

Chapter 1

Higher Education in a Sustainable Society: Addressing Knowledge Disparities and Enabling Debate

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1.1 Introduction

Sustainability is a comprehensive concept. It addresses the complex relation between and effect of social and economic development. It is a concept that challenges us to see things in relation to each other and in a larger perspective. The sustainability challenge however, comes at a time when sciences and research has expanded but at the same time is more fragmented than ever. We therefore in this book present the concept of mutual competence building related to higher education, as a concept of challenging higher education's engagement with sustainability issues in a cross disciplinary way.

Higher education in general, and universities in particular, have been central actors and arenas for large-scale change in the modern period. Universities developed in parallel to modern societies and the births of nation states in the nineteenth century. Research and science delivered important knowledge to fuel the industrial revolution and modern mass consumption society. Universities and science have also been an arena for critical debate, exemplified with the student movements in the late 1960s and 1970s in North America and Western Europe. This highlights how higher education institutions can become both integrated into societal modernisation, and also arenas for social and political debate.

This double face of science and higher education, as both *instrumental* and *reflexive*, has represented a tension in the development of universities over the centuries. Some have argued that the instrumentalisation of the modern era can only

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be balanced by a human awareness (Husserl 1937; Arendt 1958; Habermas 1972). In this divide, what role should science and higher education play?

In this book we address this issue in relation to *sustainability*. The debate on sustainability has come to the forefront of attention in society, because of an assessment of our current collective way of life as out of balance. Some argue that sustainability is tightly linked to change, either an orderly change where societies undertake the adjustments needed to operate comfortably within the limit of finite resources, or a disorderly change where our failure to adjust triggers ecological or social deterioration. The question we try to address in this book is what role higher education should take related to this debate. We argue that *mutual competence building* in understanding and addressing social and environmental challenges is a key role for higher education.

Mutual competence building (MCB) refers to our ability to discuss and reflect on the complex issues involved in making sustainable decisions. It also refers to our formal knowledge of facts, and our ability to regard alternative perspectives of matters. Thus MCB is the ability to be at the same time both instrumental and reflexive. We believe that the capacity to do that, is not only a personal ability, but a collective competence. The collective competence is materialised in the structure of the dialogues and conversations that goes on in society and in organisations.

1.2 What Is Sustainability?

1.2.1 *One Word, Many Interpretations*

Sustainability entails, broadly speaking, efforts to ensure that humanity lives well within the limits posed by the finite resources of our planet (World Commission on Environment and Development 1987). In our current state we neither adhere to the limits imposed on us, nor do the majority of the world's population live well. Addressing sustainability implies therefore triggers a discussion of social and economic change.

Robert Engelman holds that we live in an age of 'sustainababble', where there is a problematic profusion of the word 'sustainable', to mean anything from 'environmentally better' to 'cool' (Engelman 2013, p. 3). This makes it challenging to address the concept. In some sectors sustainability is used intertwiningly with 'responsibility' or 'Corporate Social Responsibility', where the latter is the integration of environmental and social concerns into business operations (Steurer 2010). Similarly, in sectors engaged in aid and poverty reduction, sustainability matters are often addressed under the heading of 'sustainable development'.

We note, however, that sustainability includes different concerns from the more narrow efforts to address climate change by reducing CO₂ emissions, the 'medium scale' efforts of addressing interlinked challenges of environmental degradation,

resource scarcity and population growth, as well as more ambitious efforts to rethink how we can best organise our economy and society. Certain levels of social inequality or educational inequality (cf. Piketty 2014) could be regarded as unsustainable. Also aspects of the public discourse, in the form of denial, might lead to unsustainability. This latter category addresses both sustainability at the macro level of states, the economy and production patterns and business strategies, in the form of CSR (Elkington 1997) or creating ‘shared value’ (Porter and Kramer 2011a, b). It can also be assessed at the level of work organisations, when it may imply meaningful and inclusive and learning workplaces, or that of the personal level. Organisational sustainability refers among other things to inclusion and learning at work as central aspects. At a personal (psychological) level meaning at work is an important dimension (Docherty et al. 2008). Thus we are going to use the concept of sustainability beyond the environmental context.

1.2.2 Searching for Balance

The United Nations report *Our Common Future* continues to be one of the central reference documents in discussions of sustainability (World Commission on Environment and Development 1987). A key feature in this text is the stress on future generations: sustainable development is defined as development that meets the needs of the present without compromising the ability of future generations to meet their needs. This concern resonates with major discussions in Western philosophy. Chapter 2 in this book on sustainability and care gives an insight into some of these discussions. One might ask how we should bring the future into our present thinking, and what should be the trade-off between our use and future use of resources? Ideally we should want to add value to the earth, and not degenerate it. This was already part of the philosophical programme of John Locke in the sixteenth century (Johnsen 2014). Locke argued that one is only entitled to natural resources if there is as much, and as good, left for others. Also in the philosophy of natural order; there is a string of references to balance, both in and between periods. David Hume and Jean-Jacques Rousseau, each in their way, tried to develop philosophies where man is in balance with nature. A further discussion of this is found in Chap. 10. Hume believed in the self-regulating features of nature (including man), ideas that were investigated by Thomas Robert Malthus, and later inspired Charles Darwin and his evolutionary theory. Today we might wish to add discussion of intergenerational relations, in the context of demographic change and an ageing workforce.

The ideas of Malthus form an important yardstick in contemporary debates on sustainability. The underlying anxiety that drives attention to sustainability in the present decade is the dual concern for survival and decent living. The current challenge to live well within the means that one planet offers raises the prospect that we could face ecological and social collapse, or even, in an extreme and long term scenario, extinction of the human race (Peter Ward and Donald Brownlee

2004). There are two types of responses to this profound challenge, where Malthus' ideas appear as a precursor on one side. Malthus argued in 1798 that population growth will eventually outstrip agricultural production, with the result that disease and famine will define the human condition (Malthus (1798) 1966). Malthus was profoundly sceptical, unlike some of his contemporaries, whether society was progressing towards an ever better state. Instead he was concerned with, and highlighted, the dangers associated with likely future trends.

Using this interpretation of sustainability as linked to endurance implies attention to time: the proof of something being 'sustainable' can only be demonstrated after a given period of time. This approach would perhaps need to define a timeframe. If we are looking at actions today, for how long should they be sustainable? Another angle might be to link sustainability to what is reasonable or balanced, including balanced development. But what does 'balance' really mean? For instance, balance means that we avoid extremes. We can pollute a little, but not so much that reproduction of food is affected, or we can accept private cars, but have to balance it with public transport. Balance can also be used as a framework for discussing ethics and the relation between our generation and future generations.

1.2.3 *A Silent Spring?*

Malthus' concern with contemporary practices and future consequences also lies at the heart of the environmental movement, which has criticised industrial production patterns and the prioritisation of economic growth. In the seminal book *Silent Spring* Rachel Carson documented how the use of chemical pesticides in industrial farming damaged the environment (Carson 1962). The underlying message of Carson's book, that humans have a profoundly negative effect on the environment, inspired much of the environmental activism that emerged in the 1960s onwards in North America and Europe (see also Chap. 10 for a fuller discussion of *Silent Spring*). In a similar vein the Club of Rome study *Limits to Growth* explored how exponential economic growth relates to a planet with finite resources (Meadows et al. 1972). The group projected likely future trends for population growth, industrialisation, pollution, food consumption and resource depletion, and created three different likely scenarios. Two scenarios predicted 'overshoot and collapse' in the environment and the economy by mid-twenty-first century (Ibid).

These studies, and the movement they formed part of, carry an inherent critique of current consumption and production patterns, with several strands within the movement arguing for an overall reduction in consumption and the need to rethink economic growth. There is considerable pessimism, in a manner not unlike Malthus', that a growing and increasingly affluent global population will deplete our resources, and damage the environment to the extent that it will be beyond repair (New Economics Foundation 2013). In turn, sustainability becomes a project about

the “winding down the dysfunctional economic and business models” so as to avoid “ecological overshoot” (Elkington 2012, p. 8, see also full quotation below).

The other major response to the sustainability challenge shares the concern for a possible future ecological collapse, but expresses considerable optimism that we will be able to address the challenges we face through technological innovation. Just as innovation in agriculture and the green revolution, solved the catastrophe Malthus predicted in relation to agricultural output and population, so human capacity for invention will help us move away from environmentally destructive practices. The writings of Jeremy Rifkin exemplify this approach. In his book *The Third Industrial Revolution* he predicts that information technology will help bring about a revolution in energy production, with consumers becoming small-scale producers of renewable energy and sharing this energy, much in the same way as we share digital files (Rifkin 2012).

The outlook of Rifkin and others is less concerned with restraining current consumption and production, and more with exploring new solutions. Major and conventional corporations are potential partners in this quest. Michael Porter and Mark Kramer note, for example, that companies can address society and the environment’s challenges as part of their business strategies. It is interesting to compare this approach with Porter’s earlier work on competitive advantage. It seems that Porter in his later works wants to influence businesses to enlarge the perspectives that go into their thinking. Porter and Kramer argue that this approach will be the most important driver of innovation and value creation in the period ahead, and that it will likely trigger change in the way market forces intersects with society (Porter and Kramer 2011a, b). They encourage companies to move away from an outdated form of value creation. Companies prioritise short-term financial gains, and ignore the needs of their customers and larger issues that concern the long-term survival of the company. Companies can no longer ignore the strain put on natural resources, customers’ welfare, suppliers’ challenges and the economic stress levied on communities where the company produces and sells goods. Instead, in the period ahead, companies will need to think in terms of ‘shared value’. This will imply creating economic value in a way that also created value for society (Porter and Kramer 2011a, b).

1.2.4 Beyond Social Responsibility

A number of companies have heeded Porter and Kramer’s call. Unilever, one of the world’s largest consumer goods companies, has adopted tough sustainability strategies: the company pledges to reduce their environmental footprint by half, while still doubling the size of its business. Moreover, 26 major multinational companies, including Alcoa, Toyota, Volkswagen and Boeing, recently launched a framework for mapping likely changes in the international economy in the period up to 2050. The accompanying analysis noted that sustained overconsumption of the earth’s resources, as the world population nears nine billion consumers, must bring either a

managed adjustment or painful collapse. The 26 companies outline the challenges that will surface in 14 sectors, including agriculture, transport, energy and materials. A major part of the assessment is a roadmap for how companies can position themselves vis-à-vis these changes, and contribute solutions to key challenges. The changes ahead are presented as important business opportunities. Innovative and flexible companies that can provide solutions are well positioned for long-term growth (World Business Council on Sustainable Development 2010).

These practical manifestations of the technological optimism perspective on sustainability are sharply criticised by observers with a more concerned outlook. For example John Elkington argues:

Properly understood, sustainability is not the same as corporate social responsibility (CSR): nor can it be reduced to achieving an acceptable balance across economic, social and environmental bottom lines. Instead, it is about the fundamental intergenerational task of winding down the dysfunctional economic and business models of the nineteenth and twentieth centuries, and the evolution of new ones fit for a human population headed towards nine billion people, living on a small planet which is already in “ecological overshoot” (Elkington 2012, p. 8).

The CSR community continues to grapple with these issues. Peter Dauvergne and Jane Lister argue that many of the recent corporate sustainability efforts are substantial. They include a reorientation of central operations and reworking global supply chains. However, Dauvergne and Lister also argue that the new measures by big corporations limit the potential for finding deeper solutions to pressing environmental problems and, ultimately, reinforce runaway consumption. More radical approaches are needed if environmental collapse is to be avoided (Dauvergne and Lister 2013).

A similar schism, between observers stressing the need for radical alternation in behaviour, and more pragmatic and conventional outlooks, is also visible in politics. In the Norwegian context in questions on energy and climate, for example, mainstream parties and major state institutions and corporations believe that a continued reliance on fossil fuel is possible through advances in carbon capture technologies and other smaller adjustments in the present industrial paradigm (Alstadheim 2010). Niche parties, however, argue for a full scale move away from fossil fuel extraction alongside radical changes in production and consumption (Aftenposten 2014).

Both perspectives, although the radical one most explicitly, often link the need to address environmental challenges with a broader reworking of the way we organise our economy and society. The British Labour MP Douglas Alexander notes for example, in a recent book on future British challenges, that in the current political situation ‘more fundamental challenges, in terms of developing a model of capitalism that generates wealth, promotes fairness and protects the environment, remain unaddressed’ (Alexander and Kearns 2013). Similarly, and in a more radical mode, the New Economics Foundation (2013) stresses that, in conjunction with changing production patterns, we also need a social transformation where we rethink our ideas of growth, wellbeing and how market forces can be more aligned with social needs. In this way social and political challenges become part and parcel of a larger

sustainability agenda. The failure of the current capitalist model to operate in tune with environmental needs opens up the space for a broader critique of capitalism's failures, most notably the reproduction of inequality and other types of social dysfunctions.

The broader debate can be associated with Thomas Piketty's *Capital in the 21st Century*, and his argument that inequality is a permanent and growing feature of today's capitalism. It can be viewed as yet another argument for the need to rethink of how we organise our economy and society (Piketty 2014). On the other hand, one can argue that market economics is about allocating scarce resources to the best uses, so solutions have to be found within a marked economic system (Nordhaus 2013). One of Piketty's main arguments is that increased investment in higher education is needed in order to increase the value of human capital relative to physical capital, to make a better balance between labour income and capital income.

1.2.5 Addressing the Need for a Critical Debate

The above discussion serves to highlight a key premise of this book, namely that there may be many different interpretations of what sustainability and a sustainable society are. What will this mean in today's society, and for each of us? One approach is, as we have noted above, to say that sustainability is not a fixed position or a well-defined concept, but a framework for a discussion. It is a framework that gives the discussion a certain direction. We can argue that some things are more suitable than something else. For instance, renewable energy is more sustainable than consuming carbon. In this case 'sustainability' has a very concrete meaning. There might be other cases where the meaning is less clear, and more contested. For instance, is urbanisation more sustainable than rural development? Similarly we may argue that the role of higher education in a sustainable society is an equally ambiguous theme. For instance the discussion in Chap. 9 in this book shows how there are different *knowledge regimes* in the discussion of environmental protection. Table 1.1 tries to illustrate that these are different categories. We argue that they differ along to dimensions; the degree of insight into the current situation and the degree of insight into and possibility to influence the future situation.

Importantly, however, we note that disagreements over what, precisely, these efforts should entail are profound, and they increase as we move from the narrower matters to the wider and more ambitious ones. Moreover, a meaningful assessment of sustainability is hard to provide when we look at sustainability in general terms. Some would argue that more rapid and direct action is needed, others that the current system is adjusting and reforming itself. So where do higher education and universities come into this picture? One role the university can have, that is not in conflict with its ethos of free and critical research, is to discuss these standards: what does sustainability mean in a certain area? In order for discussions of sustainability to be useful, they need, we often find, to be conducted within the

Table 1.1 A framework for discussion

	High level of insight into the future situation and available means to influence it	Low degree of insight into the future situation, or few available means to influence it
High degree of certainty about the current situation	Here sustainability is a matter of making consensus and taking decisions of actions	Here one needs to have continuous dialogue in order to create consensus on what to do
Low degree of certainty or contested opinions about the current situation	Here there is a fragmentation in the current knowledge that implies need for developing a common understanding	Here we are simply ignorant and might not yet understand neither what is at stake nor, what to do. Here a critical and creative dialogue is needed

context of one particular sector or area. This informs our stress on the role of universities as collaborators with particular sectors of work life institutions, such as businesses or government agencies.

1.3 The Role of the University

Above we have highlighted the historical antecedents of both the *radical* and the *reformist* or *pragmatic* perspectives on sustainability. This is, in many ways, a long running argument. One novelty associated with these debates is however, the recent growing consensus associated with the actual effects of human activity on the environment. While scientific and political groups have previously been divided over the question as to whether human activity in fact cause climate change and environmental deterioration, an increasing consensus seems to be emerging that our current activities are indeed negatively impacting a range of indicators, including the level of CO₂. The Intergovernmental Panel on Climate Change report on impacts and vulnerabilities has contributed to this consensus (IPCC 2014).

The radical perspective we have outlined above often problematises the modern: the modern world with industrialisation, capitalism and mass-consumption society has created that imbalance we see now (Dardot and Laval 2009). In the perspective of the role of the university, it is important to recognise that even if it has been a place for counter-culture, the modern university is strongly integrated into what we can call the modern project. The problem with system change arguments is that the only thing that can change a system is the system itself, that is: us as a society.

The reformist or pragmatic and reformist argument, as noted above, has also been around for a long time. Indeed the economist has always been aware of externalities; the facts that one transaction between two parties does not necessarily count for all the costs or benefits it creates. The problem of social cost was addressed by Ronald Coase in his well-known article from 1960. The question that economists have asked is what type of transaction structure will be most in line

with a reasonable distribution of social cost. This is also pretty much the argument found in Nordhaus (2013) on how to solve the climate change challenge.

Similarly, the discussion on social inequality and social imbalance is a challenge in the perspective of sustainability. This knowledge has been around for decades. However, it does not imply that there are simple solutions to this challenge, nor that universities can contribute much directly to this particular challenge. There is a parallel and similarly important imbalance issue, where we believe that universities can play a significant role, and that is the imbalance in knowledge. As we increasingly live in a knowledge society, we are increasingly dependent on people's ability to understand and evaluate knowledge. This requires a high level of education.

Regardless of an increasing consensus that human activities are indeed hurting the environment, the manner in which we are to move forward, in order to bring about a more sustainable society, remains a hotly disputed topic. Indeed, as noted at the outset of this introduction, sustainability is an 'essentially contested concept'. Just as with other broad and positively endowed terms (i.e. 'social justice'), the general desirability of which is easy to agree on, but the way to bring this about will be heavily disputed (Gallie 1956; Garver 1978). This is why the role of universities as an enabler of debate is important. Below we outline a table that highlight what kinds of debates and actions sustainability call for.

1.3.1 The Higher Education Discourse

There is a growing literature on the issue of sustainability in higher education. Most contributions are broadly concerned with how higher education institutions relate to the challenges and potential transformations linked to social, environmental and economic pressures. There are, however, two main strands in this literature: discussions of how to make university campuses 'greener' or more sustainable; and discussions of how to alter curriculum and pedagogical approaches so that students can become exposed to sustainability themes.

Both strands share an awareness of the context in which greater attention to sustainability at higher education institutions has emerged. On the one hand the prominence of environmental concerns and sustainable development has been high on national and international policy agendas since the 1970s and a number of initiatives have been taken to mobilise universities as agents of change. Lozano et al. (2013) trace the evolutions of declarations, charters and partnerships that have involved universities. The United Nation Environmental Programme's Stockholm conference in 1972 was an early initiative that recognised the centrality of education in fostering environmental protection (Lozano et al. 2013). The Talloires Declaration from 1990 was also a central initiative. The declaration has been signed by over 350 university rectors and commits their universities to address inequitable and unsustainable production and consumption patterns (Wright 2002). On the other hand, aside from these responses from universities to international policy debates, some authors also hold that universities take their cue from the corporate

sector. They note that a number of major corporations are responding to global challenges such as environmental degradation and social injustice by incorporating sustainability concerns into their core business model. Universities seek to mimic the corporate sector but face, nevertheless, tough challenges when doing so due to more complicated decision making structures and diverse operations (Krizek et al. 2012; see also Ralph and Stubbs 2014). This argument is further developed in Chap. 14 *Rhetoric about Sustainability in Education: The presence of the words not spoken* in this book.

Stephen M. Wheeler notes that of the two main strands in the literature, the texts debating how to create greener campuses predominate (see for example Barlett and Chase 2013). In-depth discussions on curricula and pedagogy are, by contrast, more infrequent (Wheeler 2012). Two edited books are, however, particularly central to our discussion. The two books comprehensively address the integration of sustainability concerns into a number of academic disciplines. In *Sustainability Education: perspective and practice across disciplines* the contributors explore attempts in the British higher education to incorporate sustainability perspectives into a broad range of fields, including business, nursing law and engineering (Jones et al. 2010). *The Sustainability Curriculum: the challenge for higher education* was first published nearly a decade earlier, and includes some discussion on the incorporation of sustainability into particular disciplines, although touching on far fewer disciplines than the Jones et al. book (Cullingford and Blewitt 2013). The book is, however, notable for debating at a relatively early stage, and in an in-depth manner, some of the major themes that are typically addressed in discussions of sustainability and higher education, including the need for interdisciplinary approaches, and the inherent tension between instrumental and critical aspects when higher education institutions address sustainability.

Our book does not address ways to foster greener campuses, but we seek to contribute to the literature on ways to integrate sustainability into university teaching, and more broadly, to explore how higher education institutions can contribute to wider efforts in society to promote sustainability. Our book draws primarily on experiences from Norway, and this is hopefully a valuable contribution, particularly since the current literature on sustainability in higher education is heavily skewed towards perspectives from Great Britain, Australia and North America (Wheeler 2012).

However, our book builds on and complements prior insights on sustainability in higher education. Several of the authors in this book share Cedric Cullingford's (2013) concern that while higher education certainly needs to engage with, and contribute to, efforts to place society and our consumption patterns on a sustainable track, it also needs to be able to unpack the clichés and media spin surrounding sustainability, as well as the competing, often instrumental and self-serving, agendas associated with sustainability. Moreover, as is highlighted in *Sustainability Education* and endorsed by several of the authors in this book, sustainability in higher education necessitates strong interdisciplinary approaches. It also requires new approaches to teaching: 'active', 'experimental' and 'collaborative' learning seem particularly appropriate (Wheeler 2012; Jones et al. 2010). A range of the

main ideas expressed by our contributors resonates with the existing core literature on sustainability in higher education. At the same time, however, the chapters in this book are unique in that they explore, across a range of disciplines, the notion that sustainability in higher education is best addressed through mutual competence building with society and work life organisations.

1.3.2 Higher Education in a Discursive Perspective

A core idea in this book is that different forms of sustainability are linked. We do not believe that a society that is unsustainable in a political or social sense is able to handle sustainability issues of the more resource or environmental kind. In one sense, economic and social and political development means higher use of resources. On the other hand, one could argue that people, as they become wealthier and more educated, also will be more concerned with environmental issues. One could argue that investment in human capital is likely to imply higher concern with economic, social and environmental conditions in society. Thus, one of the issues this book should address is how we can become wealthier, develop a more human and free society, and increase human capital both in society and in organisations, and at the same time do it in a sustainable way?

As noted above, we do not believe that higher education exists outside society, at an arm's length distance. Rather we regard higher education as part of society, but also an arena that has the capacity to reflect on society. Higher education is not in position to 'change' society, but is in a position to influence society. How then, can higher education and collaboration between work life and social institutions and universities help develop a sustainable society? We seek to say something innovative about sustainability, in a way that can be understood and debated more widely.

The basic premise of the book is that sustainability will always be a contested concept: agreement on what particular changes society should adopt in order to move towards sustainability will be a source of controversy and disagreement (Gallie 1956; Garver 1978). In this situation the role of universities is not primarily to issue instructions on what changes to adopt, but rather to open up dialogue, debate and collaboration between actors on what might be helpful measures as we move forward. In order to obtain this role, however, the university and its scholars need to grasp the basic features of the sustainability agenda generally, and explore in a more in-depth and critical manner relevant questions associated with sustainability within their discipline. Moreover, knowledge of the dilemmas and conflicting interests associated with sustainability can be conveyed to students, so that graduates can engage in debates related to sustainability in an informed manner.

We need at the same time to ask whether universities in their present form can be regarded as sustainable. Have universities played along with modern, technological and instrumental development, and as institutions for mass education, to the extent that they are no longer able to take on the role as a reflexive arenas?

In order to understand the role a university can take in social development, we think it is important to observe the role it has had in modern times. Most observers would argue that there is no “one university model” in the world. There are in fact different ideas about the role universities should play in social and economic development. Going back to the early stages of the modern era (early 1800), there were universities founded by the church, universities founded by industry and agriculture to promote technological development, and universities as general education institutions. Wilhelm von Humboldt was minister of education in Prussia, and founded Universität zu Berlin in 1810 with ideas of a giving students broad training, not least by teaching different disciplines under the same roof. His idea of a university came to inspire universities in the western world. Others, like August Comte, had argued in France for a much more instrumental approach in their thinking about universities. Comte saw universities as instruments for modernisation and economic and social development. Thus, there were, and still are, competing ideas about the role of the university (Johnsen 2014). Humboldt not only argued for broad education, and for integration of teaching and research, he also argued that education should be independent of the state. F. A. Hayek has argued that the fact that Germany during the nineteenth century increasingly adopted a much more specialised education system for technology, inspired among others by Comte had later strong negative impact on its development (Hayek 1979). The role that the universities play in society should therefore be of general concern.

1.3.3 Mutual Competence Building

Addressing sustainability means opening up a conversation about what sustainability, and efforts to create a sustainable society, might entail for distinct sectors. Universities are well positioned to enter into and enable such conversations. Clusters of expertise within the university may enter into collaborative relations with industry or other work life institutions. Universities at their best are spaces for critical thinking and ‘outside the box’ approaches to economic, ecological, social and political challenges; and insights on sustainability that emerge from a dialogue with work life institutions form part of the regular teachings at the university.

Moreover, universities endow their students with the necessary professional and life skills for them to embrace and enact change. The teaching at bachelor and master levels helps students use the skills easily acquired in one field in others. Executive education is likely to be more important as we move forward, as former students upgrade and reframe their skills sets in a period of rapid change. Universities have a role in enabling social mobility, which ties in a broader agenda on equality that we believe is associated with sustainability. Universities can take this role in a multitude of ways. Below we highlight some (Table 1.2).

The table above indicates three core dimensions in the sustainability engagement by higher education: disciplinary understanding, knowledge development and the university/practice relation. For all three, there are roles to be taken at research

Table 1.2 Different dimensions in the discussion of sustainability in higher education

	Concepts of sustainability	Approaches to knowledge development when working with sustainability	Ways to work on sustainability in or with practice
The disciplines perspective	Relating sustainability to different disciplinary discourses	Addressing the underlying dimensions and philosophical underpinnings of different apposes to sustainability	Creating interdisciplinary dialogue with society and business
Implications for teaching on sustainability	Creating engagement around the issue of sustainability	Encouraging engagement and inquiry into sustainability issues	Engage in mutual competence building on addressing sustainability issues
How the university as an institution can work with sustainability	Addressing real strategies and comparing objectives of the university	Facilitating the university as arena for discourse and sustainability and critical discussions	Encouraging research/society engagement, addressing theory/practice issues

level, at the level of teaching, and at the level of institutional strategy. What we want to highlight is that engaging in this field has institutional implications. As will be argued later in this book, just paying lip-service to the sustainability theme is not what we have in mind. Rather, we assume that addressing sustainability needs to imply that universities have to rethink some of their other engagements and strategies.

On the other hand, we do not argue that addressing sustainability means one thing only, nor should it necessarily replace other goals. We should also make it clear that as we see it, addressing sustainability is not a call for more regulation, more legislation, less freedom, more bureaucracy or more centralised decisions. Rather, we believe that sustainability will only happen if people voluntarily see the values of living in a sustainable society, and subsequently behave accordingly. Likewise we believe that the independence of thought, providing knowledge across society and critical, reflective research are the main achievement that universities can provide in a sustainable society. Through this, the university develops mutual competence building.

Mutual competence building is a matter of increasing reflection and insights, in order to make the conversation and discussion both more rational and more advanced and more inclusive. Mutual competence building is a concept that also addresses the competence and knowledge gap, and divides in society. Universities should in particular be concerned with inequality in knowledge in society.

These are objectives that universities have always aimed at. What can we add to this in this book? How will a focus on sustainability imply that we have to rethink these aims, or learn more about them? Using the starting point that sustainability is not a fixed position, but a framework for a discussion, we have invited the authors of this book to reflect on how the concept of sustainability features within their

particularly academic disciplines, and what are the prospects for collaborations with work life and social institutions?

1.4 The Contribution of This Book Beyond Norway

In line with the suggestions above, the contributors to this book explore how sustainability features in their particular fields, and debate approaches to teaching sustainability within their disciplines. The authors highlight how collaboration with society, work life and social institutions can bolster these efforts, as well as ensuring that universities become relevant players or arenas in multifaceted initiatives to bring about a sustainable society. It does not present an overall coherent account of this, nor is that the intention.

The intention of this book is to contribute to a discussion beyond the Norwegian case. This implies a need for context setting. We think that this book exemplifies an institutional setting where there is a high degree of collaboration between university and work life. This is due to both the fact that University of Agder has developed from a university college where its main activity has been professional education, and from the fact of the cultural and institutional context of Norway.

The majority of the authors work at the University of Agder, which is a new, state owned university in southern Norway. Agder region is an interesting area in which to explore the role of higher education in relation to sustainability matters. While Norway overall scores well on rankings of equality and wellbeing, Agder often lags behind. Moreover, a central global sustainability challenge features prominently in Agder. The region is increasingly reliant on income from the oil and gas sector. Local and regional authorities are highly supportive of the sector, and the university is a key supporter and partner of regional business, including, and perhaps particularly, the oil and gas sector.

Agder region also has a large processing industry cluster and a large oil equipment industry. These industry groupings have sustainability as a major theme in their strategy, and have entered into a collaborative partnership with the university in order to strengthen their work on sustainability. Leading companies in the region have formed a CSR network, where dialogue with the university has been a prominent part of the activities. The University of Agder has, therefore, a number of preliminary lessons to offer regarding collaboration with work life institutions in the field of sustainability, and the subsequent chapters will highlight these.

The institutional setting for the university is that of Scandinavia, which is often described as a collaborative social model (Johnsen and Ennals 2012a, b; Hall and Soskice 2001). There has been a discussion if there is a Nordic perspective on CSR (Midttun 2013), and a discussion of the idea of responsible innovation (Ekman et al. 2010) that resonates with a certain Nordic collaborative social model. If that is the case, it could be seen as mainstreaming responsibility and sustainability, rather than treating them as optional extras. For an international audience the Norwegian/Scandinavian model needs to be explained, including what this means for

universities. In Chap. 15 *Higher Education in a Knowledge Society* we compare the structure of higher education in Norway and UK.

Norway has had greater political stability and consensus than other nations. It has remained largely monocultural, for example by comparison with the UK. It has stayed out of the EU, and maintained distinctive development policies. Norway is unusual/unique in not facing current challenges of austerity, which dominate short term thinking in most countries. Universities in Norway continue to enjoy government funding and support. Academic knowledge is respected. Thus Norway has been able to maintain a longer term focus on environmental issues. On the other hand, Norway has an economy that to a large extent exploits renewable resources.

1.4.1 This Book

We could see the book as representing a beacon of enlightenment; at a time when around the world universities are in crisis, on the rocks. Other countries may be illuminated by the beacon. One generic argument which might develop from our discussion is that sustainability can only be defined in a discursive process. That is, sustainability will be a reasonable assessment, a well thought assumption, and a good intention to move towards solutions that take sufficient care of today's need and the future. Any society might have their idea of where this balance point is, and there will be international standards developing. CSR can be seen as industries' attempt to develop such a standard.

This book gives examples of this from Norway. It shows examples of what sustainability might mean in technology, nursing, nutrition, education and management. The point here is not that these are the final answers to the question of sustainability, but examples of discussions where academic institutions try to set a standard. Above we highlight the considerable uncertainty associated with sustainability, and we suggest that we see sustainability more as a framework for discussion. A similar point that emerges from the contributions to this book is the notion of sustainability as a contested concept. In some areas there will be profound disagreement and political battles, over what qualities or goals we should associate with sustainability. In the Chap. 9 on planning, for example, the author highlights how in one particular planning process the relationship between conservation and sustainability was an uneasy one.

Several of the authors point out that addressing sustainability in teaching and research requires an interdisciplinary perspective. Teachers need to bring in perspectives from other disciplines, so that students can grasp the full scale of the sustainability challenge. For example, in teaching on nutrition and health, it is vital to bring in insights from the environmental sciences, or knowledge of the value chains associated with food production. This may have important implications for the individual disciplines. Teaching sustainability, as with working with sustainability issues in practical operations, highlights a key challenge with sustainability: how radical must our responses be? Is it sufficient to address sustainability 'inside

the box' using solutions from the existing technological or operational paradigm, or do we need to strive for original and 'break through' solutions? This is a key dilemma in business and engineering disciplines: are the responses and solutions we are suggesting to students appropriate to the scale of the challenge we face? A variation of this argument looks at the university itself: are we an arena for experimentation on fundamental questions, or is our main rationale a conformist production of professionals?

Similarly, how innovative are universities when they approach the issue of sustainability? In some areas it seems that much of the radical critique that has been presented earlier in their disciplines now has a tendency to be 'rebranded' as sustainability arguments. Is sustainability only a way to rebrand old criticism? Is that a bad thing? Do institutions such as universities have ways of resisting change? How should we go about teaching a radical perspective on sustainability? In the Chap. 2 it is noted that science tends to distance us from this. Chapters 13 *Translating the Global Script of the Sustainable University: The Case of the University of Oslo* and 14 *Rhetoric about Sustainability in Education: The presence of the words not spoken* point to the need for universities to develop ethos. A university must teach and encourage commitment. At the same time however, it must provide the ability to think critically about commitment. In order to offer good responses to the sustainability challenge, we need critical discussions.

We have divided that book into the following five parts:

Part 1: Sustainability in a humanistic and cultural perspective

Part 2: Sustainability in life science

Part 3: Sustainability in technology and planning studies

Part 4: Sustainability and the teaching of business development

Part 5: The sustainable university

We have provided a short editorial introduction to each part.

The contributions offer a number of insights on how universities can enter into collaborative relationships. We lay foundations for cross-disciplinary approaches. The book also links to international research agendas and debates. We try to avoid both over-simplistic conclusions from Norwegian cases, and subservience to Harvard and other large international trend-makers. We encounter reflections on professional interventions. We present sustainability as a mode of discourse, rather than a narrow separate subject. The contents of the book, with the spread of topics, offer the prospect of a human-centred account. The core theme is how the university, both at a strategic level and in disciplinary research and teaching, can build mutual competence building between the university and society in order to meet future challenges.