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Building a Sustainable University Model:

The Case of Copenhagen Business School

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Abstract

Seeking to make its contribution to the solution of one of the most urgent global issues affecting our society this study aims to increase understanding of the issue of sustainability and its relationship with universities. This relationship is little explored in the literature, suggesting a study to fill this gap. This research, therefore, examines the role that Copenhagen Business School (CBS) has in achieving sustainable goals and its current approach to sustainability, in order to identify how this institution can transition towards the goal of becoming a more sustainable university. The study is guided by the following research question: How can CBS address the transition towards the final aim of becoming a more sustainable university?

The research was conducted inductively based on the case of CBS, but also using insights and knowledge shared by experts from other European universities. The findings and suggestions provided by this research are grouped into two tables which can be found in the conclusions. A response to the research question has been identified using the model proposed later in this study. The research sets out practical recommendations for the activities on which CBS must focus its attention in order to move towards a more sustainable path. Finally, because of the novelty of the model, further research is recommended to improve this approach and to reach a standardized methodology for achieving a sustainable university status that is also applicable to other universities.

Abbreviations

Abbreviation	Explanation
AACSB	Association to Advance Collegiate Schools of Business
BiS	Business in Society
CO2	Carbon Dioxide
CO2e	CO2 Equivalent
CSR	Corporate Social Responsibility
CBS	Copenhagen Business School
cbsCSR	CBS Centre for Corporate Social Responsibility
IOA	Department of Organization
DKK	Danish Krone
DTU	Technical University of Denmark
ESADE	ESADE Business School
EU	European Union
EUR	Euro
GCI	Green Campus Initiative
GHG	Greenhouse Gas
IPCC	Intergovernmental Panel on Climate Change
KWh	Kilowatt Hour
LED	Light Emitting Diode
MSC	Department for Management, Society & Communication
PRME	Principles for Responsible Management Education
RSM	Rotterdam School of Management
SDGs	Sustainable Development Goals
TBL	Triple Bottom Line

UNESCO	United Nations Educational, Scientific and Cultural Organization
UK	United Kingdom
UN	United Nations
KU	University of Copenhagen

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1. Introduction

Nowadays, many organizations are following the trend of implementing sustainable initiatives to reduce their carbon footprints. Most of these organizations have begun to include this aspect in their strategy since the Rio Declaration on Environment and Development in 1992, when representatives of 98% of the world's population agreed on major environmental issues. Principle 21 of the Declaration addresses these challenges through the concept of *sustainable development*, which could be the best approach to ensure a better future for all (United Nations Educational, Scientific and Cultural Organization (UNESCO), website). Despite efforts, studies by the United Nations (UN) have shown that progress towards sustainability has been slower than expected and, in some cases, the situation is worse than before (Velazquez et al., 2006). The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) shows that humans have a significant influence on the climate system and that human greenhouse gas emissions are the highest ever (IPCC, 2014). Consequently, it is incredibly likely that the increase in global average surface temperatures over the last 50 years and the reasons for slowing progress towards sustainability have been caused by human actions (IPCC, 2014). Following the Paris Agreement of 2015, governments and organizations are seeking to reduce global warming to less than 2 ° C above pre-industrial levels and to reduce greenhouse gas emissions in the second half of the 21st century. In addition, the parties also agreed to limit the temperature increase to 1.5 ° C (UN, 2015). On the basis of these documents, it is possible to understand how human beings bear a significant responsibility for climate change. As a result, several organizations have begun to support sustainable activities.

Sustainability initiatives must be implemented primarily to preserve human life on earth and to ensure that we do not compromise the opportunity for the future generations (Brundtland, 1987). However, sustainable development has limits which are the social organization, the state of technology and the attitude of the biosphere to absorb the results of human actions (Brundtland, 1987). Two of these aspects, technology and social organization, can be managed and improved by organizations to shape a new era of economic growth (Brundtland, 1987). On the contrary, if human beings do not work on these aspects, we will face extreme hazards. We have passed a point of no return; even if we completely stop greenhouse gas emissions, the numerous impacts of climate change will last for centuries (IPCC, 2014). We must protect the environment and preserve the conditions for future generations to prosper. It is a complex job that requires the help and contribution of every party involved: individuals, companies,

organizations and governments. It is also essential that the media talk more about this underestimated problem and that the awareness and the importance to address environmental issues become a key point in the agenda of national States, private and public organizations and institutions.

Is in this big picture that Copenhagen Business School (CBS) finds its place, together with all the other universities, in understanding and addressing these problems with green initiatives. In order to protect the environment, CBS, as an influential and frontrunner institution, has the right and duty to play its part in the challenge against environmental issues. Universities' role, as educators, has become key in the research and the teaching of sustainable values. For these reasons, CBS is making a great effort to carry out many initiatives to become a cutting-edge and more sustainable organization. Since 2007 CBS has started to incorporate in its core values and strategy the compelling need to commit for achieving sustainable goals (CBS, 2010). In these past years, CBS has combined elements of sustainability and business ethics into the various academic programmes, raised awareness among students by encouraging the formation of student organizations engaged in discussing and promoting these issues, and launched new initiatives (CBS, 2010). CBS seeks to fully integrate sustainability issues into its operations through its sustainability strategy. Consequently, alongside with its teaching objectives, it also strives to estimate and investigate the carbon impact of its research and education activities with the aim to reduce its carbon footprint by developing a progressive sensibility about energy efficiency and savings as well as by promoting renewable energy sources and sustainable mobility (CBS, 2010). Moreover, as a member of a broader community, CBS also engages in initiatives and opportunities located in the capital region and shares, for instance, with the Frederiksberg municipality a strong emphasis on sustainability (CBS, 2019). In the near future, CBS plans to launch selected initiatives as test projects that will provide knowledge and inform future sustainability guidelines. These initiatives will be used to identify opportunities to use the CBS campus as a living laboratory for sustainability, with the final aim of strengthening the CBS brand identity and promote sustainability both on and off campus (CBS, 2019).

2. Problem Statement

2.1 Problem Area and Research Scope

Given the assumption that environmental issues will continue to grow and become even more of a global concern, it can be argued that universities should be aware of their role as educators and engage in initiatives and strategies to address environmental issues in a more sustainable way of thinking. Regardless of this shared concern, it is not expected that universities will approach the problem under the same commonly shared practices and initiatives. Universities each show their own cultures and structures and they therefore tend to find different ways to incorporate sustainability values in their existing organization. However, taking CBS as a model it would be insightful to understand how this integration is happening and what future course of actions CBS still needs to fully internalize sustainability beliefs and move toward the aim of a more sustainable institution. This study therefore presents a proposal on how CBS can contribute to the achievement of a sustainable society and potentially also influence other institutions and organizations in the pursuit of this goal.

Two main reasons guided the realization of this study. The first one is to clearly define how CBS, given its key role as a university, can systematically address sustainability issues. The second one, still considering the limitations of this study, is the potential achievement of a model that can be applied not only in the university chosen as a case study, but also in any other university. The study therefore seeks to establish a "standard" for universities in the approach to sustainability, which can provide not only a definitive basis for comparing data, but also a reason for discussion and debate between the various universities, that hopefully will lead to cooperation in finding a solution to a global issue such as the achievement of a sustainable society.

2.2 Research Question

The purpose of this work is to contribute in the research of practices that will best work for CBS in achieving a sustainable aim, to understand how the university is moving towards this goal and how it should approach an internal change in consideration of environmental issues. The researchers believe that this knowledge might be able to inspire other universities with similar characteristics in the realization of this shared sustainable goal. To guide the interest towards this objective, the researchers seek to answer the following research question:

How can CBS address the transition towards the final aim of becoming a more sustainable university?

The research question will be answered using a model developed by the researchers. The model is intended to provide meaningful and practical recommendations and action plans, possibly inspiring other universities to adopt the same methodology in their pursuit of the same objective.

2.3 Outline of the Chapters

This section is intended to provide a general outline (Table 1) of how this research is divided into chapters.

Introduction (Chapter 1)	Highlights and emphasizes the significance of addressing sustainability issues.
Problem Statement (Chapter 2)	Sets the objective of the study and its possible applications by reflecting the research question and the research objectives.
Methodology (Chapter 3)	Describes the philosophy and the strategy that structure the research process. The rationale behind the choices made during the research is thus provided, along with the methods and techniques used for the collection and analysis of data. Finally, it sets out the major limitations that are involved in this study.
Theoretical Framework (Chapter 4)	Presents an outline of the current literature needed to comprehend the study and explains the reasons that guided the choices of the theories involved in the study.
Case Presentation (Chapter 5)	Provides a quick overview of the organization and more in-depth information about the university approach to sustainability.
Analysis & Discussion (Chapter 6)	The first part of this chapter provides an explanation of why the university has embarked on its sustainable journey and why it needs to pursue a sustainable model. The second part concerns the implementation of a model to assess the current sustainability approach of CBS and its potential to become a more sustainable university. The section concludes with a discussion on why awareness is essential to the extension of the proposed approach, leading to the creation of a new model that incorporates the needs for greater community involvement.
Conclusion (Chapter 7)	This section begins with an overview of the key findings brought by the study. An outline of the answer to the initial research question is then presented. The chapter continues with recommendations for future studies.
Bibliography & Appendices (Chapter 8 & 9)	The last two sections assist the reader to identify all pieces of literature and data used in this research.

Table 1: *Outline of the chapters*

3. Methodology

The following chapter describes the choices of the philosophical and theoretical assumptions behind the research, together with the approach and rationale that guided it. The data collection methods used, as well as their limitations, are explained subsequently to cast an evaluation of the research design quality. The approach described thus aims to clarify the reasoning behind the choice of qualitative research; hence, the viewpoint from which the research was conducted. In view of this, the type and process of data collection will be presented, not only to show the basis of the empirical data on which the work is centered, but also to clarify how the data are used in the analysis to ultimately support the research objective and its participation in the field of study.

3.1 Qualitative Research

The researchers adopt a qualitative method to address the given research question. This was a clear decision, as qualitative studies are appropriate for defining phenomena within their specific background (Justesen & Mik-Meyer, 2012). As Denzin & Lincoln (1998) define "*Qualitative research is multimethod in focus, involving an interpretive, naturalistic approach to its subject matter*". Furthermore, the information gathered for this research is primarily qualitative, given its focus on the social dimension. Fundamentally, the difficulty of qualitative research in interpreting information contrasts with quantitative studies that address measurements such as frequency, intensity, and quantity. Qualitative research aims to identify issues and classifications that are relevant to both researchers and individuals involved in the study (Bell & Wilmott, 2014). To do so, qualitative research includes a number of empirical tools, such as case studies, interviews and surveys, which illustrate the interpretation of individual experience (Denzin & Lincoln, 1998). In an attempt to capture the reality of the problem, the research was designed to motivate people to communicate their ideas about the issue. The background of the research is, in fact, affected by the practices of individuals and their behavior. Given the unique and intricate understanding of social relations, this type of information can not be extracted using quantitative methods. As Bell & Wilmott (2014) explain: "*The domain of business and management comprises social practices that, in principle, are amenable to study by qualitative researchers and much can therefore be learned from qualitative researchers working in other fields*". Also Creswell (2013) convey on the suitability of qualitative research to explore a complex social issue, and on the identification of variables that can not be readily assessed.

3.2 Research Philosophy and Approach

The approach of the research is guided by an interpretative philosophy. Interpretivism proposes the need for an investigator to understand the differences between human beings in our role as social actors (Saunders et al., 2009). The rationale for the decision on an interpretive philosophy is that it is generally appropriate in areas such as organizational behavior or human resource management (Saunders et al., 2009). Furthermore, given the topic of the research, the key concepts are strongly influenced by the subjective interpretation of the individuals considered. In practice, as proposed by Denzin & Lincoln (1998), the interpretative method assumes that the understanding of the world can only be achieved through interpretation. People, depending on their views, generate personal relations and interpretations of concepts and ideas. These perspectives and their associated meanings are socially negotiated and not immovable (Creswell, 2013). These are developed by the connection with others and are adapted to the historical and cultural norms in which they reside (Creswell, 2013). In interpretative research multiple realities in the shape of intangible mental structures build the essence of reality. Furthermore, according to the epistemology of interpretivism, the findings are co-constructed as the result of the interaction between the individuals that took part in the research (Denzin & Lincoln, 1998). This relates to the fact that the study refers to distinct realities, including that of the researchers (Creswell, 2013). Given the significance and emphasis placed on the social and mental constructs of individuals, this study acknowledges the potential for bias in the nature of the data gathered and in the delivery of the research itself (Creswell, 2013).

The research is primarily performed inductively based on the choice of a qualitative method. The subject under study is considerably novel. Limited literature is accessible and mainly concerns researches in other universities and sectors, particularly in the United States. Although the study maintains the specified goal stated in the research question, it does not involve any predetermined theories or conceptual frameworks (Saunders et al., 2009). This is determined not only by the limited specific literature on the subject, but also by the fact that the subject could also have been studied from other angles. The result of the theoretical choices was therefore influenced by the quality, quantity and availability of the data collected. The inductive and qualitative approach then represents the main point of view in the research of CBS' approach to sustainability, that over the years has tried to incorporate this aspect into its core values. By investigating how sustainability is perceived by university members, the researchers explored how CBS' contribution to sustainability is perceived and how it can provide an understanding of current structures and strategies for a sustainable

university model. By pursuing a narrow sample-oriented strategy, the researchers can understand the significance that individuals attach to events (Saunders et al., 2009). All of this enables a versatile framework for research that makes adjustments possible.

3.3 Research Strategy

The study attempts to examine the correlation between certain factors and how this correlation helps in answering the proposed research question. As Yin (2014) indicates, questions about how and why are more prone to explanatory studies. Furthermore, case studies, reports, and experiments as chosen study methods are more probable to contribute to these types of problems (Yin, 2014). Consequently, reflecting on these aspects, this study offers an explanatory approach, defined as: "*a valuable means of finding out what is happening; to seek new insights; to ask questions and to assess phenomena in a new light*" (Saunders et al., 2009).

A single case study is used in this research, as the analysis relates to CBS. The single case study is appropriate for testing a particular theory with a clear set of propositions (Yin, 2014), as it occurs in this research. Although a single case study was conducted to evaluate the sustainable approach of CBS, other similar universities were also of relevance as an overview of comparable organizations similarly approaching sustainable values. Finally, the researchers will discuss how the results from the case study add to the field of research and can help in the interpretation of other similar cases. However, researchers also recognize the restricted range of their individual case and therefore the extent at which the findings presented can assist to comprehend other comparable scenarios.

3.4 Research Choices

The process followed by this research began with a study of current sustainability literature and, in particular, sustainable universities. This allowed an estimation of the most appropriate theories for this study, as well as a contribution to the future design of interviews. Since the research followed an inductive approach, it was only during the data collection process that the final choice of the theories was outlined. Once the researchers had a better understanding of the background and decided to approach the two main theories of Velazquez et al. (2006) and Cortese (2003), data research was narrowed to better comply with these two theories. The process then began with the collection of secondary data such as CBS Principles for Responsible Management Education (PRME) reports, CBS documentation and CBS environmental reports. However, this database, which was not considered to

be exhaustive, required the creation of primary data. This new data source was also been used to critically analyze the information collected up to that point. As a result, the researchers, through semi-structured interviews, approached some sustainability experts working at CBS and specialists from other universities, in order to obtain primary qualitative data and discover relevant information for this research. Two main challenges were faced during the collection of the data:

- **Accessibility of data:** as regards, in particular, primary data, not all of the institutions that were initially chosen for the study agreed to grant an interview or share some documentation. Even within the university chosen as a case study, it was not possible to connect with some individuals who could have extended the data pool.
- **Novelty of the topic:** during the composition of this study, new and up-to-date data were frequently identified. This involved continuous monitoring and, in some cases, a re-examination of substantial parts of the study.

3.5 Data

In this section, the researches explain different data collection techniques. Data collection is defined by Creswell (1998) as "*a series of interconnected activities intended at collecting good information to solve emerging research questions*". In this case, the researches select both primary and secondary data. The research is exploring a trending but relatively new topic without the accessibility of recent quantitative data on sustainability at CBS. As a result, the data will be mainly qualitative and will be collected from sustainability reports of the university, articles from CBS WIRE, an independent magazine produced at CBS, and interviews. Since the scope of the thesis is not a comparison between universities, the interviews were not hard-structured, but rather tailored and semi-structured to capture the different insights that researchers might have gained from the interviewees. The primary purpose of the interviews was to help the researchers understand the relationship between sustainability and universities through different experts' point of view. Primary data were therefore collected from universities experts. Secondary data instead were obtained from journal articles, university reports, and UN documents. Secondary data were also used to explain sustainability more broadly in the introduction and to enrich the analysis with concrete examples from other industries.

3.6 Validity and Reliability

Data triangulation is performed to limit biases and the inaccuracy of primary data. For this reason, interviews' data are verified and integrated with the information published on the reports and the websites. Besides, researchers use Yin's (2014) view on validation, developed particularly for case studies. By comparing the literature and the conversations that have been conducted, it has become clear that the elements discussed are those that needed to be leveraged to achieve sustainability within a university. Previous literature on the subject has mapped out areas that, through feedback with various experts, have not only turned out to be considered appropriate for sustainability, but also already being used by universities and decision makers to address sustainability. From this point of view, therefore, the model is valid not only in the literature consulted, which is based on empirical researches carried out in other universities, but also in the confirmation given by the experts interviewed and by the current sustainable strategies of the universities consulted. In addition, the validity of the conversations and the insights resulting from them are reinforced by the choice of interviewing sustainability experts, who are part of the university chosen as the case study and the other institutions examined, who have clear and practical experience of the application of some of the concepts discussed. Moreover, researchers sought satisfactory interview quality by going into the affirmations of the interviewees in detail and carrying out the validation explicitly by verifying the affirmations where necessary. Therefore, and this could be a limitation, the suggestions indicated by the model are considered to be valid from a theoretical point of view. However, it is not possible to demonstrate empirically that these will bring the indicated results. This is due to a lack of quantitative data which can demonstrate that the suggestions proposed by the model will lead to the desired results. Furthermore, the application of some of the proposals indicated in this study can not be found in any of the universities analyzed, making it impossible to prove cause-effect relationships. In fact, although it has been possible to state that the areas to be addressed are those indicated, it can not be shown that the specific suggestions proposed for each area are to be considered exhaustive in order to achieve the results indicated. To conclude, while in some areas the study finds its validity through the comparison with the data collected, in others the non-existence of data on which to base this comparison does not allow to affirm with certainty the validity of the study's proposals. In fact, as suggested by Yin (2014) validity may be hindered, particularly in the context of explanatory research, where researchers exclude certain variables that lead to an event (Yin, 2014). However, researchers suggest this approach as a foundation on which more in-depth research could be conducted by using this study as a standardized model to evaluate the sustainable strategy of a university. In essence, by

applying the model, it is possible to become conscious of its real outcomes and to understand if there are variables that still need to be integrated and/or modified in each area addressed. This will lead to the advancement of the suggested model and the accomplishment of a proven methodology to incorporate sustainability in CBS and possibly in other universities.

Reliability refers to "*demonstrating that the operations of a study - such as the data collection procedures - can be repeated, with the same results*" (Yin, 2014). Therefore, reliability means that if another researcher respects the exact procedure explained in a case study, he should achieve the same results and conclusions (Yin, 2014). This principle aims to reduce biases and errors in a research. To assure reliability, researchers developed a research database, which includes transcripts and interview notes, university reports, UN documents, and magazine articles. However, since these data are mostly qualitative, a reproduction could lead to different results. In order to overcome this obstacle, future research, in an attempt to replicate the same results, should adopt two factors that were key to this research. The first is a collection of specific questions for the purpose of obtaining targeted information. For example, in most of the interviews conducted, in addition to questions of circumstance, aimed at understanding the general approach to sustainability, specific questions regarding individual initiatives were also asked, to understand the methodologies and the reasons that guide certain actions in specific areas. Therefore, in order to obtain a replication of the results, the researchers suggest a similar interview structure to that conducted in this study, in which there are steady key questions, such as: How do you approach sustainability at university X? What are the main barriers to sustainability in university X? How do you envision university X to be in the future?

The second element relates to the choice of data. A key criterion has always been adopted through the research, from the choice of interviewees to that of the reports: the data must have a strong connection to sustainability. This means that, in order to be able to replicate the data, the researchers suggest interviewing sustainability experts and making use of reports and documents focused on sustainability notions; as, for example, CBS PRME and sustainability reports have been used in this study.

3.7 Limitations

First and foremost, the research focuses on a Danish university. As such, CBS is characterized and influenced by the Nordic culture of which it is a part, and therefore by the approach to topics like sustainability. The selection bias of universities then limits the outcome of the study. This means that the research could lead to different results with the selection of universities from another part of Europe. Moreover, the researchers have chosen to include only European business schools in their study, since these institutions are considered to be the closest in terms of structure and resources. The only exceptions were the Danish universities University of Copenhagen (KU) and Technical University of Denmark (DTU), considered because the closest in terms of culture and, therefore, in their approach to the concept of sustainability. The second fundamental limitation concerns data regarding CO2 emissions. The consumptions data regarding the past five years are not available and they rely on a draft of the calculations provided by one of the experts, Tore Klitgaard, working on the future environmental report and other information provided through interviews. Additionally, the data concerning the emissions from 2008 to 2012 are not entirely comparable with the more modern ones, thus what has been proposed is an overview that while it holds its general informative objective, it is not to be considered exhaustive and accurate in its details. As confirmed by Louise Thomsen, Centre Manager at CBS Sustainability: "*the new data, which will be released at the beginning of the next semester, are calculated differently to the past, hence they are not comparable with the old data*" (Appendix 5).

The researchers have further chosen to narrow their point of view to a managerial and operational level. This means that researchers acknowledge that CBS sustainable initiatives and the way CBS expresses sustainability might also be approached from other points of view, such as financial or technical. However, in order to suggest a sustainability model that encompasses all the macro areas of the university, the researchers have opted for this orientation. Nevertheless, the researchers recognize the importance of the areas not included in the research and also the potential for future studies to improve the proposed model.

The researchers acknowledge that, in few points of the research, it would have been optimal to obtain data and interviews from people considered direct decision makers, for example the dean of research or the dean of education. The data are collected from a sample of individuals with whom it has been possible to connect, and therefore the study is strongly influenced by the people interviewed. With

this in mind, the researchers would like to suggest that some findings can lead to different considerations and conclusions based on changes in the sample of individuals interviewed. In prolongation of this, a vast amount of data is available for the study of this single case. It has not been possible to report all data in their entirety, which is why only some initiatives or information are mentioned; considered by the researchers to be exemplifications for the demonstration or explanation of some concepts. In conclusion, the researchers admit the potential for bias through the study, as the research has been conducted by individuals who are not external to the case study, but by university's students.

4. Theoretical Framework

This chapter explains the theories and models chosen for the approach to this study. The theoretical framework is based on a literature review of appropriate theories and is divided into three sections. Initially, it presents the literature on sustainable development in order to understand the meaning of this concept and how it has been addressed by institutions. Following this section, the sustainable university model is presented. This paragraph is fundamental to the understanding of the new model introduced by researchers in the analysis. Finally, the third section concludes the chapter with theories on awareness-raising.

4.1 Sustainable Development

The concept of sustainable development has already been adopted by CBS, in fact it is stated in its mission that the university aims to prepare students with the ultimate goal of creating value and achieving sustainable development. Moreover, CBS acknowledged some of the 17 Sustainable Development Goals (SDGs) in 2017. In literature, there have been several definitions of sustainable development. The one that has been internationally accepted by researchers and organizations such as the UN and the European Union (EU) has been designed by Brundtland (1987). This definition explains how essential it is that all human activities do not reduce the natural resources needed to benefit future generations. This concept highlights that the various environmental challenges, such as climate change and resource scarcity, are also social issues (Baranova et al., 2017). Therefore, solutions to these problems are hidden behind essential human activities. Unfortunately, it is difficult to change these activities because they have been inexorably shaped by path-dependent effects and lock-in processes (Baranova et al., 2017). These processes known as the "*socio-technical regime*" (Geels, 2005) create difficulties for new and more sustainable innovative options (Baranova et al., 2017). Moreover, "*lock-in mechanisms*" such as vested interests, low costs, consolidated convictions, sunk investments, and institutional arrangements make it difficult to implement innovations and new sustainable practices on different dimensions that include scientific, technical, economic, political and cultural (Baranova et al., 2017). For these reasons, it is required a holistic method that includes markets, politics, industry, technology, civil society and culture perspectives (Baranova et al., 2017).

This approach called transition can be defined as "*a set of connected changes, which reinforce each other but take place in several different areas, such as technology, the economy, institutions, behaviour, culture, ecology and belief systems. Therefore, a transition can be seen as a spiral that reinforces itself; there is multiple causality and co-evolution caused by independent developments*" (Rotmans et al., 2001). In prolongation of this, the concept of *sustainable transition* proposed by Grin et al. (2011) is introduced, to focus on the idea of sustainable society.

To achieve sustainable development and consequently contribute to a sustainable transition, many universities have begun to implement the model developed by Elkington (1994) called the *Triple Bottom Line (TBL)*. This model shows that sustainable development is achieved by including an economic, social, and environmental perspective. This research will present the model reviewed by Martin & Samels (2013) in their book. In this model, adapted for institutions, the elements taken into consideration are economic vitality, natural environment, and healthy communities. The model has been used by universities to assess that their projects include all these aspects.

4.2 Sustainable University

Since the mid-1980s, sustainability is a topic that has occurred in many of the official agenda of private, public, and academic organizations. Over the years, some universities have effectively implemented and pursued initiatives to support sustainable projects, but in other cases, these projects have failed because they have not been supported by the university where they have been implemented (Velazquez et al., 2006). The literature on the subject was (and still is) somewhat limited, and it is the study by Velazquez et al. (2006) that proposes the single shared definition of *sustainable university*. According to Velazquez et al. (2006) a sustainable university should be: "*a higher educational institution, as a whole or as a part, that addresses, involves and promotes, on a regional or a global level, the minimization of negative environmental, economic, societal, and health effects generated in the use of their resources in order to fulfill its functions of teaching, research, outreach and partnership, and stewardship in ways to help society make the transition to sustainable lifestyles*" (Velazquez et al., 2006). This definition covers environmental, economic, and cultural

issues and, in a certain sense, concerns the “leading by example” responsibilities that universities should have (Amaral et al., 2015).

As Turan et al. (2016) argue, sustainable universities can be seen as an alternative to entrepreneurial universities. A new approach that reflects the need for a university to adapt to new values that are no longer exclusively economic. Indeed, over the years, the benefits of environmental and social responsibilities have been acknowledged, and a business model centered solely on economic interests has become inadequate (Turan et al., 2016). Although embracing the concept of sustainable university has become increasingly important, it is a challenging task to approach this transformation “*as sustainability is complex, and conflicts with the norms, values and objectives of stakeholders are accentuated in the process*” (Turan et al., 2016). While faculty leaders are trying to maintain university standards, students usually request high quality education, preferably without payment. Management is then responsible for creating more by decreasing expenditure, and other stakeholders, such as the local society, is often left aside (Turan et al., 2016).

The researchers followed the sustainable university model developed by Velazquez et al. (2006) as a guideline for this study, since it is the only in-depth study on the subject and also takes into account the TBL approach of Elkington (1994) mentioned in the previous section. This framework explains how people responsible for sustainability initiatives can achieve their initial momentum and move forward towards the goal of creating a more sustainable university (Velazquez et al., 2006). For this reason, this model can also be used to support universities in improving the effectiveness of their potential, or current, sustainability initiatives by identifying sustainability strategies and opportunities within universities. Below, Figure 1 depicts the structure of the sustainable university model, which systematically exhibits each of the components following a strategic management process.

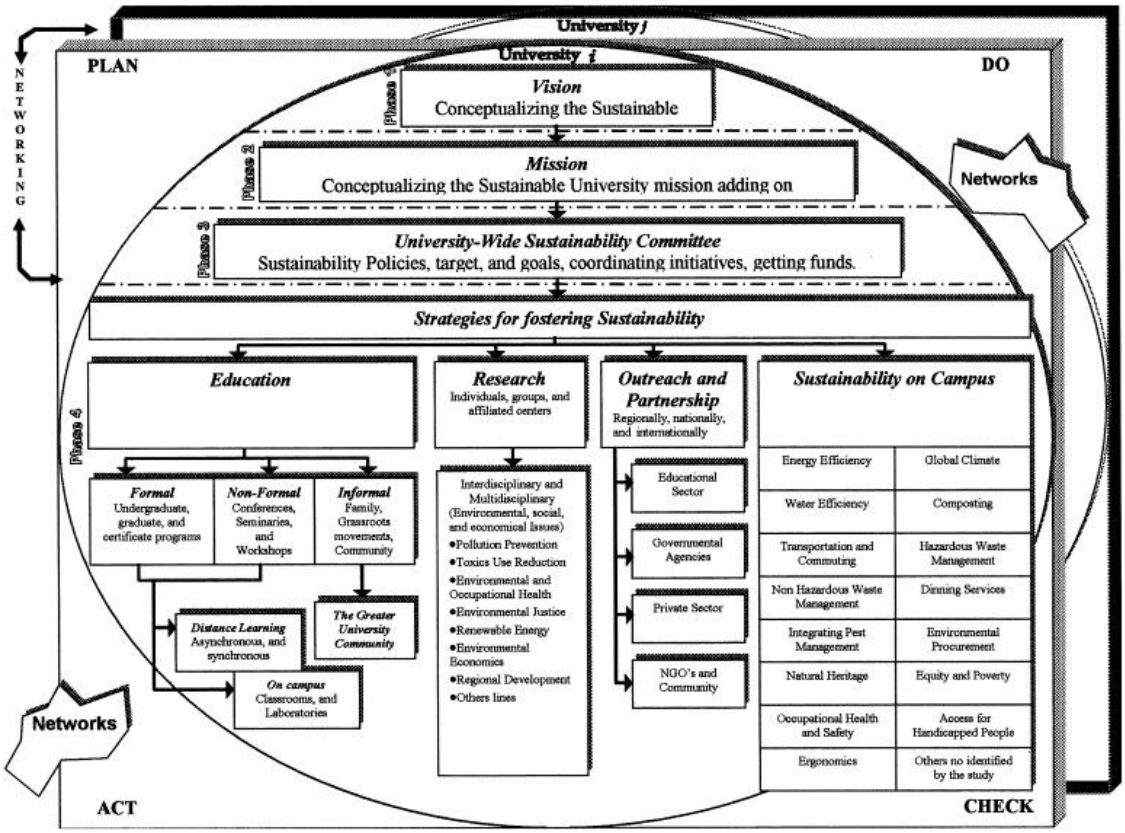


Figure 1: *Sustainable university model* (Velazquez et al., 2006)

Phase one: developing a sustainability vision for the university

At this stage, a university should define its own concept and a specific definition of what a sustainable university is about. In practice, the university has to define ways of conceptualizing a sustainable university in a formal document.

Phase two: the mission

In this phase, the model suggests that a university should include sustainability also in its mission statement to sensitize the university stakeholder and to freely declare its intention and effort to be more sustainable.

Phase three: Sustainability committee: creating policies, targets, and objectives

The next managerial step recommends that the organizational structure of a sustainable university should reflect its commitment by incorporating its policies into its routine operations as well as the generation of the means necessary to successfully achieve the mission. In the sustainable university

model, the establishment of a sustainability committee facilitates the tasks of creating and establishing comprehensive campus-wide policies, objectives, and targets.

Phase four: sustainability strategies

All the sustainability initiatives of universities are organized into four strategies.

The first three of them, education, research, and outreach and partnership, can be carried out inside or outside the campus. The other is aimed at implementing sustainability on the campus itself.

The second model chosen as a guideline for this study is the one proposed by Cortese (2003). This model is also linked to the concept of sustainable development of Brundtland (1987). Cortese (2003) underlines the idea that higher institutions have a significant function in educating students and spreading awareness to achieve a sustainable society. Indeed, the author explains that people who came out from universities are the ones who are leading the society towards an unsustainable path (Cortese, 2003). Therefore, universities must take a role of leadership for a sustainable future. The author also claims that "*students learn from everything around them*" (Cortese, 2003). With these words, the author suggests that universities' activities can be divided in four core areas: education, research, operations, and external communities. Additionally, these four areas should be considered as connected and affecting each other, as shown in Figure 2.

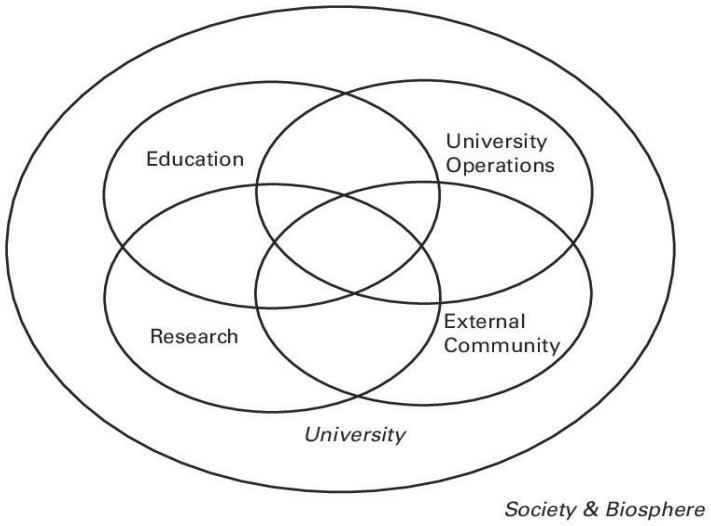


Figure 2: *Higher education modeling sustainability as a fully integrated system* (Cortese, 2003)

4.3 Awareness in the University Community

This section explains the concept of awareness and how it can be actively promoted to engage the community. According to its definition, awareness is meant to be: "*knowledge or perception of a situation or fact*" (Lexico, 2019). However, knowledge alone has limited impact on behavioral change; indeed, simply providing information on the importance of environmental preservation is unlikely to change existing habits towards more sustainable choices (Too & Bajracharya, 2015). This problem has been studied in several disciplines, but rich knowledge of it has accumulated in silos (Too & Bajracharya, 2015). Many models have been developed to guide consumer behavior towards sustainability. These models share a common conceptual basis, that environmentally sensitive behavior begins with people who have an understanding of the consequences of their behaviors. Therefore, knowledge coupled with a consumer-centered approach is necessary to make behavioral changes, for example, many green products have failed due to the myopia of ecological marketing. Empiric attempts to establish a clear path of causality from knowledge and attitude to environmentally sensitive behavior have produced ambiguous results. Thus, there may be other factors that contribute beyond knowledge and attitude. Therefore, the complexity of the communities involved in sustainability is a fundamental factor. Active community engagement would require a multiplicity of components such as education, action, trust, inclusion and strong governance (Sarkissian et al., 2009). However, while many communities have incorporated principles of sustainable development into their vision statements and decision-making processes, few have managed to translate their goals and objectives at a high level into concrete projects and possible viable strategies (Too & Bajracharya, 2015). Thus, there are gaps in implementation that prevent communities from capitalizing on the many sustainable and known techniques and technologies. Although universities are traditionally improving their approach to sustainability through operational measures, community engagement and involvement also plays a vital role in influencing lasting changes to more sustainable practices since the communities are the "heart and hands" of the whole movement for sustainability (Sarkissian et al., 2009). Thus, there are critical relationships between the following three components (Sarkissian et al., 2009):

- *sustainability* (the final general objective);
- *community* (the means to achieve sustainability);

- *community commitment* (method for mobilizing the community to participate in sustainability programs actively).

Besides, the community has the crucial role to promote sustainability, since "*it is better to pursue negotiations for change at the level of groups and communities*" (Too & Bajracharya, 2015). Indeed, social support is particularly vital for breaking habits and for developing more sustainable social norms and consumption patterns as shown by a survey conducted by the Government of United Kingdom (UK) (2005). Finally, summarizing the results of several studies, an original *6-P Community Engagement Framework* developed by Too & Bajracharya (2015) to involve the community in sustainability programs will be applied to CBS in the analysis chapter.

5. CBS & Sustainability

5.1 Introduction

In this chapter, the researchers are going to explain what CBS has implemented to make it campus more sustainable in recent years. This section will be divided in two parts. The first one is going to present how CBS interest in environmental issues evolved during the years; and how the implementation of sustainable values has been approached and evolved during past years. The second part is going to show some data and reports regarding energy consumptions and CO2 emissions in the years between 2008-2018, to cast a more concrete view on CBS effort to fight environmental problems.

5.2 History of CBS Sustainable Initiatives

Founded in 1917, CBS has, at the present day, about 20,500 students and 2,200 employees, making it one of the largest business school in Europe (CBS, 2019). The growth of the CBS community can be observed in Figure 3. With a variety of business-oriented university programs, CBS offers twelve departments and an innovative research environment (CBS, 2019). In addition to executive and farther post-graduate programmes, CBS offers a broad spectrum of courses at the undergraduate and doctoral level in different business disciplines (CBS, 2012). CBS is also the first Scandinavian business school to be accredited by the Association to Advance Collegiate Schools of Business (AACSB) (CBS, 2012).

	2012	2013	2014	2015	2016	2017	2018
Student population	19,264	19,999	20,819	22,564	22,829	21,703	20,422
Non-Danish students	2,942	3,106	3,474	4,046	4,287	3,955	3,928
PhD students	210	258	239	239	224	192	192
Full-time academic staff	614	690	748	736	673	639	633
Part-time academic staff	792	730	712	844	874	882	884
Administrative staff	617	549	586	610	649	684	700
Funding (million EUR)	169.3	164.9	164.9	165.6	174.4	181,6	179,2

Figure 3: *CBS community growth* (CBS, 2019)

CBS' identity, mission and vision are embedded together in CBS' leading strategy *Business in Society* (BiS). Launched in autumn 2011 (CBS, 2012), CBS BiS strategy strives to deliver CBS students a critical understanding of the sustainability agenda, educating them about the consequences of their short and long term decision making, both as managers and individuals (CBS, 2010). CBS aims to address significant societal and business challenges, like climate change, that affect its region and are as well world-relevant, while at the same time strengthening its commitment to responsible education (CBS, 2010). As of 2019, CBS identity, mission, and vision are (CBS, 2019):

- ***Identity:*** CBS is an international business university that incorporates elements from traditional business schools while maintaining a focus on its impact on society and a commitment to research and research-based education. Within the perspective of responsible leadership and management, CBS aims to play an essential role in discussing innovative and entrepreneurial business models, sustainable organizational forms and economic practices. Furthermore, CBS intends to keep a high entrepreneurial spirit within its students and employees, encouraging new ideas, open to individual initiative and flexible in the face of new opportunities.
- ***Mission:*** CBS bears the responsibility to bring knowledge and new thinking to businesses and organizations, to the next generation of entrepreneurs, and society as a whole. CBS is committed to educating both young and experienced people to the world of business by providing them with a sound knowledge base for value creation and sustainable development from the most up-to-date international research.
- ***Vision*****:** CBS aims to establish itself as a world-leading business university which recognizes the vital role that business and the public sector play in shaping society; and, vice versa, the equally important manner in which business practices are shaped by society.

CBS' record in sustainability and business ethics dates back to the mid-1980s, with the advent of some reputed philosophers, namely Professor Pedro Pruzan, Professor Ole Thyssen and Hans Siggaard Jensen, influential figures in developing a new social and ethical accounting and auditing approach (CBS, 2010). In 2002 Professor Pruzan co-founded the CBS Centre for Corporate Social Responsibility (cbsCSR), together with a large group of researchers from different fields united by a shared interest in corporate social responsibility (CSR), sustainability, and business ethics, to guarantee CBS' commitment to CSR and sustainable research and interdisciplinary teachings (CBS, 2010). In line with its new commitment to becoming a more socially-oriented organization, in 2008 CBS became a signatory of PRME. PRME was established in 2007 as a UNs-supported initiative to raise the profile of sustainability across the

globe in higher education and business schools, in order to give today's business students the knowledge and the ability to bring change tomorrow (CBS, 2019). PRME is now, as a voluntary initiative with over 650 signatories worldwide, the most extensive organized relationship among the UN and business-related higher education institutions. Working on several principles, PRME involves business and management schools to ensure that they offer future leaders the skills necessary to balance economic and sustainable objectives (CBS, 2019).

CBS took a natural step forward in endorsing PRME in 2008, leading to a process of implementation under the direction of its Leadership Team and cbsCSR (CBS, 2010). Three of the main highlights that underline the first steps in CBS' commitment to the implementation of PRME's principles include (CBS, 2010):

- Hiring a PRME project manager as PRME's face at CBS.
- CBS' new strategy, *Business in Society*. The still core CBS' strategy launched back in 2011 after a revision of the global strategy, with PRME taking on a vital role in its realization.
- The Green Campus Initiative (GCI), established in 2009 (CBS, 2012).

The GCI, together with CBS Goes Green, represented a big step forward for the university toward the inclusions of sustainable values. Through its Green Campus Initiative, CBS continuously started to integrate sustainability issues in its operation for the interest of future generations. GCI aimed specifically at focus areas such as energy consumption, waste management, and transportation, trying to reduce CBS' negative environmental impact by developing positive attitudes towards energy efficiency and saving, as well as by promoting sustainable and renewable energy sources (CBS, 2010). CBS Goes Green, being the primary Green Campus strategy, put special effort in its design to engage students and campus services in creating an example of institutional discussion, which is a crucial aspect of PRME integration (CBS, 2012). In order to ensure that the Green Campus strategy was successful and that it achieved CBS' green goals, everyone on campus had the opportunity to participate. As a result, CBS Goes Green developed a Green Ambassador programme that allowed students and faculty to sign sustainability pledges, learn about sustainable initiatives, and contribute to solid, innovative ideas. As of 2012, 2,600 had signed up (CBS, 2012).

Supporting student associations like 360° Students for Sustainability, turned into Oikos Copenhagen in 2010, nowadays with 40 active members and more than 3500 followers on social media platforms (CBS,

2017), together with CBS Goes Green, have been the engine behind several other projects aimed at making the campus greener. For instance, some of the initiatives that are still present till today are the acquisition of an e-car for all internal transport across campus, the introduction of drinking fountains in lecture halls to reduce the number of plastic bottles, and the installation of bicycle pumps (CBS, 2012). Furthermore, they have been instrumental in helping CBS to become Denmark's first Fair Trade University (CBS, 2012).

Launched in July 2011, the CBS Sustainability Platform was the first platform in CBS BiS strategy; intended as a focused five-year effort to build world-class, corporate-sustainability research activities (CBS, 2012). To promote and increase the focus on sustainability throughout CBS, the Sustainability Platform undertook researching and education (CBS, 2015). The platform promoted sustainable student organizations and works with external partners, such as the Maersk Group, Deloitte, the Confederation of Danish Industries and the Danish Business Authority (CBS, 2015). CBS Sustainability Platform raised Danish krone (DKK) 15 million only during its first year, in external funding, for CBS sustainability research projects (CBS, 2012). Moreover, from 2011 to 2015, EUR 4.5 million had been secured in external funds, including a grant of EUR 2.04 million from the VILLUM Foundation to recruit a VELUX professor of Corporate Sustainability, and one postdoctoral researcher. The grant also included EUR 135.000 in support of CBS sustainable student activities (CBS, 2015).

Since the life-span of CBS platforms is only five years, the Sustainability Platform was officially disbanded as of July 2016. However, in recognition of all its valuable contributions, it has been given a new lease of life as an extension of the platform, renamed CBS sustainability (CBS, 2017). The Sustainability Platform produced a considerable amount of research, fundraising, and educational activities throughout its five-year existence. Most notably (CBS, 2017):

- the platform became a founding member of the Copenhagen Sustainability initiative;
- during its life-span, more than 200 peer-reviewed publications were affiliated to the platform;
- the platform funded more than 60 sustainability-related projects;
- the platform secured almost DKK 70 million in external funding;
- it attracted more than 48 visiting faculty members, organized 30 seminars and funded 14 international conferences, eight workshops, and one publication forum;
- hosted the partnership N-Go+Business towards Sustainability Society conference with keynote speaker, former UN secretary general, Kofi Annan.

CBS Sustainability, since its birth in 2016, has already delivered a few main initiatives in these three years. CBS made the decision, on 1 January 2016, to adopt some of the 17 Sustainable Development Goals (SDGs) of the 2030 Sustainable Development Agenda, fostered by world leaders at a historic UN Summit in September 2015. Over the next 15 years, countries will mobilize efforts to fight all forms of poverty, combat inequalities, and tackle climate change according to these new goals that apply universally to everyone (CBS, 2017). The Ministry of Education does not necessarily require Danish universities to try to implement the SDGs, so it is up to individual universities to do so (CBS, 2019). However, as former CBS President Per Holten-Andersen stated in his welcome letter, this duty can not be reduced only to governments and businesses, and in answering some of the SDGs, CBS takes an active role. Figure 4 shows a range of activities undertaken by CBS to fulfill some of the 17 SDGs.

Figure 4: *SDGs adopted by CBS* (CBS, 2017)

Another recent initiative aimed at raising awareness across the campus on sustainability issues is the Sustainability Influencers initiative. Student & Innovation House and CBS PRME co-created the initiative, which was launched in October 2018 by 21 students with different educational backgrounds and nationalities. The aspiration is for the Sustainability Influencers to partner with actors who can

reinforce the initiative and involve more students in the SDGs, as well as inspire and prepare them to become agents of change for a sustainable transition. The Sustainability Influencers have already entered into partnerships with Tuborg Foundation, Impactful Jobs, Sustainable (now SustainBase), SIVIL, Nordic Sustainability, Global Compact Network Denmark, IloveGlobalGoals, Oikos Copenhagen and SDG Ambassadors Copenhagen (CBS, 2019).

Launched in 2018, the new Campus Sustainability Strategy was approved as an official CBS sub-strategy in the autumn of the same year. Sustainable design developer Tore Klitgaard is responsible for developing a Campus Sustainability Plan with Assistant Professor Kristjan Jespersen (CBS, 2019). The strategy is part of the third wave of sustainability at CBS, as described by Kristjan Jespersen. The first wave was mainly represented by a green office, reporting CBS' levels of sustainability. However, it was shut down in 2015. The following wave was led by the Sustainability Platform, one of the Business in Society Platforms, and the strategy is currently part of the third wave, driven both by political and societal interest and by CBS students' pressure (Lykkegaard, 2019b). The strategy does not only offer but requires the ability to use CBS as a sustainability laboratory in order to contribute to more sustainable development. In such a campus environment students can grasp and see the value of sustainability actions, while researchers can assess and help show the world solutions to future challenges (CBS, 2019). The core CBS' Business in society strategy will come to an end, and a new one will be needed for the years to come. Sustainability is mentioned only once in the current strategy. Kristjan Jespersen and Tore Klitgaard hope the focus of the new strategy will be sustainability (Lykkegaard, 2019b).

To conclude, CBS holds also other projects and initiatives for the future of its green agenda; committed to provide information about the baseline and the future achievements realizable during the period 2020-2025. Some of the future initiatives include CBS Campus Sustainability Profile & Goals 2020-2025:

- develop a university-wide procurement policy with clear sustainable purchasing commitments;
- commit CBS' assets, campus land, and utilities as a hub for sustainable innovation implementing aggressive greenhouse gas (GHG) reduction targets to contribute to the global challenge of climate change;
- design an energy management plan to reduce energy consumption, GHG emissions and environmental impact and save resources;
- consider the total ownership cost in all building projects and portfolio management decisions to make the best long-run economic decisions;

- CBS is planning a 35,000 m2 extension on its campus. The project is underpinned by an ambitious and sustainable masterplan advanced in collaboration with Nobel Peace Prize winner John Robinson, renowned sustainability architects, and CBS researchers. Some of the sustainable elements of the project include, for instance, solar cells energy for water cooling and reused rainwater as flushing water (CBS, 2017).

In conclusion, Figure 5 proposes to provide an overview of key CBS events related to sustainability.

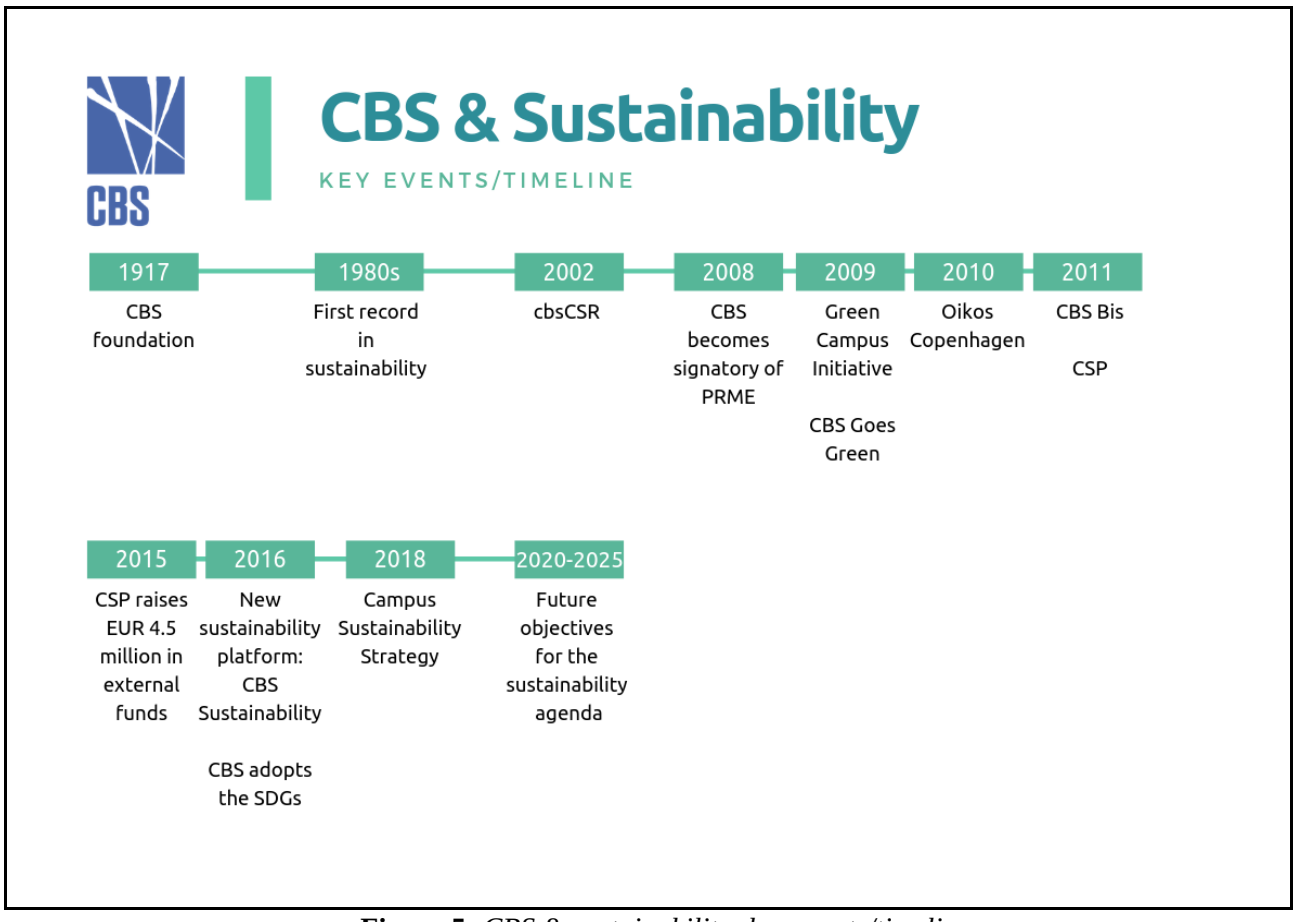


Figure 5: *CBS & sustainability: key events/timeline*

5.3 Data and Reports on Consumptions and CO2 Emissions

This section is designed to assess the direct environmental impacts of CBS' facilities. Given CBS' interest on sustainability, as former CBS president Per Holten states in the opening letter of CBS: "*it is crucial for CBS to know our own situation with regards to the volume of greenhouse gases generated directly or indirectly as a result of CBS' activities"* (CBS, 2013). The data reported are produced in early 2012 and 2019 and look back on 2008 to 2012 and 2013 to 2018 respectively. This segment will show a clear overview of CBS energy consumption (electricity and heating), waste impact, water use, transportation and CO2 emissions between 2008 and 2018. The purpose is for the reader to gain an extensive understanding of the changes in these different environmental impacts caused by CBS.

There is not a single accepted standard in sustainability reporting, which increase the difficulty to keep the report as objective and reliable as possible. However, the one adopted by CBS, the Greenhouse Gas (GHG) Protocol standard, is one of the most used worldwide (CBS, 2013). In 2016, more than 90% of Fortune 500 companies used the GHG Protocol standard, either directly or indirectly, through a program based on GHG Protocol (GHG Protocol, website). As displayed in Figure 6 below, the GHG Protocol standard separates emission into three categories, called scopes. Each scope is characterized by different activities that emit different greenhouse gasses that must be taken into account. These six gasses are then converted into CO2 equivalent (CO2e) emissions. Therefore, CO2e is a joint measure for all harmful gasses emitted by the various activities and is used frequently in this section.

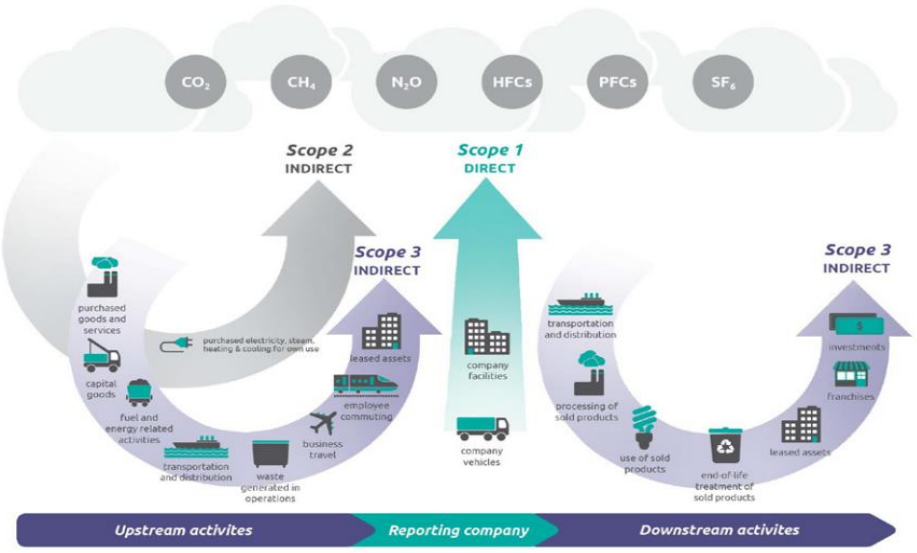


Figure 6: *The GHG protocol* (CBS, 2013)

Scope 1: **Direct GHG emissions:** Companies address their own or controlled sources of GHG emissions as scope 1. Direct GHG principally includes the sum of the following two types of activities (GHG Protocol, website):

- Electricity/heat/steam generation. These emissions are the consequence of fuel combustion in stationary sources, such as boilers, turbines, and furnaces.
- Transportation. The transportation of materials, products, waste, and employees are all considered as direct emissions, as well as emissions from vehicles owned by the company.

Scope 2: Electricity indirect GHG emissions: Scope 2 consists of the emissions from the generation of purchased electricity that is consumed in company's owned or controlled equipment or operations (GHG Protocol, website).

Scope 3: **Other indirect GHG emissions:** Scope 3 is optional, but it provides an opportunity to be innovative in GHG management. Because companies have discretion over which categories they choose to report, scope 3 may not be good for business-to-business comparisons. (GHG Protocol, website).

The first portion of this report (2008-2012) is based on the calculations carried out by CBS Goes Green back in 2012 (CBS, 2013). The initiative of keeping track of emissions started back in 2012-2013 with the aim to achieve a reduction in carbon footprint by 40% by 2020 (using 2008 as baseline). This audacious objective was embedded with the GCI into CBS campus strategy (CBS, 2010). The second part is carried out by the researchers, thanks to the information provided by Tore Klitgaard, sustainable design developer at CBS, given the lack of environmental data after the period 2012-2013. Finally, this chapter tries to provide evidence that allow CBS students and staff to recognize the importance of their actions and to make a significant contribution to helping CBS to build a sustainable campus.

5.3.1 Data 2008-2012

For the calculation between 2008-2012 not all of the activities are included, as some of them are not applicable for CBS, whereas others have been excluded due to a limit in time and resources (CBS, 2013). For instance waste impact, water consumption, and other activities have not been converted into CO2 emission (CBS, 2013). Additionally, for this time segment, electricity, heat, and water consumption from the following buildings are not included (CBS, 2013):

- Steen Blichersvej 22;
- Porcelænshaven 7;
- Rooms used for teaching at Copenhagen Zoo;
- Rooms used for teaching at Falkoner Cinema;
- Amager Strandvej 108B (exam location).

The calculations on the CO2e emissions from energy consumption are based on gram CO2e emitted per kilowatt hour (KWh) used.

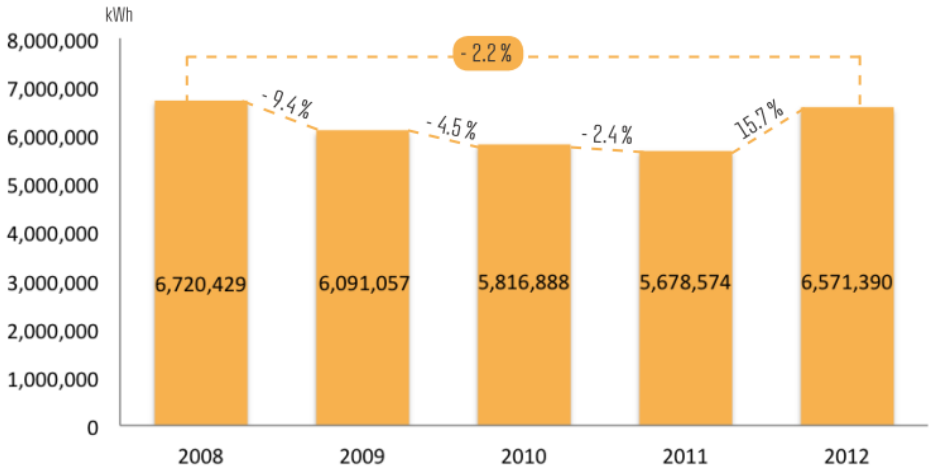


Figure 7: *Electricity consumption (2008-2012)* (CBS, 2013)

As shown in Figure 7 the consumption of electricity has seen a general decrease by 2.2 per cent between 2008 and 2012. Thanks to a technical analysis and advancements of CBS' buildings, the decrease from 2008 to 2011 can be explained and observed, however the following (2011-2012) significant increase remains unclear (CBS, 2013). In fact, since 2008, CBS has made an effort to transform all campus light bulbs into light emitting diode (LED) lamps that use much less energy and also save money (CBS, 2013). Additionally, a technical analysis conducted in 2008 to enhance the efficiency of some CBS buildings,

led to an optimization of the ventilation systems (CBS, 2013). The payback period for these types of investments is relatively short, usually 1-4 years CBS (2013), as it is possible to notice in Figure 7.

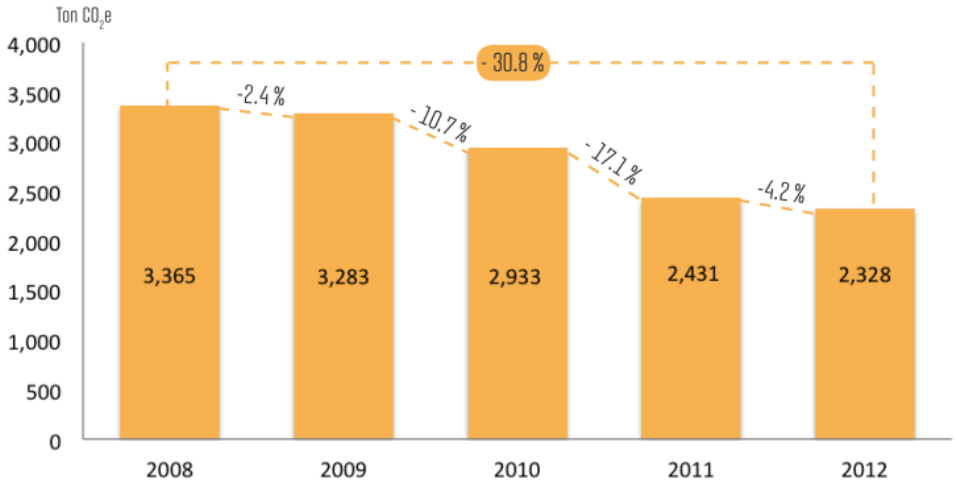


Figure 8: *CO2e emissions from electricity (2008-2012)* (CBS, 2013)

As seen in Figure 8, a significant difference exists between consumption and actual CO2e emissions for the 5-years segment 2008-2012. This discrepancy is explained by a cleaner energy mix provided by Dong Energy during the years (CBS, 2013).

Figure 9 shows a comparison on how the CO2e emissions have gone down and how it would have looked without the positive impact from the energy mix during the period 2008-2012. The cleaner energy mix accounts for a reduction in CO2e emissions of 92.8 % (CBS, 2013).

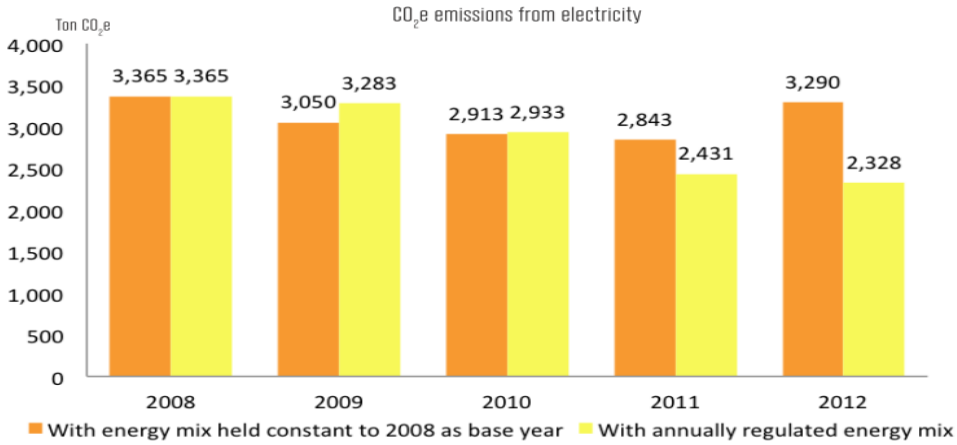


Figure 9: *Energy mix impact on CO2e emissions from electricity (2008-2012)* (CBS, 2013)

The calculations on the CO2e emissions from heating consumption are based on gram CO2e emitted per KWh used.

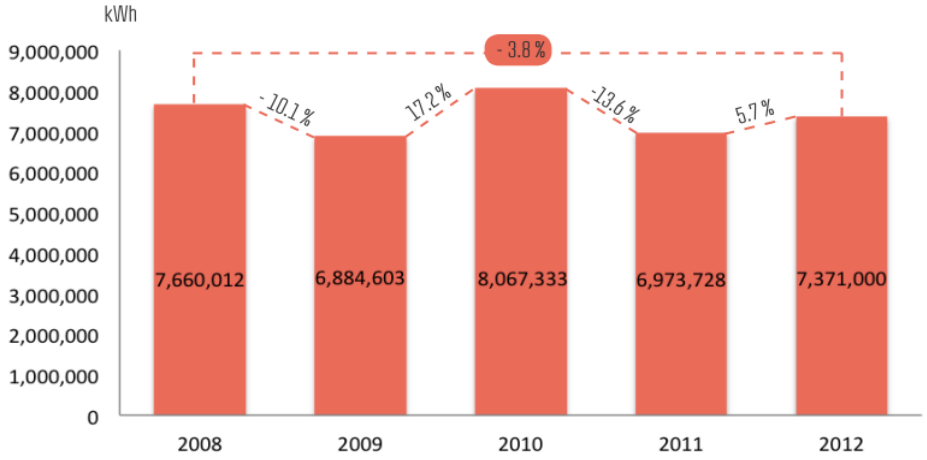


Figure 10: *Heat consumption (2008-2012)* (CBS, 2013)

As shown in Figure 10, heat consumption floated annually, with a total decrease of 3.8 percent between 2008 and 2012. The heat consumption will always vary from year to year, depending on the weather (CBS, 2013). As seen in 2010, a particularly cold winter can significantly increase heat consumption. In order to accommodate this unpredictable factor, degree-day regulations are made which standardize the data to make a fair comparison of the various years. This also facilitates the understanding of the direct impact of CBS (CBS, 2013).

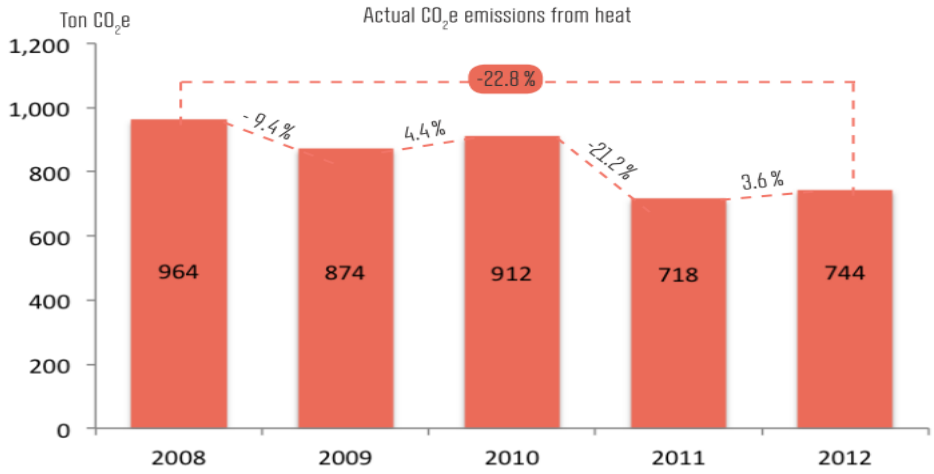


Figure 11: *CO2e emissions from heating (2008-2012)* (CBS, 2013)

Figure 11 portrays the CO2e emissions with degree-day regulations. As displayed, the overall CO2e emissions reduction adds up to 22.8 % for the period 2008-2012. Also in this case a cleaner energy mix explains most of the reduction in CO2e, accounting for 83.2% of the 22.8% decrease in CO2e emission.

To show the comparison between C02e emissions with degree-day regulations, with the energy mix held constant to 2008 as base year or regulated annually, Figure 12 below is portrayed.

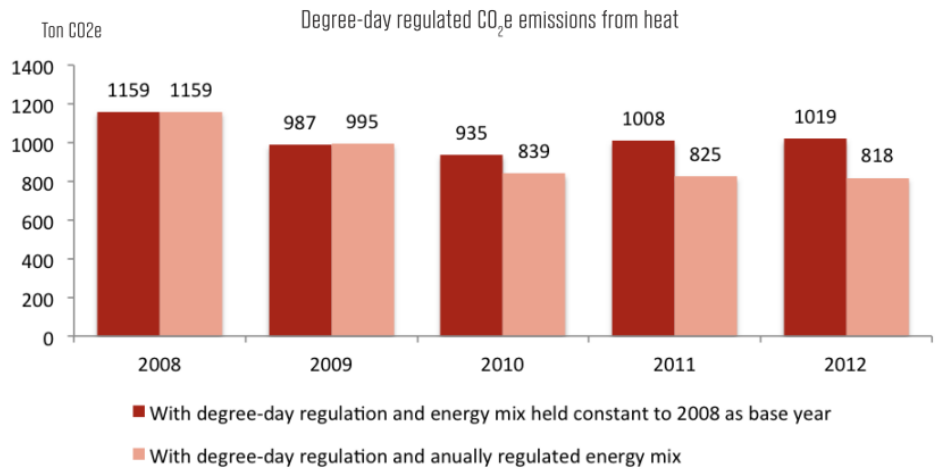


Figure 12: *Degree-day regulated CO2e emissions from heating* (CBS, 2013)

Considering CO2e emissions without degree-day regulations, it could be argued, is somewhat unfair because of the unpredictable weather variables. Therefore, it is beneficial t look at both cases, depending on the question that needs to be answered (CBS, 2013).

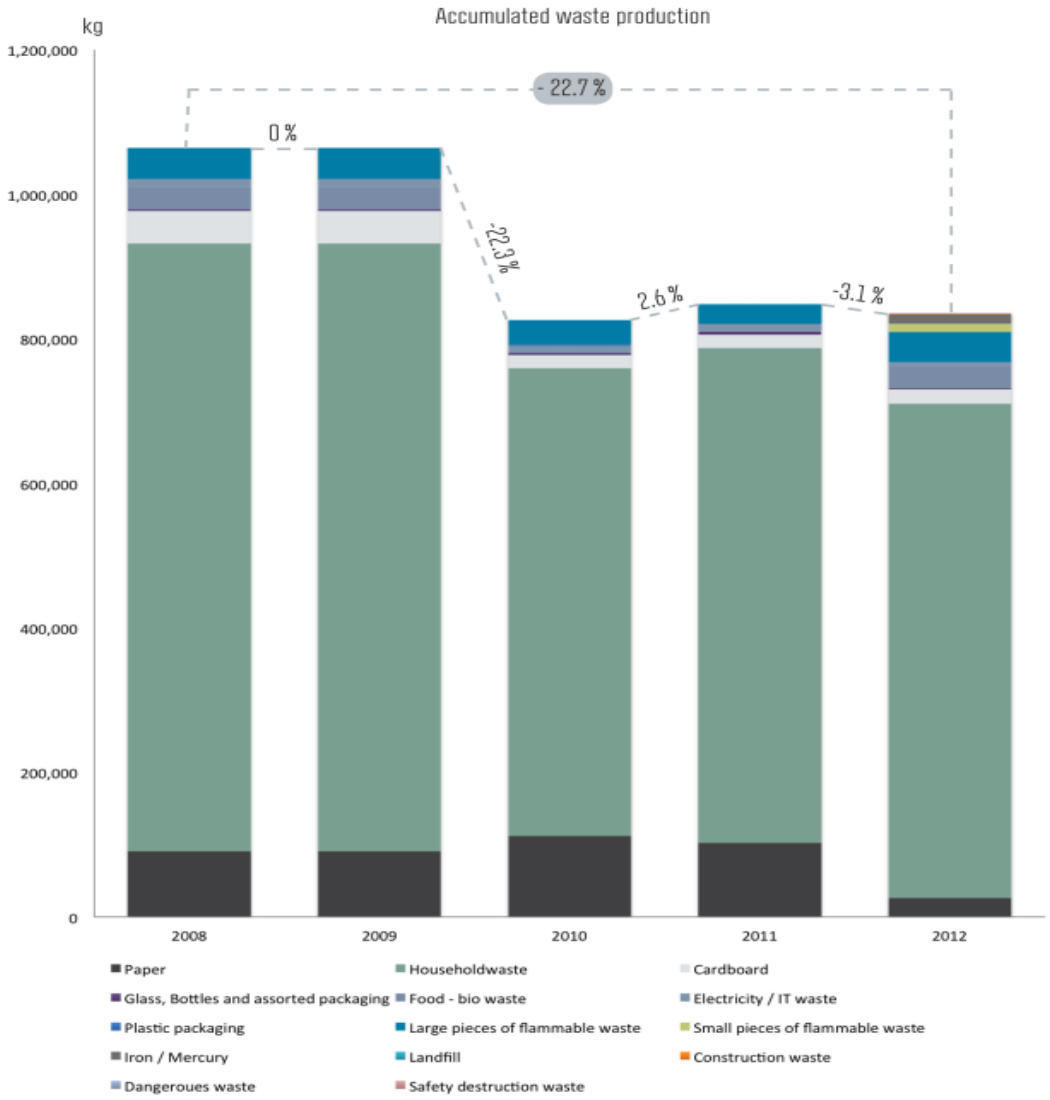


Figure 13: *Accumulated waste production (2008-2012)* (CBS, 2013)

Waste generated has been accounted only as actual waste data for the period 2008-2012 as shown in Figure 13. CO2e were not calculated due to complexity and lack of time. The absence of a consistent waste sorting system that was well managed made it harder to come up with emissions data. However, as mentioned in the report, it should have been a key objective, since waste have a considerable impact on overall emissions. (CBS, 2013).

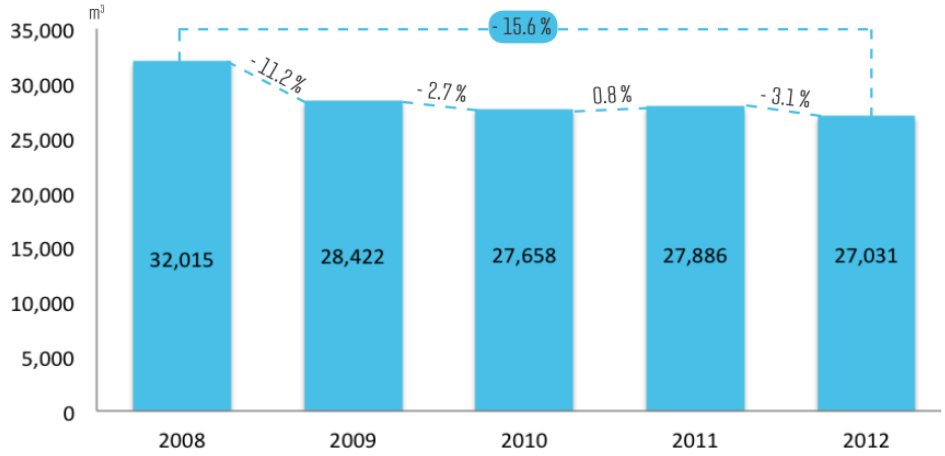


Figure 14: *Water consumption (2008-2012)* (CBS, 2013)

The data of Figure 14 for water consumption are only accounted for actual consumption and are not computed as CO2e emissions for this period. Conservation of water, efficiency and reuse are all activities that contribute to total CO2 emissions, i.e. energy used in the pumping of water directly affects carbon missions. As seen in the graph above water consumption has decreased by 15.6% from 2008 to 2012. This was primarily due to CBS' investment in the analysis and repairs of toilets and sinks. In addition, the improved behavior from students and employees had a positive impact on water consumption (CBS, 2013). Water consumption was the area where CBS achieved the best results during the period 2008-2012. It is also an area of clear economic benefits, given that, as of 2012, one m3 of water costed DKK 35.68 to CBS, resulting in total saving of DKK 177,829 in 2012 in relation to 2008 (CBS, 2013).

The graphs concerning CBS' use of flight activities in 2010, 2011 and 2012 (Figure 15) are compiled via Egencia, a travel agency. Unfortunately, the graphs from 2008 and 2009 were not available. These figures were consequently assumed by averaging the two diagrams from 2010 and 2011.

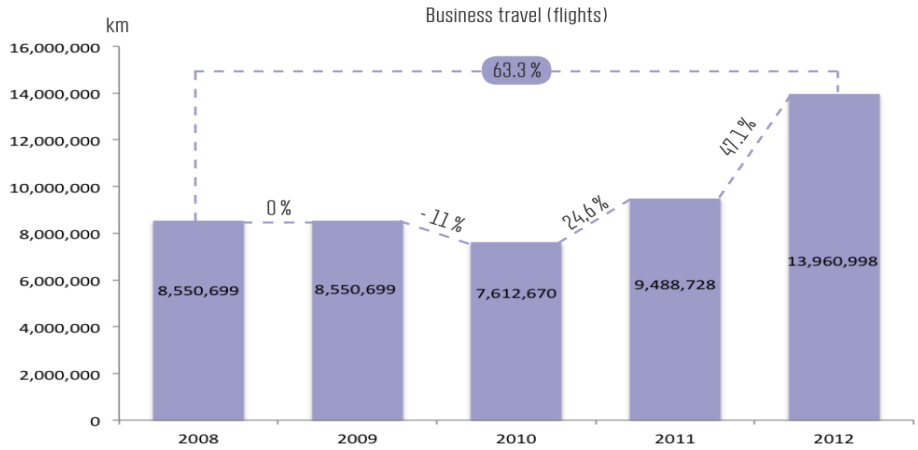


Figure 15: *Business travels (Km) (2008-2012)* (CBS, 2013)

Business travel covers all CBS employee flight activities in respect of related work activities. From 2008 to 2012, CBS has significantly expanded its business travel to strengthen the university and brand. To give a more tangible example, only the increase in the kilometers from 2011 to 2012 is equal to 2282 round trips between Copenhagen and London or 292 round trips in Vancouver (CBS, 2013).

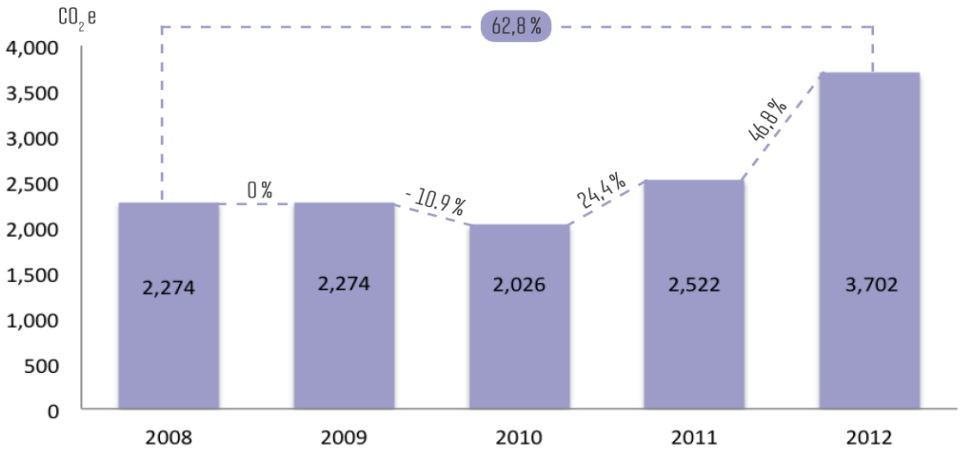


Figure 16: *CO2e emissions from business travels* (CBS, 2013)

For a university like CBS, it is important to take part in conferences and seminars around the world, however, looking at Figure 16, it can be clearly stated that business travelers account for the vast majority of CBS' emissions. In fact, business travel accounted for over 50% of the overall CO2 in 2012 (CBS, 2013). Additionally they have only continued to go up, as the number of travels increased during the years.

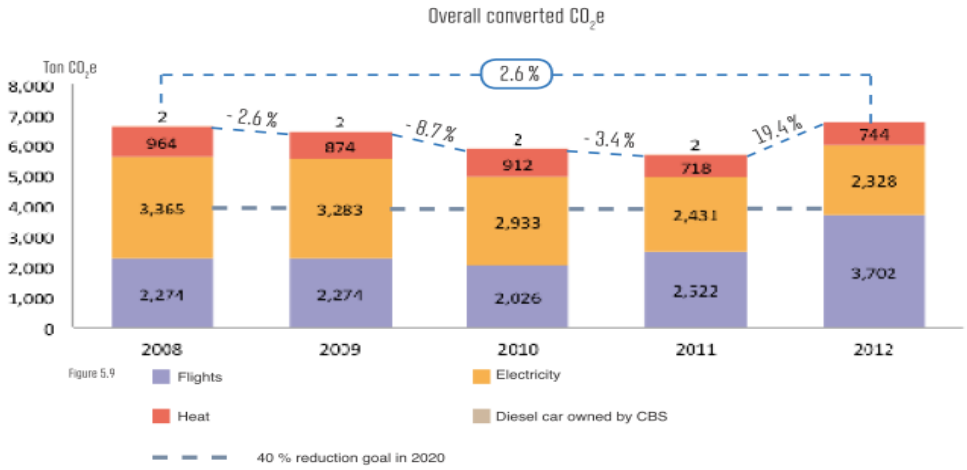


Figure 17: *Overall converted CO2e (2008-2012)* (CBS, 2013)

Overall in the period 2008-2012 there has been a 2.6% increase in CO2e emissions. These are actual CBS' emissions, but it is also worth looking at other variables to get a clearer understanding of CBS actions. This can be done by excluding the weather impact and the positive effects of a cleaner energy mix:

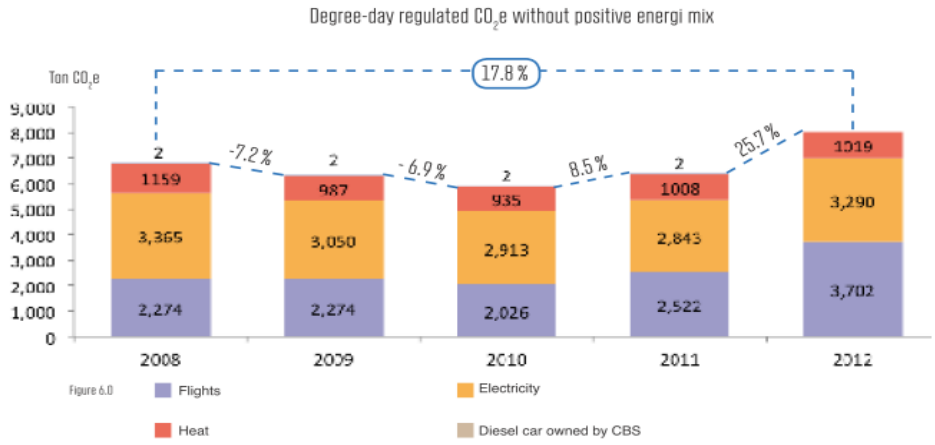


Figure 18: *Degree-day regulated CO2e without positive energy mix (2009-2012)* (CBS, 2013)

Figure 18 displays an overall increase of 17.8 % in regulated CO2e for the period considered. Such an increase, compared to the 2.6 %, seems high, however also other factors influenced the outcome, such as an increase in the number of students (CBS, 2013). Additionally, it is important to understand the difference between the two graphs showing the overall CO2e emissions. The first one displays CBS' actual emissions, while the second one shows regulated emissions to cast a more understandable picture of what the effects of CBS' actions have been. (CBS, 2013).

5.3.2 Data 2013-2018

As indicated in the limitations (section 3.7) very few data are available for this time segment. Furthermore, they are not fully compatible with those in the previous section. However, in order to provide an overview, they are reported in Appendix 1. However, in order to provide better graphic representation, the data have been rearranged by the researchers in Figure 19:

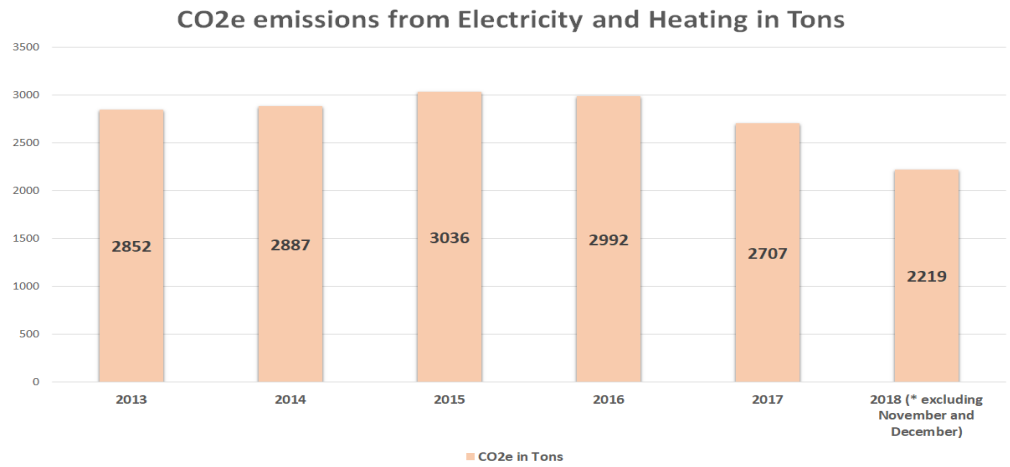


Figure 19: *Overall converted CO2e (2013-2018)*

The data available concern only electricity and heating, and it is not possible to compare it with those from previous years. Another major limitation is the impossibility of being able to distinguish between heating and electricity, given that the data has been provided in summary form.

Unfortunately, there are no specific data relating to this timeframe, and even the data on these two elements can not be studied in depth. However, it is possible to see how CBS has managed to maintain a constant level of emissions over the years. Given that the emission trend has remained constant, the researchers suggest that it is generally possible to hypothesize how the composition of the 2012 emissions (the last year of which there are detailed data) is still the same as it is today, and how the internal dynamics are supposed to have remained similar. For this reason, an overview of the composition of the CO2e emissions referred to 2012 is provided in Figure 20 and some considerations are expected to be valid for the current year as well:

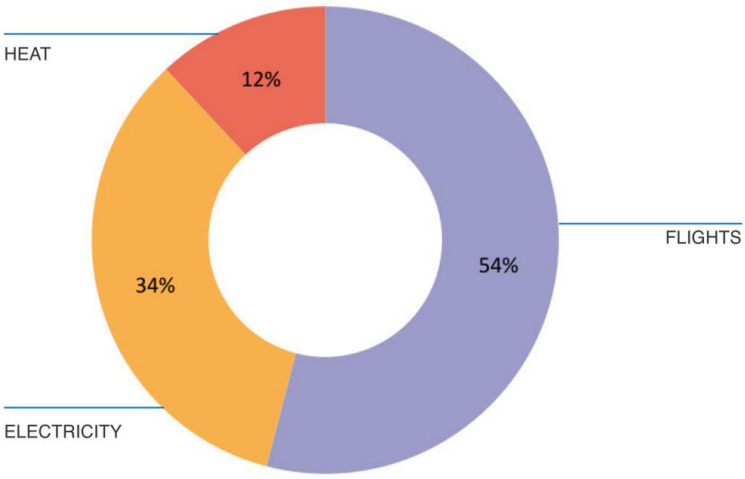


Figure 20: *Overall converted CO2e in 2012* (CBS, 2013)

From the graph it is possible to see clearly how business travels constitutes the main element of the cause of emissions, contributing more or less 50 percent. In discussions with CBS experts, it has been confirmed that the composition thus presented is valid and also represents the current composition of the emissions. For this reason, even if the total lack of concrete data does not allow us to confirm this, the researchers ultimately suggest that the data for the 2013-2018 period should be considered to represent dynamics similar to those portrayed in the previous section.

6. Analysis

This chapter is divided into three sections. The first chapter explains why CBS has begun its sustainable journey and why the university needs to follow a model to be sustainable. The second part concerns the application of a model to evaluate the current sustainability approach of CBS and its potential to achieve the status of "*sustainable university*". The last part of the analysis explains why awareness can be central to expanding the proposed model and how it can benefit from the 6Ps framework in identifying initiatives that create greater community involvement in sustainability.

6.1. Sustainable Development: an Ambitious Goal for CBS

As declared in its mission statement, CBS seeks to provide a sound knowledge base for the purpose of sustainable development to both its students and experienced individuals (CBS, 2019). Sustainable development is defined as "*the development that meets the needs of the present without compromising the ability of future generations to meet their own needs*" (Brundtland, 1987). This definition was chosen and adopted by the UN as a basis before working on the 17 sustainable development goals (SDGs) of the 2030 Agenda for Sustainable Development. In 2017, CBS adopted some of the 17 SDG, including: quality education, climate action and responsible consumption and production as shown in section 5.2 of this research. CBS understood that universities could have an important role to help the society to achieve sustainable development as confirmed by former CBS President Per Holten-Andersen in his welcome letter "*responsibility cannot only be relegated to governments and businesses*" (CBS, 2017). Having started its journey towards sustainability in the mid-1980s and continued with several initiatives, as presented in section 5.2, the adoption of the SDGs by CBS represented a fundamental step in the direction of pursuing sustainable development. CBS, by identifying its multiple projects through the SDGs, can provide a concrete way to address these initiatives in order to achieve specific objectives linked to the concept of sustainable development.

As indicated by Martin & Samels (2013), often universities invest in new expensive technologies which do not bring significant environmental and social returns. In order to tackle the concept of sustainability CBS makes use of the *triple-bottom-line* approach (TBL) developed by Elkington (1994). During interviews with Louise Thomsen and Tore Klitgaard, as well as with other experts, it emerged that TBL is a widely shared concept among people working on sustainability issues. (Appendix 5). For instance, as it stated in the CBS Campus Sustainability Profile & Goals 2020-2025:

"*We will analyze the business case for additional funding using a triple bottom-line that considers our activities' economic, environmental and social impacts*" (CBS WIRE, 2019). The TBL breaks down the concept of sustainable development explaining that organizations have to focus on *economic*, *environmental* and *social* performance to achieve sustainability. With the TBL approach, sustainability revolves around three fundamental components (Martin & Samels, 2013):

- *Economic performance* translated as the ability to generate income and work for the livelihood of the population.
- *Social performance*: interpreted as the ability to guarantee conditions of human well-being (security, health, education, democracy, participation, justice) equally distributed by classes and gender.
- *Environmental performance*: intended as the ability to maintain quality and reproducibility of natural resources.

Revisiting these concepts in a university environment as suggested by Martin & Samels (2013), is therefore proposed the following TBL model in Figure 21:

Figure 21: Revisited *Triple Bottom Line* (Martin & Samels, 2013)

The three pillars of social, economic, and environmental performance are translated in *Economic Vitality*, *Healthy Communities* and *Natural Environment*. These three aspects have to be considered always as connected and in balance because sustainability can be achieved just in their intersection. Therefore, a flourishing natural environment cannot be sustainable without economic vitality, which is not possible without a healthy community of students, professors, and campus members (Martin & Samels, 2013). The TBL approach is well suited to the complexity of the university's operations because it helps to create a process during planning. The TBL however it is static and does not include

a perspective on the future (Martin & Samels, 2013). It frames the potential of the initiative when it is proposed. For example, there is the possibility that a project meets only one or two aspects, but it will also satisfy the third pillar in the future and not at the time of the proposal. This means that some courses of action may not be considered sustainable when, in reality, they should be assessed from a longer-term perspective. The university could block some initiatives that could create a positive effect in the future because stuck within a mentality that looks exclusively to the present. Despite CBS effort to develop all the three area, the social aspect prevails, as CBS' primary objective is to prepare students for future challenges in society.

Focusing on these three aspects is not enough to reach sustainable development, CBS also needs to change some core aspects of its strategy and reshape some critical human activities such as energy consumptions, business travel, and waste. It takes time to change these activities because they have inevitably been modeled by path-dependent effects and lock-in processes (Baranova et al., 2017). Therefore a thorough approach is needed (Baranova et al., 2017). This approach called *sustainable transition* can be defined as "*a radical transformation towards a sustainable society, as a response to a series of persistent problems facing modern contemporary societies*" (Grin et al., 2011). Relating to this concept of sustainable transition, through the years CBS has been changing its core activities: education, research, operations, and relations with external communities, as it will be explained in section 6.2.4 of the analysis.

1. Finding: CBS is proceeding its journey towards sustainability to pursue sustainable development and contribute to sustainable transition. CBS wants to assume its share of social responsibility towards the environment and its stakeholders. The university also aims to prepare students to face sustainable dilemmas that they will encounter in the society. To achieve all these ambitious goals, CBS needs also to follow a model which helps the university to become sustainable in all its aspects. It emerges that an approach such as the TBL is not enough to help CBS to make fully sustainable choices because it does not consider the future effects of the initiatives. Therefore, in the next sections will be introduced and applied to CBS a model that includes all the aspects that CBS should keep into consideration to become a sustainable university to achieve sustainable development and positively contribute to sustainable transition.

6.2 Assessing Sustainability at CBS

A University infrastructure is generally embedded in its campus, consisting of several facilities such as canteens, libraries, laboratories, meeting rooms, etc. All the activities that take place on campus, nonetheless, consume energy and resources, as well as create waste. As universities could implement the concept of sustainability in their infrastructure, the same concept should be encouraged and advanced in other areas, such as teaching or research (Amaral et al., 2015). In the concept of *sustainable university*, the notion of sustainability is not exclusively linked to that of environmentalism. Instead, the concept of a sustainable university relates to environmental, financial, and social issues as explained in the previous section. In fact, the aim of universities should be to minimize the environmental, social, and economic impact generated by their activity (Velazquez et al., 2006). Recollecting the division of Cortese (2003), and the model of Velazquez et al. (2006), previously presented in the theoretical framework (section 4.2), the researchers now incorporate these two approaches to create a simplified model, as shown in Figure 22, to analyze sustainability at CBS.

Figure 22: *Revisited sustainable university model,*
own representation based on Velazquez et al. (2006) and Cortese (2003)

As seen in the literature review, the model develops on the small base of literature present on this specific and narrow subject. The model follows a similar mentality and approach to that of Velazquez et al. (2006), chosen as it represents the first thorough study of a comprehensive managerial model for a sustainable university. Indeed, at the core of the model are the three elements, identified by Velazquez at al. (2006), as the first three phases in the implementation of sustainability within universities. These are the "heart" of a sustainable university, that can not affect the remainder of its activities without it. Furthermore, following the analysis proposed by Cortese (2003), the main activities of the university are divided into four macro-areas. The model wants to make it clear that, contrary to the concept of seeing these four macro-areas (*education*, *research*, *operations* and *relations with external communities*) as separate activities, they are not. The model must be understood as each element is connected to the other. The three elements located at the center, *vision*, *mission*, and *sustainability committee*, represent the basis for the implementation of sustainable values. Their central position is to highlight how these predominantly affect the four main areas of activity. For example, a clearly stated sustainable mission could reshape the university's educational offer. This will require a renewed interest in research in new areas, which could lead, for instance, to discoveries and practical implications for the university's operations and the campus itself. Finally, all these initiatives will require the management and support from an entity such as a sustainability committee. As can be understood, the elements are interrelated, and a change in one of the four external areas will always require support from the three core elements in the middle.

6.2.1 Vision

The first step approaching the transition towards sustainability occurs when the imagination of someone in the university foresee the possible scenario of the university's members to behave according to the sustainable development ideology (Velazquez et al., 2006). There are no obstacles or limitations at this very first stage, only fantasy, and creativity. Is at this moment that universities should delineate the idea and cast a definition of a sustainable university, that should be specific to their institution (Velazquez et al., 2006).

As seen previously, the first CBS' step in sustainability and business ethics dates back to the mid-1980s. Moreover, it is in 2002, with the foundation of cbsCSR, that CBS declares for the first time its commitment to CSR and sustainable research (CBS, 2010). However, it is only in 2010, after

becoming a signatory of PRME in 2008, that the first CBS' guidelines on sustainability appear in an official document. Eight years after cbsCSR foundation and about 25 years after the initial interest in sustainability, but the word "*vision*" is not mentioned in the document even once. What can be extrapolated from the document is that under the new strategy, Business in Society: "*Our objective is to make our students critically aware of the sustainability agenda, educating them to reflect on its consequences in their short- and long-term decision making – as both managers and individuals. Our goal is not to moralise about what is right and wrong; instead, we will continue the Scandinavian sustainability tradition and learn from Danish companies such as Novo Nordisk and Novozymes, which have a long track record proving the vital connection between sustainability and business opportunities*" (CBS, 2010).

This moment represented a huge missed opportunity for CBS. Not only is a definition or vision of sustainable university not mentioned anywhere, but above all, there is an explicit will not to establish an own sustainable mentality: " *Our goal is not to moralise about what is right and wrong; instead, we will continue the Scandinavian sustainability tradition and learn from Danish companies such as Novo Nordisk and Novozymes*" (CBS, 2010). Thus, CBS did not only attempt to create a definition of a sustainable university but did not even try to create a sustainability mindset specific to its institution.

Another fundamental aspect is missing: *how* CBS intends to tackle sustainability issue. There is not a single shared definition of what an organization's vision is. A vision is generally regarded as a definition of *what* an organization wishes to achieve in the future. It should be a simple directive to show what the business intends to be. However, a meaningful sustainability vision must tackle the means by which it tends to bring actual, long-standing change. It is not only about the strategy and intent. In other words, a successful and appropriate sustainability vision must answer not only the *what* but also the *how*. (Martin & Samels, 2013). However, it is not uncommon to encounter visions that clearly address the *what*, but overlook the *how*. Many universities still have their views on sustainable development only concerning a range of environmental changes objectives, such as reductions in CO2 emissions, waste reduction, and green building objectives. (Martin & Samels, 2013). That is the exact initial situation that occurred at CBS. Not only in the first CBS PRME report is not proclaimed any concrete way to address the *how*, but also in the first environmental report ever released by CBS in 2012 what are displayed are only suggestions, and no real plan of actions.

A general optimism exists that the *how* it will require only a minor restructuring of the university's surface. In other words, the *how* is intended as a matter of tinkering university's edges. In practice, tinkering does not represent an alternative in an optic of true sustainability development. Preferably, a number of internal transformations are needed to overcome a range of organizational obstacles to sustainable development, otherwise, it might arise a situation in which facility management, financing, and initiatives are instantly aimed at the fast fixes that certain technologies promise without establishing a more structural capability basis (Martin & Samels, 2013).

Essential achievements were reached at such an early stage; the argument proposed above is not advanced to assume that the intentions and actions of CBS were utterly wrong. Indeed, already in 2012, CBS was able to track down its emissions and start to implement sustainability in its education and research, when still today some universities have to reach these goals. For instance, both Esade Business School (ESADE) and Rotterdam School of Management (RSM) do not have any technology or team that breaks down emissions.

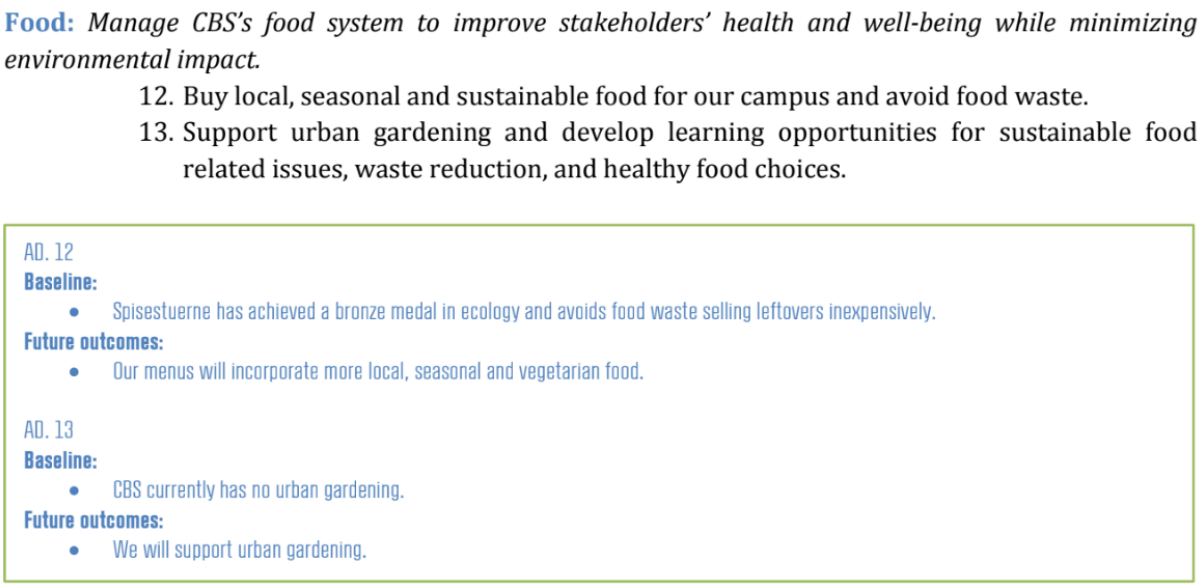
Since sustainability implies various issues and values for individuals, each university must define its own notion of its sustainable university. The current CBS vision touches all four external points presented in the model (CBS, 2019):

- Education: "(...) *the training of students capable of contributing with innovation and entrepreneurship to high level employment*"
- Research: "(...) *creation of research which (...) contributes significantly to finding new answers to societal challenges*"
- Operations "(...) *the precondition is an attractive, responsible and engaging workplace*"
- External communities: "(...) *capacity to integrate and co-create with the surrounding society*"

While this vision statement states clearly what CBS wants to achieve in the future, even in a sustainable perspective, it lacks two fundamental characteristics seen previously: *how* it intends to achieve these goals and the specificity of its vision. In fact, the lack of these two elements makes CBS' position on sustainability unclear and stuck at the general level. Without a precise address, the four statements above are likely to remain of free interpretation and even possible misinterpretation. For instance, what is meant by the creation of a responsible workplace? On what basis is defined

responsible? Also, how will CBS create this precondition of responsible workplace? As can be seen, the lack of a clear vision that points to concrete sustainable objectives is a fundamental reason for the lack of a sustainable university definition at CBS.

Even if it is referred as "sustainability plan", the first document that could probably represent the CBS' definition of a sustainable university is the CBS Campus Sustainability Profile & Goals 2020-2025, published this year in May, a few months later the last CBS PRME report (CBS WIRE, 2019). The document, in fact, clearly follow the intent to "make our campus more sustainable" following the triple bottom line approach, divided into three areas in which sustainability have to be achieved: economic, environmental, and social. Furthermore, for each area, and each specific initiative the *what* and especially the *how* are clearly stated. In Figure 23 is reported an example from the document that shows this approach.



Food: *Manage CBS's food system to improve stakeholders' health and well-being while minimizing environmental impact.*

12. Buy local, seasonal and sustainable food for our campus and avoid food waste.
13. Support urban gardening and develop learning opportunities for sustainable food related issues, waste reduction, and healthy food choices.

AD. 12

Baseline:

- Spisestuerne has achieved a bronze medal in ecology and avoids food waste selling leftovers inexpensively.

Future outcomes:

- Our menus will incorporate more local, seasonal and vegetarian food.

AD. 13

Baseline:

- CBS currently has no urban gardening.

Future outcomes:

- We will support urban gardening.

Figure 23: *Excerpt from CBS campus sustainability profile & goals 2020-2025* (CBS WIRE, 2019)

The *what* is represented by the initial statement "Manage CBS' food system". The *how* is clearly stated in the AD.12 section displaying through what mediums the *what* will be achieved. Finally, each solution and the proposed goal is uniquely tailored for the institution, for CBS, making the vision specific for its institution: "*We will develop and implement a prioritized project list through our ongoing portfolio management based on the initiatives discussed in this document*" (CBS WIRE, 2019).

Finding 2: a sustainability vision, even though the interest of the university since the mid-1980s, has only recently been proclaimed, but still not in a real official way. This represented a significant loss of position for CBS to be able to establish a sustainable transition from the first approaches to sustainability and become an example for other institutions. Setting a clear sustainable vision allows CBS to establish clear and measurable university-wide objectives. In addition, the presence of a "*how*" allows university members to gain a better understanding of which contribution they can make to the achievement of these targets. In short, the need to establish a sustainable vision in an official manner is necessary to create involvement and understanding behind concepts related to sustainability. A clearly set vision motivates employees, and can become object of desire. This will ultimately lead to a better comprehension of the themes of sustainability and increase knowledge around it. A sustainable vision is, therefore, necessary for CBS to clarify to its members the identity of which they are part and which they represent. It can serve as a means to stimulate sustainable ethics of those who are not aware of or interested in the subject. Ultimately, the real benefit of adopting a sustainable vision is to inspire, motivate, and engage all members of the university with common goals that, with the help of clear indications (the "*how*"), allow the individuals to participate and embody the will of the institute.

6.2.2 Mission

Currently, universities around the world are evolving their mission, vision, and academic methods to react to the increasing public interests concerning economic and environmental sustainability objectives for a sustainable society (Nejati & Najati, 2013).

As with the vision, there is no clear indication of how the mission statement should be defined. However, generally speaking, a mission statement is considered a brief declaration of *why* an organization operates and its general objective. In other words, the reason why an organization carries out its activities. To make the distinction clear, a mission is something to be accomplished, while a vision is something to be pursued for that accomplishment.

According to Velazquez et al. (2006), one element should be included explicitly in the mission of a university who intends to promote sustainability: clearly state and incorporate sustainability as one of the university's core principles. This point is also shared among the leaders of the four institutes under Glenn Cummings' study, deputy assistant secretary of education in the United States Department of Education in 2009: The Arizona State University, the University of New Hampshire, the Cape Cod Community College, and the Foothill D'Anza Community College. Together with the several other common elements and practices, the four presidents realized the primary need for sustainability to be declared as an aspect of the institution's mission (Martin & Samels, 2013).

Analyzing CBS' mission statement, it could be said that it does not fully reflect the characteristics of a sustainable mission. While it has exhausted its aim of explaining the *why* of its activities, if it wants to promote its transition to a sustainable university, it still needs to clearly point out its interest in sustainability as a core value. As of its current mission statement, the aspect of sustainability is partially indicated: "*We have an obligation to educate both young and experienced people (...) with a sound basis of knowledge and insights from the latest international research for the purpose of value creation and sustainable development*" (CBS, 2019). The focus is on the aspect of sustainable education, and there is no indication of a general approach to sustainability or how this represents a core value for the university. Recently the new CBS' chairman, Torben Möger Pedersen, had an interview with CBS WIRE in which he stated: "*I'm very much concerned about the climate challenge and the Sustainable Development Goals, and I want this to be an integrated part of CBS' fundamental values, and that CBS plays a crucial part in solving the challenges we're facing.*" (Lykkegaard,

2019f). These words bode well for a change and a new position, to incorporate sustainability as a core value in the university mission.

Despite all the sustainable initiatives implemented among the universities interviewed; only one has included sustainability in its mission statement as shown in Table 2:

CBS	**X**
KU	**X**
DTU	**X**
ESADE	**X**
RSM	**V**

Table 2: *Evaluation of universities' sustainable mission*

RSM represents an intriguing case. The mission statement of RSM states: "*Rotterdam School of Management, Erasmus University is a force for positive change in the world. (...) We do this in our own operations – in research, education and engagement – and in our role as a thought leader in the worlds of business, research and education. We have researched intelligent energy networks to bring sustainable energy a step closer; (...) we have initiated a goal-setting course that increases the engagement of our bachelor students; (...). It's already in our culture to consider how to make the change happen (...)"* (RSM, 2018).

RSM's approach is based on the concept of *positive change*. A concept which, as explained by Eva Rood, Director of the Positive Change Initiative at RSM: "*To some, the word sustainability has a connotation of tree-huggers or eco-activists and by simply calling it positive change instead of sustainability people are way more motivated to contribute to it. This mission statement has now encouraged also professors to shift the focus of their research towards a more sustainable approach and that's really fascinating to witness*. *Now it is part of the core, it is our mission. So it is part of the core of our strategy, which makes it also way easier for top management to support it and to stress it (...). Everything you do here has to somehow relate to positive change. So it allowed sustainability to become mainstream instead of being sort of outsourced into a separate entity*" (Appendix 2).

Reconnecting this with the literature regarding sustainable mission, it is possible to note how RSM has successfully integrated the concept of sustainability into its mission. The *why* is clearly stated and, especially, sustainability is seen as a university's core value, present in all its activities, namely education, research, operations, and engagement with internal and external communities. Two points are of particular interest from which CBS could take inspiration:

- Using the term positive change instead of sustainability has allowed unconsciously to accept the change more willingly (Appendix 2).
- As also indicated by Velazquez et al. (2006), and the study by Glenn (Martin & Samels, 2013), having incorporated sustainability as a core value in the university mission was a pivotal move to integrate sustainability as a mainstream aspect, at the same level of other university priorities.

As a matter of fact, as suggested by (Nejati & Najati, 2013), it is crucial that the current behavior of universities, and their commitment to the values of sustainable development, are supported by all individuals of the organization. In other terms, all employees of the organization must understand and practice the principles of sustainability at different levels. It is only then that a organization can effectively unify to achieve the sustainability mission. As confirmed by Louise Thomsen, this is something still missing at CBS: "*There are members of the university that still have to understand the principle of sustainability, but I don't necessarily see this as a bad thing. Some people think of sustainability as a trend, but I think that with the correct approach, these people can fully understand the true meaning of sustainability.*" (Appendix 5).

If researchers were to give a plausible example to CBS (Table 3) on how it could reshape these two core elements with the features presented so far:

Vision	Become a world-leading business university that always recognizes its relationship with society and becomes an example of a sustainable university that embraces this fundamental value in all its fields of activity. - Education: Increasing number of courses with focus on sustainability and revamp the curriculum of all courses to include sustainable values. - Operations: Reducing direct emissions of CO2 with the aim of becoming CO2 free by 2030. - Research: Incentive the research of sustainable topics, become a center for sustainable research by setting up incentives for researchers who focus their studies on these topics. - External Communities: Bring concrete and positive impact on external communities, from the closest, with the construction of new sustainable buildings that will impact positively the surrounding area of Frederiksberg municipality, to worldwide, offering a generation of student fund of sustainable values bringing a change into the world.
Mission	Promote and ensure a positive impact on society by consolidating sustainable initiatives (in all macro-areas of activity) at the core of the university, with the perspective to establish key values in future generations that will drive the transition towards a sustainable society.

Table 3: *Example of a sustainable vision and mission*

Again, this should only be seen as a plausible example to clarify how CBS could set a possible sustainable vision and mission. The proposed objectives are only probable and not to be considered as a valid suggestion for the university. However, the structure is the one that represents a real suggestion for CBS to follow, which incorporates the elements that have been seen so far. If the university does not change its position concerning its approach to sustainability, it could lead to a possible future in which, as Robert Weygand, vice president for administration and chief finance officer for the University of Rhode Island, declared: "*My greatest fear is that we will devote our efforts toward sustainability initiatives that are more in vogue than in the science of improving our*

environmental standing. There is little or no discretionary spending left on campuses. Sustainability programs realize that they must be financially integral to the University's mission if they are to be included." (Martin & Samels, 2013). This last point could represent also another reason why sustainability is not clearly stated in CBS' mission statement. Sustainable programs must begin to become financially integral to the university's mission. This will not only represent an important step towards the achievement of a sustainable university, but will also increase the shared effort to reach sustainable goals, which must become an integral part of the mission of the university. It is essential that sustainable development goes beyond innovation to become an integrated component of the university's mission. This can be achieved by establishing organisms such as offices for sustainability to handle the shift and make the necessary changes, and by incorporating sustainability, for as many university roles as necessary, into all work requirements and performance reviews (Martin & Samels, 2013). While the first part of this statement has already been put in place at CBS, in fact, there are three offices that deals with sustainability; the latter is not, and could represent another possible suggestion for CBS in order to integrate core sustainability in its mission. However, the establishment of offices for sustainability does not represent the final solution to handle sustainability at the university, and there is a need for a higher organ that takes over that said duties. However, this point will be addressed in the next section.

Finding 3: CBS lacks a real sustainability mission that should clearly state sustainability as a core value for the university. To do so, CBS could learn from the example of RSM. One of the main obstacles to achieving a sustainability mission is represented by the lack of support from all the different members of the university. One way to overcome this obstacle could be to integrate financially sustainable projects within the university's mission. Moreover, another aspect that could lead to the creation of a sustainability mission is to incorporate sustainability into the performance reviews of university employees. A clear sustainable mission could act as a motivational tool within the university, and it could allow employees (and students) to all contribute towards one common goal that benefits both the university and themselves. Providing this sense of purpose will make it easier for them to focus more on their regular duties and lead them to realize the priorities and objectives of the institution.

6.2.3 University-wide Sustainability Committee

The creation of a sustainability committee under the sustainable university model enables responsibilities for developing and setting extensive university-wide policies, tasks, and goals (Velazquez et al., 2006). The commission must ideally be set up to represent all major university actors such as professors, faculty, employees, students, unions, administrative staff and, where necessary, some representatives of the surrounding society. This committee even though it acts as the key decision-maker, it should not take over the initiatives around the campus. On the other hand, it should help those accountable for such projects to disseminate and receive data, coordinate projects, avoid conflicts, obtain resources, and ensure that strategies are implemented efficiently (Velazquez et al., 2006).

The university is, currently, completely lacking in an institution like this, and it is probably the most severe absence right now. The lack of a committee implies that individuals accountable for an initiative must develop their own connections. These connections are created informally mostly: "*People are forced to find themselves alone if they want to start a project. There is no collection channel for all sustainable requests, and this means that all the various sustainable entities such as student associations, task forces, etc. they live separated one from each other. This is why sustainable projects take so long*" (Appendix 5). The lack of a sustainable committee is a key aspect that Louise Thomsen recalled many times during the interview. The absence of a sustainable committee also shows the emergence of another problem. As Velazquez et al. (2006) suggests, one of the most significant duties for the sustainability commission is to develop sustainable policies. The lack of this entity in CBS also demonstrates the reason for the absence of official documents that clearly declare sustainable university-wide policies within the university. Some policies have been released over the years, but they remain "locked" within the department from which they were created. This spring, a thorough policy issued by the Department of Organization (IOA) has been released (Lykkegaard, 2019e). However, it affects only this single department. Previous to that, in December 2018, a Recommendations on CBS Flight Sustainability Policy was suggested by the SDG Task Force (CBS, 2018). But, as the title itself suggests, it only represents suggestions and recommendations that to date do not represent a valid university policy. Even earlier, in 2017, the Department for Management, Society & Communication (MSC) implemented the first vegetarian policy at CBS (Lykkegaard, 2017). Also in this case, there is no evidence that the policy has been adopted by other departments.

These three examples reinforce the argument that without the presence of a university-wide committee, certain initiatives are destined to remain confined to their participants.

As demonstrated by the case of the IOA and the vegetarian policy of 2017, there is no real connection between the various departments when it comes to undertaking sustainable initiatives. As Louise Thomsen points out: "*we have three offices dealing with sustainability here (...) but it is as if there were no communications between them*" (Appendix 5). It also shows that the potential for achieving a committee above the various departments is not only present but would also bring concrete results. The motivation is present, and if a department's committee has succeeded in achieving these objectives, it shows that the members of the university would not only welcome the creation of a general sustainability committee, but that it is also necessary. Without the creation of such an entity that organizes and coordinates, what would happen if each department were to pursue its own sustainable policy? Only a situation of instability would likely arise in which there would be a conflict between the various departments, even if they share a common sustainable goal. However, as Martin & Samels (2013) suggest, setting up a sustainability committee, it would be a helpful start, but it will not lead to the creation of more than marginal progress. This can be a valuable suggestion for CBS, to emphasize that the presence of a committee is not everything unless it is approached with a correct methodology. The establishment of a sustainability committee represents a fundamental step, however, the path toward efficient campus sustainability strategies and procedures involves a deeper integration into a wide range of current governance mechanisms, including the investment authorization mechanism for each building or annual budget procedures in each department. Only then, the implementation can be pushed from the leadership via middle management to the community level (Martin & Samels, 2013). On the basis of the data collected, it was not possible, from this point of view, to explore the actual possibility of the establishment of a sustainability committee. The specific study of governance mechanisms or investment authorizations has not been carried out in this research. However, it represents a highly attractive area for further research, given how this entity has shown to be potentially the most noticeable absence in CBS, to approach a sustainable university model. Nevertheless, it has been possible to demonstrate how real and tangible the need for this institution is and that the foundations are existent at CBS for its creation, at least on a theoretical level.

Finding 4: CBS lacks a sustainability committee. This represents a considerable problem for the university, which is unable to coordinate university-wide sustainable projects effectively and set clear sustainable policies that affect all the different departments and the students. The potential for the creation of such an entity is present, and on the basis of our research, it represents one of the most critical elements that are absent in the university. In fact, without it, is not only impossible to achieve the transition to a sustainable university model, but the internal coordination dynamics of the activities are ineffective and potentially harmful (as in the case where the various departments decide individually to adopt sustainable policies). A sustainability committee would, therefore, be beneficial in the university context of CBS, in coordinating sustainable activities and reducing the investment of time and probably even money. Furthermore, an institution that is placed above the various departments would send a strong message of the university's commitment to sustainability, strengthening the identity of CBS as a sustainable university and sending a clear message to the various members of the university, at all levels, of how sustainability represents a key value for the university of which they are part and which they represent. Indirectly involving more and more individuals to take an interest in and re-evaluate the importance of sustainability.

6.2.4 Education, Research, Operation and External Community

The way in which a university conducts its activities is significant to achieve environmentally responsible living and to strengthen sustainable values and habits across society (Cortese, 2003). As a matter of fact, to contribute to the sustainable transition, sustainability must be involved in all the macro areas of a university: Education, Research, Operation and External Community (Velazquez et al., 2006; Cortese, 2003).

6.2.4.1 Education

The process of integrating sustainability in education is a delicate subject, given the importance of the educational offer to any educational institution. However, it is necessary to understand how the learning that a student receives does not only derive from teaching programs; in fact, graduates' educational experience should demonstrate an intimate link between curricula and (Cortese, 2003): research; understanding and decreasing the institution's harmful ecological and social impact; and working to enhance local and regional communities to become healthier, more socially dynamic, more stable, economically safer, and environmentally sustainable. This is why, when talking about education, one must not simply think about the educational curriculum.

Delivering a sustainable education requires embracing sustainability in all macro areas of the university. Even if are the lectures that represent the most significant contribution to the education of any student, integrating sustainability into a student's education process is not an objective that can be achieved simply by adding sustainable courses to the university. It is therefore essential to educate students to take into account a bigger picture perspective. Compartmentalized knowledge without any association to broader system could lead to unforeseen, confined, inadequate, or even more detrimental outcomes to individuals and the environment (Cortese, 2003). For example, a Toyota Prius, a hybrid vehicle, consumes less gasoline than any regular car. Its emissions (85 g/km CO2) (Toyota, 2019) are approximately 20% lower than the one of a Volkswagen Golf (109 g/km CO2) (Volkswagen, 2019) which was the bestselling model in Europe in 2018 (Bekker, 2019). Without larger system thinking, the choice of a Prius would always seem a right environmental choice. However, hybrid cars do require more energy to be produced than conventional cars and emit more harmful gases during the manufacturing process. The production of the batteries for hybrid cars, in particular, requires much more energy than producing a standard car battery. The mining of nickel and lithium required for the batteries releases sulfur dioxide into the atmosphere resulting in high

pollution levels. (Burnham et al., 2006). Basically, deciding to acquire a hybrid car will not reduce traffic and solve the problem of green mobility, and in the short term can also lead to even more harmful outcomes. This example shows that understanding how the natural world works and learning how human technology should find its limits within the limits of natural systems is crucial to education (Cortese, 2003).

An extensive and in-depth research on how sustainability issues are discussed in the various CBS courses covers a possible future area of research that has not been addressed in this work. The researchers cannot say with certainty that there is a larger system thinking approach in the study of sustainability in all courses offered by the university. However, based on their personal experience as CBS students, they can say that, at least for what has been covered in their MSc course, there has been no larger system thinking approach to their teaching. As will be explained shortly, what was experienced was more a "mapping out" of possible areas in which sustainability might find its place. A concept that is very much linked to the idea of compartmentalized knowledge.

Reconnecting to what was said before, summarizing the thoughts of Martin & Samels (2013), they affirm two points regarding sustainable education:

1. "Teaching should aim to make human and environmental interdependence a seamless core of teaching in all the disciplines rather than isolated courses or modules".

This is what is happening with the curriculum development at CBS: "*Curriculum development is a long-term project encouraging bachelor and master programmes to reflect on their individual perspective on responsible management education. (...) throughout the duration of the project, faculty have integrated more and more responsible management education into their courses. Many teachers revise their course outlines in order to integrate the responsible management competencies of their programme and ask for relevant teaching material.*" (CBS, 2019). It still has to embrace many courses, especially MScs, however there are targets and concrete deadlines for achieving the goal. In fact, it can be read in the CBS (2019): "*Plan is 50% MSC in 2019 and all in 2020"*. However, in an interview with Louise Thomsen, she pointed out that she would not precisely call it curriculum development: "*What is really happening is more a "mapping out": visualizing areas where sustainability thinking might find its place. It is not really about the implementation of sustainable*

development and learn how sustainability could make an impact. That is an entirely different thing" (Appendix 5). Again, it is correct to point out how this study did not conduct a single-level research or a thorough investigation into how this shift in education is managed. However, the comment by Louise Thomsen on the subject makes it clear that CBS has not yet reached the level stated in the annual reports. It is also correct to indicate how the curriculum development will be completed in 2020 for the MSc courses, and therefore a future study is suggested, when the project will be completed, to cast a comprehensive assessment of CBS' approach to sustainability in education.

2. The education method should highlight active and experiential learning based on solving real-world problems both on campus and in the broader society.

Regarding this aspect, from what is reported on the last CBS PRME report, the curriculum development seems to point in this direction. From the example reported in the document (the BSc in International Shipping and Trade) it is indeed possible to underline this focus on real-world problems: "*Another example of responsible management issues pertains to the greenhouse gas emissions from ships, which are a source of serious concern both within the industry and for society more broadly.*" (CBS, 2019). However, this represents only a course of the much wider CBS offer; moreover, Louise's words perhaps help to understand that there is probably still no real development of the curriculum in a sustainable direction.

A strong integration of sustainable values in the various courses offered by CBS is, therefore, the correct path to follow, which however must also find ways to face real-world situations concretely, and not be stuck in the academic world. It will only be a failure to teach sustainable citizenship as a separate intellectual concept. Instead, it is crucial to choose strategies that engage students in how they inevitably play their part as individuals. Just as it takes the hands-on experience to educate a student how to create a piece of furniture, so does the teaching of sustainable citizenship. (Martin & Samels, 2013). As suggested by Eva Rood: "*Have people experienced what it is to give back or what it is to be in a degraded landscape where the ecosystem is out of balance? (...) If you bring groups of people to situations like these, they can not only learn through their head that something is wrong in the system, but they can also feel it, and that's a different "product*" (Appendix 2). For instance, RSM is in the process of setting up a community service program for staff and students, to volunteer in one-day volunteering opportunities. This is something that is missing at CBS and could bring a

positive impact in the teaching of sustainability. There are student associations that are interested in this aspect, but the outreach of their initiatives often remain confined to their sphere. Whether students have learned any guidelines in schools or family, universities still have to teach the tools of global citizenship (Martin & Samels, 2013).

Finding 5: education at CBS have to be seen as part of an integral approach together with all the other macro areas of the university. It does not only take to add sustainable courses to educate students about sustainability. The curriculum development, in this sense, seems to have started the right path, however it still needs major improvements. As suggested by Louise Thomsen, is not only a matter of mapping out areas where sustainability could find its place in the curriculum. Moreover, all the members in the university, staff and students, need to be engaged more. A "transversal" approach to the teaching of sustainable values is the right way to achieve this objective. The lack of something as a university-wide community service program at CBS does not allow university members to experience first-hand the importance of sustainable values.

6.2.4.2 Research

Research and education are two sides of the same coin. As Louise Thomsen explained to researchers: "*Everything about student education, from single electives to entire BSc, MSc and MBA courses comes from research.*" (Appendix 5).

"*In 2017, CBS published 442 peer-reviewed journal articles. 167 of these were on topics related to responsible management. 38% of all peer-reviewed journal articles published at CBS in 2017 were related to responsible management, up from 25% in 2016. Additionally, CBS published 38 peer-reviewed journal articles in FT50 journals in 2017. 39% of these were related to responsible management, an increase of 6% since 2016.*" (CBS, 2019). Additionally, CBS is involved in many sustainable-oriented research projects such as: "*Ecovillages as laboratories of sustainability and social change (ecolabss)*" or "S*ustainable lifestyles in the 21st century*" (CBS, 2019). The level of research with a sustainable perspective is considerable. Moreover, the goals for the future of research are in continuous development as Caroline Aggestam, Academic Director PRME CBS, points out: "*In the future, we will further our research work on responsible management education, to address what kind of new competencies are required in a new, more complex world. We need to further our understanding of how such competencies are fostered at CBS.*" (CBS, 2019). This positive attitude, however, should be strongly supported by the university. As Eva Rood advises, "*Universities need to find an incentive system for researchers, built to reward, for example, publications in journals that deal with societal issues. This can help professors and researchers to shift the focus of their research*" (Appendix 2).

According to the research, however, it was not possible to determine the actual impact of sustainability research on CBS. Additionally during the research it was not possible to find a clear definition of sustainable research and an adequate methodology for its assessment. The presence of these two elements would not only outline clear guidelines for determining what is meant by sustainable research, but would also allow the creation of a system for assessing its relative impact. The research study carried out by Rau et al. (2018) may be helpful in this case. The authors, having carried out a literature search in the field of sustainable research, have come to the conclusion that, in order to be able to evaluate the future impact of sustainable research, the researcher can benefit from three simple criteria (Rau et al., 2018):

- *conceptual use*; it concerns changes that study can bring in ways of thinking, alerts policy-makers, and professionals to the problem, or plays a more general role of awareness-raising.
- *instrumental use*; includes any direct impact of the studies on policies and practical decisions. In other words, as the name suggest, it indicates in which practical ways research can help in setting up policies or more concrete actions.
- *capacity-building*, it relates to education, training or even cooperative skills developed directly from research operations.

In order to give an example of their application, it is shown below how the previously mentioned research project "Sustainable lifestyles in the 21st century" could be evaluated. The three evaluation criteria mentioned above can be extrapolated from the project description (CBS, 2019):

- Conceptual use: "*framing sustainable consumption as a public health challenge could be one promising avenue for future research*".
- Instrumental use: "*to introduce and keep sustainable consumption on the political agenda to induce long-term changes*".
- Capacity-building: "*planned network activities will explore how to tackle the present and future global challenges of sustainable consumption and identify pressing key research questions*".

In the absence of a clear assessment of the impact of sustainable research on CBS, what the researchers suggest is a model, similar to the one above to, evaluate it. The simple application shown above provides an example of this. These three simple criteria can be seen as guidelines for further research and the creation of a methodology for the evaluation of research, contextualized in the specific instance of CBS.

Finding 6: research represents an active area of CBS. In this field, the university has already achieved significant results, and it is crucial to continue sustaining it with additional support for researchers and professors. However, it was not possible to determine the actual impact of CBS research on sustainability. The lack of clear indications as to how to assess the impact of sustainable research does not allow for a final assessment of this aspect of the university. The creation of guidelines, which are not necessarily to be considered those indicated, could not only give a definitive direction on the potential and effects of sustainable research, but also determine which

area of sustainable research should be targeted (e.g., policy-making or influence on decision-makers). It could also become a major decision-making method for the allocation of research funding and the creation of incentives for it. For example, it would be possible to definitively identify what is meant by sustainable research at CBS and thus be able to allocate funds exclusively for this type of research.

6.2.4.3 Operations

While a sustainable standpoint in education, research, and collaboration projects and programs have been in effect since the late 1970s; on-campus sustainability initiatives, also known as "greening the university" or "green campus", started to spread among universities only around the 90s (Velazquez et al., 2006).

As seen in previous sections, CBS places great emphasis on implementing initiatives aimed at creating a more sustainable campus. This sort of strategies focusses on the adverse effect of university facilities. Below are some examples of the categories of initiatives that CBS has undertaken (these has been previously displayed in section 5.2):

- energy efficiency;
- water efficiency;
- recycling;
- transportation and commuting;
- green buildings.

CBS started its first step in this field around 2012, also releasing its first sustainable report which shows the consumptions in various areas of the university. Moreover, the recent policy issued by the (IOA) (previously addressed in section 6.2.3) has become the first one at CBS to develop a sustainability policy aimed also at restricting CO2 footprints and prohibiting excessive flying (Lykkegaard, 2019e). Some of the rules implies (Lykkegaard, 2019e):

- "*IOA avoids flying in visitors who are only here for one event;*"
- "*IOA does not subsidize flight travels to destinations, which can be reached by train within 8 hours;*"

- "*when conference participation involves flying: Only one Senior VIP can participate per conference-paper;*"

While this represents an important result, two problems although arise:

- the reporting activity has ceased to exist for five years, and only now (2019) is a new report scheduled. This caused future new reports to be not entirely comparable with the one from the past. Making it impossible to cast a clear-cut evaluation of the environmental impact of CBS building in the past ten years.
- this 5-year gap has not made it possible to exploit a significant opportunity: to start before long-term projects that today would already be at an advanced stage.

Finding 7: an area in which CBS has shown itself ready to respond to the forces of sustainable change is that of strategies aimed at making the university campus more sustainable. However, the failure to report year by year has now forced, in a sense, to create a new baseline starting this year. In fact, with a new team, new calculation methods, and new technologies, it is not entirely correct to compare the initial sustainable reports with the more modern (future) reports. Still, even if this has created a slowdown in the achievement of long-term goals, this is not necessarily a bad thing. This can be an opportunity to create solid foundations for CBS future reporting, for the creation of university-wide sustainability policies, and the establishment of a CBS appropriate methodology for approaching initiatives aimed at the university campus. In any case, the reporting activity has resulted in being extremely useful in identifying the areas where CBS could focus its effort. For example, as seen in section 5.3, it can be shown that even a slight improvement in the area of business travel can lead to a significant reduction in CO2. This is to suggest how the effort, which translates into time, and in particular money, should be channeled, first and foremost, to achieve improvements in the areas with the highest emission levels. From this point of view, action has already been taken, even if it is not yet at the general level (see the policy issued by the IOA) and the new baseline that will be set for emissions registration can become a standard for identifying other focus areas.

6.2.4.4 External Communities

Being part of bigger communities, CBS have a special social responsibility on the society development of these other groups. A university has to look outside and bring into consideration its countless components including those that never enter in touch with the organization but are influenced by its behavior (Martin & Samels, 2013). Universities and colleges have a duty to provide guidance to local and national groups to improve their communities in their activities (Cortese, 2003).

CBS seems to be aware of the societal impact not only of its education, but also of its activities and research. As it is stated in CBS mission statement: "*With the distinctiveness of its diversity, CBS combines elements from conventional business schools and the "full university" model – always maintaining a focus on our impact on the society and a commitment to research and research-based education.*" (CBS, 2019). CBS ultimately affect progressively three main groups:

- Frederiksberg municipality

CBS is locally aware of its impact on neighboring communities, and in particular on the more immediate municipality of Frederiksberg. "*As a campus in the heart of Frederiksberg Kommune, CBS has a responsibility to integrate sustainability into the overarching university vision, mission, teaching and learning, research, and operations.*" (CBS, 2019). Even the planning of new buildings from the first moments has always had in mind the greatest interest of positively impacting not only the university community but also that of the municipality of Frederiksberg. Ultimately, increasing sustainability of the surrounding areas: "*Although still in the planning phase, the project focuses on sustainable construction, the buildings' environmental impact and greening of the surrounding urban open space, which also will be designed to cope with heavy rainfall. Another goal is to make smart buildings with flexible space that can easily be adapted to serve multiple purposes, meet future needs and to integrate new technologies. Besides enabling efficient, creative use of the buildings, the aim is to encourage more interaction with the local community*" (CBS, 2015).

- Danish/Nordic society

As part of the broader Danish and Nordic community, CBS should try to continue respecting, supporting, and continuously improving, the values and culture of the Nordic countries in sustainability. CBS has always kept this important role in mind and among some of the most recent initiatives it is possible to remark how in May 2018, CBS became a member of the Global Compact

(CBS, 2019). The UN Global Compact is an initiative developed by the UN to encourage businesses around the globe to embrace sustainable strategies that support corporate social responsibility and render the findings of the activities more visible. "*We decided to join the Global Compact to build bridges between research and business, as well as to strengthen ties between CBS and the other Danish universities. Joining the Global Compact also further strengthens CBS' partnerships with business schools and universities across the Nordic region in the PRME Nordic Chapter and Global Compact Networks in the other Nordic countries, by assisting them in the advancement of the SDGs*" (CBS, 2019).

- **Global society**

Ultimately CBS has an obligation to the broader interests of global society to bring and positively influence the world with sustainable values. This is one of the main objectives of CBS. It is possible to see how among the 2021 objectives, it is reported that: "*We would like to strengthen ties to academic institution within the Nordic region by reaching out to not only our Nordic partners within the Champions community but also signatories from other business institutions and universities. We would like to create greater collaboration opportunities and build on our Nordic perspective and knowledge to help foster greater teaching and learnings from a Scandinavian perspective*" (CBS, 2019).

Finding 8: from the beginning, CBS has always been aware of the influence it has on society and the communities it touches. This is a role of primary importance, which now by addressing global issues such as climate change, CBS has strengthened and has to implement in its identity as an educator and influencer constantly.

6.3 The Sustainable University: a Four-leaf Clover Model

As shown by the research so far, achieving a sustainable university model does not only require internal changes. To attain the status of sustainable university without the support of the university community has been seen as a risk of not being considered exhaustive and of making only structural changes that do not find the support of the individuals involved. Although pointed out in the literature, this aspect has not been fully addressed and integrated in a sustainable university model. The further element of sustainability awareness is therefore suggested, which aims precisely to generate engagement and supportive behavior, to raise understanding among the community on sustainability issues and to achieve long-term alignment of values between the university and its members. Therefore, based on the current literature and our research, this aspect has been integrated into our study and a revision of the model is proposed.

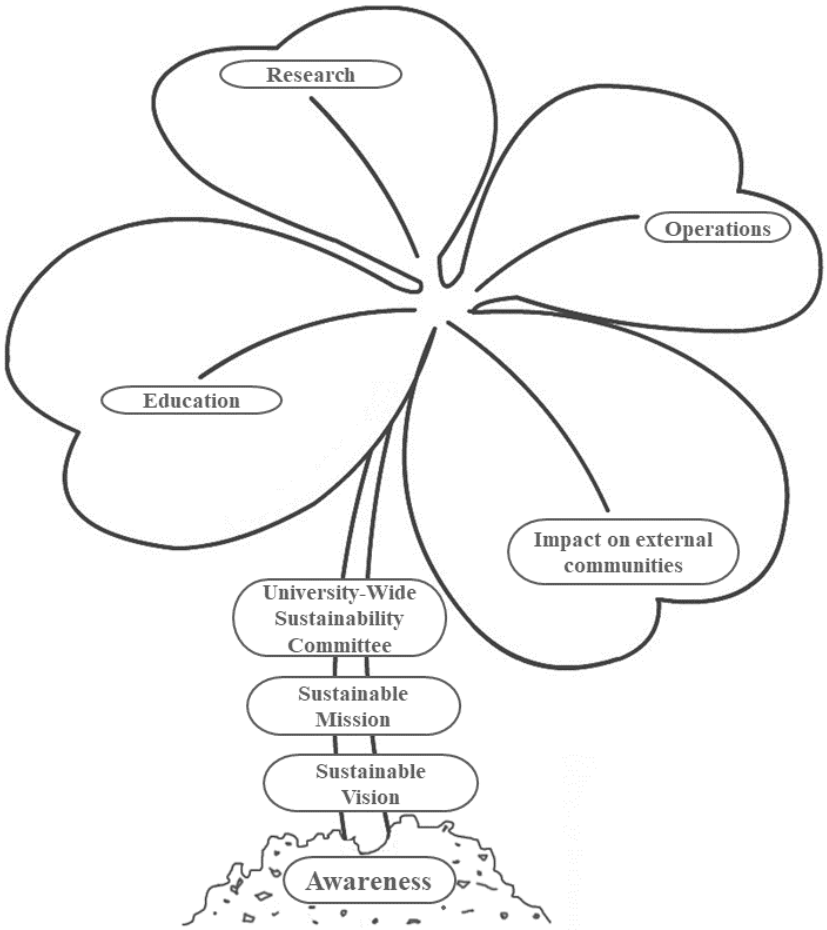


Figure 24: *The sustainable university: a four-leaf clover model*

The model previously faced now lays its foundations in sustainability awareness as displayed in Figure 24. Awareness then involves the initial stage in achieving a sustainable university, it reflects that element that must be at the origin of the development of a sustainable university, it represents the human component, the individuals, who constitute the source of support for sustainable initiatives. Without the support of university members, the achievement of a sustainable university model will become unattainable.

Finally, the next subsection explains how CBS could leverage this further element to build up engagement and raise awareness among the university community, in order to lay a solid foundation for achieving a sustainable university model.

6.3.1 Awareness: A Fundamental Driver to Develop the Sustainable University Model in CBS

In the last decade, every part of society has had to review its actions to administer better natural resources, and policymakers have been the leading promoters of sustainability policies and initiatives (Too & Bajracharya, 2015). In addition, the advent of social media technologies has dramatically increased the reach of a broad audience, as in the recent case of the Amazon forest fire, indeed, a significant number of people were informed of this catastrophe through other users who were posting to spread awareness about it (Ball, 2019). CBS WIRE, an independent magazine produced by CBS, has also begun to use its social media channels to raise awareness of environmental issues and provide suggestions on how to change unsustainable behaviors. For example, in May, the magazine published some photos of the chaos left by CBS students after their thesis hand-in party. In an attempt to induce future graduates not to act in the same way. (Lykkegaard, 2019c). Unfortunately, studies including a survey conducted by the UK Government (2005) discovered that just awareness is not enough to change current consumption patterns or behavior. The survey found that while 30% of people report worrying about companies' environmental and social records, only 3% reflect this awareness in their purchases. Therefore, only a holistic strategy can engage the community in sustainability practices because it raises the promotion of sustainability (Too & Bajracharya, 2015). In fact, social support is particularly vital for breaking habits and developing more sustainable social norms and consumption patterns (Government of UK, 2005).

For these reasons, the researchers have proposed awareness as a key driver for the achievement of a sustainable university model that finds a meaningful application only in the context of the various internal changes presented in section 6.2. Awareness, therefore, symbolizes the role of the driver, who, without a concrete basis for action, does not find tangible results in the establishment of sustainable values. As a place of learning, CBS has to spread awareness about climate change and contribute to fight it through students, teachers, and experts in the field. To achieve this goal, CBS is doing initiatives such as the "Green Week" organized by the student association Oikos Copenhagen. The Green Week is a 3-days event that has the purpose of promoting a discussion on sustainability with an economic and managerial perspective through a networking fair, lectures and workshops (CBS WIRE, 2018). It is a successful event, but CBS should promote more information-intensive campaigns to improve the environmental knowledge of students to inform them about sustainable initiatives in CBS, as suggested by Sarah Diemar, Vice President at CBS Students: "*We have an issue here when it comes to informing people about what's actually going on at CBS and the sustainability initiatives that have been put in motion and what's coming up*" (Lykkegaard, 2019d). The goal of initiatives like this is showing that being green is not only correct for the environment, but it is also a means to engage the community, which is fundamental to achieve sustainable goals as pointed out by Tore Klitgaard: "*The next step is to engage campus in the transition so we can achieve the goals. We know what the goals are, but it's not clear how we're going to get there. Therefore, students and staff are encouraged to come up with ideas and help transforming the campus. It takes a shared effort to make this happen.*" (Lykkegaard, 2019b).

Unfortunately, community engagement in sustainability projects is "dynamic and intergenerational", which makes it difficult to assess success "at any specific time" (Too & Bajracharya, 2015 / Appendix 5). Therefore, green projects such as new buildings and sorting systems are essential, but also factors such knowledge, values, and social norms are needed to raise awareness and promote behavioral change (Too & Bajracharya, 2015). Finally, poor community involvement can be a potential obstacle to raise sustainability awareness in the university, therefore, in the next subsection will be presented a model that helps to evaluate the community engagement of CBS sustainable initiatives.

6.3.2 6-P Community Engagement Framework for CBS

In this subsection, the *6-P Community Engagement Framework* is applied to a CBS initiative to show how it can be a useful tool for the university (Too & Bajracharya, 2015). The model identifies the six factors (both intrinsic and extrinsic) that can increase the community engagement in sustainability programs which are generally made up of small individual sustainability projects. A measure of success in community engagement is the participation rate. Therefore, if the community's commitment is a process to obtain active participation and sustainability awareness, individual initiatives are the vehicles for the community to participate in sustainability (Too & Bajracharya, 2015). In the framework, the 6Ps are the essential factors which raise the level of community participation in sustainability projects. The model explains that for a valid exercise of community commitment (active participation), the sustainability university-wide programs under development should validate all the 6Ps of the framework (Too & Bajracharya, 2015). However, individually, smaller sustainability projects do not have to present all 6Ps in each of them. Therefore, the structure is intentionally kept generic and does not attempt to provide any causal link between the six identified factors. Figure 25 illustrates schematically the framework (Too & Bajracharya, 2015).

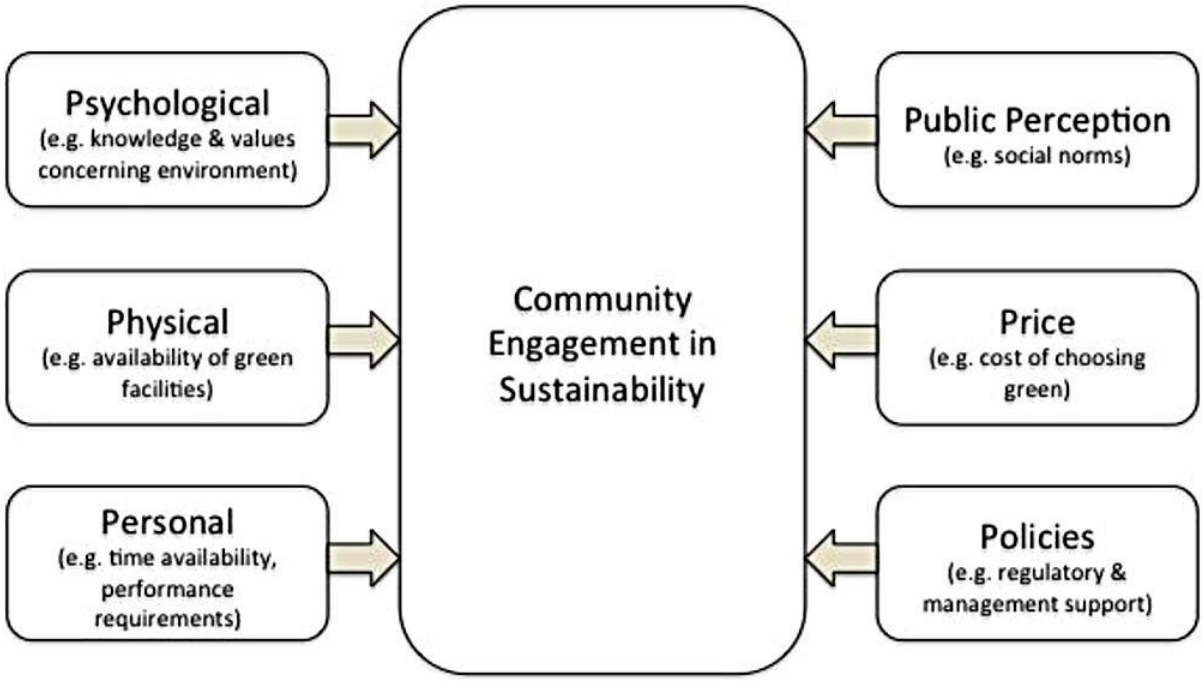


Figure 25: *6Ps framework* (Too & Bajracharya, 2015)

The 6Ps structure indicates that: *psychological*, *physical*, *personal*, *public perception*, *price*, and *political* factors are essential to engage the community in sustainable development. The authors do not give a precise definition of each P, but the researches will briefly explain each of them to contribute to the understanding of the model:

1. **Psychological**, it means the factors that influence the psyche of a person or group of people, therefore, knowledge and values related to sustainability.
2. **Physical**, it is the aspect that concerns factors such as a green building or a green area, which allow the community to live sustainably on campus.
3. **Personal**, it means factors that reward students, professors, and staff members who personally benefit from participating in the initiative.
4. **Public Perception**, this aspect regards the social norms shared with the whole community that can create a certain positive pressure within the community.
5. **Price**, it is the aspect which regards costs and incentives that a project creates.
6. **Policies**, it implies the strategies that a sustainability program or initiative include as regulatory or management support function.

Researchers will show how to apply this model to a recent CBS sustainable initiative, which concerns recycling at CBS. Students of Oikos Copenhagen, together with Campus Service, installed two recycling stations, as shown in Figure 26, in the main canteen (Solbjerg Plads) as a three-month pilot (Lykkegaard, 2019a).

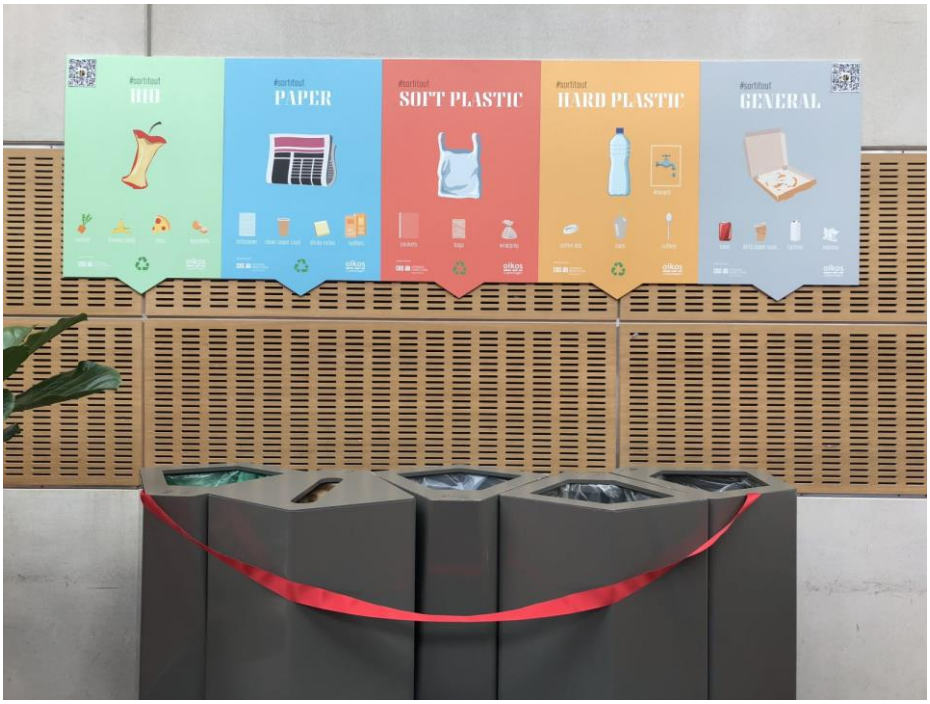


Figure 26: *Recycling station* (Lykkegaard, 2019a)

The goal declared for this initiative is to transform CBS in a green campus, but, **does it really engage the community?** Table 4 shows which 6Ps factors are addressed by this project.

6P Factor	**Description**
Psychological	The initiative helps to spread knowledge about the importance of recycling and the idea that CBS needs the contribution of all the community to become a sustainable university.
Physical	The new recycling station needs a specific physical location close to the canteen to show what to recycle through the illustrated panels.

Personal	Students, who donate their time to develop sustainable initiatives such as the sorting system, are well satisfied with the results that they achieve. Besides, they are rewarded twice because their work is positively evaluated by all the university community and even by job recruiters (Appendix 5).
Price	The general waste is an expensive problem in CBS "*A third of CBS' waste is general waste, and it's by far the most expensive kind of waste to get picked up. Our goal is that general waste makes up a fifth of the overall waste from CBS*" (Lykkegaard, 2019a). Thus, this initiative has a huge potential to decrease CBS cost of sorting.

Table 4: *6Ps model applied to CBS' recycling initiative*

In the table above, only an example of how CBS can assess the impact that a sustainable project has on the community's commitment and, consequently, on sustainability awareness has been represented. This practical demonstration leads to the finding below.

Finding 9: it is essential to increase awareness of sustainability to implement the sustainable university model effectively. Pure knowledge, however, is not enough to change the behavior of people living on campus. Therefore, CBS should evaluate how sustainable initiatives increase community involvement. The example of the recycling initiative addresses four of the 6Ps factors. These data show that this project can be an effective means to engage the community and, consequently, increase awareness of sustainability. The recycling initiative also shows how collaborations between student associations and CBS can bring great results. Therefore, the 6Ps model can be a useful tool for selecting the best sustainable initiatives, which often require both top-down commitment and bottom-up initiatives.

7. Conclusion

The purpose of this research has been to investigate about the proposed research question:

How can CBS address the transition towards the final aim of becoming a more sustainable university?

To answer this research question, the researchers have firstly investigated how the general problem of sustainability is currently handled by international organization such as the UN. They then shifted their studies to the smaller field of universities, focusing on CBS-like organizations. From this point on, they finally concentrated on the university chosen as a case study and collected various data, from primary to secondary. Through a study of CBS' historical approach to sustainability, from its origins to its current position, which was interpreted through interviews with experts and the most up-to-date reports on the subject, it was therefore concluded that the creation of a model was needed in order to be able to suggest to the university how it can become more sustainable.

The main findings identified during the research are then reported in Table 5 to provide a quick overview of the results of this work and, at the same time, indicate how the question proposed in this study can be answered.

Approach to sustainability	CBS needs to have a clear approach to sustainability. There is a lack of clear guidelines that make it complicated to track sustainability at the university and make the approach to sustainability unstructured.
Vision	CBS needs a clear sustainable vision that shows "how" the university intends to tackle sustainability issues.
Mission	In its mission, CBS needs to clearly state sustainability as a core value for the university.
Sustainability	CBS needs a university-wide sustainability committee to manage and

committee	coordinate all sustainable projects on campus.
Education	The university has greatly improved its educational offering, but it also needs to find "cross-cutting" ways to teach sustainability.
Research	CBS appears to have made a significant contribution to sustainable research. However, there is no clear indication of what is considered to be "sustainable" in research. CBS needs to set clear guidelines to indicate when a research relates to sustainability.
Operations	CBS definitely has the potential to reduce its direct CO2 impact. Major inaccuracies have been made in the past, such as the interruption of emissions monitoring, and still today, CBS can improve significantly in many areas, such as the reduction of business travel. However, only recently, a new sustainable campus team (which is also working on emissions tracking again) has been set up, a new sustainable building is expected, and a new sustainability policy by IOA has been issued. All of these actions show commitment in this area and possibly major improvements in the future.
External communities	The university has always been aware of its impact on society and, with the advent of sustainable values, this aspect must now be considered even more critical.

Table 5: *Main findings*

In conclusion, in Table 6, by applying the proposed final model:

Awareness	A clear methodology must be used by the university to evaluate sustainable initiatives. It is necessary to pursue initiatives that, in one way or another, lead to awareness-raising and the creation of a committed university community. Even hundreds of sustainable initiatives are useless if none is able to raise awareness on sustainable issues and create a supportive community.
Vision **Mission** **Committee**	CBS' major weaknesses in the sustainability approach are represented by the elements proposed at the heart of the model. CBS needs a major revision of its vision and mission and the establishment of a sustainable committee.
Education **Research** **Operations** **External** **Communities**	CBS has shown that it definitely has the potential to achieve sustainability in these four areas. With some adjustments, the university would already be on the right track to be more sustainable.

Table 6: *Main suggestions*

Ultimately, CBS has demonstrated in some areas its ability to achieve the status of a sustainable university, while in others it still needs major internal restructuring. In addition, the researchers have reached the key finding that the achievement of a sustainable university is impracticable without the spreading of awareness and the support of its community. CBS must therefore, first and foremost, focus on initiatives aimed at increasing awareness of sustainable issues, but in a meaningful way, through clear indications that these initiatives are effective in creating engagement and support. Only later will it have to work on internal restructuring of the targeted areas, first of all in the three core elements of *vision*, *mission* and *sustainability committee*. It is therefore through this process that CBS can and must channel its resources and decisions towards a transition into a more sustainable university.

The research, even if it focuses on a single case, has shown the potential to be applied in other institutions as well, which is why it would be interesting to pursue further research in order to adopt and possibly improve this model. This is particularly interesting, as the literature on the subject is quite limited and represents an area of great importance. As the contacted experts have also proved, a systematic approach to sustainability is rarely in place in universities. The study could, therefore, fill this gap and influence new research into the creation or development of approaches aimed at making universities more sustainable.

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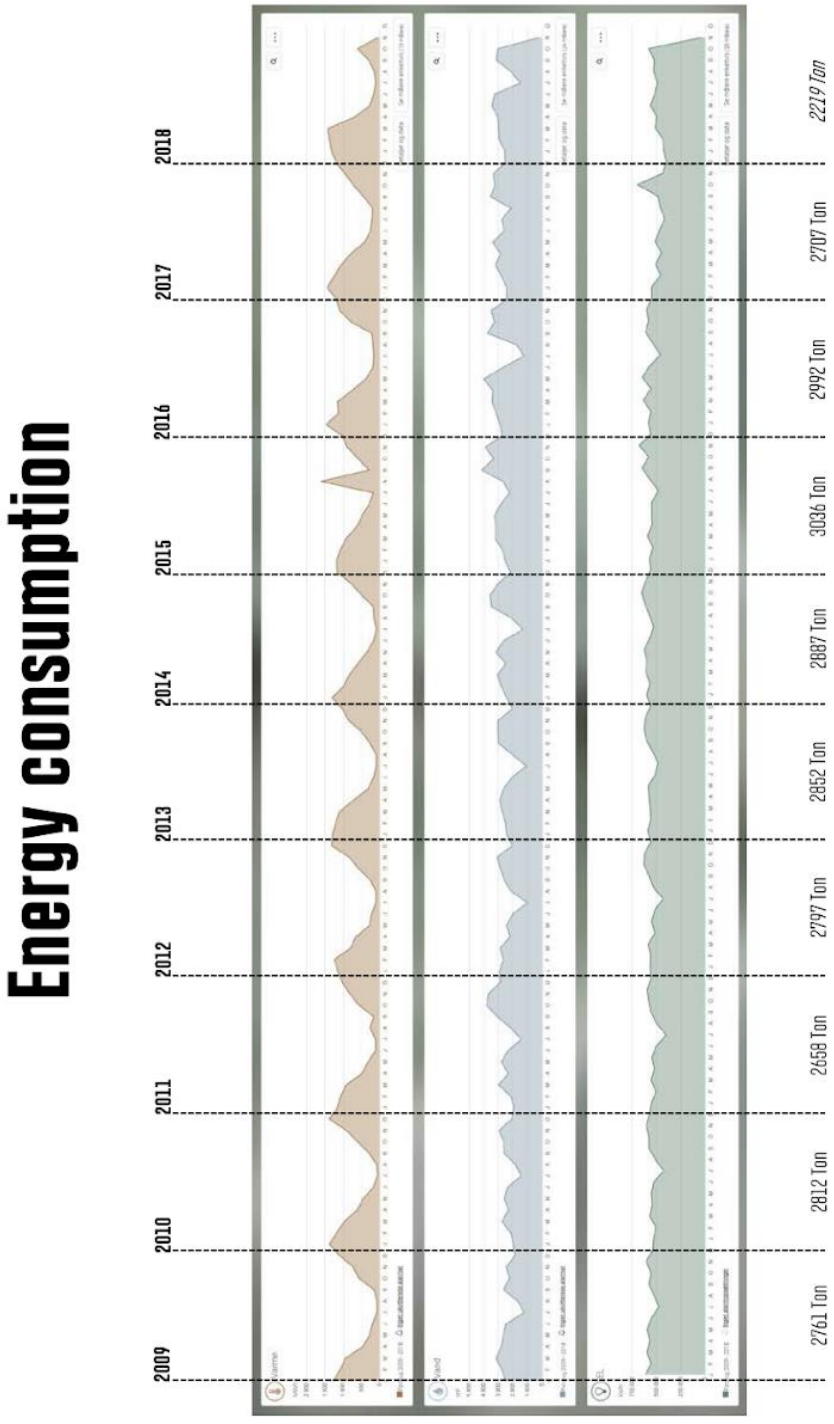
9. Appendices

Appendix 1: New Data Provided by CBS on Energy Consumptions



Appendix 2: Interview with Eva Rood (RSM)

Interview person: Eva Rood (Director of the Positive Change Initiative - Project leader of ENABLE Consortium)

Interview date: 06.05.2019

Speakers in the audio:
C: Carlo
G: Giovanni
E: Eva (RSM)

Interview:

G:	**When the overall idea of approaching sustainability started at RSM?**
E:	Well... I think this started way back early in the 90s already, when we were one of the first to think of how business is part of a wider system and has responsibilities towards society as well. Now we have a specific department that's called "Business Society Management", and it celebrated its 25th anniversary this fall. It all started with a group of researchers who actively said: "we need to make sure that we not only study business but we study business as part of a broader societal system with its own challenges and trade-offs, etc." And I guess we were one of the first in the world to recognize this. And also we've traditionally had I guess, as most northern European countries have, ample attention for ethics in our curriculum: the ethical dilemmas, difficult choices, philosophy of science, stuff like that. Our internal sustainable movement has been around for I guess 15 years or so. Sustainable RSM is the bottom-up approach of passionate employees and students who said: "the world is facing tough and overwhelming problems, we need to address them not only in research and education but also in our operations and in the way we organize our facilities and staff". But I guess what is nice maybe for you as well to talk about is that we, RSM, adopted a new mission two years ago. We are forced proposed to change in the world. And to me, this mission is Hardcore sustainability, it's sustainability 3.0, because we take the sustainable development goals as our translation of what positive change in the world may be. But somehow, because it's such a positive and encouraging, and activating statement to be a force for positive change; we have unexpectedly removed the resistance that some people have in the word sustainability. To some, the word sustainability has a connotation of tree-huggers or eco-activists or and by simply calling it positive change instead of sustainability people are way more motivated to contribute to it. So I think what we now see is that we still have to make improvements in our waste management, and in operations, and facilities, but this mission statement has now encouraged also professors to shift the focus of their research towards a more sustainable approach and that's really fascinating to witness. And it's a slow movement, so it is not like we have a new mission statement and now everyone is hardcore sustainability or an eco-warrior or whatever... that's not the case. But there's definitely a transformation going on here, and that's super fun to me to be a part of this.
G:	**So would you say that just changing the name in "positive change" also influence the idea of top management or, as you said, decision-makers also see initiatives in a different way? That's interesting to know.**

E:	Yeah, definitely. Yeah, because... well now that you mentioned top management... so, before top management could have always said: "sustainability is important and that's why we have sustainable RSM; but there are the activists, so we don't have to take them too seriously". While now it's part of the core, it's our mission. So it's part of the core of our strategy, which makes it also way easier for top management to support it and to stress it. You know, close to change is where we're going, so everything you do here has to somehow relate to positive change. So it allowed sustainability to become mainstream instead of being sort of outsourced into this separate entity.
G:	**What would you say is, for now, the biggest obstacle to a real sustainability transition for RSM or Universities in general?** **Because for what we have seen so far, awareness is growing, but still, decision-makers can't see it or can't face it or understand it entirely.** **You can see that, in universities or in general, there are a lot of movements and they're also doing great things but still doesn't seem like sustainability its a real core value.**
E:	True. Well, I think one of the reasons is that for our professors that indicate this love for sustainability our incentive system, our internal incentive system, is still not built to reward for, for example, societal involvement or publications in journals that deal with societal issues. So we still incentive publications in journals that do not really care about sustainability. So they say (the professors): "We're stuck in the middle. We want to shift the focus of our research, but then we're not rewarded. Not by you, because you don't want to engage in societal debate necessarily, but because you don't reward it. For instance, in my annual review, it's not one of the criteria for which I'm ranked". And also top journals are doing the same. It's beginning to change, but they're still not rewarding publications that are around sustainability. So that's a stretch for us. That's a tough one.
G:	**If we can move more on the technical field if you could give us an overview of the organization at RSM, where this whole sustainability movement fits inside the organization? Where your positive change movement fits inside the organizational structure?**
E:	Sure. So we have one dean for the entire school and then an executive board. In this executive board are the dean of education, the dean of research, the dean of executive education, and the director of operations. They each have responsibility for what their job title actually suggests. My positive change initiative is outside of all this structure. I report directly to the dean, and my assignment is to show him that the mission gets accepted, implemented and that positive change is being accelerated. So I do not take over the responsibility of all of those deans and directors, but I help them to implement positive change in their field of responsibility. Traditionally sustainable RSM I think was part of the operations department.
G:	**So your role is more like an advisor of sustainability. It's not really connected in any way to the organizational structure of the University.**
E:	No, and that's deliberate because I didn't want to be stuck in bureaucracy. So when I accepted the assignment I asked for this freedom and luckily I was granted it, which is amazing because I'm not captured by any of the executive board members. I can just directly discuss what I need and what needs to be done with a dean.
G:	**It gives you more flexibility, but doesn't this also gives you problems in terms of planning or reaching people?**
E:	No, it doesn't because I give a quarterly update to the executive board. With this quarterly update I'm sure that they are all on board of what my next steps are and I also explicitly ask them to approve it. So that whatever I want to do I am backed by the entire executive board, and if needed I could just approach

	people and say that the dean of education supports me or your boss, the dean of research for instance, has asked me to do this, or I just ask them to send out emails and I don't necessarily have to be visible in everything I do. I could just also prepare emails for the executive board members and asked them to spread it within their teams.
G:	**So as you said earlier, you are implementing the SDGs, but from what I've seen in the website, you're not showing how you're doing it. Especially, I haven't seen any particular initiative that relates to SDGs directly.**
E:	Well... the video series that we put online, we also use those videos in courses. We also have a student learning system, which is called Compass. We have a Compass page for all of our professors, and on that page we post ready-made questions that they can use for bachelor students but also teaching cases for MSC and MBA students. So we have a repository of learning materials available for our professors and the videos that relate to those learning materials are available for free or for anyone to enjoy online on this SDGs page. So this is what we do, we've spent two years redesigning our tutor programs and they will be launched this September and the SDGs will be like a red thread throughout our new Bachelor courses.
G:	**On a more technical side, do you personally make or do you have ever received any report on RSM's CO2 emissions? If you do, what would you say has the biggest impact on RSM's CO2 emissions?** **Because, for instance, for CBS are the business travels and we are trying to figure maybe it out a way that could reduce the number of flights. We know it's almost impossible to tell someone not to travel by plane, but probably we were thinking about incentives or something that could actually slow down this phenomenon.**
E:	Well that's interesting. We're in the middle of this debate now, involving both our professors as well as our students too. How can we make people aware of the impact of travel? I don't know the answer yet… I think we're also looking at other universities and see how they do it. Most probably we will design some sort of a policy saying: "If you are traveling within Europe and within 500 kilometers, a train is a good alternative". It's not only for our professors but also for our students; to explain to them that if you want to go to Paris from Rotterdam the train is even faster than a plane. Just to give them a bit of information on this.
G:	**It's complicated. We know it's not that easy. How do you think do you want to reduce business travels in general?**
E:	Well it's a tricky thing. Some professors are getting really upset. I'm not sure if you also notice this. They get really passionate about "do not touch my business".
G:	**Especially because they needed for research, to go to certain conferences, etc.**
E:	I agree, I fully agree.
C:	**A lot of business schools are making their policies or changing their strategies to gain a better ranking on something like "Financial Times top business schools." Do you think it should be important to include sustainability as a criterion to select the best universities?**
E:	Definitely. I definitely think that those ranking should be revised and I think the FT (Financial Times) is now looking into how to make their ranking more meaningful since now it's based on the old model of linear growth. So if you earn more salary after three years, apparently you are more successful human being, and they're not trying to figure out if that's really the case or it's not.

	But how can you then measure your contribution to society or the environment? I would say it would definitely be helpful if those rankings start to calculate sustainability as an essential element in the rankings as well.
C:	**I would like to ask you something more specific about an initiative that you have, called "mentoring scheme" that I found really interesting. I would like to know a little more about it, and also if it was created by bottom-up approaches or if it was more a top-down initiative.**
E:	No, the mentoring scheme is a top-down initiative implemented by our alumni office at our career service department. I also think the initiative represents an effort to help RSM climb in the ranking. The mentoring scheme is intended to help students or fresh alumni/young alumni to land in a good position somewhere. It's been quite successful, to our pleasant surprise, to see that the alumni actually happily volunteer to give back a couple of hours per year through the "mentor me" scheme. But this was... this is a policy for RSM to do it like that.
C:	**Coming back to the SDGs, also that one was a top-down initiative? or bottom-up?**
E:	No, this is also top-down.
G:	**It's really hard to influence decision-makers, and even when they are aware of the importance of being sustainable, they are often in a position where it's really hard to, or maybe it's impossible to make certain decisions.** **Would you say the only way to really change things is by awareness? Pushing social awareness to the point where decision-makers could act in a way that would always be in line with the public opinion.** **Because sometimes, for example, going for a more sustainable approach would be too costly and it will probably mean achieving the opposite results, where people are unhappy of the outcome even though it's more green.**
E:	Yeah, but also I would say: have people experienced what it is to to give back or what it is to be in a degraded landscape where the ecosystem is out of balance? So we're doing two things here. The first is... we are in the process of setting up a community service program for our colleagues and our students, for them to volunteer in one-day volunteering opportunities. So we're looking for societal partners that we can collaborate in, let's say Rotterdam municipality for example, this way we can also give back to the Rotterdam Society. The program aims for people to experience what it is to help out in a food bank or to help out disabled kids or lonely seniors, etc. The second one is to help people experience what it is to be in degraded landscapes: situations where profit maximization cause lands to be exploited and left empty by multinationals waiting to move on the next piece of land, leaving the local people with an ecosystem where nothing can flourish anymore and economic circumstances that are really sad and desperate. If you bring groups of people to situations like these, they can not only learn through their head that something is wrong in the system, but they can also feel it, and that's a different product. It's also awareness, but it's a different approach to gaining awareness.
C:	**Do you have a sustainable university definition which you aim to achieve in the future?**
E:	No, we don't. And know we don't know the KPIs or whatever.
C:	**Do you think it will be important?**

E:	Well… To some extent it is, and to others, it's not. To me, what's important is that we all have sort of the same end goal in mind, and I don't really care how the goal is reached. I want to have my freedom to decide what the route to that end goal is, and to me working with KPIs would sort of limit my mindset of being open for innovation, co-creation and business development. But that's just because my mind doesn't work like that. I don't have a linear mind, so to speak. I have a really creative mind, and I need to have space in order to really function optimally. If you have a linear mind and you love to think and process, it could probably be really beneficial to think about KPIs.
G:	**But I think an approach like this is what is needed sometimes, otherwise you're going to end stuck in the bureaucracy, and you're never going to find a solution. Especially if we talk about bringing sustainability, which is still not a too common topic.** **So what are you aiming for then?**
E:	As my end goal? My dream for RSM is that it becomes a business school with a holistic vision of how business operates within the system of society and the environment — so combining the doughnut approach and the planetary boundaries framework, something like that. And then I wish for all of the students of RSM that, no matter what you come to study here, you are always aware of the fact that you are a part of a system. Your role in business is part of this bigger system, and you have the responsibility to make sure that you create value as opposed to profit. Value is always in three dimensions: it's financial value, social value, and ecological value. That's my vision for RSM in a couple of years probably. This is where we have to be.
G:	**Do you encounter obstacles when you try to propose initiatives to top management? Because I can see your process is definitely more flexible. It also seems to me that you find less obstacles sometimes, but you must find some obstacles at some point. I don't think anything you say is always easily accepted. What do you have to present to have the top management to accept your proposals?**
E:	Well, the rules following business schools is to stick with business language. I have to be careful not to be carried away by my passion. I have to stick to: "this is the business case, this is why we're doing this, it will answer reputation or student demands, etc." So yeah, I always have to present the business case. I have to be really careful not to be dragged away by my passion. I did tend to be really creative, and every now and then I have to scale down my creativity. I have to make sure that it stays within the "mainstream" People have to accept me as one of them and not as an equal extra missed or something.
G:	**Is still a structured system for sure.**
E:	Yeah, and one of the advantages of my approach of having freedom is that I feel free to start 200 things at the same time. And then you know that out of the 200, maybe 150 will fail or will be blocked or will encounter resistance, but the other ones will go through; so I accept it as a natural part of the way I work. There's plenty of failures and resistance. But what I like about the positive change initiative is that we intentionally focus on the positive stuff. So within my team as well, we accept failures but we try to learn from it, and then proceed and focus on the stuff that does work.
C:	**One last question. You said that this sustainable transition, let's call it like that, started in the 90s, right?**
E:	Yes

C:	**My question is: was it because of the passion or interest of the people working at the university? Or because of external pressures? For example, regulations, etc.**
E:	It was started by a couple of really passionate professors who felt they had to launch this department of business society management because they felt it was important. Additionally, they were given the space by the dean at that time. But I think this was an initiative of a couple of passionates, very bright professors — no outside stimuli.
G:	**Okay, that's all thank you.**
E:	Thank you very much to you guys.

Appendix 3: Interview with Albert Carbó Serra (ESADE)

Interview person: Albert Carbó Serra (Facility Manager Campus Sant Cugat del Vallès, ESADE)

Interview date: 22.05.2019

Speakers in the audio:
A: Albert (ESADE)
C: Carlo
G: Giovanni

Interview:

G:	**What is your role at your University? Where do you fit in the organization? And what do you do?**
A:	I am engineer of infrastructures and I am working now in the campus of Barcelona, San Cugat del Vallès. My main role is to keep the extraction in order to function and then I work in new projects like: new buildings and infrastructures to keep all the energy systems: energetic, hbic and all this kind of installations.
G:	**Do you work with a team currently?**
A:	Yes.
G:	**How many are you?**
A:	We are five/six people. Three are employees of the university and the others work for an external company.
G:	**Do you keep track of emissions for example from electricity, water consumption and heating?**
A:	No, we do not, we have the control the emission of CO2 of our solar panel system.
G:	**Do you keep track of consumptions?**
A:	Yes, I do and every year we are decreasing our consumptions of water, electricity and hibc system. We collect the data and at the end of the year we make decision on how to decrease the consumption based on the historic values. We started this process one and half years ago.
G:	**Do you keep track of business travel emissions?**
A:	No, we do not. We have a mobility plan from the last year that shows how people reach the campus. This is the base on which we will develop the new campus and for that reason we are also trying to measure the carbon foot emissions.
G:	**Which area consumes more CO2 emissions from your perspective? Electricity, business travel or heating.**
A:	Now, it is the energy, mostly air condition.
C:	**Do you have sustainable gardening initiatives?**

A:	Yes, we have urban gardening for use of employees, not for the canteen that can be a good idea.
G:	**Do you have some particular idea that you are pushing to the management?**
A:	Yes, we do. We are creating a sustainable campus focusing on decreasing energy consumptions and emissions. We will focus on LED illuminations and HIBC: domotica, IOT. Moreover we can immediately seen the difference of consumption between a new space and an old one 15/20 percent of less consumption.
C:	**Have you found any obstacle from the top management? For example in the division of budget.**
A:	Yes, the money is the first barrier, but if you get good result you can ask for more money for new project. So all depends of the ROI. It is important to create new standard for the new spaces so it would be easy to ask for money for new spaces.
C:	**Are you planning to create spaces for physical training?**
A:	Yes, we are working on a concept of spaces with mobile furniture so it can be used for yoga and crossfit exercise. Ofc, the main problem is the space. We think these space will increase the soft skills and develop in an heuristic way.
C:	**Are you developing a project regarding the waste?**
A:	Yes, we do. We are sorting waste which comes more from the restaurant and reh canteen. We are also using glass instead of plastic bottles, but it is a huge work. We are creating a concept of "smart consumption", basically you buy just what you need to create less waste.
C:	**Do you feel support and awareness from students?**
A:	Yes, we do. Normally, foreign students are more open minded change and create new initiatives. While the autochthonous are less committed to this topic. So basically or people are super commited or zero committed. there is not a balance.
C:	**Initiatives that you are proud of?**
A:	I feel proud about the duty management system because we can collect the values for every years and balance the different periods to manage the problem before it will appear. It is a concept similar to IA.

Appendix 4: Interview with Janette Martell Sotomayor (ESADE)

Interview person: Janette Martell Sotomayor (General Coordinator of the SR-E Master Plan, ESADE)

Interview date: 27.05.2019

Speakers in the audio:
C: Carlo
G: Giovanni
J: Janette (ESADE)

Interview:

G:	**What is your role at your University? Where do you fit in the organization? And what do you do?**
J:	I started to work there from the PhD and I was developing a model to make university more sustainable and then they offered me to stay at ESADE for helping the institute to develop the model. So I started to understand how to use this holistic approach to define goals and a vision with the executive committee.
C:	**Are you also including a PDCA (Plan-Do-Check-Act) cycle in your holistic model?**
J:	Yes, we are also including it, even if we do not mention we have a lot of challenges and it is necessary to include it for being successful and obtain continuous improvement.
C:	**Which are the main challenges for this model?**
J:	We have almost 9.000 students and we are more than 104 nationalities so different values, view of the world and expectations. Moreover, we have 262 faculty member full time with 46 different nationalities so every year we received new faculty members, personals administrative and students. So the challenge is to make them internalize our values, mentality and dreams every year starting almost from zero.
C:	**Why do you put a lot of attention on social debate in your model?**
J:	Because we have in our mission statement three lines: teaching, research and social debate. We believe that the university has the important role to be a place of debate for the all community.
C:	**Is it easy to talk about sustainability at ESADE?**
J:	No it is not internally, it is very difficult, but right now we have a new general director so it is a great opportunity for us. Also in CBS you are in the same moment with the new dean. Moreover, let me tell you that I admire your university, it is a benchmark for me because you have a lot of great initiatives about sustainability. Now we are making a balance of the last 10 years to show the main accomplishment to the new general director. We are also making some survey and focus group to receive feedback and prepare new proposes. All of the people, who took part of our tests, recognized the potential of our model because it is based on a strategic vision and a systemic approach. So we need to apply our strategy based on the model, because we recognized as a weakness the partial implementation of the model. We advanced and we had a significant progress of culture of social environmental responsibility in our community, but one of the things we are not proud, on contrary you at CBS you are a good example, is to focus on responsible education. You should be very proud because you at CBS are working a lot on that but here at ESADE it is a very difficult challenge to work with the faculty. But with the new general director we have a great opportunity to have this sustainable strategy as core business also because we a prepared faculty members. So we are going to create a task force of experts for preparing our new strategic plan with them to trasversali include the sustainability on our institution plan. Finally, we have created a solid base in the last 10 years with the main strengths of having the support of the academic community and the significant progress in the culture. So now we can raise the bar and focus on training and education which will be our main goals in the next 10 years. Moreover, we will focus more on quality instead of quantitative regarding initiatives and projects, and the measure part will be important to show advances using KPI to prove the real progress and impact on society. But right now we are in the beginning of this process to this strategic plan. Moreover our executive committee defined the new three strategic area: academic excellence, identity and mission. So we are working on identity and mission area. The third area is financial sustainability.

G:	**Have the sustainable transition started by a top-down approach at ESADE? For example a professor with a strong interested in sustainability.**
J:	Yes, it have started by a top-down approach because they received a lot of pressure for the ranking. Right now the Times' higher education SDG ranking are changing including Sustainable development goals. But we are not ready yet to participate this year. We will prepare some good initiatives and in a couple of year we will be ready to compete for this ranking.
G:	**Do you think some universities could exaggerate in proposing new initiatives just to be higher in the ranking and creating in this way some greenwashing problems?**
J:	Yes, I do, especially because every universities cannot share its report and has to make its own PRME report. So who is going to evaluate if it is true? And how can a universities demonstrate all the things written in the sustainable report? For this reason now we are narrow down the number of initiatives and we are doing a critical audit of all the things to reflect on our level of achievement. I'm proud of that, I believe that it's a really good initiation with this new general director.
C:	**Do you think that student associations can help you to increase awareness about sustainability?**
J:	Definitely. We have achieved good accomplishments with Oikos. I am very proud of it. If you look at the report for this year, and you compare it with the ones from the previous years, you can see that we are doing beautiful things with them. I always try to push Oikos to work with me Also, we have other associations like "entrepreneurship and society", "Climate change" for MBA, etc. We have a lot of student associations if you look at the report, but the relation with them is merely like: "please give me all the activities that you have done this year so that I can put it in the report." We really only work with Oikos at the end. I am really frustrated about that. I really want to do something different. I do a lot of Benchmark. I'm passionate about benchmarks, and I've gathered a lot of information from the United States, the United Kingdom... from any part of the world. And when I discovered what are the others doing, I was like: " Why can't we do the same?" If you look at probably the best example, the United States, the most important thing are the students. The students are the leaders of a lot of initiatives, the students pressure the institutions, the students are the ones that ask for a sustainability plan, and they participate in challenges based on what they decided; for instance, stop the food waste in the cafeteria at UT Austin. Voluntary they created a task force to reduce food waste inside the cafeteria, and they really look for data to know what is the amount of the problem in responsible consumption. They measured, and they accomplished to reduce the tones of waste food. This is only one example; I have millions of other examples. I have a lot of information that I am sharing with others, of course, to demonstrate that: yes we can. Years ago, when I started to mention the accomplishments of other universities and suggesting we could have done the same, I was frustrated. I received a lot of feedback like: "Yes, but our isn't a big university or Harvard have millions we can't invest so much." So they suggested me, like you are doing, to be more specific, to look at Business Schools, etc. And I have found a lot of examples, also in Europe. So it all means that it's only a matter of commitment, it's only a matter of being responsible. So we are trying to push, as you also mentioned before, student engagement. Now this word "engagement", I find it in all the plans of the university, is like a "trend". It's important to engage our students, but they don't have to be left alone. Sometimes I tend to block a strategy that involves community engagement because they need a role model. So yes, it is a challenge to work with students also because every year associations change their president. That's a very big challenge because if we build a very good relation with them after only

	one year we have to start everything again. I always try to push the students: "please try to connect your dreams and your commitment with the next president." I believe we have accomplished this with Oikos but not with the other associations. Every new president should have its own ideas, but in the end, we should all share the same accomplishments. If some initiatives were successful in the past, we need to continue to support them, and we need to end this wasting of projects. I think this is one key aspect for many universities in the United States. I also think it is great that you already created a task force for the SDGs. When I read the report I believe that, if I'm wrong to correct me, is that also an example of how the students pressured the university?
G:	**Yeah, basically here we have different task forces, depending on what the university is trying to accomplish. How is it for you? Do you just have a main team for sustainability? How does your team position at the university?**
J:	My boss is a general secretariat at the university, so he is part of the staff of the general director. This means that we are at the executive committee. When he goes to the sessions, he puts on the table the challenges, the projects, and everything.
G:	**Basically you're at the top of the staff.**
J:	Yes
G:	**Here is a bit different, but I feel like that at the end, students can do a lot, but if top management doesn't recognize this effort, everything seems meaningless.**
J:	Yeah that's another example. You probably heard about Greta. The climate change urgency has to be a priority for the executive committee. We need to declare the importance and the urgency, and work on that. I can't imagine a university that during this or maximum next year doesn't define it as a priority. I don't understand it. We, as Copenhagen Business School and ESADE, really improved, raised the bars in our strategies. I really admire the things that CBS is doing, you are very coherent, and you also have the advantage of the culture.
G:	**Yes. That's a big thing. For example, some companies come to the university and fund some of the projects. It really shows how the culture is different.** **I don't know at ESADE. Maybe you have to save money or present something that is financially sustainable all the time.**
J:	Yes. We don't have any kind of partnership. Last year if we wanted to prepare a project, we had to go and ask for money to the different departments. We don't have a budget for sustainability, and that tells you a lot. Of course, that's also one of our expectation with our new general director.
C:	**Did you find a lot of challenges trying to, as you said, engage the other departments? Do you have any kind of "silos" challenge? Let's say that maybe a department doesn't want to give you resources if another give it to you first, or something similar.**
J:	Well, especially in the faculty area, yes. We have a few conversations with them. They are really working on their own. They are really doing a lot of things as you can see in the report. But if we, as a social and sustainability area, want to talk with them and try to work with them and help... no way.

	We believe that right now, our new director has a priority regarding the training of our students and the social impact of our institution. However, the main priority remains academic excellence and the impact on society of the human quality of our students. We are going to start working with the faculty in the training area, because we are going to do the same you ready done years ago with the curriculum development. This means that this is a chance to start working closely with the faculty.
C:	**We saw that here at CBS most of the CO2 emissions are created through business travels. Did you try to propose some initiative to reduce this trend of flying or?**
J:	Not at the moment. We did not enter in that area already, but when we're going to open the conversation to elaborate a sustainability plan, of course. We are going to open a lot of discussions on the whole climate change, but not at the moment. At the moment, we are only working on trying to reduce consumptions. We had initiatives against food waste or to eliminate plastic, that are not minor, and that's also a challenge. For example, the reduction in paper consumption is one of the most important accomplishments at ESADE. In 2008 we were consuming almost seventy-three tonnes of paper per academic course. Now only eighteen. Another one that is not minor or easy is electricity. We changed all the light bulbs with led and did a lot of reforms and everything in the buildings. In 2008 the consumption was about a hundred and seventy-four kilowatts per square meter, today is ninety. We also have a lot of challenges with the elimination of plastic bottles in some of the buildings particularly. It's not because of the people; it's a problem of logistic. But in the big campus where there are the majority of students, we accomplished it in a year and a half, and we don't have any more plastic bottles. That's another important accomplishment.
C:	**One last question. Before you said you make researches about other universities.** **Which are the ones in Europe that you think are, in a way, more advanced in being sustainable?**
J:	HULT University and Ashridge are doing very good things in sustainability.

Appendix 5: Interview with Louise Thomsen, CBS

Interview person: Louise Thomsen (Centre Manager for CBS Sustainability, CBS)

Interview date: 30.08.2019

Speakers in the audio:
L: Louise
G: Giovanni

Interview:

G:	**Do you think CBS has taken sustainable initiatives also to respond to the pressure from stakeholders, students, and suppliers and avoiding in this way the risk of damage to the reputation?**
L:	From this point of view, I don't think there's any real external pressure. In the end, it would have little impact if CBS were not interested in sustainability. I don't think that its is reputation would have suffered.
G:	**Is the focus on sustainable aspects growing through new students when it comes to selecting a university?**
L:	I think it might still be too early. I've been to the stands sometimes to talk to potential new students about sustainability at CBS. Many are enthusiasts, but many others are also disappointed by their experience here. I don't have a number of them, but it's my personal experience.
G:	**Does CBS have a sustainability committee?**
L:	CBS does not have a sustainability committee. People are forced to find themselves without any support from the university if they want to start a project. There is no collection channel for all sustainable requests, which means that all the different sustainable entities, such as student associations, task forces, etc., live on islands, separate from each other. That's why a sustainable project takes so much time.
G:	**Does CBS have a way to track sustainability on campus (excluding CO2)?**
L:	No. There is no real way of measuring sustainability. Also because how are you going to do it? This is something that needs to be found, and it also has to do with our definition of a sustainable university, which still needs to be clearly stated by CBS. Additionally, for what concerns CO2 emissions, the the new data, which will be released at the beginning of the next semester, are calculated differently to the past, hence they are not comparable with the old data
G:	**Is it correct to say that the 2020-2025 Green Agenda could represent the vision / definition of a sustainable university for CBS?**
L:	Finally, after so many years, with something similar to the 2013 environmental report, CBS has a document that can state its position on sustainability. I wouldn't necessarily call it a vision, because it is also a kind of blueprint for a future sustainability strategy. However, I agree that this is the first form of guidance that CBS has been lacking for a long time.

G:	**Do you think that there are members of the university, at any level, that still have to understand the principles of sustainability?**
L:	Yes. There are members of the university that still have to understand the principles of sustainability, but I don't necessarily see this as a bad thing. Some people think of sustainability as a trend, but I think that with the correct approach, these people can fully understand the true meaning of sustainability.
G:	**Has CBS implemented education / research / outreach and partnership sustainability strategies?**
L:	For what concerns education and research, everything about student education, from single electives to full BSc, MSc and MBA courses comes from research. Over the past years, CBS has launched a curriculum development initiative to implement sustainability in the various courses offered. However, I am not enthusiastic about the name given to this initiative, also because it is not a true "development" but rather a "mapping-out" of areas where sustainability can find its place.
G:	**Does CBS have initiatives that seek to provide hands-on sustainability experience?**
L:	CBS doesn't have anything like that on its own. It has no university-wide initiatives involving volunteering or something similar. Some student associations are interested in these issues.