follow-up events, so it was often not possible to follow up directly on the previous workshop, and the previously discussed content had to be reworked with the participants. As there were no reports published from non-public meetings on the topic, there were also some information gaps or different levels of information among the workshop participants.

- Communication

Concrete goals were set within the framework of the N-Convention; these were phrased in the strategy formulation at a meta-level that was far removed from the concrete goals and measures. In retrospect, an explanation of the meta-level and an explanation that the strategy formulation is broader would have been helpful in communicating the final development of the sustainability strategy. It would also be advisable to review the communication channels for the publication of the sustainability strategy; not all stakeholders were reached.

- Overall Assessment

When developing the sustainability strategy, pragmatic approaches were pursued and, as already described, the focus was on the involvement and participation of as many stakeholder groups as possible. There were some lessons learned that were very valuable for future strategy development processes.

- Outlook

It is planned to rework the missing research methods and subsequently involve students and other stakeholder groups in order to expand the participatory approach and to scientifically develop the sustainability strategy into an overall institutional sustainability strategy in the sense of the Whole Institution Approach.

Since autumn 2024, the implementation of the strategy has been the responsibility of the individual DHBW locations. The present version of the DHBW sustainability strategy does not yet indicate which contents of the sustainability strategy can contribute to the fulfillment of the SDGs. First of all, a materiality analysis is planned in order to identify the SDGs that are relevant for the university and which are in the focus of the strategy implementation. This will be followed by a status quo analysis to determine the extent to which these SDGs are already being met at the university. Further methodological steps can be derived from this. Reference is made to a study that examines the contribution of universities to the SDGs and suggests strategies for cultivating an SDG-aligned culture at universities (Cembranel et al., 2024).

The results will be compared with indices from Times Higher Education's (THE) 2024 Impact Ranking Methodology (THE, 2024) and published in a subsequent paper, which will also provide a complementary comparison with other universities. Publication is planned for the end of the second quarter of 2025.

4. Conclusions

The aim of this publication is to highlight approaches to develop sustainability strategies in the university context and to present the strategy development process of the DHBW as a practical example from the university landscape. At the time of writing, the aim was to present the strategy development process at the DHBW with subsequent critical reflection, and no comparison with strategy development at other universities had yet been made. Therefore, it is not possible to say whether this strategy was developed in an innovative way or whether it contains innovative elements compared to other strategies. Further research on this topic is needed and will be published in a next paper.

As a result of this paper, it can be stated that there are different sustainability strategies as well as different approaches to strategy development. This makes it all the more important to have a previously agreed understanding of sustainability and a sustainability vision and

mission. After reviewing the steps to be taken when developing a sustainability strategy and taken into account the quality criteria for a well-founded sustainability strategy, it can be stated that the development and implementation of a sustainability strategy is not to be understood as a project with a fixed project goal. It is rather a permanent process that must be evaluated at regular intervals in order to be able to adapt to new circumstances or changes.

It has been shown to be particularly important that concrete goals and prioritizations as well as measures are defined before the implementation of the sustainability strategy in order to be able to objectively evaluate the strategy implementation afterwards. The involvement of all those involved in the strategy process and the permanent communication about major milestones but also 'low hanging fruits' is necessary to maintain the motivation to implement the sustainability strategy.

Using the DHBW as an example, it became clear what time, and personnel expenditure can be associated with a broad-based participatory strategy development process. However, the participatory approach was perceived and assessed as positive by all parties involved. In addition to the subsequent involvement of students, it is also necessary to obtain the perspective of the dual partners as important stakeholders of the DHBW, since the practical part of the studies is taught in the partner companies. When updating the sustainability strategy, care is therefore taken to ensure that all stakeholder groups are given balanced consideration. When updating the sustainability strategy, therefore attention is paid to a balanced consideration of all stakeholder groups.

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