

SOCIAL SUSTAINABILITY WITHIN THE FRAMEWORK FOR STRATEGIC SUSTAINABLE DEVELOPMENT

Merlina Missimer

Blekinge Institute of Technology
Doctoral Dissertation Series No. 2015:09

Department of Strategic Sustainable Development



Social Sustainability within the Framework for Strategic Sustainable Development

Merlina Missimer

Blekinge Institute of Technology Doctoral Dissertation Series
No 2015:09

Social Sustainability within the Framework for Strategic Sustainable Development

Merlina Missimer

Doctoral Dissertation in
Strategic Sustainable Development



Department of Strategic Sustainable Development
Blekinge Institute of Technology
SWEDEN

2015 Merlina Missimer
Department of Strategic Sustainable Development
Publisher: Blekinge Institute of Technology
SE-371 79 Karlskrona, Sweden
Printed by Lenanders Grafiska, Kalmar, 2015
ISBN: 978-91-7295-307-9
ISSN: 1653-2090
urn:nbn:se:bth-10464

Acknowledgements

This dissertation has been written at the Department of Strategic Sustainable Development, Blekinge Institute of Technology (BTH), in Karlskrona, Sweden, under the supervision of Professors Karl-Henrik Robèrt and Göran Broman.

Dear Kalle and Göran, thank you so much for your guidance and support in this amazing adventure; I have learned so much from both of you. Kalle, your ability to always think in terms of the bigger picture and from a strategic perspective is amazing. Learning alongside you for the last few years has been an honour. Göran, I deeply appreciate your ability to think big and make it actually happen. Without you, this work would have never been carried out. Thank you both for being great mentors, colleagues and co-adventurers.

I am also very grateful for the input and support from research partners Aura Light International, Karlskrona Kommun, Landstinget Blekinge, Max Hamburgerrestauranger, Scandic Hotels, Sleep Well, The Human Element and The Natural Step. Financial support from the foundation FUTURA and BTH, as well as Energimyndigheten (Swedish Energy Agency), FORMAS (Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning), Naturvårdsverket (Swedish Environment Protection Agency), Tillväxtverket (Swedish Agency for Economic and Regional Growth) and VINNOVA (Swedish Governmental Agency for Innovation Systems) is also gratefully acknowledged.

I would also like to sincerely thank my former and current colleagues at BTH for the continuing support and interest in my work. I appreciate your sincere intellectual curiosity about my work and your friendship and support in times of doubt and challenge. The conversations we have had about my work and the topic and the support you have provided are invaluable to me and, surely, I would have never made it out the other side without you.

To the MSLS students over the years, you are a true inspiration and I feel humbled and grateful for all the things you have taught me. Your curiosity and honest questioning have made my work better and your continuous support and checking-in have made the journey more valuable.

To all the practitioners across the world (directly involved in this research or not), your work is amazing and inspiring and has continuously helped me to improve my work. I am so grateful for your input into my research and hope the work I present here serves you and helps us create the future we all want!

A special thank you to my family here in Karlskrona and abroad. Your support has meant everything to me. Knowing that you were behind me every step of the way has made this possible.

André, I am so grateful for having you at my side in this and many other journeys. I cannot imagine doing it without you...

Karlskrona, June 2015

A handwritten signature in cursive script, reading "John Riner". The signature is written in black ink on a white background.

Abstract

A common criticism of the sustainability field is that definitions are vague and that the vast amount of different tools, methods and concepts leads to confusion. In response to this challenge, for the past 25 years a group of scientists has explored the possibility to develop an overarching and unifying framework that would allow for a structured overview of other concepts, methods and tools and therefore allow for concrete, strategic planning for sustainability. Over this 25-year period the Framework for Strategic Sustainable Development (FSSD) has been tested in learning loops between scientists and practitioners and has continuously been developed. The aim of this research is to contribute specifically to the social sustainability definition of this framework, which has been found lacking both in theory and practice.

The research first establishes exactly in which ways the social dimension is underdeveloped, both from a theoretical and from a practitioner's perspective. In addition, the research explores the general field of social sustainability in order to understand the larger field, but also to gather inspiration and understand similar approaches. This exploration leads to the conclusion that the larger field of social sustainability is also under-developed and underscores the importance of this research.

Based on this conclusion, a new approach to social sustainability within the FSSD is created based on a systems approach to the social system. Various aspects of the social system are identified to be essential for sustainability, namely *trust*, *common meaning*, *diversity*, *capacity for learning* and *capacity for self-organization*. Then, overriding mechanisms by which these aspects of the social system can be degraded are identified. Based on the understanding of the essential aspects of the social system and the identified overriding mechanisms of degradation of these, a hypothesis for a definition of social sustainability by basic principles is presented. The proposed principles are, that in a socially sustainable society, people are not subject to structural obstacles to: (1) health, (2) influence, (3) competence, (4) impartiality and (5) meaning-making. These aim to function as exclusion criteria for re-design for social sustainability.

The research then presents two evaluations of this new approach, one based on workshops and interviews with FSSD practitioners and one via an FSSD-analysis of ISO 26000. Both evaluations support this new approach as useful and workable, and also contribute to suggestions for further improvement.

Overall, the research contributes with a hypothesis for a definition of social sustainability, which is general enough to be applied irrespective of spatial and temporal constraints, but concrete enough to guide decision-making and monitoring. This is a contribution to systems science in the sustainability field, and it is a step towards creating an enhanced support for strategic planning and innovation for sustainability.

Keywords

Strategic sustainable development, social sustainability, systems approach, backcasting, sustainability principles

Thesis

Disposition

This thesis includes an introduction and summary of the research as well as the following papers:

Paper A

Missimer M, Robèrt K–H, Broman G and Sverdrup H. 2010. Exploring the possibility of a systematic and generic approach to social sustainability. *Journal of Cleaner Production* 18(10-11):1107-1112

Paper B

Missimer M, Robèrt K–H and Broman G. 2015. A Strategic Approach to Social Sustainability - Part 1: Exploring the Social System. *Submitted*

Paper C

Missimer M, Robèrt K–H and Broman G. 2015. A Strategic Approach to Social Sustainability - Part 2: A Principle-based Definition. *Submitted*

Paper D

Missimer M, Robèrt K–H, and Broman G. 2014. “Lessons from the field: A first evaluation of working with the elaborated social dimension of the Framework for Strategic Sustainable Development”. Presented at *Relating Systems Thinking and Design 3*. Oslo, 15 - 17 October 2014

Paper E

Missimer M, Robèrt K–H, and Broman G. 2015. ISO 26000 from a Strategic Sustainable Development Perspective. *Manuscript*

The papers have been reformatted from their original publication or submission to fit the style of this dissertation. However, the content was not changed.

Related Work

The following publication was not included in this thesis, but is the basis from which Paper E has been developed.

Missimer M, Robèrt K–H, and Broman G. 2014. A Systems Perspective on ISO 26000. Proceedings of the 2nd International Symposium “SYSTEMS THINKING FOR A SUSTAINABLE ECONOMY. Advancements in Economic and Managerial Theory and Practice. Rome, Italy: January 23-24, 2014

Table of Contents

1. Introduction	1
1.1. Sustainability: A Wicked Challenge Requiring Systems Change	1
1.2. Sustainable Development.....	1
1.3. Framework for Strategic Sustainable Development	2
1.4. Aim of this Research	3
1.4.1 Research Question	3
1.4.2 Scope.....	4
2. Background	6
2.1. Core Insights of the FSSD	6
2.1.1 The Reasoning behind the 5-level Model	8
2.1.2 Sustainability Principles	8
2.2. Practitioners' Experience with the Social Dimension	10
2.3. The General Social Sustainability Field	13
3. Research Methodology	17
3.1. Research Paradigm.....	17
3.2. Situating the Research	18
3.2.1 Transdisciplinary Research.....	18
3.2.2 Action Research.....	18
3.2.1 Design Science Research.....	19
3.2.2 Paradigmatic Choices in each Approach	19
3.3. Research Design	20
3.3.1 Overview and Methods for each Phase	20
3.3.2 Research Clarification.....	20
3.3.3 Descriptive Phase I.....	22
3.3.4 Prescriptive Phase	22
3.3.5 Descriptive Phase II.....	30
3.4. Validity	30
4. Summary of Appended Papers	33
4.1. Paper A.....	33

4.2. Paper B.....	34
4.3. Paper C	35
4.4. Paper D	36
4.5. Paper E.....	37
5. Main Results and Discussion	39
5.1. The Need for a more Robust Social Sustainability Framework	39
5.1.1 Is a Single Definition Appropriate or Possible?	40
5.2. Social Sustainability = Sustaining the Social System	41
5.3. Essential Aspects of (a Complex Adaptive) Social System	42
5.4. Social Sustainability Principles	44
5.4.1 The Logic behind the Principles	45
5.5. First Evaluations from Praxis	47
5.6. On Theoretical Robustness	49
5.6.1 Internal Robustness	49
5.6.2 Reflections on the General Approach	50
5.6.3 Overall Validity	53
6. Contributions	55
7. Conclusions	57
References.....	59
Paper A.....	75
Paper B.....	93
Paper C.....	129
Paper D.....	151
Paper E.....	169

1. Introduction

For over 50 years, scientists and other thought leaders have been trying to call attention to the degradation of the foundation for human civilization through unsustainable behaviour and have extensively documented the negative effects of this behaviour (Carson 1962, Meadows et al. 1972, Steffen et al. 2004, Millennium Ecosystem Assessment 2005, Stern 2007, Intergovernmental Panel on Climate Change 2007, Rockström et al. 2009, Steffen et al. 2011). The 2012 Living Planet Report details that humanity is currently using 50 per cent more resources than the earth can provide on a yearly basis and that by 2030 even two planets would not be enough for human consumption levels (World Wildlife Fund, 2012).

1.1. Sustainability: A Wicked Challenge Requiring Systems Change

Over these 50 years, it has become more and more clear that all the individual issues amount to systematic degradation of our biosphere and are not just one-off issues that can be tackled individually (Rockström et al. 2009, WWF 2010). The issues and causes are interrelated in a myriad of ways and include many uncertainties (Hartman et al 2009, Kahane 2010), which leads to the sustainability challenge being complex. It is, therefore, also often considered a '*wicked problem*' - a problem that is complex, where uncertainty is high, where there is debate over values and where solutions are not obvious (Rittel and Webber 1973, Funtowicz and Ravetz 1993). The underlying problem seems to be that many of our human social systems are built on fundamentally unsustainable tenants and, therefore, entire systems change is required to move towards sustainability (Senge 2006, Mirchandani 2010, Draper 2013). In essence, we need to find ways to strategically and systematically transform many of our man-made systems.

1.2. Sustainable Development

In response to the evidence of the state of our world, a movement advocating for sustainable development emerged. While starting out as an environmental movement in the 1960s, it slowly became a broader movement that acknowledged the interwovenness of people's ecological, social and economic well-being (McKenzie 2004, Littig and Griessler 2005, Cuthill 2010).

Politically, sustainable development (SD) most prominently entered the global arena in 1987 in a report from the United Nations Commission on Environment and Development, also known as the Brundtland report. The report stated "*Humanity has the ability to make development sustainable - to ensure that it meets the needs of the present without compromising the ability of future*

generations to meet their own needs” (World Commission on Environment and Development 1987). In 1992, at the Earth Summit in Rio de Janeiro, this definition was adopted as the universal definition of sustainable development and has since been the basis for various discussions in the international policy arena, such as the World Summit on Sustainable Development in Johannesburg in 2002 and the Rio+20 conference in Rio de Janeiro in 2012, as well as efforts on a regional level to put this idea into practice, such as Agenda 21.

There has been much criticism of the Brundtland definition, mainly in relation to the vagueness of what sustainability and sustainable development actually mean (e.g., Jacobs 1999, McKenzie 2004). Paehlke (2001, 7 as cited in Partridge 2005) argues that sustainable development is a concept “*so amorphous that it might mean anything.*” As Jacobs (1999, 24) notes, “*the vagueness of the definition ... allows business and ‘development’ interests (and their government supporters) to claim that they are in favour of sustainable development when actually they are the perpetrators of unsustainability*”. The vagueness has also led to a vast array of ideas, concepts, methods and tools to aid organizations and governments to address the socio-ecological problems. This variety of definitions, terms, approaches, methods and tools, many of them designed for specific fields only, makes the sustainability field confusing and leads to a growing need to understand how they relate to sustainability and to each other (Huesemann 2001, Robèrt et al. 2002).

1.3. Framework for Strategic Sustainable Development

In response to the vagueness and lack of clarity in the sustainability field, and in order to create a unifying structure for sustainability and processes to get there, a group of scientists has explored the possibility to develop a framework that would be helpful in this regard.

As pointed out above, it is clear that sustainability issues cannot be solved by research within isolated disciplines and that, in order to match the complexity of the issues, a transdisciplinary approach is needed (Borch and Arthur 1995, Max - Neef 2005, Steffen et al. 2011, Shrivastava et al. 2013). In addition, both the ecological and social systems behave in complex ways; thus traditional linear logic is not an appropriate tool in this context (Clark et al. 1995, Max-Neef 2005; Rockström et al. 2009).

The Framework for Strategic Sustainable Development (FSSD) is therefore explicitly built on a transdisciplinary approach and insights from systems science. In order to avoid the reductionism that often comes hand in hand with linear thinking, “a rigorous scientific understanding was needed that also allowed for dealing with trade-offs from the perspective of a future sustainable situation and therefore minimises the risk of creating new problems while solving the known ones” (Bratt, 2014, 26). To address the vagueness levied at the sustainability field, the FSSD has been designed to give guidance on

strategically moving any region, organization, project or planning endeavour towards social and ecological sustainability in an economically viable way.

This framework has now been under continuous development over a 25-year consensus and peer-review process including theoretical exploration, followed by refinement and testing with scientists and practitioners. The FSSD has been elaborated and refined in theory (Robèrt 1994, Holmberg and Robèrt 2000, Broman et al. 2000, Robèrt 2000, Robèrt et al. 2002, Ny et al. 2006) and the principles have been applied by a variety of business leaders (Electrolux 1994, Robèrt 1997, Anderson 1998, Natrass 1999, Broman et al. 2000, Leadbitter 2002, Matsushita 2002, Natrass and Altomare 2002) and policy makers (Gordon 2003, Cook 2004, Strauss-Kahn 2004, James and Lahti 2004) to create a bird's-eye perspective on challenges and opportunities from a sustainability perspective. This framework has also been applied to relate various tools, methods and concepts for sustainable development to sustainability and to each other (Robèrt 2000, Robèrt et al. 2002, Robèrt et al. 2013a), including eco-design tools (Byggeth and Hochschorner 2006) and for company decision systems (Hallstedt et al. 2010), and has been taught and used to structure teaching, research and cooperation within and between academic institutions (Broman et al. 2002, Waldron et al. 2004, Waldron 2005, Robèrt et al. 2013a, Missimer and Connell 2012). For an updated review of the FSSD with some applications, and for references, see Robèrt et al. 2013b.

The FSSD seems to be one of the most rigorous and systematic attempts to provide an operational definition of sustainability and strategic guidelines for how to reach visions framed by such a definition. However, it has also become clear over the 25 years of development of the FSSD, that the social dimension of the framework is neither as robust nor as concrete as the ecological dimension (More detail on this claim will be presented in 2.1).

1.4. Aim of this Research

The above led to the idea to explore this shortcoming of the FSSD as well as a potential way to address it. The aim of the research thus has been to further develop the social dimension of the FSSD and thus contribute to the larger academic field and movement of sustainable development. As such the research has a theoretical purpose, but only in so far as one cannot work strategically in practice without a clear theoretical concept. The main aim has always been to support the real-life transition towards a sustainable future.

1.4.1 Research Question

The main research question that guided the research has been:

How can the FSSD be further developed as regards the social dimension to better aid more concrete planning and decision-making for sustainable innovation?

The accompanying research objectives were:

- To get a general understanding of how FSSD practitioners currently work with the social dimension of the FSSD
- To get a general understanding of the general social sustainability field within academia
- To describe in which ways the current social dimension of the FSSD is under-developed and not robust
- To develop a prototype of a new approach to social sustainability within the FSSD, that is more scientifically rigorous and concrete
- To test this new prototype and evaluate the results from the testing.

1.4.2 Scope

In this thesis the social dimension of sustainability refers to the sustainability of the social system – what is required to keep the social system functioning and how can this functioning be undermined. It does not focus on the social dimension of sustainability in the sense of the social change that is needed for sustainability in general to occur; although these two are certainly connected.

This work focuses specifically on exploring social sustainability in line with the approach as presented in Section 2.1 and in more detail in Section 2.3. While a literature review of other social sustainability approaches has been conducted to understand the field and gather inspiration (See section 2.3), the main focus is on further developing the FSSD specifically. The rationale for this focus is based on the *unifying* ambition and approach of the FSSD. The FSSD aims to identify basic mechanisms for un-sustainability that explain and cover the myriad of impacts from our un-sustainable design of modern society, and enable any planning endeavour to systematically approach a situation where it no longer contributes to these mechanisms. Finally, the approach allows for the strategic selection of tools, methods and concepts needed to support a transition from the current situation towards sustainability.

There are other concepts and protocols such as Corporate Social Responsibility, Social Life Cycle Assessment, ISO 26000, the Global Compact, the Global Reporting Initiative, etc., which are related to the topic of social sustainability. The time and scope of this thesis did not allow for exploration of all of these. Paper E focuses on an analysis of ISO 26000, as this guidance has been heralded as the de-facto social responsibility standard. However, the other approaches

will also have to be analysed in detail in future research to paint a full picture of their connections, overlaps, complementarities and possible contradictions.

The research presented in this doctoral thesis is part of a larger effort with the same aim. The work is undertaken in the Sustainability-Driven Innovation Group at the Department of Strategic Sustainable Development. As such, the research is situated in the context of strategic planning and product¹ innovation. While this doctoral dissertation does not directly touch upon product innovation, further research is already on its way to investigate how such a more elaborated and refined definition of social sustainability can be integrated with support methods and tools for strategic planning and product innovation.

¹ Product here refers to physical artefacts, software, processes, services or combinations of these.

2. Background

Before diving into the main research of this thesis, this section details areas that serve as the background to the research.

The first section describes the core tenants of the FSSD (based on insights from working with ecological sustainability) that also form the basis of the work on social sustainability presented in this dissertation.

Section 2.2 gives more insight into how practitioners of the FSSD are working with the social dimension and what challenges they face. This serves as a baseline to understand the practical implications and shortcomings the current approach has, as well as improvements practitioners see as essential.

Finally, Section 2.3 is a synthesis of the general academic literature and discussion on social sustainability. It serves to position the research presented in this dissertation in the larger academic context as well as to examine whether the research can be informed by existing approaches.

2.1. Core Insights of the FSSD

At the foundation of the FSSD lies a 5-level model (see Figure 1):

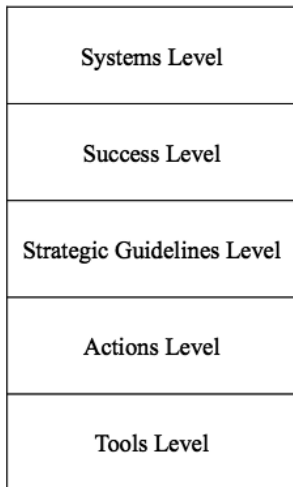


Figure 1: The 5-level model that the FSSD is based on.

The systems level describes the overall major functioning of the system, in this case the social system of the human society within the biosphere. The current threats to and degradation of this system are the rationale for the levels that follow. To apply an analogy, in chess, the system level contains the board, pieces and rules of the game.

The success level specifies the definition of the objective, in this case, sustainability. Returning to the analogy, to checkmate one's opponent is success, which can happen in almost uncountable combinations all complying with the same basic principles of checkmate. To understand the principled definition of winning in chess, it is important to know *enough* about the system.

But it is not necessary to know everything about the system of chess, with all its history and theoretical and strategic implications. The next level requires this key second level.

The strategic guidelines level specifies the guidelines for how to approach the objective strategically. This implies a step-by-step approach toward the objective in an economically viable way. The step-wise transition is guided by “backcasting” thinking, i.e., thinking back from a vision fulfilling the objective to the current situation – backcasting – to identify possible transition paths. A unique feature of the FSSD is that the backcasting does not only, or necessarily, occur from a simplified image of a desirable future (as in “scenario-planning”), but from basic principles designed as boundary conditions for re-design.² In chess, moves serve as strategic steps toward fulfilment of the principles for checkmate. Trade-offs, for instance sacrificing a piece for a higher strategic cause, are selected from their capacity to serve as platforms toward complying with principles of success (level 2), rather than as choices between inherent evils.

The actions level comprises everything done in concrete terms (e.g., in chess, the actual moves). Strategic guidelines at level 3 are applied to inspire, inform, and scrutinize every action or investment that is put into a strategic plan.

The tools level includes concepts, methods, and tools that are often required for decision support, monitoring, and disclosures of the *actions* to ensure they are chosen in line with the *strategic guidelines* to arrive stepwise at *success* in the *system*. Examples in sustainable development include modelling, management systems, indicators, and life cycle assessments. In chess, this would include everything from books on how to play, to management systems to store and analyse game-by-game moves and outcomes.

² First, given differing values, it can be difficult for large groups to agree on relatively detailed descriptions (scenarios) of a desirable distant future. Second, given technological and cultural evolution, which keep changing the conditions for the optimal path ahead, it is best to avoid overly specific assumptions of the future too early in a process of transformation. What may seem as an optimal final solution today, may be helplessly obsolete tomorrow. Third, how do we know that the scenario from which we backcast is really sustainable in the first place if it is not assessed against robust sustainability principles? And, finally, if we backcast directly from scenarios without having them scrutinized against basic principles for sustainability, it is difficult to draw general conclusions or gain learning from one topic or organization that could be transferred to other topics and organizations. In addition, as a principle-based vision is more flexible than its scenario-based counterpart because success can be achieved in a variety of ways (as long as the principles are met), organizational learning experts observe that these types of constraints *stimulate* creativity. For example, Senge (2003, 5) states “understanding your constraints frees you to create”.

2.1.1 The Reasoning behind the 5-level Model

In earlier work with ecological sustainability, it became clear that the discourse in society was characterized by high levels of confusion as to how to define this and approach the subject strategically. For example, biofuels was often mentioned as a principle for sustainability. However, if practices around biofuels build on a type of harvesting that destroys ecosystems or create negative social impacts by ruining cultures, it is actually not sustainable and can therefore not be a basic sustainability principle in itself.

The 5-level structure of the FSSD evolved to avoid such confusion by keeping a strict, logical separation between levels, especially between the system as such and the objective in the system. The objective can then serve as the functional system boundaries that guide the further research of the system. What aspects of the system (level 1) are essential to reach the objective (level 2)?

This overcomes one common challenge when working in complex systems, namely the challenge that one can get lost in the details and complex interrelationships of the system, never arriving at a good-enough understanding of how all the parts interrelate to ever move on to do something with this information.

Once the objective is clearly defined, it is also possible to look for strategic guidelines (level 3) by which actions (level 4) can be organized in a step-wise strategic plan, and relevant concepts, methods and tools for decision-making and monitoring of the planned transition route can be chosen or developed (level 5).

For the example above, this leads to the conclusion that a change to biofuels is an action (level 4) that may, or not, follow strategic guidelines (level 3) as a stepping stone to arrive at success framed by some basic principle of sustainability (level 2). The question is then, what are those principles of sustainability?

2.1.2 Sustainability Principles

As mentioned above, a unique aspect of the FSSD is that any definition of success is required to be within basic sustainability principles (SPs). The principles for ecological sustainability were derived through the following logic and by asking the following question: Sustainability has really only become relevant as a consequence of humanity's unsustainability, when we systematically overstep or challenge the systems on which we depend. Therefore, sustainability can be defined as not systematically overstepping the boundaries of the systems on which we depend. The question then becomes by

what overriding mechanisms, upstream at the point of first approximation in chains of causality, do human activities set off the myriad of downstream impacts that destroy the ecological system?

Literature studies provided empirical knowledge of the functioning of the ecosystem and the sustainability challenge in this regard (level 1 of the FSSD).

This knowledge and conceptual modelling sessions with groups of experts led to a first attempt to come up with overriding mechanisms of degradation that would explain ecological unsustainability. It was shown to be possible to cluster the myriad downstream impacts into a few upstream first-order mechanisms. Thereafter, a “not” was inserted for each mechanism to form first-order sustainability principles, which can be used as constraints for re-design.

Next, the generality of this attempted principled definition of ecological sustainability was tested on more empirical data of the ecosystem and the sustainability challenge related to it. This gave rise to a new and more refined definition, which was tested again, and so on.

It was found, during the learning process, that to be functional within the FSSD, the set of basic principles for the objective must have the following characteristics (Robert 2000; Ny et. al 2006)

- Science-based, that is, compliant with relevant scientific knowledge available to date.
- Necessary for sustainability, that is, to avoid imposing unnecessary requirements and to avoid confusion over elements that may be debatable.
- Sufficient for sustainability, that is, the principles taken together should cover all relevant aspects.
- General, that is, people from various societal sectors and scientific disciplines should be able to understand and use them.
- Concrete, that is, capable of guiding actions and problem solving.
- Distinct, that is, mutually exclusive to facilitate comprehension and monitoring.

In their current form the basic principles for ecological sustainability are:

In a sustainable society, nature is not subject to systematically increasing...

- 1) ...concentrations of substances extracted from the Earth's crust
(e.g., CO₂ from fossil fuels, or heavy metals and radioactive isotopes),
- 2) ...concentrations of substances produced by society
(e.g., CFC's, NO_x and endocrine disruptors),
- 3) ...degradation by physical means
(e.g., deforestation, overfishing and overuse of water tables),

Furthermore, so far a single overarching principle for social sustainability has been used in the FSSD (SP4). This is based on some knowledge about the constitution of human beings, namely that most people have a desire to fulfil their needs and some capacity to do so if not hindered by others. If this capacity is systematically undermined by social means, that would represent social unsustainability (cf. with the Brundtland definition above).

The basic principle for social sustainability (prior to this research work) is:

In a sustainable society,

- 4) ...people are not subject to conditions that systematically undermine their capacity to meet their needs
(e.g., from the abuse of political and economic power).

The sustainability principles help people in companies, municipalities, etc., to ask relevant questions and to identify how they contribute to unsustainability as well as to discover opportunities and step-wise approaches to phase out such contributions. The sustainability principles can also guide research (e.g., on indicators) even before critical boundaries are trespassed.

2.2. Practitioners' Experience with the Social Dimension

The FSSD is used by practitioners all across the world to support companies and communities to move towards sustainability as well as create sustainable innovation and improve the utility of various support-tools for sustainable development. This section gives some insight into how practitioners are currently working with the social dimension and what challenges they face. The practical experience of practitioners was an important piece in understanding in what ways the FSSD might be further developed, as the core aim is for the social dimension to be scientifically robust as well as concrete enough to be used to support strategic planning towards sustainability.

The practitioners' experience was assessed via a structured questionnaire interview, where an online questionnaire was distributed to FSSD practitioners via various network channels (the Natural Step Network, the Master's in Strategic Leadership towards Sustainability network as well as various informal Facebook and LinkedIn groups that are associated with the use of the FSSD).

This comes with its limitations in terms of the depths of understanding that can be generated and the lack of ability to clarify statements. However, it was regarded as exploratory research; it was not necessarily a thorough assessment of the current state. The findings created enough of an understanding to move on to

assess in depth the conceptual shortcomings of the FSSD (Paper A) and to create an evolved prototype of an approach.

The questionnaire was started by 56 individuals, 50 of whom finished the questionnaire and provided meaningful input for the inquiry. 23 of the 50 received their training in the FSSD during their time at the Master's programme in Strategic Leadership towards Sustainability at the Blekinge Institute of Technology (BTH) and had thus spent 10 months learning about the approach. Four participants had received their training of the FSSD from the 10-week distance course offered at BTH. In both of these groups, many then built on their theoretical understanding by using the framework in their practical work, either directly as consultants or in their own projects. 12 questionnaire participants learned the framework basics via a TNS (The Natural Step) training, seven learned it "on the job" mostly at TNS offices around the world and four had no official training, but have learned about the framework through reading and other forms of self-study.

The questionnaire was aimed at finding out how practitioners were working with the social sustainability principle (SP4) of the FSSD and what their insights and challenges were.

Results of the questionnaire

One participant mentioned that one of the challenges of SP4 on its own was that it was "not easy to define needs and satisfiers if you don't use another tool (e.g., Manfred Max-Neef's theory)." Indeed, the vast majority of the respondents replied that they used Manfred-Max Neef's theory of human needs (Max-Neef et al. 1991) to go further into the sustainability principle. This was not surprising as this is an approach both taught by BTH and some TNS offices.

Some aspects that were mentioned as positive were that SP4 was a superb conversation starter (two respondents) and that it "gives us a full sustainability picture in one sentence, which is very helpful". Also, one respondent mentioned that a benefit of the current approach was that it made people realize that social sustainability is not just about poor people. One respondent also appreciated that "it frames it around people's capacity to meet their own needs not being undermined (as opposed needing to be met by others)".

When asked directly about challenges in their work with the SP4, three practitioners indicated that they had no challenges at all. The top challenges that were mentioned by the other practitioners were as follows:

- **Vague:** 15 respondents directly said that the SP as it was written, was too vague, too general or not practical enough to work with. In addition, four practitioners in practice used other tools or supplemented SP4 with tools such as the Human Rights concept, ILO conventions or others. On

the other hand, two practitioners said that it was an advantage that the SP was so broad, because it allowed other tools to be brought in.

- **Measurement:** Perhaps as a result of the above, nine practitioners mentioned the challenge of not being able to measure progress on SP4 as it was formulated. Some participants connected this to not being able to measure social sustainability using SP4 in terms of financial benefits. In opposition to that, one participant mentioned that they felt the social dimension was better measured than the environmental one.
- **Scientific Rigor:** Three participants pointed out that the social dimension needed work to achieve a similar scientific foundation as the ecological dimension had. Two participants pointed out that it was a challenge that there was not similar scientific support or consensus around SP4 as there was around SPs 1-3. Another participant pointed out that what qualified as a violation of SP4 was currently rather subjective.

The pattern that stood out the most from the questionnaire data was that there was a lack of clarity and a vast degree of confusion or different interpretations about social sustainability within the FSSD or SP4 specifically; one person was still referring to an old version of SP4 with “fair and efficient resource use” which was replaced around 2004, one person considered the business case for sustainability (e.g., Willard 2012) to be about social sustainability; four respondents considered social sustainability to be about the social change needed in society to adopt sustainability overall (e.g., “In my opinion social sustainability includes many aspects - social equity and justice, public health, quality of life, behaviour change for social change, corporate social responsibility, leadership”); one considered financial sustainability of a company as part of social sustainability; one respondent worked with social sustainability as the “ability of staff to meet the needs of customers”; one respondent admitted to “dumping all the social aspects of sustainability into SP4”, while another reported that when using SP4 in workshops this was where people went “wild”, bringing up “all the theories they have ever heard”. This respondent concluded that “talking about human needs and about SP4 time and time again leads to a lot of debate and actually distraction in the groups that I work with.” One other participant echoed this feeling of distraction from the core.

Another aspect that was mentioned as unclear was the connection between individual human needs and society, as well as the connection between human needs and ecological sustainability (two respondents).

Four respondents mentioned challenges related to social sustainability in general, namely that social sustainability comes after everything else (two) and that business does not understand how it relates to them (two). One of the latter two explained it as business having the following response “I shouldn't make this business decision as it will impact negatively (potentially) on some people we have never met and that might come back on our business because (no

answer)". Finally, one practitioner mentioned that they were not convinced that "we have found a way to present [...SP4...] in a way so that organizations consider it strategic".

Four people also considered the wording about barriers as a challenge. One respondent stated that "Generally the 'no barriers to meeting human needs' draws a blank from people; discussion of human needs engages people." One respondent felt that "the principle seems to imply solutions that make life less fun".

Finally, some practitioners went as far as saying that the FSSD is mostly considered an environmental framework because of the under-development of the social side (three) or even that an emphasis on this approach to social sustainability "can damage the client's acceptance of the FSSD".

Six respondents directly called for an overhaul or further development of SP4; three additional ones mentioned that a better narrative, metaphor or explanation was needed for the social side of the FSSD. As one practitioner put it, "It is a huge area covered in a short sentence that was cutting edge once it was introduced in the early nineties but nowadays is a bit vague".

Having discovered the desire from practitioners to evolve the work with social sustainability, the next section looks at the overall academic field of social sustainability to discover the main themes in academic discourse.

2.3. The General Social Sustainability Field

A main theme within the academic discourse is that, despite the conceptualization of sustainability as a three pillar concept that integrates social, economic and environment concerns (McKenzie 2004, Littig and Griessler 2005, Cuthill 2010), the social dimension of sustainability has been essentially neglected (Littig and Griessler 2005, Partridge 2005, Kunz 2006, Cuthill 2010, Dempsey et al. 2011, Vallance 2011). Spangenberg and Omann (2006, 319) state that "*although as equally important as economic or environmental sustainability (United Nations, 1993), it [social sustainability] still lacks broad recognition*".

The topic has, however, gained increased attention in the last 10 years with more scholars focusing specifically on the social pillar of sustainability, discussing definitions, implications and indicators for this "pillar" of sustainability (e.g., Koning 2001, Barron and Gauntlet 2002, McKenzie 2004, City of Vancouver 2005, Littig and Griessler 2005, Kunz 2006, Cuthill 2010, Dempsey et al. 2011, Boström 2012). With this increased focus on defining the social pillar, various definitions of what social sustainability actually is have been brought to the table. Table 1 on the next page provides an overview.

Table 1: Social Sustainability Definitions

McKenzie, 2004, 12	Social sustainability is a life-enhancing condition within communities, and a process within communities that can achieve that condition.
Barron and Gauntlet 2002, vi	Social sustainability occurs when formal and informal processes, systems, structures and relationships actively support the capacity of future generations to create healthy and liveable communities. Socially sustainable communities are equitable, diverse, connected and democratic and provide a good quality of life.
Stren and Polese 2000, 15-16	Social sustainability of a city is the “development and/or growth that is compatible with the harmonious evolution of civil society fostering an environment conducive to the compatible cohabitation of culturally and socially diverse groups while at the same time encouraging social integration, with improvements in the quality of life for all segments of the population.
Littig and Griessler 2005, 72	Social sustainability is given, if work within a society and the related institutional arrangements satisfy an extended set of human needs and are shaped in a way that nature and its reproductive capabilities are preserved over a long period of time and the normative claims of social justice, human dignity and participation are fulfilled.
Sachs, 1999, 32–33	Social sustainability includes achieving a fair degree of social homogeneity, equitable income distribution, employment that allows the creation of decent livelihoods, and equitable access to resources and social services, [...] a balance between respect for tradition and innovation, and self-reliance, endogeneity and self-confidence.
City of Vancouver, 2005, 12	For a community to function and be sustainable, the basic needs of its residents must be met. A socially sustainable community must have the ability to maintain and build on its own resources and have the resiliency to prevent and/or address problems in the future.
Partridge (in Spangenberg and Omann 2006)	A socially sustainable society is one that is just, equitable, inclusive and democratic, and provides a decent quality of life for current and future generations.

Some authors have elaborated their definitions. This seems to be especially the case with definitions which originate in community planning, often in participatory processes. Two of the more comprehensive elaborations come from The City of Vancouver and the work done by Barron and Gauntlet for the

Western Australian Council of Social Services. The City of Vancouver (2005) identifies individual basic needs, individual or human capacity and social or community capital as the essential components of social sustainability and add the guiding principles of equity, social inclusion and interaction, security and adaptability. Barron and Gauntlet (2002) put forth the principles of equity, diversity, interconnectedness and quality of life, as well as democracy and governance, and specific characteristics that come with each of these.

Other authors, rather than providing a specific definition, or in addition to the definition, list themes or aspects of social sustainable development. The lists of themes or aspects can comprise from four to 43 items, depending on the author and range from broader themes such as general equity and leadership to more specific ones such as walkable neighbourhoods and mixed tenure (For an overview see Missimer 2013).

Despite the increased focus on the social sustainability dimension over the last 10 years, the assessment of the field in recent years seems no different than earlier. Dempsey et al. (2011, 289) conclude that “*surprisingly little attention has been given to the definition of social sustainability [...]*”.³ There is still a relatively limited literature (Colantonio et al. 2009, Dempsey et al. 2011), a lack of a clear theoretical concept (Littig and Griessler 2005, Dempsey et al. 2011), a lack of clear understanding of the meaning and interpretation (Weingaertner and Moberg 2011) and a lack of clear indicators that help distinguish sustainable development from un-sustainable development (Omann and Spangenberg 2002). Colantonio et al. (2009, 16) assert:

“The concept of social sustainability has been under-theorised or often oversimplified in existing theoretical constructs [...]. Furthermore, no consensus seems to exist on what criteria and perspectives should be adopted in defining social sustainability. Each author or policy maker derives their own definition according to discipline-specific criteria or study perspective, making a generalised definition difficult to achieve.”

There seem to be a number of challenges:

- The social sustainability concepts are built on “*concepts, such as community, society, and inclusiveness, that themselves have no clear definition* (Davidson 2007, 791).”
- Social sustainability is an analytical and a normative concept, but these aspects are not always clearly separated, leading to confusion in the prioritization process (Littig and Griessler 2005).

³ Dempsey et al. (2011) discuss social sustainability specifically in relation to urban development.

- Objectives and indicators are frequently selected based on practical understanding rather than theory and, therefore, often reflect current political agendas as well as theoretically unfounded assumptions (Littig and Griessler 2005). Omann and Spangenberg (2002), for example, highlight how social sustainability is approached differently in different EU countries based on the internal political conversation (emphasis on labour in Germany, consumption in the Netherlands, etc.). Sometimes, as Davidson (2009) has observed, the term social sustainability is simply used to describe the current system of social welfare and policy.
- The social sciences have concerned themselves with a wide variety of social objectives, strategies and measurement instruments, but often with little consideration of the sustainability perspective (Metzner 2000 as cited in Spangenberg und Omann 2006 and Colantonio et al. 2009). *“This deficit makes it difficult to systematise the different elements responding to certain problems or project priorities, which dominate the current debate, and this in turn is a major obstacle for any attempt to prioritise among the criteria developed in an ad hoc fashion, for strategy development and assessment”* (Spangenberg und Omann 2006, 320).
- Finally, there is no optimum for indicators and it is problematic to establish benchmarks (Colantonio 2007).

The above findings seem to indicate that the social dimension of sustainability is still underdeveloped but that a clear conceptual framework is important and requested. This situation seems similar to how it was for the ecological sustainability challenges some decades ago: there was a general understanding that ecosystems were deteriorating, but it was unclear how the myriad of threats connected at a basic and operational level and the societal, as well as scientific, discourses was plagued by a lack of systems perspective. This called for some framework(s) that could provide understanding of the problems and their connections as well as strategies to solve the problems without causing new problems somewhere else. The development of the ecological aspects of the FSSD shows that it was possible to make these connections visible and to tackle the problems systematically through re-design (Missimer et al. 2015a). This further therefore suggests that a development of the social dimension of a framework like the FSSD is appropriate and urgently needed.

3. Research Methodology

This section presents brief thoughts on scientific research to elucidate the author's stance as a researcher and presents the methods used to address the research problem described above.

3.1. Research Paradigm

A paradigm is “*a lens through which we view the world*” (Collins 2010, 38). In the context of research, it is the lens that influences how we approach and design our study. Some also call this a worldview or epistemologies and ontologies (Creswell 2013, 6). Creswell further suggests that individual researchers should “*make explicit the larger philosophical ideas they espouse*”; this means the philosophical worldview proposed in the study, a definition of basic ideas of that worldview, and how the worldview shaped their approach to research (ibid).

When engaging in the study of ontologies, one usually encounters two dominant streams - objectivism and subjectivism. Objectivism refers to the idea that (social) phenomena have an existence that is independent and external to the actor, while subjectivism proposes that all phenomena are produced by us through perception and human interaction (Collins 2010, 203). These two are traditionally presented as a dualism, which one needs to choose between in order to devise a research strategy. The following quote summarizes the struggle (and a resolution) that a researcher might face with this decision:

“Since these views [objectivism and subjectivism] are clearly in opposition, it is difficult to reason how either can provide the totality of knowledge and capture the entirety of such enormous questions as 'what is real?'. Nor can I say that I believe the truth is inside or outside of our own beings. I am inclined, therefore, to take a pragmatic view of how reality is and assume that aspects of both perspectives can uncover valuable information. This is similar to Nietzsche's 'perspectivist' view. The wider the perspective, the broader the understanding.

(Aly Rhodes as quoted in Collins 2010, 92)

The pragmatic view mentioned in the quote refers to the idea of “*using whatever philosophical or methodological approach works best for the particular research problem at issue*” (Robson 2011, 28). It is, at its core, problem-centred, pluralistic and concerned with consequences of actions and real-world practice (Creswell 2013). With this in mind, pragmatism seems like a good fit also for

this research undertaking considering the background and aim described in Sections 2 and 3.

In addition, the FSSD approach is based on, allows for and is strengthened by a combination of these two paradigms. On the one hand, it *approaches* objectivity by using scientific methodologies to understand the ecological and social systems and deriving *basic* principles or boundary conditions from this understanding. The whole point is to create something unifying beyond differences of values and other subjective parameters. On the other hand, within these boundary conditions and this scientific understanding, subjectivity and the differences in values and meaning-making *enhance and are needed* to bring life to the overarching framework in various contexts, a point which will be returned to in section 5.1.1

3.2. Situating the Research

This research is part of the larger field of sustainability research. Sustainability research should here be understood as intentional research. It aims to contribute to sustainability, rather than only understand, explain and predict it. It is research *for* sustainability, rather than only about sustainability (e.g., see Peattie 2011, 23).

3.2.1 Transdisciplinary Research

Shrivastava et al. (2013) as well as Lang et al. (2012), among others, argue for sustainability as a transdisciplinary science. While no clear consensus on the term transdisciplinary exists (e.g., Wickson et al. 2006, Pohl and Hadorn 2007), the general approach includes seeing the work as real-life phenomena-driven (not theory-driven) and based on collaboration between different academic disciplines, but also between academic and non-academic actors; all with the aim of integrative synthesis. It is also “*co-evolutionary in the sense that research and application occur iteratively, modifying each other* (Shrivastava et al. 2013 (236).” It is indeed this integrative synthesis that this research also aims for.

3.2.2 Action Research

Action research (AR) seems like a natural fit with transdisciplinary research. AR has a variety of definitions and approaches, but in essence “*action research is a framework for ‘inquiry that seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people* (Reason and Bradbury 2006, 1)’ (as cited in Savin-Baden and Howell 2013).” The natural fit is based on both the collaborative approach, but also the reflective nature of the endeavour, which is needed for integrative synthesis.

At its heart action research focuses on the improvement of practice of practitioners in a certain field. This is also applicable to the research that this dissertation is a part of. All three main researchers are also practitioners in the field and the entire project's aim is to provide better support to (SSD) practitioners. In addition, the work is a collaboration between researchers and partners in business, municipalities and other organizations, who are all interested in a more solid and practical way to work with social sustainability.

3.2.1 Design Science Research

In his PhD thesis, Miller (2011) repositions sustainability science as a “science of design”. Following Simon (1996, 111), he describes the process of design as the choosing of a “*course of action aimed at changing existing situations into preferred ones*”. It focuses on how things should be, rather than on how things are (Miller 2011, 101). This, to me, seems like an apt positioning of sustainability science, as it is important to understand not only what is currently sustainable and unsustainable, but also what to do about the unsustainability and how. We need prototyping and the creating and studying of solutions at a large scale (also see Frye-Levine 2012). In this particular research, the approach also seems fitting, because this research focuses on improving a heuristic to work with sustainability. This required an understanding of the status quo of the FSSD, followed by the suggestion of an improved framework, the improvement of which required design in itself.

3.2.2 Paradigmatic Choices in each Approach

Transdisciplinarity comes with a certain set of assumptions. From an ontological perspective it asserts that reality is manifested at multiple levels, where each level has its own inherent logic. This means that epistemologically, many forms of knowledge are necessary. Methodologically, it relies on rigor openness and tolerance; ethically, it relies on discussion and dialogue (Shrivastava et al. 2013, 236). This aligns well with the pragmatism stance, because it allows for the flexibility in approach that multiple levels of reality require and can therefore accommodate various sets of knowledge.

Due to the emphasis on social improvement in action research, it is often considered to fall into a research paradigm of advocacy and change, sometimes called a transformative paradigm (e.g. Creswell 2013). A transformative paradigm is usually considered a more radical extension to constructivism, and therefore is often associated with a subjectivist worldview. However, even action research can be carried out with a variety of worldviews (see e.g., Savin-Baden and Major 2013, 246).

Design science, on the other hand, in its traditional form is more often associated with an objectivist, positivist worldview (e.g., Baskerville et al. 2009). However,

many different forms of design science exist today, and, especially the more management based ones, also include more subjectivist constructivist approaches (e.g., Avenier 2010).

This cursory overview shows that all of the approaches are flexible in terms of paradigmatic choices, which matches well with the overall approach of pragmatism, where the research questions determine the approach.

3.3. Research Design

Following the idea of sustainability as a design science, this research used a design research methodology (e.g., Vaishnavi and Kuechler 2004, Peffers et al. 2007, Blessing and Chakrabarti 2009) to structure its research design. Design research and a design research methodology usually include structured ways of studying of a problem and its context, the suggestion of a solution prototype to the problem, and a testing and rigorous evaluation of the solution prototype in the context.

3.3.1 Overview and Methods for each Phase

Figure 2 gives an overview of the stages designed for this research. As the grey arrows indicate in the image, the process is an iterative one, where continuous learning takes place in each phase about all the other phases. The following section describes each phase and the methods (basic means in the figure) employed.

3.3.2 Research Clarification

This phase is about clarifying the goals of the research as well as other influencing factors, such as the conceptual frameworks the researcher will rely on. Maxwell (2005) has created an overarching research approach that supports the researcher in the quest to achieve clarity and overcome biases. In this model, the researcher asks him- or herself the following questions iteratively, throughout the entire research design process:

1. Goals: Why is this study worth doing? What issues do I want to clarify? What practices / policies do I want to influence? Why do I want to do this study? And why would anyone care about the results?
2. Conceptual framework: What do I think is going on? What theories, beliefs, and prior research will guide/inform this research? How will I understand the people or issues I am studying?
3. Research Questions: What specifically do I want to understand by doing this study? What do I not know about the thing I am studying that I want

to learn? What questions will my research answer? And how are these questions related?

4. Methods: What will I actually do in conducting this study?
5. Validity: How might my results and conclusions be wrong?

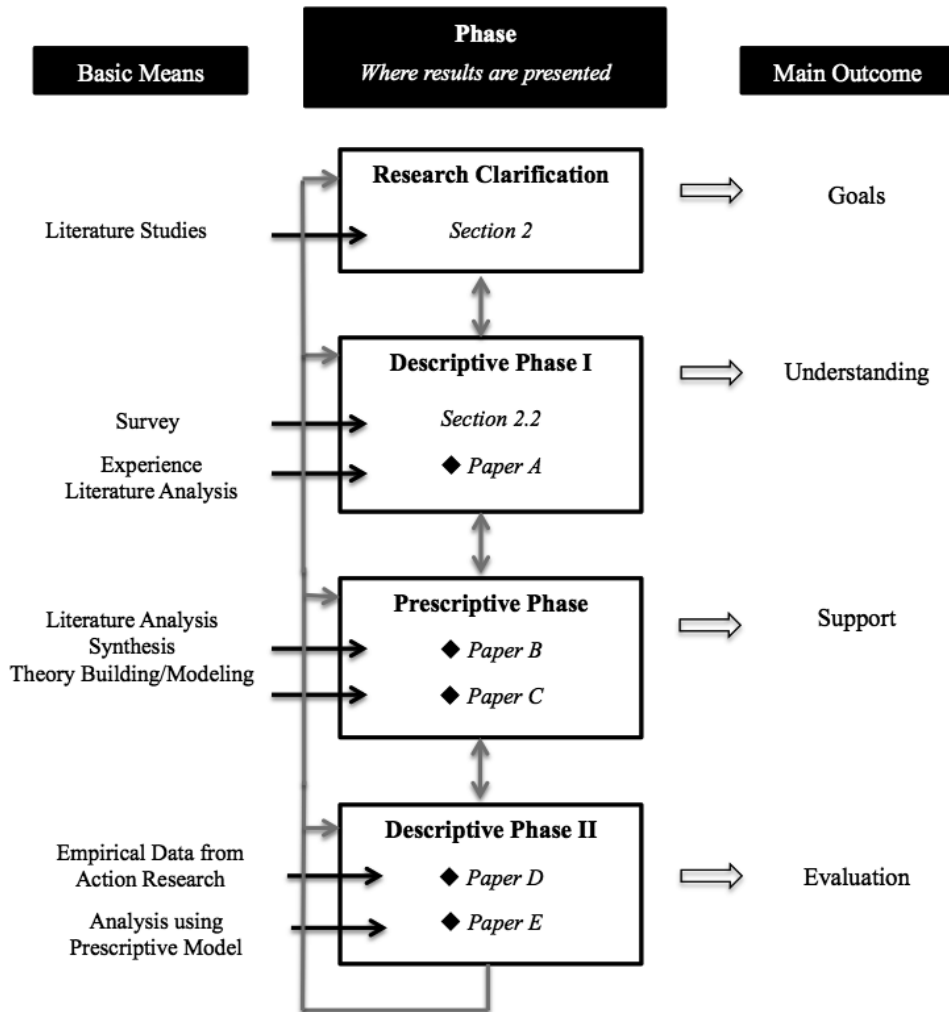


Figure 2: Research Phases. Adapted from Blessing and Chakrabarti (2009).

This iterative model matches well with the iterative model of the DRM framework. The Introduction and Section 2 (in addition to this section, Section 3) present the results of the clarification phase. Since the goals and research questions have already been presented in Section 1.4, and the methods will be

described individually for each phase, the focus here will be on elucidating the researcher's conceptual frameworks.

Conceptual Frameworks

“What theories, beliefs, and prior research will guide/inform this research?”

(Maxwell 2005)

The main conceptual framework employed in this thesis is the Framework for Strategic Sustainable Development, as described in Section 1 and 2.

Regarding conceptual frameworks in relation to research design, Section 3.1 and 3.2 have already laid out the researcher's philosophies.

Other conceptual frameworks, mainly looking at social systems from a complex adaptive systems lens, emerged later on in the research through the work undertaken in various phases. This will therefore be presented in the Results section.

3.3.3 Descriptive Phase I

The aim of the descriptive phase was to assess the current social dimension of the FSSD, as presented in literature, as well as in the ways that practitioners use it. The phase consisted of two studies – one presented Section 2.2 as background material and one in Paper A.

The study presented in Section 2.2 was meant to give more insight into how practitioners of the FSSD are currently working with the social dimension. This was assessed in the form of a questionnaire described in the section.

Paper A was based on an analysis of literature regarding the FSSD, as well as personal experiences of two co-authors of the paper, who have been part of the FSSD development for the past 25 years. The analysis was performed using the same generic five-level model for analysis of any systematic approach in any system around which the FSSD is centred as described in Section 2.1. Since founders of the FSSD were part of this work, this analysis was performed in mental modelling sessions and discussions in addition to content analysis.

3.3.4 Prescriptive Phase

Papers B and C make up the Prescriptive Phase of the research. Both papers focus on the creation of a prototype for a new approach, and were therefore mainly characterized by theory building.

One of the main aims of theory building is the creation of a (mental) model or conceptual system of the phenomenon to be understood and/or explained (Hanneman 1988, Jaccard and Jacoby 2010). Porter (1991) distinguishes framework theories from theories that analyze a smaller number of relevant variables deeply. The former takes a macro perspective and requires a certain level of abstraction. Building on this, Törnberg (2011, 12) elaborates: *“Framework theories do not make quantitative predictions, and at times barely even qualitative ones, but are useful to create a perspective and a viewpoint from which the system can be described.”* Similarly, complexity theory is considered more of a conceptual framework than a traditional theory, and therefore a way to organize the world rather than an explanatory or predictive theory (Castellani and Hafferty 2010). This is also the kind of theory this research aims to build.

The core method in the theory-building phase was conceptual modelling, i.e., modelling of concepts found in literature using the FSSD as a lens (see Figure 3). More specifically, this means that the researcher(s) engaged in extensive literature reviews, distilled key concepts from this literature and then used the five levels of the FSSD to understand the relationships of these key concepts from a strategic sustainable development perspective. This model of relationships was derived in workshops between the co-authors of the papers and clarified and improved via workshops with a diverse and large group of participants from different sectors and disciplines – natural scientists from different disciplines, social scientists from different disciplines, managers in business and municipalities as well as politicians. The main objective was to find and test generic mechanisms and principles, beyond the differences in norms and values that the various groups bring. The different backgrounds were required to make sure that the terms and aspects from literature, modelled along the FSSD structure, were understood across disciplines and perceived as generic or basic. This approach follows from the long-term objective of FSSD-informed work: to co-create, across sectors and disciplines, strategic transitions to towards sustainability. The flow of literature studies and group modelling, across disciplines, is outlined in Figure 3.

A core of people (A in Figure 3) comprised of the main researchers in the project, applied the FSSD to produce a first hypothesis for a principled definition of social sustainability. This was done by identifying essential aspects of the social system that need to be sustained (that cannot be systematically degraded) for it to be possible for people to meet their needs, (FSSD level 1) and then identifying overriding mechanisms by which these aspects of the social system can be degraded. A “not” in such mechanisms led to basic principles of social sustainability, formatted as boundary conditions for (re-)design of sustainable social systems (FSSD level 2). Throughout the process, the principles were assessed by the criteria ‘necessary’, ‘sufficient’, ‘general’, ‘concrete’ and ‘non-overlapping’ (See Section 2.1.2).

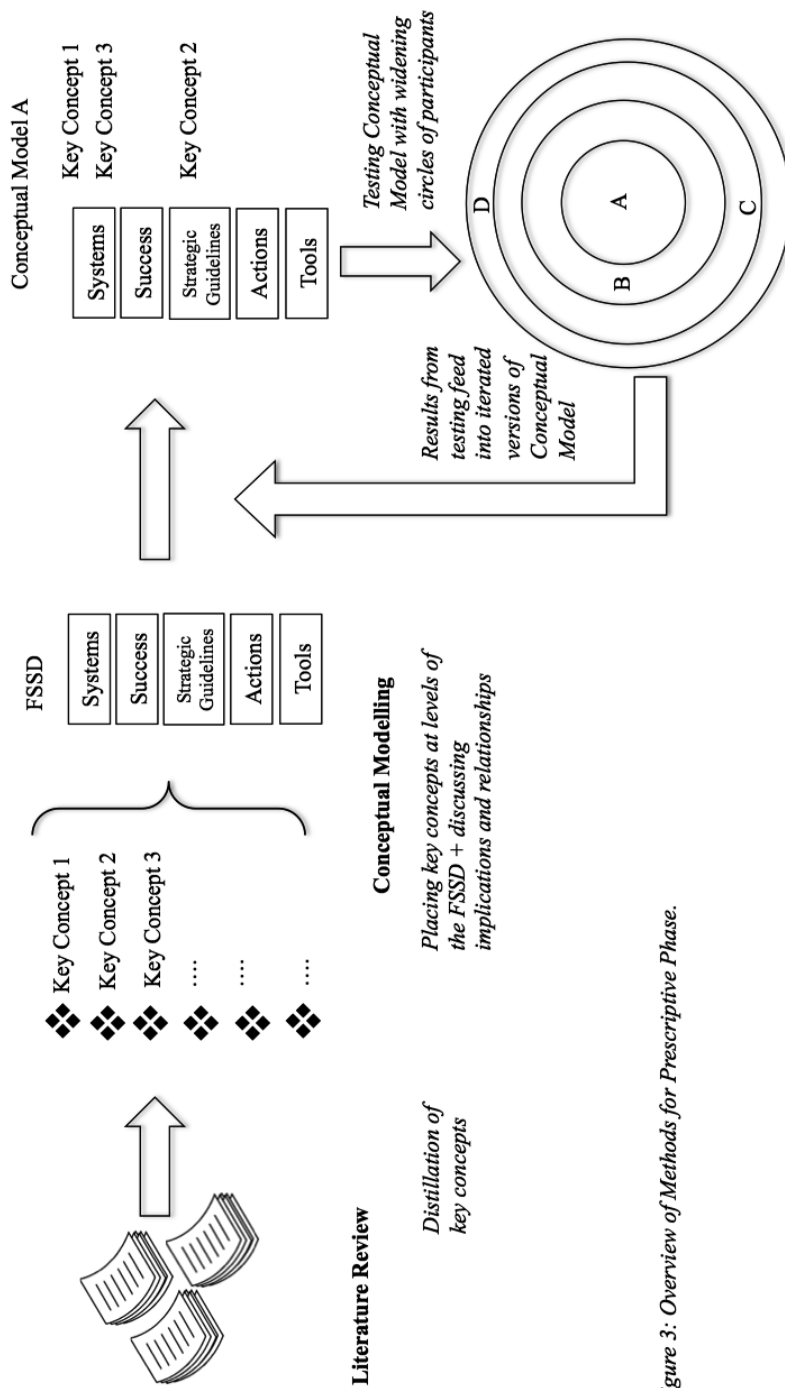


Figure 3: Overview of Methods for Prescriptive Phase.

When the core group felt ready for testing the hypothesis, the group was widened to the next circle. The researchers in the core group wanted to know if the phrasing was understood as intended by other researchers from other disciplines, i.e., had we got the semantics right. Criticism and new ideas and references were collected, which led to more modelling and an adjusted hypothesis, again assessed by the above criteria. Then the next circle was addressed. The final circle for testing included people from business, municipalities and other practitioners. The aim was to see how the proposed principles were understood by them, whether the proposed principles triggered ideas that were felt to be helpful to identify current problems as well as future solutions from a strategic sustainability perspective in the respective organizations, i.e., whether the principles work as intended, and whether the practitioners agreed that the principles are ‘necessary’, ‘sufficient’, ‘general’, ‘concrete’ and ‘non-overlapping’. The aim was never, not even in the widest circle, about trying to use the principles for a common denominator of preferences for a future sustainable scenario. At this stage of the work, it has been all about thoroughly deducing a zero-hypothesis for basic principles, boundary conditions, for any socially sustainable scenario. Finding common preferences for future sustainable scenarios will require other types of processes, relying on established social science approaches, and will be a future phase of testing of the principles.

This process model: (i) having a core team understanding exactly what the objective is, i.e., designing a framework for strategic sustainable development that is generic across disciplines, sectors, norms and values, yet detailed enough to be operational, (ii) reaching out to get criticism from larger and larger groups to test the generic qualities of the hypotheses, but (iii) without losing track of the original idea of the framework, was also the methodology behind the consensus work in earlier iterations of the FSSD (see Robèrt 2002 for more elaboration on this). The approach of finding generic “rules” of a game, and only when the rules are to be “played” in reality, inviting different opinions and values, creates creativity and dynamics based on real differences in values and norms, and avoids polarities based on misunderstandings and lack of knowledge (see also Paper B and C).

The steps taken to arrive at the presented hypothesis as well as more information on the circles of participants are detailed below.

Literature Review

As outlined above, extensive literature studies were conducted to inform conceptual modelling sessions in relation to sustainability of social systems. For all searches, a detailed search schedule was kept, recording when the search was executed, what search engine and search terms were used and the number of

results the search generated. The authors then read through the abstracts or summary (if referring to a book) of results and decided whether the source revealed anything of interest from an FSSD perspective, which would validate the source being included more thoroughly in the study. For each source that was included in the sample, snowballing was also used, identifying other sources of potential interest that had either been cited in the source or who had cited this source themselves.

The review began with looking at the field of social sustainability and looking for systems-based approaches within it. Keywords for the search included “social sustainability” or “social sustainable development” in combination with “systematic review”, “system(s) thinking”, “system(s) theory”, “system(s) dynamics”, “holistic”, “system”, “systematic” or “framework”, using various search engines; Libris, worldcat, the British Library catalogue, the Library of congress catalogue as well as google books, ebrary and dawsonera for books; Scopus, EBSCO, Sage Journals online and ISI for journals.

This review yielded an interesting overview of social sustainability, but did not result in any leads regarding a systematic, science-based approach to gradually and systematically approach social sustainability and operationalizing it. Therefore, the literature review moved on to examining the field of sociology regarding systems-based approaches. This was mostly achieved by reviewing textbooks on the various schools within sociology (e.g. Gordon 1991, Allan 2006, Macionis and Plummer 2013) and following up on specific schools that seemed most appropriate, e.g., Parsons or Luhmann due to their focus on systems approaches.

At the same time the researcher engaged in studying the history and development of systems thinking and systems approaches, especially in relation to the social system; this was done through a course with the Santa Fe institute as well as the reading of key literature (e.g. Clark et al. 1995, Capra 1996, Ragsdell and Wilby 2001, Johnson 2002, Jackson 2003, Sawyer 2005, Stacey 2007, Meadows and Wright 2008, Castellani and Hafferty 2010, Miller and Page 2009, Mitchell 2009, Ramage and Shipp 2009, Byrne and Callaghan 2013, Capra and Luisi 2014, Holland 2014). The reviewing of this literature lead to the decision to approach the overall research with a complex adaptive systems lens (as seen in section 5.3 and paper B). The decision was based on the convincing case that this lens overcame many of the challenges with earlier social systems approaches, which had lead to the turning away of sociologists from general theory (see Walby 2003, 2007).

Following this decision a search for the keywords “complex adaptive systems” and “social sustainability”, lead to the school of thinkers around Folke, Carpenter, Gunderson, Holling, Walker, Berkes, etc. (see e.g. Folke et al. 2002

for an entry point into the work of this group). Here mostly snowballing was used as a technique to gather the most important and cited articles in relation to complex adaptive systems, complex adaptive management, resilience and adaptive capacity. This literature was analyzed with the aim to distill key concepts regarding the functioning of the system and in relation to social sustainability, e.g., the results presented in Paper B and Section 5.3.

As the aim was to derive mechanisms of destruction, the literature review then moved on to understanding how one might undermine the essential aspects derived from the literature around complex adaptive system. Already early in the literature studies, it was obvious that we needed to understand the dynamics of trust better. This term returned frequently, and it was obvious that it is key for healthy social systems. Key literature in the field was surveyed (e.g., Luhmann 1979, Giddens 1984, Baier 1986, Luhmann 1988, Coleman 1990, Giddens 1990, Giddens 1991, Putnam 1993, Fukuyama 1995, Mayer et al. 1995, Kramer and Tyler 1996, Miztal 1996, Hollis 1998, Sztompka 1999, Warren 1999, Gambetta 2000, Luhmann 2000, Putnam 2000, Cook 2001, Lahno 2001, Fukuyama 2002, Hardin 2002, Nyquist Potter 2002, Uslaner 2002, Caldwell and Clapham 2003, Ostrom et al. 2003, Rothstein 2005, Tilly 2005, McLeod 2006, Castelfranchi and Falcone 2010) and the vast amount of literature from different disciplines that discuss the benefits of trust underscored the importance of this element. This study led to the conclusion that the topic of focus for sustaining trust should be trustworthiness (see the reasoning in, e.g., Meijboom 2008). This, in turn, led to a search for theories of trustworthiness, specifically the kind of theories that do not only discuss trustworthiness at a general level, but provide empirical evidence for a list of elements of trustworthiness. The latter focus was important for the subsequent modelling. The literature search for theories of trustworthiness was conducted using google scholar with the search term “allintitle: trustworthiness”. Articles with seemingly relevant titles (e.g. trustworthiness in the sense of validity of results was excluded) were skimmed to look for theoretical constructs of trustworthiness. If no theoretical construct was presented as a base for the article, the article was excluded. Once a construct was mentioned more than 3 times it was more deeply investigated. This process led to the three theories chosen for their wide use and empirical support (presented in Paper C and Section 5.4.1).

This theoretical understanding led to a first round of modelling described below, which then led to further theoretical investigation, e.g., to understand the nuances of ‘a sense of meaning’, etc.

Conceptual Modelling

Following a first in-depth phase of literature review described above, conceptual modelling was employed to place the identified concepts in relation to each other and the FSSD lens. Conceptual Modelling is considered a common, but very little understood step in the creation of a model or theory (Robinson 2006, Brooks 2007). Kotiadis and Robinson (2008) describe it as two step-process of knowledge acquisition and abstraction that leads to a concept model, which can then be tested or, in cases of computer simulation, translated into a computer model and then tested. However, it is acknowledged that the creation of a conceptual model is often more of an art than a science, as a considerable amount of creative thinking and out-of-the-box thinking is required (Robinson 2006, Brooks 2007). This notion is also supported by Jaccard and Jacoby (2010), who provide twenty-six heuristics for theory construction and model-building. The conceptual modelling phase is then usually followed by a phase of empirical or computational testing, which establishes the model's validity. While the overall validity and limitations with this approach are further addressed in Section 5.6.3., it is important to already point out here that this dissertation aims to move from the art to a science by explicitly stating the reasoning behind the model, both in this section and Section 5.

The conceptual modelling took place in workshops, mostly with the main researchers (for more details see below on participants). The aim for the workshops, which happened in iterative fashion, was to use the key terms gathered from the literature, deduct their semantic meaning and then to use logic to place them at the correct level of the FSSD.

Overall the research was guided by the idea to allow the systems perspective on planning to evolve from a dynamic and iterative dialogue between two levels of the FSSD – the system level, which describes the system of study, and the success level, which describes the goal or purpose in the system. It is this iterative 'ping-pong' between levels that was the base of the conceptual modelling.

An example may serve to illustrate how the work was conducted. The three theories presented as theories of trustworthiness each came with their own list of elements that make up trustworthiness. Thinking through them and modelling them in relation to each other and the levels of the FSSD, including the requirements and logics for sustainability principles allowed for the kind of result presented in Table 2 and Paper C. This led to a candidate set of degradation mechanisms. This first set was then modelled against the other essential aspects at the systems level to test for further mechanisms (also see Section 5.4.1 and Paper C).

Throughout this process another modelling process took place; namely the kind of modelling where the researchers would take contemporary social issues and test whether they could be clustered under the derived mechanisms of destruction. In this way, unemployment, for example, could be understood as a combination of an obstacle to health, meaning the lack of basic economic means to take care of oneself, and an obstacle to meaning-making, meaning the individual lost their role and with it their sense of place in the world. This kind of modelling served to make sure that the mechanisms of destruction did really cover contemporary social issues.

Circles of Participants

The hypothesis derived from literature studies resulted in workshops, moving from the core to the periphery of the widening circles of colleagues, peers and experts (see Figure 3).

- A) The core group was constituted by the main researcher: Merlina Missimer and Prof. Karl-Henrik Robert and Prof. Göran Broman.
- B) The next circle included colleagues in the sustainability group at BTH comprised of researchers with backgrounds in business administration, anthropology, product development, etc., and students from the Master's in Strategic Leadership towards Sustainability with backgrounds from a wide array of disciplines.
- C) The next circle included external scholars across various disciplines, e.g. Political Science (Scholars from the Quality of Government Institute at Gothenburg University), Business, Management and Organizational Dynamics (e.g., Scholars from Acadia University in Nova Scotia, the University of Pennsylvania), Design (Scholars from the Strategic Innovation Lab at the Ontario School of Arts and Design), Computer Science (Scholars from Otago Polytechnic's College of Enterprise and Development as well as the University of Toronto), Modelling (Scholars from Lund University), Green Chemistry (Scholars from Carnegie Mellon University and Brunel University).
- D) The outermost circle included people from municipalities and other public organizations, e.g., representatives from the Municipality of Karlskrona, Landstinget Blekinge, Stockholm Läns Landsting, from various businesses including Aura Light International, Max Hamburgerrestauranger, Scandic Hotels, Sleep Well, The Human Element, Stockholms Hamnar, Riksbyggen, Skanska, Vasakronan and other practitioners, e.g., practitioner from The Natural Step network.

The results presented in Papers B and C (as well as Section 5) are simply the final version of the principled definition. This process is hard to represent in the linear fashion of a paper and given the space constraints for most journals. Still, Paper B describes the system aspects that have been identified as essential in this

iterative dialogue, while Paper C lays out the sustainability principles that were derived therefrom in conceptual modelling sessions and through initial testing performed over several years. Only together, however, do they create a full picture of the approach.

3.3.5 Descriptive Phase II

Papers D and E make up the descriptive phase II, which aims to evaluate the prototype created in the prescriptive phase.

Paper D reports preliminary findings of using the new prototype with FSSD practitioners. At the onset of the research project, it was decided that success criteria for the prototype would relate to two things: the level of scientific rigor of the new approach and the viability of use of the new approach by practitioners. The data for the evaluation presented in Paper D was gathered in 3 separate workshops with FSSD practitioners. In the workshops, the authors, together with the FSSD practitioners, used the new social sustainability principles to assess projects on their contribution to social sustainability. The workshops were followed by group interviews with the practitioners about their insights and experiences.

Finally, Paper E presents the results of using the new prototype to assess another social sustainability protocol, namely ISO 26000. While not a direct assessment of the prototype itself, the use of the prototype in a way in which the sustainability principles might be used on a regular basis, reveals much about the prototype itself.

3.4. Validity

An overall challenge that is often levied at research for sustainability is that it is counter to the scientific ideals of objectivity and value-neutrality. However, Peattie (2011, 27) argues:

“It is somehow ironic that sustainability researchers frequently encounter criticism because their research is intentional, value-based and driven by a desire to contribute to a better world. They are advised by colleagues that ‘good’ research is objective, value-free and dispassionate. This simply reveals a curious truth about paradigms, that they are linguistic accents: we are aware of other people’s but not our own. The existing scholarship paradigm has its own strong values that reflect those of the DSP (dominant social paradigm), and are so widely accepted as ‘normal’ that they become invisible, even with

academic institutions that one might assume would challenge all such assumptions.”

As a sustainability researcher, the author has certain values and is passionate about changing the world towards sustainability. This bias is acknowledged, but does not preclude the idea of asking questions as neutrally as possible and utilizing the best science available to answer the research questions.

Thompson (2012, 10) outlines three musts for good research: 1) self-awareness of the researcher regarding how their mental models influence the problem-definition, 2) the ability of the researcher to trust themselves and engage in the research process without continuously questioning their own approach, and 3) return to questioning and critical evaluation of their own mental models after a phase of the research is completed. The author has followed this advice and returns to 3) as well as to more detailed validity considerations specific to this approach in Section 5.6.3.

Missimer, M

Social Sustainability within the Framework for Strategic Sustainable Development

(This page is intentionally left blank.)

4. Summary of Appended Papers

This section presents summaries of the appended papers as well as a short description of the author's contribution. To avoid overlap results for each paper are not presented here, but instead are included in Section 5.

4.1. Paper A

Exploring the possibility of a systematic and generic approach to social sustainability

Published as

Missimer M, Robèrt K-H, Broman G and Sverdrup H. 2010. Exploring the possibility of a systematic and generic approach to social sustainability. *Journal of Cleaner Production* 18(10-11):1107-1112

Summary

This paper assesses the social dimension of the Framework for Strategic Sustainable Development. Since the ecological side has proven to be both logically robust and operational, the findings on the social side are presented in comparison to the ecological side, so as to highlight the discrepancies. Findings relate mostly to the systems and success levels of the framework.

Relation in Thesis

This paper provides a deeper understanding of the conceptual ways in which the social dimension of the FSSD falls short. This is part of Descriptive Phase I in Figure 2 and provides the basis for the improvement prototype presented in Papers B and C.

Author's contribution

The author was involved in the literature review, discussions and mental-modelling sessions and led the writing process, based on conversations with co-authors.

4.2. Paper B

A Strategic Approach to Social Sustainability - Part I: Exploring the Social System

Published as

Missimer M, Robèrt K-H and Broman G. 2015. A Strategic Approach to Social Sustainability - Part 1: Exploring the Social System. *Submitted*

Summary

This paper attempts to fill the previously outlined gap and provide a first proposal of an approach to a scientifically robust, operational definition of social sustainability. In Paper B, a systems-based approach to the social system is presented, the basis for presenting a zero-hypothesis of principles for social sustainability in Paper C. For Paper B, transdisciplinary literature studies, as well as conceptual modelling sessions, were performed. The social system was examined from various angles – such as complex adaptive system studies, human needs theory, as well as other social sciences lenses. Insights from these fields were woven together to define aspects of the social system that are essential for social sustainability.

Relation in Thesis

Together with Paper C, Paper B presents the first prototype of a new approach to social sustainability within the FSSD (Prescriptive Phase in Figure 2.2 leading to support). Paper B specifically presents the systems exploration undertaken to arrive at new social sustainability principles. It builds on the gaps identified in Paper A and presents a more scientifically robust approach.

Author's contribution

The author was the lead author and conducted all of the literature studies presented.

4.3. Paper C

*A Strategic Approach to Social Sustainability
- Part 2: A Principle-based Definition*

Published as

Missimer M, Robèrt K-H and Broman G. 2015. A Strategic Approach to Social Sustainability - Part 2: A Principle-based Definition. *Submitted*

Summary

Paper C builds on Paper B and identifies overriding mechanisms by which these aspects of the social system can be degraded, thereby finding exclusion criteria for re-design for sustainability. Literature studies, conceptual modelling sessions and initial testing with partners in academia, business and NGOs were performed. Based on the understanding of the essential aspects of the social system and the identified overriding mechanisms of degradation of these, a hypothesis for a definition of social sustainability by five basic principles is presented.

Relation in Thesis

Together with Paper B, Paper C presents the first prototype of a new approach to social sustainability within the FSSD. Paper C specifically builds on the identified aspects of the social system in Paper B and derives mechanisms of destruction thereof.

Author's contribution

The author was the lead author and conducted all of the literature studies presented. The conceptual modelling sessions were performed by all paper authors together. The author of this dissertation also contributed to testing with partners in business and academia.

4.4. Paper D

Lessons from the field: A first evaluation of working with the elaborated social dimension of the Framework for Strategic Sustainable Development

Published as

Missimer M, Robèrt K-H and Broman G. 2014. “Lessons from the field: A first evaluation of working with the elaborated social dimension of the Framework for Strategic Sustainable Development”. Presented at *Relating Systems Thinking and Design 3*. Oslo, 15 - 17 October 2014

Summary

In this paper, the newly-developed social dimension of the FSSD is evaluated regarding its usability for practitioners using an action research approach. The data for evaluation comes from workshops that were run with sustainability professionals who use the FSSD in their work. In three workshops, the authors, as well as groups of sustainability professionals, used the new social sustainability principles to assess projects on their contribution to social sustainability. The workshops were followed by reflections by and interviews with the professionals.

Relation in Thesis

This paper is the first one in a series of evaluations (Descriptive Phase II in Figure 2) of the new prototype. Evaluation studies contribute to the overall research by both assessing the current prototype and also feeding into development of further prototypes. Some of the results from this work have already been included in Papers B and C, as the timing of the paper submissions allowed for such updates.

Author’s contribution

The author was the lead researcher and author, gathering all data through workshops and following interviews and writing the paper, with guidance and high-level input from the other two paper authors.

4.5. Paper E

ISO 26000 from a Strategic Sustainable Development Perspective

Published as

Missimer M, Robèrt K - H, and Broman G. 2015. ISO 26000 from a Strategic Sustainable Development Perspective. *Manuscript*

Summary

In this paper, the newly-developed social dimension of the FSSD is used to analyse and evaluate ISO 26000's contribution to sustainability, highlighting both benefits and shortcomings of ISO 26000 from a social systems and strategic sustainable development perspective. This process also yields valuable results and insights about the applicability and usefulness of the FSSD social sustainability principles themselves.

Relation in Thesis

The paper is a second contribution to the evaluation stage of the prototype (Descriptive Phase II). It provides learning from practical use of the social sustainability principles.

Author's contribution

The author was the lead writer and carried out the literature review and all assessment work of ISO 26000.

Missimer, M

Social Sustainability within the Framework for Strategic Sustainable Development

(This page is intentionally left blank.)

5. Main Results and Discussion

This section presents the main results of the research as well as some discussion points related to these findings.

5.1. The Need for a more Robust Social Sustainability Framework

While the entire research started with the idea that the social dimension of the FSSD required improvements, the importance of this work was steadily cemented throughout the research process and with updated findings. It was clear from the start that the practitioners wanted and needed support (Section 2.2) and that a collective understanding of the concept did not exist the way it did for ecological sustainability.

Further research into other social sustainability (Section 2.3) approaches revealed a similar lack of clarity and robustness and, specifically, no workable definition of social sustainability. This led to the conclusion that attempting to derive an overarching definition of social sustainability was indeed an apt and timely endeavour. The author was once asked at a seminar why they would focus on deriving “*yet another*” social sustainability definition. Even this question highlights the need for the work presented here: an overarching definition and framework for social sustainability that does not invalidate all other approaches, but that allows the other definitions to be compared and analysed via a larger, all-encompassing frame.

Based on the knowledge from the research above, Paper A analysed the conceptual gap within the FSSD and showed which holes needed to be filled. The analysis showed that at the system level a big picture, systems and scientific understanding was not evident on the social side. A systems understanding and scientific approach, however, is the basis of the FSSD and this assessment therefore represents a rather large gap. Not surprisingly, based on the above, at the success level, the framework’s earlier definition of social sustainability, was also found to be lacking both in robustness, as well as in the ability to actually concretely guide and monitor action. What does it actually mean to systematically undermine people’s capacity to meet their needs? Without a further fleshing out based on an understanding of how the mechanisms of destruction actually work, this question is, of course, hard to answer.

All of the above, then, supported the idea to understand how the social dimension of the FSSD could be further developed.

5.1.1 Is a Single Definition Appropriate or Possible?

A common argument as regards social sustainability is that vagueness and a pluralism of definitions are both appropriate and preferable over a single definition because of the complexity of the topic (McKenzie 2005, Kunz 2006, Dempsey et al. 2011, Boström 2012). Proponents of this stance (e.g., Lehtonen 2004, 211) argue that *“different geographical and temporal scales as well as situational contexts require their own frameworks, which do not necessarily provide a coherent picture, but a mosaic of partly contradicting views of reality”*. They propose that sustainability can only be defined in a local context through participatory processes, with engagement from all stakeholders (Davidson 2009, Dempsey et al. 2011).

The author does not disagree with the need for context-specific approaches and methods, as well as the necessity of participatory processes, to successfully anchor sustainability in all aspects of human life. However, this does not exclude the need for and possibility of an overarching framework. However, this does not, per se, exclude the need and possibility of an overarching framework with basic elements that would be the same across context-specific differences. In terms of need, if we acknowledge that in many ways the world has become a globally connected network, and actions in one area of the world can have large effects in areas far away, how do we manage the complexity of many contexts and ensure that our actions are not creating a larger sustainability problem somewhere else?

Partridge (2005, 4) argues that,

“It is not necessarily useful to only think of sustainability as context-dependent. While it is useful to apply the idea to a particular object (like forestry, fishing or human wellbeing for example), I want to suggest that the real potential of sustainability as an idea is as an integrating framework – a means for considering the relationships between different dimensions, rather than just assessing the sustainability or otherwise of a single element.”

Regarding possibility, in the social sciences, for a long time, it has also been argued that such an overarching approach is not possible; that the social is deeply subjective and embedded and that the workings of the social system cannot be objectively studied the way ecological systems can. A systems perspective, in this sense, has not been considered possible. However, recently some have argued that this in fact is exactly what is needed, for example, in sociology (Byrne 1998, Castellani and Hafferty 2010, Urry 2003). Walby (2003, 2007) argues complexity theory offers new ways of thinking about some of the classic dilemmas in social science:

- “The tension between the search for general theory and the desire for contextual and specific understandings (2003, 1)”
- “Combining an understanding of both individual and social structure, that does not deny the significance of the self-reflexivity of the human subject while yet theorising changes in the social totality (2003, 2)”

This research, then, is based on both the idea that such an approach is indeed possible and is, in fact, needed to overcome the wickedness of context-specific approaches. As noted above, it does not invalidate the importance of all other approaches, but provides a larger, systems-based framework to connect and compare them. In fact, the FSSD itself is well complemented with participatory approaches (see e.g., Meisterheim et al. 2011). It is based on these arguments that we set out to derive a set of social sustainability principles.

5.2. Social Sustainability = Sustaining the Social System

Clarifying and developing the social side of the FSSD has led to greater clarity in the description of sustainability in general. Working with a systems perspective, sustain-ability in the FSSD is about the elimination of mechanisms of systematic degradation of a healthy ecological and social system (see Section 2 for more on the rationale).

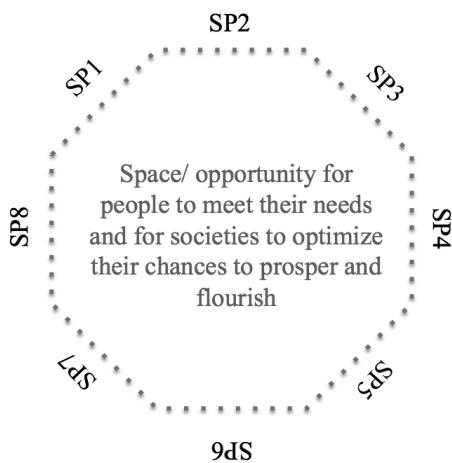


Figure 4: Sustainability principles as boundary conditions

The sustainability principles, both ecological and social, are devised as boundary conditions within which the system can continue to function and develop various desirable scenarios, outside of which it cannot. It is the space between the boundaries that creates the opportunity for people to meet their needs in whatever way they choose and for societies to optimize their chances to prosper and flourish (see Figure 4).

In that sense, the definition of sustainability is not about a flourishing of human life or all needs being met, but about the basic conditions that are necessary for the ecological and social systems to not systematically degrade, so that the opportunity to meet needs remains.

This is a redefinition of social sustainability within the FSSD from an individual perspective (human needs) to a social systems perspective.⁴

5.3. Essential Aspects of (a Complex Adaptive) Social System

The research looked at human social systems as complex adaptive systems (see e.g., Clayton and Radcliffe 1996). Castellani and Hafferty (2010, 7) argue that

“human social systems are distinguished in two important ways: the ‘things’ of which they are comprised, which is some set of human social agents (individuals, groups, formal organizations, etc.) and the relationships among these social agents, which constitutes some form of social interaction (Byrne 1998; Holland 1995; 1998; Klir 2011; Luhmann 1995).”

Complex adaptive systems are inevitably characterized by uncertainty, change and surprise. This, in return, requires flexibility and adaptation in dealing with the system. This ability to adapt is often termed resilience (e.g., Walker et al. 2004, see also Berkes et al. 2003, Folke et al. 2005, Folke 2006, Nelson et al. 2007). Adger (2000) defines social resilience as the ability of human communities to withstand external shocks to their social infrastructure, such as environmental variability, or social, economic and political upheaval. The literature discusses some essential aspects of adaptive capacity and the long-term survival of socio-ecological systems:

Diversity is repeatedly mentioned as an important aspect of resilience (Folke et al. 2002, Walker et al. 2006, Norberg and Cumming 2006, Chapin et al. 2010). In essence, more diversity leads to more variety in response options to the constant change. Since one does not always know what will be needed in the future, having as many options as possible is the best strategy to be resilient in the long run.

Learning is also mentioned as essential when dealing with complexity and constant changes (Gunderson 2001, Scheffer et al. 2001, Folke et al. 2002, 2004, Olsson et al. 2004, Walker et al. 2006, Nelson et al. 2007, Chapin et al. 2010). Resilient systems must not become rigid and monolithic in any way, but instead constantly learn and adapt to new situations (Scheffer et al. 2001, Folke et al. 2002).

⁴ In fact, the satisfaction of individual human needs is equally dependent on the functioning of the ecological and social system and therefore conceptually sits above both the ecological and social sustainability principles.

Further, a capacity for **self-organization** is important when confronted with a sudden change in the environment (Olsson et al. 2004, Folke et al. 2005, Norberg and Cumming 2006, Folke 2006, Osbahr et al. 2010). Self-organization refers to the idea that organization can happen without system-level intent or centralized control (Clark et al. 1995, Levin 1998, Westley 2002, Walker et al. 2006) and is important because often quick responses are needed. Overly strong reliance on centrally controlled responses, for example by a governance organization, results in lags in response time and vulnerability of a system.

While the aspects listed so far apply to all living systems, additional aspects are discussed for the social system.

One of these is social capital as a necessity to coordinate the system in its adaptation and allow for collective action (Pretty and Ward 2001, Ostrom and Ahn 2003, Pretty 2003, Adger 2003, Folke et al. 2003, Olsson et al. 2004, Folke et al. 2005, Walker et al. 2006, Osbahr et al. 2010). Within social capital research, on the other hand, **trust** has been highlighted as the main variable (Putnam 2000, Fukuyama 2002, Rothstein 2005, Wollebaek and Selle 2008) and is therefore often considered “the fabric which binds society together” (Hollis 1998, Luhmann 2000, Potter 2002, Caldwell and Clapham 2003).

From a complexity perspective, trust is a necessity because it is almost impossible for one or a few individuals to understand or completely control the entire complex system, and therefore we must rely more and more on others to make decisions and choose viable alternatives (Meijboom et al. 2006, Meijboom 2008). Further, if trust between the various individuals does not exist, it is difficult or impossible to achieve collective learning, diversity and self-organization in the system. Finally, we can intuitively understand the connection between low levels of trust and social ills, such as such as corruption and segregation, which further points at the importance of trust as an overarching element in the social system. This will be returned to in more detail below.

Last, there is the aspect of **common meaning**. Humans are a meaning-making and meaning-seeking species (e.g., see Bruner 1990 cited in Tronick 2008, Cacioppo et al. 2005, Marsen 2008, Park 2011; for a review of the literature on meaning see Park 2010). In relation to social capital in complex adaptive social systems, Scheffer et al. (2001, 229) explain that common culture and meaning are essential. *“Particularly in the absence of a long history of reciprocity and the trust that engenders, stakeholders will often make the decision to enter into the initial reciprocities on the basis of their belief that they share representations, interpretations, and systems of meaning with the other party or parties (Nahapiet and Ghoshal 1998).”* The need for common meaning is also supported by studies in management, where it has been well documented that, in order to exist and thrive, social systems (in this case companies and other organizations) need a clear purpose (e.g., Collins and Porras 2002), which is a form of common meaning. Already Ackoff and Emery (2005), in earlier

attempts to look at social systems from a systems perspective, asserted that social systems are indeed purposeful systems.

Based on the above understanding of essential aspects of social systems, the next section presents the results of the principles that were derived thereof.

5.4. Social Sustainability Principles

In order to derive social sustainability principles (SSPs), the question asked was: How could the five essential aspects of the social system presented above be eroded? This modelling work led to the following zero-hypothesis of SSPs, the derivation of which will be further elaborated below:

In a socially sustainable society, people are not subject to structural obstacles to

SSP 1. ...health.

This means that people are not exposed to social conditions that systematically undermine their possibilities to avoid injury and illness; physically, mentally or emotionally, e.g. dangerous working conditions or insufficient wages.

SSP 2. ...influence.

This means that people are not systematically hindered from participating in shaping the social systems they are part of, e.g. by suppression of free speech or neglect of opinions.

SSP 3. ...competence.

This means that people are not systematically hindered from learning and developing competence individually and together, e.g. by obstacles for education or insufficient possibilities for personal development.

SSP 4. ...impartiality.

This means that people are not systematically exposed to partial treatment, e.g. by discrimination or unfair selection to job positions.

SSP 5. ...meaning-making.

This means that people are not systematically hindered from creating individual meaning and co-creating common meaning, e.g. by suppression of cultural expression or obstacles to co-creation of purposeful conditions.

The term structural obstacles refers to social constructions - political, economic and cultural - which are firmly established in society, upheld by those with power and, due to a variety of dependencies, difficult or impossible to overcome or avoid by the people exposed to them. The emphasis on structural obstacles is

important. It is not the one-off actions violating the above that lead to social unsustainability. It is when such violations are embedded in the way a society organizes itself, that we have a serious problem.

5.4.1 The Logic behind the Principles

The principles were derived by taking each essential aspect of social systems listed in 5.3 and exploring the mechanisms of destruction for each. The exploration began with the aspect of trust.

Starting out with the essential aspect of trust and thinking about how to erode it, the research quickly moved on to the concept of trustworthiness, which is claimed to be the essential factor in creating trust (Mayer et al. 1995, Hardin 1996, Tullberg 2008). Three major theories of trustworthiness and trust were chosen based on their empirical support, long-standing track-record and theoretical soundness, and examined to understand how trust may be eroded. Two of these theories, Mayer et al.'s (1995) model and the Fundamental Interpersonal Relations Orientation (FIRO) approach (Schutz 1958, 1992, 1994), focus on interpersonal trust, not social or generalized trust at a societal or global scale. However, the principles require to be general enough to be applicable at any scale, and therefore the components of said theories needed to be extrapolated to a higher level (The details of this can be found in Paper C). The third theory, focusing on institutional trust as an important predictor of social (generalized) trust (Rothstein 2005, Wollebaek and Selle 2008), was already focused on this higher, societal rather than group level. Table 2 below gives an overview of the components of trustworthiness and trust from each approach, as well as how this was translated into a sustainability principle. These considerations on trust led to SSPs 1-4.

Common meaning was earlier presented as another essential aspect of a social system. A sense of meaning is strongly linked to the individual's mental and emotional health (Klinger 1998), and structural obstacles acting to suppress meaning-making could therefore be understood through the mechanism of not respecting the individual's right to uphold health. From the point of view of social capital and keeping a society together, however, common meaning was the essential aspect identified. This had not been covered in the above principles. Therefore SSP5 was added, as common meaning is destroyed by the lack of an ongoing process of meaning-making.

Table 2: Overview of derivation of principles

	FIRO <i>Each group member feels he/she is and others are...</i>	Inst. Trust <i>Gov. Inst. that are</i>	Abstraction	SSP element
Mayer et al. 1995/ Mayer and Norman 2004 3 components of trustworthiness				
Ability/Competence: group of skills/characteristics that enable a party to have influence within some specific domain.	Competent	Effective	Element occurs in all theories and at all levels, no abstraction needed	Competence
Motivation of Benevolence is the extent to which a trustee is believed to want to do good to the trustor.	Liked		One cannot 'like' people who one does not know (anything) about, but can take stance of general likeability of others. Similarly difficult to show Benevolence to people with whom one does not interact. Concrete expression: to respect the right of each individual to uphold <i>health</i> .	Health
Integrity: the consistency in the other party in adhering to espoused values and the acceptability of these values			Aspect of consistency falls at the strategic guidelines level of the FSSD (see discussion); aspect of acceptable values can be ordered under "meaning-making" and under the freedom for communities to develop their specific desirable contents within the SPs.	-
	Significant		You cannot say about people you do not know or know nothing about that they are significant. But you can claim their right to influence in general	Influence
		Impartial	Element from the societal level, no abstraction needed	Impartiality

In terms of *diversity*, if people are not systematically hindered from being healthy, individuals with different characteristics remain. If people in general are not systematically hindered from influencing the social systems they are part of and are not systematically exposed to partial treatment, all the differences have opportunity to show up at the system level. Therefore, another sustainability principle does not seem to be needed to ensure diversity in the system.

The aspect of *learning* seems covered by the principle around competence the way it is defined; and the principles around influence and impartiality ensure that this individual learning transfers to the system. However, while learning is a natural individual trait, the organizational learning literature comes to the conclusion that organizational or communal learning does not come naturally to us. To learn as a system we need to learn *together*. This can be addressed by the principle around meaning-making, which ensures that there is no systematic hindrance to the process of making sense of the world *together*. Overall, this should ensure that learning can emerge at the system level.

Regarding the last aspect of *self-organization*, all living systems are naturally self-organizing in their healthy form. This implies that as long as the above social sustainability principles are complied with, particularly no structural obstacles to health, there should be no reason why groups of people would not be able to do so.

5.5. First Evaluations from Praxis

A prototype is usually followed by evaluation, which is especially important in a design research approach. As noted earlier, extensive testing and updating of the prototype will need to continue for many years to perform a proper evaluation of the prototype regarding the two success criteria:

- the level of scientific rigor of the new approach and
- the viability of use of the new approach by practitioners.

However, Papers D and E do provide preliminary evaluation results, specifically regarding the more practical evaluation of the viability of use. The arenas for testing were intentionally chosen to be different in each study. One was a practitioner peer setting where the new approach was explained and worked with; the results show the perceptions and feedback about working with the SSPs from practitioners. The other was to use the new social approach to analyse an existing tool and see whether this was feasible and what the results were. Both of these arenas are equally important for the practical evaluation of the new approach, as this is indeed how the FSSD is used on a regular basis – for planning and analysis purposes and in “teaching” situations by practitioners.

The results from these studies show that it is indeed possible to use the newly proposed social sustainability principles, and the approach that comes with it, in

the manner intended. In Paper D it is reported that all groups of participants successfully used the new approach in the exercises they were given, and some participants even went as far as starting to think about integration of the SSPs with the existing tools they commonly use. By and large, the practitioner felt that the new approach was an improvement and filled many of the gaps that the earlier approach featured - a more thorough and scientific approach to the social aspects, which really allowed for a common language and a more thorough assessment. They also pointed out challenges – the somewhat more difficult nature of the science behind the new approach, as well as some of the wording of the new SSPs and the need for a better “narrative” – some of which have already been incorporated into updates of the prototype (e.g., SSP1 was earlier named “integrity” and then changed to “health”, etc.). While the paper reports that there were ambivalent feelings about whether this new approach would be adopted by practitioners, it was not due to the science behind the approach, but because of the need of a simpler narrative for the lay audience. However, in more recent developments since the paper, many of the practitioners have indeed adopted the new approach and are actively working at integrating it into their repertoire of offerings. This seems to imply that the approach is indeed useful and relevant for the practitioners, even if it may take some time to stretch beyond previous comfort zones and go deeper in understanding.

Paper E demonstrates that the social systems understanding and the new SSPs can be used for analysis purposes; this can reveal valuable results as to the strengths and weaknesses of an approach (in this case ISO 26000) as regards planning for sustainability. Specifically, for ISO 26000 the analysis demonstrates why a systems understanding based on rigorous science is beneficial for sustainability planning and what downfalls a stakeholder consensus-based approach may have when it is not sufficiently rooted in science. The new approach also enables an analysis of what important aspects of social sustainability ISO 26000 is covering and not covering, and why the latter is not without significance. The conclusion from the analysis is that ISO 2600 provides comprehensive guidance that addresses many of the potential violations, but that the guidance cannot assure that its recommended actions alone will lead to social sustainability; it could gain much from being complemented by a strategic framework.

Measuring against the success criteria for evaluation of the new social sustainability approach, it is only because of the rigor and structure of the new approach that such an analysis of ISO 26000 is possible and yields results that can practically inform practitioners in their work.

Regarding the level of scientific rigor, the intensive work and especially literature analysis that has gone into this dissertation testifies to an increase in rigor as regards the social dimension of the FSSD. The aim for rigor is further supported through the peer review process that some of the work has already gone through and that the remainder of the work will go through. The aim for

the project is to increase the rigor by systematically inviting peer feedback from research and practitioner communities and strengthen the approach through continuous trans-disciplinary work.

5.6. On Theoretical Robustness

5.6.1 Internal Robustness

The research set out to derive principles that would be useful for analysis, planning, re-design and monitoring of transitions towards social sustainability. In order to do so the principles should have the following characteristics (Robèrt 2000; Ny et al. 2006):

- Science-based, i.e., compliant with relevant scientific knowledge available to date.
- Necessary for sustainability, to avoid imposing unnecessary requirements and to avoid confusion over elements that may be debatable.
- Sufficient for sustainability, to avoid gaps in the thinking; the principles taken together should cover all relevant aspects.
- General, to be applicable in any arena, at any scale, by any member in a team and all stakeholders, regardless of field of expertise, to allow for cross-disciplinary and cross-sector collaboration.
- Concrete, to guide problem solving and innovation.
- Distinct, to facilitate comprehension and monitoring.

An assessment against these characteristics reveals the following:

The research has built a logical argument for why these principles are necessary. Furthermore, having pursued extensive literature studies, the research at this point did not reveal any aspects related to complex adaptive social systems and social sustainability that could not be sub-ordered to the five principles, or fit elsewhere in the five level FSSD structure. This implies that the current principles are sufficient based on current understanding. However, the FSSD has always and will always be subject to continuous development, so future modelling and action research may call for amendments. This has also been the case for the ecological principles as the current wording of the three ecological principles has evolved over time to be more and more precise and helpful for re-design.

The principles are also meant to be general in that they are applicable to any group, organization or community and yet concrete enough to guide planning, innovation and action, as well as and monitoring, selection and use of supplementary concepts, methods and tools. The results of the action research with various practitioners (see Section 5.5) support the new principles'

applicability along those lines. This will be also further explored in forthcoming action research studies.

Finally, they are meant to be distinct in the sense that all aspects of one are not also covered by another. The work presented in this dissertation has made a theoretical argument for this, e.g., in relation to meaning-making. The action research seems to also support the notion that the principles are indeed distinct, as the practitioners did not seem to have major difficulties in brainstorming violations and clearly grouping them under one principle rather than another.

5.6.2 Reflections on the General Approach

A systems approach to (social) sustainability seems appropriate, based on the mere fact that the social system is indeed a system. In addition, the aim of understanding the system is to plan for its sustainability. In this context, Hjorth and Bagheri (2006) support a systems approach. They claim (2006, 79) that *“to do a good planning it is essential to find a way to formulate reality as a system rather than as a set of independent problems. A system is recognized by the integrity and interaction of its components. To improve a system it is no use improving each part separately, rather the whole [and the relationships] should be looked at”*.

A comprehensive understanding of the social system clearly validates a trans-disciplinary approach because (social) life does not occur in disciplines. The most comprehensive understanding therefore comes from combining different approaches and seeing multiple perspectives at the same time. However, trying to take in multiple perspectives also brings very practical challenges; the most basic one being that one person cannot read everything and understand every thought there has ever been about the social system and sustainability. This research covered a lot of breadth: the field of social sustainability as it is currently being discussed in the literature; the history and philosophy of social sciences; complex adaptive systems and social complexity; social capital and trust; human needs and more. And yet, not everything has been covered. This is acknowledged as a challenge and a limitation to the research at this point. While support from various fields also strengthens the research and adds to its validity, more work will need to go into making this approach evermore robust.

The approach used in this research works with this challenge by exploring two levels in parallel: the system on the one hand and the success level on the other. The approach works as follows: one attempts a definition of objectives (in the form of principles) in a complex system, then goes back to see if the definition serves the criteria “necessary, sufficient, concrete, general and distinct” for the outlined objective. This leads to criticism as regards the relevance and robustness of the principles and some refinement. The new version is then again tested in practice and in relation to the systems level. This is because one does not need to understand everything in the system to move systematically towards

a clear objective in the system, but one must understand the system enough (Ny et al. 2006). As mentioned before this is an always on-going process and will require special focus in the case of this research.

Definitions

The definitions chosen for this research speak to the transdisciplinary nature of the endeavor and the broad appeal needed for the chosen terms. In this research, the social system has been defined as individuals connected into a system through human relationships and interactions. While this is a rather broad definition, the research necessitated a definition that could capture all social sub-systems and not be too specific so as to exclude some. The chosen definition has served this purpose well. The limitation is, of course, that the principles may be understood as rather abstract and, therefore, potentially hard for people to identify with and reflect on. It then becomes the work of the practitioner to interpret this broad definition in the appropriate context while not losing the point that the principles are applicable to and necessary for all systems regardless of contextualization.

An important note is that ‘social system’ was purposefully chosen over the term ‘society’. As Giddens (1984, 10) states “*it is essential to avoid the assumption that what a 'society' is can be easily defined, a notion which comes from an era dominated by nation-states with clear-cut boundaries that usually conform in a very close way to the administrative purview of centralized governments*”. The word society conjures up associations with nation-states and potentially specific details of what this society might look like. The more abstract term of ‘social system’ avoids these associations and therefore hopefully steers clear of controversies over the details of the social system.

Social Sustainability in a general sense has been defined as not undermining the capacity of the social system to provide the possibility for human well-being. It is a boundary condition within which the system continues to function, outside of which it does not. To reiterate, it is not about utopia, i.e., conditions for the flourishing of human life, but about the basic conditions that are necessary for the social system to not systematically degrade into dysfunction, e.g., general segregation and corruption.

This connects to the overall distinction within the FSSD between backcasting from principles vs. backcasting from scenarios, the advantage of backcasting from principles being that it is easier for a large group to agree on because it is about basics rather than more detailed goals (which, depending on values and individual preferences, can be designed in many different ways to satisfy the principles). This certainly seems appealing when trying to define social sustainability for the entire global system. In addition, the self-organizing properties of living system allow the system to develop on its own as long as it

does not undermine that development. It therefore makes sense to phrase the principles as boundary conditions and equip them with a ‘not’.

An example of the process

The results presented in papers B and C as well as earlier in this section show only the preliminary final outcome of the modeling process. Section 3.3.4 aimed to describe the process that lead to this outcome as detailed as possible; however, an example may serve to illustrate it further. It became clear from the trustworthiness literature that hat one key aspect was respect for the integrity of a person meaning the health of the individuals. In earlier models the core group termed this ‘integrity’. In an earlier publication (Missimer 2013, 31) this was described as in the vein of “the meaning of ‘Unversehrtheit’ in German. The adjective ‘unversehrt’ means without damage, injury or harm.” However, even then it was already acknowledged that that this term could lead to confusion as the term ‘integrity’ was also featured in the trustworthiness literature in the sense of moral connotation along the lines of honesty and consistency. However, the researchers felt that the focus on the absence of harm was more in line with what was needed than the health definition, e.g., by the World Health Organization, which states that “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (World Health Organization 2006)”. However, throughout the work with partners, it became obvious that the participants continuously got confused by the word integrity and almost always associated it with the moral connotation. This led the researchers to decide to abandon that term and opted to use health with a more narrow definition as the best option so far: in the socially sustainable society people are not exposed to social conditions that systematically undermine their possibilities to avoid injury and illness, physically, mentally or emotionally.

Finally, there are many other elements that appear in the literature on social sustainability. The articles of this thesis report preliminary results on how these elements may connect within the FSSD. “Empathy”, e.g., a constitutional element of most peoples’ mental makeup, sits at the first level of the FSSD. To increase the chances of really using empathy for the common good, the Golden Rule can be applied, which serves as an “acid-test” on measures and strategies laid out to approach compliance with sustainable goals, and thus belongs to the third FSSD level. Likewise, it has already been argued that “integrity” can be used as a guideline under the third level: “Transparency” most likely also belong to level 3 of the FSSD. Further elaborations along these lines will continue in future research.

5.6.3 Overall Validity

Overall, the research to this point has mostly focused on conceptual modeling and as such employed literature reviews, semantics and logic. While parts of the theory have been supported in other research fields such as the field of complex adaptive management, the combination of the different parts has not. Thus, there are numerous ways in which it might be wrong. However, the aim was never an explanatory theory, but rather a framework theory that can guide thinking about concrete planning and action towards sustainability based on the best available science. The trans-disciplinary research approach and the many theories and findings in different fields that point to similar results also add to the validity.

A theory is usually tested empirically for validation. Testing for validation is, however, harder for more abstract higher-level social theories and in dynamic systems. Blessing and Chakrabarti (2009) discuss the limitations of validating research that is based on creating something new and then testing it (often referred to as design (science) research), as it is often difficult to establish whether the desired effect was created by the specific intervention or another unaccounted for aspect. In addition, “the context in which the development process takes place changes, irrespective of the introduction of design support: people learn, markets change, organizations evolve, new technologies emerge, new knowledge becomes available and new regulations are put in place” (ibid, 183)”.

In that sense, we have started preliminary testing regarding whether the proposed principles are applicable, understandable, relevant and helpful to people working in various fields. It has not yet been tested what the longer-term results from working with this approach would be, which will need a more rigorous qualitative research approach and is an essential next step to validate and improve the conceptual model. This is indeed planned as further research in conjunction with various social scientists.

Overall, the limitations in determining validity act as an encouragement to be as objective, accurate, clean and transparent as possible, so that others may find holes in the logic and update the theory. As Gordon (1991, 110) points out “a good model can be expanded to include additional factors when their relevance is suspected”. Therefore, the model of social sustainability proposed here is a starting point, expandable and condensable if necessary.

Missimer, M

Social Sustainability within the Framework for Strategic Sustainable Development

(This page is intentionally left blank.)

6. Contributions

This research aims at further developing the social dimension of the FSSD. The work to this point contributes mostly with regards to theoretical understanding (Papers A, B and C). Later papers (D and E) move into more practical application and relevance, but many learning loops need to be completed here before a solid evaluation can be performed. Nonetheless, the dissertation follows the entire Design Research Methodology cycle, which in itself adds to the robustness of the work. The research thus makes a more theoretical contribution to the academic field and a practical one to society at large.

As presented at the onset of the dissertation, the social sustainability field in general has been demanding a clearer definition of social sustainability for a long time. In addition, researchers and practitioners in the field specifically using the FSSD have requested the same. This research contributes such a definition of social sustainability, which is general enough to be applied irrespective of spatial and temporal constraints, but concrete enough to guide decision-making. This is not only a contribution because it answers the general question about a more concrete social sustainability definition, but also because many other research fields, e.g., sustainable product development, sustainable supply chain management, and others, rely on these insights to move their fields forward as regards (social) sustainability.

The demand for a clearer definition in the research field is not just for the purpose of analytical clarity, but because without a clear theoretical concept, it is hard to practically work towards social sustainability. As sustainability is an applied science, all answers are intended to have immediate practical consequences. Sustainability is studied not just to understand it, but to make the world more sustainable. In that way, an answer to the question of how one can work more strategically with the social issues of sustainability is meant to help us create a more socially sustainable world. The need for this as well as the lack of it was demonstrated in this research.

Quite practically, a strong desire for a more elaborated, operational and robust definition of social sustainability has also been expressed by project partners and many other organizations as a prerequisite for them to be able to work more concretely and systematically with social sustainability aspects. This research provides a prototype of such a definition and a first validation that such an approach is viable and helpful.

Missimer, M

Social Sustainability within the Framework for Strategic Sustainable Development

(This page is intentionally left blank.)

7. Conclusions

This research began with the idea that the social dimension of sustainability specifically in regards to the FSSD could benefit from further support and elaboration. The research aims to answer the following research question:

How can the FSSD be further developed as regards the social dimension to better aid more concrete planning and decision-making for sustainable innovation?

A prototype based on rigorous literature studies and mental-modelling sessions was proposed and then tested in various applications and with that this dissertation provides a first, but thoroughly supported answer to this question. The research also shows that, despite doubt and criticism, a systems approach to social sustainability is possible and useful.

This dissertation has been part of a larger project with the same aim; as such, and because the topic and the approach demand it, the research in this field will continue beyond the work presented here. It is not possible to claim that social sustainability, or even social sustainability specifically within the FSSD, has been completely covered and dealt with within the timeframe of a PhD dissertation. As the research presented here may be a more radical update to the social dimension, it will need testing and adjustment over time. I look forward to being part of this work!

Next steps in this research are already on their way, and ideas for further work are currently being developed. In addition to continued evaluation, integration into sustainability methods and tools in product innovation, as well as procurement and value chain management, pose interesting questions. Answers to these questions are urgently needed to accelerate society's move towards sustainability and so provide research grounds with great leverage for real change.

Missimer, M

Social Sustainability within the Framework for Strategic Sustainable Development

(This page is intentionally left blank.)

References

- Ackoff, R. L., & Emery, F. E. 2005. *On purposeful systems: An interdisciplinary analysis of individual and social behavior as a system of purposeful events*. New Brunswick, NJ, USA: Transaction Publishers.
- Adger, W. N. 2000. Social and ecological resilience: are they related? *Progress in Human Geography*. 24(3), pp.347–364.
- Adger, W.N. 2003. Social capital, collective action and adaptation to climate change. *Economic Geography*. 79, p.387–404.
- Allan, K.D. 2006. *Contemporary Social and Sociological Theory: Visualizing Social Worlds* (Ed. 1). Sage Publisher
- Anderson, R. C. 1998. *Mid course correction - toward a sustainable enterprise: The Interface model*. Atlanta, USA: The Peregrinzilla Press.
- Avenier, M. J. 2010. Shaping a constructivist view of organizational design science. *Organization studies*, 31(9-10), pp. 1229-1255.
- Baier, A. 1986. Trust and Antitrust. *Ethics* 96(2): 231-260. Available at <http://www.jstor.org/stable/2381376>
- Barron, L. & Gauntlet, E. 2002. *Model of social sustainability (Stage 1 Report)*. Housing and Sustainable Communities Indicators Project, Western Australian Council of Social Service (WACOSS), Perth, Australia.
- Baskerville, R., Pries-Heje, J., & Venable, J. 2009. Soft design science methodology. In *proceedings of the 4th international conference on design science research in information systems and technology* (p. 9). ACM.
- Berkes, F., Colding, J., & Folke, C., (Eds.) 2003. *Navigating Social-Ecological Systems: Building Resilience for Complexity and Change*. Cambridge, UK: Cambridge Univ. Press.
- Blessing, L. & A. Chakrabarti, 2009. *DRM, a Design Research Methodology*. London: Springer Verlag.
- Borch, O.J & Arthur, M.B. 1995. Strategic Networks among Small Firms: Implications for Strategy Research Methodology. *Journal of Management Studies* 32, pp. 419-441.
- Boström, M. 2012. A missing pillar? Challenges in theorizing and practicing social sustainability: introduction to the special issue. *Sustainability: Science, Practice, & Policy*. 8(1), pp. 3-14
- Bratt, C. 2014. *Integrating a Strategic Sustainability Perspective into Eco-Labelling, Procurement and Supply Chain Management* (Doctoral dissertation, Blekinge Institute of Technology).

- Broman, G., Byggeth, S. & Robèrt, K.-H. 2002. Integrating environmental aspects in engineering education. *International Journal of Engineering Education*. 18(6), pp. 717-724.
- Broman, G., Holmberg, J. & Robèrt, K.-H. 2000. Simplicity without Reduction: Thinking Upstream Towards the Sustainable Society. *Interfaces*. 30(3), pp.13-25.
- Brooks, R. J. 2007. Conceptual modelling: framework, principles, and future research. Working Paper 2007/011. Lancaster University Management School. <http://eprints.lancs.ac.uk/48885/1/Document.pdf>
- Bruner, J. 1990. *Acts of meaning*. Cambridge, MA: Harvard University Press.
- Byggeth, S. & Hochschorner, E. 2006. Handling Trade-offs in Ecodesign Tools for Sustainable Product Development and Procurement. *Journal of Cleaner Production*. 14(15-16), pp.1420-1431.
- Byrne, D. & Callaghan, G. 2013. *Complexity theory and the social sciences: The state of the art*. Routledge.
- Byrne, D. 1998. *Complexity Theory and the Social Sciences*. London, UK: Routledge
- Cacioppo, J.T., Hawkey, L.C., Rickett, E. M. & Masi, C.M. 2005. Sociality, Spirituality, and Meaning Making: Chicago Health, Aging, and Social Relations Study. *Review of General Psychology*. 9(2), pp. 143–155.
- Caldwell, C. & Clapham, S.E. 2003. Organizational Trustworthiness: An International Perspective. *Journal of Business Ethics* 47, pp.349–364.
- Capra, F. & Luisi, P.L. 20014. *The systems view of life: a unifying vision*. Cambridge, UK: Cambridge University Press.
- Capra, F. 1996. *The web of life: A new scientific understanding of living systems*. Anchor
- Carson, R. 1962. *Silent Spring*. Houghton Mifflin Company, Boston.
- Castelfranchi, C. & Falcone, R. 2010. *Trust theory: A socio-cognitive and computational model*. Vol. 18. John Wiley & Sons.
- Castellani, B & Hafferty, F. W. 2010. *Sociology and Complexity Science: A New Field of Inquiry*. Berlin/Heidelberg, Germany: Springer
- Chapin F. S., Carpenter, S. R., Kofinas, G.P., Folke, C., Abel, N., Clark, W.C., Olsson, P., Smith, D. M. S., Walker, B., Young, O.R., Berkes, F., Biggs, R., Grove, J.M., Naylor, R. L., Pinkerton, E., Steffen, W. & Swanson, F.J. 2010. Ecosystem stewardship: sustainability strategies for a rapidly changing planet. *Trends in Ecology and Evolution*. 25(4), pp. 241- 249

- City of Vancouver. 2005. *Administrative Report*. RTS No.: 05186 CC File No.: 3501.
- Clark, N., Perez-Trejo, F. & Allen, P.M. 1995. *Evolutionary Dynamics and Sustainable Development: A systems Approach*. Cheltenham, UK: Edward Elgar Publishing Ltd.,
- Clayton, A. & Radcliffe, N.J. 1996. *Sustainability: a systems approach*. London: Earthscan/James & James.
- Colantonio, A. 2007. *Measuring Social Sustainability: Best Practice from Urban Renewal in the EU. Social Sustainability: An Exploratory Analysis of its Definition, Assessment Methods, Metrics and Tools*. 2007/01: EIBURS Working Paper Series July.
- Colantonio, A., Dixon, T., Ganser, R., Carpenter, J. & Ngombe, A. 2009. *Measuring Socially Sustainable Urban Regeneration in Europe*. Oxford Institute for Sustainable Development (OISD), School of the Built Environment, Oxford Brookes University
- Coleman, J. 1990. *Foundations of Social Theory*. The Belknap Press of Harvard University Press.
- Collins, H. (2010). *Creative research: the theory and practice of research for the creative industries*. Ava Publishing.
- Collins, J.C. & Porras, J.I. 2002. *Built to last*. (3rd ed). New York: Harper Collins Publisher Inc.
- Cook, D. 2004. *The natural step towards a sustainable society*. Green Books Ltd, Dartington, UK.
- Cook, K. (ed.). 2001. *Trust in society*. Russell Sage Foundation.
- Creswell, J. 2013. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Fourth Ed. SAGE Publications, Inc.
- Cretney, A., Cretney, S., & Meisterheim, T. 2011. *Integrating Participatory Processes in Planning for Strategic Sustainable Development*. Master's Thesis. Blekinge Institute of Technology.
- Cuthill, M. 2010. Strengthening the 'Social' in Sustainable Development: Developing a Conceptual Framework for Social Sustainability in a Rapid Urban Growth Region in Australia. *Sustainable Development*. 18(6), pp.362-373.
- Davidson, M. 2007. Searching for the socially sustainable city: Achieved through inducing the right mixture? In *Proceedings of the State of Australian Cities National Conference, Adelaide, Australia, 28-30 Nov2007*. Retrieved at <http://eprints.qut.edu.au/29562/1/c29562.pdf> (Accessed January 25th, 2013)

- Davidson, M. 2009. Social sustainability: a potential for politics? *Local Environment*. 14:7, pp.607-619.
- Dempsey, N., Bramley, G., Power, S. & Brown, C. 2011. The social dimension of sustainable development: Defining urban social sustainability. *Sustainable Development*. 19(5), pp.289–300.
- Draper, S. 2013. Creating the Big Shift: System Innovation for Sustainability. In *Forum for the Future*. pp. 2-48.
- Electrolux. 1994. *Electrolux Annual Report*. Electrolux, Stockholm, Sweden.
- Folke, C. 2006. Resilience: The emergence of a perspective for social–ecological systems analyses. *Global Environmental Change*. 16, pp.253–267
- Folke, C., Carpenter, S., Elmqvist, T., Gunderson, L., Holling, C. S., Walker, B., Bengtsson, J., Berkes, F., Colding, J., Danell, K., Falkenmark, M., Gordon, L., Kaspersen, R., Kautsky, N., Kinzig, A., Levin, S., Mäler, K. G., Moberg, F., Olsson, P., Oström, E., Reid, W., Rockström, J., Savenije, H. & Svedin, U. 2002. *Resilience and Sustainable Development: Building Adaptive Capacity in a World of Transformations—Scientific Background Paper on Resilience for the process of The World Summit on Sustainable Development on behalf of The Environmental Advisory Council to the Swedish Government*. Stockholm: Ministry of the Environment.
- Folke, C., Carpenter, S., Walker, B., Scheffer, M., Elmqvist, T., Gunderson, L., & Holling, C. S. 2004. Regime shifts, resilience, and biodiversity in ecosystem management. *Annual Review of Ecology, Evolution, and Systematics*. (35), pp.557-581.
- Folke, C., Colding, J. & Berkes, F. 2003. Synthesis: building resilience and adaptive capacity in social-ecological systems. In *Navigating Social-Ecological Systems: Building Resilience for Complexity and Change*. Berkes, F., Colding, J. & Folke, C. (Eds). Cambridge, UK: Cambridge University Press, pp. 352–87
- Folke, C., Hahn, T., Olsson, P. & Norberg J. 2005. Adaptive governance of social-ecological systems. *Annual Review of Environment and Resources*. 30, pp.441-473.
- Frye-Levine, L. A. (2012). Sustainability through Design Science: Re-Imagining Option Spaces Beyond Eco-Efficiency. *Sustainable Development*, 20(3), 166-179
- Fukuyama, F. 1995. *Trust: The social virtues and the creation of prosperity*. New York: Free Press
- Fukuyama, F. 2002. Social Capital and Development: The Coming Agenda. *SAIS Review*. 20(1), pp. 23-37.

- Funtowicz, S. O. & Ravetz, J.R. 1993. Science for the post-normal age. *Futures*. 25(7):739–55.
- Gambetta, D. & Hamill, H. 2005. *Streetwise: How Taxi Drivers Establish Customer's Trustworthiness*. Russell Sage Foundation.
- Gambetta, D. 2000. Can We Trust Trust? In: Gambetta, D. (ed.) *Trust: Making and Breaking Cooperative Relations*, electronic edition, Department of Sociology, University of Oxford, chapter 13, pp. 213-237.
- Giddens, A. 1984. *The Constitution of Society: Outline of the Theory of Structuration*. Cambridge, UK: Polity Press.
- Giddens, A. 1990. *The Consequences of Modernity*. Cambridge: Polity Press
- Giddens, A. 1991. *Modernity and self-Identity: Self and society in the late modern age*. Cambridge: Polity Press
- Gordon, S. 1991. *The History and Philosophy of Social Science*. London and New York: Routledge.
- Gordon, S. 2003. *The Natural Step and Whistler's journey towards sustainability*. Paper presented at the Sustainable Mountain Communities Conference in Banff, Alberta.
- Gunderson, L. H. 2001. South Florida: the reality of change and the prospects for sustainability: managing surprising ecosystems in Southern Florida. *Ecological Economics*. 37(3), pp.371-378.
- Hallstedt, S., Ny, H., Robèrt, K.-H. & Broman, G. 2010. An Approach to Assessing Sustainability Integration in Strategic Decision Systems for Product Development. *Journal of Cleaner Production*. 18(8), pp.703-712
- Hanneman, R. 1988. *Computer-assisted theory building*. Thousand Oakes, CA, US: Sage Publications
- Hardin, R. (eds.). 2002. *Trust and trustworthiness*. Russell Sage Foundation.
- Hardin, R. 1996. Trustworthiness. *Ethics*. 107, pp.26-42.
- Hartman, C.L., P.S. Hofman and E.R. Stafford. 1999. Partnerships: A Path to Sustainability. *Business Strategy and the Environment*: 8(5): 255-266.
- Hjorth, P. & Bagheri, A. 2006. Navigating towards sustainable development: A system dynamics approach. *Futures*. 38, pp.74–92.
- Holland, J. 1995. *Hidden Order: How Adaptation Builds Complexity*. Reading, MA, USA: Addison-Wesley.
- Holland, J. 1998. *Emergence: From Chaos to Order*. Cambridge, MA, USA: Perseus Books

- Holland, J. H. 2014. *Complexity: A very short introduction*. Oxford, UK: Oxford University Press.
- Hollis, M. 1998. *Trust within Reason*. Cambridge: Cambridge University Press
- Holmberg, J. & Robèrt, K-H. 2000. Backcasting from non-overlapping sustainability principles – a framework for strategic planning. *International Journal of Sustainable Development and World Ecology*. 7, pp.291-308.
- Huesemann, M. H. 2001. Can pollution problems be effectively solved by environmental science and technology? An analysis of critical limitations. *Ecological Economics*. 37(2), p.271-288.
- Intergovernmental Panel on Climate Change. 2007. *Climate Change 2007: Synthesis Report*. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva, Switzerland.
- Jaccard, J. & Jacoby, J. 2010. *Theory Construction and Model building skills*. New York: Guilford press.
- Jacobs, M. 1999. Sustainable development: a contested concept. In *Fairness and futurity: essays on environmental sustainability and social justice*. Dobson, A., (Ed). Oxford, UK: Oxford University Press.
- James S. & Lahti T. 2004. *The Natural Step for communities: how cities and towns can change to sustainable practices*. Gabriola Island, British Columbia, Canada: New Society Publishers.
- Johnson, S. 2002. *Emergence: the connected lives of ants, brains, cities and software*. Scribner
- Kahane, A. 2010. *Power and love: A theory and practice of social change*. Berrett-Koehler Publishers.
- Klinger, E. 1998. The search for meaning in evolutionary perspective and its clinical implications. In *The Human Quest for Meaning: A Handbook of Psychological Research and Clinical Applications*. Wong, P. & Fry, P. (Eds.). New Jersey: Laurence Erlbaum Associates. pp. 27 – 50.
- Klir, G.J. 2001. *Facets of Systems Science*. 2nd Ed. New York, NY, USA: Kluwer Academic/Plenum Publishers
- Koning, J. 2001. *Social sustainability in a globalizing world: context, theory and methodology explored*. Tilburg University, The Netherlands, paper prepared for the UNESCO / MOST meeting, 22-23 November 2001, The Hague, Netherlands. Available at <http://www.tilburguniversity.nl/globus/seminars/sem02.02.pdf> (accessed January 21st, 2013)

- Kotiadis, K. & Robinson S. Conceptual modelling: knowledge acquisition and model abstraction. *Proceedings of the 40th Conference on Winter Simulation*. Winter Simulation Conference, 2008.
- Kramer, R. M. & Tyler, T.R. (eds). 1996. *Trust in organizations: Frontiers of Theory and Research*. London: Sage
- Kunz J. 2006. *Social Sustainability and Community Involvement in Urban Planning*. University of Tampere: Tampere, Finland.
- Lahno, B. 2001. On the emotional character of trust. *Ethical Theory and Moral Practice* 4:171-189
- Lang, D.J., Wiek, A., Bergmann, M., Stauffacher, M., Martens, P., Moll, P., Swilling, M., Thomas, C.J., 2012. Transdisciplinary research in sustainability science: practice, principles, and challenges. *Sustain Science* 7, pp. 25–43.
- Leadbitter, J. 2002. PVC and sustainability. *Progress in Polymer Science*. 27(10), pp.2197-2226.
- Lehtonen, M. 2004. The environmental–social interface of sustainable development: capabilities, social capital, institutions. *Ecological Economics*. 49(2), pp.199-214.
- Levin, S. A. 1998. Ecosystems and the biosphere as complex adaptive systems. *Ecosystems*. 1(5), pp.431-436.
- Lewis, J. D. & Weigert, A. 1985. Trust as a social reality. *Social Forces*. 63, pp.967–985.
- Littig, B. & Griessler, E. 2005. Social sustainability: a catchword between political pragmatism and social theory. *International Journal of Sustainable Development*. 8(1), pp.65-79.
- Luhman, N. 1995. *Social Systems*. Stanford, CA, USA: Stanford University Press
- Luhmann, N. 1979. *Trust and Power*. John Wiley & Sons.
- Luhmann, N. 2000. *Vertrauen, ein Mechanismus der Reduktion der sozialer Komplexität*. 4. Auflage, Stuttgart: Lucius & Lucius.
- Macionis J.J. & Plummer, K. 2013. *Sociology: A global Introduction* (5th eds). Pearson Education Limited
- Marsen, S. 2008. The Role of Meaning in Human Thinking. *Journal of Evolution and Technology* . 17(1), pp. 45-58.
- Matsushita. 2002. *Environmental sustainability report 2002*. Matsushita Electric Industrial Co., Ltd. Osaka, Japan
- Max-Neef, M., Elizalde, A. & Hopenhayn, M. 1991. *Human scale development: conception, application and further reflections*. New York: Apex.

- Max-Neef, M.A., 2005. Foundations of transdisciplinarity. *Ecological Economics*. 53, pp. 5–16.
- Maxwell, J. A. 2005. *Qualitative research design: An interactive approach*. Thousand Oaks, California, US: Sage Publications, Inc.
- Mayer, R. C. & Norman, P.M. 2004. Exploring Attributes of Trustworthiness: A Classroom Exercise. *Journal of Management Education*. 28, pp.224-249.
- Mayer, R.C., Davis, J. H. & Schoorman, F.D. 1995. An Integrative Model of Organizational Trust. *Academy of Management Review*. 20(3), pp.709-734.
- McKenzie, S. 2004 *Social Sustainability: Towards Some Definitions*, Hawke Research Institute, Working Paper Series No. 27, University of South Australia.
- McKenzie, S. 2005. *Building institutions for sustainability: A New Zealand case study*. Diss. ResearchSpace@ Auckland.
- McLeod, C. 2006. *Trust*. The Stanford Encyclopedia of Philosophy. Available at <http://plato.stanford.edu/entries/trust>
- Meadows, D. H. & Wright, D. 2008. *Thinking in systems: A primer*. Chelsea Green Publishing.
- Meadows, D. H., Meadows, D. L., Randers, J. and Behrens, W.W. 1972. *The Limits to Growth: a Report for the Club of Rome's Project on the Predicament of Mankind*. London, Earth Island.
- Meijboom, F. L. B., Visak, T. & Brom, F.W.A. 2006. From Trust To Trustworthiness: Why Information Is Not Enough In The Food Sector. *Journal of Agricultural and Environmental Ethics*. 19, pp.427–442.
- Meijboom, F. L.B. 2008. *Problems Of Trust: A Question of Trustworthiness - An ethical inquiry of trust and trustworthiness in the context of the agricultural and food sector*. Doctoral Dissertation, Utrecht University
- Metzner, A. 2000. Caring capacity and carrying capacity – a social science perspective. Papers Presented at the *INES 2000 Conference: Challenges for Science and Engineering in the 21st Century*, Stockholm.
- Millenium Ecosystem Assessment. 2005. *Living beyond our means. Natural assets and human well-being*. Statement from the board. Sarukhán, J. & Whyte, A. (Eds.)
- Miller, J. H. & Page, S.E. 2009. *Complex adaptive systems: an introduction to computational models of social life: an introduction to computational models of social life*. Princeton, NJ, USA: Princeton University Press.
- Miller, T. R., 2011. *Constructing Sustainability: A Study of Emerging Scientific Research Trajectories*. (PhD). Arizona State University. Available at

- http://repository.asu.edu/attachments/56608/content/Miller_asu_0010E_10655.pdf (Accessed January 25th, 2013)
- Mirchandani, Dilip. 2010. EAM White Paper Series: sustainability and innovation for systemic change." *Organization Management Journal* 7(4), pp. 243-245.
- Missimer, M. & Connell, T. 2012. Pedagogical Approaches and Design Aspects to Enable Leadership for Sustainable Development. *Sustainability: The Journal of Record* 5(3), pp. 172-181.
- Missimer, M. 2013. *The social dimension of strategic sustainable development*. Licentiate Dissertation, Blekinge Institute of Technology.
- Missimer, M., Robèrt K – H., Broman G. & Sverdrup, H. 2010. Exploring the possibility of a systematic and generic approach to social sustainability. *Journal of Cleaner Production*. 18(10-11), pp.1107-1112.
- Mitchell, M. 2009. *Complexity: A guided tour*. Oxford, UK: Oxford University Press.
- Miztal, B. 1996. *Trust in Modern Societies: The Search for the Bases of Social Order*. Polity Press.
- Nahapiet, J., & Ghoshal, S. 1998. Social capital, intellectual capital, and the organizational advantage. *Academy of management review*, pp. 242-266.
- Natras, B. & Altomare, M. 2002. *Dancing with the tiger*. Gabriola Island, British Columbia, Canada: New Society Publishers.
- Natras, B. 1999. *The Natural Step: corporate learning and innovation for sustainability*. Doctoral Thesis. The California Institute of Integral Studies, San Francisco, California, USA.
- Nelson, D. R., Adger, W.N. & Brown, K. 2007. Adaptation to Environmental Change: Contributions of a Resilience Framework. *Annual Review of Environment and Resources*. 32, pp.395–419.
- Norberg, J. & Cumming, G.S. 2006. *Complexity Theory for a Sustainable Future*. Columbia University Press, New York.
- Ny, H., MacDonald J.P., Broman G., Yamamoto R. & Robèrt K-H. 2006. Sustainability constraints as system boundaries: an approach to making life-cycle management strategic. *Journal of Industrial Ecology*. 10(1-2), pp.61-77.
- Nyquist Potter, N. 2002. *How can I be trusted? : a virtue theory of trustworthiness*. Lanham, Md. : Rowman & Littlefield
- Olsson, P., Folke, C., & Hahn, T. 2004. Social-ecological transformation for ecosystem management: the development of adaptive co-management of a wetland landscape in southern Sweden. *Ecology and Society* 9(4), pp. 2.

- Omann, I. & Spangenberg, J.H. 2002. *Assessing Social Sustainability- The Social Dimension of Sustainability in a Socio-Economic Scenario* Presented at the 7th Biennial Conference of the International Society for Ecological Economics in Sousse (Tunisia), 6-9 March 2002 Available at http://seri.at/wp-content/uploads/2010/05/Assessing_social_sustainability.pdf (Accessed November 29th, 2012)
- Osbahr, H., Twyman, C., Adger, W. N. & Thomas, D. S. G. 2010. Evaluating successful livelihood adaptation to climate variability and change in southern Africa. *Ecology and Society*. 15(2), pp.27.
- Ostrom, E., & Ahn, T. K., (Eds). 2003. *Foundations of social capital*. Cheltenham, UK: Edward Elgar Publishing.
- Ostrom, E., Walker, J. & Messner, D. 2003. *Trust and reciprocity*. Russel Sage Foundation.
- Paehlke, R. 2001. Environmental Politics, Sustainability and Social Science. *Environmental Politics*. 10(4), pp.1-22.
- Park, C. 2011. Meaning and Growth within Positive Psychology: Toward a More Complete Understanding. In: *Designing Positive Psychology: Taking Stock and Moving Forward*. Sheldon, K.M., Kashdan, T.B. & Steger, M.F. (Eds). Cary, NC, USA: Oxford University Press. p- 324 -334.
- Park, C. L. 2010. Making sense of the meaning literature: an integrative review of meaning making and its effects on adjustment to stressful life events. *Psychological bulletin*. 136(2), pp.257-301.
- Partridge, E. 2005. *Social sustainability: a useful theoretical framework?* Paper presented at the Australasian Political Science Association Annual Conference 2005, Dunedin, New Zealand, 28-30 September 2005.
- Peattie, K. 2011. "Developing and Delivering Social Science Research for Sustainability". In *Researching Sustainability: A Guide to Social Science Methods, Practice and Engagement*. Franklin, A & Blyton, P. (Eds). Milton Park, Abingdon, Oxon: Earthscan.
- Peffer, K., Tuunanen, T., Rothenberger, M. A., & Chatterjee, S. 2007. A design science research methodology for information systems research. *Journal of management information systems*, 24(3), pp. 45-77.
- Pohl, C., & Hadorn, G. H. 2007. *Principles for designing transdisciplinary research*. Munich: Oekom.
- Porter, M.E. 1991. "Towards a Dynamic Theory of Strategy". *Strategic Management Journal*. 12(S2):95-117.
- Potter, N.N. 2002. *How can I be trusted? : a virtue theory of trustworthiness*. Lanham, Md.: Rowman & Littlefield.

- Pretty, J. & Ward, H. 2001. Social capital and the environment. *World Development*. 29, pp.209-227.
- Pretty, J. 2003. Social capital and the collective management of resources. *Science*. 302, pp.1912-1914.
- Putnam, R. 1993. *Making democracy work. Civic traditions in modern Italy*. Princeton (NJ): Princeton University Press
- Putnam, R. 2000. *Bowling Alone. The Collapse and Revival of American Community*. New York, London: Simon and Schuster.
- Ragsdell, G. & Wilby, J. (eds.). 2001. *Understanding complexity*. Kluwer Academic/Plenum Publishers
- Ramage, M. & Shipp, K. 2009. *Systems Thinkers*. London: Springer.
- Reason, P. and Bradbury, H. 2006. Introduction: Inquiry and participation in search of a world worthy of human aspiration. In: *Handbook of Action Research: participative inquiry and practice*. Reason, P. & Bradbury, H. (Eds). Thousand Oaks, CA: Sage
- Rittel, H.W.J. & Webber, M.M. 1973. Dilemmas in a general theory of planning. *Policy Sciences*. 4:155-169.
- Robèrt, K.-H. 2002. *The Natural Step story: Seeding a quiet revolution*. Gabriola Island: New Society Publishers. (see, e.g., page 107 and onwards)
- Robèrt, K.-H. 1994. *Den Naturlige Utmaningen (The Natural Challenge)*. Stockholm, Sweden: Ekerlids Publisher.
- Robèrt, K.-H. 1997. *ICA/Electrolux - A case report from 1992*. 40th CIES Annual Executive Congress, Boston, MA.
- Robèrt, K.-H. 2000. Tools and concepts for sustainable development, how do they relate to a general framework for sustainable development, and to each other? *Journal of Cleaner Production*. 8(3), pp.243-254.
- Robèrt, K.-H., Broman, G. & Basile, G. 2013b. Analyzing the concept of planetary boundaries from a strategic sustainability perspective: How does humanity avoid tipping the planet? *Ecology and Society* 18(2): 5.
- Robèrt, K.-H., Broman, G., Waldron, D., Ny, H., Byggeth, S., Cook, D., Johansson, L., Oldmark, J., Basile, G., Haraldsson, H., MacDonald, J., Moore, B., Connell, T. & Missimer, M. 2013a. *Strategic Leadership Towards Sustainability*. Karlskrona: Blekinge Institute of Technology.
- Robèrt, K.-H., Schmidt-Bleek, B., Aloisi de Larderel, J., Basile, G., Jansen, J.L., Kuehr, R., Price Thomas, P., Suzuki, M., Hawken, P. & Wackernagel, M. 2002. Strategic sustainable development selection, design and synergies of applied tools. *Journal of Cleaner Production*. 10, pp.197-214.

- Robinson, S. 2006. Issues in conceptual modelling for simulation: setting a research agenda." *Proceedings of the 2006 OR Society Simulation Workshop*.
- Robson, C. 2011. *Real World Research*. 3rd edition. West Sussex, UK: Wiley& Sons Ltd.
- Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F., Lambin, E., Lenton, T., Scheffer, M., Folke, C. & Schellnhuber, H. 2009. A safe operating space for humanity. *Nature*. 461, pp.472-475.
- Rothstein, B. 2005. *Social Traps and the problem of Trust*. Cambridge: Cambridge University Press
- Sachs, I. 1999. Social sustainability and whole development: exploring the dimensions of sustainable development. In *Sustainability and the social sciences: a cross-disciplinary approach to integrating environmental considerations into theoretical reorientation*. Egon, B. & Thomas, J. (Eds). Zed Books, London.
- Savin-Baden, M., & Major, C. H. 2013. *Qualitative research: The essential guide to theory and practice*. Routledge.
- Sawyer, R. K. 2005. *Social emergence: Societies as complex systems*. Cambridge, UK: Cambridge University Press
- Scheffer, M., Westley, F., Brock, W.A. & Holmgren, M. 2001. Dynamic interaction of societies and ecosystems: Linking theories from ecology, economy, and sociology. In *Panarchy: understanding transformations in human and natural systems*. Gunderson, L. & Holling, C.S. (Eds). Island Press, Washington, DC, USA:195-239.
- Schutz, W. 1958. *FIRO: A Three-Dimensional Theory of Interpersonal Behavior*. New York, NY: Rinehart.
- Schutz, W. 1992. Beyond FIRO-B—Three New Theory Derived Measures—Element B: Behavior, Element F: Feelings, Element S: Self. *Psychological Reports*. 70, pp.915-937.
- Schutz, W. 1994. *The Human Element: Productivity, Self-Esteem and the Bottom Line*. San Francisco, CA: Jossey-Bass.
- Senge, P. 2003. Creating Desired Futures in a Global Economy. *Reflections*. 5(1), pp.1-12.
- Senge, P. 2006. Systems Citizenship: The leadership mandate for this millennium. *Leader to Leader* 41: 21-26
- Shrivastava, P., Ivanaj, S., Persson, S., 2013. Transdisciplinary Study of Sustainable Enterprise. *Business Strategy and the Environment* 22, pp. 230–244.

- Simon, H. A. 1996. *The sciences of the artificial*. 3rd edition. Cambridge, MA: MIT Press.
- Spangenberg, J. H. & Omann, I. 2006. Assessing social sustainability: social sustainability and its multicriteria assessment in a sustainability scenario for Germany. *International Journal of Innovation and Sustainable Development*. 1(4), pp.318-348.
- Stacey, R. D. 2007. *Strategic management and organisational dynamics: The challenge of complexity to ways of thinking about organisations*. Pearson education
- Steffen, W., Crutzen, P.J., McNeill, J.R., 2007. The Anthropocene: are humans now overwhelming the great forces of nature. *Ambio: A Journal of the Human Environment* 36, pp. 614–621.
- Steffen, W., Persson, Å., Deutsch, L., Zalasiewicz, J., Williams, M., Richardson, K., Crumley, C., Crutzen, P., Folke, C., Gordon, L., Molina, M., Ramanathan, V., Rockström, J., Scheffer, M., Schellnhuber, H.J., Svedin, U., 2011. The Anthropocene: From Global Change to Planetary Stewardship. *AMBIO* 40, pp. 739–761.
- Steffen, W., Sanderson, A., Jäger, J., Tyson, P. D., Moore III, B., Matson, P. A., Richardson, K., Oldfield, F., Schellnhuber, H.- J., Turner II, B. L. & Wasson, R. J. 2004. *Global Change and the Earth System: A planet under Pressure*. New York: Springer Verlag.
- Stern, N. 2007. *The economics of climate change: the Stern review*. Cambridge: Cambridge University Press.
- Strauss-Kahn, D. 2004. Building a Political Europe. 50 Proposals for Tomorrow's Europe. *Brussels: European Commission*.
- Stren, R. & Polese, M. 2000. Understanding the New Sociocultural Dynamics of Cities Comparative Urban Policy in a Global Context. In *The Social Sustainability of Cities: Diversity and the Management of Change*. Stren, R. & Polese, M. (Eds). Toronto: University of Toronto Press.
- Sztompka, P. 1999. *Trust: A Sociological Theory*. Cambridge University Press.
- Thompson, A. W. 2012. *Integrating a Strategic Sustainable Development Perspective in Product-Service System Innovation*. School of Engineering, Blekinge Institute of Technology.
- Tilly, C. 2005. *Trust and rule*. Cambridge University Press.
- Törnberg, A. 2011. *Using Complexity Theory Methods for Sociological Theory Development-With a Case Study on Socio-Technical Transitions*. Master's Thesis, Gothenburg University

- Tronick, E. 2008. Multilevel Meaning Making and Dyadic Expansion of Consciousness Theory: The Emotional and the Polymorphic Polysemic Flow of Meaning. In *The Healing Power of Emotion: Affective neuroscience, development, clinical practice*. Fosha, D. Solomon, M. & Siegel, D. (Eds). New York: Norton p.86-111.
- Tullberg, J. 2008. Trust -The importance of trustfulness versus trustworthiness. *The Journal of Socio-Economics*. 37, pp.2059–2071.
- Urry, J. 2003. *Global Complexity*. Cambridge/Oxford, UK: Polity Press
- Uslaner, E. 2002. *The Moral Foundation of Trust*. New York: Cambridge University Press
- Vaishnavi, V., & Kuechler, W. 2004. Design research in information systems. Available at <http://www.isworld.org/Researchdesign/drisISworld>.
- Vallance, S. P., Harvey, C. & Dixon, J.E. 2011. What is social sustainability? A clarification of concepts. *Geoforum*. 42, pp.342–348.
- Walby, S. 2003, April. Complexity theory, globalisation and diversity. In *conference of the British Sociological Association, University of York*.
- Walby, S. 2007. Complexity Theory, Systems Theory, and Multiple Intersecting Social Inequalities. *Philosophy of the Social Sciences*. 37(4):449–470. doi:10.1177/0048393107307663
- Waldron, D. 2005. A new education - "strategic leadership towards sustainability". Seminar on education for sustainable development (Seminarium om utbildning för hållbar utveckling), Stockholm, Sweden, Ministry of Culture and Education.
- Waldron, D., Byggeth, S., Ny, H., Broman, G., & Robèrt, K.-H. 2004. Structured comprehension for systems thinking, learning and leadership towards sustainability. *Environmental Management for Sustainable Universities (EMSU)*. Tecnológico de Monterrey, Mexico.
- Walker, B., Gunderson, L.H., Kinzig, A., Folke, C., Carpenter, S. & Schultz, L. 2006. A handful of heuristics and some propositions for understanding resilience in social-ecological systems. *Ecology and Society*. 11(1):13.
- Walker, B., Holling, C.S., Carpenter, S.R. & Kinzig, A. 2004. Resilience, adaptability and transformability in social-ecological systems. *Ecology and Society*. 9(2):5.
- Warren, M. E. 1999. *Democracy and trust*. Cambridge University Press.
- Weingaertner, C. & Moberg, Å. 2011. Exploring Social Sustainability: Learning from Perspectives on Urban Development and Companies and Products. *Sustainable Development*. DOI: 10.1002/sd.536.

- Westley, F. 2002. The devil in the dynamics. In *Panarchy: understanding transformation in human and natural systems*. Gunderson, L. H. & Holling, C. S., (Eds). Island Press, Washington, D.C., USA. Pp.333-360.
- Wickson, F., Carew, A. L., & Russell, A. W. 2006. Transdisciplinary research: characteristics, quandaries and quality. *Futures*, 38(9), 1046-1059.
- Wollebaek, D. & Selle, P. 2008. Where does social capital come from? In *The third sector in Europe*. Osborne, S.P. (Eds). NY, NY: Routledge Studies in the Management of Voluntary and Non-profit Organizations.
- World Commission on Environment and Development. 1987. *Our Common Future*. [Report of the] *World Commission on Environment and Development*. Available at: <http://www.un-documents.net/wced-ocf.htm> (Accessed January 21st, 2013)
- World Health Organization. 2006. *Constitution of the World Health Organization – Basic Documents*, Forty-fifth edition, Supplement, October 2006.
- World Wildlife Fund International. 2010. Living Planet Report 2010: Biodiversity, biocapacity and development. WWF International
- World Wildlife Fund International. 2012. *Living Planet Report 2012: Biodiversity, Biocapacity and Better Choices*. Gland (Switzerland)

Missimer, M

Social Sustainability within the Framework for Strategic Sustainable Development

(This page is intentionally left blank.)

Paper A

Exploring the possibility of a systematic and generic approach to social sustainability

Paper A is published as

Missimer M, Robèrt K–H, Broman G and Sverdrup H. *Exploring the possibility of a systematic and generic approach to social sustainability*, J Clean Prod (2010), doi:10.1016/j.jclepro.2010.02.024

Exploring the possibility of a systematic and generic approach to social sustainability

Merlina Missimer

Karl-Henrik Robèrt

Göran Broman

Harald Sverdrup

Abstract

There is a growing need to understand how existing concepts and tools for sustainability relate to each other and to a robust, trans-disciplinary systems perspective for sustainability. As a response, a group of scientists, including some of the authors, have developed a framework based on backcasting from sustainability principles over the last 20 years – the Framework for Strategic Sustainable Development (FSSD), also known as The Natural Step Framework. The intent of this study is to scrutinize the existing framework as regards its social dimension. The study demonstrates dichotomies and lack of robustness and proposes a way forward to make the social dimension of the FSSD more cohesive as well as operational.

Keywords: *Sustainability principles; Social sustainability; Framework for Strategic Sustainable Development, The Natural Step Framework; System analysis;*

Introduction

Scientists of various fields support the conclusion that society is currently on a long-term unsustainable course [1, 2]. Two-thirds of ecosystem services, which human society depends on, are being degraded or used in ways that cannot be sustained [3]. According to the World Bank 1.4 billion people in the world still live on less than 1.24 USD a day [4]. Human rights abuses, corruption, workers' abuses, discrimination, a high rate of HIV/Aids, lack of access to education, among many other things, are still common place in many countries [5, 6]. Many societal actors, governments and a multitude of private companies worldwide are beginning to understand the crisis of un-sustainability and are asking for assistance in reorienting their activities in a sustainable direction. However, finding help is not always easy. A vast array of ideas, concepts, methods, and tools has been developed in response to the complex nature of the interrelated socio- ecological problems. Various kinds of management systems for Economy, Quality, Security, Health, Environment and Climate, as well as Corporate Social Responsibility (CSR) guidelines exist [7-11]. This variety of definitions, terms, approaches, methods and tools makes the field confusing and leads to a growing need to understand how they relate to sustainability and to each other [12, 13].

Previous attempts to be more systems oriented and strategic about sustainable development have built on attempts to create holistic scenarios for a sustainable future, and then to plan systematically to get there. Departing in planning from an imagined point of success in the future and searching for smart step-by-step approaches to get there from the current situation is referred to as "backcasting", a term coined by John Robinson in 1987 in his work with energy futures [14-17].⁵ Backcasting as a general approach is the first-order key element of being strategic and is in particular helpful when the problem to be addressed is complex and the dominant trends are part of the problem. This is clearly the case in sustainability, both ecological and social [14-17].⁶

⁵ While the methodology has been implicitly used for centuries, in war strategy for example [18], it was not until Robinson's 1987 publication and his as well as Dreborg's subsequent work that established this term as a methodology, applied to date mostly in energy and environmental work [14]. The methodology has also been used in the field of business intelligence [19].

⁶ An example of an effort to use backcasting for sustainability purposes is the development of critical loads and their use in the European arena to mitigate emissions. The critical loads were derived in a backcasting process from ecological and social goals based on ecosystem function and structure [20-24].

In backcasting from scenarios as used by Robinson, a simplistic but rather specific image of the future, or a set of specific goals, is used as the basis of the planning. Backcasting from a robust definition of a goal, helps avoid sub-optimizations and sometimes even „blind alleys“ because it departs in planning from the full scope of the goal in the future – not from current technologies and the limitations of those. This allows for more robust estimations of future potentials and opportunities and avoiding fixing one problem by inventing another. An example, where this opportunity was not exploited, would be the introduction of DDT or CFC“s, both of which were responses to current problems and demands but turned out to be a blind-alley from a whole sustainability perspective.

Backcasting from scenarios or specific goals also has some drawbacks [15]. First, given differing values, it can be difficult for large groups to agree on relatively detailed descriptions of a desirable distant future. Second, given technological and cultural evolution, which keep changing the conditions for the optimal path ahead, it is best to avoid overly specific assumptions of the future too early in a process of transformation. What may seem as an optimal final solution today, may be helplessly obsolete tomorrow. Thirdly, how do we know that the scenario that we backcast from is really sustainable in the first place if it is not assessed by robust principles?⁷ And, finally, if we backcast directly from scenarios without having them scrutinized by basic principles for sustainability, it is difficult to draw general conclusions, i.e. gain learning from one topic or organization that could be transferred to other topics and organizations.

Over the last twenty years, a group of scientists, including some of the authors, have explored the possibility to develop a framework based on backcasting from sustainability principles. This framework has since been elaborated and refined in theory [12, 25-27] as well as practiced in many organizations and sectors such as Electrolux and IKEA [25], Interface, Scandic Hotels and Collins Pine [28], Hydro Polymers [29], regions and municipalities [30, 31], Agriculture [32, 33], and transport systems [34]. This framework has also been applied to relate various tools and concepts for sustainable development to sustainability and to each other [12, 27] and for academic education [35-38].

It is important to note that the term “Sustainable Development” and “Sustainability” are not synonymous. Semantically, the term sustainability describes a stage (or state of being), while sustainable development points at processes towards or within that state [39]. When backcasting from sustainability principles, the principles describe a goal, semantically a state of being. Furthermore, a goal can in itself be to comply with basic principles, or constraints, for sustainability, and the same basic conditions can then be applied to inform further technical and cultural evolution. More precisely, this

⁷ The term robustness will be discussed at more detail later on in the paper.

framework focuses on these basic conditions or requirements that need to be fulfilled in order for the system to be sustainable as well as the application of these principles for backcasting planning.

Intent of the study and hypothesis

The above-mentioned framework for strategic sustainable development (FSSD)⁸ has an ecological and a social dimension.⁹ The question explored in this paper is whether the Framework for Strategic Sustainable Development as it is formulated now allows for backcasting from social sustainability in a way that is operational enough. The intent of this study is to scrutinize the existing framework as regards the social dimension, specifically the definition of social sustainability in terms of basic conditions, with the hypothesis that the social side, when compared to the ecological one is not equally operational. This paper is the first in a series aimed at exploring a principled definition of social sustainability.

Methods

The analysis will be performed using the same generic five-level model for analysis of any systematic approach in any system that the FSSD was originally developed around [12]. The levels of the framework are the following:

1. *The Systems level* describes the overarching system within which analyses and planning occur, e.g. an organization or project within society (with its stakeholders, laws, norms etc.), within the biosphere (with its natural laws, natural resources, biodiversity, etc).
2. *The Success level* describes the overall principles that are fulfilled in the system (1) when the organization is in compliance with its vision, within constraints set by basic principles for socio-ecological sustainability.
3. *The Strategic Guidelines level* provides some generic and overarching strategic guidelines for planning and acting towards any goal (2). The core basic guidelines of the framework are: (i) With each investment strive to bring projects and organizations closer to compliance with the success principles (2). In doing so, strike a good balance between (ii) direction and advancement speed with respect to the success principles and (iii) return on investment. Other, “softer”, guidelines are related to process, e.g. honesty, transparency, accountability and inclusiveness.

⁸The Framework for Strategic Sustainable Development is called so because it allows backcasting backcasting from a set of basic conditions for sustainability (the minimum goal) and then a stepwise planning (development) approach to this goal.

⁹ It also includes the economic dimension. See below.

4. *The Action level* describes what actions are planned and carried out in line with the strategic guidelines.
5. *The Tools level* describes the methods, tools and concepts used to manage, measure and monitor the activities (4) so that these are chosen in a strategic way (3) to arrive at success (2) in the system (1). For example; ecodesign tools and environmental management systems.

Results

The paragraphs below detail what a critical evaluation of the FSSD reveals about the social sustainability aspects of the current framework. Since the ecological side has proven itself to be both logically robust¹⁰ and operationable, the findings on the social side are presented in comparison to the ecological side, so as to highlight the discrepancies.

Systems level: At the systems level on the ecological side, the FSSD is based on a thorough analysis of the “big picture” of the ecosystems, following logical conclusions from laws of nature such as thermodynamics, the conservation laws, the biogeochemical cycles, and how the exchange of flows of resources and waste between society and natural systems can be described precisely enough to approach overriding mechanisms for how the natural system is currently eroded [40]. An equal analysis for the social side is not evident. Would it be possible to explore the social system with an equally thorough analysis, thereby informing more precisely the following levels of the framework?

Success level: In the following, the reasoning behind the definition of ecological sustainability is described, after which the results of attempting to apply the same approach to social sustainability, are presented.

When the original framework was developed, the scientists started to derive criteria that the basic principles of sustainability had to fulfill in order to be robust and operational [26, 36, 39, 41]:

- Necessary, to allow a detection of incontrovertible and mandatory aspects and measures of sustainability;
- Sufficient, to not have gaps in the thinking;
- General, to allow inter-disciplinary and cross-sector cooperation; Concrete enough to inspire innovation, action and give direction;
- Distinct (mutually exclusive) to avoid overlaps and thereby allow for comprehension as well as development of indicators.

¹⁰ As elaborated later on in this section

To arrive at principles meeting those criteria, the subsequent logics were followed:

Sustainability is a term that has become relevant only as a consequence of humanity's systematic contributions to un-sustainability, when the limits of sustainability is challenged or overstepped. Thus, we are trying to set the limits between sustainability and un-sustainability. It is therefore logical to look for *different overriding* mechanisms by which society is systematically eroding the ecological systems, and then equipping such basic mechanisms with a "not". What are the fundamental flaws in the design of the un-sustainable society and how can such be used as exclusion criteria for redesign of society with its organizations?

The framework's sustainability principles are in their current form stated below (the first three dealing with ecological sustainability, and the fourth addressing social sustainability which we will return to):

In the sustainable society, nature is not subject to systematically increasing...

1. ...concentrations of substances extracted from the Earth's crust,
 2. ...concentrations of substances produced by society,
 3. ...degradation by physical means
- and
4. ...people are not subject to conditions that systematically undermine their capacity to meet their needs.

Already before making a deeper analysis of the social system, it is possible to identify a discrepancy in the FSSD between the ecological and social side at the second level. It is obvious, that there is no reciprocal cohesion between the current phrasing of sustainability principles (SPs) 1-3 on the one hand, and sustainability principle (SP) 4 on the other. A more reciprocal and logical representation of the two systems is presented in Fig 1 below. From this follows the concrete gap we would like to explore regarding the identification of overriding mechanisms by which the social system can be eroded.

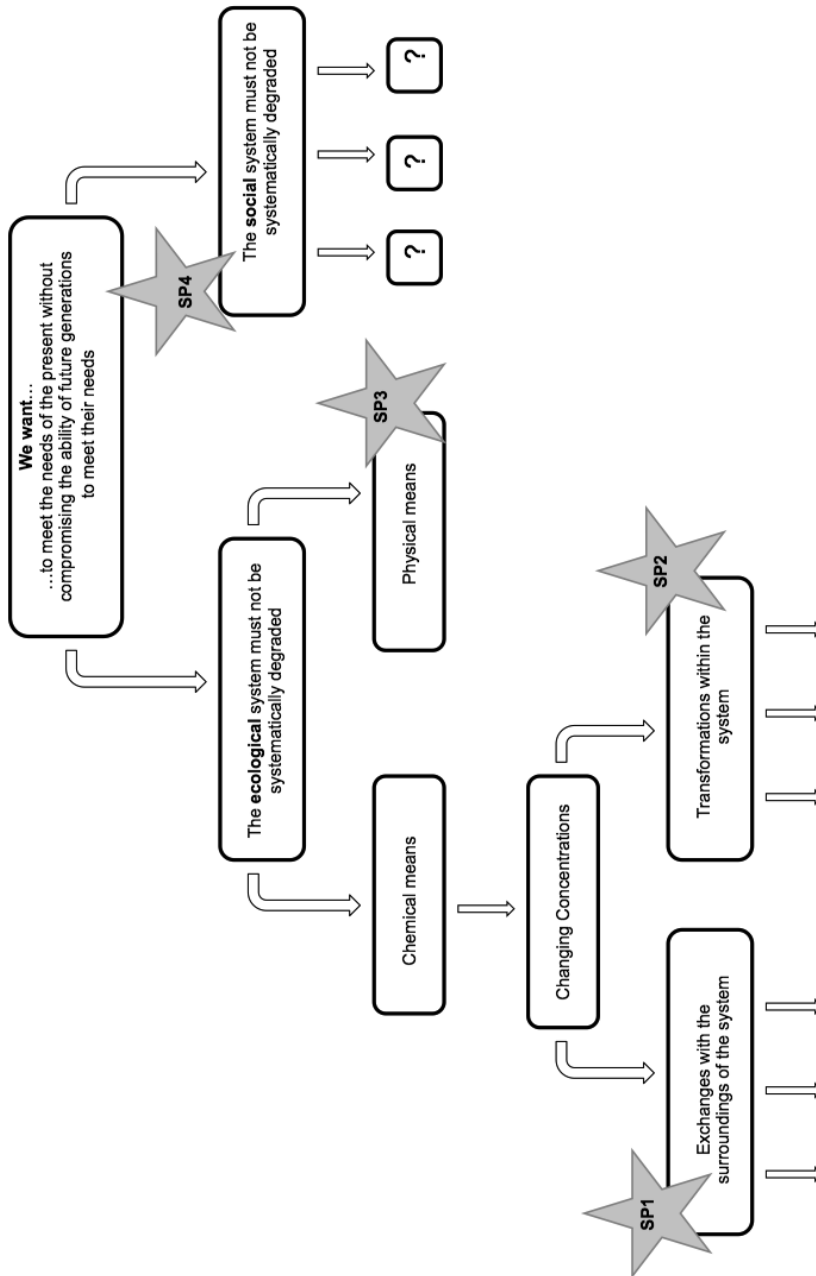


Figure 1: The ecological and social side of the Framework for Strategic Sustainable Development – gaps and imbalances are highlighted through its visual representation.

Starting with the Brundtland definition as something we want for humanity¹¹ and applying the logic laid out above, it is clear that we achieve sustainability (i) by not systematically degrading the ecological system and (ii) by not systematically degrading the social system (see figure 1). This would lead to two overriding principles for sustainability, namely sustainability for the ecological system on the one hand, and sustainability for the social system on the other¹².

The overriding principle for ecological sustainability has already been further fleshed out into higher-order and more concrete principles (SPs 1-3), whereas there is nothing under the overriding principle for social sustainability. The social principle of the FSSD only provides a claimed statement of social sustainability as being a society where “people are not subject to conditions that systematically undermine their capacity to meet their needs”. This is not distinct from the starting point (the Brundtland definition). At least the overlap is considerable. Furthermore, whether this overriding description of social sustainability would follow a thorough analysis of the social system or not, remains to be investigated. Even if this description would hold to such scrutiny, the question remains, exactly *how*, expressed as basic mechanisms, does the design of our current society erode the capacity of people to meet their needs?

Other levels: Since the last three levels of the FSSD are not specific to either the ecological or the social side, there is no inconsistency between them. At the strategic guidelines level, the above mentioned guidelines ought to be equally important for the social side as for the ecological side. But will those suffice on their own as overriding guidelines also for social strategies? It cannot be excluded that a more robust description of the first level (social system), leading to a more elaborate description of basic mechanisms for erosion of the social system and consequent operational principles for social sustainability (second level), will influence also the third, strategic guidelines level (and thereby the remaining two levels – actions and tools).

¹¹ “Meeting the needs of the present without compromising the ability of future generations to meet their own needs” [42] describes the topic at a very high philosophical level. What does this actually mean in practical terms? The FSSD tries to break this definition down into operational principles that allow us to analyse and plan for a sustainable future.

¹² “Economic sustainability” is often mentioned as a third pillar of sustainability. However, as Daly [43] points out the economy is a *means* for any objective (not an objective in itself). It therefore fits at the strategic level of this framework rather than at the success level.

Discussion

Studying social sustainability brings with it some inherent challenges that are not encountered when studying the ecological system. “We are looking at a system that we (as researchers) cannot observe as an outsider”, it is often argued since studying the human social system means in fact the studying of ourselves. Further “that the social world is much too complex and far too interwoven with value statements, morals, and other intangible, non-measurable aspects to be studied as one would study an ecological system with traditional scientific methodologies”. However, we do not think that this is reason enough to not even try. First, the ecological system is also complex. Secondly, there never has been such a thing as an un-researchable issue. All systems can be analysed, and complex and far-reaching objectives can always be attempted. It could even be argued that the most prestige-infected, contentious or controversial issues are those that need such research attitudes the most.

Perhaps it is precisely because of the perceived complexity and ambiguity, that a systems analysis, and systematic re-design approach to social sustainability from a basic principled level, should be attempted. Such an approach will probably shed light on interrelated aspects and relationships that may currently be overseen, and result in more generic guidelines for cross-sector and interdisciplinary modelling of social sustainability.

The analysis in the earlier section brought up unanswered questions. In order to follow the logic presented above, the first call to order would be to, as was done on the ecological side, explore the social system *enough* to identify overriding mechanisms of social un-sustainability. They would then need to be phrased in such a way that they could function as generic and concrete enough constraints for design of social sustainability. As this must be done in a cohesive and concrete way, our future research will build on group-modelling sessions with academics as well as practitioners from business and municipalities. This will also promote participation and establishment of ownership to the results and their ramifications when it comes to actions and changes to be made.

Our research questions from this discussion are as follows:

1. *Can the basic functional mechanisms of the social system be determined with sufficient accuracy and comprehension to feed into the second level of the analytical five-level framework presented above?*
2. *If so, what are some typical mechanisms of erosion of the social system and can these be clustered functionally so as to be converted into principles for social sustainability that meet the criteria of the current ecological definition ‘necessary’, ‘sufficient’, ‘general’, ‘concrete’ and ‘distinct’?*

3. *If such principles of social sustainability can be derived, what are some strategic guidelines that can be developed to aid organizations to move towards social sustainability? Based on a deeper understanding of social sustainability, will such strategic guidelines differ from the ones applied for systematic approaches towards ecological sustainability?*
4. *How can methods and tools be developed such that they foster actions to be strategic to arrive at sustainability in the social system?*
5. *How can the framework's unifying capacity be applied to detect the relationship between other methods, tools and concepts and norms for social sustainability, and thereby increase the applicability of such?*

One challenge arises with the approach of basic requirements for sustainability on the social side. While ecological systems are the result of evolutionary processes, the social system is more than just that. A part of the social system has roots in evolutionary social biology, but it is also a highly developed human construct. While avoiding basic mechanisms for destruction may seem possible to defend as a starting point for planning on the ecological side (humans have never been obliged to engineer natural systems to make them sustainable), the same is not necessarily true with social sustainability. For the social system, an ethical stance of avoiding obvious mechanisms behind erosion of the social fabric may not be enough. Are perhaps deliberate and constructive positive actions in social systems, passed on as ethical norms and traditions through generations, also needed? If so, what norms would support this approach, and how could such norms be evaluated with regard to sustainability and in the context of the proposed framework? Regardless the outcome of such explorations, seeking to discover overtly destructive mechanisms to avoid at least them, should be helpful also for the social system. Destructive elements of the system of operation can easily be overlooked or remain unidentified when engaging in small positive steps which has become a trend in many organizations today (e.g. local social initiatives such as support of soccer clubs, daycare centers, etc). The positive steps, of course, are important and should be continued, but not at the cost of an upstream approach to tackle elements that are systematically eroding the system, perhaps through indirect impacts in other parts of the world.

Since the above mentioned norms can be highly dependent on cultural context (although some form of the golden rule seems to exist in most cultures), it is the focus on these more general destructive elements, the upstream causes for social un-sustainability, which might still allow for a generic approach.

Conclusion

We have explored a broadly cited framework for strategic decision making towards sustainability, and demonstrated its dichotomies and lack of robustness in its social dimension, and proposed a way forward to make it more cohesive as well as operational. We are not convinced that the challenges described in dealing with the social system would necessarily make it impossible to arrive at a cohesive and well-structured framework that includes social sustainability. Such would rely on a structure solid and concrete enough in time and space for more effective and efficient cross-sector and interdisciplinary cooperation. It would also be helpful for more effective and efficient use of existing methods, tools and concepts for social sustainability, since it would help determine their relationships to sustainability, as well as to each other. In forthcoming work, we are going to explore the theory of the FSSD, thoroughly elaborate it by modelling of the social system, scrutinize the outcome from cross-reading with some of the most cited protocols and frameworks for social sustainability, and then test its applicability in some real life analyses and planning.

Acknowledgments

Financial support from the Real Change Funding Partners – VINNOVA (The Swedish Governmental Agency for Innovation Systems), Tillväxtverket (Swedish Agency for Economic and Regional Growth), FORMAS (Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning), Naturvårdsverket (Swedish Environment Protection Agency) and Energimyndigheten (Swedish Energy Agency) - is gratefully acknowledged.

References

- [1] Steffen W, Sanderson A, Jäger J, Tyson P D, Moore III B, Matson P A, Richardson K, Oldfield F, Schellnhuber H-J, Turner II B L, and Wasson R J, eds. *Global Change and the Earth System: A Planet Under Pressure*, IGBP Book Series. Heidelberg, Germany: Springer-Verlag. 2004
- [2] MA. *Ecosystems and Human Well-being: Our Human Planet : Summary for Decision- makers (Millennium Ecosystem Assessment)*. Chicago, IL, USA: Island Press. 2005
- [3] Worldwatch Institute (eds). *State of the world: a Worldwatch Institute report on progress toward a sustainable society*. New York: Norton. 2006
- [4] Worldbank. *Worldbank Updates Poverty Estimates for the Developing World*.
<http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:21882162~pagePK:64165401~piPK:64165026~theSitePK:469382,00.html>. Accessed Jan 15, 2010
- [5] Amnesty International. *Amnesty International Report 2009 – The state of the world’s human rights*. London, UK: Amnesty International. 2009
- [6] United Nations. *The Millennium Development Goals Report 2009*. New York: United Nations. 2009
- [7] Cruz J M. Dynamics of Supply Chain Networks with Corporate Social Responsibility through Integrated Environmental Decision-Making. *European Journal of Operational Research* 2008;184(3):1005-1031.
- [8] Secchi D. Utilitarian, Managerial and Relational Theories of Corporate Social Responsibility. *International Journal of Management Reviews* 2007; 9(4):347-373.
- [9] International Standards Organization (ISO). *ISO 26000 Guidance on Social Responsibility a Working Draft*. Geneva: International Standards Organization, 2007.
- [10] ISO Advisory Group. *Working Report on Social Responsibility*. Geneva: International Standards Organization, 2007.
- [11] Dobers P. *Corporate Social Responsibility: Management and Methods*. *Corporate Social Responsibility and Environmental Management* 2009;16:185-191
- [12] Robert K-H, Schmidt-Bleek B, Aloisi de Larderel J, Basile G, Jansen JL, Kuehr R, Price Thomas P, Suzuki M, Hawken P, Wackernagel M. *Strategic*

sustainable development selection, design and synergies of applied tools. *Journal of Cleaner Production* 2002;10:197-214.

- [13] Huesemann M H. Can pollution problems be effectively solved by environmental science and technology? An analysis of critical limitations. *Ecological Economics* 2001;37(2): 271-288
- [14] Quist J. *Backcasting for a Sustainable Future: The Impact After 10 Years*. Delft, Netherlands: Eburon Academic Publishing. 2007
- [15] Dreborg K-H. Essence of backcasting. *Futures* 1996;28(9):813-828
- [16] Robinson JB. Energy Backcasting: A proposed method for policy analysis. *Energy Policy* 1982;10:337-344
- [17] Robinson JB. Future under glass – A recipe for people who hate to predict. *Futures* 1990;22(9): 820-843
- [18] Clausewitz K v. *On War*. Princeton University Press, Princeton, NJ. 1984
- [19] Pollard A. *Competitor Intelligence: Strategies, Tools and Techniques for Competitive Advantage*. Financial Times Professional Limited, London. 1999
- [20] Sverdrup H, Warfvinge P. Assessment of critical loads of acid deposition on forest soils. In: Nilsson J (Ed). *Critical loads for sulphur and nitrogen*. Nordic Council of Ministers and The United Nations Economic Commission for Europe (ECE), Stockholm Nordic Council of Ministers Miljörapport 1988:15:81-130.
- [21] Sverdrup H, Alveteg M, Westling O, Akselsson C. Critical loads for acidity to ecosystems - How environmental limits came to set the policy. In: Haines-Young R, Potschin M, Cheshire D (eds). *Defining and identifying environmental limits for sustainable development*. Position papers 13-22. Final Overview Report to DEFRA. Centre for Environmental Management, School of Geography, University of Nottingham, Nottingham NG7 2RD. CEM@Nottingham.ac.uk, Project Code CTE 0510; 2006.
- [22] de Vries W, Bakker D, Sverdrup H, Paces T, Tipping E. Effects-based approaches to assess the risk of heavy metal inputs to soils--Overview methods and models. In: Gregor H, Spranger T, Hörnerbach F. *Workshop on critical limits and effect based approaches for heavy metals and persistent organic pollutants*. Umweltbundesamt Texte 2001; 5(98):125-224 issn 0722-186X
- [23] Bakker D, de Vries W, Sverdrup H. Effects-based approaches to assess the risk of heavy metal inputs to surface waters--Overview methods and models. In: Gregor H, Spranger T, Hörnerbach F. *Workshop on critical limits and effect based approaches for heavy metals and persistent organic pollutants*. Umweltbundesamt Texte 2001;5(98):225-278 issn 0722-186X
- [24] Kämäri J, Amann M, Brodin Y, Chadwick M, Henriksen A, Hettelingh J P, Kuylienstierna J, Posch M, Sverdrup H. The use of critical

loads for the assessment of future alternatives to acidification. *Ambio* 1992;21:377-386.

[25] Ny H, MacDonald JP, Broman G, Yamamoto R, Robèrt K-H. Sustainability constraints as system boundaries: an approach to making life-cycle management strategic. *Journal of Industrial Ecology* 2006;10(1-2): 61-77

[26] Broman G, Holmberg J, Robèrt K.-H. Simplicity Without Reduction: Thinking Upstream Towards the Sustainable Society. *Interfaces* 2000;30(3): 13-25.

[27] Robèrt K-H. Tools and concepts for sustainable development, how do they relate to a general framework for sustainable development, and to each other?. *Journal of Cleaner Production* 2000;8(3):243-254.

[28] Nattrass B. The Natural Step: corporate learning and innovation for sustainability. San Francisco, California, USA, The California Institute of Integral Studies. Ph.D. 1999.

[29] Everard M, Monaghan M, Ray D. 2020 Vision Series No2: PVC and Sustainability, The Natural Step UK/UK Environment Agency, 2000.

[30] James S, Lahti T. The Natural Step for communities: how cities and towns can change to sustainable practices. Gabriola Island, British Columbia, Canada: New Society Publishers, 2004.

[31] Resort-Municipality-of-Whistler-(RMOW). Whistler 2020: moving toward a sustainable future, RMOW, 2005.

[32] Andersson R, Aronsson M, Robèrt K-H. Den livsviktiga näringen: en rapport om kretsloppsprincipen och jordbruket (Agriculture from a scientific perspective) Stockholm, The Federation of Swedish Farmers, Det Naturliga Steget, 1993.

[33] Robèrt K-H. The Natural Step story - seeding a quiet revolution. Gabriola Island, British Columbia, Canada: New Society Publishers, 2002.

[34] Robèrt M. Backcasting and econometrics for sustainable planning: Information technology and individual preferences of travel. *Journal of Cleaner Production* 2005;13(8):841-852.

[35] Broman G, Byggeth S, Robèrt K-H. Integrating environmental aspects in engineering education. *International Journal of Engineering Education* 2002;18(6):717-724.

[36] Robèrt K-H, Broman G, Waldron D, Ny H, Byggeth S, Cook D, Johansson L, Oldmark J, Basile G, Haraldsson H, MacDonald J. *Strategic Leadership Towards Sustainability*. Karlskrona: Psilanders grafiska, 2005.

[37] Waldron D. A new education - "strategic leadership towards sustainability". Seminar on education for sustainable development

(Seminarium om utbildning för hållbar utveckling), Stockholm, Sweden, Ministry of Culture and Education. 2005

[38] Waldron D, Byggeth S, Ny H, Broman G, Robèrt K-H. Structured comprehension for systems thinking, learning and leadership towards sustainability. Environmental Management for Sustainable Universities (EMSU). Tecnológico de Monterrey, Mexico, 2004.

[39] Holmberg J, Robèrt, K-H. Backcasting from non-overlapping sustainability principles – a framework for strategic planning. *International Journal of Sustainable Development and World Ecology* 2000;7:291-308

[40] Holmberg J. Socio-Ecological Principles and Indicators for Sustainability. PhD Dissertation. Institute of Physical Resource Theory, Chalmers University of Technology, Göteborg, Sweden. 1995.

[41] Ny H, Haraldsson H-V, Robèrt K-H, Broman G, Sverdrup H. Systems Modelling and Simulation within Sustainability Constraints. Licentiate Dissertation Series No. 2006:08. Blekinge Institute of Technology, Karlskrona, Sweden. 2006

[42] World Commission on Environment and Development. Our Common Future, Report of the World Commission on Environment and Development. Published as Annex to General Assembly document A/42/427, Development and International Co-operation: Environment. 1987. <http://www.un-documents.net/wced-ocf.htm>. (accessed 28 May 2008)

[43] Daly H, Farley J. Ecological Economics – Principles and Applications. Washington, USA: Island Press. 2004

Missimer, M

Social Sustainability within the Framework for Strategic Sustainable Development

(This page is intentionally left blank.)

Paper B

**A Strategic Approach to Social Sustainability - Part 1:
Exploring the Social System**

Missimer, M

Social Sustainability within the Framework for Strategic Sustainable Development

Paper B is published as

Missimer, M, Robèrt K – H and Broman, G. 2015. A Strategic Approach to Social Sustainability - Part 1: Exploring the Social System. *Submitted*

A Strategic Approach to Social Sustainability - Part 1: Exploring the Social System

Merlina Missimer

Karl-Henrik Robèrt

Göran Broman

Abstract

Despite the conceptualization of sustainability as a three-pillar concept that integrates ecological, social and economic considerations, it is widely acknowledged that the social dimension is so far the least developed. This study attempts an approach to a scientifically robust, operational definition of social sustainability. In this paper (part one of a two-part series), a systems-based approach to the social system is presented, as a basis for presenting a zero-hypothesis of principles for social sustainability in part two. Transdisciplinary literature studies as well as conceptual modelling sessions were performed and the social system was examined from various angles – complex adaptive system studies, human needs theory and other social sciences, and insights from these fields were woven together. The whole work was structured and guided by the Framework for Strategic Sustainable Development.

Various aspects of the social system were identified to be essential. First, humans are a social species, implying a necessity for individuals to connect into a social system to meet some of their human needs. However, the focus of the study was not those individual needs per se, but the essential aspects of the social system that need to be sustained (that cannot be systematically degraded) for it to be possible for people to meet those individual needs. These essential aspects were found to be *trust*, *common meaning*, *diversity*, *capacity for learning* and *capacity for self-organization*. Trust seems to be generally acknowledged to be the overriding aspect of a vital and functional social system, its “glue”. A sense of common meaning is also stated by several authors as an important part of the social capital and something that helps keeping a group or society together. Diversity is acknowledged as essential for resilience; in the human social system we suggest this can be interpreted as diversity of personalities, ages, gender, skills, etc. Capacity for learning and self-organization are also motivated from a resilience point of view by several authors.

These results form a basis for the hypothesis for a definition of social sustainability presented in paper 2, which in turn is a step towards creating an

Missimer, M

Social Sustainability within the Framework for Strategic Sustainable Development

enhanced support for strategic planning and innovation for sustainability. Further testing and refinement of this theoretical foundation, and bringing it into practical use, will be the subject of the continued studies.

Keywords: strategic sustainable development, social sustainability, social system, systems thinking, sustainability principles.

1. Introduction

Sustainable development (SD) most prominently entered the global political arena in 1987 in a report from the United Nations Commission on Environment and Development, also known as the Brundtland report. The report stated *“Humanity has the ability to make development sustainable - to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs”* (World Commission on Environment and Development 1987). The concept of SD, and this definition specifically, has been much criticized, mainly in relation to the vagueness of what sustainability and sustainable development actually mean (e.g., Jacobs 1999, McKenzie 2004). Paehlke (2001, 7 as cited in Partridge 2005) argues that sustainable development is a concept *“so amorphous that it might mean anything.”* As Jacobs (1999, 24) notes, *“the vagueness of the definition ... allows business and ‘development’ interests (and their government supporters) to claim that they are in favour of sustainable development when actually they are the perpetrators of unsustainability”*. The vagueness has also led to a vast array of supplementary definitions, terms, approaches, methods and tools, many of which designed for specific fields only. This has made the general sustainability field confusing and there is a growing need to understand how all the definitions, terms, approaches, methods and tools relate to each other and to a general understanding of sustainability (Huesemann 2001, Robèrt et al. 2002).

1.1. Social Sustainability

In addition, despite the conceptualization of sustainability as a three-pillar concept that integrates ecological, social and economic considerations (McKenzie 2004, Littig and Griessler 2005, Cuthill 2010), it is widely acknowledged that the social dimension of sustainability is the least developed (Littig and Griessler 2005, Partridge 2005, Kunz 2006, Cuthill 2010, Dempsey et al. 2011, Vallance et al. 2011). The topic has gained increased attention in the last 10 years with more scholars focusing specifically on the social pillar of sustainability, discussing definitions, implications and indicators (e.g., Koning 2001, Barron and Gauntlet 2002, McKenzie 2004, City of Vancouver 2005, Littig and Griessler 2005, Kunz 2006, Cuthill 2010, Dempsey et al. 2011, Boström 2012). However, the assessment of the field in recent years seems no different than earlier. There is still a relatively limited literature (Colantonio et al. 2009, Dempsey et al. 2011), a lack of a clear theoretical concept (Littig and Griessler 2005, Dempsey et al. 2011), a lack of clear understanding of the meaning and interpretation (Weingaertner and Moberg 2011) and a lack of clear indicators that help distinguish sustainable development from un-sustainable development (Omann and Spangenberg 2002). Colantonio et al. (2009, 16) assert:

“The concept of social sustainability has been under-theorised or often oversimplified in existing theoretical constructs [...]. Furthermore, no consensus seems to exist on what criteria and perspectives should be adopted in defining social sustainability. Each author or policy maker derives their own definition according to discipline-specific criteria or study perspective, making a generalised definition difficult to achieve.”

There seem to be a number of challenges:

- The social sustainability concepts are built on “*concepts, such as community, society, and inclusiveness, that themselves have no clear definition*” (Davidson 2007, 791).
- Social sustainability is an analytical and a normative concept, but these aspects are not always clearly separated, leading to confusion in the prioritization process (Littig and Griessler 2005).
- Objectives and indicators are frequently selected based on practical understanding rather than theory and, therefore, often reflect current political agendas as well as theoretically unfounded assumptions (Littig and Griessler 2005). Omann and Spangenberg (2002), e.g., highlight how social sustainability is approached differently in different EU countries based on the internal political conversation (emphasis on labor in Germany, consumption in the Netherlands, etc.). Sometimes, as Davidson (2009) has observed, the term social sustainability is simply used to describe the current system of social welfare and policy.
- The social sciences have concerned themselves with a wide variety of social objectives, strategies and measurement instruments, but often with little consideration of the sustainability perspective (Metzner 2000 as cited in Spangenberg und Omann 2006 and Colantonio et al. 2009). “*This deficit makes it difficult to systematise the different elements responding to certain problems or project priorities, which dominate the current debate, and this in turn is a major obstacle for any attempt to prioritise among the criteria developed in an ad hoc fashion, for strategy development and assessment*” (Spangenberg und Omann 2006, 320).
- Finally, there is no optimum for indicators and it is problematic to establish benchmarks (Colantonio 2007).

1.2. Framework for Strategic Sustainable Development

In response to the vagueness and lack of clarity in the general sustainability field, and in order to create a unifying structure for strategic sustainability work, some scientists has explored the possibility to develop a framework that would be helpful in this regard. This trans-disciplinary framework has been designed to give guidance on how any region, organization or project can support society’s

transition towards social and ecological sustainability in an economically viable way.

The Framework for Strategic Sustainable development (FSSD), see fig 1, has now been under continuous development over a 20-year consensus and peer-review process including theoretical explorations (Robèrt 1994, Holmberg and Robèrt 2000, Broman et al. 2000, Robèrt 2000, Robèrt et al. 2002, Ny et al. 2006, Missimer 2013) and testing/refinements between scientists and practitioners from business (Electrolux 1994, Robèrt 1997, Anderson 1998, Natrass 1999, Broman et al. 2000, Leadbitter 2002, Matsushita 2002, Natrass and Altomare 2002) and policy/government (Gordon 2003, Cook 2004, James and Lahti 2004, Strauss-Kahn 2004). The framework has also been applied to relate various tools, methods and concepts for sustainable development to sustainability and to each other (Robèrt 2000, Robèrt et al. 2002, Robèrt et al. 2010, Robèrt et al. 2013), including eco-design tools (Byggeth and Hochschorner 2006) and for company decision systems (Hallstedt et al. 2010), and has been taught and used to structure teaching, research and cooperation within and between academic institutions (Broman et al. 2002, Waldron et al. 2004, Waldron 2005, Robèrt et al. 2010, Missimer and Connell 2012).

1.2.1 Five interactive levels of strategic planning for sustainability

At the foundation of the FSSD lies the following 5-level model (see figure 1):

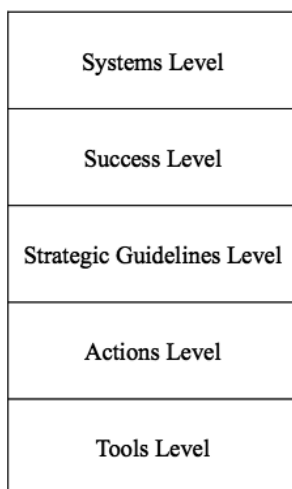


Figure 1: The 5-level model that the FSSD is based on.

The system level describes the overall major functioning of the system, in this case the social system of the human society within the biosphere. The current threats and degradation of this system is the rationale for the levels that follow. To apply an analogy, in chess, the system level contains the board, pieces and rules of the game.

The success level specifies the definition of the objective, in this case, sustainability. Returning to the analogy, to checkmate one's opponent is success, which can happen in almost uncountable combinations all complying with the same basic principles of checkmate. To understand the principled definition of winning in chess, it is important to know

enough about the system. But it is not necessary to know everything about the system chess, with all its history and theoretical and strategic implications. The next level requires this key second level.

The strategic guidelines level specifies the guidelines for how to approach the objective strategically. This implies a step-by-step approach toward the objective in an economically viable way. The step-wise transition is guided by “backcasting” thinking, i.e., thinking back from a vision fulfilling the objective to the current situation – backcasting – to identify possible transition paths. A unique feature of the FSSD is that the backcasting does not only, or necessarily, occur from a simplified image of a desirable future (as in “scenario-planning”), but from basic principles designed as boundary conditions for re-design.¹³ In chess, moves serve as strategic steps toward fulfillment of the principles for checkmate. Trade-offs are selected from their capacity to serve as platforms toward complying with principles of success (level 2), rather than as choices between inherent evils.

The actions level comprises everything done in concrete terms, e.g., in chess, the actual moves. Strategic guidelines at level 3 are applied to inspire, inform, and scrutinize every action or investment that is put into a strategic plan.

The tools level includes concepts, methods, and tools that are often required for decision support, monitoring, and disclosures of the *actions* to ensure they are chosen in line with the *strategic guidelines* to arrive stepwise at the *success* in the *system*. Examples in sustainable development are modelling, management systems, indicators, life cycle assessments, etc. In chess, this would include everything from books on how to play, to management systems to store and analyze game-by-game moves and outcomes.

¹³ First, given differing values, it can be difficult for large groups to agree on relatively detailed descriptions (scenarios) of a desirable distant future. Second, given technological and cultural evolution, which keep changing the conditions for the optimal path ahead, it is best to avoid overly specific assumptions of the future too early in a process of transformation. What may seem as an optimal final solution today, may be helplessly obsolete tomorrow. Third, how do we know that the scenario that we backcast from is really sustainable in the first place if it is not assessed against robust sustainability principles? And, finally, if we backcast directly from scenarios without having them scrutinized against basic principles for sustainability, it is difficult to draw general conclusions, i.e., gain learning from one topic or organization that could be transferred to other topics and organizations. In addition, as a principle-based vision is more flexible than its scenario-based counterpart because success can be achieved in a variety of ways (as long as the principles are met), organizational learning experts observe that these types of constraints *stimulate* creativity. For example, Senge (2003, 5) states “understanding your constraints frees you to create”.

1.2.2 Experiences from explorations of ecological sustainability

In earlier attempts to work with ecological sustainability, it became clear that the discourse in society was characterized by high levels of confusion as to how to define this and approach the subject strategically. For example, biofuels was often mentioned as a principle for sustainability. However, if practices around biofuels build on a type of harvesting that destroys ecosystems it is actually not sustainable and can therefore not be a basic sustainability principle in itself.

The five-level structure of the FSSD evolved to avoid such confusion by keeping a strict, logical separation between levels, especially between the system as such and the objective in the system. The objective can then serve as the functional system boundaries that guide the further research of the system. What aspects of the system (level 1) are essential to reach the objective (level 2)? Once the objective is clearly defined, it is possible to look for strategic guidelines (level 3) by which actions (level 4) can be organized in a step-wise strategic plan, and relevant concepts, methods and tools for decision-making and monitoring of the planned transition route can be chosen or developed (level 5).

For the example above, this leads to the conclusion that a change to biofuels is an action (level 4) that may, or not, follow strategic guidelines (level 3) as a stepping stone to arrive at success framed by some basic principle of sustainability (level 2). The question is then, what are those principles of sustainability?

As mentioned above, a unique aspect of the FSSD is that any definition of success is required to be within basic sustainability principles. The principles for ecological sustainability were derived by asking the following question: by what overriding mechanisms, upstream at the level of first approximation in chains of causality, do human activities set off the myriad of downstream impacts that will destroy the ecological system? Literature studies provided empirical knowledge of the functioning of the ecosystem and the sustainability challenge in this regard (level 1 of the FSSD).

This knowledge and conceptual modelling sessions with groups of experts lead to a first attempt to come up with overriding mechanisms of degradation that would explain ecological unsustainability. A myriad of downstream impacts were clustered in a few upstream first-order mechanisms. Thereafter, a “not” was inserted for each mechanism to form first-order sustainability principles, designed as exclusion criteria for redesign. Next the generality of this attempted principled definition of ecological sustainability was tested on more empirical data of the ecosystem and the sustainability challenge related to it. This gave rise to a new and more refined definition, which was tested again, and so on.

It was found, during the learning process, that to be functional within the FSSD, the set of basic principles for the objective must have the following characteristics (Robèrt 2000; Ny et. al 2006)

- Science-based, that is, compliant with relevant scientific knowledge available to date.
- Necessary for sustainability, that is, to avoid imposing unnecessary requirements and to avoid confusion over elements that may be debatable.
- Sufficient for sustainability, that is, the principles taken together should cover all relevant aspects.
- General, that is, people from various societal sectors and scientific disciplines should be able to understand and use them.
- Concrete, that is, capable of guiding actions and problem solving.
- Distinct, that is, mutually exclusive to facilitate comprehension and monitoring.

In their current form the basic principles for ecological sustainability are:

In a sustainable society, nature is not subject to systematically increasing...

- 1) ...concentrations of substances extracted from the Earth's crust (e.g. CO₂ from fossil fuels, or heavy metals and radioactive isotopes),
- 2) ...concentrations of substances produced by society (e.g. CFC's, NO_x and endocrine disruptors),
- 3) ...degradation by physical means (e.g. deforestation, overfishing and overuse of water tables),

Furthermore, so far a single overarching principle for social sustainability has been used in the FSSD. This is based on some of our knowledge about the constitution of human beings, namely that most people have a desire to fulfill their needs and some capacity to do so if not hindered by others. If this capacity is systematically undermined by social means, that would represent unsustainability (c.f. with the Brundtland definition above).

In its current form the basic principle for social sustainability is:

In a sustainable society,

- 4) ...people are not subject to conditions that systematically undermine their capacity to meet their needs (e.g. from the abuse of political and economic power).

The sustainability principles help people in companies, municipalities, etc., to ask relevant questions and to identify how they contribute to unsustainability. The sustainability principles can also guide research, e.g., on indicators even before critical boundaries are trespassed.

For an updated review of the FSSD with applications, and for references, see Robèrt et al. 2013.

1.3 Social Sustainability within the FSSD

Though experiences in practice has shown that the FSSD serves well for systematic re-design to support societal compliance with the three principles for ecological sustainability, it has also shown that the FSSD suffers from an underdevelopment of the social dimension (Missimer et al. 2010; Missimer 2013). It is not operational enough to serve analyses, planning, innovation and monitoring of transitions towards social sustainability. The social sustainability principle above is not specific enough about the overriding mechanisms by which peoples' capacity to meet their needs can be eroded, nor is it based on the same thorough systems research approach as the ecological principles are. Reviews of the social sustainability literature have also shown that a clear conceptual framework is important and requested.

This suggests that a further development of the social dimension of the FSSD is appropriate and urgently needed. To improve the FSSD by a more operative definition of social sustainability would not only serve planning and transition towards social sustainability per se. It would serve planning and transition to ecological sustainability as well. Re-design towards sustainable practices happens in the creative tension field between social and ecological sustainability, and cooperation to safeguard natural systems relies on functional enough social systems. Suggestions for a direction of improvement in that regard have been made by Missimer et al. (2010) and the aim of the work presented here is to further develop these suggestions.

2. Aim

The larger research project is guided by the question: *how can the FSSD be further developed as regards the social dimension to better aid more concrete planning and decision-making for sustainable innovation?* The aim of the research is to identify social sustainability principles, which can be used as boundary conditions for re-design in the above-described fashion.

The aim of this paper (part one of a two-part series) is to establish a systems-based approach to the social system and identify essential aspects of this system

from a sustainability point of view as a basis for developing principles for social sustainability. That is, over and above sustaining essential aspects of the ecological system; what are the essential aspects of the social system that need to be sustained (cannot be systematically degraded) in order to not systematically undermine the capacity of people to meet their needs, now and in the future?

The aim of the second paper is to identify the overriding mechanisms by which these essential aspects of the social system can be degraded and to present a zero-hypothesis for a principled definition of social sustainability.

The theory laid out in these two papers will be further tested in action-research with practitioners in businesses and municipalities and presented in upcoming papers.

3. Methods

The main method employed was literature studies in the systems- and social sciences looking for essential aspects of a resilient and functional social system. The FSSD was used to structure the review and analysis. Thus, in line with the experiences from applying the basic ideas of the FSSD for the study of the ecosystem, the approach here was guided by the idea to allow the systems perspective on planning to evolve from a dynamic and iterative dialogue between two levels – the system level and the success level of the FSSD. This was achieved through conceptual modelling sessions by the authors, sometimes in collaboration with other researchers.

This is hard to represent in a linear fashion. Still, paper 1 describes the system aspects that have been identified as relevant in this iterative dialogue, while paper 2 lays out the sustainability principles that were derived therefrom. Only together, however, do they create a full picture of the approach.

4. Results

The results section starts off with a description of the approach to social sustainability chosen here and the evidence that was found in the literature for the appropriateness of studying the topic with a systems approach. The main body then presents the aspects of the social system that emerged as essential from the above-mentioned iterative dialogue between the first and second levels of the FSSD. It is important to note that many other aspects and terms that are often used in relation to, or under the umbrella of, social sustainability were assessed through the lens of the FSSD. More on this in paper 2.

4.1. General Approach

4.1.1. Sustainability in the FSSD

Brundtland speaks to the idea of meeting human needs, now and in the future. How is this different than social sustainability?

On a very fundamental level all human beings have needs that they aim to satisfy. Human needs describe in-born requirements that need to be satisfied in order for the individual to remain healthy – physically, emotionally and mentally. Various categorizations of human needs exist (Maslow 1943, Burton 1990, Max-Neef et al. 1991, Doyal and Gough 1991, Ramsay 1992), many of which overlap substantially (Chittenden 2000, Alkire 2002). Maslow’s hierarchy (1943) is probably the most well-known; Max-Neef et al.’s (1991) is a common contemporary one used in the (economic and sustainable) development conversation.¹⁴ Most human beings have the desire and some innate capacity to satisfy their own needs by themselves, and use this capacity if they are not hindered to do so by other individuals or organizations (the parts of the social system on which they depend). At the same time, it is obvious that many of the needs, such as participation, affection and others can only be satisfied in community with others. So, by design, humans are a social species. Malinowski (1994) summarizes that *“A major driving force behind society and societisation seems to be – in the broadest sense – the creation of opportunities to meet one’s needs”* (also see e.g., Maturana and Varela 1980). So individual humans are capable of meeting their own needs, but are dependent on the ecological and the social systems to do so.

The FSSD therefore approaches social sustainability from this social system’s perspective. Sustainability is about the elimination of mechanisms of systematic degradation of essential aspects of both the ecological and the social system and is thus defined by boundary conditions within which the system can continue to function and evolve, outside of which it cannot.

¹⁴ Max-Neef et al. devise a scheme of nine human needs: subsistence, protection, affection, creation, identity, participation, understanding, freedom, idleness. A need is, according to Max-Neef et al., constitutional and the same in all cultures (what differs are the satisfiers, i.e., choice of concrete methods or means by which the needs can be satisfied) and must be met to avoid psychological or physical ill-health. Max-Neef et al. state that if one of the human needs is in systematic short supply, this leads to “poverty” regardless of how well the other needs are being satisfied. It is within this tension of needs and satisfiers that sustainable solutions are possible.

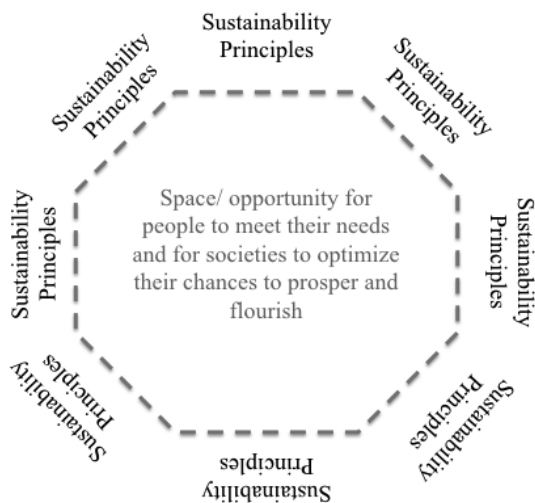


Figure 3: Sustainability principles as boundary conditions

In that sense, the definition of sustainability is not about a flourishing of human life or all needs being met, but about the basic conditions that are necessary for the ecological and social systems to not systematically degrade. The sustainability of these two systems then creates the space and opportunity for people to meet their needs in whatever way they chose and for societies to optimize their chances to prosper and flourish (see figure 2). A socially

robust system may be most needed at times of very harsh conditions such as natural catastrophes. The boundary conditions for a sustainable system allow for creativity in how we design systems that adapt to given circumstances.

4.1.2. Support for a Social (Complex) Systems Approach

The FSSD is based on a systems approach. However, in the social sciences, a systems approach has long been contentious. Even though social systems theory was a dominant strand in traditional sociology (Castellani and Hafferty 2010), this kind of thinking about large-scale processes was later largely abandoned or at least marginalized (Walby 2003, 2007). However, recently systems thinking or rather, complexity theory, has gained increased popularity in the social sciences (Törnberg 2011, Nowotny 2005). Some authors even go as far as saying that an overhaul of sociological theory and method is needed and that complexity science is the most promising new approach (Byrne 1998, Castellani and Hafferty 2010, Urry 2003).

More concretely, Walby (2003, 2007) argues that complexity theory overcomes the challenges levied at earlier systems thinking approaches, namely that it lets go of a focus on equilibrium and functionalist approaches to system-parts interactions and instead emphasizes dynamic process and co-evaluation of systems. She further states that complexity theory offers new ways of thinking about some of the classic dilemmas in social science:

- “*The tension between the search for general theory and the desire for contextual and specific understandings (2003, 1)*”
- “*Combining an understanding of both individual and social structure, that does not deny the significance of the self-reflexivity of the human subject while yet theorising changes in the social totality (2003, 2)*”

Giddens’ theory of structuration (e.g., Giddens 1984, Stones 2005) describes something similar, although not originating from a systems perspective. His seminal sociological theory aims to overcome the traditional divide in sociology over whether the individual or the social system is the more powerful and should be the focus of sociological investigation. Giddens claims that the structure of society and agency (located at an individual level) are a duality that cannot be conceived apart from each other; social structures are comprised of human agency and also shape human agency.

Schwandt and Szabla (2013, 3), in fact, identify a “conceptual congruence” of the theory of structuration and complexity theory, an idea supported by others in the field (Walby 2003, Castellani and Hafferty 2010). This implies taking both the individual and the whole into account when creating a theoretical framework for social systems and sustainability.¹⁵

Going further, like all living systems, human social systems can be considered not only complex, but a complex adaptive system (e.g., Clayton and Radcliffe 1996). Castellani and Hafferty (2010, 7) argue that “*human social systems are distinguished in two important ways: the ‘things’ of which they are comprised, which is some set of human social agents (individuals, groups, formal organizations, etc.) and the relationships among these social agents, which constitutes some form of social interaction (Byrne 1998; Holland 1995; 1998; Klir 2011; Luhmann 1995).*”

Gordon (1991, 3) similarly states that at a basic level the parts of the system are individual human beings that are connected into a system through human relationships and interaction. This then includes all individual human beings as well as specific sub-systems such as communities, nations, institutions or companies and our interactions, which manifest themselves in direct interactions as well as more indirect, intangible ones such as cultural systems.¹⁶

From a systems perspective, the links between the parts, here the social relationships and interactions, are especially important (Bossel 1999, 8; Franklin

¹⁵ This is also supported by some conclusions in the social sustainability literature, namely that consensus has emerged that social sustainability seems to have two axis – an individual human one and a social one (Spangenberg and Omann 2006).

¹⁶ Some (e.g., Stichweh 2000) claim, that at this point, the entire world is connected into one global system.

and Blyton 2011) As Hjorth and Bagheri (2006, 79) argue, “*a system is recognized by the integrity and interaction of its components [...This] represents a way of understanding reality that emphasizes the relationships among a system’s parts, rather than the properties of the parts themselves*”. This emphasis on relationships is what we build on in our work on social sustainability.

Before moving on to the next section, it must be pointed out that complexity theory in its current form is not a single coherent body of thought but is constituted by a range of different traditions and approaches (Cudworth and Hobden 2012, 169; Walby 2003, 3) (Walby 2007, 457). It is therefore considered more of a conceptual framework than a traditional theory (Castellani and Hafferty 2010) and matches well with the FSSD. The FSSD, as previously outlined, approaches complexity with an iterative dialogue between its levels in order to arrive at simplicity without reduction (Broman et al. 2000).

4.2. The Complex Adaptive Social System

The basis of the approach described in this paper is the idea that human social systems like all living systems can be described as a complex adaptive system. Clark et al. (1995, 36) explain that “*as systems evolve they usually do so in the direction of increasing complexity. By this we mean not only that the number of the participating components of the system increases but also that the pattern of interrelationships amongst these components is also becoming more elaborate – that is their number and type is increasing*”. The degree of complexity is amplified by many diverse and free-willed agents in the social system.

The increasing level of complexity of social life in modern society, partly through globalization and the development and spread of technology, and the difficulty this brings in coordinating our systems is a common topic also in mainstream sociology (Giddens 1990, 1991, Luhmann 1988).

The research field of resilience theory, complex adaptive systems and adaptive management has emerged to study and understand the dynamics of working with complex adaptive systems (Berkes et al. 2003, Folke et al. 2005, Nelson et al. 2007). Although focused on socio-ecological systems, i.e., the interaction between social and the ecological system, it provides many insights for the social system itself, not just in relation to the ecological system. While ecological and social systems do not function entirely the same, nor can the study of resilience and adaptability be directly applied from one to the other (Adger 2000), the social system is a living system and it would therefore make

sense to keep the above in mind also when thinking about the social system in itself.

A complex system is inevitably characterized by uncertainty, change and surprise, which in return requires flexibility and adaptation in dealing with the system. Adaptability or adaptive capacity is defined in the literature as the ability to ‘manage resilience’ (Walker et al. 2004, 2006, Folke et al. 2005). Resilience, in return, is defined as the capacity of a system to absorb disturbance and re-organize while undergoing change so as to still retain essentially the same function, structure, identity and feedbacks (Walker et al. 2004).¹⁷ It focuses on the ability to absorb and shape change as well as the ability for renewal (Berkes et al. 2003, Folke et al. 2005, Folke 2006, Nelson et al. 2007). Adger (2000) defines social resilience as the ability of human communities to withstand external shocks to their social infrastructure, such as environmental variability or social, economic and political upheaval.

The literature discusses some essential aspects of adaptive capacity and the long-term survival of socio-ecological systems:

4.2.1. Diversity

Diversity is repeatedly mentioned as an important aspect of resilience (Folke et al. 2002, Walker et al. 2006, Norberg and Cumming 2006, Chapin et al. 2010). Folke et al. (2002, 19) claim “*diversity is not just insurance against uncertainty and surprise. It also provides a mix of components whose history and accumulated experience help cope with change, and facilitates redevelopment and innovation following disturbance and crisis*”. In essence, more diversity leads to more variety and in an environment of constant change and uncertainty, one does not always know what will be needed in the future; therefore, having as many options as possible is the best strategy to be resilient in the long run. Diversity is also specifically mentioned in relation to types of knowledge and as including, e.g., indigenous knowledge in understanding a system (Folke et al. 2002, 2005). In addition, an increasing body of research focuses specifically on diversity in governance as a source for resilience (Burger et al. 2001, Ostrom et al. 2002, Berkes et al. 2003, Dietz et al. 2003, Folke et al. 2005, Ostrom 2005).

4.2.2. Learning

¹⁷ It is important to note that, even though the literature on socio-ecological systems focuses primarily on changes in the ecological system, the ‘disturbance’ can come from changes in the physical environment or from changes within the social system (Janssen et al. 2007)

Many authors stress the need for flexibility and learning to deal with the complexity and constant changes (Gunderson 2001, Scheffer et al. 2001, Folke et al. 2002, 2004, Olsson et al. 2004, Walker et al. 2006, Nelson et al. 2007, Chapin et al. 2010). Learning in this sense means to be able to sense changes and respond to them effectively. The literature focuses specifically on social and institutional learning and includes social memory, the capacity to learn from experience, as a mechanism (McIntosh 2000, Folke et al. 2005). Scheffer et al. (2001) discuss how resilient systems must not become rigid and monolithic in any way, but instead constantly learn and adapt to the situation. Folke et al. (2002, 47) claim that “*flexible social networks and organizations that proceed through learning-by-doing are better adapted for long-term survival than are rigid social systems (that have set prescriptions [...])*”. The importance of the aspect of learning is also supported by literature in the field of organizational learning (e.g., Senge 1990).

4.2.3. Self-organization

Complex adaptive systems are usually self-organized systems without system-level intent or centralized control (Clark et al. 1995, Levin 1998, Westley 2002, Walker et al. 2006). Walker et al. (2004) explain that, although the system is “*dominated by individual human actors who do exhibit intent, the system as a whole does not (as in the case of a market)*”. It is this capacity for self-organization that is especially important when confronted with a sudden change in the environment (Olsson et al. 2004, Folke et al. 2005, Norberg and Cumming 2006, Folke 2006, Osbahr et al. 2010). Folke et al. (2002) emphasize the importance of creating opportunity for self-organization towards socio-ecological sustainability.

4.2.4. Trust (Social Capital)

While the aspects listed so far apply to all living systems, additional ones have been discussed for the social system.

One of these is social capital as a necessity to coordinate the system in its adaptation and allow for collective action (Pretty and Ward 2001, Ostrom and Ahn 2003, Pretty 2003, Adger 2003, Folke et al. 2003, Olsson et al. 2004, Folke et al. 2005, Walker et al. 2006, Osbahr et al. 2010). Folke et al. (2005) specifically claim that social capital increases the flexibility of management of organizations and institutions.

The concept of social capital is a confusing and often-criticized one (e.g., Arrow 2000); therefore some caution and great analytical precision is required. Rothstein (2005) makes a convincing argument that social capital is a function of networks and trust, so the quantity of connections multiplied by the quality of the connections. He further goes on to argue that trust is *the* main variable in social capital and that many others that are discussed are not valid in the same way. Others in the field agree that trust is one of the main variables that creates value in social systems (Putnam 2000, Fukuyama 2002, Wollebaek and Selle 2008).

Also in other fields, trust is often discussed as the fabric, which binds society together (Hollis 1998, Luhmann 2000, Potter 2002, Caldwell and Clapham 2003). Furthermore, it is often claimed that trust has a superordinate position in relation to other essential aspects of a well-functional social system. If this is true, trust could serve as a proxy for the quality of the social system at large. Erosion of trust can lead to a negative and self-re-enforcing spiral causing a dysfunctional social system, the “social entrapment”, and it calls for very large efforts of leadership and powerful policy-making to open the trap up again (Rothstein 2005, 2007).

As a social species, human arrange themselves into various forms of organizations (or sub-systems), but to make the organization effective, they need to coordinate their interactions (Gordon 1991, 6). However, coordination becomes more challenging in a system as complex as the social one. In such a complex system it is almost impossible for one or a few individuals to understand or completely control the entire complex system. Therefore, with more and more complexity we must rely more and more on others to make decisions and choose viable alternatives (Meijboom et al. 2006, Meijboom 2008). A way to deal with the risk and uncertainty inherent in this complexity is by trusting (Lahno 2001, Meijboom et al. 2006). Friedman (2007, 557-558), e.g., states “*without trust, there is no open society, because there are not enough police to patrol every opening...without trust there can also be no flat world, because it is trust that allows us to take down walls, remove barriers, and eliminate friction at borders*”.

Trust is therefore seen as a quality of connection, which allows the system to remain together despite the level of internal complexity. In return, as discussed above, it allows for coordinated, collective adaptation to the constant change produced by the complex adaptive systems around us (rather than many individual, competing adaptive strategies). This quality of connection or emphasis on the links between individuals is also what we are interested in from a systems perspective.

In the organizational studies field, some have argued that there is even tangible economic benefit from trust, because trust facilitates exchanges among individuals and enhances cooperation and therefore lowers transaction costs (Coleman 1990, Putnam 1993, Fukuyama, 1995, 2002).

Because in paper 2, we will start the exploration for social sustainability principles in relation to trust and then cross-check against the other essential aspects, we elaborate a bit more on trust below.

Defining Trust : Meijboom (2008, 91) defines trust as an

“attitude towards (collective) humans that enables an agent to cope with situations of uncertainty and lack of control, by formulating a positive expectation towards another agent, based on the assessment of the trustworthiness of the trusted agent”. He adds (ibid, 28) that “trust includes a sincere belief about the trustworthiness of the trusted agent that is informed by the available evidence. However, trust is more than cognitive, more than a mental conviction based on the available evidence. It further includes an emotional component”.

For Lewis and Weigert (1985) trust is characterized by a “*cognitive ‘leap’ beyond the expectations that reason and experience alone would warrant – they simply serve as the platform from which the leap is made*” (971).¹⁸ Mayer et al. (1995) incorporate the emotional component by adding a vulnerability component defining trust as the willingness of a trustor to be vulnerable to the actions of a trustee based on the expectation that the trustee will perform a particular action. They argue that “*making oneself vulnerable is taking risk.*

¹⁸ For support on the emotional component also see (Jones 1996; Lahno, 2001). It is important to emphasize that there are quite strong proponents of trust being a cognitive element only, with co-operation and risk-taking used as synonyms (Hardin 1996, 2002, 2006; also see Colquitt et al. 2007 for an overview). In response to this, Meijboom (2008, 8) writes: “*Risk calculation and trusting are two complementary, yet different mechanisms to deal with uncertainty. A risk approach aims to clarify the uncertain aspects of the situation in which one has to rely on another agent. In this context the aim is to translate the problem of known uncertainty into one of risk. Consequently, one can make a personal assessment and does not need to trust another. The ultimate aim is to prevent that trust is necessary and, if this appears to be beyond reach, to enable the individual confronted with uncertainty to calculate whether it is worthwhile taking the risk given one’s own interests and preferences. A trust approach to uncertainty, on the other hand, starts where a risk focus ends. It focuses on those situations that remain uncertain even after the uncertain aspects have turned in to risk*”.

Trust is not taking risk per se, but rather it is a willingness to take risk" (Mayer et al. 1995, 712). Thus, trust is here defined as an attitude that enables an agent to cope with situations of uncertainty and lack of control, by making themselves vulnerable based on positive expectations towards another agent, derived from the assessment of the trustworthiness of the trusted agent. Bews and Martins (2002, 14) describe trust as a dynamic phenomenon that unfolds over two stages. The first stage depends on 'pre-trust' conditions; the second depends on the perception of trustworthiness of the person to be trusted. This second part continues throughout the length of the relationship, while the first is of shorter duration. Pre-trust conditions include contextual factors, perceived risk and the propensity to trust.

We will return to the importance of these insights and specifically the thoughts around trustworthiness in paper 2 when describing a zero-hypothesis for principles for social sustainability.

4.2.5. Common meaning (Social Capital)

Another thing that sets human social systems apart from many other systems is that humans are also a meaning-making and meaning-seeking species (e.g., see Bruner 1990 cited in Tronick 2008, Cacioppo et al 2005, Marsen 2008, Park 2011; for a review of the literature on meaning see Park 2010). In fact, this seems to be hard-wired into our brains (Baumeister and Vohs 2005). Klinger (1998, 33 as cited in Bellin 2009, 16) states, *"the human brain cannot sustain purposeless living. It was not designed for that. Its systems are designed for purposive actions, and when blocked, they deteriorate, and the emotional feedback from idling those systems signals extreme discomfort and motivates the search for renewed purpose and hence meaning."* This idea that humans are constantly looking for meaning and purpose is a concept in several disciplines, such as sociology, anthropology, and other social sciences (Kurzman 2008).¹⁹ Giddens (1984), e.g., speaks of structures of signification, the interpretations or meanings that individuals use to make sense of their experience, as an important element of the social system. Frankl (e.g., 1962, 1986), based on his experience in a concentration camp, made meaning famous in his psychological theory and practice of logotherapy.

In relation to social capital in complex adaptive social systems Scheffer et al. (2001, 229) state that *"It is important not to neglect, however, the role of common culture and meaning in the creation of social capital, both horizontal and vertical. Particularly in the absence of a long history of reciprocity and the*

¹⁹ The idea is also the basis of the constructivism theory in pedagogy (e.g. Bellin 2009) and the psychology of development and learning in children (e.g., Kagan 1981, Wells 2009).

trust that engenders, stakeholders will often make the decision to enter into the initial reciprocities on the basis of their belief that they share representations, interpretations, and systems of meaning with the other party or parties (Nahapiet and Ghoshal 1998)."

This is also supported by studies in management, where it has been well documented that, in order to exist and thrive, social systems (in this case companies) need a clear purpose (e.g., Collins and Porras 2002). Already Ackoff and Emery (2005) in earlier attempts to look at social systems from a systems perspective, asserted that social systems are indeed purposeful systems.

In summary, we have found five aspects of the social system that are essential from a sustainability point of view. In paper 2 we will explore by what overriding mechanisms these essential aspects can be degraded.

5. Discussion

5.1. Reflections on a Complex Systems Approach

A systems approach to (social) sustainability seems appropriate, based on the mere fact that the social system can indeed be considered a system or exhibit system-like behavior (Castellani and Hafferty 2010). In addition, the aim of understanding the system is to plan for its sustainability. In this context, Hjorth and Bagheri (2006) support a systems approach. They claim (2006, 79) that *"to do a good planning it is essential to find a way to formulate reality as a system rather than as a set of independent problems. A system is recognized by the integrity and interaction of its components. To improve a system it is no use improving each part separately, rather the whole [and the relationships] should be looked at"*.

For many, systems thinking in the social sciences remains to be connected to the strand of functionalist thinking in sociology (Hanneman 1988, 29; Jackson 1985). This then, in turn, is connected to the maintenance of order and more conservative political strands. We have already addressed this above, but are aware that the connection and criticism remain in the minds of many.

Many argue that sustainability is a 'wicked' problem - a problem that is complex, where uncertainty is high, where there is debate over values and where solutions are not obvious (Rittel and Webber 1973, Funtowicz and Ravetz 1993) and that therefore a systems approach which includes participatory elements and deliberations about values (e.g. soft systems approaches) may be appropriate. We think this is compatible with our approach and will return to this particular perspective in the introduction to paper 2.

In the end, the newer insights regarding a social complex systems approach (presented in 4.1.1) together with the kind of systems approach the FSSD utilizes, allowed these criticisms to be addressed and overcome. This strengthened the argument that a social complex systems approach is indeed an appropriate path.

5.2. Reflections on a Trans-disciplinary Approach

Complexity science is a transdisciplinary endeavor (Capra 1997 as cited in Walby 2003, 6) in itself. It also makes sense to base a comprehensive understanding of the social system on a trans-disciplinary approach because (social) life does not occur in disciplines. The most comprehensive understanding therefore comes from combining different approaches and seeing multiple perspectives at the same time. However, trying to take in multiple perspectives also brings very practical challenges; the most basic one being, that one person cannot read everything and understand every thought there has ever been about the social system and sustainability. This research covered a lot of breadth: the field of social sustainability as it is currently being discussed in the literature; the history and philosophy of social sciences; complex adaptive systems and social complexity; social capital and trust; human needs and more. And yet, not everything has been covered. In addition, breadth is on the expense of depth when there is a given time-frame. This is acknowledged as a challenge and a limitation to this research at this point. While support from various fields also strengthens the research and adds to its validity, more work will need to go into understanding more of the subtleties of many of the approaches.

5.3. Validity

A final note on validity. While parts of the theory have been supported in other research fields such as the field of complex adaptive management, the combination of the different parts has not. Thus, there are numerous ways in which it might be wrong. However, we are not aiming for an explanatory theory, but rather a framework theory that can guide thinking about concrete planning towards sustainability based on the best available science. An attempt to validate the theory through empirical testing in businesses, municipalities and other organizations will be undertaken in the next phase of the research. This might lead to adjustments of the theory. As Gordon (1991, 110) points out “*a good model can be expanded to include additional factors when their relevance is suspected*”. Therefore, the model of social sustainability proposed here is a starting point, expandable and condensable if necessary. Future steps necessary for this research will be elaborated in paper 2.

6. Conclusion

Based on the above results and discussion, we conclude that the following aspects of a social system are essential to sustain (cannot be systematically degraded) from a sustainability point of view: *trust, common meaning, diversity, capacity for learning* and *capacity for self-organization*. Trust seems to be generally acknowledged to be the overriding element of a vital and functional social system, its “glue”. A sense of common meaning is also stated by several authors as an important part of the social capital and something that helps keeping a group or society together. Diversity is acknowledged as essential for resilience; in the human social system we suggest this can be interpreted as diversity of personalities, ages, gender, skills, etc. Capacity for learning and self-organization are also motivated from a resilience point of view by several authors.

Acknowledgements

Financial support was provided by the FUTURA foundation and is hereby gratefully acknowledged. FUTURA was not involved in the study design, the collection, analysis and interpretation of data, in the writing of the report or in the decision to submit the article for publication.

References

- Adger, W. N. 2000. Social and ecological resilience: are they related? *Progress in Human Geography*. 24(3), pp.347–364.
- Adger, W.N. 2003. Social capital, collective action and adaptation to climate change. *Economic Geography*. 79, p.387–404.
- Ackoff, R. L., & Emery, F. E. 2005. *On purposeful systems: An interdisciplinary analysis of individual and social behavior as a system of purposeful events*. New Brunswick, NJ, USA: Transaction Publishers.
- Alkire, S. 2002. Dimensions of human development. *World Development*. 30(2), pp. 181-205.
- Anderson, R. C. 1998. *Mid course correction - toward a sustainable enterprise: The Interface model*. Atlanta, USA: The Peregrinzilla Press.
- Arrow, K. 2000. Observations on social capital. In *Social capital: A multi-faceted perspective*, Dasgupta, P. & Serageldin, I., eds. Washington, D.C.: World Bank. Pp. 3-5.
- Barron, L. & Gauntlet, E. 2002. *Model of social sustainability (Stage 1 Report)*. Housing and Sustainable Communities Indicators Project, Western Australian Council of Social Service (WACOSS), Perth, Australia.

- Baumeister, R. F. & Vohs, K.D. 2005. The Pursuit of Meaningfulness in Life. In *Handbook of Positive Psychology*. Snyder, C. R. & Lopez, S. J. (Eds.). Cary, NC, USA: Oxford University Press. p 608-619
- Bellin, Z. J. 2009. *Exploring a Holistic Content Approach to Personal Meaning*. Doctoral Thesis. Loyola University in Maryland. Available at <http://www.meaningthroughbeing.com/wp-content/uploads/2010/03/Bellin-Dissertation-PDF.pdf>
- Berkes, F., Colding, J., & Folke, C., eds. 2003. *Navigating Social-Ecological Systems: Building Resilience for Complexity and Change*. Cambridge, UK: Cambridge Univ. Press.
- Bews, N. & Martins, N. 2002. An evaluation of the facilitators of trustworthiness. *SA Journal of Industrial Psychology*. 28 (4), pp.14-19.
- Bossel, H. 1999. *Indicators for Sustainable Development: Theory, Method, Applications*. A Report to the Balaton Group. Winnipeg, Manitoba, Canada: The International Institute for Sustainable Development (IISD).
- Boström, M. 2012. A missing pillar? Challenges in theorizing and practicing social sustainability: introduction to the special issue. *Sustainability: Science, Practice, & Policy*. 8(1), pp. 3-14
- Broman, G., Byggeth, S. & Robèrt, K.-H. 2002. Integrating environmental aspects in engineering education. *International Journal of Engineering Education*. 18(6), pp. 717-724.
- Broman, G., Holmberg, J. & Robèrt, K.-H. 2000. Simplicity Without Reduction: Thinking Upstream Towards the Sustainable Society. *Interfaces*. 30(3), pp.13-25.
- Bruner, J. 1990. *Acts of meaning*. Cambridge, MA: Harvard University Press.
- Burger, J., Ostrom, E., Norgaard, R.B., Policansky, D. & Goldstein, B.D. 2001. *Protecting the Commons. A Framework for Resource Management in the Americas*. Washington, DC: Island Press
- Burton, J. W., ed. 1990. *Conflict: Human needs theory*. New York: St. Martin's Press.
- Byggeth, S. & Hochschorner, E. 2006. Handling Trade-offs in Ecodesign Tools for Sustainable Product Development and Procurement. *Journal of Cleaner Production*. 14(15-16), pp.1420-1431.
- Byrne, D. 1998. *Complexity Theory and the Social Sciences*. London, UK: Routledge
- Cacioppo, J.T., Hawkey, L.C., Rickett, E. M. & Masi, C.M. 2005. Sociality, Spirituality, and Meaning Making: Chicago Health, Aging, and Social Relations Study. *Review of General Psychology*. 9(2), pp. 143–155.

- Caldwell, C. & Clapham, S.E. 2003. Organizational Trustworthiness: An International Perspective. *Journal of Business Ethics* 47, pp.349–364.
- Capra, F. 1997. *The Web of Life: A New Synthesis of Mind and Matter*. London: Flamingo.
- Castellani, B & Hafferty, F. W. 2010. *Sociology and Complexity Science: A New Field of Inquiry*. Berlin/Heidelberg, Germany: Springer
- Chapin F. S., Carpenter, S. R., Kofinas, G.P., Folke, C., Abel, N., Clark, W.C., Olsson, P., Smith, D. M. S., Walker, B., Young, O.R., Berkes, F., Biggs, R., Grove, J.M., Naylor, R. L., Pinkerton, E., Steffen, W. & Swanson, F.J. 2010. Ecosystem stewardship: sustainability strategies for a rapidly changing planet. *Trends in Ecology and Evolution*. 25(4), pp. 241- 249
- Chittenden, D. 2000. *System and Human Needs: Comparative Analysis of a Systems Framework for Finding Indicators for Sustainable Development with a Theory of Fundamental Human Need* : a Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Chemical and Process Engineering at the University of Canterbury, Christchurch, New Zealand.
- City of Vancouver. 2005. *Administrative Report* Report. RTS No.: 05186 CC File No.: 3501.
- Clark, N., Perez-Trejo, F. & Allen, P.M. 1995. *Evolutionary Dynamics and Sustainable Development: A systems Approach*. Cheltenham, UK: Edward Elgar Publishing Ltd.,
- Clayton, A. & Radcliffe, N.J. 1996. *Sustainability: a systems approach*. London: Earthscan/James & James.
- Colantonio, A. 2007. *Measuring Social Sustainability: Best Practice from Urban Renewal in the EU. Social Sustainability: An Exploratory Analysis of its Definition, Assessment Methods, Metrics and Tools*. 2007/01: EIBURS Working Paper Series July.
- Colantonio, A., Dixon, T., Ganser, R., Carpenter, J. & Ngombe, A. 2009. *Measuring Socially Sustainable Urban Regeneration in Europe*. Oxford Institute for Sustainable Development (OISD), School of the Built Environment, Oxford Brookes University
- Coleman, J.S. 1990. *Foundations of Social Theory*, Cambridge: Belknap Press
- Collins, J.C. & Porras, J.I. 2002. *Built to last*. (3rd ed). New York: Harper Collins Publisher Inc.
- Colquitt, J.A., Scott, B.A. & J. A. LePine. 2007. Trust, trustworthiness, and trust propensity: a meta-analytic test of their unique relationships with risk taking and job performance. *Journal of applied psychology*. (92)4, pp. 909-927.

- Cook, D. 2004. *The natural step towards a sustainable society*. Green Books Ltd, Dartington, UK.
- Cudworth, E. & Hobden, S. 2012. The Foundations of Complexity, the Complexity of Foundations. *Philosophy of the Social Sciences*. 42(2):163–187. doi:10.1177/00483931110388038
- Cuthill, M. 2010. Strengthening the ‘Social’ in Sustainable Development: Developing a Conceptual Framework for Social Sustainability in a Rapid Urban Growth Region in Australia. *Sustainable Development*. 18(6), pp.362-373.
- Davidson, M. 2007. Searching for the socially sustainable city: Achieved through inducing the right mixture? In *Proceedings of the State of Australian Cities National Conference, Adelaide, Australia, 28-30 Nov2007*. Retrieved at <http://eprints.qut.edu.au/29562/1/c29562.pdf> (Accessed January 25th, 2013)
- Davidson, M. 2009. Social sustainability: a potential for politics? *Local Environment*. 14:7, pp.607-619.
- Dempsey, N., Bramley, G., Power, S. & Brown, C. 2011. The social dimension of sustainable development: Defining urban social sustainability. *Sustainable Development*. 19(5), pp.289–300.
- Dietz, T., Ostrom, E. & Stern, P.C. 2003. The struggle to govern the commons. *Science*. 302, pp.1907-1911.
- Doyal, L. & Gough, I. 1991 *A theory of human need*. New York: Palgrave Macmillan
- Electrolux. 1994. *Electrolux Annual Report*. Electrolux, Stockholm, Sweden.
- Folke, C. 2006. Resilience: The emergence of a perspective for social–ecological systems analyses. *Global Environmental Change*. 16, pp.253–267
- Folke, C., Carpenter, S., Elmqvist, T., Gunderson, L., Holling, C. S., Walker, B., Bengtsson, J., Berkes, F., Colding, J., Danell, K., Falkenmark, M., Gordon, L., Kaspersen, R., Kautsky, N., Kinzig, A., Levin, S., Mäler, K. G., Moberg, F., Olsson, P., Oström, E., Reid, W., Rockström, J., Savenije, H. & Svedin, U. 2002. *Resilience and Sustainable Development: Building Adaptive Capacity in a World of Transformations—Scientific Background Paper on Resilience for the process of The World Summit on Sustainable Development on behalf of The Environmental Advisory Council to the Swedish Government*. Stockholm: Ministry of the Environment.
- Folke, C., Colding, J. & Berkes, F. 2003. Synthesis: building resilience and adaptive capacity in social-ecological systems. In *Navigating Social-Ecological Systems: Building Resilience for Complexity and Change*. Berkes, F., Colding, J. & Folke, C. (eds). Cambridge, UK: Cambridge University Press, pp. 352–87
- Folke, C., Carpenter, S., Walker, B., Scheffer, M., Elmqvist, T., Gunderson, L., & Holling, C. S. 2004. Regime shifts, resilience, and biodiversity in ecosystem

management. *Annual Review of Ecology, Evolution, and Systematics*. (35), pp.557-581.

Folke, C., Hahn, T., Olsson, P. & Norberg J. 2005. Adaptive governance of social-ecological systems. *Annual Review of Environment and Resources*. 30, pp.441-473.

Frankl, V.E. 1962. *Man's search for meaning: An introduction to logotherapy*. New York: Simon and Schuster.

Frankl, V.E. 1986. Logotherapy and the challenge of suffering. *Review of Existential Psychology & Psychiatry*. 1, pp. 63 – 67.

Franklin, A. & Blyton, P. 2011. *Researching Sustainability: A Guide to Social Science Methods, Practice and Engagement*. London: Earthscan.

Friedman, T.L. 2007. *The world is flat : a brief history of the twenty-first century*. 2nd rev. and expanded ed. New York : Farrar, Straus and Giroux.

Fukuyama, F. 1995. *Trust: The social virtues and the creation of prosperity*. New York: Free Press.

Fukuyama, F. 2002. Social Capital and Development: The Coming Agenda. *SAIS Review*. 20(1), pp. 23-37.

Funtowicz, S. O. & Ravetz, J.R. 1993. Science for the post-normal age. *Futures*. 25(7):739–55.

Giddens, A. 1984. *The Constitution of Society. Outline of the Theory of Structuration*. Cambridge, UK: Polity Press.

Giddens, A. 1990. *The Consequences of Modernity*. Cambridge: Polity Press

Giddens, A. 1991. *Modernity and Self-Identity: Self and society in the late modern age*. Cambridge, UK: Polity Press.

Gordon, S. 1991. *The History and Philosophy of Social Science*. London and New York: Routledge.

Gordon, S. 2003. *The Natural Step and Whistler's journey towards sustainability*. Paper presented at the Sustainable Mountain Communities Conference in Banff, Alberta.

Gunderson, L. H. 2001. South Florida: the reality of change and the prospects for sustainability: managing surprising ecosystems in Southern Florida. *Ecological Economics*. 37(3), pp.371-378.

Hallstedt, S., Ny, H., Robèrt, K.-H. & Broman, G. 2010. An Approach to Assessing Sustainability Integration in Strategic Decision Systems for Product Development. *Journal of Cleaner Production*. 18(8), pp.703-712

Hanneman, R. 1988. *Computer-assisted theory building*. Thousand Oakes, CA, US: Sage Publications

- Hardin, R. 1996. Trustworthiness. *Ethics*. 107, pp.26-42.
- Hardin, R. 2002. *Trust and Trustworthiness*. New York: Russell Sage Foundation.
- Hardin, R. 2006. *Trust*. Cambridge, UK: Polity Press.
- Hjorth, P. & Bagheri, A. 2006. Navigating towards sustainable development: A system dynamics approach. *Futures*. 38, pp.74–92.
- Holland, J. 1995. *Hidden Order: How Adaptation Builds Complexity*. Reading, MA, USA: Addison-Wesley.
- Holland, J. 1998. *Emergence: From Chaos to Order*. Cambridge, MA, USA: Perseus Books
- Hollis, M. 1998. *Trust within Reason*. Cambridge: Cambridge University Press
- Holmberg, J. & Robèrt, K-H. 2000. Backcasting from non-overlapping sustainability principles – a framework for strategic planning. *International Journal of Sustainable Development and World Ecology*. 7, pp.291-308.
- Huesemann, M. H. 2001. Can pollution problems be effectively solved by environmental science and technology? An analysis of critical limitations. *Ecological Economics*. 37(2), p.271-288.
- Jackson, M.C. 1985. Social systems theory and practice: The need for a critical approach. *International Journal Of General System*. 10(2-3), pp.135-151.
- Jacobs, M. 1999. Sustainable development: a contested concept. In *Fairness and futurity: essays on environmental sustainability and social justice*. Dobson, A, ed. Oxford, UK: Oxford University Press.
- James S. & Lahti T. 2004. *The Natural Step for communities: how cities and towns can change to sustainable practices*. Gabriola Island, British Columbia, Canada: New Society Publishers.
- Janssen, M. A., Anderies, J. M., & Ostrom, E. 2007. Robustness of social-ecological systems to spatial and temporal variability. *Society and Natural Resources*, 20(4):307-322.
- Jones, K. 1996. Trust as an affective attitude. *Ethics*. 107, pp.4-25.
- Kagan, J. 1981. *The second year: The emergence of self awareness*. Cambridge, MA: Harvard University Press.
- Klinger, E. 1998. The search for meaning in evolutionary perspective and its clinical implications. In *The Human Quest for Meaning: A Handbook of Psychological Research and Clinical Applications*. Wong, P. & Fry, P. (Eds.). New Jersey: Laurence Erlbaum Associates. pp. 27 – 50.
- Klir, G.J. 2001. *Facets of Systems Science*. 2nd Ed. New York, NY, USA: Kluwer Academic/Plenum Publishers

- Koning, J. 2001. *Social sustainability in a globalizing world: context, theory and methodology explored*. Tilburg University, The Netherlands, paper prepared for the UNESCO / MOST meeting, 22-23 November 2001, The Hague, Netherlands. Available at <http://www.tilburguniversity.nl/globus/seminars/sem02.02.pdf> (accessed January 21st, 2013)
- Kunz J. 2006. *Social Sustainability and Community Involvement in Urban Planning*. University of Tampere: Tampere, Finland.
- Kurzman, C . 2008. Introduction: Meaning-Making in Social Movements. *Anthropological Quarterly* . 81(1), pp. 5-15.
- Lahno, B. 2001. On The Emotional Character Of Trust. *Ethical Theory and Moral Practice*. 4, pp.171–189.
- Leadbitter, J. 2002. PVC and sustainability. *Progress in Polymer Science*. 27(10), pp.2197-2226.
- Levin, S. A. 1998. Ecosystems and the biosphere as complex adaptive systems. *Ecosystems*. 1(5), pp.431-436.
- Lewis, J. D. & Weigert, A. 1985. Trust as a social reality. *Social Forces*. 63, pp.967–985.
- Littig, B. & Griessler, E. 2005. Social sustainability: a catchword between political pragmatism and social theory. *International Journal of Sustainable Development*. 8(1), pp.65-79.
- Luhmann, N. 1988. Familiarity, confidence, trust: problems and alternatives in: *Trust: Making and breaking cooperative relations*. Gambetta, D. (ed.). Oxford: Basil Blackwell, 94-107
- Luhman, N. 1995. *Social Systems*. Stanford, CA, USA: Stanford University Press
- Luhmann, N. 2000. *Vertrauen, ein Mechanismus der Reduktion der sozialer Komplexität*. 4. Auflage, Stuttgart: Lucius & Lucius.
- Malinowski, B. 1944. *A scientific theory of culture*. Chapel Hill: University of North Carolina.
- Marsen, S. 2008. The Role of Meaning in Human Thinking. *Journal of Evolution and Technology* . 17(1), pp. 45-58.
- Maslow, A.H. 1943. A theory of human motivation. *Psychological Review*. 50(4), pp.370-96.
- Matsushita. 2002. *Environmental sustainability report 2002*. Matsushita Electric Industrial Co., Ltd. Osaka, Japan.

- Maturana, H. R. & Varela, F. J. 1980. *Autopoiesis and Cognition. The Realization of the Living*. Dordrecht, Holland: D. Reidel.
- Max-Neef, M., Elizalde, A. & Hopenhayn, M. 1991. *Human scale development: conception, application and further reflections*. New York: Apex.
- Mayer, R.C., Davis, J. H. & Schoorman, F.D. 1995. An Integrative Model of Organizational Trust. *Academy of Management Review*. 20(3), pp.709-734.
- McIntosh, R.J. 2000. Social Memory in Mande. In *The Way the wind blows: climate, history and human action*. McIntosh, R.J., Tainter, J.A., & McIntosh, S.K. (eds.). New York: Columbia Univ Press: 141-180
- McKenzie, S. 2004 *Social Sustainability: Towards Some Definitions*, Hawke Research Institute, Working Paper Series No. 27, University of South Australia.
- Meijboom, F. L. B., Visak, T. & Brom, F.W.A. 2006. From Trust To Trustworthiness: Why Information Is Not Enough In The Food Sector. *Journal of Agricultural and Environmental Ethics*. 19, pp.427–442.
- Meijboom, F. L.B. 2008. *Problems Of Trust: A Question Of Trustworthiness - An ethical inquiry of trust and trustworthiness in the context of the agricultural and food sector*. Doctoral Dissertation, Utrecht University
- Metzner, A. 2000. Caring capacity and carrying capacity – a social science perspective. Papers Presented at the *INES 2000 Conference: Challenges for Science and Engineering in the 21st Century*, Stockholm.
- Missimer, M. 2013. *The social dimension of strategic sustainable development*. Licentiate Dissertation, Blekinge Institute of Technology.
- Missimer, M., Robèrt K – H., Broman G. & Sverdrup, H. 2010. Exploring the possibility of a systematic and generic approach to social sustainability. *Journal of Cleaner Production*. 18(10-11), pp.1107-1112.
- Missimer, M. & Connell, T. 2012. Pedagogical Approaches and Design Aspects To Enable Leadership for Sustainable Development. *Sustainability: The Journal of Record* 5(3), pp. 172-181.
- Nahapiet, J., & Ghoshal, S. 1998. Social capital, intellectual capital, and the organizational advantage. *Academy of management review*, pp. 242-266.
- Natrass, B. & Altomare, M. 2002. *Dancing with the tiger*. Gabriola Island, British Columbia, Canada: New Society Publishers.
- Natrass, B. 1999. *The Natural Step: corporate learning and innovation for sustainability*. Doctoral Thesis. The California Institute of Integral Studies, San Francisco, California, USA.
- Nelson, D. R., Adger, W.N. & Brown, K. 2007. Adaptation to Environmental Change: Contributions of a Resilience Framework. *Annual Review of Environment and Resources*. 32, pp.395–419.

- Norberg, J. & Cumming, G.S. 2006. *Complexity Theory for a Sustainable Future*. Columbia University Press, New York.
- Nowotny, H. 2005. The Increase of Complexity and its Reduction: Emergent Interfaces between the Natural Sciences, Humanities and Social Sciences. *Theory, Culture & Society*. 22(5):15–31. doi:10.1177/0263276405057189
- Ny H., MacDonald J.P., Broman G., Yamamoto R. & Robèrt K-H. 2006. Sustainability constraints as system boundaries: an approach to making life-cycle management strategic. *Journal of Industrial Ecology*. 10(1-2), pp.61-77.
- Olsson, P., Folke, C., & Hahn, T. 2004. Social-ecological transformation for ecosystem management: the development of adaptive co-management of a wetland landscape in southern Sweden. *Ecology and Society* 9(4):2.
- Omman, I. & Spangenberg, J.H. 2002. *Assessing Social Sustainability- The Social Dimension of Sustainability in a Socio-Economic Scenario* Presented at the 7th Biennial Conference of the International Society for Ecological Economics in Sousse (Tunisia), 6-9 March 2002 Available at http://seri.at/wp-content/uploads/2010/05/Assessing_social_sustainability.pdf (Accessed November 29th, 2012)
- Osbahr, H., Twyman, C., Adger, W. N. & Thomas, D. S. G. 2010. Evaluating successful livelihood adaptation to climate variability and change in southern Africa. *Ecology and Society*. 15(2):27.
- Ostrom, E. 2005. *Understanding institutional diversity*. Princeton, New Jersey, USA: Princeton University Press.
- Ostrom, E., & Ahn, T. K., eds. 2003. *Foundations of social capital*. Cheltenham, UK: Edward Elgar Publishing.
- Ostrom, E., Dietz, T., Dolsak, N., Stern, P., Stonich, S., & Weber, E.U., eds. 2002. *The Drama of the Commons*. Washington, DC: Natl. Acad.
- Paehlke, R. 2001. Environmental Politics, Sustainability and Social Science. *Environmental Politics*. 10(4), pp.1-22.
- Park, C. L. 2010. Making sense of the meaning literature: an integrative review of meaning making and its effects on adjustment to stressful life events. *Psychological bulletin*. 136(2), pp.257-301.
- Park, C. 2011. Meaning and Growth within Positive Psychology: Toward a More Complete Understanding. In: *Designing Positive Psychology: Taking Stock and Moving Forward*. Sheldon, K.M., Kashdan, T.B. & Steger, M.F. (eds). Cary, NC, USA: Oxford University Press. p- 324 -334.
- Partridge, E. 2005. *Social sustainability: a useful theoretical framework?* Paper presented at the Australasian Political Science Association Annual Conference 2005, Dunedin, New Zealand, 28-30 September 2005.

- Potter, N.N. 2002. *How can I be trusted? : a virtue theory of trustworthiness*. Lanham, Md.: Rowman & Littlefield.
- Pretty, J. & Ward, H. 2001. Social capital and the environment. *World Development*. 29, pp.209-227.
- Pretty, J. 2003. Social capital and the collective management of resources. *Science*. 302, pp.1912-1914.
- Putnam, R. 1993. *Making democracy work. Civic traditions in modern Italy*. Princeton (NJ): Princeton University Press.
- Putnam, R. 2000. *Bowling Alone. The Collapse and Revival of American Community*. New York, London: Simon and Schuster.
- Ramsay, M. 1992. *Human needs and the market*. Aldershot: Avebury.
- Rittel, H.W.J. & Webber, M.M. 1973. Dilemmas in a general theory of planning. *Policy Sciences*. 4:155-169.
- Robèrt, K.-H. 1994. *Den Naturlige Utmaningen (The Natural Challenge)*. Stockholm, Sweden: Ekerlids Publisher.
- Robèrt, K.-H. 1997. *ICA/Electrolux - A case report from 1992*. 40th CIES Annual Executive Congress, Boston, MA.
- Robèrt, K.-H. 2000. Tools and concepts for sustainable development, how do they relate to a general framework for sustainable development, and to each other? *Journal of Cleaner Production*. 8(3), pp.243-254.
- Robèrt, K.-H., Schmidt-Bleek, B., Aloisi de Larderel, J., Basile, G., Jansen, J.L., Kuehr, R., Price Thomas, P., Suzuki, M., Hawken, P. & Wackernagel, M. 2002. Strategic sustainable development selection, design and synergies of applied tools. *Journal of Cleaner Production*. 10, pp.197-214.
- Robèrt, K.-H., Broman, G., Waldron, D., Ny, H., Byggeth, S., Cook, D., Johansson, L., Oldmark, J., Basile, G., Haraldsson, H., MacDonald, J., Moore, B., Connell, T. & Missimer, M. 2010. *Strategic Leadership Towards Sustainability*. Karlskrona: Blekinge Institute of Technology.
- Robèrt, K.-H., Broman, G. & Basile, G. 2013. Analyzing the concept of planetary boundaries from a strategic sustainability perspective: How does humanity avoid tipping the planet? *Ecology and Society* 18(2): 5.
- Rothstein, B. 2005. *Social Traps and the problem of Trust*. Cambridge: Cambridge University Press
- Rothstein, B. 2007. *Anti-Corruption: A "Big-Bang" Theory*. Gothenburg: The Quality of Government Institute at University of Gothenburg. Working Paper 2007: 3.

Scheffer, M., Westley, F., Brock, W.A. & Holmgren, M. 2001. Dynamic interaction of societies and ecosystems: Linking theories from ecology, economy, and sociology. In *Panarchy: understanding transformations in human and natural systems*. Gunderson, L. & Holling, C.S. (Eds). Island Press, Washington, DC, USA:195-239.

Schwandt, D. R., & Szabla, D. B. 2013. Structuration Theories And Complex Adaptive Social Systems: Inroads To Describing Human Interaction Dynamics. *Emergence: Complexity & Organization*, 15(4).

Senge, P. M. 1990. *The Fifth Discipline*. New York: Broadway Business.

Senge, P. 2003. Creating Desired Futures in a Global Economy. *Reflections*. 5(1), pp.1-12.

Spangenberg, J. H. & Omann, I. 2006. Assessing social sustainability: social sustainability and its multicriteria assessment in a sustainability scenario for Germany. *International Journal of Innovation and Sustainable Development*. 1(4), pp.318-348.

Stichweh, R. 2000. On the Genesis of World Society: Innovations and Mechanisms. *Distinktion: Scandinavian Journal of Social Theory*. 1(1), pp.27-38.

Stones, R. 2005. *Structuration theory*. New York, NY: Palgrave Macmillan.

Strauss-Kahn, D. 2004. Building a Political Europe. 50 Proposals for Tomorrow's Europe. *Brussels: European Commission*.

Törnberg, A. 2011. *Using Complexity Theory Methods for Sociological Theory Development-With a Case Study on Socio-Technical Transitions*. Master's Thesis, Gothenburg University

Tronick, E. 2008. Multilevel Meaning Making and Dyadic Expansion of Consciousness Theory: The Emotional and the Polymorphic Polysemic Flow of Meaning. In *The Healing Power of Emotion: Affective neuroscience, development, clinical practice*. Fosha, D. Solomon, M. & Siegel, D. (ed). New York: Norton p.86-111.

Urry, J. 2003. *Global Complexity*. Cambridge/Oxford, UK: Polity Press

Vallance, S. P., Harvey, C. & Dixon, J.E. 2011. What is social sustainability? A clarification of concepts. *Geoforum*. 42, pp.342-348.

Walby, S. 2003, April. Complexity theory, globalisation and diversity. In *conference of the British Sociological Association, University of York*.

Walby, S. 2007. Complexity Theory, Systems Theory, and Multiple Intersecting Social Inequalities. *Philosophy of the Social Sciences*. 37(4):449-470.
doi:10.1177/0048393107307663

Waldron, D. 2005. A new education - "strategic leadership towards sustainability". Seminar on education for sustainable development (Seminarium om utbildning för hållbar utveckling), Stockholm, Sweden, Ministry of Culture and Education.

Waldron, D., Byggeth, S., Ny, H., Broman, G., & Robèrt, K.-H. 2004. Structured comprehension for systems thinking, learning and leadership towards sustainability. *Environmental Management for Sustainable Universities (EMSU)*. Tecnológico de Monterrey, Mexico.

Walker, B., Holling, C.S., Carpenter, S.R. & Kinzig, A. 2004. Resilience, adaptability and transformability in social-ecological systems. *Ecology and Society*. 9(2):5.

Walker, B., Gunderson, L.H., Kinzig, A., Folke, C., Carpenter, S. & Schultz, L. 2006. A handful of heuristics and some propositions for understanding resilience in social-ecological systems. *Ecology and Society*. 11(1):13.

Weingaertner, C. & Moberg, Å. 2011. Exploring Social Sustainability: Learning from Perspectives on Urban Development and Companies and Products. *Sustainable Development*. DOI: 10.1002/sd.536.

Wells, G. 2009. *The Meaning Makers: Learning to Talk and Talking to Learn* (2nd ed) Bristol, Buffalo, Toronto: MULTILINGUAL MATTERS.

Westley, F. 2002. The devil in the dynamics. In *Panarchy: understanding transformation in human and natural systems*. Gunderson, L. H. & Holling, C. S., eds. Island Press, Washington, D.C., USA. Pp.333-360.

Wollebaek, D. & Selle, P. 2008. Where does social capital come from? In *The third sector in Europe*. Osborne, S.P. (eds) NY, NY: Routledge Studies in the Management of Voluntary and Non-profit Organizations.

World Commission On Environment And Development. 1987. *Our Common Future*. [report of the] World Comission on Environment and Development. Available at: <http://www.un-documents.net/wced-ocf.htm> (Accessed Janaurat 21st, 2013)

(This page is intentionally left blank.)

Paper C

**A Strategic Approach to Social Sustainability - Part 2:
A Principle-based Definition**

Paper C is published as

Missimer, M, Robèrt K – H and Broman, G. 2015. A Strategic Approach to Social Sustainability - Part 2: A Principle-based Definition. *Submitted*

A Strategic Approach to Social Sustainability - Part 2: A Principle-based Definition

Merlina Missimer

Karl-Henrik Robèrt

Göran Broman

Abstract

In paper 1 of this two-part series, the social system was explored, identifying essential aspects for social sustainability. The aim of this paper is to identify and present overriding mechanisms by which these aspects of the social system can be degraded, thereby finding exclusion criteria for re-design for sustainability. Literature studies, conceptual modelling sessions and initial testing with partners in academia, business and NGOs were performed. The whole work was structured and guided by the Framework for Strategic Sustainable Development. Based on the understanding of the essential aspects of the social system and the identified overriding mechanisms of degradation of these, a hypothesis for a definition of social sustainability by basic principles is presented. The proposed principles are that in a socially sustainable society, people are not subject to structural obstacles to: (1) health, (2) influence, (3) competence, (4) impartiality and (5) meaning-making.

Overall, the two papers contribute with a hypothesis for a definition of social sustainability, which is general enough to be applied irrespective of spatial and temporal constraints, but concrete enough to guide decision-making and monitoring. This is a contribution to systems science in the sustainability field and it is a step towards creating an enhanced support for strategic planning and innovation for sustainability. Further testing and refinement of this theoretical foundation, and bringing it into practical use, will be the subject of the continued studies.

Keywords: strategic sustainable development, social sustainability, social system, systems thinking, sustainability principles.

1. Introduction

Paper 1 of this two-part series concluded that a clearer definition of social sustainability than currently exists is needed and that the following aspects of the social system are essential to sustain (cannot be systematically degraded) from a social sustainability point of view: *trust*, *common meaning*, *diversity*, *capacity for learning* and *capacity for self-organization*. The aim of this paper is to identify and present overriding mechanisms by which these aspects of the social system can be degraded, and to formulate operational sustainability principles as exclusion criteria for redesign of society towards social sustainability.

1.1 Point of Departure

It should be pointed out that the whole process of attempting an operational definition of sustainability starts out from a normative stance (a value statement). The Brundtland definition of sustainability is here taken as a basis for such a point of departure (World Commission On Environment And Development 1987). We say that we want (for humanity) “... *development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*” Wanting this to happen cannot be derived from scientific knowledge or proven right or wrong by scientific methods. That this is at all desirable is a normative stance that each person needs to decide for himself/herself to embrace or not.

We know that there will never be a society where all people have all their needs completely fulfilled all the time. That is utopia. But we can have it as a *want*, an ideal state that should not be deviated from more and more. A systematically increasing deviation from this unreachable state is unsustainable development. If such a systematically increasing deviation comes out as an unavoidable result of the basic design and operation of society, we have an unsustainable basic design and mode of operation of society.

Most people sign on to this normative stance. Once accepted, scientific knowledge and scientific methods can be used to draw conclusions: if this is what we want, on what conditions can it be achieved?” What are the essential aspects of the ecological and social systems that need to be sustained in order to not systematically undermine the capacity of people to meet their needs, now and in the future, and what are the overriding mechanisms by which these essential aspects can be degraded?

1.2 Is a Single Definition Appropriate?

A common argument as regards social sustainability is that vagueness and a pluralism of definitions are appropriate and preferable over a single definition, because of the complexity of the topic (McKenzie 2005, Kunz 2006, Dempsey et al. 2011, Boström 2012). Proponents of this stance (e.g., Lehtonen 2004, 211) argue that *“different geographical and temporal scales as well as situational contexts require their own frameworks, which do not necessarily provide a coherent picture, but a mosaic of partly contradicting views of reality”*. They propose that sustainability can only be defined in a local context through participatory processes, with engagement from all stakeholders (Davidson 2009, Dempsey et al. 2011). McKenzie (2004, 16-17) argues:

“Definitions broad enough to encompass all factors in all situations tend to be too broad for use in specific situations. Moreover, as definitions and indicator sets are often developed through consultation with community members as a first phase in research programs, they vary according to the needs and interests of the community in which they are developed. To approach a community with a pre-existing definition and indicator set may disrupt the community’s sense of ownership of the research being undertaken.”

The arguments can be challenged on several grounds. Jacobs (1999) criticism that vagueness allows unsustainable action to be couched and presented as sustainable has already been noted in paper 1. Another challenge comes up with context-specific definitions. Acknowledging that in many ways humanity has become a global network, and if actions in one area of the world can have large effects in areas far away from the location of action, are many context-dependent definitions created by smaller communities enough to ensure that we are not creating a larger sustainability problem somewhere else?

Furthermore, similar arguments were used to discourage attempts to find a definition of ecological sustainability to support structuring of analyses and planning. Counter to these arguments, the existing definition of ecological sustainability has shown to be operational at any scale within a framework for strategic sustainable development (FSSD), irrespective of the specifics of activities in different organizations and regions. (see, e.g., Robèrt et al., 2002 and Robèrt et al., 2013).

The sustainability principles of the FSSD are designed to be generally applicable and at the same time concrete enough to guide analyses, planning, innovation and selection, design and a coordinated use of supplementary concepts, methods and tools. The approach to define success in a complex system in this way, i.e., by basic principles or ‘boundary conditions for redesign’, effectively addresses

also the conservative bias that is sometimes leveled at the social sustainability field (e.g. Marcuse 1998). As the state of sustainability is defined by principles rather than the specifics of a scenario, it is not in fact a conservative state to maintain a certain configuration; nor does it exclude a participatory approach to defining what an organization or a community wants together (although as noted in paper 1 this is where the wickedness lies). Well thought-through boundary conditions, applied in a participatory manner, allow and encourage groups, organizations and communities to create visions together and cooperate in non-prescriptive manners to work towards the visions. As long as visions (maybe described as scenarios) remain within principled sustainability boundaries, a participatory approach is possible and can be very useful. In fact, processes to co-create visions within boundary conditions, and to plan ahead towards such visions, should also contain an openness to develop and sharpen the boundary conditions through these real-life learning experiences. The principles we present in this paper are the result of several years of theoretical modelling amongst scientists, followed by application and planning in business and municipalities/cities, followed by a new round of scientific evaluation and modification of principles, and so on.

Others, (e.g. Partridge 2005, 4) also advocate against context-specific definitions:

“It is not necessarily useful to only think of sustainability as context-dependent. While it is useful to apply the idea to a particular object (like forestry, fishing or human wellbeing for example), I want to suggest that the real potential of sustainability as an idea is as an integrating framework – a means for considering the relationships between different dimensions, rather than just assessing the sustainability or otherwise of a single element.”

Hodge and Hardi (1997, 10) add that *“developing and using a clear conceptual framework for guiding the assessment process is very important. With a conceptual framework in place, indicators emerge more naturally, and can be adjusted to the needs of a given locale or set of decision makers.”*

Finally, the fact that a complex goal in a complex system may be difficult to derive, e.g., defining sustainability in the social system, is not a satisfactory rationale for not trying. Even a failure in this regard, ought to be accompanied by some learning. It is based on these arguments that we set out to derive a set of social sustainability principles.

2. Methods

For a presentation of the under-laying methodology and approach to this work (the Framework for Strategic Sustainable Development; FSSD), please refer to paper 1.

The main method employed was literature studies in the systems- and social sciences. The FSSD was used to structure the review and analysis. The approach of this research is guided by the idea to allow the systems perspective on planning to evolve from a dynamic and iterative dialogue between two levels of the FSSD – the system level, which describes the system of study, and the success level, which describes the goal or purpose in the system. This was achieved through conceptual modelling sessions by the authors in collaboration with other researchers as well as with practitioners in real-life testing.

It is hard to represent this process in a linear fashion. Still, paper 1 describes the system aspects that have been identified as essential in this iterative dialogue. This paper will lay out the overriding mechanisms for degradation of these aspects (formulated, by negation, as sustainability principles) that were derived therefrom in the conceptual modelling sessions (supported by the literature studies) and through initial testing performed over several years by the authors in cooperation with partners in academia, business, municipalities and NGOs.

In paper 1, trust came out as a particularly important aspect of robust social systems, discussed amongst researchers from social, economics and political sciences. In our study, we started with searching for overriding mechanisms by which these essential aspects of the social system can be degraded. This leads to a set of candidate degradation mechanisms. We then test if the degradation mechanisms found this way are all relevant and to what extent the set of mechanisms might be relevant also as regards degradation of the other essential aspects of the social system identified in paper 1. During the modelling sessions, we applied the criteria for robust boundary conditions stated in paper 1, i.e., *necessary, sufficient, general, concrete and distinct*.

3. Results

First, it is important to note that many other terms that are often used in conjunction with attempts to define social sustainability were assessed using all five levels of the FSSD lens, not only its second level. Thus, terms such as “Empathy” (a constitutional element of human’s mental make-up, i.e., something that belongs to first FSSD level) and “Golden rule” (an “acid-test” if

a behavior to other people would really serve, i.e., something belonging to the third FSSD level) were tested. Also “Transparency”, “Accountability”, and “Honesty” were tested and found to belong to the third FSSD level. We also tested the principles by thought-experiments of actions, bringing the fourth level of the FSSD into play, and we reflected on possible ways of indicating and monitoring actions towards compliance with the principles, which belong to the fifth level of the FSSD. This type of modelling furthered the confidence that the chosen methodology has merits and helps to create clarity and is likely to support operationalization of social sustainability.

As pointed out, describing an iterative process in a linear fashion of a paper can be challenging. Due to this, it is sometimes necessary to also discuss the reasoning for a particular result here in the results section.

3.1. Principles for Social Sustainability derived from Trust

3.1.1. Trust Necessitates Trustworthiness

Returning to trust as an essential aspect of the social system, the fabric that makes society function as a system, one quickly moves towards trustworthiness, if one is interested in how to create, or avoid destroying, trust. As trust has a strong emotional component and involves a cognitive leap it is not something that can be controlled or forced, but must rather be invited and earned. Meijboom et al. (2006) discuss this in relation to consumer trust:

“You cannot make others trust you. This, however, does not imply that [...] trust is an unmanageable problem. It shows that we had better approach the issue from the question of why a consumer would trust someone else. If we do so, we notice that trust raises the question whether the other person is worth being trusted. This emphasizes that lack of trust is a problem of the one who wants to be trusted rather than of the trustor (432).”

Many authors agree with this statement and claim that the essential factor in creating trust is actually trustworthiness (Mayer et al. 1995, Hardin 1996, Tullberg 2008).

3.1.2. Components of Trustworthiness

According to Mayer et al. (1995), trustworthiness is made up of three components:

Ability/Competence: Ability is the group of skills, competencies, and characteristics that enable a party to have influence within some specific domain.

Motivation of Benevolence: A Motivation of Benevolence is the extent to which a trustee is believed to want to do good to the trustor.

Integrity: Integrity is the consistency in the other party in adhering to espoused values and the acceptability of these values (Mayer and Norman 2004).

These three components have since been validated empirically (e.g., Schoorman et al. 1996, Engelbrecht and Cloete 2000, Bews and Martin 2002, Mayer and Gavin 2005, Colquitt et al. 2007,) and adopted in subsequent models (McKnight et al. 1998; also see Colquitt et al. 2007). Finally, they have been found to be the most recurrent factors in trustworthiness studies (Roy and Shekhar 2010).

3.1.3. Trusting Teams - Fundamental Interpersonal Relations Orientation

Another theory of inter-personal trust is the Fundamental Interpersonal Relations Orientation (FIRO) (Schutz 1958, 1992, 1994), which has a long track-record of being practically used in high-performance teams, e.g., squad teams in the army and alike. According to FIRO, three dimensions of reciprocal interpersonal relations are necessary and sufficient to explain well-functioning teams based on trust, namely if each group member feels that he/she is...

1. Being Significant ... opposed to feeling unimportant, meaningless, and of no value.
2. Being Competent... opposed to feeling inept and unable to cope.
3. Being Liked...opposed to feeling unappreciated.

...the level of trust is high and the group functions well in tough situations.

3.1.4. Creating Trust through Trustworthy Institutions

The above components of trust and trustworthiness are discussed in connection to inter-personal trust. Rothstein (2005) as well as Wollebaek and Selle (2008) believe that, at a societal level, institutional trust is by far the most important predictor of social (generalized) trust. Rothstein (2005) argues that because institutions design the rules and incentives, which govern behaviour at the individual level, it is the institutional design that is the leverage point for fostering trust or mistrust within a society. He argues that specifically (i) effective and (ii) impartial governmental institutions that implement public policy lead to trust-generation in citizens.

He describes the psychological mechanism as follows:

- Citizens will see that most people in a society with corrupt officials must take part in corruption in order to obtain what they feel their rightful due. *They will therefore conclude that most other people cannot be trusted either.*
- In order to act in such a society, citizens must, even though they may consider it morally wrong¹, also begin to take part in corruption. *They will therefore conclude that since they cannot themselves be trusted, other people cannot generally be trusted either.*

The reverse applies as well. Therefore, if public officials can be trusted, then it infers that most other people can also be trusted.

The role of public institutions is so important because they are responsible for the governance of the entire system and they are key in creating social norms around interaction. Rothstein and Stolle (2008, 444) explain that “*states, for example, enable the establishment of reliable contracts between citizens in that they provide information and monitor legislation about contracts, and enforce rights and rules that sanction lawbreakers, protect minorities and actively support the integration and participation of citizens*”. Institutions fall as key actors at level 1 of the FSSD. However, their behavior can support or not support compliance with the sustainability principles at level 2.

Having explored trust and trustworthiness at various scales of social systems, the next section moves on to attempt a first set of social sustainability principles.

3.1.5. Deriving Principles

One of the criteria for the principles is being ‘general’ (to be applicable in any arena, at any scale, by any member in a team and all stakeholders, regardless of field of expertise, to allow for cross-disciplinary and cross-sector collaboration). Both FIRO and Mayer et al.’s components for trusting groups and trustworthiness presented above, operate at an interpersonal, not a global, social level. We therefore need to extrapolate these dimensions to a higher level without the essence being lost. This will be the first step.

For FIRO, one can note that an individual cannot expect to be seen as ‘significant’, ‘competent’ and ‘liked’ in person by people who do not know or do not know anything about the individual. Still, we can have a general feeling of likeability for other people, and the concrete expression of that would be to respect the right of each individual to uphold *health*, i.e., to avoid injury and illness (physically, mentally and emotionally) in the short and long term.

¹ Rothstein claims that they in fact also dislike taking part in it.

Being ‘significant’ is also a doubtful expression in the larger social context; you cannot say about people you do not know or know nothing about that they are significant. But you can claim their right in this context. The best translation to the larger social system might then be *influence*, which is a more generic term regardless of scale of the social system.

The term *competence* seems to be applicable to both the smaller and the larger system and therefore does not need to be changed.

A similar abstraction can be done for Meyer et al.’s principles. While competence can remain, ‘benevolence’ might be hard to assess at a scale larger than social systems where people know each other. Benevolence at a higher level, similarly to ‘being liked’, might be expressed as respecting the right of each individual to uphold *health*.

‘Integrity’ in the Meyer et al. meaning (consistency based on espoused and acceptable values) sticks out a bit. For one, the aspect of consistency falls at the strategic guidelines level of the FSSD. However, the aspect of acceptable values remains. We will return to this below.

Trustworthy institutions as a mechanism to create trusting social systems are described as effective (meaning competent at achieving their goals) and impartial. This mirrors the aspect of competence mentioned before and adds the aspect of *impartiality*.

This is also supported by research around equality and trust. Wilkinson and Pickett (2009) show that trust is higher in more equal societies². Although equality and impartiality are not equivalent, this supports the importance of impartiality as a design principle as partiality is a way to create high levels of inequality.

In summary, the reasoning on trust has prepared us to formulate a first hypothesis for a definition of social sustainability:

In a socially sustainable society, people are not subject to structural obstacles to ...

SSP 1. ...*health*.

(This means that people are not exposed to social conditions that systematically undermine their possibilities to avoid injury and illness; physically, mentally or emotionally, e.g. dangerous working conditions or insufficient wages.)

² Measured by income equality.

SSP 2. ...*influence*.

(This means that people are not systematically hindered from participating in shaping the social systems they are part of, e.g. by suppression of free speech or neglect of opinions.)

SSP 3. ...*competence*.

(This means that people are not systematically hindered from learning and developing competence individually and together, e.g. by obstacles for education or insufficient possibilities for personal development.)

SSP 4. ...*impartiality*.

(This means that people are not systematically exposed to partial treatment, e.g. by discrimination or unfair selection to job positions.)

By structural obstacles we mean social constructions - political, economic and cultural - which are firmly established in society, upheld by those with power and, due to a variety of dependencies, difficult or impossible to overcome or avoid by the people exposed to them.

3.2. Principles for Social Sustainability derived from the Other Essential Aspects

Paper 1 also identified *common meaning*, *diversity*, *capacity for learning* and *capacity for self-organization* as essential aspects to sustain in the social system. The question is now whether the above-proposed principles are sufficient also as regards these aspects.

3.2.1. Common Meaning

As pointed out in paper 1, humans are a meaning-making species and therefore by default create a sense of meaning. A sense of meaning is strongly linked to the individual's mental and emotional health (Klinger 1998) and structural obstacles acting to suppress meaning-making, could therefore be understood through the mechanism of not respecting the individual's right to uphold health.

However, basic principles, designed as boundary conditions for redesign, should address primary and not indirect effects. If structural obstacles are primarily perceived as being in the way of meaning-making this needs to be addressed in its own right.

From the point of view of social capital and keeping a society together, common meaning was also an essential aspect identified in paper 1. The importance of common meaning is also supported by the aspect of integrity mentioned by Mayer et al., i.e., consistency based on espoused and acceptable values. It is defined as standards of behavior, and rings very close to a common meaning in the sense of having decided together what is important in a group of people or society at large.

The importance of common meaning expressed as purpose is not the least evident when looking at sub-systems. In a complex system with independent agents, these agents have many choices regarding what sub-system to affiliate with. A reason for existence may be serving a particular function, serving a function particularly well or having some other attribute that attracts people. What motivates people to be part of a specific sub-system? As Vallance et al. 2011 (345), e.g., point out in relation to cities “*a sustainable city is one that people actually want to live in*”. If they can see no reason to live there, they will move somewhere else. This echoes the argument for a strong purpose in organizations in order to ensure their survival (e.g., Collins and Porras 2002).

Therefore another social sustainability principle is added to the list.

In a socially sustainable society, people are not subject to structural obstacles to ...

SSP 5. ...*meaning-making*.

(This means that people are not systematically hindered from creating individual meaning and co-creating common meaning, e.g. by suppression of cultural expression or obstacles to co-creation of purposeful conditions.)

3.2.2. Diversity

Diversity is mentioned in the literature as an aspect of resilience. In a social system, we are interested in diversity as regards characteristics such as gender, age, personality, skills, etc. It is diversity in this regard that “*provides a mix of components whose history and accumulated experience help cope with change, and facilitates redevelopment and innovation following disturbance and crisis*”(Folke et al. 2002, 19).

So, would this kind of diversity be assured through the above-mentioned social sustainability principles? We believe so. If people are not systematically hindered from upholding health; physically, mentally or emotionally, individuals with different characteristics remain. If people in general are not systematically hindered from influencing the social systems they are part of and from developing the competence they like, and if they are not systematically exposed to partial treatment, all the differences have opportunity to show up at the system

level. It does not seem that another sustainability principle needs to be added to ensure diversity in the system.

3.2.3. Capacity for Learning

Learning is also mentioned as an aspect of resilience, which enables flexibility and development. This aspect seems to be covered by the principle around competence as learning comes through the individuals into the system. In addition, continued competence development includes the ability to learn and remain competent even as the environment changes.

Even though learning is a natural individual trait, the organizational learning literature comes to the conclusion that organizational or communal learning does not come naturally to us. To learn as a system we need to learn *together*. Lageroos (2004, 321) in this same vein comments, that

“learning can be stifled and the traditional patterns of an advanced social system often do just that. As systems age, they tended to solidify protocols that once worked, but may no longer work because the environment has changed or because the protocol has become corrupted over time without anyone noticing. Yet, the people who achieved power by the old system naturally tend to believe in it. Hunting societies, for example, tend to name the best hunter as leader. However, as the group grows bigger and more skillful in hunting, the available prey declines. Leaders who are the best hunters naturally seek bigger and better ways to hunt— which leads to even less prey. Anyone who suggests settling down to grow food (agriculture) is considered crazy because everyone knows that the way to get food is to hunt“.

However, the above social sustainability principles can address these issues. The principle around influence allows individual learning to transfer to the system level and the principle around impartiality ensures that everyone’s ideas in the learning process are valued in an impartial way. The principle around meaning-making ensures that there is no systematic hindrance to the process making sense of the world together and in the process learn from it. Overall, this should ensure that learning can emerge at the system level.

3.2.4. Capacity for Self-organization

The last essential aspect of the social system, coming from the resilience literature, was that of self-organization – the ability of the system to organize itself without a pre-determined intent and structure. In a social system this would refer to individuals being able to organize themselves into different structures to

address a certain goal. All living systems are naturally self-organizing in their healthy form. This implies that as long as the above social sustainability principles are complied with, particularly no structural obstacles to health, there should be no reason why groups of people would not be able to do so.

This concludes the investigation for upstream mechanisms of destruction of the essential aspects of the social system identified in paper 1.

3.3. A zero Hypothesis for Social Sustainability Principles

Based on our work above, we arrive at a list of 5 social sustainability principles. Further work on specific wording may be required, but the above presents a first set of results.

In a socially sustainable society, people are not subject to structural obstacles to ...

SSP 1. ...health.

(This means that people are not exposed to social conditions that systematically undermine their possibilities to avoid injury and illness; physically, mentally or emotionally, e.g. dangerous working conditions or insufficient wages.)

SSP 2. ...influence.

(This means that people are not systematically hindered from participating in shaping the social systems they are part of, e.g. by suppression of free speech or neglect of opinions.)

SSP 3. ...competence.

(This means that people are not systematically hindered from learning and developing competence individually and together, e.g. by obstacles for education or insufficient possibilities for personal development.)

SSP 4. ...impartiality.

(This means that people are not systematically exposed to partial treatment, e.g. by discrimination or unfair selection to job positions.)

SSP 5. ...meaning-making.

(This means that people are not systematically hindered from creating individual meaning and co-creating common meaning, e.g. by suppression of cultural expression or obstacles to co-creation of purposeful conditions.)

Again, the term structural obstacles refers to social constructions — political, economic and cultural — which are firmly established in society, upheld by those with power and, due to a variety of dependencies, difficult or impossible to overcome or avoid by the people exposed to them.

4. Discussion

The research set out to derive useful social sustainability principles, which reflect the boundary conditions of a functional social system. The end result was a first hypothesis of five social sustainability principles. This section focuses on discussion and insights as regards the original aim and the FSSD approach and is a complement to the discussion in paper 1 of this two-part series.

4.1. Characteristics of the Principles

To be useful for analysis, planning and re-design for sustainability the principles should have the following characteristics (Robèrt 2000; Ny et al. 2006):

- Science-based, i.e., compliant with relevant scientific knowledge available to date.
- Necessary for sustainability, to avoid imposing unnecessary requirements and to avoid confusion over elements that may be debatable.
- Sufficient for sustainability, to avoid gaps in the thinking. The principles taken together should cover all relevant aspects.
- General, to be applicable in any arena, at any scale, by any member in a team and all stakeholders, regardless of field of expertise, to allow for cross-disciplinary and cross-sector collaboration.
- Concrete, to guide problem solving and innovation.
- Distinct, to facilitate comprehension and monitoring.

An assessment against these characteristics reveals the following:

The research has built a logical argument for why these principles are *necessary*. Furthermore, having pursued extensive literature studies, we have at this point not been able to find any aspects related to social sustainability that could not be sub-ordered the five principles, or fit elsewhere in the five level FSSD structure (such as empathy, golden rule, transparency, etc). This implies that the current principles are *sufficient*. However, the FSSD has always and will always be subject to continuous development, so future modelling and action research may call for amendments. This has also been the case for the ecological principles as the current wording of the three ecological principles has evolved over time to be more and more precise and helpful for re-design.

Furthermore, we want to re-state an essential element of this discussion: boundary conditions are designed to address problems and solutions at a high enough system level to be generic, while still being operational. As such they should be inclusive to *cover* all things that are relevant to discuss, so as to *not forget* essential aspects. But they should not *contain* such aspects, so as to not become *prescriptive* and undermine innovation in the contextually different environments of organizations and regions. So, the principles are designed to be *general* in that they are applicable to any group, organization or community and yet *concrete* enough to guide planning, innovation, action, and monitoring, selection and use of supplementary concepts, methods and tools. Preliminary results of action research with various practitioners support this conclusion. This will be further explored in forthcoming action research studies.

They are also *distinct* in the sense that all aspects of one are not also covered by another. There might be subtle overlaps in the sense that some aspects of one are also covered by another but we argue this is at this stage a smaller problem than insufficiency, i.e., missing essential principles. This will, again, be returned to in future work.

4.2. Validity

The validity of the results is supported by the trans-disciplinary research approach and the many theories and findings in different fields that point to similar results. A theory is usually tested empirically for validation. Testing for validation is, however, harder for more abstract higher-level social theories and in dynamic systems. Blessing and Chakrabarti (2009) discuss the limitations of validating research that is based on creating something new and then testing it (often referred to as design (science) research) as it is often difficult to establish whether the desired effect was created by the specific intervention or another unaccounted for aspect. In addition, *“the context in which the development process takes place changes, irrespective of the introduction of design support: people learn, markets change, organisations evolve, new technologies emerge, new knowledge becomes available and new regulations are put in place”* (ibid, 183).

In that sense, we will validate whether the proposed principles are applicable, understandable, relevant and helpful to people working in the field and help them to identify gaps to improve on the robustness of the social systems of which they are part.

The limitations in determining validity act as an encouragement to be as objective, accurate, clean and transparent as possible, so that others may find holes in the logic and update the theory. As Gordon (1991, 110) states, “A good model can be expanded to include additional factors when their relevance is

suspected.” This research aims for a good model that can be expanded or condensed as motivated by evidence from its use.

4.3. Future Work

The papers presented here are part of a multi-year research project. The results will need to be refined and improved over decades to come (just like the ecological principles have been).

Next steps include elaborating the candidate set of principles further, i.e., test/adjust/supplement/refine them (iteratively) and, show their usefulness in relation to some specific cases, through a close cooperation with partners in academia, business and municipalities. Further, it will be investigated whether such a more elaborated and refined definition of social sustainability can be integrated with existing support methods and tools for strategic sustainable development, product-service innovation, energy system development, regional development, etc.

Acknowledgements

Financial support was provided by the FUTURA foundation and is hereby gratefully acknowledged. FUTURA was not involved in the study design, the collection, analysis and interpretation of data, in the writing of the report or in the decision to submit the article for publication.

References

- Bews, N. & Martins, N. 2002. An evaluation of the facilitators of trustworthiness. *SA Journal of Industrial Psychology*. 28 (4), pp.14-19.
- Blessing, L. & Chakrabarti, A. 2009. *DRM, a Design Research Methodology*. London: Springer Verlag.
- Boström, M. 2012. A missing pillar? Challenges in theorizing and practicing social sustainability: introduction to the special issue. *Sustainability: Science, Practice, & Policy*. 8(1), pp. 3-14
- Collins, J.C. & Porras, J.I. 2002. *Built to last*. (3rd ed). New York: Harper Collins Publisher Inc.
- Colquitt, J.A., Scott, B.A. & J. A. LePine. 2007. Trust, trustworthiness, and trust propensity: a meta-analytic test of their unique relationships with risk taking and job performance. *Journal of applied psychology*. (92)4, pp. 909-927.

- Davidson, M. 2009. Social sustainability: a potential for politics? *Local Environment*. 14:7, pp.607-619.
- Dempsey, N., Bramley, G., Power, S. & Brown, C. 2011. The social dimension of sustainable development: Defining urban social sustainability. *Sustainable Development*. 19(5), pp.289–300.
- Engelbrecht, A.S. & Cloete, B.E. 2000. An analysis of a supervisor-subordinate trust relationship. *Journal of Industrial Psychology*. 26 (1), pp.29-38.
- Folke, C., Carpenter, S., Elmqvist, T., Gunderson, L., Holling, C. S., Walker, B., Bengtsson, J., Berkes, F., Colding, J., Danell, K., Falkenmark, M., Gordon, L., Kaspersen, R., Kautsky, N., Kinzig, A., Levin, S., Måler, K. G., Moberg, F., Olsson, P., Oström, E., Reid, W., Rockström, J., Savenije, H. & Svedin, U. 2002. *Resilience and Sustainable Development: Building Adaptive Capacity in a World of Transformations—Scientific Background Paper on Resilience for the process of The World Summit on Sustainable Development on behalf of The Environmental Advisory Council to the Swedish Government*. Stockholm: Ministry of the Environment.
- Gordon, S. 1991. *The History and Philosophy of Social Science*. London and New York: Routledge.
- Hardin, R. 1996. Trustworthiness. *Ethics*. 107, pp.26-42.
- Hodge, R.A. & Hardi, P. 1997. The need for guidelines: the rationale underlying the Bellagio principles for assessment. In *Assessing Sustainable Development. Principles in Practice*. P. Hardi & T. Zdan, eds. Winnipeg, Manitoba, CA: International Institute for Sustainable Development. pp.7–20.
- Klinger, E. 1998. The search for meaning in evolutionary perspective and its clinical implications. In *The Human Quest for Meaning: A Handbook of Psychological Research and Clinical Applications*. Wong, P. & Fry, P. (Eds.). New Jersey: Laurence Erlbaum Associates. pp. 27 – 50.
- Kunz J. 2006. *Social Sustainability and Community Involvement in Urban Planning*. University of Tampere: Tampere, Finland.
- Lagerroos, D. 2004. Sustainability Seen Through An Integral Lens. *World Futures*. 60(4), pp. 319 – 325.
- Lehtonen, M. 2004. The environmental–social interface of sustainable development: capabilities, social capital, institutions. *Ecological Economics*. 49(2), pp.199-214.
- Marcuse, P. 1998. Sustainability is not enough. *Environment and Urbanization*. 10(2), pp.103-112.
- Mayer, R.C., Davis, J. H. & Schoorman, F.D. 1995. An Integrative Model of Organizational Trust. *Academy of Management Review*. 20(3), pp.709-734.

Mayer, R. C. & Norman, P.M. 2004. Exploring Attributes Of Trustworthiness: A Classroom Exercise. *Journal of Management Education*. 28, pp.224-249.

Mayer, R. C. & Gavin, M. B. 2005. Trust in management and performance: Who minds the shop while the employees watch the boss? *Academy of Management Journal*. 48, pp.874–888.

McKenzie, S. 2004 *Social Sustainability: Towards Some Definitions*, Hawke Research Institute, Working Paper Series No. 27, University of South Australia.

McKenzie, S. 2005. *Building institutions for sustainability: A New Zealand case study*. Diss. ResearchSpace@ Auckland.

McKnight, D. H., Cummings, L. L., & Chervany, N. L. 1998. Initial trust formation in new organizational relationships. *Academy of Management Review*. 23(3), pp.473-490.

Meijboom, F. L. B., Visak, T. & Brom, F.W.A. 2006. From Trust To Trustworthiness: Why Information Is Not Enough In The Food Sector. *Journal of Agricultural and Environmental Ethics*. 19, pp.427–442.

Ny H., MacDonald J.P., Broman G., Yamamoto R. & Robèrt K-H. 2006. Sustainability constraints as system boundaries: an approach to making life-cycle management strategic. *Journal of Industrial Ecology*. 10(1-2), pp.61-77.

Partridge, E. 2005. *Social sustainability: a useful theoretical framework?* Paper presented at the Australasian Political Science Association Annual Conference 2005, Dunedin, New Zealand, 28-30 September 2005.

Robèrt, K.-H. 2000. Tools and concepts for sustainable development, how do they relate to a general framework for sustainable development, and to each other? *Journal of Cleaner Production*. 8(3), pp.243-254.

Robèrt, K.-H., Schmidt-Bleek, B., Aloisi de Larderel, J., Basile, G., Jansen, J.L., Kuehr, R., Price Thomas, P., Suzuki, M., Hawken, P. & Wackernagel, M. 2002. Strategic sustainable development selection, design and synergies of applied tools. *Journal of Cleaner Production*. 10, pp.197-214.

Robèrt, K.-H., Broman, G., Waldron, D., Ny, H., Byggeth, S., Cook, D., Johansson, L., Oldmark, J., Basile, G., Haraldsson, H., MacDonald, J., Moore, B., Connell, T. & Missimer, M. 2013. *Strategic Leadership Towards Sustainability*. Karlskrona: Blekinge Institute of Technology.

Rothstein, B. & Stolle, D. 2008. The state and social capital: An institutional theory of generalized trust. *Comparative Politics*. 40(4), pp.441-459.

Rothstein, B. 2005. *Social Traps and the problem of Trust*. Cambridge: Cambridge University Press

Roy, S. K., & Shekhar, V. 2010. Alternative Models of Trustworthiness of Service Providers. *Journal of Global Marketing*. 23(5), pp.371-386.

- Schoorman, F. D., Mayer, R. C., & Davis, J. H. 1996. *Empowerment in Veterinary Clinics: The role of trust in delegation*. Paper presented at Annual Meeting of Society for Industrial and Organizational Psychology, San Diego.
- Schutz, W. 1958. *FIRO: A Three-Dimensional Theory of Interpersonal Behavior*. New York, NY: Rinehart.
- Schutz, W. 1992. Beyond FIRO-B—Three New Theory Derived Measures—Element B: Behavior, Element F: Feelings, Element S: Self. *Psychological Reports*. 70, pp.915-937.
- Schutz, W. 1994. *The Human Element: Productivity, Self-Esteem and the Bottom Line*. San Francisco, CA: Jossey-Bass.
- Tullberg, J. 2008. Trust -The importance of trustfulness versus trustworthiness. *The Journal of Socio-Economics*. 37, pp.2059–2071.
- Vallance, S. P., Harvey, C. & Dixon, J.E. 2011. What is social sustainability? A clarification of concepts. *Geoforum*. 42, pp.342–348.
- Wilkinson, R.G & Pickett, K. 2009. *The Spirit Level*. London: Bloomsbury Press.
- Wollebaek, D. & Selle, P. 2008. Where does social capital come from? In *The third sector in Europe*. Osborne, S.P. (eds) NY, NY: Routledge Studies in the Management of Voluntary and Non-profit Organizations.
- World Commission On Environment And Development. 1987. *Our Common Future*. [report of the] *World Commission on Environment and Development*. Available at: <http://www.un-documents.net/wced-ocf.htm> (Accessed Janaurat 21st, 2013)

(This page is intentionally left blank.)

Paper D

Lessons from the field: A first evaluation of working with the elaborated social dimension of the Framework for Strategic Sustainable Development

Paper D is published as

Missimer, M, Robèrt K – H, and Broman, G. 2014. “Lessons from the field: A first evaluation of working with the elaborated social dimension of the Framework for Strategic Sustainable Development”. Presented at *Relating Systems Thinking and Design 3*. Oslo, 15 - 17 October 2014

Lessons from the field:
A first evaluation of working with the elaborated
social dimension of the Framework for Strategic
Sustainable Development

Merlina Missimer

Karl-Henrik Robèrt

Göran Broman

Abstract

Arguably, sustainability is the most complex challenge humanity has faced to date. Not only are the impacts of our behavior resulting in more and more severe repercussions, but we are also realizing that the causes of unsustainability are deeply embedded in the design of many of the systems we rely on. This means, of course, also, that solutions to the problem cannot be one-off ideas, but that strategic and systematic transformation of many of our systems is needed. Because of the necessity of the re-design of our economic and other man-made systems, it has been suggested that sustainability science should be considered a “science of design” (Miller 2011). Perhaps it can be considered one of the most “wicked” cases of design, as it needs to aim both for significant impact and a participatory approach to solve the challenge.

One framework that approaches the sustainability challenge from a design angle is the Framework for Strategic Sustainable Development (FSSD). Specifically, it is based on the idea of strategically and step-wise designing sustainability out of the systems we currently rely on. The FSSD is a trans-disciplinary framework built on insights from systems thinking and has been continuously developed for the last two decades. Its core is built on backcasting from principles of re-design for sustainability, which allows for wide-spread agreement on what sustainability means and allows for creativity within these constraints, so that each group or organization can create their own path towards sustainability within these constraints. The FSSD has been used in organizations all over the world to create real transformation towards sustainability.

A particular recent development focus has been the social dimension of sustainability. Following the idea of sustainability as a design science, the development was based on a design research methodology (e.g. Blessing and Chakrabarti 2009), which included a suggested new ‘prototype’ for the approach to social sustainability within the FSSD. Based on a systems approach to the social system, five new principles of social sustainability have been proposed (Missimer 2013, Missimer *et al.* 2013a, 2013b). This paper aims to contribute to the evaluation stage of the prototype and presents preliminary results of an evaluation based on field-work with the new social sustainability principles. Overall, a clearer definition of social sustainability is not just for theoretical purposes, but because without a clear theoretical concept, it is hard to strategically work towards social sustainability in practice.

The data for evaluation comes from workshops that were run with sustainability professionals (also called practitioners) who use the FSSD in their work. In three workshops, the authors, as well as groups of sustainability professionals, used the new social sustainability principles to assess projects on their contribution to social sustainability. The workshops were followed by reflections by and interviews with the professionals assessing the usability of the new principles.

Preliminary results indicate that it is indeed possible to use the newly proposed social sustainability principles in the manner intended and that the approach yields results that are valuable to the professional and the potential clients of these professionals. Integration with existing tools commonly used by the practitioners was possible, although further refinement of the designed tool prototypes will be needed.

Practitioners reflected that the earlier approach to social sustainability lacked in clarity and the ability to structure other tools and concepts in the field. They reported that most practitioners designed their own way of working with social sustainability, which lead to confusion and undermined a common approach. They appreciated the more thorough and scientific approach to the social aspects presented in the new approach, which allowed for a common language and a more thorough assessment of contributions to un-sustainability. The practitioners also reported new insights regarding the use and connection to other tools and concepts in the field of social sustainability.

However, challenges were expressed as regards the somewhat more difficult nature of the science behind the new approach and how this impacted the ease of working with the framework for practitioners. The paper ends with some reflections by the authors. In further research this preliminary evaluation will be expanded and built upon to facilitate continuous improvement and applicability of the FSSD.

Keywords: Strategic Sustainable Development, Social Sustainability, Systems Thinking, Action Research

Introduction

The Sustainability challenge

The impacts of our unsustainable behavior have by now been extensively documented (e.g. Steffen et al. 2004, Millenium Ecosystem Assessment 2005, Stern 2007, Intergovernmental Panel on Climate Change 2007, Rockström et al. 2009). The 2012 Living Planet Report details that humanity is currently using 50 per cent more resources than the earth can provide on a yearly basis and that by 2030 even two planets would not be enough for human consumption levels (World Wildlife Fund 2012).

A wicked challenge

The sustainability challenge is a complex challenge, as issues and causes are interrelated in a myriad of ways and include many uncertainties (Hartman et al 2009, Kahane 2010). It is therefore also often considered a ‘*wicked problem*’ - a problem that is complex, where uncertainty is high, where there is debate over values and where solutions are not obvious (Rittel and Webber 1973, Funtowicz and Ravetz 1993).

In essence, sustainability is potentially the most wicked challenge humanity has ever faced as impacts are occurring on an unprecedented scale and our own continuation as a species depends on it (Scharmer and Kaufer 2013)

Systems change is needed

It has also become more and more clear, that all the individual issues amount to systematic degradation of our biosphere and are not just one off issues that can be tackled individually (Rockström et al. 2009, World Wildlife Fund 2010). The underlying problem seems to be that many of our human social systems are built on fundamentally unsustainable tenants and that therefore entire systems change is required to move towards sustainability (Senge 2006, Mirchandani 2010, Draper 2013). In essence, we need to find ways to strategically and systematically transform many of our man-made systems.

Sustainability – A “Science of Design”

Because of the necessity of the re-design of our economic and other man-made systems, it has been suggested that sustainability science should be considered a “science of design” (Miller 2011). Following Simon (1996, 111), Miller (2011) describes the process of design as the choosing of a “*course of action aimed at changing existing situations into preferred ones*”. It focuses on how things should be, rather than on how things are (Miller 2011, 101).

Therefore, sustainability might be one of the most “wicked” cases of design (Moote, 2013), as it needs to aim both for significant impact and a participatory approach to solve the challenge.

Framework for Strategic Sustainable Development

One framework that approaches the sustainability challenge from a design angle is the Framework for Strategic Sustainable Development (FSSD). Specifically, it is based on the idea of strategically and step-wise designing un-sustainability out of the systems we currently rely on by giving guidance on moving any region, organization, project or planning endeavor towards social and ecological sustainability in an economically viable way.

The framework was designed in order to create a unifying structure for sustainability and is therefore a trans-disciplinary framework built on insights from systems thinking and has been under continuous development over a 20-year consensus and peer-review process including theoretical exploration, followed by refinement and testing in iterative learning loops between scientists and practitioners from business and government (see, e.g., Robèrt 2000; Broman et al. 2000; Robèrt et al. 2002; Ny et al. 2006). The FSSD has been applied by a variety of business leaders (Electrolux 1994, Robèrt 1997, Anderson 1998, Natrass 1999, Broman et al. 2000, Leadbitter 2002, Matsushita 2002, Natrass and Altomare 2002) and policy makers (Gordon 2003, Cook 2004, Strauss-Kahn 2004, James and Lahti 2004).

A 5-level model

At the foundation of the FSSD lies the following 5-level model (see figure 1):

The system level describes the overall major functioning of the system, in this case the social system of the human society within the biosphere. The current threats and degradation of this system is the rationale for the levels that follow.

The success level specifies the definition of the objective, in this case, sustainability. In the case of the FSSD, sustainability is defined using sustainability principles. The next level requires this key second level.

The strategic guidelines level specifies the guidelines for how to approach the objective strategically. This implies a step-by-step approach toward the objective in an economically viable way.

The step-wise transition is guided by “backcasting” thinking, i.e., thinking back from a vision fulfilling the objective to the current situation – backcasting – to identify possible transition paths. A unique feature of the FSSD is that the backcasting does not only, or necessarily, occur from a simplified image of a desirable future (as in “scenario-planning), but from basic principles designed as boundary conditions for re-design, which allows for creativity within these constraints, so that each group or organization can create their own path towards sustainability within these constraints.

The actions level comprises everything done in concrete terms, e.g., in chess, the actual moves. Strategic guidelines at level 3 are applied to inspire, inform, and scrutinize every action or investment that is put into a strategic plan.

The tools level includes concepts, methods, and tools that are often required for decision support, monitoring, and disclosures of the *actions* to ensure they are chosen in line with the *strategic guidelines* to arrive stepwise at the *success* in the *system*. Examples in sustainable development are modelling, management systems, indicators, life cycle assessments, etc.

Objective as a functional system boundary

The five-level structure of the FSSD evolved to avoid confusion by keeping a strict, logical separation between levels, especially between the system as such and the objective in the system. The objective can then serve as the functional system boundaries that guide the further research of the system. What aspects of the system (level 1) are essential to reach the objective (level 2)? Once the objective is clearly defined, it is possible to look for strategic guidelines (level 3) by which actions (level 4) can be organized in a step-wise strategic plan, and relevant concepts, methods and tools for decision-making and monitoring of the planned transition route can be chosen or developed (level 5).

Overriding mechanisms of destruction

As mentioned above, a unique aspect of the FSSD is that any definition of success is required to be within basic sustainability principles. As sustainability has only become relevant as a consequence of humanity’s systematic contributions to un-sustainability, the principles for ecological sustainability were derived by asking the following question: by what overriding mechanisms,

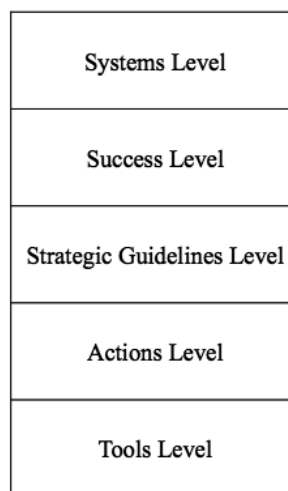


Figure 1: The 5-level model that the FSSD is based on.

upstream at the level of first approximation in chains of causality, do human activities set off the myriad of downstream impacts that will destroy the ecological system? A myriad of downstream impacts were clustered in a few upstream first-order mechanisms. Thereafter, a “not” was inserted for each mechanism to form first-order sustainability principles, designed as exclusion criteria for redesign.

Sustainability principles

In order for sustainability principles (level 2) to work for backcasting (level 3) they should be science-based, necessary (but not more, to allow for ‘out-of-the-box’ creativity) and sufficient (to not forget essential elements of sustainability), general enough (to be applicable to all activities relevant to sustainability), concrete enough (to inspire action and provide direction) and distinct i.e. mutually exclusive (to allow structured analyzes and monitoring) (Ny et al. 2006). The principled definition of sustainability used within the next section is:

In a sustainable society,

nature is not subject to systematically increasing...

- ESP 1.** ...concentrations of substances extracted from the Earth’s crust,
ESP 2. ...concentrations of substances produced by society,
ESP 3. ...degradation by physical means

people are not subject to systematic barriers to...¹

- SSP 1.** ... integrity
SSP 2. ... influence
SSP 3. ... competence
SSP 4. ... impartiality
SSP 5. ... meaning

Social sustainability within the FSSD

In recent work on the framework (Missimer et al., 2010; 2013a, 2013b; Missimer, 2013) the social dimension, a hitherto relatively neglected dimension of the framework, has been explored into the five above-mentioned social principles. The aim was to make it as operational as the first three, ecological, sustainability principles.

¹ Note that the social sustainability principles have been updated based on and since this work with practitioners. However, in this paper we present the version that has also been used with practitioners.

Based on transdisciplinary literature studies, as well as conceptual modelling sessions, essential elements of the social system were identified. These essential aspects were found to be *trust*, *common meaning*, *diversity*, *capacity for learning* and *capacity for self-organization* (Missimer et al., 2013a). These essential elements were then used to derive a first hypothesis of social sustainability principles from. The 5 principles are described as follows:²

In a socially sustainable society, people are not subject to systematic barriers to:

... *integrity*

This means that people are not systematically exposed to direct harm; physically, mentally or emotionally

... *impartiality*

This means that people are not systematically exposed to impartial and unequal treatment. It is about acknowledging that all people have the same rights and are of equal worth.

... *influence*

This means that people are not systematically hindered from participating in shaping the social systems they are part of

... *competence*

This means that people are not systematically hindered from developing competence, learning and developing individually and together.

... *meaning*

This means that people are not systematically hindered from different forms of meaning-making at the individual and collective level.

² Same as Footnote 1

Aim of Paper

This paper presents a first set of results from practical field-work with the new social sustainability principles presented above. The aim was to evaluate the usefulness of the new proposed principles. Overall, a clearer definition of social sustainability is not just for theoretical purposes, but because without a clear theoretical concept, it is hard to strategically work towards social sustainability in practice.

Research Design and Method

Following the idea of sustainability as a design science, the development was based on a design research methodology (e.g. Blessing and Chakrabarti 2009), which usually includes the studying of a problem and its context, the suggestion of a solution prototype to the problem and a testing rigorous evaluation of the solution prototype in the context. The suggested ‘prototype’ for the new approach to social sustainability within the FSSD has been described above. This paper presents a first set of results in the evaluation stage.

At the onset of the research project, it was decided that success criteria for the prototype would relate to two things: the level of scientific rigor of the new approach and the viability of use of the new approach by practitioners. This paper focuses on the second of these success criteria.

The data for evaluation comes from workshops that were run with sustainability professionals (also called practitioners) who use the FSSD in their work. In three workshops in three different countries, the authors together with groups of sustainability professionals, used the new social sustainability principles to assess projects on their contribution to social sustainability.

The workshops usually started out with one of the authors presenting the new work and answering any lingering questions. The workshop participants would then apply the principles in a case study format to various scenarios, e.g. the lifecycle of a cup of coffee, community work or another relevant case study. The workshops were followed by reflections by and interviews with the professionals assessing the usability of the new principles. In the following section we will present a vignette of each workshop, followed by summarized results and the discussion.

Results

Group 1

This group was comprised of 8 individuals, ranging from having worked with the FSSD for just a few months to over a decade of experience.

The most experienced person (Participant 1), who has also followed the development of the social sustainability closely, reported having used the new SSPs in explorative ways with clients already. Participant 1 felt that the new principles were intuitive to people, i.e., that people could grasp their meaning even if they could not remember them verbatim. That being said, Participant 1, acknowledged that this was “new land” and that there was still an unease when working with these new concepts. Participant 1 was the only participant who had been exposed to the new SSPs before and had tried them out. All other participants had heard of them, but came to the workshop to gain a deeper understanding.

The rest of the participants echoed the unease. However, they also acknowledged that they didn’t feel particularly strong on this social aspect of sustainability in general. Yet, the new approach did not give them the ease they were looking for. They still considered it complex.

While they felt that the principles were useful as a discussion point – to think critically about social sustainability issues, their main questions or concerns related to the logic or the flow of how the principles were derived from the system’s understanding. They deemed this to be the most important part, as they felt they were able to relay a concise, compelling and scientifically accurate description of the system and the principles on the ecological side. They did not yet feel that this was the case on the social side. They discussed the need to create “our own words and our own explanations” to be able to convey their logic to clients and to essentially own the story themselves.

Finally, the term ‘integrity’ as used in the social sustainability principles was still a challenge to many as they intuitively associated it with a moral stance of integrity rather than no harm, which led to confusion when working with the SSPs.

Group 2

3 individuals were involved in workshop 2. One of them had 2 years, another 4 years and the third had 10 years of experience working with the FSSD.

After 1.5 days of workshop each participant seemed to have a very different response. Participant 1 on this group felt that the science behind the new social sustainability principle was solid and that this perspective had been missing before. They acknowledged that the new approach was more difficult than the old approach, but that also the way of thinking that was associated with the FSSD was not very common in general and therefore more difficult for many people. They felt, however, unsure about how to use the new SSPs in practice (despite practice exercises throughout the workshop).

Participant 2 seemed to have the opposite reaction. They felt the new SSPs were usable in practice, also with various tools that are commonly used within the FSSD. They, however, felt that the science and logic was not clear and that the new science behind the principles left a lot of questions. Similar to group 1, this participant felt that a clearer narrative was very important, but missing so far.

Participant 3 felt that the new approach was a valuable addition to the framework and that social sustainability was now much better addressed. However, they had many questions related to the implementability. They voiced concerns about the complexity of the approach for users, especially those not familiar with the general approach of the FSSD and therefore were not convinced that this new approach would replace the old one, despite them feeling that it was an improved approach. Finally, this participant had questions around wording, specifically regarding the word integrity, but also others. This participant also mentioned that the new approach did not provide quite the clarity they had hoped for.

Group 3

Group 3 was comprised of 8 practitioners, with a similar range of years of experience as group 1. The most experienced practitioners had over a decade of experience; the newest person about 6 months. The average was around 7 years.

Similar to group 1, one of the senior practitioners had already starting the new SSPs in their work. They mentioned that overall the approach was very useful and that people within the community of practitioners had been waiting for this “forever”. They also reported that they felt that the earlier approach was “just stabbing in the dark” as the approach did not provide any concrete guidance. They did acknowledge, that of course at this point there were more questions than answers with the new approach, but that this was the work to be done now, to figure out how to work with this new approach. They did also mention that some of the language around integrity and impartiality was tricky.

One person in the group felt that during the exercises the new SSPs did not necessarily bring up the most material issues. One other person described the exact opposite, feeling that they did lend themselves to exactly that.

Another senior practitioner considered the new SSPs very useful and stated that it was a question “of how they would work with them, not if”. They felt that they could clearly see the pattern of the principles in many of their projects.

Two practitioners discussed that the former human needs approach really set off light-bulbs with people and questioned whether this would be the case with the new approach. They felt that this new approach was more complex and also didn't feel like the new logic was completely clear and solidified yet.

Overall, the sentiment was that a lot more practice would be needed with the new approach for the practitioners to feel comfortable and, similar to the other groups, that a clearer narrative was needed to work with clients.

Summary of Results and Discussion

The preliminary results indicate that it is indeed possible to use the newly proposed social sustainability principles in the manner intended. All groups successfully used the new approach in the exercises they were given. Some participants even went as far as starting to think about integration of the SSPs with the existing tools they commonly use; they seemed to think that the integration was possible, although, of course, further refinement of the designed tool prototypes will be needed.

The patterns emerged from the three separate groups were, that

- the language of the SSPs was still tricky to most of the practitioners.
- the approach was still complex and a clearer narrative was needed.
- some practitioners were more able to accept the novelty, complexity and the work-in-progress state of the SSPs and reacted with less unease than others. In general, the more experienced practitioners felt less unease.

Some pattern also emerged, that were essentially the opposite of each other

- Some felt that the SSPs did not necessarily bring up the most material issues; other felt like they did exactly that.
- Some felt that the science was solid, but were unsure about how to use the new SSPs in practice (despite practice exercises throughout the workshop). Others felt unsure about the science, but felt that the SSPs were usable in practice.
- As a result of all of the above some felt that the new approach was a valuable addition and that social sustainability was now much better

addressed. Others were not convinced that this new approach would replace the old one due to its complexity.

Reflections from the authors

Not surprisingly, one could observe a difference between practitioners using the new SSPs and how they felt about doing so. Despite the fact that they all used the SSPs successfully in an exercise, many still felt very uneasy even after the exercise.

A pattern that seemed to emerge was that the reactions to the new SSPs often seemed highly dependent on a person's willingness or ability to engage with uncertainty and risk. It seems in every group there are always some people who are (naturally) more entrepreneurial, willing to take risk and try something new and do not feel that their professionalism is threatened by 'not knowing' or 'trying something that might fail'. Understandably, the practitioners want to feel knowledgeable, competent and confident when engaging with their clients. And there is certain kind of irony that we as practitioners "teach" others about planning in complex systems and that this comes with uncertainty and risk, while at the same time feeling such a level of unease with it ourselves.

One, of course, has to also acknowledge that change and learning is a process and that initial reactions to a proposed change are not always indicative of the long-term success of the change initiative. In relation to the FSSD, the ecological side has already undergone a +20 year development and will continue to do so and it is to be expected that the social side will do so as well and that acceptance of changes will take a long time.

Finally, an interesting take away has also been that the usefulness and use of the prototype is not about only the prototype itself, but to a large extent about the support the practitioners receive with the implementation. The implementation support is really what will determine the success of the new approach. A variety of tools and mechanisms will be needed, which opens up an interesting next phase for this research project overall.

References:

- Anderson, R. C. 1998. *Mid course correction - toward a sustainable enterprise: The Interface model*. Atlanta, USA: The Peregrinzilla Press.
- Blessing, L. & A. Chakrabarti, 2009. *DRM, a Design Research Methodology*. London: Springer Verlag.
- Broman, G., Holmberg, J. & Robèrt, K.-H. 2000. Simplicity Without Reduction: Thinking Upstream Towards the Sustainable Society. *Interfaces*. 30(3), pp.13-25.
- Cook, D. 2004. *The natural step towards a sustainable society*. Green Books Ltd, Dartington, UK.
- Draper, S. 2013. Creating the Big Shift: System Innovation for Sustainability. In Forum for the Future. pp. 2-48.
- Electrolux. 1994. *Electrolux Annual Report*. Electrolux, Stockholm, Sweden.
- Funtowicz, S. O. & Ravetz, J.R. 1993. Science for the post-normal age. *Futures*. 25(7):739–55.
- Gordon, S. 2003. *The Natural Step and Whistler's journey towards sustainability*. Paper presented at the Sustainable Mountain Communities Conference in Banff, Alberta.
- Hartman, C.L., P.S. Hofman and E.R. Stafford. 1999. Partnerships: A Path to Sustainability. *Business Strategy and the Environment*: 8(5): 255-266.
- Intergovernmental Panel on Climate Change. 2007. *Climate Change 2007: Synthesis Report*. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva, Switzerland.
- James S. & Lahti T. 2004. *The Natural Step for communities: how cities and towns can change to sustainable practices*. Gabriola Island, British Columbia, Canada: New Society Publishers.
- Kahane, A. 2010. *Power and love: A theory and practice of social change*. Berrett-Koehler Publishers.
- Leadbitter, J. 2002. PVC and sustainability. *Progress in Polymer Science*. 27(10), pp.2197-2226.
- Matsushita. 2002. *Environmental sustainability report 2002*. Matsushita Electric Industrial Co., Ltd. Osaka, Japan

Mirchandani, Dilip. 2010. EAM White Paper Series: sustainability and innovation for systemic change." *Organization Management Journal* 7.4: 243-245.

Millenium Ecosystem Assessment. 2005. *Living beyond our means. Natural assets and human well-being*. Statement from the board. Sarukhán, J. & Whyte, A. (eds.)

Miller, T. R., 2011. *Constructing Sustainability: A Study of Emerging Scientific Research Trajectories*.(PhD). Arizona State University. Available at http://repository.asu.edu/attachments/56608/content/Miller_asu_0010E_10655.pdf (Accessed January 25th, 2013)

Missimer, M. 2013. *The social dimension of strategic sustainable development*. Licentiate Dissertation, Blekinge Institute of Technology.

Missimer, M., Robèrt K – H., Broman G. & Sverdrup, H. 2010. Exploring the possibility of a systematic and generic approach to social sustainability. *Journal of Cleaner Production*. 18(10-11), pp.1107-1112.

Missimer, M., Robèrt K – H., & G. Broman, 2013a. A Strategic Approach to Social Sustainability - Part 1: Exploring the Social System. *Manuscript submitted for publication*.

Missimer, M., Robèrt K – H., & G. Broman, 2013b. A Strategic Approach to Social Sustainability - Part 2: A Principle-based Definition. *Manuscript submitted for publication*.

Natras, B. & Altomare, M. 2002. *Dancing with the tiger*. Gabriola Island, British Columbia, Canada: New Society Publishers.

Natras, B. 1999. *The Natural Step: corporate learning and innovation for sustainability*. Doctoral Thesis. The California Institute of Integral Studies, San Francisco, California, USA.

Ny H., MacDonald J.P., Broman G., Yamamoto R. & Robèrt K-H. 2006. Sustainability constraints as system boundaries: an approach to making life-cycle management strategic. *Journal of Industrial Ecology*. 10(1-2), pp.61-77.

Rittel, H.W.J. & Webber, M.M. 1973. Dilemmas in a general theory of planning. *Policy Sciences*. 4:155-169.

Robèrt, K.-H. 1997. *ICA/Electrolux - A case report from 1992*. 40th CIES Annual Executive Congress, Boston, MA.

Robèrt, K.-H. 2000. Tools and concepts for sustainable development, how do they relate to a general framework for sustainable development, and to each other? *Journal of Cleaner Production*. 8(3), pp.243-254.

Robèrt, K.-H., Schmidt-Bleek, B., Aloisi de Lardere, J., Basile, G., Jansen, J.L., Kuehr, R., Price Thomas, P., Suzuki, M., Hawken, P. & Wackernagel, M. 2002.

Strategic sustainable development selection, design and synergies of applied tools. *Journal of Cleaner Production*. 10, pp.197-214.

Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F., Lambin, E., Lenton, T., Scheffer, M., Folke, C. & Schellnhuber, H. 2009. A safe operating space for humanity. *Nature*. 461, pp.472-475.

Scharmer, Otto, and Katrin Kaufer. 2013. *Leading from the emerging future from ego-system to eco-system economies*. San Francisco: Berrett-Koehler Publishers, Inc.,

Senge, P. 2006. Systems Citizenship: The leadership mandate for this millenium. *Leader to Leader* 41: 21-26

Simon, H. A. 1996. *The sciences of the artificial*. 3rd edition. Cambridge, MA: MIT Press.

Steffen, W., Sanderson, A., Jäger, J., Tyson, P. D., Moore Iii, B., Matson, P. A., Richardson, K., Oldfield, F., Schellnhuber, H.- J., Turner Ii, B. L. & Wasson, R. J. 2004. *Global Change and the Earth System: A planet under Pressure*. New York: Springer Verlag.

Stern, N. 2007. *The economics of climate change : the Stern review*. Cambridge: Cambridge University Press.

Strauss-Kahn, D. 2004. Building a Political Europe. 50 Proposals for Tomorrow's Europe. *Brussels: European Commission*.

World Wildlife Fund International. 2010. Living Planet Report 2010: Biodiversity, biocapacity and development. WWF International

World Wildlife Fund International. 2012. *Living Planet Report 2012: Biodiversity, Biocapacity and Better Choices*. Gland (Switzerland)

Paper E

**ISO 26000 from a Strategic Sustainable Development
Perspective**

Paper E is published as

Missimer, M, Robèrt K – H, and Broman, G. 2015. ISO 26000 from a Strategic Sustainable Development Perspective. *Manuscript*

ISO 26000 from a Strategic Sustainable Development Perspective

Merlina Missimer

Karl-Henrik Robèrt

Göran Broman

Abstract

Since its publication in 2010, ISO 26000 has become the de-facto standard of Corporate Social Responsibility (CSR). While not a certifiable standard in ISO terms, but rather a guidance document, it has become the document many corporations use as their basis for CSR work. ISO 26000 claims that the objective of social responsibility is to contribute to sustainable development, using the Brundtland definition – development, which meets the needs the present without compromising the ability of future generations to meet their own needs – as the basis for sustainable development.

However, the Brundtland definition, while commonly referred to, is not sufficiently concrete to give guidance for strategic planning and action in businesses, municipalities and society at large. Therefore it is helpful to supplement the Brundtland definition with a framework that allows for this concrete and strategic planning, e.g. the Framework for Strategic Sustainable Development (FSSD). The FSSD is based on a principled definition of a sustainable global civilization, defining social and ecological sustainability in more operational terms, and guidelines for how to contribute systematically and strategically to fulfillment of this definition. It is a trans-disciplinary framework built on insights from systems thinking and has been continuously developed as well as used and improved in organizations, and amongst developers of tools and concepts, all over the world for the last two decades. A particular recent development focus has been the social dimension of sustainability, with new insights based on the application of systems thinking to social systems having been recently presented.

In this paper, these new insights are used to analyze and evaluate ISO 26000's contribution to sustainability, highlighting both benefits and shortcomings of ISO 26000 from a social systems and strategic sustainable development perspective. Main points include that, while ISO 26000 is comprehensive in it's

scope and provides a vast achievement in terms of international consensus building around the essential issues in CSR, it is not based on a scientific understanding of social and ecological systems and is therefore a document highlighting current societal expectations rather than a document allowing organizations to innovate, plan, act and monitor long-term for sustainability. The paper further points out aspects of sustainability that are likely to become issues in the future, but are currently not covered by the ISO guidance. Finally, the paper lays out in which ways ISO 26000 supports strategic working towards sustainability, and in which areas other tools are necessary.

Keywords: ISO 26000, Strategic Sustainable Development, Social Sustainability, Systems Thinking,

Note: This paper is an elaborated version of the paper Missimer, M, Robèrt K – H, and Broman, G. 2014. A Systems Perspective on ISO 26000. Proceedings of the 2nd International Symposium “SYSTEMS THINKING FOR A SUSTAINABLE ECONOMY. Advancements in Economic and Managerial Theory and Practice. Rome, Italy: January 23-24, 2014

1. INTRODUCTION

1.1 A background on ISO 26000

In 2010, after 5 years of consultation and development and with much anticipation, the International Standards Organization (ISO) published their ISO 26000 guidance on social responsibility (from here on referred to as the Guidance). Since its launch, ISO 26000 has had a steady incline in interest and adoption by several users. In the 2012 ISO 260000 Post Publication Organization Survey, 60 countries were reported to have adopted the Guidance to inform national guidance on CSR standards, while 20 more were in the process of reviewing it for potential adoption. Further, more than 10.000 copies of the Guidance have been sold, giving an indication of how many organizations are working with it, although potentially many more are working with it on an informal basis (ISO 2012).

Being the first guidance document that integrates social, environmental and governance concepts into one framework, it is considered significant progress in helping organizations work with corporate social responsibility²⁴ (Moratis and Cochius, 2011) as it is the most comprehensive guidance on CSR to date (e.g. Johnston 2012, 112). While it is not a certifiable standard like most of ISO's other tools, but rather a guidance document, it has a similar aim, namely to create a common definition of what social responsibility is and give organizations a comprehensive base to work from. Rob Steele, Director General of ISO, describes it as a "one-stop shop [...] for an overview of the subject area" for people who "are trying to understand what they should do within their organizations" (ISO 2010a). It is hoped that one comprehensive framework for CSR will make the work in this area more efficient (e.g. Schwartz and Tilling 2009, Moratis and Cochius 2011). The overall objective of social responsibility, according to the Guidance, is to contribute to sustainable development (ISO 2010b, vi).

1.2 Brundtland's Definition of Sustainable Development

The Brundtland definition - to ensure that development meets the needs of the present without compromising the ability of future generations to meet their own needs (World Commission on Environment and Development 1987) - is used as the basis for the concept of sustainable development (ISO 2010b, 9).

There has been much criticism of the Brundtland definition, mainly in relation to the vagueness of what sustainability and sustainable development actually mean

²⁴ ISO switched its terminology from corporate social responsibility to social responsibility in order to clarify that the guidance can be used for all organization, not just corporations. However, the term remains confusing as the guidance in fact includes responsibility for social and environmental impacts (Pojasek 2011).

(e.g. Jacobs 1999, McKenzie 2004). Paehlke (2001, 7 as cited in Partridge 2005) argues that sustainable development is a concept “so amorphous that it might mean anything.” As Jacobs (1999, 24) notes, “the vagueness of the definition ... allows business and ‘development’ interests (and their government supporters) to claim that they are in favour of sustainable development when actually they are the perpetrators of unsustainability”. There is a vast array of definitions, terms, approaches, methods and tools for sustainable development, many of them designed for specific fields only. This makes the sustainability field confusing and leads to a need to understand how concepts and tools relate to sustainability and to each other (Huesemann 2001, Robèrt et al. 2002). This is a challenge then also for ISO 26000, as it is hard to determine whether the Guidance really contributes to the goal of sustainable development, if said goal is so ill-defined.

1.3 Aim and Scope

The aim of this paper is to analyze and evaluate ISO 26000’s potential contribution to sustainable development through the lens of a framework for strategic sustainable development (FSSD), which includes a more operational definition of sustainability and guidelines for how organizations can contribute to its fulfillment in a strategic way. The focus is on the social dimension of sustainability and the social impacts that ISO 26 000 considers, as this is the main focus of ISO 26000²⁵. This does not imply, however, that the environmental or economic dimension is less important. All dimensions need to be considered at all times for sustainable development to occur.

2. THE FRAMEWORK FOR STRATEGIC SUSTAINABLE DEVELOPMENT

The FSSD has now been under continuous development over a 25-year consensus and peer-review process including theoretical exploration, followed by refinement and testing in iterative learning loops between scientists (see, e.g., Robèrt 2000; Broman et al. 2000; Robèrt et al. 2002; Ny et al. 2006) and practitioners from business (Electrolux 1994, Robèrt 1997, Anderson 1998, Natrass 1999, Broman et al. 2000, Leadbitter 2002, Matsushita 2002, Natrass and Altomare 2002) and government (Gordon 2003, Cook 2004, Strauss-Kahn

²⁵ As pointed out in footnote 1, the terminology remains confusing. ISO 26000 is a guidance for companies for what they should be taking responsibility for in addition to their financial performance. This includes environmental and social impacts, although the Guidance leans heavily towards the social impacts. Perhaps, because of this, it is often associated with the social pillar of sustainable development. Also note that the Guidance in section 2.6 defines the environment as natural surroundings including people but then uses the term “environment “ in section 6.5 to refer to ecology impacts only.

2004, James and Lahti 2004).

The FSSD brings with it some advantages that lend themselves favorably as a basis from which to assess ISO 26000's contribution to sustainable development:

- It is built on a scientific systems-understanding of both the natural and the social system.
- It includes a clear definition of sustainability, which due to its principled nature is generally applicable and yet concrete enough to guide action.
- It facilitates step-wise and strategic movement towards the goal of sustainability.
- It helps make better use of other tools, methods or frameworks for sustainability: once it has been used to identify the gap to sustainability, as well as desirable strategies to bridge the gap, it is easier to select and inform other forms of support needed for the transition (Robert et al. 2002).

As the social dimension of the FSSD is the most apt dimension to compare ISO 26000 to, it is described briefly in the following paragraphs.

In recent work on the FSSD (Missimer et al., 2010; Missimer, 2013, Missimer et al. 2015a, 2015b) the social dimension has been further explored. Five social principles were derived from extensive trans-disciplinary literature studies on the essential elements of a sustainable social system, followed by conceptual modelling sessions using systems-thinking, backcasting theory and insights based on earlier FSSD work (Missimer et al. 2015a, 2015b). They have since been tested with sustainability practitioners (Missimer et al. 2014). Based on trust, diversity, capacity for learning, capacity for self-organization, and common-meaning as essential aspect of the social system, the principles derived state that:

In a socially sustainable society, people are not subject to structural obstacles to ...

SSP 1. ...*health*.

This means that people are not exposed to social conditions that systematically undermine their possibilities to avoid injury and illness; physically, mentally or emotionally, e.g. dangerous working conditions or insufficient wages.

SSP 2. ...*influence*.

This means that people are not systematically hindered from participating in shaping the social systems they are part of, e.g., by suppression of free speech or neglect of opinions.

SSP 3. ...*competence*.

This means that people are not systematically hindered from learning and developing competence individually and together, e.g., by obstacles for education or insufficient possibilities for personal development.

SSP 4. ...*impartiality*.

This means that people are not systematically exposed to partial treatment, e.g. by discrimination or unfair selection to job positions.

SSP 5. ...*meaning-making*.

This means that people are not systematically hindered from creating individual meaning and co-creating common meaning, e.g., by suppression of cultural expression or obstacles to co-creation of purposeful conditions.

The term structural obstacles refers to social constructions - political, economic and cultural - which are firmly established in society, upheld by those with power and, due to a variety of dependencies, difficult or impossible to overcome or avoid by the people exposed to them.

Together with the ecological sustainability principles, this leads to 8 sustainability principles within the FSSD depicted in Figure 1.

In a sustainable society,	
nature is not subject to systematically increasing...	people are not subject to structural obstacles to...
ESP 1. ...concentrations of substances extracted from the Earth's crust	SSP 1. ... health
ESP 2. ...concentrations of substances produced by society	SSP 2. ... influence
ESP 3. ...degradation by physical means	SSP 3. ... competence
	SSP 4. ... impartiality
	SSP 5. ... meaning-making

Figure 1: The eight Sustainability Principles of the FSSD

3. ISO 26000'S CONTRIBUTION TO STRATEGIC SUSTAINABLE DEVELOPMENT

ISO 26000's explicit aim is to contribute to sustainable development in line with the Brundtland definition. In the above referred to work, we have laid out a more concrete and structured way of managing such a universal concept of sustainability. The question is in what ways ISO 26000 does or can contribute to strategic sustainable development.

3.1 A thorough basis?

It first must be said that the ISO 26000 guidance is a remarkable achievement in terms of consensus building and stakeholder engagement on an international scale. 400 experts from 99 countries, 69 of which are developing countries, were involved in the working group (ISO, 2010a). Further, the Guidance puts major emphasis on stakeholder involvement in determining which issues are relevant to a particular organization (See Section 5 in the Guidance), which can be a way of getting large parts of the impacted social system represented and conducting a more thorough assessment. However, especially the first might also provide some hurdles from a strategic sustainable development perspective.

In order for strategic planning towards sustainability to be viable it needs to be based on a robust, scientific understanding of the systems we depend on – at the most basic level the ecological and the social system - and sustainability goals that are derived from this understanding. This argument is uncontested in ecological sustainability and it has been argued that the same is necessary and possible for the social dimension (Missimer et al. 2010, Missimer 2013, Missimer et al 2015a, 2015b). How does the ISO 26000 fare?

An analysis of the Guidance and the material around its development indicates that this first part – a thorough study and clear understanding of the working of the social system – was not undertaken; no reference to any science in the field can be found. The Guidance reflects some understanding of systems and interrelationships (e.g. Section 5.2.1) and seems to be guided by a concern for equity (see, e.g., p. vi, Principle 4.4, etc.). It also mentions some systems characteristics, such as the importance of diversity (29), meaningful work (Section 6.4) and learning (e.g., Section 6.3.9 *Economic, Social and cultural Rights*). However, the recognition of these elements seems to rest on a normative base, rather than a systematic analysis of the ecological and social systems and sustainability related impacts in those.

As already mentioned, the Guidance refers to the Brundtland definition as the overall goal. It then goes on to list core subjects that companies need to pay attention to in their responsibility work in order to contribute to sustainable development. The six core subjects, like all of ISO 26000, were derived in a

consensus process, heavily informed by international standards and conventions from before, such as the Global Compact, the Declaration of Human Rights, ILO standards, etc., but are not based on a systematic analysis of the social system and how degradation of this could be avoided. The final outcome represents what stakeholders can agree on - what some might call the lowest common denominator (Schwartz and Tilling 2009, 291). Ward (2011) gives interesting insights into the struggles of the working group in the process of defining this common denominator, shedding light on the difficulties of coming to an agreement when different sets of values and interests are involved. The reliance on what is acceptable to stakeholders continues in the Guidance document itself, as it relies heavily on the concept of societal expectations and the need for companies to conform to those as the basis of CSR.

From a strategic planning perspective, the reliance on goals that are set by what is currently known and acceptable or perceived as established norm, rather than what is necessary from a sustainability perspective in the long run, is risky. The Guidance “recognizes that the elements of SR reflect the expectations of society at a particular time and are liable to change” (p. 5), but does not seem concerned about this for a strategic pathway towards sustainability. How do we know if what society expects today, is also what society will expect tomorrow? A related, but somewhat different challenge is that there is no guarantee that the expectations are in any way aligned with what is needed for sustainability. Johnston (2012, 81) deems the assumption that “‘expectations of society’ are a good proxy for the requirements of sustainable development” as highly questionable.²⁶ There are many examples to illustrate this point. Public opinion in some countries, e.g., still questions the impact of human behavior on climate change. If public opinion is an indication for societal expectations, the expectation would then be to do nothing about human impacts on climate change, a stance which most sustainability experts and scientists would probably disagree with as a viable path for sustainable development. History can also give many examples of practices and expectation that were deemed acceptable by society at the time but in retrospect we consider unacceptable, e.g slavery. What practices do we deem acceptable today that decades or centuries from now we will judge socially unsustainable? Johnston (2012, 117) concludes, that “with its banal assumption that social expectations are obvious and can be equated with sustainability, [the Guidance] actually distracts attention away from the very difficult question of how corporate decision-making can be oriented towards

²⁶ Johnston (2012) also highlights that the guidance itself admits that “a single set of societal expectation cannot be defined”, which ISO 26000 attempts to resolve by referring to the need of each organization to determine the responsibility on their own in collaboration with their stakeholders. However, the guidance also points out that stakeholder interests and social expectations are not identical and that it is the latter that should guide decision-making. This, in fact, leaves companies then with very little concrete guidance.

greater sustainability”. These considerations all point in the same direction: we must go further than looking at trends and current public discourses, if we are to find structured ways towards sustainability.

Having assessed that the Guidance does not seem to be based on a systematic understanding of the ecological and social system, we go on to assess whether it nevertheless moves us in the direction of social sustainability.

3.2 Coverage of Social Sustainability Issues

In the next step we will therefore compare the Guidance’s core subjects with the principles of social sustainability described above to see in what ways ISO 26000 might contribute to sustainable development despite its lack of a base in a systematic analysis of the social system from a sustainability perspective. For the purpose of this paper, we will exclude the core subject of “environment”, since this is well developed elsewhere and since ISO 26000 has such a clear focus on the impacts in the social system.²⁷

So how does ISO 26000 compare? A first challenge one comes across is the overlap within the Guidance, which leads to confusion and difficulty in understanding how the different aspects relate to each other (Johnston 2012, 115). More than a nuisance, this makes strategic implementation difficult. From a strategic sustainable development perspective, it is most challenging that the Guidance mixes actual goals (Success in the FSSD) with strategies that might lead to the fulfillment of these goals (actions in the FSSD). In addition, the Guidance lists various actions and tools for each subject, but because the most important levels for strategic sustainable development, the success level (defined using an understanding of the systems level) and the strategic guidelines level are not analytically separated from each other and from other levels, the structure of the Guidance is characterized by overlap and confusion also on those levels. Appendix A shows a re-organized overview, which was used as basis for the rest of the analysis.

²⁷ The Guidance itself refers back to ISO 14000 series in their environmental work. For an assessment of ISO 14001 from a strategic sustainable development perspective, see (MacDonald 2005). For readers interested in a complete framework for systematic planning in line with the FSSD, we refer to previous literature (Robèrt 1994, Holmberg and Robèrt 2000, Broman et al. 2000, Robèrt 2000, Robèrt et al. 2002, Ny et al. 2006, Robèrt et al. 2013).

		Employees and workers in the supply chain	
Principle	Overarching question	General category	Specific example
Contribution to structural obstacles to health	What social conditions occur in our value chain that systematically undermine people's possibilities to avoid injury and illness; physically, mentally or emotionally?		unfair compensation (not enough to live on)
			health and safety: excessive work hours; unsafe + unhealthy working conditions
			harassment or abuse (emotional or physical)
			forced labor, child labor
Contribution to structural obstacles to influence	What social conditions occur in our value chain that systematically hinder people from participating in shaping the social systems they are part of?	Practices that suppress feedback within the org	no formal mechanisms to report up the command-chain, lack of whistle-blower system
		Practices that suppress employees influence on the governance of the org	no collective bargaining rights
Contribution to structural obstacles to competence	What social conditions occur in our value chain that systematically hinder people from learning and developing competence individually and together?		lack of opportunities for competence development
			lack of mechanisms for organizational learning and development
			no development talks
Contribution to structural obstacles to impartiality	What social conditions occur in our value chain that systematically expose people to partial treatment?	Practices of discrimination	discrimination
		Practices that promote economic inequality	large differences in income within org
Contribution to structural obstacles to meaning-making	What social conditions occur in our value chain that systematically hinder people from creating individual meaning and co-creating common meaning?		lack of clear purpose of the org
			lack of clear roles and responsibilities for individuals
			disrespect of employee's culture

Figure 2: Potential Contributions to violation of principles per stakeholder; stakeholder groups modelled on ISO 26000.

Violations by Impact on stakeholder group			
Community (not already covered by workers)		Consumers	
General category	Specific example	General category	Specific example
Practices that cause direct harm (rely on any form of direct abuse?)	forced removal of communities		product's health and safety impacts
Practices that undermine access to basic resources, e.g fresh air, fresh water, arable land	land-grabbing		impacts of advertising on psychological well being
Practices that undermine independent, economic development			
Practices that cause harm indirectly	reliance on political regime that engages in harassment and abuse		
Practices that suppress/rely on the lack of opportunity to express the communities' opinion in relation to our work?	no formal mechanisms for the communities to give opinion/influence the aspects of the business that affect them		(report issues, costumers service)
Practices that suppress/rely on the lack of opportunity to express the communities' opinion in relation to political activity in their community?	reliance on political regime that engages in suppression of free speech, does not have free elections, etc		
Practices that lead to ignoring communities wishes due to excessive use of org's power	excessive lobbying		
Practices that rely on/promote lack of education/competence development in community		Practices that promote false understanding	false information, false advertising
	discrimination in the selection of workforce		prohibitive pricing of basic goods
	reliance on political regimes that engage in discrimination		
	engaging in corruption or relying on corrupt regimes		
	reliance on political regimes that engage in suppression of cultural expression	Practices that alter meaning-making subversively	advertising
	disrespect of local culture		

		All																				
		6.3. Human Rights																				
		Organizations have a responsibility to respect all human rights, regardless of their ability to prevent or eliminate the adverse human rights impacts they are or may be exposed to or contribute to.																				
		Issue 6: Civil and Political Rights												Issue 7: Economic, S								
		• the right to life,	• the right to a life with dignity,	• the right to freedom from torture,	• the right to security of person,	• the right to own property,	• liberty and integrity of the person,	• right to due process of law and a fair hearing when facing criminal charges.	• freedom of opinion and expression,	• freedom of peaceful assembly and association,	• freedom to adopt and practise a religion	• freedom to hold beliefs,	• freedom from arbitrary interference with privacy, family, home or correspondence,	• freedom from attacks on honour or reputation,	• the right of access to public services	• the right to take part in elections	• right to education;	• right to work in just and favourable conditions;	• freedom of association;	• right to an adequate standard of health;	• right to a standard of living adequate for the physical and mental health and well-being of himself or herself and his or her family;	
Principle																						
Contribution to structural obstacle to health		x	x	x	x									x	x	x			x		x	x
Contribution to structural obstacle to influence									x	x						x			x			
Contribution to structural obstacle to competence																	x					
Contribution to structural obstacle to impartiality		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Contribution to structural obstacle to meaning-making											x	x										

Figure 3: ISO 26000's Issues mapped to SSPs.

Figure 2 presents a further fleshed out application of the social sustainability principles as a basis for comparison. It is important to note, that the categories and examples are not exhaustive. There are potentially a myriad of other ways to violate the SSPs; the ones listed are there to serve as examples to clarify the meaning of the principles. This will be discussed in more detail later on. In the next step, we will look at the subjects of human rights and the ones relating to stakeholders - labor practices, community involvement and consumer issues - individually and analyze their contribution to social sustainability. Figure 3 maps the Guidance's issues to the SSPs. It is important to note that we only compare issues labeled as "goals", as they fall at the same analytical level as the sustainability principles.

As a first result it can be stated that almost all of the ("Goal") issues in the Guidance can be mapped to the SSPs, implying that overall ISO 26000 seems to address social sustainability.²⁸ As Figure 3 highlights, the use of civil, political, economic, social and cultural rights as a basis for all work with the Guidance, addresses all of the SSPs, with a heavy emphasis on the principles around health and impartiality.²⁹ The subject of Human Rights therefore seems like a thorough basis for the work with all other subjects. The only aspect that sticks out is the right to own property as part of *Subject 6.3 Human Rights* (see figure 3) as it cannot be directly mapped to any of the SSPs. We regard the right to own property as a cultural norm, rather than a necessity from a sustainability perspective.

Second, it is visible that all SSPs are addressed in some form. However, the real question is whether the Guidance's issues cover the existing list of possible violations completely. We will discuss this for each subject separately, but it can already be pointed out that it is unlikely that the positive actions that the Guidance recommends will address all possible negative impacts an organization could have on the social system. We will look at each stakeholder group separately.

Labour Issues

Appendix B lists a number of questions and examples in relation to employees

²⁸ As with environmental issues it will largely depend on the management of the issue whether it contributes to sustainability, e.g., how does an organization concretely implement the Guidance and does this implementation itself contribute to social sustainability.

²⁹ The light grey marking for all rights under the principle of impartiality is due to the basis of human rights being equally enjoyed by all, as stated in the preamble to the Declaration of Human Rights.

from a strategic social sustainability perspective. This is used for comparison purposes. ISO 26000 introduces the issues related to employees as follows:

“The labour practices of an organization encompass all policies and practices relating to work performed within, by or on behalf of the organization, including subcontracted work. Labour practices extend beyond the relationship of an organization with its direct employees or the responsibilities that an organization has at a workplace that it owns or directly controls” (ISO 2010, 33).

As with many subjects, it also states that the primary responsibility of ensuring worker’s rights lies with government; organizations should abide by the law where law is adequate or by the principles underlying the ILO instruments if law is inadequate. Figure 4 describes details for each issue (all information taken directly from ISO 2010).

Subject	Issue	Description of Issues
6.3 Human Rights	6.3.10 Issue 8: Fundamental principles and rights at work	Fundamental principles and rights at work are focused on labour issues. They have been adopted by the international community as basic human rights and as such are covered in the human rights section. The International Labour Organization (ILO) has identified fundamental rights at work. These include freedom of association and effective recognition of the right to collective bargaining; the elimination of all forms of forced or compulsory labour; the effective abolition of child labour; and the elimination of discrimination regarding employment and occupation.
6.4 Labour Practices	6.4.3 Issue 1: Employment and employment relationships	Issue 1: significance of employment for human development; about regulation of relationship between employer and employee; employees require addition protection because power is not equal between them and employer – universally accepted
	6.4.4 Issue 2: Conditions of work and social protection	includes wages and other forms of compensation, working time, rest periods, holidays, disciplinary and dismissal practices, maternity protection and welfare matters such as safe drinking water, sanitation, canteens and access to medical services. Social protection refers to all legal guarantees and organizational policies and practices to mitigate the reduction or loss of income in case of employment injury, illness, maternity, parenthood, old age, unemployment, disability or financial hardship and to provide medical care and family benefit. Generally, the primary responsibility for social protection lies with the state.
	6.4.5 Issue 3: Social dialogue	includes all types of negotiation, consultation or exchange of information between or among representatives of governments, employers and workers, on matters of common interest relating to economic + social concerns.
	6.4.6 Issue 4: Health and safety at work	concerns the promotion and maintenance of the highest degree of physical, mental and social well-being of workers and prevention of harm to health caused by working conditions.
	6.4.7 Issue 5: Human development and training in the workplace	includes the process of enlarging people's choices by expanding human capabilities and functioning, thus enabling women and men to lead long and healthy lives, to be knowledgeable and to have a decent standard of living. Human development also includes access to political, economic and social opportunities for being creative and productive and for enjoying self-respect and a sense of belonging to a community and contributing to society.

Figure 4: Issues related to Labour.

Figure 3 gives an overview of how issues listed under 6.3.10 *Human Rights Issue 10 Fundamental Principles and Rights at Work* and 6.4 *Labour Practices* map to the Social Sustainability Principles. Heavy coverage is again on the issues related to health. It is quickly seen that all principles except for obstacles to meaning-making are touched upon, which though, is indirectly addressed

since it included within the subject of human rights.

When comparing examples of possible violations above and the descriptions of ISO's Issues, however, one can see that the examples of violations provided in ISO 26000 would not necessarily lead the mind to cover all the SPs of the FSSD. While the ISO 26000 examples under health seem to relevantly exemplify this whole principle, it is not clear whether all provided examples under "influence" covered the full meaning of this principle. While *Collective Bargaining Rights* is a match, *Issue 3: Social Dialogue*, may or may not include all aspects that impact the workers. Further, whether this form of feedback allows for influence from the workers depends heavily on whether in reality environments for true dialogue exist. For this reason, the way dialogues are organized from a process-point of view, belong to the third, "strategic guidelines level" of the FSSD. A whistle-blower system, e.g., may still be required. *Issue 5 Human Development and Training*, the only issue that addresses *Competence*, covers competence development for individuals but does not address a lack of organizational learning mechanism. Under Impartiality, discrimination seems to be only indirectly covered by the human rights as well as issue 8. However, 'excessive differences in income' is not addressed at all by any of the Guidance. Finally, under obstacles to meaning-making, while the human rights cover issues related to meaning-making via cultural expression, meaning-making in the sense of organizational purpose and clear roles and responsibilities is not mentioned in the entire Guidance at all. While meaningful work is mentioned as an essential element in human development (p. 34), it is never addressed specifically how this might be provided.

The following might illustrate why these issues, which have not been covered by the Guidance, are relevant. Company X produces a good or service and in order to do so relies on Company Y in its supply chain. In this case the workers at Company Y are the system Company X might have social sustainability impacts on. Company X has an interest in social sustainability at company Y because it relies on this system (Company Y) in order to fulfill its own (Company X's) purpose. Based on a systematic understanding of social sustainability and the importance of the essential aspects of social systems (trust, diversity, capacity for learning, capacity to self-organize and meaning), Company X wants to make sure that structural obstacles to peoples' health, influence, competence, impartiality or meaning-making do not exist at company Y. Company X would then be interested in the capacity for learning in company Y to be able to continuously rely on them in the long-term. A lack of organizational learning mechanisms at company Y (one example of structural obstacles to competence) may then be of interest to Company X because a lack of this mechanism would not allow the company as a whole to continuously learn and innovate. Similarly, because meaning is an important aspect of sustainable systems, there is an interest in not obstructing the development of a clear purpose and clear roles (an

example of structural obstacles to meaning-making). Finally, company X is interested in trust in company Y because it may lead to more hassle-free production. If trust is undermined, for example, if employees at company Y feel that they cannot influence their own system or that their impartiality is violated through an excessive difference in income (and who reaps the benefit of the work), they might strike or revolt. While Company X cannot be responsible for all that goes on at Company Y, it can make sure that it itself is not contributing to violations of SSPs and thus take responsibility for their part.

Community Issues

ISO 26000 introduces the issues related to community as follows and follows up with the issues depicted in Figure 5:

“It is widely accepted today that organizations have a relationship with the communities in which they operate. This relationship should be based on community involvement so as to contribute to community development. Community in this clause refers to residential or other social settlements located in a geographic area that is in physical proximity to an organization's sites or within an organization's areas of impact. Community involvement goes beyond identifying and engaging stakeholders in regard to the impacts of an organization's activities; it also encompasses support for and building a relationship with the community.”

Subject	Issue	Description of Issues
6.8 Community involvement and development	6.8.3 Issue 1: Community involvement	Community involvement is an organization's proactive outreach to the community. It does not replace the need for taking responsibility for impacts on society and the environment.
	6.8.4 Issue 2: Education and culture	Education and culture are foundations for social and economic development and part of community identity. Preservation and promotion of culture and promotion of education compatible with respect for human rights have positive impacts on social cohesion and development.
	6.8.5 Issue 3: Employment creation and skills development	By creating employment, all organizations, large and small, can make a contribution to reducing poverty and promoting economic and social development.
	6.8.8 Issue 6: Health	Health is an essential element of life in society and is a recognized human right. Threats to public health can have severe impacts on communities and can hamper their development.
6.6 Fair operating practices	Issue 1: Anti- corruption	Corruption is the abuse of entrusted power for private gain. Corruption can take many forms. Examples of corruption include bribery (soliciting, offering or accepting a bribe in money or in kind) involving public officials or people in the private sector, conflict of interest, fraud, money laundering, embezzlement, concealment and obstruction of justice, and trading in influence.
	Issue 2: Responsible political involvement	Organizations can support public political processes and encourage the development of public policy that benefits society at large. Organizations should prohibit use of undue influence and avoid behaviour, such as manipulation, intimidation and coercion
	Issue 5: Respect for property rights	The right to own property is a human right recognized in the Universal Declaration of Human Rights. Covers both physical property and intellectual property

Figure 5: Issues related to Community Involvement and Development.

In comparison, Appendix C lists a number of questions and examples in relation to community from a strategic social sustainability perspective. Figure 3 shows that all social sustainability principles seem to be at least at a surface level, in some form, covered. However, this subject serves as a great example where positive actions do not necessarily cover all potential negative impacts.

When looking at ISO 26000 examples of possible violations one can see that the examples of violations do not cover all the SSP's. The SSP of health is addressed by *Issue 6: Health*, which focuses on public health and addressing health threats, such as HIV/AIDS and other diseases and supporting access to medicine and vaccines. However, it is questionable whether it addresses issues that undermine the health (in the sense of wholeness) of the community, such as forced displacement or reliance on regimes that engage in suppression or torture. Reliance on regimes that engage in oppression or torture could be covered under Responsible Political Involvement and is addressed in the overall Subject of Human Rights. Forced displacement could be covered under Respect for Property Rights, but is not explicitly mentioned and may not cover communities that do not have a culture of explicit property rights. While practices that undermine access to basic resources like fresh air, fresh water, arable land (e.g. pollution or land-grabbing) are partially covered by Subject 6.5 on environment, land-grabbing might not be covered if property rights do not exist in the way the western legal framework operates. However, these are issues that the

organization might be directly contributing to. While the Guidance states that proactive outreach to the community, does not replace taking responsibility for impacts, it is not clear under which other subject such issues would become evident. Finally, on health, “practices that undermine independent economic development” are not necessarily covered as the provision of employment by one large organization is not necessarily supporting independent economic development. Under influence, practices that suppress/rely on the lack of opportunity to express the communities’ opinion in relation to the organizations work is addressed by Issue 1 in 6.8. Practices that suppress/rely on the lack of opportunity to express the communities’ opinion in relation to political activity in their community (e.g. reliance on political regime that engages in suppression of free speech, does not have free elections, etc.) is covered by the overall subject of human rights and practices that lead to ignoring the communities wishes due to excessive use of the organization’s power (e.g. excessive lobbying) seems covered by Issue 2 under 6.6. Obstacles to competence seem directly covered by 6.8.4. Under both impartiality and meaning, the examples of violations seem covered by the issues in the category or the subject of human rights overall.

Similarly to the labour force, discussed above, organization X is interested in social sustainability in the community it operates because it relies on the community to produce its own products or services. If social sustainability in the community is undermined, this might lead to civil unrest, which can be a risk factor in relation to efficient production a organization X. Again, while organization X cannot be responsible for all that goes on in each community, it can make sure that it itself is not contributing to violations of SSPs and thus take responsibility for their part.

Consumer Issues

Appendix D lists a number of questions and examples in relation to consumers from a strategic social sustainability perspective. This is used as a comparison. ISO 26000 introduces the issues related to consumers by stating that “Organizations that provide products and services to consumers, as well as other costumers, have responsibilities to those consumers and customers” (ISO 2010, 51). It uses the UN Guidelines for Consumer Protection as the basis for this work. Figure 6 describes details for each issue (all information taken directly from ISO 2010).

Subject	Issue	Description of Issues
6.7 Consumer issues	6.7.3 Issue 1: Fair marketing, factual and unbiased information and fair contractual practices	This allows consumers to make informed decisions about consumption and purchases and to compare the characteristics of different products and services. Fair contractual processes aim to protect the legitimate interests of both suppliers and consumers by mitigating imbalances in negotiating power between the parties.
	6.7.4 Issue 2: Protecting consumers' health and safety	Provision of products and services that are safe and that do not carry unacceptable risk of harm when used or consumed.
	6.7.6 Issue 4: Consumer service, support, and complaint and dispute resolution	Consumer service, support, and complaint and dispute resolution are the mechanisms an organization uses to address the needs of consumers after products and services are bought or provided.
	6.7.7 Issue 5: Consumer data protection and privacy	intended to safeguard consumers' rights of privacy by limiting the types of information gathered and the ways in which such information is obtained, used and secured.
	6.7.8 Issue 6: Access to essential services	Although the state is responsible for ensuring that the right to satisfaction of basic needs is respected, there are many locations or conditions in which the state does not ensure that this right is protected. An organization can contribute to the fulfilment of this right
	6.7.9 Issue 7: Education and awareness	Education and awareness initiatives enable consumers to be well informed, conscious of their rights and responsibilities, more likely to assume an active role and to be able to make knowledgeable purchasing decisions and consume responsibly.

Figure 6: Issues related to Consumers.

Figure 3 gives an overview of how the consumer issues listed map to the SSPs. It is immediately obvious that all principles are touched upon. When comparing table X with the potential violations, it is also noticeable that in this category all the potential violations listed so far are covered, except for the potential impacts of advertising which are only partly touched upon in Issue 4. *Issue 3: Sustainable Consumption* is not addressed here, because it is considered a strategy for how decrease negative environmental and social impacts overall, by the consumer and therefore indirectly by the organization.

The comprehensive coverage of potential violations might imply that organizations naturally have a focus on their relationships to their customers. A case for why organizations might be interested in minimizing their unsustainable impact with their customers will therefore not be made.

4. DISCUSSION

Overall, the analysis has shown that ISO 2600 (in this paper referred to as the Guidance) provides comprehensive guidance that addresses many of the potential violations of the social sustainability principles (SSPs) of the framework for strategic sustainable development (FSSD). The analysis shows also that there are existing examples of violations of the SSPs that are not covered in the Guidance. Other examples of potential violations are also possible. As already mentioned above, because the social system is complex and there are myriad of ways to contribute to SSPs violations, this is not a surprise.

It, however, makes it hard to come up with an exhaustive list that organizations can use to assess and address their current situation and why the Guidance cannot assure that its recommended actions alone will lead to social sustainability. It is a powerful step in the right direction, but we believe it can gain much from being informed by a more rigorous analysis in line with this study.

Many organizations use and will want to continue using ISO 26000 because they believe it creates legitimacy for their work. Because it is the de-facto standard, using it potentially shows that an organization is ‘doing their part’. The fact that the Guidance is not sufficient from a strategic sustainable development perspective and the amount of overlap and confusion it includes, makes a case for why a strategic framework for sustainability might be a helpful compliment to the existing ISO Guidance. Other work has been done on how ISO 26000 allows for strategic planning in the field of Social Responsibility (Hahn 2012) and shows that when analyzed across six commonly-used dimensions of strategic planning, it performs worst in the categories related to strategy.³⁰ This is not surprising, considering it is hard to create viable strategies without a clear understanding of the system and a concrete vision of what the goal (success) might look like.

The SSPs are few and non-overlapping and allow each organization to assess for itself how it might be contributing to violations now and what issues could come up in the future. The FSSD in that sense is a mental model that empowers, allows, and guides users in a strict but yet not prescriptive way how they may or may not be contributing to society’s transition towards sustainability (as opposed to “also think about sustainability”, vaguely and as an add-on activity). It allows organizations to innovate, plan, act and monitor long-term in a strategic and cohesive way towards sustainability. In addition, it allows for guidance in complexity, even when exact impacts cannot (yet) be determined. This addresses two issues that Schwartz and Tilling (2009) also cite. First, they cite Power (1997), asserting that the risk with standards is that they abstract complex issues and can as a result shift focus from the complexities to things that can be verified or measured (ibid, 296). This often leads to simplicity with reduction whereas the FSSD’s explicit aim is to allow for simplicity without reduction (Broman et al., 2000). Second, citing Brunsson (2002), they highlight that “by following a legitimate external standard, an organization can avoid having to make its own decisions on necessary actions” (Schwartz and Tilling, 2009, p. 292). While this might seem tempting for an organization at first, a more active stance on sustainable development will require that organizations are empowered enough

³⁰ The six dimensions used are: Internal and external audit, Vision and Mission, Establishing objectives, Generating strategies, Strategy Implementation and Strategy Evaluation

to make their own decisions. Jacobsson (2000, p. 45, cited in Schwartz & Tilling, 2009, p. 292) cautions about standards leading to a focus on implementing “the right procedures and produce[ing] the right documents, rather than whether they are actually doing something differently.”

5. CONCLUSION

To conclude, ISO 26000 in many ways is a great achievement. It is comprehensive, internationally agreed-upon and recognized. There is tremendous value in it. This value could be enhanced were the Guidance to be paired with a framework that allows users to plan and act systematically with a long-term view towards sustainability, as the Guidance otherwise may become a time-consuming ‘check the boxes’ exercise that does not lead strategically closer to sustainability, which after all is its intended aim.

REFERENCES

- Anderson, R. C. (1998). *Mid course correction - toward a sustainable enterprise: The Interface model*. Atlanta (USA): The Peregrinzilla Press.
- Broman, G., Byggeth, S. & Robèrt, K.-H. (2002). Integrating environmental aspects in engineering education. *International Journal of Engineering Education*. 18(6): 717-724.
- Broman, G., Holmberg, J. & Robèrt, K.-H. (2000). Simplicity Without Reduction: Thinking Upstream Towards the Sustainable Society. *Interfaces*. 30(3):13-25.
- Brunsson, N. (2000) Organizations, Markets and Standardization. In Brunsson, N., Jacobsson, B. (Eds). *A World of Standards*, 21-39. Oxford/New York: Oxford University Press.
- Cook, D. (2004). *The Natural Step towards a Sustainable Society*. Dartington, UK: Green Books Ltd.
- Electrolux. (1994). *Electrolux Annual Report*. Electrolux, Stockholm, Sweden.
- Gordon, S. (2003). *The Natural Step and Whistler's journey towards sustainability*. Paper presented at the Sustainable Mountain Communities Conference in Banff, Alberta.
- Hahn, R. (2012). ISO 26000 and the Standardization of Strategic Management Processes for Sustainability and Corporate Social Responsibility. *Bus. Strat. Env.*. doi: 10.1002/bse.1751
- Holmberg, J., Robèrt, K.-H. (2000). Backcasting from non-overlapping sustainability principles – a framework for strategic planning. *International Journal of Sustainable Development and World Ecology*. 7: 291-308.
- Huesemann, M. H. (2001). Can pollution problems be effectively solved by environmental science and technology? An analysis of critical limitations. *Ecological Economics*. 37(2): 271-288.
- ISO. (2010a). ISO Secretary-General's perspectives on ISO 26000. Retrieved from http://www.iso.org/iso/home/news_index/news_archive/news.htm?refid=Ref1564 (accessed November 8th, 2013).
- ISO. (2010b). *ISO 26000: Guidance on Social Responsibility*. 1st ed. Switzerland: International Standards Organization. Reference number ISO26000:2010(E)
- ISO. (2013). ISO 26000 - International forum revisits the road travelled. Retrieved _____ from _____

http://www.iso.org/iso/home/news_index/news_archive/news.htm?refid=Ref1691 (accessed November 8th, 2013).

- Jacobs, M. (1999). Sustainable development: a contested concept. In Dobson, A. (Ed.) *Fairness and futurity: essays on environmental sustainability and social justice* Oxford, UK: Oxford University Press.
- Jacobsson, B. (2000). Standardization and expert knowledge. In Brunsson, N., Jacobsson, B. (Eds). *A World of Standards*, 40-49. Oxford/New York: Oxford University Press.
- James S., Lahti T. (2004). *The Natural Step for communities: how cities and towns can change to sustainable practices*. Gabriola Island, British Columbia, Canada: New Society Publishers.
- Johnston, A. (2012). ISO 26000: Guiding Companies to Sustainability through Social Responsibility? *European Company Law* 9 (2): 110–117.
- Leadbitter, J. (2002). PVC and sustainability. *Progress in Polymer Science*. 27(10): 2197-2226.
- MacDonald, J. P. (2005). Strategic sustainable development using the ISO 14001 Standard. *Journal of Cleaner Production* 13(6): 631-643.
- Matsushita. (2002). *Environmental sustainability report 2002*. Matsushita Electric Industrial Co., Ltd. Osaka, Japan.
- McKenzie, S. (2004). *Social Sustainability: Towards Some Definitions*, Hawke Research Institute, Working Paper Series No. 27, University of South Australia.
- Missimer, M. (2013). *The Social Dimension of Strategic Sustainable Development*. Licentiate Dissertation. Karlskrona, Sweden: Blekinge Institute of Technology.
- Missimer, M., Connell, T. (2012). Pedagogical Approaches and Design Aspects To Enable Leadership for Sustainable Development. *Sustainability: The Journal of Record* 5(3): 172-181.
- Missimer, M., Robèrt K – H., Broman G. & Sverdrup, H. (2010). Exploring the possibility of a systematic and generic approach to social sustainability. *Journal of Cleaner Production*. 18(10-11): 107-1112.
- Missimer, M., Robèrt K – H., & Broman G. (2015a). A Strategic Approach to Social Sustainability - Part 1: Exploring the Social System. Manuscript submitted for publication.
- Missimer, M., Robèrt K – H., & Broman G. (2015b). A Strategic Approach to Social Sustainability - Part 2: A Principle-based Definition. Manuscript submitted for publication

- Moratis, L., Cochius, T. (2011). *ISO 26000: the business guide to the new standard on social responsibility*. Sheffield (UK): Greenleaf Publishing.
- Nattrass, B., Altomare, M. (2002). *Dancing with the tiger*. Gabriola Island, British Columbia, Canada: New Society Publishers.
- Nattrass, B. (1999). *The Natural Step: corporate learning and innovation for sustainability*. Doctoral Thesis. The California Institute of Integral Studies, San Francisco, California, USA.
- Ny, H., MacDonald J.P., Broman G., Yamamoto R. & Robèrt K.-H. (2006). Sustainability constraints as system boundaries: an approach to making life-cycle management strategic. *Journal of Industrial Ecology*. 10(1-2): 61-77.
- Paehlke, R. (2001). Environmental Politics, Sustainability and Social Science. *Environmental Politics*. 10(4): 1-22.
- Partridge, E. (2005). *Social sustainability: a useful theoretical framework?* Paper presented at the Australasian Political Science Association Annual Conference 2005, Dunedin, New Zealand, 28-30 September 2005.
- Power, M. (1997). *The Audit Society: Rituals of Verification*. Oxford/New York: Oxford University Press.
- Robèrt, K.-H. (1994). *Den Naturlige Utmaningen* (The Natural Challenge). Stockholm, Sweden: Ekerlids Publisher.
- Robèrt, K.-H. (1997). *ICA/Electrolux - A case report from 1992*. 40th CIES Annual Executive Congress, Boston, MA.
- Robèrt, K.-H. (2000). Tools and concepts for sustainable development, how do they relate to a general framework for sustainable development, and to each other? *Journal of Cleaner Production*. 8(3): 243-254.
- Robèrt, K.-H., Broman, G., Waldron, D., Ny, H., Byggeth, S., Cook, D., Johansson, L., Oldmark, J., Basile, G., Haraldsson, H., MacDonald, J., Moore, B., Connell, T. & Missimer, M. (2010). *Strategic Leadership Towards Sustainability*. Karlskrona: Blekinge Institute of Technology.
- Robèrt, K.-H., Schmidt-Bleek, B., Aloisi de Lardere, J., Basile, G., Jansen, J.L., Kuehr, R., Price Thomas, P., Suzuki, M., Hawken, P. & Wackernagel, M. (2002). Strategic sustainable development selection, design and synergies of applied tools. *Journal of Cleaner Production*. 10: 197-214.
- Robèrt, K.-H., Broman, G. & Basile, G. (2013). Analyzing the concept of planetary boundaries from a strategic sustainability perspective: How does humanity avoid tipping the planet? *Ecology and Society* 18(2): 5.
- Schwartz, B., Tilling, K. (2009). 'ISO-lating' Corporate Social Responsibility in the Organizational Context: A Dissenting Interpretation of ISO 26000. *Corporate Social Responsibility and Environmental Management*. 16: 289–

299.

Strauss-Kahn, D. (Chair) (2004). Building a political Europe-50 proposals for tomorrow's Europe. *A Sustainable project for tomorrow's Europe Brussels, European Commission.*

Waldron, D. (2005). A new education - "strategic leadership towards sustainability". Seminar on education for sustainable development (Seminarium om utbildning för hållbar utveckling), Stockholm, Sweden, Ministry of Culture and Education.

Waldron, D., Byggeth, S., Ny, H., Broman, G., & Robèrt, K.-H. (2004). Structured comprehension for systems thinking, learning and leadership towards sustainability. *Environmental Management for Sustainable Universities (EMSU)*. Tecnológico de Monterrey, Mexico.

Ward, H. (2011). The ISO 26000 International Guidance Standard on Social Responsibility: Implications for Public Policy and Transnational Democracy. *Theoretical Inquiries in Law*. 12 (2): 665–718

Wilkinson, R.G; Pickett, K. (2009). *The Spirit Level*. London: Bloomsbury Press.

Weinestedt, H. (2009). Stakeholder Analysis as a tool for working with Social Responsibility- Developing a stakeholder analysis method for ISO 26000. Master's thesis. Stockholm University

World Commission On Environment And Development. (1987). *Our Common Future*. [report of the] *World Comission on Environment and Development*. Available at: <http://www.un-documents.net/wced-ocf.htm> (Accessed November 7, 2013).

This page is intentionally left blank.

Appendix A cont'd

- Human rights as an overarching subject as many of the other subjects are applications of the human rights standard to various stakeholder groups (workers, the larger community, consumers).
- Distinguishes between issues that describe actual goals, e.g. human rights, and strategic guidelines for reaching the goals, e.g. due diligence, avoidance of complicity, etc.
- Subject 6.6 Fair operating practices lumped together with community involvement as both address impacts on the larger system, such as the communities an organization might operate in.
- 6.2 Organizational Governance as strategic guidelines for how an organization should behave on its way to reaching the goal of upholding human rights as well as the goals set by the other subjects (respect for human rights has been omitted as a principle in Figure 2 due to the obvious overlap).

*Appendix B: Labour (Employees and workers in the supply chain):
 Issues mapped to SSP Violations.*

(reads across page 200 and 201)

Principle	General Category	Example
Contribution to structural obstacles to health		Unfair compensation (not enough to live on)
		health and safety: excessive work hours; unsafe + unhealthy working conditions
		harassment or abuse (emotional or physical)
		forced labor, child labor
Contribution to structural obstacles to influence	Practices that suppress feedback within the org	no formal mechanisms to report up the command-chain, lack of whistle-blower system
	Practices that suppress employees influence on the governance of the org	No collective bargaining rights
Contribution to structural obstacles to competence		lack of opportunities for competence development
		lack of mechanisms for organizational learning and development
		no development talks
Contribution to structural obstacles to impartiality	Practices of discrimination	discrimination
	Practices that promote economic inequality	large differences in income within org
Contribution to structural obstacles to meaning-making		lack of clear purpose of the org
		lack of clear roles and responsibilities for individuals
		Disrespect of employee's culture

Appendix B continued

6.3 HR	6.4 Labour Practices				
Issue 8: Fundamental principles and rights at work	6.4.3 Issue 1: Employment and employment relationships	6.4.4 Issue 2: Conditions of work and social protection	6.4.5 Issue 3: Social dialogue	6.4.6 Issue 4: Health and safety at work	6.4.7 Issue 5: Human development and training in the workplace
	X				
		X			
		X		X	
				X	
X					
			?		
X					
					X
X					

Appendix C: Community (not already covered by workers): Issues mapped to SSP Violations
 (reads across page 202 and 203).

Principle	General category	Example
Contribution to structural obstacles to health	practices that cause direct harm (rely on any form of direct abuse?)	forced removal of communities
	practices that undermine access to basic resources, e.g fresh air, fresh water, arable land	pollution, land-grabbing
	practices that undermine independent, economic development	
	practices that cause harm indirectly	reliance on political regime that engages in harassment and abuse
Contribution to structural obstacles to influence	Practices that suppress/rely on the lack of opportunity to express the communities' opinion in relation to our work?	No formal mechanisms for the communities to give opinion/influence the aspects of the business that affect them
	Practices that suppress/rely on the lack of opportunity to express the communities' opinion in relation to political activity in their community?	Reliance on political regime that engages in suppression of free speech, does not have free elections, etc
	Practices that lead to ignoring communities wishes due to excessive use of org's power	Excessive lobbying
Contribution to structural obstacles to competence	Practices that rely on/promote lack of education/competence development in community	child labor
Contribution to structural obstacles to impartiality		Discrimination in the selection of workforce
		Reliance on political regimes that engage in discrimination
		Engaging in Corruption or relying on corrupt regimes
Contribution to structural obstacles to meaning-making		Reliance on political regimes that engage in suppression of cultural expression
		Disrespect of local culture

Appendix C continued

6.8 Community involvement and development				6.6 Fair operating practices			HR
6.8.3 Issue 1: Community involvement	6.8.4 Issue 2: Education and culture	6.8.5 Issue 3: Employment creation and skills development	6.8.8 Issue 6: Health	Issue 1: Anti-corruption	Issue 2: Responsible political involvement	Issue 5: Respect for property rights	
						?	
			x				
		x					
							x
x							
							x
					x		
	x						
							x
							x
				x			
							x
	x						

Appendix D: Consumer: Issues mapped to SSP Violations.

6.7 Consumer issues							
		6.7.3 Issue 1: Fair marketing, factual and unbiased information and fair contractual practices	6.7.4 Issue 2: Protecting consumers' health and safety	6.7.6 Issue 4: Consumer service, support, and complaint and dispute resolution	6.7.7 Issue 5: Consumer data protection and privacy	6.7.8 Issue 6: Access to essential services	6.7.9 Issue 7: Education and awareness
Principle	General category	Example					
Contribution to structural obstacle to health		product's health and safety impacts impacts of advertising on psychological well-being	x		x	x	
Contribution to structural obstacle to influence		(report issues, costumers service)		x			
Contribution to structural obstacle to competence	Practices that promote false understanding	False information, false advertising					
Contribution to structural obstacle to impartiality		Prohibitive pricing of basic goods				x	
Contribution to structural obstacles to meaning-making	Practices that alter meaning-making subversively	Advertising	x				

ABSTRACT

A common criticism of the sustainability field is that definitions are vague and that the vast amount of different tools, methods and concepts leads to confusion. In response to this challenge, for the past 25 years a group of scientists has explored the possibility to develop an overarching and unifying framework that would allow for a structured overview of other concepts, methods and tools and therefore allow for concrete, strategic planning for sustainability. Over this 25-year period the Framework for Strategic Sustainable Development (FSSD) has been tested in learning loops between scientists and practitioners and has continuously been developed. The aim of this research is to contribute specifically to the social sustainability definition of this framework, which has been found lacking both in theory and practice.

The research first establishes exactly in which ways the social dimension is underdeveloped, both from a theoretical and from a practitioner's perspective. In addition, the research explores the general field of social sustainability in order to understand the larger field, but also to gather inspiration and understand similar approaches. This exploration leads to the conclusion that the larger field of social sustainability is also underdeveloped and underscores the importance of this research.

Based on this conclusion, a new approach to social sustainability within the FSSD is created based on a systems approach to the social system.

Various aspects of the social system are identified to be essential for sustainability, namely trust, common meaning, diversity, capacity for learning and capacity for self-organization. Then, overriding mechanisms by which these aspects of the social system can be degraded are identified. Based on the understanding of the essential aspects of the social system and the identified overriding mechanisms of degradation of these, a hypothesis for a definition of social sustainability by basic principles is presented. The proposed principles are, that in a socially sustainable society, people are not subject to structural obstacles to: (1) health, (2) influence, (3) competence, (4) impartiality and (5) meaning-making. These aim to function as exclusion criteria for re-design for social sustainability.

The research then presents two evaluations of this new approach, one based on workshops and interviews with FSSD practitioners and one via an FSSD-analysis of ISO 26000. Both evaluations support this new approach as useful and workable, and also contribute to suggestions for further improvement.

Overall, the research contributes with a hypothesis for a definition of social sustainability, which is general enough to be applied irrespective of spatial and temporal constraints, but concrete enough to guide decision-making and monitoring. This is a contribution to systems science in the sustainability field, and it is a step towards creating an enhanced support for strategic planning and innovation for sustainability.

