Toward a New Social Contract: A Tripartite Mixed-Methods Analysis of Social Sustainability at Three Land-Grant Universities

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TOWARD A NEW SOCIAL CONTRACT:
A Tripartite Mixed-methods Analysis of Social Sustainability
at Three Land-grant Universities

A Dissertation
Presented to
The Morgridge College of Education
University of Denver

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

by
Lyndsay J. Agans
November 2008
Advisor: Dr. Frank Tuitt
ABSTRACT

Increasingly, colleges and universities in the United States are adapting toward a model of behavior that incorporates issues of sustainability. This adaptation in universities and in society has implications on the organizational and nation-state level, the very core of which may serve to reshape the social contract between the two. In addition to supplying a strong counter-hegemonic argument that alters the competitive economic agenda-setting paradigm, this study serves as a tripartite comparative case study analysis of university adaptation toward social sustainability. By employing a social capital lens to understanding social sustainability in higher education, this study seeks to examine the relationship between higher education, sustainability, and the nation-state. The conceptual framework of this analysis will draw on Putnam’s concept of social capital, in the effort to understand the relationship between higher education, sustainability, and social capital as well as what a sustainability paradigm could mean in terms of a “new” social contract.

The methodology of this study is exploratory and aimed at understanding university adaptation in three ways: first, elements of organization and administration aimed at advancing sustainability; second, teaching and research
efforts that have been established within a sustainability frame; and third, community and outreach efforts that examines the role of the university in its local environment as well as the work toward public service. The specific methodology employed can be categorized as comparative case study (Yin, 2003).

To validate findings, data is triangulated via a between-methods design and collected through: qualitative survey, contextual content analysis, and comparative discourse analysis respectively (Jaeger, 1988). The result is effectively a 3 x 3 mixed methods design so that each individual case study employs each of the three methodologies in order to provide a rich description of the social sustainability phenomena and offer data for comparative discourse analysis.

Findings reveal three distinct strands amongst the case studies in the analysis of sustainability discourse. Results show the importance of the role of, organizational context, personal approach of the chief sustainability agent, and organizational saga in contributing to adaptation. In this way, sustainability approaches and the priority and university adaptation differed. These three approaches can be described as: an energy/operations/facilities perspective, a research and academic-focused perspective, and a humanistic-grassroots approach.
ACKNOWLEDGMENTS

There are so many words of gratitude I owe to so many that have aided me along the way that I must first acknowledge that I cannot do justice to the kindness, generosity, and support which have made this work possible.

In gratitude, I acknowledge the support of my dissertation committee, particularly my chair, Dr. Frank Tuitt. With great admiration I thank: Dr. Mary Ann Danowitz for her mentorship and for the lessons on how to ask the important questions; Dr. Frank Tuitt for encouraging me to find my own voice in posing those questions; Dr. Annemarie Vaccaro for showing me how to engage not only the mind but the heart in searching for the answers; and, Dr. Malaika McKee-Culpepper whose helpful ear nurtured my creativity throughout it all. I also give thanks to Dr. Patti Helton, without whom I would not have been able to bring this journey to its destination; and Dr. Frederique Chevillot whose humor and compassion made the arrival all the more pleasant.

Behind any student in pursuit of a doctorate is a cadre of family and friends who make that pursuit possible and meaningful. This dissertation is as much the product of my mind as it is the result of the sacrifice and work of my parents over so many years. With love, I thank Kathy and Jim Agans and my brother and sister, James and Melody, as well as my nephew Anthony who constantly reminds me what is important. To my friends: Jeremy, Amanda, Deborah, Debi, Jen, and Amy, my sincerest thanks and appreciation, always.
Dedicated in loving memory to my uncle, Tony Daur;
teacher, coach, and all-around inspiration.
A man who embodied the best parts of education and social justice,
and whose legacy will
Stay Wonderful.
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Chapter 1
Introduction

Increasingly, colleges and universities in the United States are adapting toward a model of behavior that incorporates issues of sustainability. This adaptation in universities and in society has implications on the organizational and nation-state level, the very core of which may serve to reshape the social contract between the two. Until recently, the key focus of this paradigm shift, for both social and private organizations, has been an emphasis on ecological sustainability for continued economic growth. Within this framework, the capitalist economy continues as the agenda-setting priority. The outcome of such an agenda relegates diversity and equity measures as lesser priorities. Such an agenda, applied to a paradigm of sustainability would suggest that without resonance within central organizational ethos and priorities, sustainability measures tend to serve as surface, rather than transformative, changes. The result is that universities are being measured, ranked, and marketed as ostensibly subscribing to a “green” agenda, but failing to transform the organization in ways that incorporate social sustainability and further the social justice aspects of sustainability. A central tenet of this argument is that organizations laden with discrimination and inequality are not sustainable organizations. Extrapolating to the broader issue of societal
Sustainability; gross inequalities in access and equity in education render any large-scale system non-sustainable.

Sustainable development, or sustainability as I will refer to it, shifts the agenda-setting paradigm from short-term self interest to long-term global interest. At the center of its interests, then, are social interactions and equality. Also, it is possible that as sustainability appeals to both the perpetuation of the way of life for the individual as well as for the greater good, and in this way supports a new social contract.

Furthermore, sustainability is an attempt to provide the best outcomes for the human and natural environments both now and into the indefinite future. Such a paradigm is in complete opposition to the neoliberal, human capital model of infinite economic growth and consumption (Raven, 1995). Increasing popular support for sustainability has spread, gaining momentum in recent years in the United States. Furthermore, costs such as the price of petroleum reveal not only an ecological threat, but an economic and “national security” threat to the United States. Given such social and psychological costs, national quality of life in the United States has been on the decline. This rationale becomes increasingly motivating as Marks et al. (2006) and Lane (1993) have shown that quality of life stems primarily from security for the future and networks of social contact. Sustainability would affect each individuals way of life, and in this way perhaps,
solidarity toward a new agenda may be reached that values the contributions to be made by all cultures, genders, races, and ages.

*Struggling with Semantics*

In addition to agenda and priority-setting, sustainability faces the pains of a growing trend built on a mixture of definitions and constituencies. A foundational concern of a sustainability paradigm is what is meant by sustainability exactly, and more specifically what is meant by social sustainability?

Former Norwegian Prime Minister Gro Harlem Brundtland defined sustainability as: “the ability to meet the needs of the present while living within the carrying capacity of supporting ecosystems and without compromising the ability of future generations to meet their own needs” (1987).

There are a number of definitions of sustainability and the definitions of these terms tends to be a location of conflict or confusion. Within the five capitals model, utilized by the Natural Step –the UK government – we can see how all forms of capitalwork together in constructing our world system.
Table 1.1 Definitions of Capital

<table>
<thead>
<tr>
<th>Capital Type</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Capital</td>
<td>any stock or flow of energy and material that produces goods and services. It includes Resources - renewable and non-renewable materials; Sinks - that absorb, neutralize or recycle wastes; Processes - climate regulation; Natural capital is the basis not only of production but of life itself.</td>
</tr>
<tr>
<td>Human Capital</td>
<td>consists of people's health, knowledge, skills and motivation. All these things are needed for productive work. Enhancing human capital through education and training is central to a flourishing economy.</td>
</tr>
<tr>
<td>Financial Capital</td>
<td>plays an important role in our economy, enabling the other types of Capital to be owned and traded. But unlike the other types, it has no real value itself but is representative of natural, human, social or manufactured capital; e.g. shares, bonds or bank notes.</td>
</tr>
<tr>
<td>Social capital</td>
<td>concerns the institutions that help us maintain and develop human capital in partnership with others and in networks; e.g. families, communities, businesses, trade unions, schools, and voluntary organizations.</td>
</tr>
<tr>
<td>Manufactured Capital</td>
<td>comprises material goods or fixed assets, which contribute to the production process rather than being the output itself – e.g. tools, machines and buildings.</td>
</tr>
</tbody>
</table>

An analysis of social sustainability in higher education examines the intersection of human capital, natural capital, and social capital.

**Higher Education and Sustainability**

In studying university adaptation, the following seven areas of higher education institutions are factors in creating or inhibiting sustainability: (1) Curriculum, (2) Research and Scholarship, (3) Operations, (4) Faculty and Staff
Development and Rewards, (5) Outreach and Service, (6) Student Life, (7) Institutional Mission, Structure and Planning (Cortese, 2003). My aim is to develop a model of university adaptation that specifically addresses the role of social capital and interdependence in creating sustainability. Although the seven areas identified by Cortese are appropriate to investigate, the emphasis on operations by current ecological sustainability scholars leads me to focus on the other aspects of higher education and sustainability. The three specific areas of inquiry are, governance and administration; teaching and research; and, community and outreach.

Rationale

Why investigate university adaptation toward social sustainability? For two years now I have been perplexed on where the argument for diversity is headed. Given the agenda-setting economic ideology, we have seen affirmative action eliminated by legislation and popular vote. And now we face a landscape in which white men are considered as an “under-represented” population. As a movement gaining in momentum and popularity, sustainable development has the ability to promote social justice as a central tenet and as a paradigm that can transform the current crisis of inequality we now face.

“A sustainable society is a just society...” (President’s Council on Sustainable Development, 1995) this is the overarching principle of environmental justice and sustainable development. From a social sustainability perspective, it is
redundant to speak about sustainability and justice; the former includes the latter. Because of the importance of environmental justice and the fact that it is often overlooked in discussions of sustainability, it should be given equal emphasis in education. All aspects of a sustainable society: economy, culture, institutions/social structure, the ecosystem, can be viewed from an environmental justice perspective. The Essex Report, produced by The President’s Council on Sustainable Development (1995), provides important underlying concepts for the theoretical framework of this study. In regards to environmental justice, the Essex Report offers the following key proposals for universities:

1. Sustainable development with environmental justice ensures that no community, group, people or gender is required to accept socially condoned and/or legally sanctioned negative environmental consequences.

2. Sustainable development with environmental justice redresses past, present, and future maldistribution of resources, privileges and rights of endangered communities, of poor people, and of communities of color.

3. Sustainable development with environmental justice eliminates the necessity to choose between sources of income versus health and safety, especially for poor people and people of color.
4. Sustainable development with environmental justice ensures the widest stakeholder participation possible in relevant decision making needed to avert inequitable and unjust environmental conditions.

5. Fossil fuel energy flows should be not only be decreased, but more equitably distributed among all people regardless of their differences -- sustainable and equitable energy flows foster structural interdependence rather than structural dependence.

6. Sustainable communities cannot be maintained unless biodiversity and cultural diversity are highly revered.

7. A sustainable society produces a public policy process which is cyclical rather than linear. (President’s Council on Sustainability, 1995)

Like many of the other dilemmas within the sustainability, language is potentially a problematic area when using the term “environmental justice.” This term doesn’t necessarily evoke the critical connection between equality in social institutions and the environmental movement. However, what must be understood is that environmental justice is fully under the umbrella of social sustainability, and should not be considered apart from social sustainability conversations. Perhaps re-phrasing terms to change the positioning of terms could help alter the perspective of those concepts. For example, the term socio-ecological justice or eco-social equality may evoke different relationships than environmental justice. The
importance of language cannot be understated in regards to its influence in social change. Thus, a key area of inquiry of this study is the language used by participant universities to describe social sustainability.

Higher education is a location in which change can occur within institutions themselves as consumers, but also as it contributes to shaping society; subsequently creating environmentally just citizens and informing policy as well as sharing knowledge to further sustainability.

Another concern is the socio-economic element of shifting to sustainable technologies and the potential for discrimination and inequality that sustainable development could pose. Because of this, attention must be paid to how university adaptation toward sustainability can attend to the social justice aspects of the movement, or the inequalities and zero-sum competition characterizing the neoliberal economy will continue. Placing sustainability as a societal priority is also a positive argument for incorporating different knowledges and cultures into creating sustainable organizations.

*Conceptual Framework*

In addition to supplying a strong counter-hegemonic argument that alters the “human capital paradigm” I offer a tripartite comparative case study analysis of university adaptation toward social sustainability within a social justice frame. It is the groundwork for the rationale of my central guiding question: how can universities adapt in ways that centralize social justice within sustainability,
incorporating aspects of social sustainability in their efforts to advance ecological sustainability? By employing a social capital lens to understanding social sustainability in higher education, this study seeks to examine the relationship between higher education, sustainability, and the nation-state.

Significance of the Study

The implications of a study of this kind raise a number of avenues for scholastic inquiry. My analysis will focus on two theoretical arenas, first at the institutional level, and second, in relation to the nation-state.

The primary analysis will focus on social sustainability as a new direction for diversity in higher education. Discussion will include how sustainability efforts have advanced in U.S. higher education and how diversity and social justice within a main-streamed social sustainability paradigm may lead to an augmented vision of social justice and diversity in land-grant institutions. Additionally, analysis will be aimed at understanding the function of higher education in creating active and engaged citizenry. The conceptual framework of this analysis will draw on Putnam’s concept of social capital, in the effort to understand the relationship between higher education, sustainability, and social capital as well as what a sustainability paradigm could mean in terms of a “new” social contract.

I intend to develop practical resources for university stakeholders to draw from. The first resource is a framework for consideration of sustainability agents and administration to consider different efforts at incorporating social justice
within sustainability strategic plans. The second resource set will be aimed at diversity professionals and student affairs practitioners, offering examples of how to incorporate social sustainability into diversity training for professional and student staff (e.g., residence life staff). The resources will be accessible via some of the major list servs of the Association for the Advancement of Sustainability in Higher Education, their website, and also at www.civitasU.org.

The reasons for doing so are two-fold: first, to understand the broader function of the university to the nation-state, land-grant universities represent a crucial linkage between the state and the broader purpose of higher education. Second, in addition to the external function of higher education to the state, the internal function of sustainability (in both administrative and academic areas) and its impact on students may reveal the outcome of university adaptation toward inclusive sustainability. My aim is to articulate the role of interdependence of higher education organizations to their internal and external actors and the importance of diversity in creating sustainable institutions of higher education. Additionally, moving equality and diversity concerns into organizational priorities vis-à-vis “mainstreaming” of social sustainability may help to elucidate some of the stereotypes, presumptions, and privilege associated with the sustainability movement. This is a unique and important perspective; not only because it fosters sustainable development, but because of the potential for discrimination and further reification of the dominant hegemonic discourse. There is currently a lot of
talk and popular press about how to “Go Green” – but how can universities adapt toward sustainability? It is important to continue to apply a critical lens to the current discourse of the movement – particularly in a movement that has traditionally been stereotypically white, privileged, and liberal. Our view must not be narrow and it must not reify the dominant hegemonic discourse.

**Guiding Questions**

- How are universities adapting to become more sustainable?
- What current university-wide sustainability policies and documents exist and how (positively and negatively) do they inform university adaptation?
- How is social sustainability included or excluded?

**Thesis Structure**

The organization of this study has been shaped by consideration of a number of intentional theoretical frameworks designed to understand the relationship between key concepts in higher education, sustainability, and organizational change. Chapter 1 has offered a number of early considerations which guide the location of inquiry.

Chapter 2, a review of relevant literature aims at developing the context of sustainability in higher education, while operationalizing terms in the sustainability literature. A central debate within the sustainability movement is the operational definition of key terms, including: sustainability, social sustainability, environmental racism, equality, diversity, green, and intergenerational justice. Thus, a primary focus of my literature will focus on four arenas: background and
history of the sustainability movement with an emphasis on social sustainability, applicable definitions of key terms for my study, and, the evolution of sustainability in higher education. Due to the roots of the sustainability movement and the wealth of international scholarship, the literature will be drawn mainly from U.S. and European literature (see Appendix A for bibliography).

Chapter 3 offers the methodological approach of the study and explains the background of three different methods of research, open-ended survey, centering resonance case study analysis, and comparative discourse analysis. The theory behind these approaches is rigorously described to enhance the transparency of the research methods and to facilitate replicability of the study.

Chapters 4, 5, and 6 present the case studies of Michigan State University, University of Vermont, and Oregon State University, respectively. Each study offers a frame of the social, political, and economic context of the participant universities. The cases also present a thick description of sustainability efforts at each of the land-grant institutions, and drawing from primary and secondary data sources, offers the results of intra-organizational centering resonance analysis of each case. This analysis also provides data to conduct the third method of inquiry, comparative discourse analysis.

Chapter 7 offers a synthesis of the case study comparisons and elucidates the findings of the inter-organizational comparisons. Data for synthesis and
analysis was generated by employing the comparator feature of centering resonance analysis, which facilitated discourse comparison of non-parallel texts.

Chapter 8 attends to the implications of the case study comparison findings within a framework of social capital. Thus, the aperture of inquiry has moved from intra-organizational to inter-organizational, and then widens to examine the relationship among land-grant institutions, sustainability, and society. The discussion offers a key finding of this study which seeks to explain the relationship between social capital and social sustainability and its importance to higher education and society at-large.

In addition to offering limitations, researcher reflections, suggestions for further research, and promising practices for organizational change, Chapter 9 concludes by considering the implications of the intersection of sustainability, higher education, and society for the social contract.
Chapter 2

Relevant Literature

The concept of sustainability is itself a highly contested issue. In attempting to define sustainability, theorists have pulled from across disciplines and from different time periods as well as cultural conceptions. Gladwin (1998, p. 36) summarizes the larger concept as follows: “At a high level of abstraction the literature suggests that sustainable development is a process of achieving human development (widening or enlarging the range of human choice) in an inclusive, connected, equitable, prudent, and secure manner.”

Conceptual Framework

In reviewing the literature, my focus will draw across the breadth of conceptualizations, to introduce the different and varying approaches to sustainability which, in turn, complicate the nature of understanding sustainability and how efforts to “become” sustainable can differ so widely (or not) among universities. Furthermore, it is not enough to simply narrowly examine the social aspects of sustainability. Thus, this theoretical inquiry aims to elucidate the importance of the interdependence between “systems” of “sustainability” also known as the triple bottom line of sustainability, encompassing social, economic, and ecological sustainability. Greater explanation will accompany later expositions of conceptualizations of
sustainability, but first, an examination of these systems and their interdependence.

In order to facilitate an analysis at the intersection of social sustainability, higher education, and social capital, each is first reviewed in the literature to ground an understanding of the concept. First, I will discuss social sustainability; specifically, how it differs from other types of sustainability and how to come to a more salient definition. Second, a discussion of the emergence of sustainability in higher education will also examine areas of social sustainability in higher education. Next, the importance of social capital as a conceptual link and location of change for higher education will be discussed. Finally, the use of social capital as a methodology will be introduced to understand the critical lens applied in this qualitative study.

Background

Social sustainability has proved to be intractable both analytically and in practice. To an extent it tends to be less researched than ecological and, to a lesser degree, economic sustainability (Gladwin et al. 1995). In attempts to define the concept, scholars have pointed to fair distribution of resources (Daly & Cobb 1994), communalization of decision making (Gladwin et al. 1995), humanization of capital, sharing of power and maintaining population at levels below carrying capacity as major facets of social sustainability. However, the literature also reveals a gap where social sustainability interacts with other facets
of sustainability and the important linkages, and interdependence of these facets. Most striking is the paucity of emphasis on social sustainability within the higher education movement toward sustainability.

Much of the work done in sustainable development up to this point has been viewed through a lens of first environmental and second, economic sustainability. Ecological economist Herman Daly has provided the theoretical basis for much of the rather limited work on defining economic sustainability. Hawken’s (1993, p. 139) influential definition of economic sustainability was greatly influenced by Daly: “Sustainability is an economic state where the demands placed upon the environment by people and commerce can be met without reducing the capacity of the environment to provide for future generations.” Other authors have added notions of maintaining net benefits forever (Munro, 1995), non-declining utility (Tietenberg, 1996), shifting from quantitative to qualitative measures of progress (Daly & Cobb, 1994), accounting for full costs, and reducing the scale of the economy to be in line with the ecology of the planet (Daly, 1993). Economic notions of sustainability are widely accepted within the environmental community, but are also refuted (sometimes ignored) by economists, policy makers and other decision makers in society. Overall, 50 years after the roots of the sustainability movement began (Kidd, 1992), the concept is still ambiguous and few philosophical debates have been
resolved. As Bartelmus (1999, p. 1) stated, “Agreement ends with attempts at operationalizing the elusive notion of sustainability.”

Although social sustainability is an interdependent, inalienable facet of sustainability, it also rests within environmental sustainability. Without the persistence of natural and life-support resources, social sustainability fails. What must also be recognized, however, is that without social sustainability, environmental sustainability will not be advanced. It must be understood that from a systems perspective, each sphere of sustainability, environmental, social, and economic, are interdependently linked.

A commonly accepted definition for the social dimension is not available, largely because there is no consensus on what is to be understood by the concept of social. Indeed, what defines the “social” is determined by the underlying theoretical framework. The social dimension is clearly different from the environmental one, since it is multidimensional it refers both to individual and collective levels; but it is also reflexive and contextual. That is, our perceptions and interpretations of the objective social conditions change the behavior of individuals and social collectives, hence influencing the objective conditions themselves (Empacher, 2002). Moreover, as a facet of sustainability, social sustainability is unique as the only unlimited growth area, as both economic and environmental resources are finite.
Because of the ineffable and unique characteristics of social sustainability, and its place embedded in the environment and encompassing the economy, the social sphere of sustainability cannot be addressed with the same methods of analysis as the environmental and economic ones. Sachs (1999) argues that talking solely about a social sphere of development is but one of many dimensions that may be prioritized.

By contrast, Daly (1996) and others tend to criticize any augmentation of the application of analysis of sustainability beyond the scope of the environment. He argues that a distinct concept should be developed in order to take into account the “ethico-social” limits to growth. The central argument is that, all things being equal and the inherent overlap of the social and economic aspects of sustainability, making a critical distinction between the two for analysis can be advantageous in order to fully articulate the dimensions fully. Sometimes termed a “holistic” or “pluralistic” approach toward sustainability, the implication is not necessarily that all dimensions of sustainability should be intertwined and parsed out in order to analyze, but that none should be excluded from the analysis (Barrett & Grizzle, 1998). Moreover, when applying a lens of political realism, leaving out social considerations from sustainable development would result in an overall diminishment of the issue, particularly given the emerging attention being paid to climate change, the impact of globalization on social stratification,
and “national security interests” that can are underlying aspects of the social sustainability dialogue.

There has been a great deal of criticism of the Brundtland definition and the sustainable development agenda as a whole (across the political spectrum). The most extreme criticism is that sustainable development, when defined vaguely in order to meet the needs of all stakeholders, is that it is nothing more than a utility to be employed by multi-national corporations seeking to gain a competitive advantage, while using attention to sustainability and environmental concerns as a marketing scheme. As Michael Jacobs notes, “the vagueness of the definition … allows business and “development” interests (and their government supporters) to claim that they are in favor of sustainable development when actually they are the perpetrators of unsustainably” (1996, p.21).

Discourses of sustainable development are also based on a unitary system of knowledge and, despite its claims of accepting plurality, there is a danger of marginalizing or co-opting traditional knowledges to the detriment of communities at different levels of development. The mere notion of “development” – sustainable or otherwise does not ensure benefit to all persons. Therefore, social capital, as a positive factor in creating change, must also be understood from a perspective of equality and social justice.

*Toward a Model of Sustainability*
The interrelationship between the environmental, social, and economic aspects of sustainability is commonly represented by one of two models. The first model features three concentric spheres and is often referred to as the “Bio-economy model” of sustainability. The economic and social spheres are portrayed as nested and dependent on the health of the environment. A number of sustainability scholars (Empacher, 2002; Dubois and Mahieu, 2002) have argued that the social dimension cannot be analyzed through the same analytical framework and same tools as the ecological and economic ones, notably because of the reflexive, multidimensional, and contextual character of “the social” and the difficulty to quantify most social phenomena. Rooted in an environmental protectionist standpoint, sustainable development is often conceptualized through a bio-economy model (Passet, 1996; Marechal, 2000). In this model, the three pillars (social, natural, economic) have been replaced by three concentric circles, the environment circumscribing the social dimension, and the economic sphere constituting the innermost circle.

This model is based on the notion that economic activities are a construct and product of the social. The priority within this model is to elucidate the nested reliance of systems on the existence of environment.
Thus, in the sense of a hierarchy, the social would be derivative and reliant on the economic, but at the same time reliant on, or constrained by, the ultimate environmental sphere (Passet, 1996; Marechal, 2000). The clear difference in priorities and value set by such a model of sustainability serves to challenge predominant notions of economy and hegemony currently perpetuated within today’s political economy. However, given that the focus of analysis is life-systems, the implication is that the model is representative of a dynamic relationship between the three areas, and two critical issues should be mentioned. First, the biophysical limits are not stable, but in constant flux with the dynamic development of human knowledge and technology (Hukkinen, 2003). Second, the
clear hierarchy between the circles does not mean that the environment would necessarily always be the most important and relevant dimension. That is, social or economic aspects may be the most relevant and meaningful locations of fomenting change - so long as the operation of socioeconomic systems does not enter into conflict with the environmental framework conditions (Hahtola, 1990; Norgaard, 1994).

A more recent but increasingly widespread mode of thinking is that the three spheres of influence are best represented equally. This is portrayed in the “overlapping circles” of the triple bottom line model of sustainability. In principle, any community or organization that adopts the “overlapping circles” model should immediately incorporate social sustainability as a concern equal to environmental or economic sustainability. In reality, however, this has not always been the case.

The expression “triple bottom line” was developed by environmental economist John Elkington in 1997 and the term is now also used widely in discussions of sustainability. Elkington argued from the perspective that “we need to bear in mind that it is not possible to achieve a desired level of ecological or social or economic sustainability (separately), without achieving at least a basic level of all three forms of sustainability, simultaneously” (1999, p.123).
As Elkington explains, “the sustainability agenda, long understood as an attempt to harmonize the traditional financial bottom line with emerging thinking about the environmental bottom line, is turning out to be much more complicated than some early business enthusiasts imagined. Increasingly, we think in terms of a triple bottom line, focusing on economic prosperity, environmental quality, and -- the element which business has tended to overlook - social justice” (1999, p. 141).
Despite its inclusion in the triple bottom line, the role played by the social is rarely equal to the economic and environmental concerns of sustainability. The Global Reporting Initiative (GRI, 1997) has reported: "reporting on social performance occurs infrequently and inconsistently across organizations" (p. 5). This is also described in a recent study by the Western Australian Council of Social Services (WACOSS) who note that, “while there has been considerable work done on the environmental and economic aspects, the social has tended to fall off the sustainability agenda” (2006, paragraph 11). Contributing to the marginalization of social sustainability as a focus is the lack of a concrete and agreed upon definition. The dilemma when defining sustainability is that the context in which the definition is applied tends to be more important than its wording. For example, inclusive definitions may call for interdisciplinary input and a cohesive view of the interrelation of nature, society and the economy, but the basic agenda of those who are performing the research, or profiting from its implementation, will quickly determine the real meaning of the work of any organization (higher education or otherwise) in the field of sustainability.

Desperately Seeking a Definition

Social sustainability is not the only area of sustainability that suffers from a crisis of identity and categorization. What is generally agreed upon is the concept of sustainability as articulated in the Brundtland definition, “meets the needs of the present without compromising the ability of future generations to meet their own
needs” Brundtland Report (1987). As the report highlights the three widely accepted aspects of sustainable development as the environment, social equity, and economic growth, it also gives basic criteria relating to each. In regards to social equity, the Report offers the following, “Developing nations must be allowed to meet their basic needs of employment, food, energy, water and sanitation. If this is to be done in a sustainable manner, then there is a definite need for a sustainable level of population” (Brundtland Report, 1987, p. 39). These stipulations for sustainable development laid the foundation for further articulation of social sustainability by subsequent policy summits. However, over time different actors have developed definitions of each aspect of sustainability suitable to their own function and mission. Due to the wide array of definitions and their sources, definitions of social sustainability by certain key actors are offered here in a chart for ease of accessibility.
<table>
<thead>
<tr>
<th>Definition</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Socially based definitions</strong></td>
<td></td>
</tr>
<tr>
<td>‘Social Sustainability for a city is defined as development which is compatible with the harmonious evolution of civil society, fostering an environment conducive to the compatible contribution of culturally and socially diverse groups while at the same time encouraging social integration with improvements in the quality of life of all segments of the population.’</td>
<td>UNESCO ‘MOST’ Program: Towards Socially Sustainable Cities</td>
</tr>
<tr>
<td>Generally, societies that are inclusive, cohesive, and that have accountable institutions are best able to support lasting development outcomes.</td>
<td>World Bank Social Development Website</td>
</tr>
<tr>
<td>Social sustainability occurs when the formal and informal \n\begin{itemize} \item processes \item systems \item structures and \item relationships \end{itemize} actively support the capacity of current and future generations to create healthy and livable communities. Socially sustainable communities are equitable, diverse, connected and democratic and provide a good quality of life.</td>
<td>WACOSS model of social sustainability, p 11.</td>
</tr>
<tr>
<td>A sustainable community would be secure, healthy and equitable, with a clear sense of place.</td>
<td>Environmental Protection Authority (2002) Towards Sustainability.</td>
</tr>
<tr>
<td>‘Sustainable society – Society whose long term prospects for continuing to exist are good. Such a society would be characterized by an emphasis on preserving the environment, developing strong peaceful relationships between people and nations, and an emphasis on equitable distribution of wealth.’</td>
<td>Coop America, Coop America Quarterly, No. 37, Summer 1995, p 46.</td>
</tr>
</tbody>
</table>
A Generally Useful Idea

The meaning and application of sustainability are contextual (Kay and Schneider 1994), and sustainability could simply be at an initial stage when definitions are still being defined. According to Gladwin (1999, p. 3), “The notion appears set to remain fuzzy, elusive or contestable for some time to come. This is to be expected during the emergent phase of any new, big and generally useful idea.”

Critics of the sustainability movement tend to label the standard (the Brundtland Commission) definition as insufficient. The most striking critique is that in attempting to strike a balance between ecology and economics, the concept of sustainable development is too broad. For example, Tietenberg (1996, p. 538-39) claims, “Being all things to all people can build a large following, but it also has a substantial disadvantage; close inspections may reveal the concept to be vacuous.” Moreover, the balance between “sustaining” and “development” “papers over a deep North-South divide and fails to answer critical questions,” wrote Esty (2001, p. 75). This flaw has the potential to undermine sustainability as a concept and goal, both from a scholarly perspective and a social justice purview. However, like many broad social movement concepts, although there may never be a consensus definition of sustainability; that may in the end be a strength rather than weakness of the concept. As Kidd described, “The roots of the term ‘sustainability’ are so deeply embedded in fundamentally different concepts, each of which has
valid claims to validity, that a search for a single definition seems futile. The existence of multiple meanings is tolerable if each analyst describes clearly what he or she means by sustainability,” (1992, p 2). The conflict over defining sustainability bleeds over into other areas of scholastic debate around sustainability. When approaching this debate from a social justice perspective, and centralizing the importance of diversity, not only does measurement become a central concern, but group representation as well as institutional culture all become relevant elements in university adaptation towards sustainability. Again, the consideration for change as well as measurement and the categorization of underrepresented populations becomes a highly localized circumstance. In creating broad measures of social sustainability, a single measure containing “universal” items may be more of a disservice to creating change. What must also be addressed is the question articulated by Mitcham (1995) around “what is to be sustained and for whom” and the implications the answers to this question may have for social equality.

Beginning with The Stockholm Declaration (UNESCO, 1972), there has been a steady development of national and international sustainability declarations relevant to higher education. Many institutions of higher education signal their attempts to become more sustainable by signing these declarations. This section will examine the various international and national sustainability declarations, in order to better understand the general trends and frameworks that
have emerged in the area of sustainability in higher education as well as to understand the emergence of sustainability as a social movement and its relationship to higher education.

The Evolution of Sustainability in Higher Education

*Stockholm Declaration*

The Stockholm Declaration of 1972 was the first declaration to make indirect reference to sustainability in higher education. Although the focus was primarily on environmental law, the Stockholm Declaration recognized the interdependency between humanity and the environment. This was one of the first documents to discuss inter- and intra-generational equity amongst humans. The Stockholm Declaration offered 24 principles to achieve environmental sustainability. Whereas the majority of principles focused on legislation, Principle 19 explicitly stated the need for environmental education from grade school through higher education in order to “broaden the basis for enlightened opinions and responsible conduct by individuals, enterprises and communities in protecting and improving the environment in its full human dimension” (UNESCO, 1972, Principle 19). Where the Stockholm Declaration laid the groundwork and argument for sustainability in higher education, the Tbilisi Declaration mobilized initiatives toward formal measures of sustainability in education.
The Tbilisi Declaration

One of the most important moments in the evolution of international sustainability declarations related to education was the Intergovernmental Conference on Environmental Education (ICEE) in Tbilisi. In 1977 the Tbilisi Conference reified the arguments of the Stockholm Declaration by stating that environmental education should be provided to people of all ages, all levels of academic aptitude and must be delivered in both formal and non-formal environments (UNESCO, 1977). The declaration discussed the need for environmental education, the principal characteristics of environmental education and offered guidelines for international strategies of action. It further implored higher education to consider environmental and sustainability concerns within the framework of the university (UNESCO, 1977). The Tbilisi Declaration further recognized requirements for the development of sustainability initiatives within the university amongst faculty, students, and support staff and was the first declaration to take an international and holistic approach to the environment within a higher education context. The Tbilisi Declaration had set the focus of sustainability on the university, and thirteen years later, with the Tailloires Declaration, agents of universities mobilized sustainability in higher education.
The Talloires Declaration

Drafted in 1990, the Talloires Declaration was the first statement made by university administrators of a commitment to sustainability in higher education (ULSF, 1990). It states, “university heads must provide leadership and support to mobilize internal and external resources so that their institutions respond to this urgent challenge” (UNESCO, 1990, p. 2). The central theme to the declaration is that signatory universities must work together towards environmental sustainability and encourage universities who were not present at the conference to sign the declaration and join administrators in their efforts. As it states, “The university heads must provide the leadership and support to mobilize internal and external resources so that their institutions respond to this urgent challenge. We, therefore, agree to take the following actions:

1. Use every opportunity to raise public, government, industry, foundation, and university awareness by publicly addressing the urgent need to move toward an environmentally sustainable future.

2. Encourage all universities to engage in education, research, policy formation, and information exchange on population, environment, and development to move toward a sustainable future.

3. Establish programs to produce expertise in environmental management, sustainable economic development, population, and related fields to
ensure that all university graduates are environmentally literate and responsible citizens.

4. Create programs to develop the capability of university faculty to teach environmental literacy to all undergraduate, graduate, and professional school students.

5. Set an example of environmental responsibility by establishing programs of resource conservation, recycling, and waste reduction at the universities.

6. Encourage the involvement of government (at all levels), foundations, and industry in supporting university research, education, policy formation, and information exchange in environmentally sustainable development. Expand work with nongovernmental organizations to assist in finding solutions to environmental problems.

7. Convene school deans and environmental practitioners to develop research, policy, information exchange programs, and curricula for an environmentally sustainable future.

8. Establish partnerships with primary and secondary schools to help develop the capability of their faculty to teach about population, environment, and sustainable development issues.

9. Work with the UN Conference on Environmental and Development, the UN Environment Programme, and other national and international
organizations to promote a worldwide university effort toward a sustainable future.

10. Establish a steering committee and a secretariat to continue this momentum and inform and support each other's efforts in carrying out this declaration.” (UNESCO, 1990)

The Talloires Declaration was an important mechanism in bringing about awareness and commitment to sustainability, particularly for U.S. universities. However, the catalyst in bringing sustainability as an issue of social importance can be traced to the UN Conference on the Environment and Development, also known as “the Rio conference.” For education, chapter 36 of Agenda 21 was particularly important.

**Agenda 21 - Chapter 36 (Rio)**

Agenda 21 was the result of the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992. Chapter 36 Education, awareness and training, specifically addresses issues related to sustainability in education (UNCED, 1992). Chapter 36 first recognized past university sustainability directives, and stated that the Tbilisi Declaration provided the fundamental principles for the proposals listed in Agenda 21. The three central tenets of which were:
1) reorienting education towards sustainable development;
2) increasing public awareness of environmental issues; and
3) promoting environmental training among educators. (UNCED, 1992)

Chapter 36 also identified a lack of environmental awareness throughout the world, and recognized formal and informal education as a solution to environmentally unsustainable behavior. Building from the strength of the Rio conference, the Kyoto declaration set forth to create specific action plans for universities.

The Kyoto Declaration

The Kyoto Declaration was the result of 90 international university leaders assembling for the Ninth International Association of Universities Round Table in 1990, and was closely tied to Agenda 21 and the United Nations Commission on Environment and Development Conference in Rio de Janeiro. The main contribution of the Kyoto Declaration was a call for a clearer vision of how to achieve sustainability within universities. The Kyoto Declaration claimed that the international university community must create specific plans of action in order to pursue the goal of sustainability. The Kyoto Declaration also stressed the ethical obligation of universities to the environment and to sustainable development principles. A final feature of the declaration was its challenge to universities to not only promote sustainability through environmental education, but also through the physical operations of a university (IAU, 1990).

The Swansea Declaration
The Swansea Declaration of 1993 brought together representatives from over 400 universities in 47 countries, and echoed the sentiments of past declarations, asserting that universities had a major responsibility to help societies develop in an “environmentally secure and civilized world” (UNESCO, 1993, p. 1). The declaration repeated many of the tenets of past university sustainability declarations. These included the need for universities to review their physical operations, the desire for environmentally literate students and faculty, and an emphasis on the ethical obligations universities have to present and future generations. Although the Swansea Declaration adopts much of the language iterated in the Halifax Declaration, it added an interesting dimension to the discussion of sustainability in higher education in that it stressed equality amongst countries as an important factor in achieving sustainability.

The American College & University Presidents Climate Commitment

In December of 2006, 12 college and university presidents, working with the Association for the Advancement of Sustainability in Higher Education (AASHE), ecoAmerica, and Second Nature, launched The American College & University Presidents Climate Commitment. Amongst the priorities of the ACUPCC is attaining climate neutrality. As of July, 2008, almost 500 college and university presidents from institutions in 48 states have signed the commitment. They include 14 state university systems.
Earth Charter

The idea of a Charter originated in 1987, when the United Nations World Commission on Environment and Development called for a new charter to guide the transition to sustainable development. In 1992, the need for a charter was urged by then-Secretary General Boutros Boutros-Ghali at the Rio de Janeiro Earth Summit. The Rio Declaration became the statement of the achievable consensus at that time. In 1994, Maurice Strong (Chairman of the Earth Summit) and Mikhail Gorbachev, working through organizations they each founded (Earth Council and Green Cross International respectively), restarted the Earth Charter as a civil society initiative. The initial drafting and consultation process drew on hundreds of international documents.

The Earth Charter urges environmental responsibility, peaceful coexistence, respect for life, democracy, and justice. It is organized into 16 general headings, each covering a general principle, as follows:

- Respect Earth and life in all its diversity.
- Care for the community of life with understanding, compassion and love.
- Build democratic societies that are just, participatory, sustainable and peaceful.
- Protect and restore the integrity of Earth's ecological systems, with special concern for biological diversity and the natural processes that sustain life.
- Prevent harm as the best method of environmental protection and, when knowledge is limited, apply a precautionary approach.
- Adopt patterns of production, consumption and reproduction that safeguard Earth's regenerative capacities, human rights and community well-being.
- Advance the study of ecological sustainability and promote the open exchange and wide application of the knowledge acquired.
- Eradicate poverty as an ethical, social and environmental imperative.
- Ensure that economic activities and institutions at all levels promote human development in an equitable and sustainable manner.
- Affirm gender equality and equity as prerequisites to sustainable development and ensure universal access to education, health care and economic opportunity.
- Uphold the right of all, without discrimination, to a natural and social environment supportive of human dignity, bodily health and spiritual well-being, with special attention to the rights of indigenous peoples and minorities.
- Strengthen democratic institutions at all levels, and provide transparency and accountability in governance, inclusive participation in decision-making, and access to justice.
- Integrate into formal education and lifelong learning the knowledge, values and skills needed for a sustainable way of life.
- Treat all living beings with respect and consideration.
- Promote a culture of tolerance, nonviolence and peace.

The previous examples have shown that sustainability declarations have evolved over time within higher education. However, many universities who have signed national and international declarations have done so as a symbolic gesture while doing very little to implement measures to becoming more sustainable. This raises the issue of accountability in becoming a signatory to a national or international declaration. Some institutions may be signing declarations for public relations purposes only and may not be supporting the overall effort to bring sustainability to higher education. Endorsing a declaration is no longer adequate proof of a commitment towards becoming more sustainable (Walton, 2000).

Themes in Declarations and Policies

The question of how various institutions are framing the central task of becoming sustainable universities is not easy to answer as early studies of organizational change toward sustainability suggest that the adoption of
sustainable practices varies greatly based on geographic, political, and institutional context (Clugston, 1999; Filho, 1999). However, there are common principles and themes among the majority of institutional policies, national, and international declarations. These themes are sustainable physical operations, sustainable academic research, environmental literacy, ethical and civic responsibility, cooperation amongst universities and countries, the development of interdisciplinary curriculum and service-learning opportunities, non-governmental organizations, and community outreach.

*Social Capital and Sustainability*

As a framework for articulating the importance of sustainability, drawing from a capital analysis, environmental economists have sought to elucidate the importance of social capital to world systems. Thus, the social capital pillar of sustainability is critical and irreplaceable in the same manner as natural and economic capital. A distinct and important differentiation must be made about social capital, however. Although it can be increased or decreased, and can also be transferred or mobilized, unlike natural and economic capital, is not a finite commodity. Increasingly, the World Bank has been one of the most prominent advocates of the social capital approach over the past few years.

Though its roots can be traced to the work of critical theorists and sociologists, particularly to the works of Durkheim, Marx, and Weber (Carroll &
Stanfield, 2003), the contemporary use of the term social capital is most often attributed to Bourdieu (1986), Coleman (1988) and Putnam (1993, 2000). Social capital has been defined in a number of different ways, but in general, it refers to the networks of social relations characterized by norms of trust and reciprocity that can improve the efficiency of society by facilitating coordinated actions (Adger, 2000; Stone & Hughes, 2002). The narrowest concept of social capital is associated with Putnam (1993), who explains social capital as a set of horizontal associations between people comprising social networks and associated norms that have an effect on the productivity of the community. A broader definition is given by Coleman (1988, p. 598), who describes social capital as “a variety of different entities, with two elements in common; they all consist of some aspect of social structure, and they facilitate certain actions of actors—whether personal or corporate actors—within the structure.” This conceptualization broadens the concept to include vertical as well as horizontal linkages, an important consideration when examining organizational behavior.

In applying social capital to environmental issues, social capital has been operationalized as, “the social and political environment that enables norms to develop and shapes social structure” (Grootaert, 1998; Woolcock, 2001). Woolcock argues that a relative consensus has been struck among scholars on the definition of social capital as referring to “the norms and networks that facilitate collective action” (2001, p. 70). He further posits that any definition of social
capital should focus on its sources rather than consequences. For example, trust is not social capital but an outcome of it, and can be used as a measure of social capital (Pretty, 2007). Determinants of social capital might include personal characteristics such as age, sex or health; family characteristics; education; and, attitudes and values (Stone and Hughes, 2002). Social capital has sources of multiple dimensions; to do distinguish between these dimensions, the concepts “bonding” and “bridging” social capital have emerged (Putnam, 2003).

The capacity to leverage resources, ideas and information from formal institutions beyond the community is a key function of linking social capital (Woolcock, 2001, pp. 71–72). Social capital has mostly been used to explain differentials in economic development between societies with differing levels of social integration. The economic benefits of social capital are well established. How exactly social networks produce the beneficial outcomes is a subject of debate, and the causal relationships are far from clear, but information sharing, coordination of activities, and collective decision-making are mentioned among the beneficial functions of social capital (Grootaert, 1998, pp. 3–6, 11). Recently, scholars have been critical of social capital and its application in practical policies, notably by the proponents of neo-institutional economics (e.g., Sobel, 2002; Carroll and Stanfield, 2003; Dolfsma and Dannreuther, 2003; van Staveren, 2003). However, as previously discussed, social capital theorists are
aware of the need to distinguish sources of social capital from its outcomes. Putnam’s analysis was crucial in arguing the need for this shift.

Although scholars using the social capital framework often see it as a resource for economic growth and development, they do recognize the intrinsic value of social networking—the fact that social capital is simultaneously an input to and an output of the sustainable development process (e.g., Grootaert, 1998).

The relationship between social capital and the state has been a subject of much controversy, some scholars accusing the social capital approach of neglecting the crucial role of formal state institutions in influencing development at the local level. Furthermore, Woolcock (2001) and Adger (2001) have emphasized the institutional context within which the social networks are embedded, notably the state, which plays a central role in the facilitation of social capital. Thus, the intrinsic nature of the relationship between social capital and the social contract is a critical one. The key location to facilitate this relationship is higher education.

Social capital and sustainability have a critical relationship. If sustainability is to be built, it would rely on a foundation of social capital and its networks to facilitate that development. Inversely, social capital is maintained, protected, and mobilized through a sustainable society. Using social capital to examine sustainability in higher education can elucidate some of the implications around
organizational behavior as well as potential benefits to higher education and
society at large.

The term "social capital" initially appeared in community studies,
highlighting the central importance for the survival and functioning of city
neighborhoods—of the networks of strong, crosscutting personal relationships
developed over time that provide the basis for trust, cooperation, and collective
action in such communities (Jacobs, 1965). The concept has been applied since its
early use to elucidate a wide range of social phenomena, although researchers
increasingly have focused attention on the role of social capital as an influence
beyond a mechanism for understanding the development of human capital
(Coleman, 1988). In the social sciences, there has been a significant increase in
scholarly use of the social capital concept over the last twenty years (e.g.,

Social capital suggests that social bonds, trust, and social norms are an
important part of the basis for sustainable livelihoods (Grooteart, 1999). Its value
was identified by Jacobs (1961) and Bourdieu (1986), later given a clear theoretical
framework by Coleman (1998). However, social capital was brought to wider
attention by Putnam’s work on the decline of social capital in the United States
(Bowling Alone, 1995). Coleman describes it as “the structure of relations between
actors and among actors” that encourages productive activities. These aspects of
social structure and organization act as resources for individuals to use to realize their personal interests (Bromley, 1993).

As it lowers the costs of working together, social capital also facilitates cooperation. With lowered “costs” and increased trust people are more likely to invest in collective activities (trusting that others will also do so). This also serves to decrease activities that tend to decrease trust such as crime – a somewhat obvious, but important point as the collective gains in an increase in social capital (as a remedy). Although there are already many different descriptions of social capital, these four central tenets of the concept relate its meaning: relations of trust; reciprocity and exchanges; common rules, norms and sanctions; connectedness, networks and groups (Putnam, 1995; Woolcock, 2001).

Relations of (public) trust

Cooperation is built upon trust. In turn, cooperation reduces the transaction costs between people, and so liberates resources. Instead of having to invest in monitoring others, individuals are able to trust them to act as expected. It can also create a social obligation inasmuch that trusting someone engenders reciprocal trust. There are two types of trust: the trust we have in individuals whom we know; and the trust we have in those we do not know, but which arises because of our confidence in a known social structure. Trust takes time to build, but is easily broken (Gambetta, 1988; Fukuyama, 1995), and when a society is pervaded by
distrust, cooperative arrangements are unlikely to emerge (Baland & Platteau, 1998).

Reciprocity and exchanges

Reciprocity and exchanges also increase trust. There are two types of reciprocity: simultaneous exchanges of items of roughly equal value; and diffuse reciprocity refers to a continuing relationship of exchange that at any given time may be unrequited, but over time is repaid and balanced (Coleman, 1990; Putnam, 1993). Consider, for example, the debates over carbon use and energy credits currently being considered for trade. Once a global norm around the environment as public trust has been established and accepted expectations put into place, reciprocity and exchange becomes an important mechanism of accountability. Again, this contributes to the development of long-term obligations between people, which can be an important part of achieving positive environmental outcomes (Platteau, 1997).

Common rules, norms and sanctions

Common rules, norms and sanctions are the mutually agreed or handed-down norms of behavior that place group interests above those of individuals. Associations of higher education bodies that commit to different declarations and policies are an important normative process. What must accompany those processes, however, are accountability and sanction measures as mutually-agreed sanctions ensure that those who break the rules know they will be punished.
These are sometimes called the internal morality of a social system (Coleman, 1990), the cement of society (Elster, 1989). Formal rules are those set out by authorities, such as laws and regulations, while informal ones are those individuals use to shape their own everyday behavior. Norms are, by contrast, preferences and indicate how individuals should act; rules are stipulations of behavior with positive and/or negative sanctions. A high social capital implies high “internal morality,” with individuals balancing individual rights with collective responsibilities (Etzioni, 1995).

**Connectedness, networks and groups**

Connectedness, networks, and groups and the nature of relationships are a vital aspect of social capital. There may be many different types of connection between groups (trading of goods, exchange of information, shared programs, strategic plans, etc.).

Connectedness manifests in different types of groups at the local level—from student groups, to environmental management groups, and non-governmental organizations. It also implies connections to other groups in society, from both micro and macro levels.

**Toward increasing natural capital**

For students to invest in the protection of natural capital and to engage in bridging and building social capital, they must be convinced that the benefits derived from group or joint or collective approaches will be greater than those
from individual ones. A third agent in this agreement is the role of the nation-state. A core assumption of this relationship is the required investment of resources of the nation-state into higher education to help develop social and human capital. This assumption is in turn based on the trust and exchange that it will produce sufficient benefits to exceed the costs (Grootaert, 1998; Dasgupta & Serageldin, 2000).

For initiatives to persist, the benefits must then exceed both these costs and those imposed by any free-riders in the group-based or collective systems (1990), geographic regions (Putnam, 1993, 1995), and nations (Fukuyama, 1995). The central proposition of social capital theory is that networks of relationships constitute a valuable resource for the public good, providing their members with "the collectively-owned capital, shared in by all members of society" (Orr, 1990). Thus, ceteris paribus, as social sustainability is enacted, social capital is mobilized. The inverse is also true.

Figure 2.3

The Relationship
The interdependent, sustainable nature of this model also has implications for the role, relevance, and sustainability of higher education in general. As a location that creates and replicates social capital, higher education is an important catalyst to build momentum. The implications of which suggest that instead of viewing sustainability as an additive component to building competitive advantage within an economic-agenda, universities can serve both their own needs of organizational survival and perpetuation while concomitantly returning to their core purpose of serving the public good. Sustainability as a movement, stands to gain the momentum to create a paradigm in which this is possible if the social capital, that is, the trust, between land-grant universities can be connected to mobilize such a shift. In the end, this will require strong organizational leadership and public accountability in the form of an active participant citizenry.
Currently, no national data sets of sustainability exist, therefore the focus of this study has been highly theoretical, though empirically-based in nature (AASHE is in the process of developing a pilot to be implemented in 2008 that is national in scope). Thus, the methods of this study are exploratory and aimed at understanding university adaptation in three ways: first, elements of organization and administration aimed at advancing sustainability; second, teaching and research efforts that have been established within a sustainability frame; and third, community and outreach efforts that examines the role of the university in its local environment as well as the work toward public service. The specific methodology employed can be categorized as comparative case study (Yin, 2003). To validate findings, data is triangulated via a between-methods design and collected through: qualitative survey, contextual content analysis, and comparative discourse analysis respectively (Jaeger, 1988). The result is effectively a 3 x 3 qualitative design so that each individual case study employs each of the three methodologies in order to provide a rich description of the social sustainability phenomena and offer data for comparative discourse analysis.
Scope

The scope of this study is intentional from both a conceptual and practical perspective and was structured on the broader theoretical questions on the U.S. social contract. First, given the question of the purpose of universities, institutions with the Carnegie Classification of “research extensive” were selected (formerly known as Research I). Furthermore, the size, diversity, resources, and ecological footprint of these institutions, and their connection to the nation-state economy, this seemed a logical parameter. The second restriction on the sample of institutions is whether or not they are a land-grant university. Again, in relation to one of the guiding theoretical questions regarding public good, and given the mandate of land-grant universities provided by the Smith-Lever Act (1914), this, too, is set as a parameter. The final restriction on the scope of the sample of this study is the existence of a full-time sustainability officer. Such criterion acts as a “litmus” test to discern university attention toward sustainability as well as providing a purposeful, yet limited sized sample that would lend feasibility to the completion of the research study.

A listing of research-extensive universities (Carnegie Institute, 2008) was cross-referenced with a list of land-grant universities (U.S.D.A., 2008). That list of 42 universities was then referenced against a listing of full-time sustainability officers provided by AASHE (personal communication). The result revealed
twelve institutions representing a diverse range of geographical locations in the
U.S.:

1. University of California – Berkeley

2. University of Connecticut

3. University of Florida

4. University of Maryland – College Park

5. Michigan State University

6. University of Nevada – Reno

7. University of New Hampshire

8. The Ohio State University - Columbus

9. Oregon State University

10. The Pennsylvania State University – University Park

11. University of Vermont

12. Virginia Polytechnic Institute & State University

As previously stated, the social justice frame of data collection seeks to amplify the
organizational discourse on social sustainability to facilitate a comparative
analysis. Through inquiry around social sustainability, which includes social
justice and diversity measures, this study aims to understand how organizations are

\[^{A}\text{As of 2008, the University of California System is considered “land-grant” however, given the other criterion, and to standardize the case study for comparison, Berkeley, the first land-grant university in California was selected.}\]

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implementing social aspects of sustainability in their efforts. A result of this focus raises questions about multiplicity of identities and limitations of past discourse of affirmative action and diversity. To elucidate these complications, and explore new areas, the emphasis of this study will be to deconstruct how institution-wide discourse in strategic planning documents resonates with social sustainability discourse from the chief sustainability officer of each of the case study universities. Analysis of this discourse also enables inquiry into the connections between sustainability and social capital in these land-grant institutions.

Theoretical Framework

*Grounded Theory*

This study is approached as exploratory and theoretical, but rooted in empirical evidence. For qualitative data analysis, a modified grounded theory approach borrowed from the work of Strauss and Corbin (1998), has been blended with new methodological techniques to come up with useful ways of analyzing the data that were uniquely suited to the problem of social sustainability in higher education. I began with research questions suggested by previous literature and theory (a more deductive approach) and used the research questions to guide the focus of my empirical analysis. The resultant data in turn led to a new theoretical framework for the follow-up methodological steps. This interplay of deduction and induction (Marshall & Rossman, 1989; Strauss & Corbin, 1998) formed the basis of my modified grounded theory analysis.
The results of grounded theory analysis are not a reporting of facts but a set of probability statements about the relationship between concepts, or an integrated set of conceptual hypotheses developed from empirical data (Glaser, 1998). The coding process in this study was a key area of modification that sought to remove biases of the individual researcher by utilizing Crawdad 2.0 computer software for centering resonance analysis.

Grounded Theory Modification

This study should be considered modified due to the modification of the content analysis and critical discourse methodologies which relied on centering resonance analysis for theoretical coding, though it should be recognized that the data from the open-ended survey is bounded by the scope of the questions on social sustainability. Theoretical codes integrate the theory by weaving the fractured concepts into hypotheses that work together in a theory explaining the main concern of the participants. Theoretical coding occurs when the researcher applies a theoretical model to the data (Creswell, 1987). It is important that this model is not forced beforehand but has emerged during the comparative process of the grounded theory approach. A second theory informing the coding of sustainability documents during the content analysis stage is constructed by linguistic theory. This process is further explained in the following section on centering resonance analysis. A distinction should be made with the comparative
discourse methodology which, using the results from the content analysis, relied on theoretical memos to analyze data.

Theoretical memoing is "the core stage of grounded theory methodology" (Glaser, 1998). "Memos are the theorizing write-up of ideas about substantive codes and their theoretically coded relationships as they emerge during coding, collecting and analyzing data, and during memoing" (Glaser, 1998). In turn, these memos facilitate the making of meaning of similarities or differences in intra and inter-organizational discourse. Thus, memos facilitated the zig-zag approach to examining the compared discourse to facilitate policy analysis.

Open-ended Survey

The first step of research was the dissemination by email of a qualitative survey (questionnaire) to each of the sustainability officers of the sample. Open-ended survey questions were then analyzed and coded through a constant comparative (Glaser, 2008), zig-zag approach (Creswell, 1998) between literature and data to discern emergent themes and language. Survey participants were also sent consent forms at the time of dissemination. To retain a modified grounded theory approach, data analysis took place separately from follow-up in person (when possible) interviews with participants or via phone communication. Once data was analyzed, member checks were utilized to validate findings. In turn, emergent trends and language were then outlined to create a framework for content
analysis of each of the participant sites’ sustainability and diversity documents as well as overall mission and strategic plans.

The qualitative survey was undertaken to fill descriptive gaps that currently exist in assessment instruments on sustainability. Because of the elusive nature of defining social sustainability, open-ended response opportunities aimed to draw out the clearest picture of what is occurring. Survey questions were developed through literature review and after review and feedback from field experts (Dr. Judy Walton, President of the Association for the Advancement of Sustainability in Higher Education; Dr. Debra Row, President, U.S. Partnership for Education on Sustainable Development). Survey results were important in developing a critical framework for the content analysis of university sustainability, diversity, mission, and planning documents. Thus, text analysis in the form of centering resonance analysis became a natural extension of the inquiry that began with the qualitative survey.

Centering Resonance Analysis

This study uses centering resonance analysis (CRA) to examine the content and structure of corporate codes of ethics. CRA is a text analysis method that uses linguistic theory to create word networks of nouns and noun phrases in order to represent main concepts, their influence, and their interrelationships (Corman, 2002; McPhee, 2002). McPhee posits that CRA networks “direct our attention to highly influential words, where ‘influential means they facilitate the connection of
meaning among many different words, across very different parts of the overall word network” (2002, p. 278). Drawing from network theory, influence is measured as between-ness centrality of a word, or how often that word is “between” other words. This measurement indicates the likelihood of a word being the shortest link in the network connecting any other two words (McPhee, 2002, p. 276). That is, CRA considers a word to have more influence within a text if it ties other words together in the text network and mediates meaning (Corman, 2002).

This differs from previous methods of text analysis which have relied on frequency counts of words or phrases. The weakness of such a method is that it does not take into account the influence of words in relationship to other terms in codes (Carasco & Singh, 2003; Farrell & Farrell, 1998; Gaumnitz & Lere, 2004). Using CRA extends current knowledge of ethics codes by analyzing both content and structure of codes. CRA provides a means of text analysis that allows the examination of a document to facilitate the comparison of non-parallel texts. That is, two or more texts that are similar or different in their structure and content. Existing content analysis programs require parallel texts in order to facilitate comparison. Word networks that have the same words or word phrases in similar influential positions within texts are said to resonate with each other (Corman et al., 2002). This is an important feature for systematically analyzing whether codes
from the two discourses differ significantly, as well as how codes within documents are similar and different.

To put it simply, CRA finds and maps concepts linking diverse chains of discussion and reasoning in and across text, then can compare maps between different groups and organizations. CRA involves both a conceptualization of discourse and a technology for its study. It is one of a growing array of procedures for text analysis but is unique in its dependence on and elaboration of centering theory, a theory of text coherence (Grosz, Weinstein, & Joshi, 1995; Walker, Joshi, & Prince, 1998). Centering theory describes coherence as a backward and forward reference to “centers” of linked meaning and emphasizes noun phrases as the basic centers of reference. CRA is a method for mapping the relations, generated in the discourse, among its noun phrase elements (Corman, 2002).

The process executed by applying centering resonance algorithms (see Figures 3.1-3.5) includes four steps: the first two are selection of the noun phrase elements, the focal words, to be the basis of later stages of analysis, and linking of words into a net-work reflecting their sequence inside sentences (McPhee, 2002). The third stage, indexing, involves taking all appearances of focal words and computing values for two main structural indices. The main index for individual words is influence, which measures the betweenness centrality of the word—its likelihood of being on the shortest path in the network connecting any other two words. The other main type of index is resonance, which measures the similarity of
two networks in using the same influential words (Corman, 2002). In the final, fourth stage of CRA, concept mapping, the most influential words and their connections are displayed as a network. Current work on CRA aims to allow informative display of the evolution of central terms and their relations over time, as discourse proceeds. All four steps in this sequence are now automated (McPhee, 2002).

*Using CRA*

The centering resonance analysis (.cra) file itself is a comma-delimited text file, which can be opened with a variety of programs, including Microsoft Excel. First, three statistics describe the entire CRA Network. Nodes lists the number of nodes in the CRA Network. Density gives the proportion of links that exist in the CRA Network, divided by the number of links that could possibly exist in a network of that size.
Density is an indicator of how highly connected the network is. The third statistic is *group influence* and it indicates how centralized the entire CRA Network is. The CRA networks with high group influence scores indicate highly coherent, focused text. CRA Networks with lower group influence scores indicate text that is not as focused or coherent, which tends to be true of texts that are more casual or conversational in nature. Both the density and the group influence scores are normalized measures that have minimum values of 0 and maximum values of 1 (Corman, 2002; McPhee, 2002).
The output (HTML) file displays the CRA map (via the embedded .gif file). For the average CRA Network this contains the 20 or 30 most influential nodes and their interconnections. The most influential words are shown boxed in red, the next most influential words are shown in boxed in yellow, and the next most influential words are shown boxed in white. The colors of the links indicate the frequency of co-occurrence of the connected words. Gray links indicate one co-occurrence, black links indicate two co-occurrences, and blue links indicate three or more co-occurrences. The most influential words tend to be located near the top or the map, and the lower portion of the graph tends to contain less influential words (Crawdad Technologies, 2008).

The output generated by the analysis offers CRA maps as well as a word resonance table (see Appendices). The table's left column is for words, and the right column for word pairs. The words column lists the top 20 words rank ordered by influence descending. The pairs column shows the top 20 pairs, ranked by frequency weighted pair influence descending. These paired scores are a product of the influence of the two words involved in the pair weighted by the number of times the pair co-occurs (McPhee, 2002).

*Comparative Policy Discourse Analysis*

Texts, images, and representations have become both the means and objects of processes of commodification (Baudrillard, 1995). This situation has raised debate over the kinds of textual and visual representation and subsequent
subjectivity of individuals (McLaren & Lankshear, 1993). It has resulted in making
texts and images important locations of analysis and research (Luke, 1995).
Because of the differences in operational definitions of terms relating to
sustainability, those employed by the sustainability officers of each institution will
be compared inter and intra-organizationally. The purpose of this is to examine the
consistency of discourse between the organization and the sustainability officer.
Three broad content areas will be examined: a) Outreach and Service, b) Student
Life, c) Institutional Mission, Structure and Planning (Cortese, 1999). The
framework of the critical discourse analysis (CDA) for purposes of this study is
one of social justice, aimed at understanding sustainability within a social capital
frame. The reasons for doing so relate to guiding questions about social justice
within sustainability. The text being analyzed in these case studies are the
responses of the open-ended social sustainability survey and the university-wide
sustainability plan. An important trait of critical discourse analysis is identifying
underlying implicit messages in communications that outline systemic ideology
(Janks, 1997).

Discourse refers to expressing oneself using words. Discourses are
ubiquitous ways of knowing, valuing, and experiencing the world. Discourses can
be used for an assertion of power and knowledge, and they can be used for
resistance and critique (Fairclough, 1996). Furthermore, discourses then provide
"frameworks or ways of viewing issues" (Bacchi, 1999, p. 40).
Thus, CDA is necessary for describing, interpreting, analyzing, and critiquing social life reflected in text (Luke, 1997). CDA is concerned with studying and analyzing written texts and spoken words to reveal the discursive sources of power, dominance, inequality, and bias and how these sources are initiated, maintained, reproduced, and transformed within specific social, economic, political, and historical contexts (Van Dijk, 1988). It tries to illuminate ways in which the dominant forces in a society construct versions of reality that favor their interests. By unmasking such practices, CDA scholars aim to support the victims of such oppression and encourage them to resist and transform their lives (Foucault, 2000), a central tenet of critical theory.

Also, while CDA can also focus on body language, utterances, symbols, visual images, and other forms of semiosis (signs and symbols) as means of discourse (Fairclough, 2002), this study will be limited to analyzing written language.

Elizabeth Allan's (2003) method of policy discourse analysis was incorporated into the methodology to investigate how university diversity policies discursively frame sustainability and social sustainability in survey responses and university documents, respectively. A hybrid methodology, comparative (policy) discourse analysis focuses on written documents. The result is a strategy for examining policy discourses and the ways they come together to make particular perspectives more prominent than others (Allan, 2003).
The objective of CDA is to uncover the ideological assumptions that are hidden in the words of our written text or oral speech in order to resist and overcome various forms of power (Fairclough, 1989). CDA aims to systematically explore often opaque relationships between discursive practices, texts, and events and wider social and cultural structures, relations, and processes. It strives to explore how these non-transparent relationships are a factor in securing power and hegemony, and it draws attention to power imbalances, social inequities, non-democratic practices, and other injustices with the intention of spurring people to corrective actions (Fairclough, 1993).

Furthermore, CDA tries to unite, and determine the relationship between, three levels of analysis: (a) the actual text; (b) the discursive practices (that is the process involved in creating, writing, speaking, reading, and hearing); and (c) the larger social context that bears upon the text and the discursive practices (Fairclough, 2000).

When discourse is effective in practice, evidenced by its ability to organize and regulate relations of power, it can be termed a “regime of truth” (Foucault, 1980). It is this regime, a system by which a political system is controlled, that is revealed when we engage in critical discourse analysis.

vanDijk (2000) acknowledges that CDA does not have a unitary theoretical framework or methodology because it is best viewed as a shared perspective encompassing a range of approaches. CDA does not provide answers to the
problems but does enable one to understand the conditions behind the specific problem; the deep, ideological roots of the issue (Palmquist, 1999).

Thus, this hybrid methodology of comparative policy discourse analysis seeks to employ a method that questions the constructs of power in the effort to lead to action toward social sustainability.

Case Study Conceptual Framework

In presenting each case study, a background of the university including organizational culture will be discussed to develop a full contextual picture. Next, three areas critical to social sustainability will be examined: governance and administration, curriculum and research, and community service and outreach. Responses provided by the lead sustainability administrator will be utilized as a cornerstone for the data analysis. The inductive analysis of the social sustainability survey will in turn provide a comparative framework for the content resonance analysis of the university sustainability policy. The third stage of the qualitative data analysis, comparative discourse analysis, is then undertaken to understand the relationships between sustainability policy discourse and diversity discourse in the organization and it’s resonance with the discourse of the lead sustainability administrator. Thus, the university’s attempt at adaptation toward sustainability through these three lenses, the shared discourses of which will then be summarized to facilitate synthesis and analysis under a social capital lens in the subsequent chapter.
Validity

As a research strategy, the distinguishing characteristic of the case study is that it attempts to examine: (a) a contemporary phenomenon in its real-life context, especially when (b) the boundaries between phenomenon and context are not clearly evident (Yin, 2003). Comparative case studies in particular, which attempt to reconcile evidence across cases, types of data, and different investigators, and between cases and literature increase the likelihood of creative reframing into a new theoretical vision (Bartunek, 1988; Yin, 2003). Another strength of this methodological approach is that the resultant theory is likely to be empirically valid. The likelihood of valid theory is high because the theory-building process is so intimately tied with evidence that it is very likely that the resultant theory will be consistent with empirical observation (Yin, 1994).

In the social sciences, the use of triangulation can be traced back to Campbell and Fiske (1959) who developed the idea of "multiple operationism." They argued that more than one method should be used in the validation process to ensure that the variance reflected that of the trait and not of the method. The conventional form of triangulation is also known as the “between methods” approach designed for convergent validation (Denzin, 1978). The use of complementary methods is generally thought to lead to more valid results. "Triangulation, however, can be something other than scaling, reliability, and convergent validation. It can also capture a more complete and contextual portrayal of the study" (Jick, 1979, p. 233). Beyond the analysis of overlapping
variance, the use of multiple measures may also uncover some unique variance which otherwise may have been neglected by singular methods (Denzin, 1978). It is here that qualitative methods, in particular, can play an important role by eliciting data and suggesting conclusions to which other methods would be blind. “In this sense, triangulation may be used not only to examine the same phenomenon from multiple perspectives but also to enrich our understanding by allowing for new or deeper dimensions to emerge” (Yin, 1994, p.103).

Reflexive Grounded Theory

Grounded theory is a way of generating new theory grounded in the field but also set in the context of existing theory. Therefore it does not set out to test an existing hypothesis (Kennedy & Lingard, 2006), but rather seeks to generate theory from the research situation “as it is.” The essence of grounded theory is the inductive–deductive interplay, beginning not with a hypothesis but with a research situation.

The grounded theory approach is not linear but a concurrent, iterative and integrative, with data collection, analysis and conceptual theorizing occurring in parallel and from the outset of the research process (Duhscher & Morgan 2004). An important consideration in the grounded theory methodology is attention to the role and influence of the researcher. A part of the process for qualitative researchers is to understand their position and interpretation of data by being reflexive researchers. Robson (2002, p. 22) states simply that reflexivity is “an awareness of the ways in which the researcher as an individual with a particular social identity
and background has an impact on the research process.” Similarly, Neil (2006) argues that the potential impact of the researcher on the data needs to become part of the research record in order to be explored through constant comparative analysis.

The constant comparison method necessitates that these themes are grounded in the data rather than being derived from a preconceived conceptual framework. This implicitly requires awareness of self and a consciously reflective process. With any research study, the role of the researcher, and the impact their social, cultural, and political ideologies must be acknowledged and addressed (Reinharz, 1979). Given the particular qualitative nature of this study, the subjectivity of interpretation will be made as transparent as possible in the course of data collection, analysis, and findings.
Chapter 4

Michigan State University

Background

Michigan State University (MSU) is a co-educational public research university in East Lansing, Michigan. The university was founded in 1855, as the nation’s pioneer land-grant institution and served as a model for future land-grant colleges in the United States under the 1862 Morrill Act.

Following the introduction of the Morrill Act, the college became coeducational and expanded its curriculum beyond agriculture as prescribed in its founding. Currently, MSU is the eighth-largest university in the United States, with 46,045 students and 2,954 faculty members (Michigan State University, 2008). MSU's (private, non-Morrill Act) endowment started in 1916 when the Engineering Building burned down. MSU has often lagged behind peer institutions in terms of endowments (Michigan State University, 2006). At the close of fiscal year 2004–2005, the endowment had risen to $1.325 billion, raising the University to sixth of the 11 Big Ten schools in terms of endowment (Michigan State University, 2007).
Sustainability at Michigan State University

MSU is a member of The Association for the Advancement of Sustainability in Higher Education (AASHE), The National Wildlife Campus Ecology Project, Wege Foundation’s Economicology group, and Central Michigan Sustainable Business Forum. In November 2006 MSU joined the Chicago Climate Exchange (CCX) committing to 2% annual reductions in greenhouse gas reductions (Michigan State University, 2007).

MSU Office of Sustainability

Terry Link, Director of Sustainability at Michigan State University describes the aim of his office as, “Building collaboration across institutional mission to give attention to implications of and opportunities for approaches that address challenges to make more sustainable choices.” To facilitate university adaptation, Link and his staff “bring together teams across functions, disciplines, and status to think, discuss, research, and act to improve institutional sustainability.”

The office of sustainability at MSU continues to grow and as it does is now devoting more resources to the attention of “the environmental impacts on campus there are more bodies assigned to things like compliance, environmental management systems, and energy management.” From a philosophical perspective, Link anticipates a shift in how sustainability is viewed. He states, “We’ll focus
more on collecting and telling the full stories of our impacts upstream and
downstream so that they become more visible both socially and environmentally.”

The Office of Campus Sustainability launched an ongoing series of
workshops for employees on “Sustainability: What It Can Look Like in the
Workplace and the Home” in Spring 2007. Representatives from the
Environmental Science and Policy Program, Center for Advanced Study in
International Development, the Office of Campus Sustainability and local
environmental groups have developed a web page on climate information listing
local researchers, tips, and basic science for the community. The Office of Campus
Sustainability developed a series of five posters around climate change and
personal action that have been posted around campus to raise awareness and
encourage action and in order to educate the campus as a whole around issues of
sustainability.

**Governance & Administration**

Multiple accomplishments in governance and administration at MSU over
the past two years have propelled the university toward institutional sustainability.
The Faculty Voice effort, begun in Spring 2006, has been charged with re-
examining the role of faculty in university governance. In Fall 2005, president Lou
Anna Simon launched “Boldness By Design,” a campus vision that seeks to 1)
enhance the student experience; 2) improve research opportunities; 3) enrich
community, economic and family life; 4) expand international reach; and 5) strengthen stewardship.

The stewardship effort of *Boldness by Design* has brought new positions: a campus environmental management systems (EMS) manager, energy and environment engineer, solid waste coordinator, and an environmental stewardship project coordinator. As Link explains, we’re “using a collaborative and “systems” approach, and an Environmental Stewardship Systems Team has been addressing our two most pressing areas of stewardship – energy and solid waste.”

A key area in which MSU has been developing is their effort at assessment and evaluation of their work towards creating a more sustainability organization. To that end, a committee was established and designated the task of reporting on the state of campus sustainability. The University Committee for a Sustainable Campus (UCSC) working in conjunction with the office of sustainability, produced the 2007 Campus Sustainability Report. The version of that report analyzed in this study includes 88 indicators and recommendations for 10 key indicators. Summer [2008] focus groups will discuss those key indicators, and larger community forums will continue the discussion in the fall.

Says Link, “This is the sixth year of our Vision 2020 campus land use planning effort. The past year saw a broadly participative update of the plan, which added environmental stewardship principles including:
• Incorporation of design concepts associated with active living communities to make it easy for people to include physical activity in their daily lives.

• Establish a coordinated bicycle system including convenient and appropriately sized storage facilities, bike lanes within roadways, and pathways where appropriate.” (personal communication)

In addition to working to provide leadership in sustainability to the Michigan State University campus, the office of sustainability is also a leader for the state of Michigan in sustainability efforts.

MSU is the lead institution in the Michigan Higher Education Partnership for Sustainability (MiHEPS), hosting its web site and listserv and most recently a meeting to discuss collaboration between state government and other institutions around energy and climate change. A steering committee led by MSU has been formed to pursue this collaboration.

*Teaching & Research*

The connections between the work of the sustainability office and the faculty are strong. As Link explains:

“Faculty sit on our advisory committee and guide the direction of our work. I am invited to numerous classes to discuss sustainability in broad terms as well as the university’s efforts. I work with faculty on committees and teams to address complex issues. I work with faculty who wish to have their students engaged with projects on and off campus. I teach, sit on graduate thesis committees. I sponsor events in collaboration with faculty, especially our ongoing UN Decade of Education for Sustainable Development Speaker Series. Most recently I have led a group of faculty in developing our first academic program in sustainability, now in review by academic
governance. We’re also working on establishing a faculty learning community around sustainability this fall [2008].”

Curriculum development around sustainability continues to grow at MSU. The graduate program in Environmental Science and Policy Program (ESPP) has connected environmental studies across the entire university making course and research opportunities more accessible regardless of discipline.

Two new sustainability specializations at the undergraduate level are in development; one dealing with sustainable agriculture and food systems and the other with sustainability more broadly. Other programs such as, Science, Technology, Environment and Public Policy (STEPPs) have been in existence for some time and is the result of a joint effort of several colleges and schools. It joins RISE (Residential Initiative for the Study of Environment), Ecological Economics, International Development, Peace and Justice Studies, the Bailey Scholars Program, and Gender, Justice and Environmental Change as popular interdisciplinary programs dealing with key components of sustainability.

In addition, MSU has created the Office of Bio-based Technologies to link faculty in Engineering, Natural Science, Agriculture and Natural Resources, and Packaging with MSU Extension and Agricultural Experiment Stations. This research has led to new businesses utilizing bio-based materials and fuels (University of Michigan, 2008).
Community Service & Outreach

In 2007, 11,274 MSU students were involved in Service Learning projects, up 32% from just two years ago (personal communication). Since 2001, through the “Small Town Design Initiative” students have provided design options for more than 50 communities throughout Michigan in collaboration with those communities.

In addition to service-learning efforts, community outreach has become a priority of the MSU administration. Under the leadership of President Lou Anna Simon, MSU has initiated and funded a private/public partnership, *Prima Civitas* which aims to support regional economic development throughout mid-Michigan through worker re-training efforts. The Poverty Reduction Initiative is working locally in the five counties of Northwest Michigan to reduce poverty by 25% by the year 2010. Capacity building includes "welfare to career" workplace success models and stakeholder investment by area employers in a private-public job retention partnership. MSU has facilitated development of a regional Local First economic development initiative with locally owned businesses and neighborhood organizations. Beyond its Michigan outreach efforts, the office of sustainability views its role positioned within the global environment.

Link explains global efforts as a part of MSU’s sustainability vision, “We work overseas in many countries with a historic focus on Africa and special emphasis on appropriate technology and community development. We assisted with the redevelopment of Rwanda after the genocide through development of specialty coffee growing. This has led to the development of 13 cooperatives that raise and sell fair trade coffee. (In the past two years
MSU closed the loop by purchasing that coffee. Two Tanzanian villages are benefiting from the work of students and faculty in the Department of Mechanical Engineering. Working with a Michigan nonprofit, Solar Circle, they are trying to launch an industry that will supply this East African nation with solar ovens manufactured from locally available materials.”

**Social Sustainability at Michigan State University**

In discussing the role social sustainability played in consideration of the work of his office, Terry Link explains,

“Our job is to raise the social considerations at the same time and with the same volume that we raise environmental ones. To solve one set of issues by ignoring the other is not sustainable in the long term. Part of this work is making those issues more visible and to question the moral implications of disproportionate impacts on selected groups or individuals…”

Each of the respondents was asked to define social sustainability and their approach to it. Link explains,

“I would say it is the step child of the three usual dimensions of sustainability. Many, if not all administrators still see sustainability as being about environmental issues and impacts and do not see the social as being part of the same. Most people that come to sustainability to date, come from the environmentalist track. I did myself, but as I have studied it, worked in it, I have returned to my earlier concerns around social and economic justice, nonviolence, democracy and peace. I see them now as indivisible, but I’m of a rather small minority here. We’ve been urged by administrators to steer away from issues like wage disparity or anything to do with collective bargaining.”

Given the concerns of the university administration about the role of the sustainability office in social justice issues, the goal is “to network closely with those on campus who work to keep the social issues in the forefront of consideration.”
**MSU: Centering Resonance Analysis**

Responses to the social sustainability survey were cleaned and formatted for generation of a Central Resonance Analysis document using Crawdad 2.0 text analysis software. The social sustainability survey was converted to text files in order to use the Crawdad Text Analysis System version 2.0 (Crawdad Technologies, 2007). Initial analyses produced word networks for each code. Network properties for each code were analyzed, including size (number of nodes/words) and density (number of connections compared to the number of possible connections). Additionally, codes were compared with each other for resonance, or how much the content and structure of codes were similar to each other.

General network of the Michigan State University Social Sustainability Survey responses as analyzed through centering resonance analysis reveal the number of nodes to be 174 with a density of 0.022 and a focus of 0.334. Density is the proportion of links that exist in the CRA Network, divided by the number of links that could possibly exist in a network. A density score of 0.022 therefore indicates a moderately strong level of significance. However, a focus score of 0.334, a statistic of group influence indicates how centralized the entire CRA Network is, reveals a highly significant level of centralization in the CRA Network. Results were found to be normal given that group influence scores are normalized measures that have minimum values of 0 and maximum values of 1.
A map of the CRA Network word influence resonance can be seen in Figure 4.1. Higher influence words such as sustainability, faculty, social, issue, are also densely connected with each other, suggesting a higher co-occurrence of these words. The next grouping of words having slightly less influence include campus, student, environmental, and economic. The strongest network density occurred between sustainability, social, and economic.
Similar data preparation took place of the Michigan State University Sustainability Report of 2007, and a text document of approximately sixty-seven pages was analyzed.

General network of the Michigan State University Sustainability Report as analyzed through centering resonance analysis reveal the number of nodes to be 2056 with a density of 0.008 and a focus of 0.124. Density is the proportion of links that exist in the CRA Network, divided by the number of links that could possibly exist in a network. A density score of 0.008 does not indicate a significant
level of density. However, a focus score of 0.124, a statistic of group influence indicates how centralized the entire CRA Network is, reveals a moderate level of centralization in the CRA Network. Results were found to be normal given that group influence scores are normalized measures that have minimum values of 0 and maximum values of 1.

Table 4.2. *MSU Influence Analysis Results and Word Pairings, Policy*

<table>
<thead>
<tr>
<th>Words</th>
<th>Pairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>msu 0.12519</td>
<td>msu</td>
</tr>
<tr>
<td>student 0.08909</td>
<td>msu</td>
</tr>
<tr>
<td>number 0.06736</td>
<td>msu</td>
</tr>
<tr>
<td>campus 0.06581</td>
<td>msu</td>
</tr>
<tr>
<td>figure 0.04928</td>
<td>student</td>
</tr>
<tr>
<td>year 0.03805</td>
<td>number</td>
</tr>
<tr>
<td>university 0.03682</td>
<td>student</td>
</tr>
<tr>
<td>water 0.03618</td>
<td>student</td>
</tr>
<tr>
<td>report 0.03447</td>
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</tr>
<tr>
<td>employee 0.03352</td>
<td>msu</td>
</tr>
<tr>
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<td>student</td>
</tr>
<tr>
<td>use 0.02495</td>
<td>student</td>
</tr>
</tbody>
</table>

A map of the CRA Network word influence resonance can be seen in Figure 4.2. Higher influence words such as msu, student, number, campus are also
densely connected with each other, suggesting a higher co-occurrence of these words. The next grouping of words having slightly less influence include, figure, year, water, and university. The strongest network density occurred between MSU, student, number, and campus. Table 4.2 also presents the 21 most influential words and word pairs. The CRA map shows these words in relation to each other, and indicates the density of word co-occurrence.

Centering Resonance Analysis Comparison

After generating Network data, both the MSU Social Sustainability Survey and the MSU Sustainability Report were loaded for comparison and analyzed via the Crawdad “Comparator” function which compares two CRA files by determining the intersection of the two CRA Networks as well as the unique parts of each. The results are output in two forms: First, there is a CRA Network visualization of the highest influence words shared by the two CRA Networks, followed by CRA network visualizations of the most influential words unique to each. There is also a tabular listing of all the common words and word pairs plus all the unique words and word pairs in the two CRA files.
Figure 4.3. MSU Comparison Shared Words

Figure 4.4. MSU Comparison: Unique Words, Social Sustainability Survey

Figure 4.5. MSU Comparison: Unique Words, Sustainability Report
MSU Summary

The Michigan State University sustainability office has been recognized for its excellence by external bodies such as the Association for the Advancement of Sustainability in Higher Education. The incorporation of social sustainability into the vision and efforts of the MSU office of sustainability has been steadily increasing. Resonance between the social sustainability survey response and the larger sustainability plan and support suggest a moderately strong level of discourse resonance. With an increase on evaluation and benchmarking, particularly around student learning outcomes and curriculum, the mainstreaming of sustainability at the university stands to only increase.

A strong emergent theme of the sustainability discourse from Michigan State is an academic and research focus of sustainability issues. Efforts at MSU continue to draw on an organizational saga that connects the university to the community, state agriculture, and furthering its role as the nation’s first land-grant institution.
Chapter 5
University of Vermont

Background

The University of Vermont was chartered as a private university in 1791. In 1865, the university merged with Vermont Agricultural College (chartered November 22, 1864, after the passage of the Morrill Land-Grant Colleges Act), emerging as the University of Vermont and State Agricultural College. Vermont residents make up 35 percent of enrollment; 65 percent of students come from other states and countries (University of Vermont, 2008).

The University of Vermont was the first American college or university with a charter plainly declaring that the "rules, regulations, and by-laws shall not tend to give preference to any religious sect or denomination whatsoever" (University of Vermont, 2008, paragraph 19).

Justin Smith Morrill a Representative (1855–1867) and Senator (1867–1898) from Vermont, served as a trustee of the university from 1865-1898 (University of Vermont, 2007). In this way, the University of Vermont holds a special responsibility in their function as a land-grant institution.

Sustainability at the University of Vermont

The University is a member of University Leaders for a Sustainable Future (ULSF), National Wildlife Federation’s Campus Ecology program, the Consortium
for Environmental Excellence, NACUBO, APPA, and SCUP, as well as Northeast Campus Sustainability Consortium and numerous local and regional associations relating to sustainability.

The university’s Environmental Council, composed of faculty, staff, students, and community members, encourages internal outreach and collaboration through the Small Grants program, monthly open meetings, listservs, and an annual Eco-Fair to celebrate successful projects. The Council encourages and tracks external partnerships and collaborations related to campus greening, such as the Clean Cities program, the Vermont Campus Energy Group, the local Alliance for Climate Action, and the Northeast Campus Sustainability Consortium.

UVM: Office of Sustainability

The function of the office of sustainability at the university of Vermont is summarized by its Director of Sustainability, Gioia Thompson, as:

1. Support organizational strategic planning for the University’s sustainability work in academic programs, curricula and campus operations. Assist the President’s Commission on Sustainability (PCS) with development of an umbrella strategy and implementation processes. Focus on climate neutrality planning in first year. Work with Development and other offices to seek grant funding and opportunities for collaboration for subsequent years.
2. Track UVM’s sustainability bottom line, following national best practices and indicators relating to sustainability, initially focusing on environmental sustainability (green building, food, waste, transportation, energy and land use) and subsequently including social and financial aspects of sustainability as appropriate. Support involvement of key stakeholders.

3. Educate and involve the campus community and the public at large about sustainable living at UVM, at home, and in their travels through an expanded EcoReps program, a strong website presence, and other activities. Collaborate with other institutions and organizations to demonstrate sustainable technologies and practices. Work with Communications to disseminate information. (personal communication)

The University of Vermont has a focus on liberal arts, health and the environment, and has adopted a vision of being an “Environmental University”. Although the university enjoys a strong culture of environmentalism the office of sustainability has only recently been established. As Thompson states, “The Environmental Council and I in my previous role of Environmental Coordinator have been involved with a core group of faculty concerned about greening the institution and working with students on campus greening projects. Our small grants program brought in another circle of faculty who are interested in working
with students but not having time to address institution-wide greening activities. More recently President Fogel has convened deans to strategize about ways to link the academic side of campus with Vermont’s environmental priorities, and a proposal is before the Faculty Senate to create a new interdisciplinary program. I have been involved in these conversations as the one responsible for making sure we ‘walk the talk.’”

Thompson articulates the growing efforts, “I see the office expanding into a stronger education and outreach mode, getting grants for projects, working with Development to endow a sustainability fellows program, and connecting more with the academic side of campus. I still expect the core office staff to remain small and nimble. The idea is that sustainability is being addressed across the university, and that the office serves to tie the pieces together into a coherent yet evolving story.”

**Governance & Administration**

The University’s stated academic focus on the environment, along with liberal arts and health, has grown out of more than 30 years of course offerings in environmental studies and sciences. Approximately ten percent of undergraduates major in environmentally related areas, including natural resources, sustainable agriculture, environmental engineering, environmental science, and environmental studies. (Thompson, personal communication)

The Environmental Council, created in 1996, works with the position which is now known as the Director of Sustainability, Gioia Thompson, for tracking
environmental performance; recommending environmentally responsible practices; encouraging collaboration among students, faculty members, and staff members; and connecting with the local community.

As Thompson described it, "During the past two years, under the leadership of President Fogel, the University’s commitment to sustainability and environmental excellence in academics, operations, and outreach has been elevated from a medley of grassroots and departmental efforts to a consolidated, university-wide strategic initiative." In addition, a sustainability task force is leading a campus and community visioning discussion in 2007 in preparation for a major new program. President Fogel signed a pledge in 2004 in support of regional greenhouse gas reductions, and in May, 2007 signed the Presidents’ Climate Commitment.

The University’s institutional commitment to tracking environmental performance was recognized in 2004 with a Vermont Governor’s Award for Environmental Excellence for the Environmental Council’s environmental report card, Tracking UVM, developed in collaboration with local sustainability organizations.

*Teaching & Research*

In addition to the Environmental Program, which offers a self-designed major in four colleges, the University of Vermont’s sustainability related academic programs include numerous majors in the College of Agriculture and Life Sciences; the College of Arts and Sciences; the College of Engineering and Mathematics; and, the Rubenstein School of Environment & Natural Resources.
In addition, research centers span health research and promotion, rural economic vitality, community and place-based education, and environment and natural systems. Examples include the Gund Center for Ecological Economics, the Center for Rural Studies, and the Center for Sustainable Agriculture.

Recent initiatives have helped provide the tools to foster service learning, residential learning communities, and interdisciplinary activity, blurring traditional lines between academics, research, operations, and outreach. For example, according to Thompson, “an interdisciplinary program in Environmental Sciences was recently integrated into the University curriculum, with leadership from the Rubenstein School of Environment & Natural Resources and the College of Agriculture & Life Sciences.” However, about research incentives, Thompson explains, “the primary concern at the university now is that there are barriers to faculty getting involved in interdisciplinary work because of the promotion and tenure system. This is being addressed through the Leading by Design proposal before the Faculty Senate.”

**Community Service & Outreach**

In addition to traditional activities of the Extension Service, the University of Vermont fosters engages in sustainability through outreach efforts such as service learning, collaboration on land use and transportation, and many other activities.

A specific example of community outreach includes the Office of Community-University Partnerships and Service Learning, created in September of 2003, which supports collaborative UVM-community partnerships, high quality service-
learning, and community-based scholarship. A recent example involved students helping to recycle mobile homes.

Moreover, the University works to maintain positive town-gown relations, through the work of the Office of Student & Community Relations. In February, 2005 UVM hosted the third Annual Northeast Climate Conference, bringing together 400 college students from the northeastern United States to “collaborate on ways of fighting climate change on their campuses and in their states. Common themes included grassroots movements, student organizing and networking, outreaching, future planning, and staying positive” (Thompson, April, 2008, personal communication).

**Social Sustainability at the University of Vermont**

When asked to define social sustainability, Thompson explains, “Social sustainability to me is about health, equity, access to education, development of an informed, engaged citizenry, and lively democratic decision-making processes. My office’s approach is to advance environmental sustainability by engaging with the many people on campus who work on these issues, learning from their successes and combining efforts when appropriate. For example, there are several presidential commissions related to diversity and equity; a new sustainability commission will be learning from and working with the existing commissions, sharing some members.”
In discussing the importance of terminology around matters of social sustainability and diversity:

“The University’s and the community’s commitment to social sustainability is so pervasive, so broad and deep, that we don’t talk about it that way [separately]. We talk about justice, about health, about diversity, equity, responsibility, governance. Our culture of promoting these values can easily be traced back more than 200 years at the University and in Vermont in general. It’s the basis of our way of life.”

The social sustainability efforts by members of the university community have long been praised and celebrated by the university leadership and in university publications. Thompson believes “there is a high level of consciousness about social sustainability throughout the university. This means that any initiative that fails to recognize these values is quickly called into question.”

Furthermore, the Strategic Plan for 2003-2008 emphasizes diversity and environmental excellence in academic programs and operations in two of its seven goals. In 2006 all University policies were re-evaluated for their alignment with these strategic goals.

On the student affairs side of things, “residential life has a number of residential learning communities that could be placed under this umbrella. The student center is devoted to social justice. Our campus and community relations office brings support for environmental and social responsibility among students living in the community, convening neighbors and students on joint projects and UVM has a very strong record of student volunteerism” says Thompson.
When asked to describe what role social sustainability plays at the University of Vermont, sustainability director Gioia Thompson explains, “My belief is that environmental sustainability takes on an entirely new level of meaning when we bring social justice and diversity themes into the conversation. The ecological effects of global warming are sobering, but don’t necessarily empower people act. The threat of widespread social breakdown resulting from ecological disasters, on the other hand, bring forth compassion for other people, and that heart-centered impulse is what really is bringing people to take action on a personal level.”

The office aims to work across different levels and areas of the university. Thompson describes this work as, “we are promoting open, democratic decision-making about environmental sustainability through the new presidential commission and a grassroots Environmental Forum. We connect with formal structures that support social sustainability, and we also reach out to student leaders. The students don’t see a distinction between environmental and social sustainability, from my experience. For example, the fair trade, local food, and investing initiatives thoroughly mix social and environmental values in their arguments for change.”

*University of Vermont: Centering Resonance Analysis*

Responses to the social sustainability survey were cleaned and formatted for generation of a Central Resonance Analysis document using Crawdad 2.0 text
analysis software. The social sustainability survey was converted to text files in order to use the Crawdad Text Analysis System. Initial analyses produced word networks for each code. Network properties for each code were analyzed, including size (number of nodes/words) and density (number of connections compared to the number of possible connections). Additionally, codes were compared with each other for resonance, or how much the content and structure of codes were similar to each other.

Table 5.1

*Influence Words UVM Social Sustainability Survey*

<table>
<thead>
<tr>
<th>Words</th>
<th>Pairs</th>
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<tbody>
<tr>
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<td>community</td>
<td>sustainability</td>
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<tr>
<td>office</td>
<td>sustainability</td>
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</tbody>
</table>

General network of the University of Vermont Social Sustainability Survey responses as analyzed through centering resonance analysis reveal the number of nodes to be 263 with a density of 0.023 and a focus of 0.342. Density is the
proportion of links that exist in the CRA Network, divided by the number of links that could possibly exist in a network. A density score of 0.022 therefore indicates a moderate level of significance (Crawdad Technologies, 2007). However, a focus score of 0.334, a statistic of group influence indicates how centralized the entire CRA Network is, reveals a highly significant level of centralization in the CRA Network. Results were found to be normal given that group influence scores are normalized measures that have minimum values of 0 and maximum values of 1.

A map of the CRA Network word influence resonance can be seen in Figure 5.1. Higher influence words such as sustainability, social, university, campus, faculty, and environmental are also densely connected with each other, suggesting a higher co-occurrence of these words. The next grouping of words having slightly less influence include event, topic, indicator, community, and justice. The strongest network density occurred between sustainability, social, and university.
Similar data preparation took place of the University of Vermont Sustainability Plan, a text document of approximately sixty-three single-spaced pages was analyzed.
General network of the University of Vermont Sustainability Report as analyzed through centering resonance analysis reveal the number of nodes to be 2123 with a density of 0.006 and a focus of 0.111. Density is the proportion of links that exist in the CRA Network, divided by the number of links that could possibly exist in a network. A density score of 0.006 does not indicate a significant level of density. However, a focus score of 0.111, a statistic of group influence indicates how centralized the entire CRA Network is, reveals a moderate level of centralization in the CRA Network. Results were found to be normal given that group influence scores are normalized measures that have minimum values of 0 and maximum values of 1. Table 5.2 presents the 21 most influential words and word pairs.
Table 5.2

*Influence Word List. UVM Sustainability Plan*

<table>
<thead>
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<th>Words</th>
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<td>uvm</td>
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<td>university</td>
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<td>program 0.03631</td>
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<td>student</td>
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<td>faculty 0.02827</td>
<td>uvm</td>
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<td>uvm</td>
</tr>
<tr>
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<td>Campus</td>
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<td>Campus</td>
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<td>system</td>
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<tr>
<td>resource 0.02114</td>
<td>uvm</td>
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<td>university</td>
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<tr>
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<td>uvm</td>
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<td>service 0.01994</td>
<td>community</td>
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<tr>
<td>design 0.01982</td>
<td>uvm</td>
</tr>
</tbody>
</table>
Higher influence words such as UVM, university, campus, community, student, system, and program are also densely connected with each other, suggesting a higher co-occurrence of these words. The next grouping of words having slightly less influence include, new, faculty, education, and food. The strongest network density occurred between university, campus, community, and students. The CRA map shows these words in relation to each other, and indicates the density of word co-occurrence.

Comparative Policy Discourse Analysis

After generating Network data, both the UVM Social Sustainability Survey and the UVM Sustainability Plan were loaded for comparison and analyzed via the Crawdad “Comparator” function which compares two CRA files by determining the intersection of the two CRA Networks as well as the unique parts of each. The results are output in two forms: First, there is a CRA Network visualization of the highest influence words shared by the two CRA Networks, followed by CRA network visualizations of the most influential words unique to each. There is also a tabular listing of all the common words and word pairs plus all the unique words and word pairs in the two CRA files. Visual comparison shows top influence pairs and words only.
Figure 5.2 *UVM Shared Words*

![Diagram of UVM Shared Words](image1)

- campus
- program
- sustainability
- vermont
- community
- uvm
- university
- member
- faculty
- staff
- student
- health
- food
- human
- local
- system
- environmental
- social
- activity
- office
- development
- new
- diversity

Figure 5.3 *Unique Words for UVM Sustainability Plan*

![Diagram of Unique Words for UVM Sustainability Plan](image2)

- agency
- desirable
- credit
- staff
- integrative
- pan-university
- food
- future
- design
- photo
- student
- community
- solution
- system
- sustainable
- ecological
- uvm
- engagement
- economics

- world
- natural
- business
- school
- water
- service
- resource
- product

Figure 5.4 *Unique Words for UVM Social Sustainability Survey*

![Diagram of Unique Words for UVM Social Sustainability Survey](image3)

- advisor
- activity
- academic
- life
- campus
- center
- level
- community
- decisionmaking
- faculty
- program
- development
- side
- social
- publication
- residential
- democratic
- proposal
- student
- university
- piece
- argument
- conversation
- agenda-setting
- above
- pervasive
- sure
- coherent
Summary

Drawing from a strong organizational saga of civic engagement as well as environmental awareness, the implementation of sustainability measures at the University of Vermont is understandably at a relatively high level of sophistication. As word influence and discourse resonance shows, the focus of sustainability at the University of Vermont stems from a very human-focused approach. The strong themes of diversity, student, and democracy in the mission and values of the sustainability efforts are reflected in the organizational discourse. Because of the focus on student engagement and grassroots efforts and the framing of sustainability from a social justice perspective, the discourse moves beyond normative expectations of sustainability toward the potential of transformative change.

The culture of the university coupled with the national climate of sustainability awareness enables the university to bypass obstacles that many other land-grant institutions will face due to values, culture, community, and geography. Sustainability efforts have also received funding support and external recognition which have helped advance the cause. In sum, centering resonance analysis suggests a strong resonance between the social sustainability survey and the university sustainability plan, a strong indicator that the office of sustainability is succeeding in its efforts and that social sustainability is being mainstreamed into the agenda-setting paradigm of the institution.
Examining the shared words between the UVM social sustainability survey and the UVM sustainability plan reveals a few areas of interest; in overlap as well as omission. The tightly-knit words of campus, community, Vermont, faculty, staff and student resonated with high density to each other. Separately, health, human, food, and local held strong density scores to each other. Diversity appears as a shared word between the two documents, indicating that it does in fact have a place of priority within the university sustainability discourse. However, absent from the social sustainability survey and the university sustainability plan, are the words justice and equality. Although it doesn’t mean that these words don’t necessarily appear in the text, the centering resonance analysis suggests that these terms do not resonate strongly as central concepts of the discourse.
Chapter 6

Oregon State University

*Background*

Oregon State University (OSU) is a coeducational, public research university located in Corvallis, Oregon. Oregon State is one of 73 land-grant universities currently operating throughout the world. The school is also recognized as a sea-grant, space-grant and sun-grant institution, making it one of only two US institutions to retain all four designations and the only public university to do so (Cornell is the only other with similar designations). OSU's programs in nuclear engineering, ecology, forestry, public health, biochemistry, zoology, oceanography, food science and pharmacy are recognized nationally as top tier programs (Oregon State University, 2008). Specific priority research initiatives include biofuels, wave and wind energy production, and ocean conditions analysis. OSU also administers Oregon’s cooperative extension service, "communicating research developments and best practices to diverse audiences ranging from ranchers seeking more drought-tolerant wheat varieties to urban apartment dwellers looking to cut energy consumption" (Oregon State University, 2008).

Brendan Trelstad, Director of Sustainability at Oregon State University articulates the work of his sustainability office,
“My office acts as a hub for a broad spectrum of sustainability related work around the campus. My half-time employee and I manage small projects (like energy conservation projects), provide input on large projects, work with students, connect campus people to off campus resources, and vice versa, provide a single initial point source for sustainability information for the university, set and implement policy decisions, perform outreach and education for the campus and community, fundraise, and take input from stakeholders. We are the responsible entity for the President’s Climate Commitment and a few other strategic initiatives. I’m also the university’s alternative transportation coordinator."

Trelstad also discusses the work of the office to connect with other areas at Oregon State University and the community at-large. He says, "we do a lot of outreach, table at many campus and community events and represent OSU administration in an official capacity. We also manage OSU’s sustainability website, oregonstate.edu/sustainability. I also rely to some extent on other groups or departments getting our message out. For example, the group that does new student orientation carries our information in their material, and the College of Engineering and many other groups distribute our self guided sustainability tour brochure."

Although the office of sustainability has enjoyed top-level administrative support, it also works to increase funding and grow to create new positions. Trelstad expains his strategy, "We will continue focus on cost savings, primarily
through energy and water savings projects. I hope to develop a strong network of contacts within each of the 100+ academic departments on campus, and continue to do the same for the nearly 100 non academic departments. I need to support the academic community more, and I see need for funding an additional half time position (or increasing my 0.5 direct report to 1.0). This funding has not yet been identified, so timing is uncertain."

**Governance & Administration**

Oregon State University (OSU) has signed on to adhere to the standards and action plans made by the Governor of the State of Oregon, state agencies, and many of Oregon’s companies and communities to develop sustainable solutions that balance economic, environmental, and community needs while building opportunities for future generations to meet their own needs. As the state’s land, sea, and space-grant university, the University sustainability plan states, “OSU is ready to support and lead both public and private sector organizations to find sustainable approaches, educate future leaders and citizens who understand and practice sustainability, and demonstrate sustainable practices in the University’s day-to-day operations. OSU is committed to incorporating sustainability in its education, research, outreach, and operations as a critical component to its goal of becoming a top-ten land grant university”(p. 23).

To maintain institutional buy-in and collective leadership, OSU Provost Sabah Randhawa has formed a group of faculty, staff and students to recommend
what action the university needs to take to become a leader in sustainability teaching and research. “The group meets periodically and represents most academic areas of campus” says Trelstad.

*Teaching & Research*

Trelstad sees greater incorporation into the curricula as an important area of change for increasing sustainability efforts at OSU. "The most obvious opportunity for OSU right now is to consolidate existing excellence in classes, on-going projects, and learning opportunities into a transparent package that students and community members can recognize as sustainability". Currently, there are efforts in multiple colleges and departments including individual classes, certificate programs, “master” training programs, and short course training sessions. There are potential opportunities to link university operations (e.g., green building, energy systems, eco-roofs, etc.) with interested students, classes, and research projects. " However, there is no up-to-date comprehensive list of courses across multiple colleges, introductory course on sustainability, or transcript-visible program" discusses Trelstad.

Interestingly, some resistance has been met be areas with a long-standing interest in environmental efforts. Trelstad explains, "Some of OSU’s traditional constituents are not totally convinced yet that sustainable practices aren’t code words for 'increased environmental regulation,' so care is encouraged in how we go about implementing sustainability in the curriculum. There are opportunities for
OSU to secure funding from agencies such as NSF and USDA, both with programs aimed at increasing sustainability knowledge and awareness."

A core of expertise, experience, and facilities to study and implement alternative energy and energy systems is developing at OSU. Researchers in the Colleges of Agricultural Sciences, Engineering, Forestry, and Oceanic and Atmospheric Sciences are exploring a range of alternative energy sources including bio, wind, wave, and solar.

A group of undergraduate students has been involved in developing expertise in biofuels for the past several years and recently participated in an EPA-sponsored program to develop new technology. Researchers in plant science are examining ways to replace oil-based energy and other products with cell-based equivalents. OSU was named a Sun Grant university in recognition of its ability to bring many participants together to focus on bio-based energy and sustainable agricultural production. The university is proposing an innovative co-generator that will optimally supply not only the whole campus with energy but also provide “nega-watts,” or excess energy that can be sold to other users. Researchers in Engineering have worked with external partners to create a successful wave energy program, developing technologies to take advantage of wave power.

*Community Service and Outreach*

Locally, OSU has responded to concerns about the increased human impact on world ecosystems in several ways. A strong focus has been given to operations
and facilities in consideration of sustainability. OSU has established a Sustainability Strategic Plan for operations and has completed two LEED-rated buildings, one of which received a Gold rating. In 2006, the school won the RecycleMania competition, in which schools compete to see who can collect the most recyclables, after placing fourth in 2005.

OSU’s Industrial Assessment Center (IAC), one of such 26 centers supported by the U.S. Department of Energy at universities nationwide, provides no-cost energy, waste, and productivity assessments to small- and medium-sized manufacturers in the Northwest.

The university also engages in a variety of ongoing sustainability-related activities. These include: a student-run organic farm, production and use of biodeisel on campus, monthly lunchtime sustainability discussion groups, and the establishment of a “green” certification system for on-campus residents.

Social Sustainability at Oregon State University

When asked about his definition for social sustainability, sustainability officer Brendan Trelstad replied, “For definitions, I turn to The Natural Step and its System Conditions, the 4th of which is about social aspects. It’s a great system and more organizations should use The Natural Step.”

“Most of my time is spent on projects that do not have a direct social implication. However, other projects like the People’s Park project are great examples of social sustainability. This will be a newly landscaped quiet space in
the center of campus that will model low impact landscaping and likely include features like a meeting space for small groups and a labyrinth. Although we don’t typically approach projects from a social sustainability point of view, it is considered in everything we do. From an institution wide standpoint, a lot of emphasis is put on diversity. This is also true for employee training. Employees are allowed and in many cases encouraged to enroll in classes to advance their personal or professional ambitions. I would say it is by far less integrated in the broader university setting than it is in my office.”

Trelstad describes support of diversity initiatives by university administration as “very high.” Conversely, he feels that support for social sustainability issues general has “just started to get traction.” This has also increased in the last few years with respect to sustainability, but OSU has always had a strong community involvement and service ethic.

When asked specifically about the incorporation of diversity into the work of the office of sustainability, Trelstad responded, “I would cite the diversity initiative and some of the projects on which I’m working. The strategic plan is being crafted with diversity as a central component by Trelstad and other Oregon State University administration. These are considerations, but not always primary considerations in our work here. Since diversity work is being done elsewhere on campus, we sometimes interconnect with those groups, but it is not an ongoing dialogue.”
Oregon State University: Centering Resonance Analysis

Responses to the social sustainability survey were cleaned and formatted for generation of a Central Resonance Analysis document using Crawdad 2.0 text analysis software. The social sustainability survey was converted to text files in order to use the Crawdad Text Analysis System version 2.0 (Crawdad Technologies, 2007). Initial analyses produced word networks for each code. Network properties for each code were analyzed, including size (number of nodes/words) and density (number of connections compared to the number of possible connections). Additionally, codes were compared with each other for resonance, or how much the content and structure of codes were similar to each other.

Table 6.1

Influence Analysis OSU Social Sustainability

<table>
<thead>
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<tbody>
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<td>small</td>
<td>sustainability</td>
</tr>
<tr>
<td>social</td>
<td>project</td>
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</table>
General network analysis of the Oregon State University Sustainability Survey responses as analyzed through centering resonance analysis reveal the number of nodes to be 167 with a density of 0.024 and a focus of 0.235. Density is the proportion of links that exist in the CRA Network, divided by the number of links that could possibly exist in a network. A density score of 0.024 therefore indicates a moderately strong level of significance. However, a focus score of 0.235, a statistic of group influence indicates how centralized the entire CRA Network is, reveals a highly significant level of centralization in the CRA Network. Results were found to be normal given that group influence scores are normalized measures that have minimum values of 0 and maximum values of 1.

Higher influence words such as sustainability, project, campus, group, and student are also densely connected with each other, suggesting a higher co-occurrence of these words. The next grouping of words having slightly less influence include work, small, social, initiative, diversity. The strongest network density occurred between sustainability, university, and social.

Similar data preparation took place of the Oregon Statue University Sustainability Plan, a text document of approximately fifty-eight pages was analyzed.
General network mapping of the Oregon Statue University Sustainability Plan as analyzed through centering resonance analysis reveal the number of nodes to be 1291 with a density of 0.008 and a focus of 0.109. Density is the proportion of links that exist in the CRA Network, divided by the number of links that could possibly exist in a network. A density score of 0.008 does not indicate a significant level of density. However, a focus score of 0.109, a statistic of group influence indicates how centralized the entire CRA Network is, reveals a moderate level of centralization in the CRA Network. Results were found to be normal given that group influence scores are normalized measures that have minimum values of 0 and maximum values of 1. Table 6.2 presents the 21 most influential words and word pairs.

Table 6.2 OSU Influence Analysis

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</table>
A map of the CRA Network word influence resonance can be seen in Figure 6.2. Higher influence words such as OSU, sustainability, program, student, Oregon, and resource are also densely connected with each other, suggesting a higher co-occurrence of these words. The next grouping of words having slightly less influence include, new, faculty, education, and food. The strongest network density occurred between sustainability, OSU, program, and energy. The CRA map shows these words in relation to each other, and indicates the density of word co-occurrence.

OSU: Comparative Policy Discourse Analysis

After generating Network data, both the OSUSocial Sustainability Survey and the OSU Sustainability Plan were loaded for comparison and analyzed via the Crawdad “Comparator” function which compares two CRA files by determining
the intersection of the two CRA Networks as well as the unique parts of each. The results are output in two forms. First, there is a CRA Network visualization of the highest influence words shared by the two CRA Networks, followed by CRA network visualizations of the most influential words unique to each. There is also a tabular listing of all the common words and word pairs plus all the unique words and word pairs in the two CRA files. Visual comparison shows top influence pairs and words only.

Figure 6.3 *Shared Words*

![Shared Words Diagram](image)

**employee**  **new**  **university**  **social**  **work**  **resource**  **initiative**  **diversity**

Figure 6.4 *Unique Words OSU Social Sustainability Responses*

![Unique Words Diagram](image)

**opportunity**  **growth**  **business**  **plan**  **sustainable**  **food**  **technology**  **wave**
Summary

What emerged from analysis of the sustainability strategic planning documents at OSU was a focus on the use of sustainability measures to advance ecological sustainability from what might be termed a “facilities perspective.” Heavy emphasis by the work of the sustainability office is centered on physical plant and operations. Responses to social sustainability questions in particular were vague and tended to assign little priority to the continuous engagement of diversity dialogue in sustainability. A strong example of this is the assertion by Trelstad that many of the activities undertaken by his office “do not have a direct social implication.” Indeed one of the key concepts of sustainability is that all three areas are inextricably linked.

The mission articulated in the OSU strategic planning and communicated by the chief sustainability officer suggest an approach that would place the university at the front of state-wide efforts toward sustainability. Given the university’s designation as a land, sea, and space-grant institution, the utilitarian approach has chosen to center function over transformation. The implementation of sustainability has and will continue to stem from a top-down business approach to
increasing competitive advantage. As such, whereas facilities and functional components of sustainability have received funding and emphasis, the elements of social sustainability go unattended.
Chapter 7
Discussion: Case Study Comparison

Congress passed the Morrill Act in 1862, creating a new type of university. These land-grant universities were based on the ideas that U.S. higher education should be open to all, provide liberal and practical education, and prepare the citizenry for the U.S. labor market (Campbell, 1995; McDowell, 2001). Dedicated to teaching, research, and public service, these land-grant universities continue to be recognized as educational leaders and many have joined the ranks of the nation's most distinguished public research universities (Johnson, 1999). Given their charge and mission, and the important function to the nation-state, land-grant universities are obliged to understand their role in creating a more sustainable world.

This study is grounded in the notion that inquiry leads to change. This examination of the discursive framing of sustainability is guided by a commitment to eliminating subordination in education and a liberatory belief in a more just and equitable society (Ladson-Billings, 2000; Lather, 1991). Critical approaches to policy analysis help to raise important questions about the control and production of knowledge, and the ways policy can be used to empower individuals to act upon/in their environment to challenge dominant ideology.
(Ball, 1994; Marshall, 1999). My research is also influenced by a critical realism theoretical frame. Critical realism is a materialist and dialectical philosophy. It acknowledges that the mind only knows the world by means of perception, thought, and language but clings to the ontological assumption that there is a real objective knowable material world. This real world displays three levels of abstraction at which mechanisms can be examined and knowledge generated (Huckle, 2004). Realist explanation consists of connecting experience in the empirical domain to structures and processes in the real domain through contingent factors in the actual domain. Critical realism, like postmodernism, is anti-positivist as it claims that to explain a phenomena it is not sufficient to to show that it is an instance of well established regularities or connections, but necessary to discourse its connections with other phenomena via knowledge of the underlying structures and mechanisms that work to produce these connections. It accepts a weak social constructivism (Dickens, 1996) by recognizing that social reality is pre-interpreted and that language, discourse, and ideology shape its production and reproduction. At the same time it rejects a strong social constructivism that would deny the material reality of nature. Given the position of this study within sustainability, the use of a social capital frame, and the employ of discourse analysis, critical realism seems the only suitable theoretical framework to facilitate inquiry that leads to change and real outcomes.
In this study, I investigated discursive practices shaping sustainability, meaning I examined sustainability as a subject of discourse. Discourse is a term often used but without simple definition. For the purposes of this study, discourse is “larger than language, more than words” (Bacchi, 1999, p. 40); it is about what can be said and who can speak, when, and with what authority (Ball, 1990). For this investigation, the study of discourse (discourse analysis) includes the examination of text, its relationship to the social context in which it is constructed, and why, out of all the possible things that could be articulated, only certain statements and ideas are made visible or heard (Allan, 2003; Ball, 1990).

Table 7.1

*Inter-Organizational Discourse Comparison*

<table>
<thead>
<tr>
<th></th>
<th>Nodes</th>
<th>Density</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSU Survey</td>
<td>174</td>
<td>0.022</td>
<td>0.334</td>
</tr>
<tr>
<td>MSU Plan</td>
<td>2056</td>
<td>0.008</td>
<td>0.124</td>
</tr>
<tr>
<td>UVM Survey</td>
<td>263</td>
<td>0.023</td>
<td>0.342</td>
</tr>
<tr>
<td>UVM Plan</td>
<td>2123</td>
<td>0.006</td>
<td>0.111</td>
</tr>
<tr>
<td>OSU Survey</td>
<td>167</td>
<td>0.024</td>
<td>0.235</td>
</tr>
<tr>
<td>OSU Plan</td>
<td>1291</td>
<td>0.008</td>
<td>0.109</td>
</tr>
</tbody>
</table>
Centering Resonance Comparison analysis outcomes show a good deal of parallel construction in the sustainability discourses among the three land-grant universities being examined in this study, with a few notable exceptions.

The Michigan State University Plan held the strongest amount of internal resonance, but word overlap suggests strong resonance due to a focus on evaluation and benchmarking and not necessarily on the concepts of sustainability. The University of Vermont sustainability survey shows the highest level of group influence (noted as focus) in the discourse, the strength of which should be understood as the comparison to the number of nodes and density. This suggests a strong cohesiveness of word influence. Of the discourses, the University of Vermont has the strongest relationship between its responses to the social sustainability survey and the sustainability planning document. Finally, Oregon State University analysis reveals the lowest levels of nodes and group influence (focus) scores. Shared words between social sustainability survey responses and the university strategic plan on sustainability suggest a system-based facilities approach to sustainability that emphasizes a competitive advantage. Qualitative discourse analysis of word-share in survey and planning documents shows social sustainability to be much of an afterthought within Oregon State University’s adaptation to sustainability.
Inter-organizational Shared Discourse Comparison

Michigan State University:

University of Vermont:

Oregon State University:
These university policies codify an institution-wide commitment to influence and determine decisions to strengthen, enhance, promote, and support coordinated and integrated sustainability efforts, applied to students, faculty, and outreach. Despite the proliferation of recommendations, initiatives, and strategies, codified in sustainability action plans, consensus on what to prioritize and how to define commonly shared concepts and goals differs widely among the three case studies examined.

Figure 8.1 Visual side-by-side comparison of shared pairs
Findings and Interpretations

Three distinct strands were evident in the analysis of sustainability discourse: based on organizational context, personal approach of the chief sustainability agent, and organizational saga, the priority and university adaptation differed. Those three approaches can be described as: a facilities perspective, a research and academic focused perspective, and a humanistic-grassroots approach.

Discourses of Social Sustainability

Analysis of sustainability action plans revealed a discourse of democracy, evident in calls for inclusion and opportunity, civic responsibility, commitment to equity and equality, and participatory, engaged learning. This discourse contributes to shaping a change-agent identity, visible in individual and collective efforts to produce social change and equality as a result. In this way, social sustainability functions as a counter-hegemonic discourse, as democracy emerges as an alternative to the marketplace discourse. However, the dominance and greater weight of the marketplace discourse undermines the systemic change-making possibilities of the discourse of democracy. Instead, out of the tension evident between the discourses of democracy and the marketplace, images of the change agent give way to images of entrepreneurial endeavors: individuals encouraged and rewarded for initiative and the development of innovative programs that ensure the university a competitive edge in the marketplace. Sustainability scholars have termed this the “greenwashing” of...
organizations. Each university examined in this study is faced with this tension in the efforts to align the mission of the office of sustainability to the broader organizational social, economic, and political contexts. It is in these arenas that we see a shaping of the sustainability discourse – be it academic-research, human-grassroots, or facilities-operations strategy.

Discussion and Implications

Various university personnel, including sustainability officers, draft and implement sustainability action plans "to build the capacity of land-grant universities to function inclusively and effectively in a multicultural world" (Ingram, 2005). These plans are well-meaning in regards to social sustainability and diversity, but fail to connect the physical and economic concerns of capital with the social in the function of their university efforts. In this section, the findings reported in the previous case study chapters are discussed and some recommendations are delineated for how sustainability agents might use the findings of this research to improve their work.

University administrators, and in particular those with responsibility for sustainability efforts, could benefit from reading, training, and discussion on social sustainability and the wider role of the university as public service. Such education and training could work to mobilize the social capital of the organization and extend discussion to include awareness of the privileging conditions that construct both oppressive and empowering realities for
individuals. Careful attention to discourse, particular around matters of social justice, knowledge-sharing, interdependence, and action-orientation is critical to build intra and inter social capital.

(De)Constructing Policy

Through awareness and knowledge-sharing sustainability personnel can consider how their work could result in discursive shifts. However, this is not as simple as rewriting policy to replace certain words with others, such as searching a document for "diversity" and replacing it with "social sustainability" in order to shift from a deficit to an equity focus. However, individuals can be more informed and critical of the ways in which such documents are discursively constituted. For instance, a discussion about an institution's commitment to affirmative action versus equity planning based on a social sustainability framework may be a useful start, for a focus on equity can shift attention away from individual differences and deficiencies to institutional practices, priorities, and the production of unequal educational outcomes (Bensimon, 2005).

Action-Orientation and Interdependence

Consideration of the relationship between stated problems and solutions can engage a process through which practitioners can question assumptions about a problem, what Stacey (1992) refers to as "double-loop learning." Such a "cognitive shift" (Bensimon, 2005) may inspire discussions about different solutions and deploy the tactical use of discourse. Sustainability offices that have
been successful have done so through the mobilization of social capital and the raising of awareness of efforts toward goals. To be successful, the land-grant university must recognize the role of interdependence to facilitate adaptation toward sustainability just as the larger world-systems must. Coalition-building must occur across departments and divisions to facilitate change in these loosely-coupled organizations (Clark, 1972; Weick, 1976).

Collective Discourse

Sustainability action plans are authored by institutional agents (e.g., administrators, faculty, and experts, and thus these documents tell one part of the) story. Multiple perspectives exist regarding the challenges faced when organizations build their sustainability and multicultural capacity (Ewert & Rice, 1994); yet the university's narrative, disseminated through institutional policy and discourse, can give the impression that one perspective is universally applicable (Hassel, 2004). Additional sources of knowledge can be identified, and other voices should be heard, important examples include student groups and community stakeholders. Sustainability leaders can use their positional authority to facilitate dialogue--not to help "us" learn from "them," but instead to bring multiple worldviews to bear on diversity and social sustainability through a "critical, balanced, and fair-minded approach" (Hassel, 2004). Many of the problems sustainability addresses can feel out of reach to lay individuals wanting to get involved. By creating access to action, working to form coalitions, and
allowing for different perspectives (and even definitions), leaders can build social
capital that in turn perpetuates social sustainability as a facet of the
organization’s culture.

Summary

The investigation of discourses circulating in sustainability documents
described here identified dominant discourses of access, disadvantage, the
marketplace, and democracy as most prominent in conveying images of diverse
individuals. These discourses contribute to shaping perceptions of sustainability
and constructing particular social identities for diverse groups to assume.

Discursive practices, carried by sustainability action plans, produce individuals’
ways of thinking and acting, meaning these discursive practices construct (at
times competing) possibilities and constrain, even conceal, alternatives.

In sum, the aim of the investigation was to increase sustainability
professionals’ awareness of the conditions that produce particular sustainability
discourses, how some discourses serve to create prioritization of university
adaptation, and how sustainability action plans, in their current form, may
(unwittingly) compromise the achievement of their own goals. Further, it is to be
hoped that the inquiry will inspire new questions and further research about
discourses of sustainability, how policy discourses come together to make
particular perspectives more prominent than others, and how these discourses
contribute to constructing and/or replicating cultural realities at land-grant universities.
Chapter 8

Conclusion

Higher education plays a unique and critical role, one often overlooked, in making a healthy, just and sustainable society a reality. For its part in the social contract, higher education has been granted tax-free status, the ability to receive public and private funds, and academic freedom in exchange for educating students and producing the knowledge that will result in a thriving civil society. From a nested-systems perspective, land-grant universities, as social institutions are reliant upon socio-economic systems for their perpetuation, in turn these systems are predicated upon a thriving eco-system. Sustainability understood this way becomes an imperative for higher education, not simply a means to gaining competitive advantage in a green-washed marketplace.

Figure 8.1 Higher Education, Socio-economic, and Ecosphere as nested system
This analysis of social sustainability efforts at land-grant universities has emphasized the need for a global shift in thinking and ways of knowing. Through comparative case studies, a picture of these processes of change has begun to evolve. Utilizing comparative policy discourse analysis, the focus of that change has been elucidated to better understand organizational behavior and the need to address key areas in higher education to make room for social sustainability.

Summary: From Policy to Practice

The practical implications of this study suggest the need for an alignment of discourse between sustainability agents and the broader university. Data analysis also reveals a critical gap in the attention paid to social aspects of sustainability. To summarize, I will discuss the implications of this study as it applies to three investigated areas: governance and administration; teaching and research; and outreach and community.

Governance and Administration

There are two aspects of governance and administration that bear consideration in summarizing the important role of this area for social sustainability. First, although there exist no governing bodies with sanction or accountability power, professional organizations working toward sustainability play an important part in bridging social capital between universities. Second, strong organizational leadership in a university president is both a strong factor in symbolic influence around organizational behavior as well as institutional agenda-
setting, particularly as it impacts the organizational climate (Bolman & Deal, 1996; Denzin, 1998).

In December of 2006, 12 college and university presidents, working with the Association for the Advancement of Sustainability in Higher Education (AASHE), ecoAmerica and Second Nature, launched The American College & University Presidents Climate Commitment. The ACUPCC is a high-visibility, joint and individual commitment to address global climate disruption through actions to reduce and eventually neutralize greenhouse gas emissions, and to accelerate the research and educational efforts of higher education to equip society to do the same.

The ACUPCC is an example of strong leadership by university leaders. It is the first effort by any major sector of society to set a long-term goal of climate neutrality. The positive impact of collective leadership by a large number of colleges and universities is essential to creating a paradigm change in higher education. Collaborative action toward the common goal is necessary - no one school or subset of schools can solve the problem – thus the view of sustainability as a mechanism toward “competitive advantage” serves only to limit the ability to attain the broader goals of sustainability. In short, the scope, scale and speed of the challenge demand an unprecedented level of collaboration by all of higher education.
Finally, the American College & University Presidents Climate Commitment (ACUPCC) has fundamentally shifted higher education’s attention on sustainability from a series of excellent, distinct programs to a strategic imperative, and for land-grant institutions, an obligation. The ACUPCC is also increasing the amount and effectiveness of communication, coordination and collaboration across departments and between initiatives on campuses. According to a recent survey by Second Nature, presidents at dozens of colleges and universities, the ACUPCC has effectively brought about a structure to build “a vibrant community and a sense of shared purpose across the institutions moreso than any other initiative in recent memory” (Cortese, 2008).

A second key area of change for land-grant universities to attend to is integrating social sustainability into teaching and learning.

**Teaching & Research**

I initially approached this study as a means to glean the information necessary to support the development of an instrument to assess social sustainability measures in universities. However, after conducting these case studies and studying the results, I am led to a different conclusion around assessment of sustainability, particularly social sustainability. If social sustainability efforts are to be transformative, they must be insinuated into the curriculum and pedagogy of the academics of an institution. The most effective means of measuring those efforts is an assessment of student learning outcomes
derived from quantitative and qualitative studies. The many service-learning offerings now available at so many universities (including all three of the case studies presented). To prioritize the incorporation of social sustainability efforts, strategic plans must move the language of their discourse into the very language of the courses occurring inside their walls and the learning that is taking place out in the community.

Furthermore, the educational experience of graduates must be oriented toward creating a connection among curriculum and (1) research; (2) understanding and reducing any negative ecological and social footprint of the institution; and, (3) working to improve local and regional communities so that they are healthier, more socially vibrant and stable, economically secure and environmentally sustainable. In sum, it is not about infusing sustainability into the curriculum; it is reorienting the curriculum to achieve sustainability.

Outreach and Communities

Finally, the learning and benefit to society of higher education forming partnerships with local and regional communities to help make them socially sustainable will be a crucial part of the creating a new purpose in higher education. Land-grant universities have an obligation to support local and regional communities, making every action lead to community improvement, especially as they are now the anchor institutions for economic development.
An additional promising area in which social sustainability can also be assessed is from a community-based research perspective. Not only would this approach provide an externally-based lens to understand organizational behavior, this effort would also build social capital between the institution and its surrounding community and indirectly bring the importance of that connection into the sustainability agenda.

**Limitations**

It must be acknowledged that this study could have taken on any number of different research designs. Like any methodology, this study has certain advantages and limitations, and those should be attended to.

Unsurprisingly, sample size is a consideration when weighing the strengths and weaknesses of any research endeavor. The offering of three case studies was an attempt at offering the thick description inherent in a case study methodology while providing opportunities for inter-organizational comparison to better understand the role of context in organizational behavior. Given the theoretical bounds of land-grant high research intensity institutions, the population is 42 potential participants. The newness of the concept in higher education, however, left only 12 of those institutions as “eligible” for this study. Of those, 6 responded to my call for participation, but for feasibility of this study, only the first three were selected.
This study was approached from an exploratory perspective, and as such, attempted to identify key areas of organizational change to facilitate adaptation toward social sustainability. Taking on such abstract concepts as social sustainability and social capital (not to mention discourse and grounded theory) presented a number of challenges in how this inquiry was conducted and the implications that might be drawn. Crossing these two abstract concepts pushes the study into heavily theoretical territory that may have weakened the strength of practical implications. However, this research was undertaken with the understanding that to create a path to finding concrete practices, an exploratory, theoretical study was a necessary first-step. Furthermore, although designed to strengthen the validity of the study, the use of a tripartite qualitative research method may also inadvertently tend to decrease the accessibility of the study and its findings. Crossing three case studies by three research methods under a social capital lens within a social sustainability framework may obfuscate the replicability of the study.

Centering resonance analysis was an intentional research decision given how new the method and software are and the small number of tests of its validity and reliability. However, the collective methodology was undertaken as part of a larger philosophy of praxis.

*Reflexive Researcher*
As a research study, this work represents more than an inquiry into social sustainability, but also serves as a mechanism to creating organization change with the belief that “inquiry leads to change.” As an effort of academic activism, I have been sensitive to how interactions with sustainability professionals and evaluation of their efforts may enhance or hinder the movement of social sustainability in organizations. The act of inquiry is also representative of an ideology of research. By engaging a fairly new method in analyzing discourse I have also sought to question “how we know what we know.” Pushing the bounds of methodology to construct knowledge while blurring the divide between qualitative and quantitative methods was an intentional research choice. Finally, although it has been my hope that asking these questions may plant the seeds of change, I must acknowledge that case study analysis and judgment of sustainability efforts are two very different things.

Ascribing characteristics to organizational discourse must be met with a balance of fair inquiry and qualification. To be transparent, it must be acknowledged that I have undertaken this work with the assumption that social sustainability and social capital deserve greater attention in the wider sustainability movement and that attention to these issues is a requisite of successful university adaptation within the new “green” paradigm. What must also be acknowledged, however, is that while the critique herein aims to be constructive, it is too early to be judgmental about efforts at creating sustainable universities. The sustainability
movement at-large would do well to remember this. Michigan State University Director Terry Link’s narrative on his changing view of social sustainability exemplifies this issue.

Suggestions for further research

This study was undertaken as an exploration of the incorporation of social sustainability at land-grant universities to better understand what has been a somewhat neglected area of sustainability. This work is only the tip of the iceberg. In addition to follow-up studies such as a longitudinal discourse analysis to study changes over time, questions raised here suggest a multitude of directions for further research. The use of centering resonance analysis can be used to better understand the evolution of sustainability in US universities and to help create cohesion across missions, plans, and assessment instruments. Furthermore, the collection of data in this way would also facilitate quantitative analyses in order to paint a broad picture of sustainability efforts in US higher education. This study has touched on a number of different theoretical constructs and areas of higher education with the intention of inciting change through inquiry. The results suggest a need for added work in understanding student learning outcomes and sustainability, the incorporation of sustainability in curricula, and the implementation of sustainability across institutions. From a practical perspective, this study has highlighted some promising practices existing to further social justice into the movement toward sustainability at land-grant institutions. A logical
inverse action to this work toward advancing social sustainability is to examine the incorporation of sustainability into the work being done by diversity and equality agents at organizations. Although I have offered a tool for diversity agents to create awareness and education around using social sustainability to advance matters of diversity, equality, and social justice, this is but a first step toward that end. Given the strength of the advancement of sustainability in political, economic, and social spheres, sustainability can serve as a powerful framing tool to advance diversity and equity measures.

Social, Political, and Economic Context

This study has examined how organizational context has informed discourse and how, subsequently, that discourse has informed change around sustainability. What should also be considered is the current social, political, and economic context of the nation-state. Within all three areas, social, political, and economic spheres, sustainability has emerged as a critical issue. Socially, sustainability has achieved a high level of visibility on levels that have transcended minority environmental activist factions to being subsumed into the popular culture and media. When former Presidential candidate Al Gore garnered popular attention for his work on “An Inconvenient Truth,” political awareness was also raised.

Efforts to bring about change toward sustainability in the political arena of the United States has been on-going for some time, but now with global political
attention and current popular interest, the U.S. government has begun to heed the call to awareness.

ACUPCC presidents and the members of HEASC have been active in supporting the Higher Education Sustainability Act – a bill amending the Higher Education Reauthorization (HESA) amends the Higher Education Act to authorize a new $50 million grant program at the Department of Education that will annually support between 25 and 200 projects at higher education institutions and consortia/associations:

1. Higher education associations and consortia are eligible for funding to conduct faculty and administrator trainings; disseminate best practices, case studies, and educational guidelines; engage external stakeholders such as business, alumni, and accrediting agencies; and create analytical tools to assess institutional progress.

2. Individual institutions are eligible for funding to implement administrative and operations sustainability practices; establish multidisciplinary sustainability education, research, and outreach programs; conduct energy management, green building, waste and toxics management, green purchasing, transportation, and related initiatives; establish sustainability literacy as a requirement for degree programs; and integrate sustainability in all programs of instruction. (H.R. 3637--110th Congress (2007)).
Economic considerations have also furthered the sustainability cause in the social and political spheres. Scarcity of high demand natural resources, specifically of petroleum, have brought to bear the need to shift the predominant political ideology to ensure economic and state security.

A New Social Contract

Jean-Jacques Rousseau, 1712-1778, lived and wrote during what was arguably the headiest period in the intellectual history of modern France--the Enlightenment. He was one of the bright lights of that intellectual movement, contributing articles to the Encyclopédie of Diderot, and participating in the salons in Paris, where the great intellectual questions of his day were pursued.

Rousseau has two distinct social contract theories. The first is found in his essay, Discourse on the Origin and Foundations of Inequality Among Men, commonly referred to as the Second Discourse, and is an account of the moral and political evolution of human beings over time, from a State of Nature to modern society. As such, it contains his naturalized account of the social contract, which he sees as very problematic. The second is his normative, or idealized theory of the social contract, and is meant to provide the means by which to alleviate the problems that modern society has created for us, as laid out in the Second Discourse.

The normative social contract, argued for by Rousseau in The Social Contract (1762) begins with the most oft-quoted line from Rousseau: "Man was born free, and he is everywhere in chains" (p. 49). This claim is the conceptual
bridge between the descriptive work of the Second Discourse, and the prescriptive work that is to come. Humans are essentially free, and were free in the State of Nature, but the development of modern civilization has substituted subservience to others for that freedom, through dependence, economic and social inequalities, and the extent to which we judge ourselves through comparisons with others. Rousseau maintains, by submitting our individual, particular wills to the collective or general will, created through agreement with other free and equal persons, then freedom is achieved.

The most basic covenant, the social pact (referred to as such by such James Madison and others), is the agreement to come together and form a people, a collectivity, which by definition is more than and different from a mere aggregation of individual interests and wills. This act, where individual persons become a people is "the real foundation of society" (p. 59). Included in this version of the social contract is the idea of reciprocated duties: the sovereign is committed to the good of the individuals who constitute it, and each individual is likewise committed to the good of the whole.

Rousseau's social contract theories together form a single, consistent view of the current social and political situation. The development of social capital is the restitution of equality in society and higher education is a mechanism capable of bringing about that change.

We are at a critical moment in history; not only for higher education,
but for humanity. According to Cortese, “We are faced with the greatest intergenerational equity challenge in modern history” (personal communication). When the presidents participating in the ACUPCC last summer were surveyed, the majority said the most important reason for making the commitment was that it was the right thing to do for the sake of their students and their students’ children and grandchildren (Cortese, 2008).
 References


modeling the local coherence of a discourse. Computational Linguistics, 21,203-
225.


Hahtola, K., 1990. Pragmatic-hermeneutical human action model for environmental

Harris, J.M., 2000. Basic principles of sustainable development. Global Development
and Environment Institute, Working Paper 00-04. Tufts University, Medford,
MA.http://ase.tufts.edu/gdae.

Harriss, J., 2001. Social capital construction and the consolidation of civil society in
rural areas. Development Studies Institute, London School of Economics and
Political Science, Working

Paper Series No. 00-16. www.lse.ac.uk/depts/destin.

paradigms. Journal of Extension [On-line], 42(2). Available at:


http://www.carleton.ca/~jsheyhol/cda.htm


Management Decision, 39(7), 551-555


http://www.discourse-insociety.org/OldArticles/The%20reality%20of%20racism.pdf


Appendix A.

Research Forms
Call for Participation

Dear __________:

My name is Lyndsay Agans and I'm currently a Ph.D. candidate at the University of Denver and I am also a research consultant on the new STARS survey being developed by the Association for the Advancement of Sustainability in Higher Education (AASHE). I'm writing to ask if you would be willing to participate in my dissertation research which is an examination of university adaptation and social sustainability. Your participation would entail answering just 10 questions in whatever format you feel most comfortable with -- I would be happy to call and interview you if that would be convenient and amenable to you. Or, I have attached the questionnaire to correspond electronically and answer the questions on your own time if that would
be your preference and most convenient for you. In my estimate, the questionnaire should only take about 20-30 minutes to complete.

I think it's important that you know that you and your office were not picked at random for this survey. __________ has employed a number of initiatives that make it unique as a leader in university sustainability efforts. Also, the scope of my analysis is limited to land-grant, doctoral research universities that employ a full-time sustainability officer, which makes any time you might give to this study so very valuable, as the number of institutions which meet such criteria are only about a handful.

Attached you will find the questionnaire accompanied with the informed consent form as required by the University of Denver IRB standards of ethical research.

Should you have any questions about the study, myself, or the survey, please feel free to contact me. For further information about my background, feel free to visit my online portfolio at: http://portfolio.du.edu/lagans on the DU website.

I cannot stress how appreciative I would be of your participation in my study. Whatever your decision, please let me know by email so that I may act accordingly. Thank you in advance for your time.

Kind Regards,

Lyndsay
INFORMED CONSENT FORM

DISSERTATION RESEARCH: University Adaptation Toward Social Sustainability

You are invited to participate in a study that will examine social sustainability in universities. In addition, this study is being conducted to collect data for analysis and publication in a doctoral dissertation. The study is conducted by Lyndsay J. Agans who can be contacted at 812-361-8248 or lagans@du.edu. This project is sponsored by a full-time faculty member, Dr. Frank Tuitt, Department of Higher Education, University of Denver, Denver, CO 80208, 303-871-4573, ftuitt@du.edu.

Participation in this study should take about 20-30 minutes of your time. Participation will involve responding to several questions about sustainability. Participation in this project is strictly voluntary. The risks associated with this project are minimal. If, however, you experience discomfort you may discontinue the interview at any time. We respect your right to choose not to answer any questions that may make you feel uncomfortable. Refusal to participate or withdrawal from participation will involve no penalty or loss of benefits to which you are otherwise entitled.

Your responses will be identified by code number only and will be kept separate from information that could identify you. This is done to protect the confidentiality of your responses. Only the researcher will have access to your individual data and any reports generated as a result of this study will use only group averages and paraphrased wording. However, should any information contained in this study be the subject of a court order or lawful subpoena, the University of Denver might not be able to avoid compliance with the order or subpoena. Although no questions in this interview address it, we are required by law to tell you that if information is revealed concerning suicide, homicide, or child abuse and neglect, it is required by law that this be reported to the proper authorities.

If you have any concerns or complaints about how you were treated during the interview, please contact Dennis Wittmer, Chair, Institutional Review Board for the Protection of Human Subjects, at 303-871-2431, or Sylk Sotto-Santiago, Office of Sponsored Programs at 303-871-4052 or write to either at the University of Denver, Office of Sponsored Programs, 2199 S. University Blvd., Denver, CO 80208-2121.

You may keep this page for your records. Please sign the next page if you understand and agree to the above. If you do not understand any part of the above statement, please ask the researcher any questions you have.
INFORMED CONSENT FORM

I have read and understood the foregoing descriptions of the study called DISSENTATION RESEARCH: University Adaptation Toward Social Sustainability. I have asked for and received a satisfactory explanation of any language that I did not fully understand. I agree to participate in this study, and I understand that I may withdraw my consent at any time. I have received a copy of the consent form.

Printed Name ________________________________________________

Signature ___________________________________________

Date _________________

___ I agree to be audiotaped.

___ I do not agree to be audiotaped.

Signature ___________________________________________

Date _________________

I would like a summary of the results of this study to be mailed to me at the e-mail address:
Social Sustainability Survey

DISSERTATION RESEARCH: University Adaptation Toward Social Sustainability

The following is a list of ten questions about your work as a sustainability officer, the work of your office, and the overall approach by the university. Please be as thorough and detailed as possible.

Background: This data is being collected and analyzed for potential use and publication in my dissertation for a doctorate in higher education at the University of Denver. The data will be kept confidential as described in the informed consent form.

General Questions

1. What would you identify as the main functions of your office?
2. How does this connect with the university at large?
3. Given the broadness of sustainability can you describe how involved the office has been with faculty and vice versa? What about student services and student life?
4. Where do you see the sustainability office heading in the next 5 years?

Social Sustainability

1. Regarding social sustainability, specifically, how would you define it and how is it approached by your office?
2. How would you describe the importance placed on social sustainability by your university? Can you say more about the priority level of social sustainability and what has shaped that positioning?
3. How integrated is social sustainability work into the functions of your office?
   i. How integrated is that work into the broader university?
4. What is your perception of how social sustainability is integrated at various levels and locations of the university particularly within the following three areas:
   i. Administration: funding and agenda-setting around social sustainability
   ii. Social: Student development and student life influence, community outreach
   iii. Faculty: research incentives, syllabi, diversity
5. Can you identify any current or future university initiatives aimed specifically at social sustainability?

6. Can you discuss any incorporation of diversity and social justice themes to your work and the work of your office?

Thank you.

I appreciate the time you took for this interview. Is there anything else you think would be helpful for me to know about your work and the work of your office?

Again, if at any time you have concerns about this study or the use of data, please feel free to contact me or the Office of Sponsored Research at DU. Your identifying information will be kept in confidence per IRB and APA guidelines and expectations.

Please indicate by if it be all right to follow up with you regarding possible questions I may have had about your responses by listing below the best time(s) and way to reach you.
Appendix. B.

Michigan State University
Faculty sit on our advisory committee and guide the direction of our work. I am invited to numerous classes to discuss sustainability in broad terms as well as the university’s efforts. I work with faculty on committees and teams to address complex issues. I work with faculty who wish to have their students engaged with projects on and off campus. I teach, sit on graduate thesis committees. I sponsor events in collaboration with faculty, especially our ongoing UN Decade of Education for Sustainable Development Speaker Series. Most recently I have led a group of faculty in developing our first academic program in sustainability, now in review by academic governance.

I mentor students one on one, offer entering students an introduction to getting involved on campus beyond the classroom. Students sit on our advisory committee. I mentor several student organizations. I help students do independent projects on and off campus.

Where do you see the sustainability office heading in the next 5 years?

More and more pieces of sustainability are being peeled off and tackled by teams or through new positions. With growing interest in the environmental impacts on campus there are more bodies assigned to things like compliance, environmental management systems, energy management, etc. I think our efforts will be to continue to emphasize the connections across the social and economic dimensions of sustainability. We’ll focus more on collecting and telling the full stories of our impacts upstream and downstream so that they become more visible both socially and environmentally.

Social Sustainability

Regarding social sustainability, specifically, how would you define it and how is it approached by your office?

I believe there must be some safety net that provides a level of economic and social security. This includes health care, shelter, food, and equal opportunity. We must recognize that the current order does not attend to this well.

Our job is to raise the social considerations at the same time and with the same volume that we raise environmental ones. To solve one set of issues by ignoring the other is not sustainable in the long term. Part of this work is making those issues more visible and to question the moral implications of disproportionate impacts on selected groups or individuals. Our Campus Sustainability Report 2007 tried to do that. Also our programming needs to attend to these issues, keeping them in the light.

How would you describe the importance placed on social sustainability by your university? Can you say more about the priority level of social sustainability and what has shaped that positioning?

I would say it is the step child of the three usual dimensions of sustainability. Many, if not all administrators still see sustainability as being about environmental issues and impacts and do not see the social as being part of the same. Most people that come to sustainability to date, come from the environmentalist track. I did myself, but as I have studied it, worked in it, I have returned to my earlier concerns around social and economic justice, nonviolence, democracy and peace. I see them now as indivisible, but I’m of a rather small minority here. We’ve been urged by administrators to steer away from issues like wage disparity or anything to do with collective bargaining.

How integrated is social sustainability work into the functions of your office?
We try to keep the issue alive, but we don’t push it too hard. We address it in every circumstance and attempt to network closely with those on campus who work to keep the social issues in the forefront of consideration.

How integrated is that work into the broader university?

Not sure I can answer this. Diversity issues are given a lot of coverage, but wage equity for example is not.

What is your perception of how social sustainability is integrated at various levels and locations of the university particularly within the following three areas:

Administration: funding and agenda-setting around social sustainability

Social: Student development and student life influence, community outreach

I believe that Student services works a lot on this, offering support, and Service Learning Center activity is rising quickly

Faculty: research incentives, syllabi, diversity

Preparing to offer an institute for faculty next spring to infuse sustainability into the curriculum. We’re also working on establishing a faculty learning community around sustainability this fall

Can you identify any current or future university initiatives aimed specifically at social sustainability?

The Health4U effort looks at quality of life and is specifically offering opportunities for people to get exercise during the work day. Our Family Resource Center helps those with family deal with elder care, child care, and family medical issues through counseling and programs to give them needed support and assistance.

Can you discuss any incorporation of diversity and social justice themes to your work and the work of your office?

Our UN Decade speakers’ series invites speakers from different backgrounds to talk about social issues as well as environmental and economic issues. Our office is developing ongoing community forums to discuss large issues in a way that nurtures respectful dialogue. Our Campus Sustainability Report highlighted several social areas we believe need the community’s attention.

CRA Network Statistics
Number of nodes: 174
Density: 0.022
Focus: 0.334
CRA Map

Influence Analysis

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CRAWDAD Visualizer v1.0

MSU.sustainability report.

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Influence Analysis

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Visual Comparison

Note: Visual comparison shows top influence pairs and words only.

CRA file1: Sustainability analysis\MSU.sustainability report.cra

CRA2 file2: Social Sustainability Surveyresponse.MSU.cra

Shared Words
Unique Words for CRA file1

source  figure  faculty

year  number  total

association  club  food

graduate  msu  society

student

woman

cost  farm  water  vehicle  indicator

care  health  student  project  student  learning  service  economic  social  economic  environmental  life  quality  environmental  social  campus  project  campus  environmental  environmental  impact  environmental  management  economic  justice  academic  program  center  service  same  time  issue  social  campus  sustainability  campus  impact  campus  report  community  faculty  environmental  system  day  work  question  response  management  system  report  sustainability  economic  issue  institutional  sustainability  broad  sustainability  complex  issue  report  social  body  campus  compliance  environmental  community  learning  effort  university  attention  community  good  time  child  family  center  learning  family  medical  nonviolence  peace  bargaining  collective  long  term  environmental  sustainability  economic  sustainability  community  sustainability  program  sustainability  campus  social  academic  faculty  collaboration  faculty  decade  faculty  energy  environmental  environmental  interest  economic  level  development  sustainable  justice  nonviolence  activity  learning  equal  opportunity  level  security  education  ongoing  democracy  nonviolence  service  support  activity  service  development  un  democracy  peace

Unique Words for CRA file2

advocacy  access  office  life  interest  development  assistance  care  name  dimension  family  social

committee  speaker

student

child

old

respectful  function  net  implication  address  disparity  environmentalist  selected

Complete Comparison

Shared Pairs

[organization student] [care health] [faculty student] [project student] [learning service] [economic social] [economic environmental] [life quality] [environmental social] [campus project] [campus environmental] [environmental impact] [environmental management] [economic justice] [academic program] [center service] [same time] [issue social] [campus sustainability] [campus impact] [campus report] [community faculty] [environmental system] [day work] [question response] [management system] [report sustainability] [economic issue] [institutional sustainability] [broad sustainability] [complex issue] [report social] [body campus] [compliance environmental] [community learning] [effort university] [attention community] [good time] [child family] [center learning] [family medical] [nonviolence peace] [bargaining collective] [long term] [environmental sustainability] [economic sustainability] [community sustainability] [program sustainability] [campus social] [academic faculty] [collaboration faculty] [decade faculty] [energy environmental] [environmental interest] [economic level] [development sustainable] [justice nonviolence] [activity learning] [equal opportunity] [level security] [education ongoing] [democracy nonviolence] [service support] [activity service] [development un] [democracy peace]
Shared Words

sustainability issue social student faculty campus environmental impact economic sustainable way team community work program wage good learning opportunity university institutional justice people report child committee level research response life family date nonviolence care broad health diversity medical area food development ongoing new graduate large question service group needed effort academic time class system collaboration collective attempt volume complex quality center consideration resource compliance review body incentive connection education part organization support project office lot energy long attention institute day peace fall management choice visible position safety activity direction same decade job approach term different current outreach introduction small light funding possible early spring mission status concern more and more well discipline minority event assistance numerous individual independent classroom interest security growing un administration dialogue thing equal bargaining curriculum counseling story step old usual piece being offer full democracy equity series set coverage

Unique pairs & Words

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involvement information diverse force seniority
due qu drink limited anaerobic essential scholarship
physical incident marsh hope friend nature
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ecology communication ashley site let component
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APPENDIX C.

University of Vermont
Social Sustainability Survey

DISSERTATION RESEARCH: University Adaptation Toward Social Sustainability

The following is a list of ten questions about your work as a sustainability officer, the work of your office, and the overall approach by the university. Please be as thorough and detailed as possible.

Background: This data is being collected and analyzed for potential use and publication in my dissertation for a doctorate in higher education at the University of Denver. The data will be kept confidential as described in the informed consent form.

General Questions

1. What would you identify as the main functions of your office?
   
   o **Support organizational strategic planning** for the University’s sustainability work in academic programs, curricula and campus operations. Assist the President’s Commission on Sustainability (PCS) with development of an umbrella strategy and implementation processes. Focus on climate neutrality planning in first year. Work with Development and other offices to seek grant funding and opportunities for collaboration for subsequent years.
   o **Track UVM’s sustainability bottom line**, following national best practices and indicators relating to sustainability, initially focusing on environmental sustainability (green building, food, waste, transportation, energy and land use) and subsequently including social and financial aspects of sustainability as appropriate. Support involvement of key stakeholders.
   o **Educate and involve the campus community and the public at large** about sustainable living at UVM, at home, and in their travels through an expanded EcoReps program, a strong website presence, and other activities. Collaborate with other institutions and organizations to demonstrate sustainable technologies and practices. Work with Communications to disseminate information.
   o **Stimulate and select feasible ideas** that support the umbrella strategy; create detailed implementation plans; provide project management support; celebrate campus successes.

2. How does this connect with the university at large?

The University of Vermont has a focus on liberal arts, health and the environment, and has adopted a vision of being an “Environmental University”. The university is home to a wide range of academic programs and campus life activities related to environment, community development and social justice. Vermont itself is known as a place striving for sustainability in all its forms,
including democratic decisionmaking, equitable distribution of wealth, and ecological and human health.

3. Given the broadness of sustainability can you describe how involved the office has been with faculty and vice versa? What about student services and student life?

Because there is such a vast amount of activity at UVM relating to sustainability as broadly defined, for clarity we are focusing on environmental sustainability for now.

Note that the office was created recently and is now gearing up. The Environmental Council and I in my previous role of Environmental Coordinator have been involved with a core group of faculty concerned about greening the institution and working with students on campus greening projects. Our small grants program brought in another circle of faculty who are interested in working with students but not having time to address institution-wide greening activities. More recently President Fogel has convened deans to strategize about ways to link the academic side of campus with Vermont’s environmental priorities, and a proposal is before the Faculty Senate to create a new interdisciplinary program. I have been involved in these conversations as the one responsible for making sure we “walk the talk.” Focus the Nation activities engaged a wider group of faculty. With announcements about the creation of the new office of sustainability many more faculty are now aware of the potential to link with others around this topic.

About sustainability in general—beyond the campus footprint—faculty in several of the colleges and in Extension organize all kinds of seminar series, lectures, and events on sustainability topics. There is no need for the Office of Sustainability to promote or get involved in any of these.

On the student life and residential life side, we have three major initiatives. The new student center’s mission is about social and environmental justice, see http://www.uvm.edu/davis. I have not seen much faculty involvement in that effort to date, nor would I expect it. On the student life side, we have the GreenHouse, an environmentally oriented residential learning community supported by a faculty director, courses and co-curricular activities. (Another small coop dorm on campus, Slade Hall, has a faculty advisor and involves faculty relating to permaculture and other sustainable living topics on an ongoing basis.) About student life, our Eco-Reps program is supported by a doctoral student and her faculty mentor, the GreenHouse. The program is funded by Residential Life and the Office of Sustainability funds the doctoral student.

4. Where do you see the sustainability office heading in the next 5 years?

I see the office expanding into a stronger education and outreach mode, getting grants for projects, working with Development to endow a sustainability fellows program, and connecting more with the academic side of campus. I still expect the core office staff to remain small and nimble. The idea is that sustainability is being addressed across the university, and that the office serves to tie the pieces together into a coherent yet evolving story.

Social Sustainability

1. Regarding social sustainability, specifically, how would you define it and how is it approached by your office?

Social sustainability to me is about health, equity, access to education, development of an informed, engaged citizenry, and lively democratic decisionmaking processes. My office’s
approach is to advance environmental sustainability by engaging with the many people on campus who work on these issues, learning from their successes and combining efforts when appropriate. For example, there are several presidential commissions related to diversity and equity; a new sustainability commission will be learning from and working with the existing commissions, sharing some members.

2. How would you describe the importance placed on social sustainability by your university? Can you say more about the priority level of social sustainability and what has shaped that positioning?

The University’s and the community's commitment to social sustainability is so pervasive, so broad and deep, that we don’t talk about it that way. We talk about justice, about health, about diversity, equity, responsibility, governance. Our culture of promoting these values can easily be traced back more than 200 years at the University and in Vermont in general. It’s the basis of our way of life.

How integrated is social sustainability work into the functions of your office?

We are promoting open, democratic decisionmaking about environmental sustainability through the new presidential commission and a grassroots Environmental Forum. As mentioned above, we connect with formal structures that support social sustainability, and we also reach out to student leaders. The students don’t see a distinction between environmental and social sustainability, from my experience. For example, the fair trade, local food, and investing initiatives thoroughly mix social and environmental values in their arguments for change.

i. How integrated is that work into the broader university?

The social sustainability efforts by members of the university community have long been hailed and celebrated by the university leadership and in university publications. I believe there is a high level of consciousness about social sustainability throughout the university. This means that any initiative that fails to recognize these values is quickly called into question.

4. What is your perception of how social sustainability is integrated at various levels and locations of the university particularly within the following three areas:

i. Administration: funding and agenda-setting around social sustainability

The university has funded centers and commissions about gender, diversity and social justice, all with staff; the first two also have faculty involved.

ii. Social: Student development and student life influence, community outreach

Residential life has a number of residential learning communities that could be placed under this umbrella. The student center is devoted to social justice. Our campus and community relations office brings support for environmental and social responsibility among students living in the community, convening neighbors and students on joint projects. UVM has a very strong record of student volunteerism.
iii. Faculty: research incentives, syllabi, diversity

I hope the above descriptions will help answer the parts about syllabi and diversity. About research incentives, the primary concern at the university now is that there are barriers to faculty getting involved in interdisciplinary work because of the promotion and tenure system. This is being addressed through the Leading by Design proposal before the Faculty Senate.

5. Can you identify any current or future university initiatives aimed specifically at social sustainability?

I hope I have.

6. Can you discuss any incorporation of diversity and social justice themes to your work and the work of your office?

My belief is that environmental sustainability takes on an entirely new level of meaning when we bring social justice and diversity themes into the conversation. The ecological effects of global warming are sobering, but don’t necessarily empower people act. The threat of widespread social breakdown resulting from ecological disasters, on the other hand, bring forth compassion for other people, and that heart-centered impulse is what really is bringing people to take action on a personal level.

Thank you.

I appreciate the time you took for this interview. Is there anything else you think would be helpful for me to know about your work and the work of your office?

I was hoping that I would be able to talk with others at the university about the social aspects of sustainability addressed in this survey. As we’re still in transition as an office and given the timing at the end of the academic year, this did not happen. I expect that in a year I would have much richer response to your questions.

Again, if at any time you have concerns about this study or the use of data, please feel free to contact me or the Office of Sponsored Research at DU. Your identifying information will be kept in confidence per IRB and APA guidelines and expectations.

Please indicate by if it be all right to follow up with you regarding possible questions I may have had about your responses by listing below the best time(s) and way to reach you.

Yes, please do. You have my contact information, and now that the semester is over, I’m free much more of the time.

Thank you for asking these questions.
### Influence Analysis - UVM

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Visual Comparison
Note: Visual comparison shows top influence pairs and words only.

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CRA2 file2: C:\Documents and Settings\jenkell\Desktop\Sustainability analysis\UVM.socsus..cra

Shared Words

Unique Words for CRA file1

world  natural  business  school  water  service  resource  product
Unique Words for CRA file2

Complete Comparison

Shared Pairs
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http://www.uvm.edu/giee/?page=certificate-program

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Appendix D.
Oregon State University
Social Sustainability Survey

DISSERTATION RESEARCH: University Adaptation Toward Social Sustainability

The following is a list of ten questions about your work as a sustainability officer, the work of your office, and the overall approach by the university. Please be as thorough and detailed as possible.

Background: This data is being collected and analyzed for potential use and publication in my dissertation for a doctorate in higher education at the University of Denver. The data will be kept confidential as described in the informed consent form.

General Questions

1. What would you identify as the main functions of your office?
   My office acts as a hub for a broad spectrum of sustainability related work around the campus. My half-time employee and I manage small projects (like energy conservation projects), provide input on large projects, work with students, connect campus people to off campus resources, and vice versa, provide a single initial point source for sustainability information for the university, set and implement policy decisions, perform outreach and education for the campus and community, fundraise, and take input from stakeholders. We are the responsible entity for the President’s Climate Commitment and a few other strategic initiatives. I’m also the university’s alternative transportation coordinator.

2. How does this connect with the university at large?
   As mentioned above, we do a lot of outreach, table at many campus and community events and represent OSU administration in an official capacity. We also manage OSU’s sustainability website, oregonstate.edu/sustainability. I also rely to some extent on other groups or departments getting our message out. For example, the group that does new student orientation carries our information in their material, and the College of Engineering and many other groups distribute our self guided sustainability tour brochure.

3. Given the broadness of sustainability can you describe how involved the office has been with faculty and vice versa? What about student services and student life?
   We are very involved with students and student life. Our housing and dining group has created a sustainability committee and I advise them periodically. We also have the OSU Student Sustainability Initiative, which has been very successful. http://recycle.oregonstate.edu/ssi/. Faculty involvement has been less than that of students, but still a good level of involvement. I work with at least 3 different courses each year, one of them I work with all three terms every year to do service projects, and speak to courses about the work we're doing on campus.

4. Where do you see the sustainability office heading in the next 5 years?
   Continue the direction we've started. We will continue focus on cost savings, primarily through energy and water savings projects. I hope to develop a strong network of contacts within each of the 100+ academic departments on campus, and continue to do the same for the nearly 100 non academic departments. I need to support the academic community more, and I see need for
funding an additional half time position (or increasing my 0.5 direct report to 1.0). This funding has not yet been identified, so timing is uncertain.

Social Sustainability

1. Regarding social sustainability, specifically, how would you define it and how is it approached by your office?

I don’t like to define sustainability or the aspects therein. For definitions, I turn to The Natural Step and its System Conditions, the 4th of which is about social aspects. It’s a great system and more organizations should use The Natural Step.

Most of my time is spent on projects that do not have a direct social implication. However, other projects like the People’s Park project are great examples of social sustainability. This will be a newly landscaped quiet space in the center of campus that will model low impact landscaping and likely include features like a meeting space for small groups and a labyrinth. Although we don’t typically approach projects from a social sustainability point of view, it is considered in everything we do.

2. How would you describe the importance placed on social sustainability by your university? Can you say more about the priority level of social sustainability and what has shaped that positioning?

The importance question varies from dept to dept. In some areas where you might expect to see it high it is high (humanities, social science, etc). Where you might expect to see it low it is probably low (physics, chemistry, etc, although we will have a green chemistry program soon, and one physics course PH 313, is all about alternative energy). In some places you might not expect to find it at all, it is thriving, like our new ecological engineering degree.

From an institution wide standpoint, a lot of emphasis is put on diversity. This is also true for employee training. Employees are allowed and in many cases encouraged to enroll in classes to advance their personal or professional ambitions.

3. How integrated is social sustainability work into the functions of your office?

Please refer to my answer on question 1 of this section to address this.

i. How integrated is that work into the broader university?

Adding to my answer for question 2 of this section, I think this varies greatly by dept. I would say it is by far less integrated in the broader university setting than it is in my office.

4. What is your perception of how social sustainability is integrated at various levels and locations of the university particularly within the following three areas:

i. Administration: funding and agenda-setting around social sustainability
Admin’s support of diversity initiatives has been very high. Support for sustainability in general has just started to get traction. Through OSU Extension, there is a lot of social work going on.

ii. Social: Student development and student life influence, community outreach

This has also increased in the last few years with respect to sustainability, but OSU has always had a strong community involvement and service ethic.

iii. Faculty: research incentives, syllabi, diversity

This is an area of high support recently, as of the last 4-6 years.

5. Can you identify any current or future university initiatives aimed specifically at social sustainability?

I would cite the diversity initiative and some of the projects on which I’m working. A good place you might look for this information is in the OSU strategic planning documents: [http://oregonstate.edu/leadership/strategicplan/](http://oregonstate.edu/leadership/strategicplan/)

6. Can you discuss any incorporation of diversity and social justice themes to your work and the work of your office?

These are considerations, but not always primary considerations in our work here. Since diversity work is being done elsewhere on campus, we sometimes interconnect with those groups, but it is not an ongoing dialogue.

Thank you.
OSU.Social Sustainability Survey

CRA Network Statistics
Number of nodes: 167
Density: 0.024
Focus: 0.235

CRA Map

Influence Analysis

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condition 0.02338 project | great 0.007

Visual Comparison
Note: Visual comparison shows top influence pairs and words only.

CRA file1: C:\Documents and Settings\jenkell\Desktop\Sustainability analysis\OSU.sustainability policy..cra

CRA2 file2: C:\Documents and Settings\jenkell\Desktop\Sustainability analysis\OSU.Social Sustainability Survey.cra

Shared Words

Unique Words for CRA file1
Unique Words for CRA file2

Complete Comparison

Shared Pairs

[osu sustainability] [alternative energy] [information sustainability] [osu student] [college engineering] [group sustainability] [campus outreach] [life student] [course program] [natural system] [natural step] [energy project] [project student] [campus community] [committee sustainability] [campus people] [development student] [osu strategic] [campus center] [education outreach] [student sustainability] [sustainability university] [campus group] [example sustainability] [initiative student] [initiative osu] [new student] [involvement student] [information osu] [large project] [osu strong] [college group] [initiative support] [initiative strategic] [course year] [academic community] [service strong] [condition system] [impact low] [information material] [landscaping low] [high science] [responsible strategic] [natural organization] [personal professional] [point single] [initial point] [impact landscaping] [initial single]

Shared Words

sustainability project student campus osu group initiative work social program university diversity employee energy new course community resource low information case class service research support great broad strategic system faculty space department strong involvement year personal college science condition natural direct time outreach alternative high academic good need cost area point people official general ongoing website consideration development life source engineering meeting center respect decision organization additional park position policy network impact report setting likely education single funding term document extension wide institution committee planning place water message commitment contact office professional material example successful green training coordinator level landscaping question president focus responsible integrated true step aspect climate different primary importance capacity incentive large stakeholder section entity transportation syllabus ecological extent involved degree definition initial

Unique pairs & Words

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CRAWDAD Comparator 1.6