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

Lyndsay Josephine Agans
University of Denver

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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.

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A Tripartite Mixed-methods Analysis of Social Sustainability

at Three Land-grant Universities

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A Dissertation

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by

Lyndsay J. Agans

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Advisor: Dr. Frank Tuitt

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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.

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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

Natural Capital	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.
Human Capital	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.
Financial Capital	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.
Social capital	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.
Manufactured Capital	comprises material goods or fixed assets, which contribute to the production process rather than being the output itself – e.g. tools, machines and buildings.

(source: Higher Education Funding Council for England, 1998)

Figure 1.1

Natural Step 5 Capitals Model of Sustainability
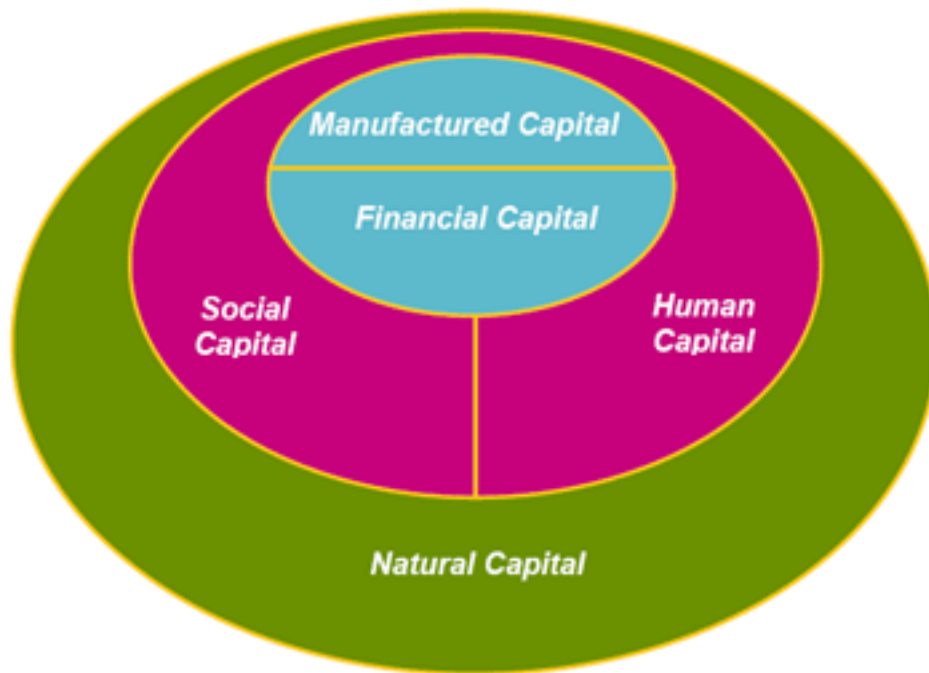
An analysis of social sustainability in higher education examines the intersection of human capital, natural capital, and social capital.

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

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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

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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, andalso 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.

Figure 2.1

Bio-economy Model of Sustainability
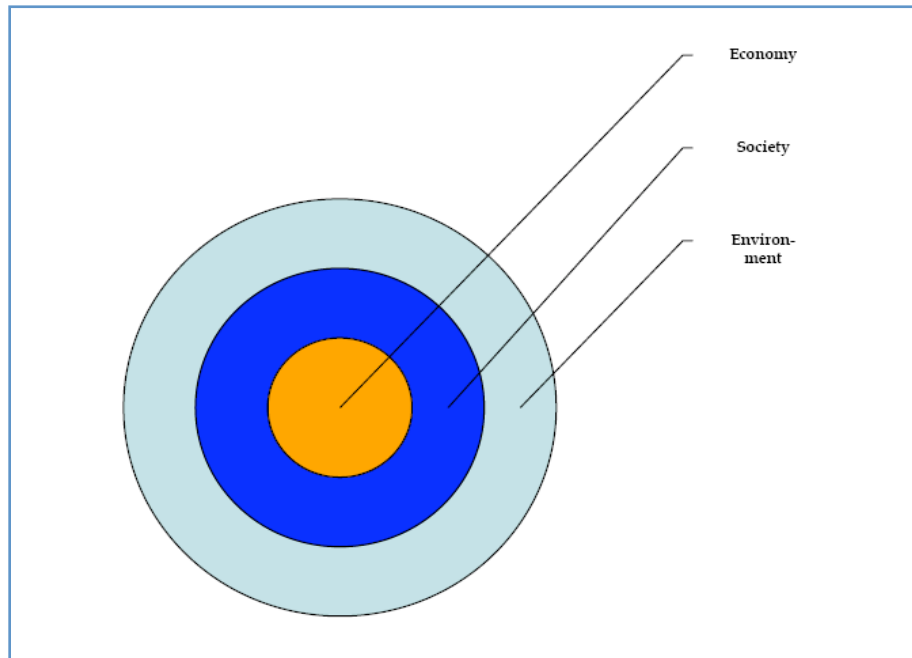
Thus, in the sense of a hierarchy, the social would be derivative and reliant on the economic, but at the same time reliant on, or constrained by, the ultimate environmental sphere (Passet, 1996; Marechal, 2000). The clear difference in priorities and value set by such a model of sustainability serves 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).

Figure 2.2

Triple Bottom Line Model of Sustainability
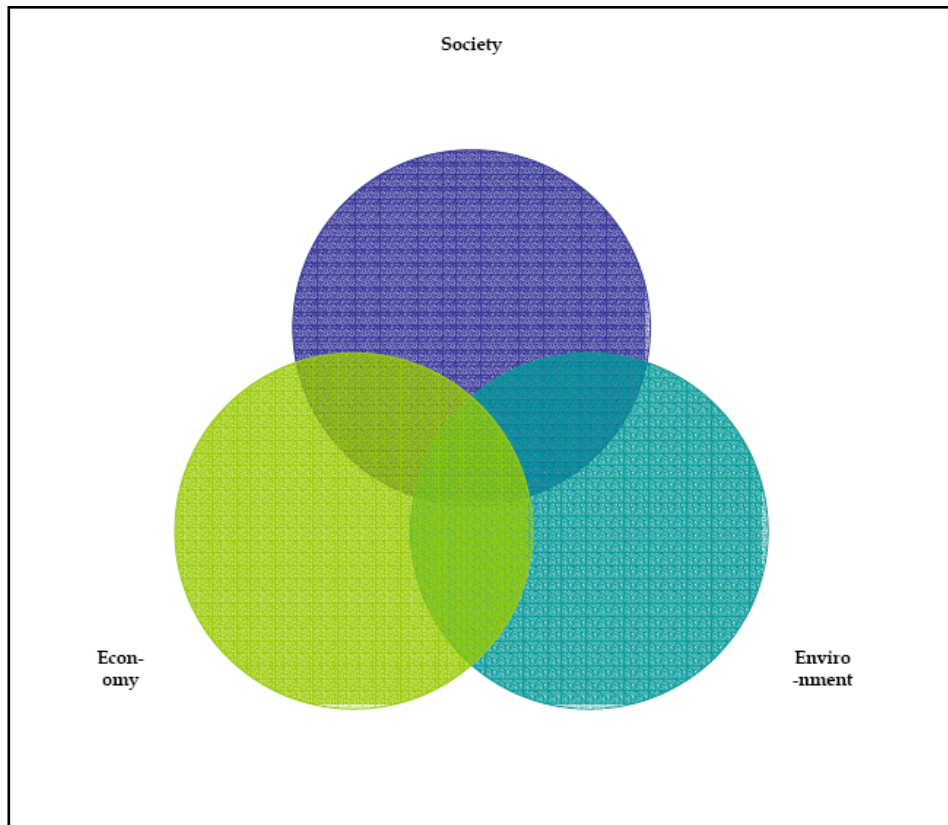
As Elkington explains, "the sustainability agenda, long understood as an attempt to harmonize the traditional financial bottom line with emerging thinking about the environmental bottom line, is turning out to be much more complicated than some early business enthusiasts imagined. Increasingly, we think 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 2.1. *Definitions of Social Sustainability*

Definition	Source
Socially based definitions	
'Social Sustainability for a city is defined as development which is compatible with the harmonious evolution of civil society, fostering an environment conductive 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.'	UNESCO 'MOST' Program: Towards Socially Sustainable Cities
Generally, societies that are inclusive, cohesive, and that have accountable institutions are best able to support lasting development outcomes.	World Bank Social Development Website
Social sustainability occurs when the formal and informal • processes • systems • structures and • relationships 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.	WACOSS model of social sustainability, p 11.
A sustainable community would be secure, healthy and equitable, with a clear sense of place.	Environmental Protection Authority (2002) Towards Sustainability.
'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.'	Coop America, Coop America Quarterly, No. 37, Summer 1995, p 46.

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 of 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., Bourdieu, 1986; Coleman, 1988, 1990; Putnam, 1993, 1995).

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

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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
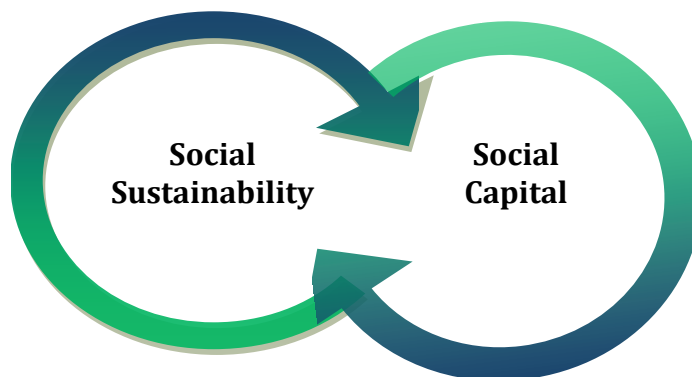
The interdependent, sustainable nature of this model also has implications for the role, relevance, and sustainability of higher education in general. As a location that creates and replicates social capital, higher education is an important catalyst to build momentum. The implications of which suggest 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.

Chapter 3

Methodology

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 inthree 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[A]

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

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[A] 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.

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

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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.

Centering Resonance Analysis Process Algorithms

Figure 3.1 *Influence of Word*	$$PR'_{AB} = WR_{AB} = \sum_{i=1}^{N(A)} \sum_{j=1}^{N(B)} I_i^A \bullet I_j^B \bullet \alpha_{ij}^{AB} \quad \overline{\sum_{k+1}^{B)} \left(P_{kl}^B\right)^2}$$
Figure 3.2 *Standardized* *Influence of Word*	
Figure 3.3 *Pair Resonance*	
Figure 3.4 *Pair Resonance* *Standardized*	
Figure 3.5 *Word Resonance* *Between Texts*	

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

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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 sustinability 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).

<div align="center">Reflexive Grounded Theory</div>

Grounded theory is a way of generating new theory groundedin 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 generatetheory 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 researchsituation.

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. Theversion 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 an d 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.

Table 4.1

Word Influence List, Social Sustainability Survey

Words	Pairs
sustainability 0.34716	issue | social 0.158
issue 0.28079	sustainability | social 0.130
social 0.18774	sustainability | faculty 0.104
faculty 0.1499	issue | environmental 0.080
environmental 0.09476	sustainability | campus 0.050
impact 0.08813	social | economic 0.049
student 0.08762	issue | economic 0.037
campus 0.0717	sustainability | environmental 0.033
sustainable 0.07094	issue | impact 0.025
way 0.06763	sustainability | economic 0.023
economic 0.06564	sustainability | team 0.021

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.

Figure 4.1

CRA Map of MSU Survey Responses
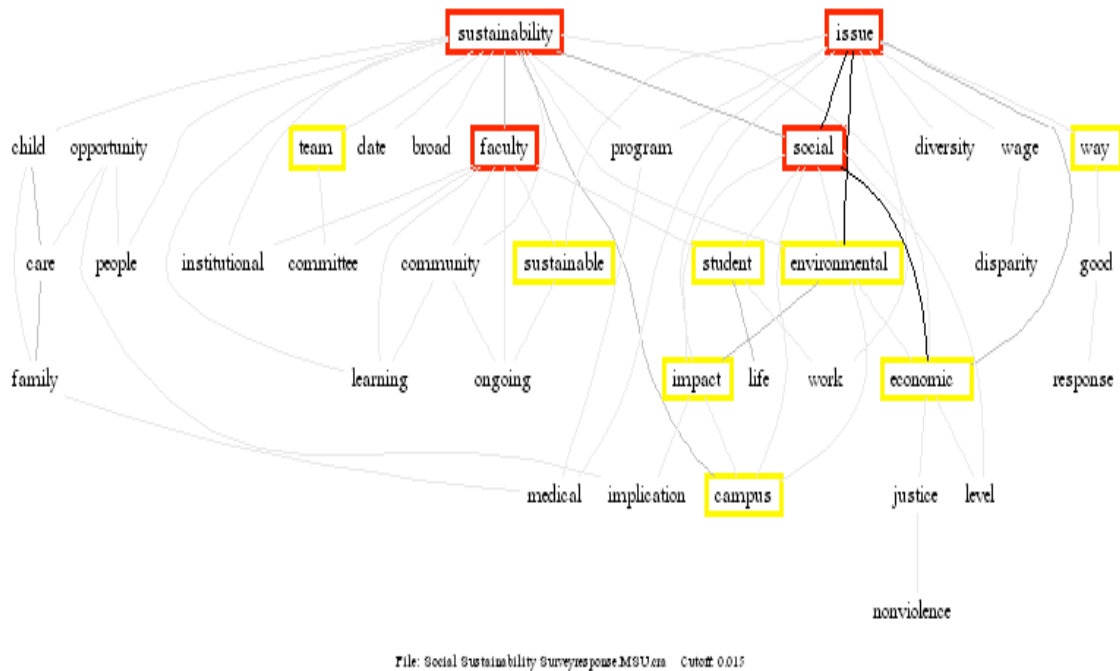
Similar data preparation took place of the Michigan State University Sustainability Report of 2007, and a text document of approximately sixty-seven pages was analyzed.

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*

Words	Pairs
msu 0.12519	msu	student 1.048
student 0.08909	msu	campus 0.140
number 0.06736	msu	number 0.118
campus 0.06581	msu	figure 0.105
figure 0.04928	student	campus 0.100
year 0.03805	number	figure 0.086
university 0.03682	student	number 0.084
water 0.03618	student	employee 0.069
report 0.03447	student	graduate 0.068
employee 0.03352	msu	employee 0.059
source 0.02791	student	year 0.054
indicator 0.02568	student	figure 0.053
use 0.02495	student	food 0.053

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
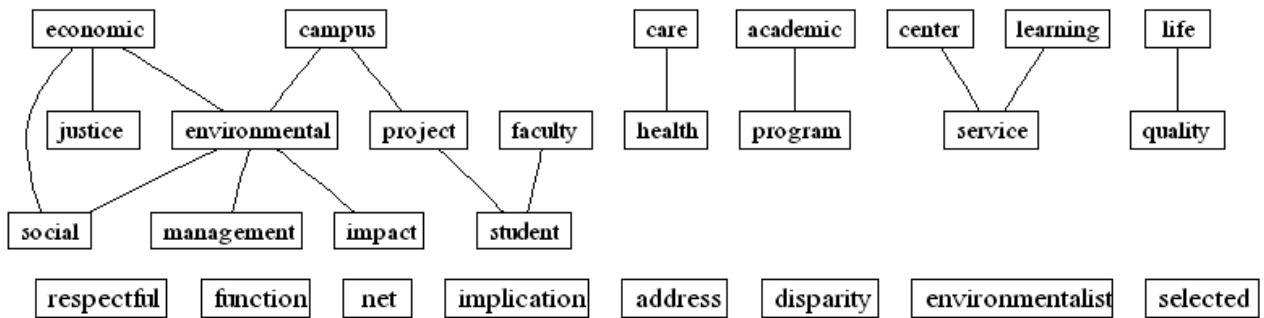
Figure 4.4.MSU Comparison: Unique Words, Social Sustainability Survey
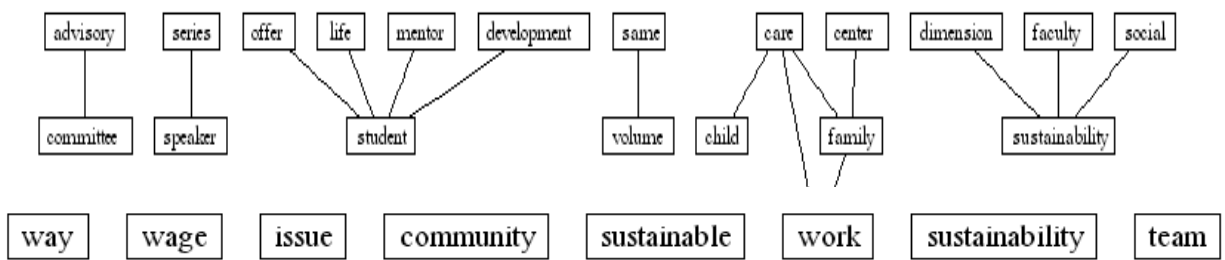
Figure 4.5.MSU Comparison: Unique Words, Sustainability Report
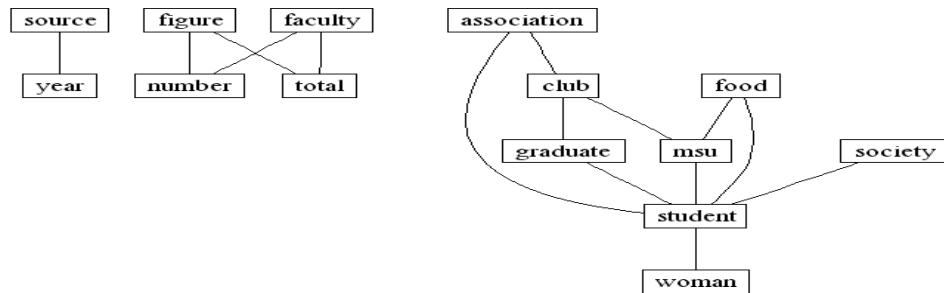
MSU Summary

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 Thomspon, "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

Words	Pairs
sustainability 0.34993	sustainability | social 0.505
social 0.18039	sustainability | environmental 0.239
university 0.11228	sustainability | university 0.236
faculty 0.10915	social | environmental 0.070
campus 0.10828	sustainability | office 0.062
environmental 0.09739	social | university 0.061
student 0.09055	sustainability | community 0.044
community 0.06348	sustainability | faculty 0.038
office 0.0592	sustainability | campus 0.038

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 moderatelevel of significance (Crawdad Technologies, 2007). However, a focus

score of 0.334, a statistic of groupinfluence 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.

Figure 5.1

CRA Map of University of Vermont Survey Response

File: UVM.socsus..cra   Cutoff: 0.015

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 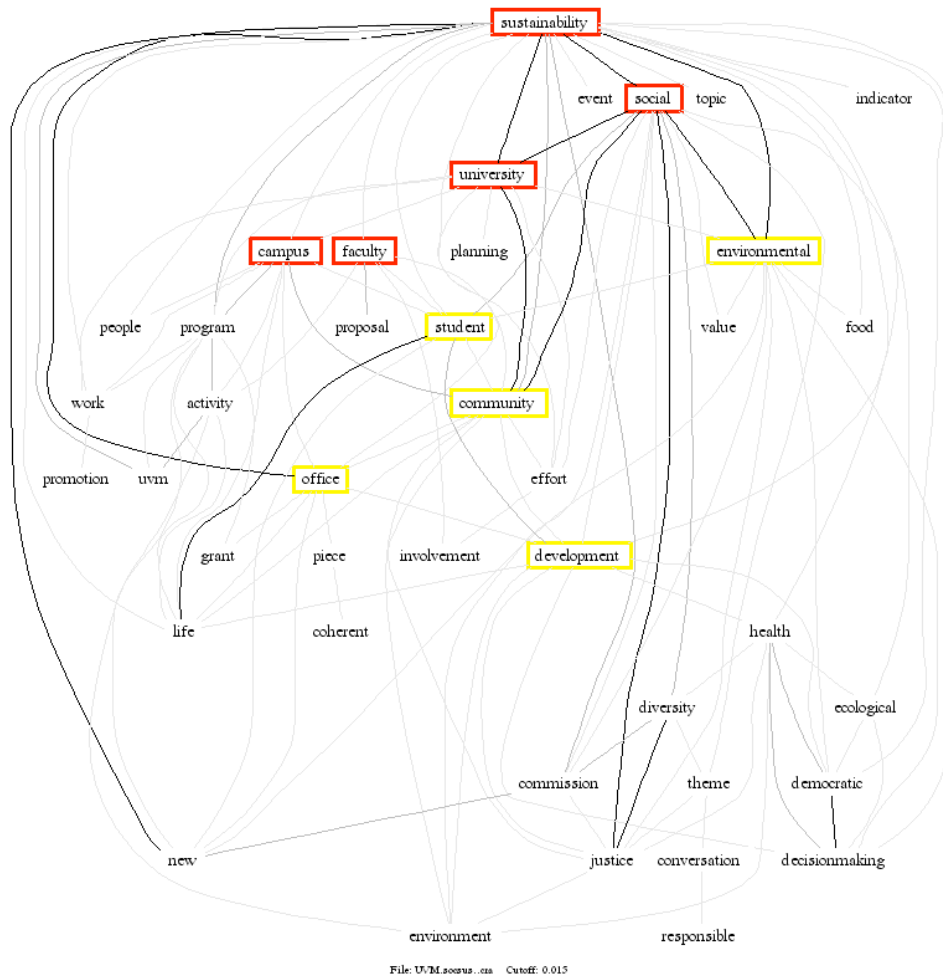2123 with a density of 0.006 and a focus of 0.111. Density is the proportion of links that exist in the CRA Network, divided by the number of links that could possibly exist in a network. A density score of 0.006 does not indicate a significant level of density. However, a focus score of 0.111, a statistic 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

Words	Pairs
uvm 0.11217	uvm | community 0.216
university 0.07946	uvm | university 0.125
campus 0.06505	uvm | campus 0.117
community 0.05828	university | vermont 0.115
student 0.05316	uvm | student 0.107
system 0.04666	university | campus 0.098
program 0.03631	community | student 0.071
vermont 0.02953	student | faculty 0.062
new 0.02894	university | community 0.046
faculty 0.02827	uvm | program 0.045
education 0.02697	Campus | community 0.045
food 0.02653	uvm | system 0.042
environmental 0.02626	Campus | student 0.035
course 0.02356	Campus | vermont 0.031
initiative 0.0229	uvm | vermont 0.030
research 0.02193	system | food 0.026
resource 0.02114	uvm | faculty 0.025
center 0.02107	university | student 0.025
health 0.02026	uvm | center 0.024
service 0.01994	community | faculty 0.023
design 0.01982	uvm | sustainability 0.022

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*

campus   health   food

program   sustainability   vermont   community   human   local

uvm   university   member   faculty

staff   student

system   environmental   social   activity   office   development   new   diversity
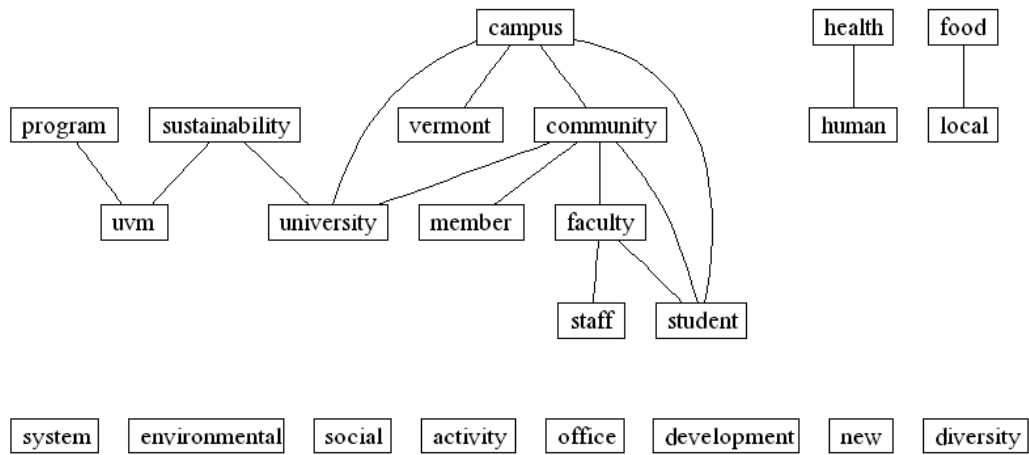
Figure 5.3 *Unique Words for UVM Sustainability Plan*

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
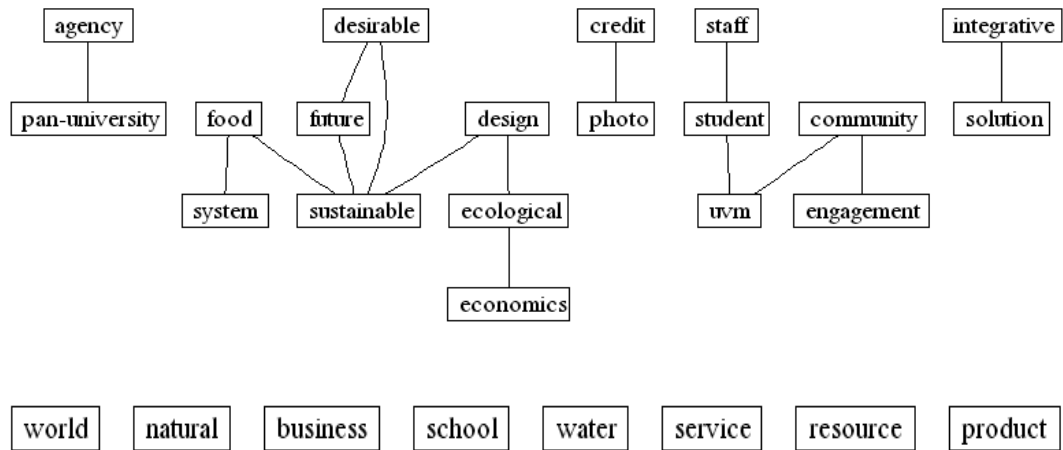
Figure 5.4 *Unique Words for UVM Social Sustainability Survey*

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

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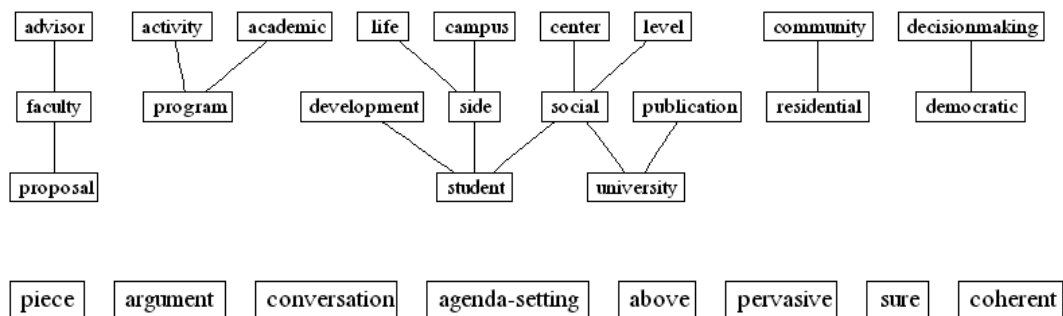
Summary

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 sustinability 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

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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

Words	Pairs
sustainability 0.24988	campus	work 0.066
project 0.1985	sustainability	social 0.057
campus 0.17727	sustainability	osu 0.042
group 0.14385	sustainability	group 0.036
student 0.13914	sustainability	student 0.035
work 0.12462	sustainability	work 0.031
small 0.12025	sustainability	initiative 0.028
social 0.11352	project	student 0.028

initiative 0.11187	campus | group 0.026
diversity 0.0974	campus | student 0.025
employee 0.08886	project | small 0.024

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*

Words	Pairs
osu 0.11048	osu | sustainability 0.329
sustainability 0.11023	state | university 0.071
program 0.10411	program | student 0.068
student 0.07298	oregon | university 0.062
oregon 0.066	osu | student 0.048
resource 0.04806	oregon | state 0.044
state 0.04747	sustainability | information 0.037
university 0.04702	osu | program 0.035
new 0.03905	sustainability | council 0.032
research 0.03832	student | faculty 0.028

energy 0.03264	sustainability | program 0.023
information 0.03048	program | oregon 0.021
faculty 0.02772	program | university 0.020
food 0.02763	sustainability | effort 0.019
system 0.02444	sustainability | oregon 0.015
science 0.02352	sustainability | campus 0.015
sustainable 0.02289	osu | opportunity 0.013
campus 0.02199	oregon | research 0.013
college 0.02104	sustainability | resource 0.011
service 0.02062	resource | sustainable 0.011

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.
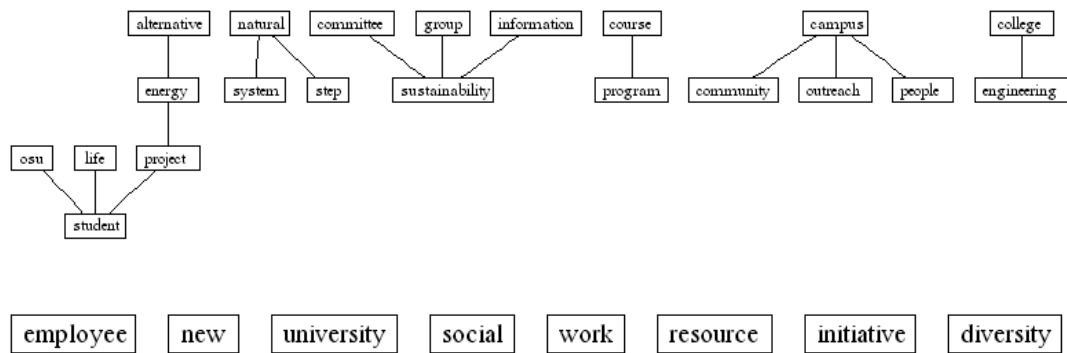
Figure 6. 3 *Shared Words*

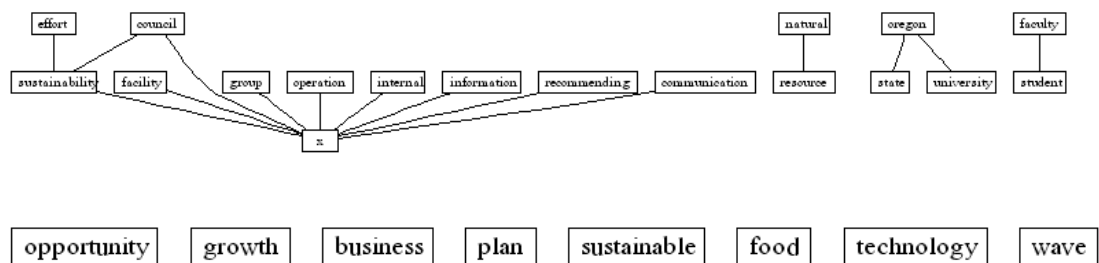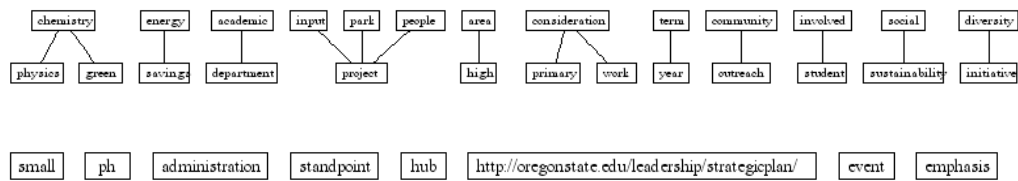Figure 6. 4 *Unique Words OSU Social Sustainability Responses*

Figure 6.5 *Unique Words for OSU Sustainability Plan*

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

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(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 discourseits 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

|	Nodes	Density	Focus
MSU Survey	174	0.022	0.334
MSU Plan	2056	0.008	0.124
UVM Survey	263	0.023	0.342
UVM Plan	2123	0.006	0.111
OSU Survey	167	0.024	0.235
OSU Plan	1291	0.008	0.109

Centering Resonance Comparison analysis outcomes show a good deal of parallel construction in the sustainability dicourses 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.
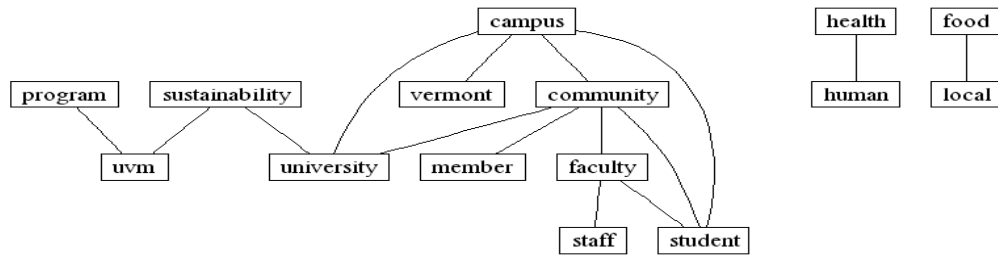
Inter-organizational Shared Discourse Comparison
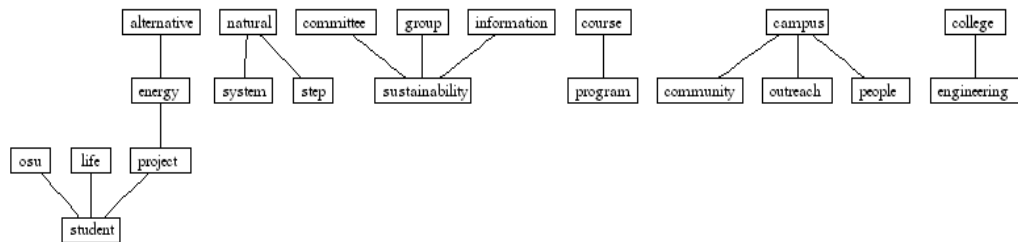
Michigan State University:
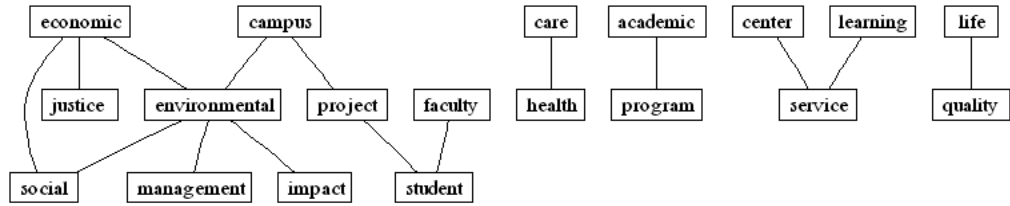
University of Vermont:

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*

MSU	UVM	OSU
organization student	faculty student	alternative energy
care health	faculty staff	OSU sustainability
faculty student	food local	college engineering
learning service	community student	group sustainability
economic social	community member	campus outreach
economic environmental	health human	student life
life quality	sustainability UVM	natural system

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

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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-grassoots, 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-sharingsustainability 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 sustainabilitydocuments

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*

Higher
Education

Socio-
economic

Ecosphere
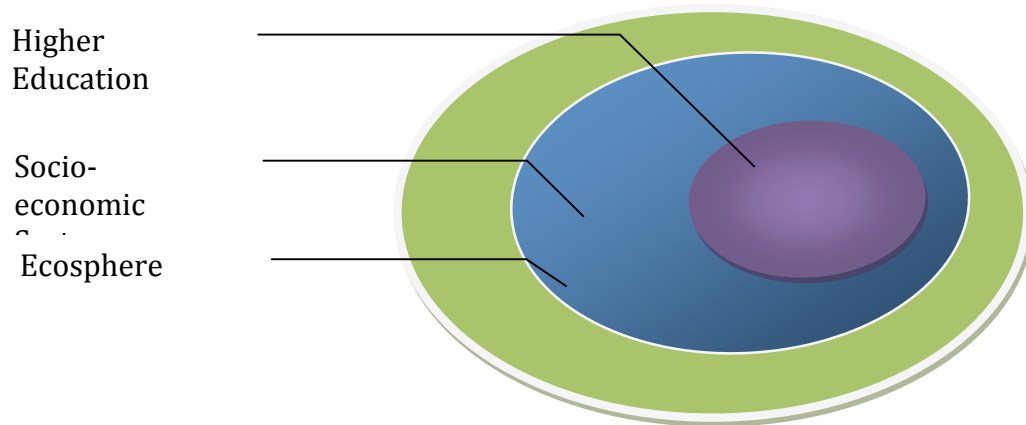
This analysis of social sustainability efforts at land-grant universities has emphasized the need for a global shift in thinking and ways of knowing. Through comparative case studies, a picture of these processes of change has begun to evolve. Utilizing comparative policy discourse analysis, the focus 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

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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 *Encyclopdie* 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 currentsocial 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).

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APPENDICES

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

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 DISSERTATION 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

MICHIGAN STATE University – SURVEY RESPONSES

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 an d 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.
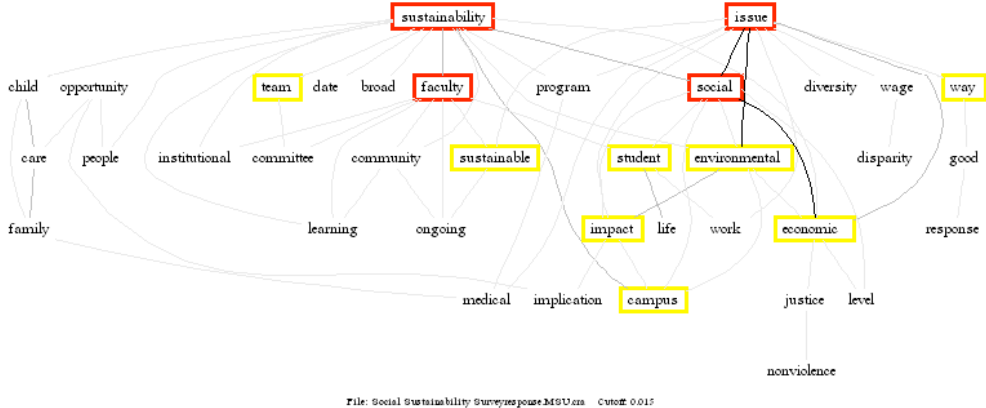
CRA Network Statistics

Number of nodes: 174
Density: 0.022
Focus: 0.334

CRA Map

File: Social Sustainability Surveyresponse.MSU.cra   Cutoff: 0.015

Influence Analysis

Words	Pairs
sustainability 0.34716	issue	social 0.158
issue 0.28079	sustainability	social 0.130
social 0.18774	sustainability	faculty 0.104
faculty 0.1499	issue	environmental 0.080
environmental 0.09476	sustainability	campus 0.050
impact 0.08813	social	economic 0.049
student 0.08762	issue	economic 0.037
campus 0.0717	sustainability	environmental 0.033
sustainable 0.07094	issue	impact 0.025

way 0.06763	sustainability | economic 0.023
economic 0.06564	sustainability | team 0.021
team 0.05953	issue | sustainable 0.020
work 0.0487	issue | way 0.019
wage 0.04402	social | environmental 0.018
program 0.04103	social | impact 0.017
community 0.03719	environmental | impact 0.017
opportunity 0.0364	social | student 0.016
learning 0.03639	sustainability | program 0.014
institutional 0.0359	issue | work 0.014
child 0.03381	sustainability | community 0.013
justice 0.03307	sustainability | learning 0.013
good 0.03307	social | campus 0.013
people 0.03097	faculty | student 0.013
committee 0.03047	sustainability | institutional 0.012
level 0.02218	sustainability | child 0.012
date 0.02218	issue | wage 0.012
nonviolence 0.02218	issue | program 0.012
disparity 0.02218	sustainability | people 0.011

response 0.02218	faculty | sustainable 0.011
implication 0.02096	sustainability | date 0.008
care 0.0206	sustainability | broad 0.007

CRAWDAD Visualizer v1.0

MSU.sustainability report.

CRA Network Statistics
Number of nodes: 2056
Density: 0.008
Focus: 0.124

Influence Analysis

Words	**Pairs**
msu 0.12519	msu | student 1.048
student 0.08909	msu | campus 0.140
number 0.06736	msu | number 0.118
campus 0.06581	msu | figure 0.105
figure 0.04928	student | campus 0.100
year 0.03805	number | figure 0.086
university 0.03682	student | number 0.084
water 0.03618	student | employee 0.069
report 0.03447	student | graduate 0.068
employee 0.03352	msu | employee 0.059

source 0.02791	student | year 0.054
indicator 0.02568	student | figure 0.053
use 0.02495	student | food 0.053
community 0.02439	student | water 0.052
health 0.02025	msu | food 0.051
sustainability 0.02024	msu | graduate 0.046
faculty 0.01883	msu | source 0.045
environmental 0.01857	msu | water 0.041
farm 0.01761	msu | environmental 0.040
vehicle 0.01683	student | environmental 0.040
food 0.01643	number | campus 0.040
area 0.01578	msu | year 0.033
new 0.01571	number | faculty 0.033
research 0.01535	year | source 0.033
economic 0.0153	number | employee 0.025
graduate 0.01516	msu | farm 0.024
paper 0.0151	student | faculty 0.022
cost 0.01464	student | farm 0.019
data 0.01383	student | vehicle 0.019

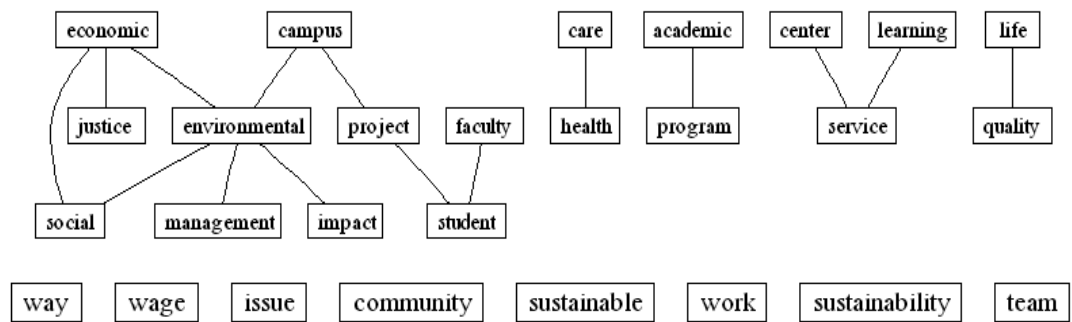|	
total 0.01365	student | economic 0.019
increase 0.01312	number | total 0.019

CRAWDAD Visualizer v1.0

Visual Comparison

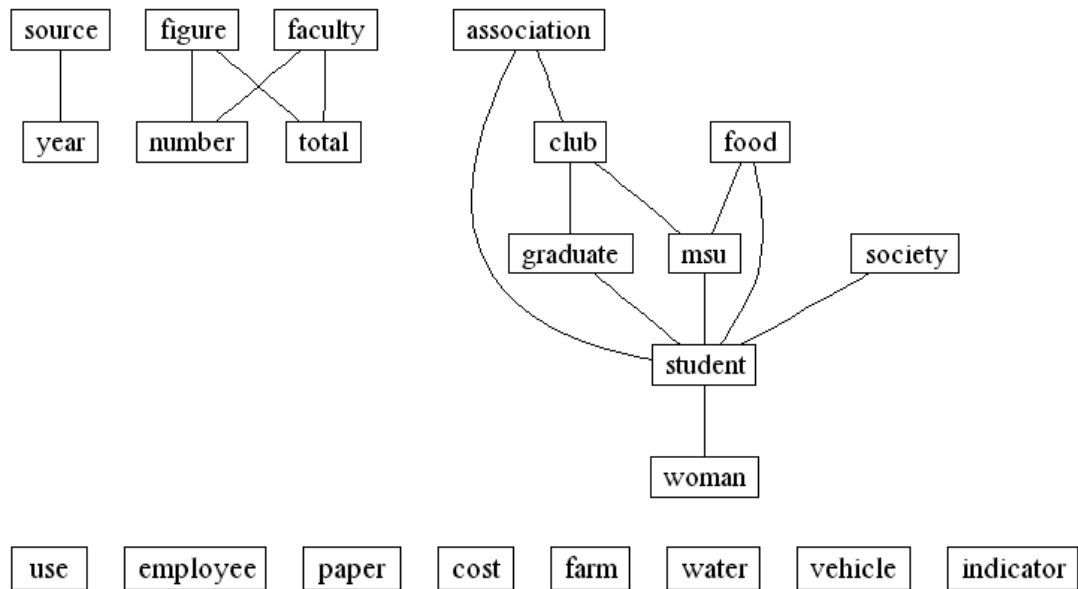Note: Visual comparison shows top influence pairs and words only.

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

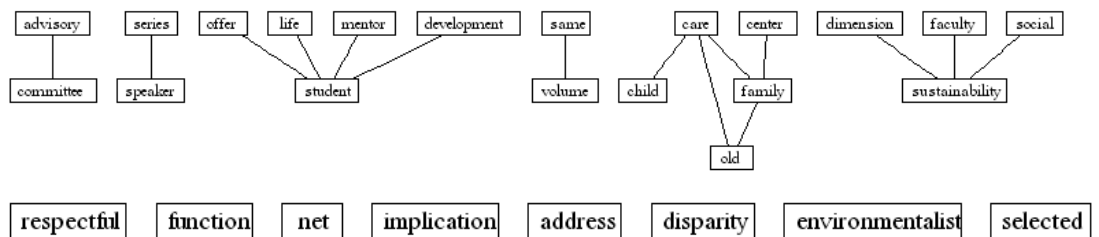**CRA2 file2: Social Sustainability Surveyresponse.MSU.cra**

Shared Words

Unique Words for CRA file1

Unique Words for CRA file2

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]

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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

CRA file1	CRA file2
[club student] [msu student] [club msu] [graduate student] [association student] [food student] [society student] [association club] [source year] [faculty total] [student woman] [club graduate] [figure number] [faculty number] [figure total] [food msu] [family student] [assn. student] [graduate msu] [environmental student] [student wildlife] [justice student] [fishery student] [spartan student] [horticultural student] [employee student] [club food] [club society] [association msu] [indicator rationale] [number total] [msu society] [campus msu] [figure msu] [campus student] [environmental msu] [assn. club] [student year] [student water] [percentage student] [club environmental] [club wildlife] [club woman] [club family] [club justice] [club spartan] [club horticultural] [club fishery] [greenhouse student] [msu number] [paper recycled] [human resource] [copy paper] [employee msu] [number student] [ash coal] [assn. msu] [economic student] [medical student] [human source] [faculty staff] [course credit] [msu source] [msu wage] [student vehicle] [planning student] [peace student] [engineering student] [relief student] [nutrition student] [injury number] [education high] [high wage] [coal land-filled] [club organization] [air travel] [club medical] [marsh wetland] [ash land-filled] [figure student] [msu wildlife] [msu woman] [family msu] [justice msu] [fishery msu] [horticultural msu] [msu spartan] [farm student] [lansing student] [animal student] [income student] [park student] [clean student] [fair student] [ecological student] [investment student] [east student] [business	[environmental issue] [series speaker] [social sustainability] [faculty sustainability] [dimension sustainability] [life student] [development student] [offer student] [mentor student] [care child] [care family] [advisory committee] [center family] [care old] [family old] [same volume] [speaker un] [decade speaker] [decade series] [energy management] [decade un] [series un] [sustainability team] [learning sustainability] [impact issue] [child sustainability] [people sustainability] [date sustainability] [issue sustainable] [issue way] [class sustainability] [review sustainability] [administrator sustainability] [fall sustainability] [funding sustainability] [agenda-setting sustainability] [sustainability usual] [piece sustainability] [step sustainability] [curriculum sustainability] [more and more sustainability] [administration sustainability] [spring sustainability] [issue work] [issue wage] [issue program] [issue medical] [diversity issue] [impact social] [social student]

student] [student volunteer] [bank student] [strength student] [magazine student] [habitat student] [struggle student] [regional student] [student trade] [assistance student] [right student] [forestry student] [stewardship student] [friend student] [nature student] [journalism student] [humanity student] [child student] [student tax] [philosophy student] [ecology student] [listening student] [student wilderness] [friendshop student] [progressive student] [engineer student] [purpose student] [scuba student] [freethinker student] [org. student] [*news student] [student urban] [clinic student] [q student] [ear student] [student unionization] [friendship student] [student unicef] [road-trip student] [civitan student] [experimental student] [alliance student] [recreation student] [com student] [outing student] [promoting student] [eco student] [cycling student] [paper total] [graduate woman] [food store] [paper white] [pond wetland] [charter earth] [cedar red] [ncha survey] [eligible enrolled] [enrolled retiree] [farm msu] [employee number] [hour student] [ncha student] [faculty figure] [figure human] [consumption water] [economic indicator] [faculty woman] [faculty man] [association graduate] [graduate undergraduate] [man total] [plant power] [enrollment student] [student survey] [number service] [number woman] [figure resource] [environmental food] [cost health] [motor vehicle] [enrollment graduate] [annual loan] [club peace] [club engineering] [minimum wage] [action possible] [comparison wage] [intramural sports] [club yoga] [eligible retiree] [msu water] [economic msu] [campus number] [course msu] [msu project] [engineering msu] [east msu] [campus south] [average figure] [amount year] [irrigation water] [food graduate] [michigan state] [faculty gender] [faculty tenured] [association food] [food society] [care cost] [graduate society] [enrollment increase] [gender total] [future sustainable] [east lansing] [gas greenhouse] [graduation rate] [ncha percentage] [association society] [act score] [point talking] [msu organization] [msu peace] [animal msu] [greenhouse msu] [indicator student] [campus water] [debt student] [human number] [man number] [campus club] [use water] [club year] [fiscal year] [club water] [club employee] [energy use] [consumption food] [club farm] [club vehicle] [hybrid vehicle] [club economic] [cost tuition] [coal recycled] [average wage] [club lansing] [justice peace] [club planning] [animal club] [club

[administrator issue] [issue visible] [issue large] [forefront issue] [issue light] [issue set] [issue programming] [counseling issue] [coverage issue] [faculty sustainable] [level social] [consideration social] [dimension social] [connection social] [background social] [faculty learning] [faculty institutional] [part social] [area social] [concern social] [job social] [administration social] [funding social] [being social] [early social] [security social] [agenda-setting social] [committee faculty] [faculty ongoing] [development faculty] [faculty group] [faculty incentive] [faculty speaker] [faculty institute] [advisory faculty] [faculty series] [faculty spring] [faculty un] [education faculty] [student work] [impact implication] [environmental volume] [good way] [impact selected] [environmental growing] [committee team] [advisory student] [impact moral] [introduction student] [downstream impact] [outreach student] [disproportionate impact] [impact interest] [full impact] [growing impact] [impact story] [independent student] [ongoing sustainable] [attempt campus] [respectful way] [address sustainable] [speaker sustainable] [long sustainable] [dimension economic] [choice sustainable] [campus introduction] [time way] [campus growing] [campus classroom] [campus interest] [function team] [sustainable un] [series sustainable] [education sustainable] [decade sustainable] [complex team] [opportunity people] [disparity wage] [economic security] [choice team] [position team] [new team] [medical program] [implication

income] [hall residence] [club park] [club project] [clean club] [club fair] [club ecological] [club greenhouse] [club investment] [club east] [percentage survey] [business club] [man woman] [red river] [gap wage] [cedar river] [cubic yard] [club volunteer] [bank club] [club strength] [ash recycled] [club magazine] [club habitat] [club struggle] [club regional] [club trade] [land-filled recycled] [assistance club] [club right] [club relief] [club forestry] [club stewardship] [club friend] [club nature] [club journalism] [club nutrition] [club humanity] [child club] [club tax] [club philosophy] [club ecology] [club listening] [club engineer] [club org.] [club wilderness] [club unicef] [alliance club] [club outing] [club promoting] [club road-trip] [club ear] [club urban] [club experimental] [club recreation] [club friendship] [clinic club] [club progressive] [club eco] [club friendshop] [civitan club] [club q] [club com] [club purpose] [*news club] [club cycling] [club unionization] [club freethinker] [club scuba] [enrolled regular] [msu year] [msu vehicle] [msu plant] [low msu] [msu planning] [credit msu] [clean msu] [medical msu] [child msu] [health student] [staff student] [loan student] [student team] [campus farm] [figure indicator] [water year] [number resource] [intramural number] [state university] [environmental indicator] [indicator social] [amount paper] [office paper] [pool vehicle] [faculty grievance] [paper ton] [beverage food] [total woman] [graduate man] [average loan] [solid waste] [low wage] [average hour] [age average] [club resource] [injury top] [construction standard] [motor pool] [federal loan] [board tuition] [hour week] [board room] [room tuition] [arbitration grievance] [high msu] [lansing msu] [income msu] [msu park] [ecological msu] [fair msu] [investment msu] [business msu] [msu volunteer] [bank msu] [msu strength] [magazine msu] [habitat msu] [msu struggle] [msu regional] [msu trade] [assistance msu] [msu right] [msu relief] [forestry msu] [msu stewardship] [friend msu] [msu nature] [journalism msu] [msu nutrition] [humanity msu] [msu tax] [msu philosophy] [ecology msu] [listening msu] [*news msu] [ear msu] [msu promoting] [msu q] [msu unicef] [msu scuba] [msu wilderness] [engineer msu] [msu org.] [msu recreation] [msu outing] [msu unionization] [alliance msu] [eco msu] [msu road-trip] [msu urban] [friendshop msu] [clinic msu] [friendship msu] [com msu] [civitan msu] [freethinker msu] [cycling msu] [experimental msu] [msu purpose] [msu

opportunity] [care opportunity] [good response] [needed program] [lot work] [community ongoing] [direction work] [exercise work] [part work] [collaboration institutional] [institutional research] [coverage wage] [equity wage] [offering opportunity] [child dimension] [counseling program] [community forum] [area community] [approach opportunity] [community influence] [community outreach] [offering people] [institutional mission] [opportunity shelter] [health opportunity] [food opportunity] [exercise people] [child old] [child usual] [child step] [committee direction] [level net] [date environmentalist] [collective disparity] [committee thesis] [committee graduate] [broad effort] [development life] [development ongoing] [attention implication] [diversity incentive] [broad term] [life offering] [implication moral] [ongoing speaker] [disproportionate implication] [care equal] [care shelter] [care food] [broad university] [family resource] [development speaker] [influence life] [needed support] [forum ongoing] [group selected] [counseling medical] [diversity preparing] [diversity syllabus] [academic review] [time volume] [ongoing series] [office ongoing] [decade ongoing] [ongoing un] [connection effort] [assistance needed] [research status] [discipline function] [development series] [decade development] [development education] [effort fall] [net safety] [possible question] [attempt circumstance] [dialogue respectful] [environmentalist track] [collaboration event] [class numerous] [consideration forefront] [consideration same]

progressive] [campus figure] [increase student] [michigan student] [number source] [ratio student] [body student] [student wage] [figure university] [course number] [learning number] [number sports] [number undergraduate] [grievance number] [campus north] [estimated number] [number riders] [figure food] [source university] [employee indicator] [figure service] [michigan university] [figure top] [figure man] [water well] [surface water] [pumped water] [environmental graduate] [community member] [fuel vehicle] [cost injury] [environmental justice] [increase significant] [food wildlife] [association environmental] [food woman] [family food] [faculty minority] [graduate wildlife] [environmental society] [department food] [food justice] [family graduate] [graduate justice] [assn. food] [food spartan] [food horticultural] [fishery food] [high school] [assn. graduate] [fishery graduate] [graduate spartan] [graduate horticultural] [amount material] [change climate] [benefit wage] [future generation] [art college] [destination travel] [average seniority] [gap low] [debt loan] [justice woman] [association wildlife] [society wildlife] [association woman] [association family] [undergraduate woman] [association justice] [society woman] [family society] [job satisfaction] [loan private] [justice society] [enrollment undergraduate] [assn. association] [created wetland] [hour needed] [goritz wetland] [hour worked] [beverage store] [association horticultural] [association fishery] [association spartan] [assn. society] [man undergraduate] [art letter] [gender man] [graduation retention] [fishery society] [society spartan] [horticultural society] [electricity steam] [jet laser] [eligible regular] [goritz marsh] [disorder seasonal] [regular retiree] [indicator msu] [michigan msu] [consumption msu] [msu study] [msu standard] [msu power] [msu sewage] [msu surplus] [number year] [cost student] [resource student] [student undergraduate] [employee figure] [campus vehicle] [building campus] [campus service] [number office] [number staff] [campus planning] [beverage number] [gender number] [enrolled number] [arbitration number] [number retiree] [number tenured] [coal figure] [food water] [figure woman] [figure wage] [increase year] [total university] [figure undergraduate] [figure grievance] [enrolled figure] [university wage] [store university] [employee wage] [contribution employee] [office source] [employee paid] [community life] [food waste] [economic impact] [animal farm] [area natural]

[effort term] [group individual] [address approach] [lot support] [effort quality] [academic governance] [center resource] [activity center] [dimension step] [dimension usual] [individual selected] [different speaker] [incentive syllabus] [governance review] [compliance thing] [background different] [education speaker] [institute preparing] [attention mission] [forum large] [moral visible] [downstream visible] [body thing] [assistance support] [independent project] [being part] [term university] [discipline status] [disproportionate moral] [order well] [indivisible small] [current order] [minority small] [concern early] [equal food] [education series] [administration funding] [growing interest] [full story] [graduate thesis] [equal shelter] [food shelter] [agenda-setting funding] [new position] [administration agenda-setting] [education un] [energy system] [equal health] [health shelter] [food health] [more and more piece] [step usual] [decade education]

[faculty team] [farm south] [food ton] [high low] [faculty fixed-term] [annual total] [food vegetable] [fleet vehicle] [food meatless] [increase percentage] [action increase] [organization service] [data digest] [total white] [beverage consumption] [alternative fuel] [club human] [physical plant] [hazardous waste] [amount copy] [association organization] [course ed] [gas natural] [science social] [fabric social] [material move] [ecological justice] [dairy facility] [recycled ton] [emission ton] [american club] [emission greenhouse] [pond woodland] [period same] [active club] [bike bus] [ratio student/faculty] [emission gas] [united way] [rate retention] [job security] [association medical] [cleanup river] [wetland woodland] [club spring] [actual emission] [southwest wetland] [alternative club] [club leadership] [club man] [emission fee-subject] [advantage club] [compensation worker] [medicine science] [break club] [club intercooperative] [bhakti club] [club red-cross] [club council] [anthropology club] [amnesty-international club] [club meditation] [agronomy club] [chicago climate] [climate exchange] [beverage drink] [beverage gallon] [beverage juice] [beverage soft] [chicago exchange] [msu research] [data msu] [change msu] [msu service] [big msu] [group msu] [degree msu] [msu store] [digest msu] [community student] [campus university] [number report] [change student] [amount student] [service student] [student study] [campus source] [group student] [international student] [diversity student] [learning student] [participation student] [man student] [gap student] [student worked] [student yoga] [campus research] [figure source] [campus waste] [report year] [campus lansing] [diversity number] [hour number] [accident number] [number participant] [number trip] [digest number] [campus electricity] [campus user] [campus riders] [figure paper] [cost figure] [indicator report] [course figure] [faculty year] [figure injury] [vehicle year] [total year] [graduate water] [figure recycled] [figure public] [figure tuition] [figure store] [high university] [eligible figure] [figure gallon] [employee graduate] [consumption year] [quality water] [average year] [college university] [food indicator] [community new] [recent year] [body water] [decrease year] [decline employee] [previous year] [storm water] [gallon water] [recommendation report] [injury source] [initial report] [eligible employee] [employee enrolled] [employee full-time] [employee temporary] [employee retiree] [environmental michigan]

[faculty system] [cost economic] [graduate increase] [physical source] [increased use] [ncha source] [change michigan] [food service] [health national] [environmental wildlife] [college graduate] [graduate organization] [environmental woman] [environmental family] [department environmental] [development new] [enrolled health] [farm wetland] [coal plant] [animal research] [office total] [farm manure] [assn. environmental] [digest faculty] [environmental stewardship] [faculty source:data] [farm lane] [environmental horticultural] [environmental fishery] [environmental spartan] [research teaching] [high institution] [graduate greenhouse] [object vehicle] [food item] [alternative vehicle] [group michigan] [program study] [graduate medical] [change group] [food housing] [human injury] [board cost] [consumption energy] [content paper] [injury resource] [cost room] [compensation cost] [club michigan] [annual plant] [national trend] [grievance total] [digest total] [tenured total] [source:data total] [high point] [change club] [state support] [gpa high] [fuel pool] [natural resource] [education institution] [building standard] [program training] [consumption store] [destination international] [hour service] [fuel motor] [fuel hybrid] [landfill waste] [natural pond] [enrolled human] [course golf] [big ratio] [injury reported] [college residential] [involvement service] [assist course] [course reimbursed] [course non-msu] [placement service] [air destination] [housing service] [estimated service] [enrolled resource] [wildlife woman] [family wildlife] [justice wildlife] [international travel] [family woman] [grievance office] [staff team] [part whole] [club group] [family justice] [natural science] [decline overall] [master plan] [annual federal] [assn. wildlife] [annual dollar] [annual private] [acre sf] [annual spent] [percentage respondent] [spartan wildlife] [horticultural wildlife] [fishery wildlife] [pond west] [assn. woman] [marsh pond] [assn. family] [gender woman] [gpa school] [pool vernal] [department store] [assn. justice] [fishery woman] [spartan woman] [horticultural woman] [accident traffic] [lane wetland] [family fishery] [family horticultural] [family spartan] [inflation rate] [lot wetland] [treatment wetland] [charter principle] [central wetland] [intramural participation] [domestic travel] [justice spartan] [horticultural justice] [fishery justice] [air domestic] [content recycled] [age seniority] [cartridge jet] [estimated learning] [cartridge ink] [marsh/created wetland]

[commuter wetland] [fact glance] [lifting object] [cartridge laser] [intramural participant] [art residential] [care enrolled] [participant sports] [gender undergraduate] [association yoga] [sale surplus] [enrolled freshman] [object struck] [anaerobic digester] [freshman mean] [alternative hybrid] [ink jet] [protection wellhead] [indirect recovery] [assn. horticultural] [assn. fishery] [assn. spartan] [actual fee-subject] [composite score] [anxiety disorder] [career placement] [grievance settled] [act composite] [coli e.] [ordinance violation] [federal private] [enrolled mean] [enrolled persons] [cattle dairy] [dollar spent] [leave sick] [pumped wells] [baker woodlot] [affective disorder] [james madison] [fishery spartan] [horticultural spartan] [fishery horticultural] [msu report] [health msu] [msu paper] [msu state] [building msu] [human msu] [msu resource] [college msu] [benefit msu] [student university] [msu school] [construction msu] [msu national] [msu ton] [msu recycled] [msu sale] [beverage msu] [minimum msu] [enrolled msu] [map msu] [electricity msu] [msu police] [ed msu] [assist msu] [number university] [new student] [consumption student] [quality student] [student waste] [injury student] [level student] [number use] [experience student] [student transportation] [spring student] [procurement student] [solid student] [rationale student] [anxiety student] [depression student] [graduation student] [reported student] [student student/faculty] [non-resident student] [gases/energy student] [student unsubsidized] [figure water] [number vehicle] [number research] [graduate number] [campus food] [campus graduate] [campus consumption] [low number] [day number] [decline number] [campus effort] [employee university] [acre campus] [credit number] [animal campus] [number travel] [campus sustainable] [campus environment] [number recycling] [environmental figure] [campus east] [decrease number] [number top] [minority number] [eligible number] [number placement] [association campus] [miosha number] [automotive number] [number rider] [figure vehicle] [campus society] [campus watershed] [campus ridership] [economic figure] [figure graduate] [community university] [consumption figure] [community report] [figure office] [food year] [annual figure] [university vehicle] [graduate year] [paper year] [figure staff] [employee faculty] [figure safety] [credit figure] [figure travel] [figure hour] [board figure] [employee food] [beverage figure] [figure

gender] [figure room] [ash figure] [digest figure] [figure mile] [dollar figure] [economic employee] [figure retiree] [figure land-filled] [data report] [large university] [employee total] [health indicator] [source vehicle] [food source] [plant report] [office university] [employee human] [acre university] [woman year] [employee injury] [wage year] [research use] [employee low] [association year] [annual report] [travel university] [society year] [flat year] [employee reduction] [student/faculty year] [employee group] [baseline year] [ghg year] [employee staff] [association water] [fuel source] [trip university] [beverage water] [university violation] [ordinance university] [society water] [reservoir water] [water wells] [community large] [employee support] [employee fund] [association employee] [physical report] [farm food] [employee society] [assistance employee] [employee seniority] [child employee] [employee gap] [food vehicle] [farm research] [farm graduate] [graduate vehicle] [economic food] [economic graduate] [community future] [intramural source] [health human] [indicator job] [cost total] [graduate michigan] [description source] [health resource] [cost increase] [environmental quality] [faculty human] [community global] [community generation] [area trend] [computer use] [indicator tuition] [health social] [faculty resource] [land use] [graduate program] [indicator security] [beverage use] [indicator introduction] [indicator negative] [system total] [control use] [faculty office] [injury vehicle] [cost fuel] [health safety] [economic life] [large system] [food organization] [cost human] [college new] [faculty position] [food lansing] [education research] [cost resource] [michigan quality] [education graduate] [food planning] [environmental project] [faculty member] [graduate lansing] [food peace] [animal food] [facility research] [eligible health] [graduate planning] [health retiree] [food income] [conference faculty] [percentage vehicle] [economic peace] [environmental requirement] [graduate peace] [food park] [food project] [clean food] [animal graduate] [coal waste] [fair food] [ecological food] [food greenhouse] [association farm] [food investment] [impact quality] [graduate income] [faculty interaction] [engineering food] [east food] [research standard] [business food] [environmental philosophy] [area river] [project research] [graduate park] [association vehicle] [graduate project] [farm society] [clean graduate] [day

increase] [food medical] [ecological graduate] [fair graduate] [annual increase] [staff total] [area existing] [food volunteer] [permit vehicle] [increase level] [graduate salary] [bank food] [graduate investment] [cost increased] [food lb] [food strength] [engineering graduate] [east graduate] [society vehicle] [business graduate] [food magazine] [food habitat] [safety total] [loan total] [food struggle] [incident vehicle] [food regional] [increase position] [food trade] [ladder vehicle] [assistance food] [food right] [departmental vehicle] [moving vehicle] [collision vehicle] [bending vehicle] [food relief] [ton total] [association economic] [cost financial] [food forestry] [food stewardship] [food friend] [food nature] [food journalism] [food nutrition] [food humanity] [graduate volunteer] [child food] [food tax] [food philosophy] [ecology food] [bank graduate] [food listening] [funding research] [graduate strength] [food wilderness] [food friendshop] [food urban] [food promoting] [food freethinker] [food scuba] [ear food] [civitan food] [*news food] [com food] [food unicef] [food purpose] ** LIST TRUNCATED **

msu number figure year water employee source indicator use farm vehicle paper cost data total increase michigan high change trend state coal consumption plant fuel waste building amount human course significant injury college average low equipment study lansing benefit destination additional great future institution material natural facility planning plan acre annual reduction decline irrigation big measure international green animal wildlife staff crime need ground pond income ratio pool key washington bike loan school standard operation woman important environment field efficiency american ethical construction national park framework rate goal ton teaching credit clean increased percentage global similar bottom envelope fair ecological decision greenhouse river product generation south debt writing department strong member active nation residence salary investment responsibility promise engineering hall parking action east problem relationship movement fell business fund practice demand travel hour wetland southeastern groundwater commitment deep financial existing recycled age sense potential air whole power earth simple computer gas fact local implementation grassroot mining curren

disparity implication net respectful environmentalist function dimension selected address speaker administrator offering background exercise advisory forum forefront moral influence preparing downstream order thesis disproportionate governance shelter agenda-setting mentor circumstance programming track syllabus indivisible

excellent enforcement period public recent preamble measurement manure sex agriculture cartridge accident enrollment home following knowledge friendly emission north vegetable recommendation crucial graph world budget truck diesel yard respondent major experience recycling special traffic principle association club charter addition search labor cubic participation pressure volunteer growth storm appropriate item resident real spiral chemical intramural likely ctu illinois leed sewage majority bank primary ucsc contribution poston design transportation lb strength conference apsa apa grant board end increasing requirement container worker sale land cut removal road layoff sports fruit population conservation formal lane interdependent medicine floodplain steady degree tuition popular soil various challenge table result side object lifting ireland freshman slight bulb page permit section procurement boomer intention daily affordability rich motivation industry recycled/remanufactured mind t contradictory buy sword climate produce misconduct miner worldwide bullet cafe evapotranspiration turf favored reality available hardly free personal category savings able general fertilizer picture vendor felony cultural bronze thread beverage type property litany art culture football ecosystem heavy magazine coach chapter tree forested severe habitat correct undergraduate pathway residential store decrease facilityspecific overall survey red recovery solid treatment protection alternative simon assn. long-term actual awareness top digester point short smart occupational leadership healthy initiative struggle form surface satisfaction rationale score society equivalent central regional percent gender training laboratory golf skill apartment fop campaign trade direct based law signage voter bus schedule language woodland room cedar workplace contract right anxiety participant option integrated malicious graduation depression origin grievance science control ash newspaper combination useful minimum corps steam misdemeanor french website success larceny flat value off-campus ethnicity reported disposal process cereal unwanted one-year jet career domestic organic relief athletic station employment compensation act game expansion copy production chicago open november riparian trip difference compound content educational living record award own eligible nat ag gpa ink exchange residency collection surrounding drinking footbridge purchase revenue clear phase basketball

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donated related forestry expenditure tech. west motor stewardship man strategy profile southwest violation rating capital short-term alcohol involvement information diverse force seniority due qu drink limited anaerobic essential scholarship physical incident marsh hope friend nature student/faculty detail leader space changing move weather apparent list enrolled journalism digest gallon e. cumulative systemic nutrition interdependence federal compost mixed electronic non-resident volatile advantage fixed-term watershed mile place surplus square humanity factor pattern *the consequence electric resale running border five-year previous operating portion basic policy description agricultural common juice instance foundation associated ladder manifestation meatless combined handling sulfur cafeteria hybrid utility discrete stress stressed fortunate assessment raise wisdom carbon bicycle retention map safe consumed quantity supply dollar hazardous significance dept. electricity driver cont curricular gap ethics intersection alumnus familiar tax designation completion lens market final secondary ability contamination executive veterinary performance cigarette unit close vision white claim egyptian creative full-time teh landfill engagement frequent substantial interaction compact pumped indiana affect interdependency contaminant richard commission reason stage sizable philosophy coli police cleanup gg multiple ridership native leading placement indoor hand conversation example ecology communication ashley site let component pest country willing user ingredient inquiry cyclotron boiler lumber flow past turbine provided history pollution week sufficient poor nox offset pass integrity signal sick concentrated release meal seasonal model cattle case ownership test wagon rise present letter cooling emphasize livestock discharge glance dairy reduced endowment biodiversity res employer laser factory atlanta epa view ncha beijing furniture visit yards internet private sedan circle perception weeklong comparison cost/mcf combustion bad united conditioning footprint purchasing variety pollutant pride awakening stable productivity note government subsidized danger feed convenient bending admin. created complete break specific package single temporary encouraging listening affected sharp departmental ohio when moving ordinance source:msu successful collision bridge electrical expensive money consistent printing energy-saving eye woodlot line vast shortage

heating struck positive shift necessary soft retiree moment fiber livelihood u.s. minimizing contributor sign weed midwest universal fleet carnegie pedestrian run reservoir farming fy arbitration housing hardware citizen preexisting educator mark selection no-till irregular panama renewed second-place setting de senior fresh precious election shortcoming milk president outside longstanding vernal half-time fee likelihood sheet economy disorder commodity uncertain makeup responsible appropriation mass original length historical evidence easy face initial talent specialization coordinated vice-president role saginaw bedding loss characteristic remnant acreage sf aesthetic only importance tea post-consumer replacement improvement respect article proximity destruction dpp district expanded nonresident foot formation unregistered stream meat producer wellhead bag marketing month organized ncorporate ingham notice boundary exception appointment composting aware parent tenured america leave workforce suggestion live look migration park-like load cause stepp disaster means context distinctive bonus measuring preconceived china show preparation researcher overview city campus-wide face to face reliance insect assaultthe transit stability car tractor boston innovation foreign sexual msu-water late prof. fiscal mileage definition purchased scholarly beginning base knowledgeable summary adjacent resolve jurisdiction adjusted bold turn di unity thorough reach particular unavailability effective avg. innovative footage biodiesel bris visceral element document paid occurrence elder mean magical range estimated renewable readiness september usage structure constrained usable rule wealthy aquifer sludge advanced professional journal meeting destiny pipe registered repayment workshop p fly y liquid subsequent bottled settlement three-year tillage transition ill. registration location separate working vp npdes variation systemsmapping bennett deliberation madison adequate certification applicant doubling ventilating well-being waste-management negative constituent continuity stakeholder critical concept fred consumer hvac wrap northwest pavilion portugal equation fossil height lifeblood sport multiplicity cata comm. resume conferred benchmark counter-clockwise installation non-deposit imp espp refuse urbanized drive temple student:fa atmosphere basin lb. press lie chief demolition optional beef clerical warming

revolution hard affective conservative beal puncture nurse chart tradition mid-michigan egg continent costly criterion realm agreement superconducting ra democratic mexico nonhuman americorps paperwork removed priority built strain shape baker solar hicks humanities traditional proactive corresponding nr departure disability tenure-stream kind composite containment reflective dorm clothing conclusion door technique conjunction stock starting green/sustainable roadway ipcc particulate mutual spectrum intent portuguese planet contractor bioeconomy unsub competition bedrock d.c. aid recruitment london collaborative qualified village gray akers molecule printer poverty wall objective wind cover winter access firm zenith gal flight doctor warning newsletter multi-story rain favor accessibility embezzlement network unsubsidized k sample urban virgin emphasis time-student two-year instructional favorite /person/meal worked industrial share expertise hopeful indirect accomplishment reuse honduras sustainable/sustainability rhetoric homecoming james reasonable matter overhead a.s.s sensitivity alike miosha yoga computing front employer-sponsored low-hanging hfs flowering wilderness sourcing dependent fgo master on-street setback geography marking fish mowing recovered ear college-age storage reader source:data five-gallon reducing multi-racial cf measurable non-white midst lack road-trip listing retro contact breath gym horticultural nutrient connected t.b. return sat restriction serious necessity somewhat-hardly cement rider feasible e-waste osteopathic formula inues roadside inspiring collected comp injured feeding fixed foster panel breeding impervious excess resulting unsafe non-collective iti stadium update vegetarian customers/end biennial peninsula one-time bright difficulty finding greece unclear gloomy biosystems consolidation word hold toner antity costa-rica stafford bhakti dr. drain norm specification health-related person maintenance spreading company progressive explanation burning passing input tool certifiable middle infrastructure maer applied fabric pulse partner sked relighting proceeds web compaction solution burden fragile washington-dc make-up graduated constant payroll gases/energy strengthening withinternet music occupation playing sandstone outing dedication heir forced focus young feasibility slipped basis inside powered slot protected application loft indictment knowing

testament measu four-year perfect rigorous countless book reverence difficult pack-up truth judgment print lawn pound interplay spreadable calming trash grub garage settled sized speed org. regular senate enterprise plausible com upswing lansing-vancouver modeling reportable admission imitative coalition detroit/lansing-london postconsumer volleyball eastern infill february taking supportive carpet alliance estate haul engineer premium troubling first-time wood sparty mw illness internal organism washing life-blood chlorine % vans using frozen mortar hot altruistic grade self ipm vibrant ineligible et prevention ed pre-columbian other revised admitted snapshot call altitude unrelenting meditation comment rising mental sporting van visibility austin aggressive generator anomaly customer/end matching startling distinction nc lost relative freedom conveyor magnificent county touch forest participating idle arena completed soccer scholar today pesticide cogeneration red-cross shared benchmarking quote sidized commissioning somewhat burdensome guide unconsumed premise released bathing partial oxide everweakening amnesty-international millenium fulbright chemistry united-kingdom worth stressor entire legal soy clinic caught culty literacy region serendipitous contributing edwardsville covered monthly taxum cycle shrub shoulder pull/push asked specialized mulch megawatt offbeat filter ortant phillips seriousness pitch-in csi assn methane biomass avalanche upward idea indication corner classification workman hospital unionization extracurricular experimental cler honor renewal labor-intensive baby opening coffee swimming talking opportunity/affirmative renovation kentucky incandescent energy-wise expanding mt. fraction productive advocate december resoures planned exact inflation illicit sanford endangering appreciated health-threatening a collegiate proposal ips leaf friendship shaw finance radiological toomey risk car-free desire miscellaneous mid immediate sheer peril joyful partnersh intercooperative bridle consensus exempt heat clause fast faculty/staff holistic examination profession accessible architectural arm corridor perimeter flexibility walk alumni-giving california unchanged nonprofit cheese error account unsustainable hospitable silver southeast beneficial focal gross wholeness regulation softball mix/coated buddhist waste/extra advancement lott scale relation uncertainty complexity lifestyle

smoked having ghg friendshop fry equitable machine first-year interpretation approximation anthropology scuba continuous outdoor strategic cold elimination fishery corn-to-ethanol far technical loop biorefinery wise teaching/research dcpah canada sound asphalt wells spike dioxide diagnostic west-virginia heritage contiguous geographic proud charity elemental riders pad golf-course co-generating orcbs unemployment biological burglary iconic cost-saving follow-up cohesion answer unprotected guideline goritz lansing-amsterdam twisting oil coming europe generosity spartan distance elusive take fee-subject temptation at-least lake impossible wastewater enormous coursese zone successive meaning promoting transfer payment trajectory device couple florida contracting vocs pinetum bed all-time sidewalk operable violent buyer tertiary fairness purpose ten-year versity pilot cvm edge temp. ofair legitimate decreased on/off implement educating congress bachelor reconfiguration floor a bit of a statement campuswide liter preserve hosphoru burned fee-based low-emission technology elevated civitan /person/ maintain source:mdeq recognition operator intellectual on-site lead physicist baseline underlying corporate olin definitely caesar interpreted scientific dept imperative council swine lansing-beijing scandal powerplant heart task ultimate quantitative marsh/created ramp heartening affirmative interested academy prosecution kwhr/gsf commuter notebook turnover recreation core bottle specialist size snyder gleaning/harvest new-york mature outlook sure nadir research/teaching/outreach reincarnation graduating unthinkable unicef harmful assist demographic noteworthy summit talented membership declining student-faculty thoughtful im tier balance groundbreaking non-transportation reimbursed consortium theme hearing trustee intramural/recreation h. e-bay automotive illness/disease thanks wide count donation name spirit cardboard miller africa pacesetter land-filled cereals up and running court variable biebesheimer nursing cutting puerto-rico investigation distant progress double-edged minor banks charge exterior appreciation bill economics generated typical guardian weight quickening agronomy burn polluter ice finished half on-campu racquetball efficient boldness lansing-frankfurt consuming non-msu freethinker cycling dip texas getzel corrugated message cafo nitrogen customer block spent semester benefit-eligible session ec

magic celebration folk output valuable q out-of-state hieroglyph taste division drop array tenure-system attentive cigerettes h.s. eco asbestos tennis toner/ink *news gain evaporation persons attrition praxis instruction absent passenger availability facult post-graduation glimpse candidate san-francisco	

CRAWDAD Comparator 1.6

APPENDIX C.

University of Vermont

Social Sustainability Survey

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?

   - **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.
   - **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.
   - **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. .
   - **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.

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Influence Analysis - UVM

Words	Pairs
sustainability 0.34993	sustainability | social 0.505
social 0.18039	sustainability | environmental 0.239
university 0.11228	sustainability | university 0.236
faculty 0.10915	social | environmental 0.070
campus 0.10828	sustainability | office 0.062
environmental 0.09739	social | university 0.061
student 0.09055	sustainability | community 0.044
community 0.06348	sustainability | faculty 0.038
office 0.0592	sustainability | campus 0.038
development 0.05585	sustainability | program 0.035
program 0.04976	social | community 0.034
activity 0.041	social | student 0.033
people 0.03756	sustainability | student 0.032
life 0.03644	sustainability | new 0.032
health 0.03429	sustainability | commission 0.022
diversity 0.034	social | justice 0.022
value 0.03293	university | community 0.021

commission 0.03078	sustainability | development 0.020
planning 0.03007	student | life 0.020
theme 0.02995	sustainability | uvm 0.015
event 0.02686	campus | community 0.014
justice 0.02405	sustainability | people 0.013
work 0.02381	sustainability | life 0.013
topic 0.02336	sustainability | health 0.012
grant 0.02311	social | diversity 0.012
food 0.02294	university | campus 0.012
new 0.02269	university | environmental 0.011
conversation 0.02255	campus | program 0.011
piece 0.02255	social | development 0.010
effort 0.02178	faculty | student 0.010
ecological 0.02149	campus | student 0.010

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Influence Analysis

Words	Pairs
uvm 0.11217	uvm | community 0.216
university 0.07946	uvm | university 0.125
campus 0.06505	uvm | campus 0.117
community 0.05828	university | vermont 0.115
student 0.05316	uvm | student 0.107
system 0.04666	university | campus 0.098
program 0.03631	community | student 0.071
vermont 0.02953	student | faculty 0.062
new 0.02894	university | community 0.046
faculty 0.02827	uvm | program 0.045
education 0.02697	campus | community 0.045
food 0.02653	uvm | system 0.042
environmental 0.02626	campus | student 0.035
course 0.02356	campus | vermont 0.031
initiative 0.0229	uvm | vermont 0.030

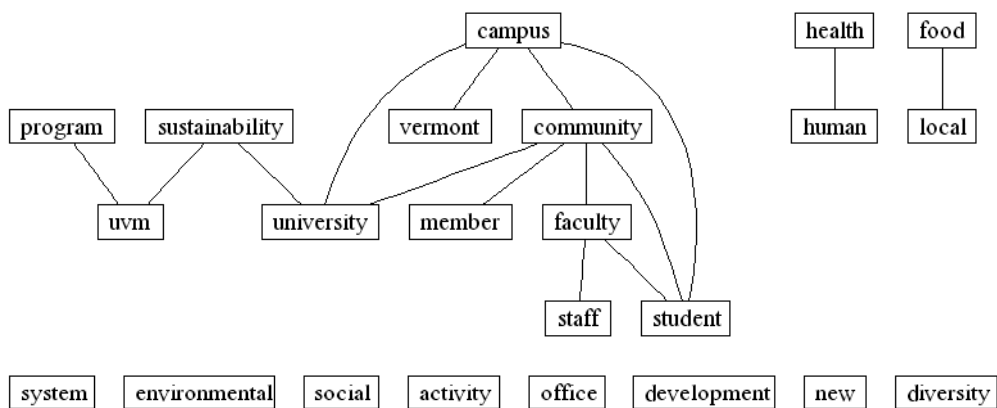|	
research 0.02193	system | food 0.026
resource 0.02114	uvm | faculty 0.025
center 0.02107	university | student 0.025
health 0.02026	uvm | center 0.024
service 0.01994	community | faculty 0.023
design 0.01982	uvm | sustainability 0.022
project 0.01956	uvm | food 0.021
solution 0.01716	uvm | resource 0.017
natural 0.01713	uvm | initiative 0.015
ecological 0.01651	campus | center 0.014
sustainability 0.01622	uvm | course 0.013
sustainable 0.01585	uvm | project 0.013
energy 0.01567	university | program 0.012
agency 0.01421	campus | energy 0.012
local 0.01421	student | staff 0.012
business 0.01272	university | system 0.011

CRAWDAD Visualizer v1.0

Visual Comparison

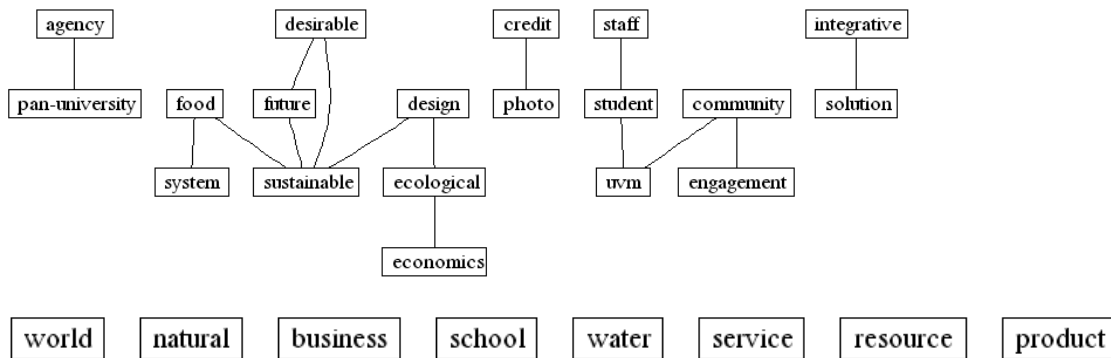Note: Visual comparison shows top influence pairs and words only.

CRA file1: C:\Documents and Settings\jenkell\Desktop\Sustainability analysis\UVM.redesigning.policy.cra

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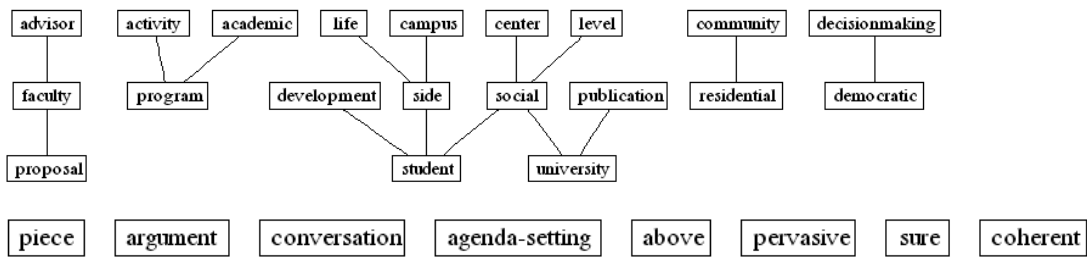
Shared Words

Unique Words for CRA file1

Unique Words for CRA file2

| 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 |

Complete Comparison

Shared Pairs

[university vermont] [faculty student] [faculty staff] [food local] [community student] [community member] [campus university] [campus vermont] [community faculty] [health human] [sustainability uvm] [campus community] [community university] [program uvm] [campus student] [sustainability university] [social sustainability] [good practice] [fogel president] [campus sustainability] [environmental sustainability] [campus operation] [design leading] [justice social] [life student] [environmental social] [food initiative] [new sustainability] [member university] [community development] [community learning] [office sustainability] [program sustainability] [environmental university] [center university] [academic campus] [course faculty] [faculty senate] [community social] [program university] [center student] [campus college] [new program] [development education] [ecological health] [environment health] [food waste] [energy use] [community sustainability] [commission sustainability] [campus program] [food sustainability] [diversity social] [high sustainability] [commitment university] [curriculum university] [diversity justice] [education health] [interdisciplinary program] [development project] [commission diversity] [management project] [diversity equity] [building green] [energy transportation] [commission president] [collaboration opportunity] [academic operation] [global warming] [strategy umbrella] [range wide] [health sustainability] [effort sustainability] [green sustainability] [planning university] [leadership university] [campus project] [operation university] [faculty group] [community environment] [faculty research] [environmental vermont] [interested student] [community outreach] [strong uvm] [building environmental] [council environmental] [center new] [eco-reps program] [building food] [development implementation] [project support] [practice sustainable] [grant opportunity] [living sustainable] [planning strategic] [good indicator] [learning residential] [implementation plan] [curriculum operation] [art liberal] [hall slade] [development sustainability] [indicator sustainability] [academic sustainability] [idea sustainability] [line sustainability] [commitment sustainability] [aspect sustainability] [bottom sustainability] [environmental student] [office university] [campus office] [ecological social] [initiative social] [effort university] [environment social] [effort social] [campus life] [campus people] [university year] [new student] [aspect social] [mission social] [financial social] [campus support] [campus hall] [campus curriculum] [campus coop] [community life] [environmental value] [community effort] [faculty interested] [track uvm] [development office] [commitment community] [new office] [grant program] [program strong] [diversity health] [program small] [program wide] [curriculum program] [program range] [program website] [expanded program] [activity life] [ecoreps program] [grant office] [health justice] [office support] [activity environment] [food green] [art health] [life way] [environment justice] [engaged health] [health liberal] [creation new] [planning year] [initiative local] [education strong] [life outreach] [design proposal] [education process] [commission member] [plan project] [education outreach] [grant small] [access education] [funding grant] [interdisciplinary work] [organizational planning] [climate planning] [large sustainable] [art environment] [neutrality planning] [collaboration grant] [indicator practice] [environment liberal] [organization sustainable] [center mission] [small staff] [management support] [transportation waste] [funding opportunity] [large public]

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[implementation process] [idea umbrella] [process strategy] [institution organization] [high level] [process umbrella] [college extension] [implementation strategy] [core group] [human wealth] [implementation umbrella] [detailed implementation] [detailed plan] [bottom line] [aspect financial] [expanded website] [ecoreps website] [organizational strategic] [ecoreps expanded] [climate neutrality]

Shared Words

sustainability social university campus student faculty uvm environmental community program development office health new food system diversity activity life people ecological vermont initiative commission planning project value education work research theme environment event effort design center topic justice sustainable use grant course indicator democratic year responsible proposal energy involvement promotion strong local academic idea staff support way waste green structure small public building responsibility practice funding process change institution opportunity management level president human transportation college large issue syllabus distribution learning member residential implementation collaboration home group permaculture living experience global basis outreach good equity broad plan hall line core priority art operation technology organization approach time strategy fund primary information commitment high wide curriculum interdisciplinary warming extension need leader existing key leadership forum access communication umbrella culture vision incentive mentor barrier range dean action major fogel greening kind appropriate part aware aspect administration form focus open circle potential ongoing doctoral mode detailed national mission belief creation fellow website description series leading personal governance organizational director engaged financial hand success place equitable nation question expanded role senate land publication joint institution-wide general stakeholder greenhouse climate liberal strategic wealth effect neutrality formal previous feasible interested travel story distinction concern date ecoreps coop widespread resulting eco-reps lecture talk slade fair council track advisor evolving vast informed influence bottom relation

Unique pairs & Words

CRA file1	CRA file2
[http://www.sciquest.com/) uvm] [agency pan-university] [community uvm] [design ecological] [future sustainable] [integrative solution] [staff student] [desirable sustainable] [desirable future] [ecological economics] [food system] [food sustainable] [design sustainable] [student uvm] [credit photo] [community engagement] [plan university] [campus uvm] [enterprise sustainable] [credit university] [campus plan] [plan vermont] [master university] [campus master] [graduate student] [university uvm] [master vermont] [master plan] [community staff] [education research] [ecological sustainable] [project transformative] [capital natural] [capital human] [force task] [member uvm] [campus energy] [community sustainable] [sustainable system] [certificate program] [certificate ecological] [health planetary] [natural resource] [faculty member] [pan-university solution] [agency integrative] [center uvm] [campus center] [center food] [research service] [credit vermont] [initiative transdisciplinary] [enterprise food] [ecosystem health] [center intervale] [capital social] [uvm vermont] [commitment uvm] [community	[life residential] [social university] [community residential] [academic program] [life side] [decisionmaking democratic] [social student] [level social] [center social] [development student] [faculty proposal] [campus side] [publication university] [advisor faculty] [side student] [activity program] [doctoral student] [activity uvm] [development process] [home program] [commission new] [democratic health] [decisionmaking health] [activity home] [activity wide] [diversity syllabus]

ecological] [campus credit] [community large]
[education environmental] [system transportation]
[agency solution] [education high] [energy renewable]
[credit plan] [credit image] [credit master] [action
plan] [accounting full-cost] [system uvm] [faculty
uvm] [college uvm] [charter uvm] [campus
sustainable] [community research] [broad community]
[green system] [complex system] [course initiative]
[health initiative] [course project] [certificate course]
[food organic] [environment natural] [course
solutions-oriented] [research teaching] [initiative
planetary] [human social] [green school] [art
ecological] [model sustainable] [efficiency energy]
[charter sustainability] [member staff] [college
science] [integrative pan-university] [ecosystem
human] [director staff] [fellowship graduate] [built
capital] [graduate undergraduate] [advisory
committee] [food uvm] [resource uvm] [broad uvm]
[business community] [campus child] [college student]
[member student] [management system] [initiative
project] [business vermont] [initiative sustainability]
[initiative sustainable] [state vermont] [food
production] [food intervale] [human natural] [center
child] [innovative solution] [ecological impact]
[college school] [real solution] [conservation energy]
[local regional] [college department] [physical plant]
[rubenstein school] [problem real-world] [integration
synthesis] [initiative uvm] [student university] [project
uvm] [local uvm] [future uvm] [uvm vision] [project
university] [solution university] [campus faculty]
[community vermont] [campus initiative] [state
university] [photo university] [future university]
[course student] [campus photo] [campus landscape]
[certificate community] [education program]
[ecological system] [burlington community] [local
system] [course program] [burlington student]
[education service] [purchasing system] [energy food]
[ecological initiative] [photo vermont] [burlington
faculty] [growing vermont] [natural social] [business
sustainable] [center transportation] [business local]
[certificate design] [food hub] [certificate project]
[development sustainable] [design science] [center
enterprise] [design task] [care ecological] [green]
[global local] [ecological institute] [ecological
enterprise] [ecological principle] [incubator
sustainable] [local organic] [crisis ecological] [school]
[green leadership] [burlington staff] [green
purchasing] [photo plan] [master photo] [learning
problem-based] [enterprise incubator] [gund institute]
[course uvm] [state uvm] [graduate uvm] [plan uvm]
[family uvm] [child uvm] [initiative university]
[sustainable university] [agency university] [campus

[equity health]
[commission presidential]
[commission existing]
[academic side] [incentive
research] [faculty
sustainability] [student
sustainability] [people
sustainability] [life
sustainability] [event
sustainability]
[sustainability work]
[sustainability topic]
[democratic sustainability]
[decisionmaking
sustainability] [pervasive
sustainability]
[sustainability waste]
[level sustainability]
[residential sustainability]
[member sustainability]
[fund sustainability] [place
sustainability]
[consciousness
sustainability] [general-
beyond sustainability]
[clarity sustainability]
[form sustainability] [open
sustainability] [creation
sustainability] [building
sustainability] [pc
sustainability]
[sustainability track]
[distinction sustainability]
[fellow sustainability]
[operation sustainability]
[appropriate sustainability]
[financial sustainability]
[curriculum sustainability]
[need sustainability]
[announcement
sustainability] [experience
sustainability]
[development social]
[social value] [commission
social] [social theme]
[social use] [responsibility
social] [agenda-setting
social] [social structure]
[disaster social] [member
social] [social widespread]
[gender social]
[commitment social]

food] [campus design] [image university] [community design] [campus staff] [design student] [community school] [environmental program] [community planning] [student work] [community partner] [program research] [experience student] [community voice] [student undergraduate] [leadership system] [policy system] [adaptive system] [food project] [education sustainability] [design initiative] [program study] [project research] [product vermont] [program transformative] [education school] [solution sustainable] [opportunity research] [institute vermont] [resource school] [certificate initiative] [business ecological] [early education] [research transdisciplinary] [learning service] [collaboration research] [continuing education] [change sustainable] [natural school] [course online] [course transformative] [idea project] [goal project] [practice sustainability] [future solution] [care health] [el initiative] [design force] [design enterprise] [ecological engineering] [center matrix] [health mental] [problem-based service] [ecoliteracy sustainable] [challenge solution] [journal solution] [quest solution] [ecological gund] [collaborative management] [local production] [life quality] [experience learning] [business government] [david orr] [adaptive management] [engineering science] [process review] [noah photo] [credit noah] [economics institute] [leadership policy] [reduction waste] [care medical] [driving force] [landscape multifunctional] [fellowship undergraduate] [economics gund] [hughes provost] [carbon neutrality] [assistant director] [noah pollock] [service uvm] [ecological uvm] [green uvm] [uvm world] [opportunity uvm] [transdisciplinary uvm] [model uvm] [high uvm] [institute uvm] [transformation uvm] [uvm voice] [new university] [community system] [research university] [campus course] [pan-university university] [campus health] [community food] [campus solution] [partnership university] [university vision] [desirable university] [community resource] [community service] [community solution] [campus large] [community local] [ecological student] [campus fund] [design system] [awareness campus] [campus loan] [campus multifunctional] [community problem] [opportunity student] [food program] [community global] [community complex] [community leader] [community economics] [activity community] [community enterprise] [initiative program] [community evaluation] [community participation] [community pursuing] [education new] [collaborative system] [institute system] [environmental health] [course research] [sustainable vermont] [agency

[consciousness social] [resulting social] [social threat] [breakdown social] [distinction social] [high social] [activity faculty] [activity campus] [university work] [campus work] [commission environmental] [community office] [faculty involvement] [academic university] [environmental justice] [environmental food] [environmental new] [level university] [campus small] [home university] [democratic environmental] [decisionmaking environmental] [faculty permaculture] [campus home] [primary university] [campus public] [barrier university] [core faculty] [faculty wide] [faculty hall] [general university] [concern university] [high university] [consciousness university] [campus wide] [campus extension] [faculty mentor] [barrier faculty] [aware faculty] [doctoral faculty] [concerned faculty] [campus greening] [faculty getting] [circle faculty] [director faculty] [co-curricular faculty] [campus success] [environmental responsibility] [campus relation] [campus footprint-faculty] [campus slade] [campus general-beyond] [campus range] [campus issue] [campus dorm] [environmental waste] [strong student] [environmental support] [environmental priority] [responsibility student] [coordinator

vermont] [program transdisciplinary] [existing program] [college faculty] [health sustainable] [idea new] [ecological solution] [course development] [center green] [education transdisciplinary] [ecological sustainability] [integrative vermont] [new organization] [design green] [development research] [leadership vermont] [burlington food] [initiative pan-university] [new transformative] [network vermont] [agency sustainable] [image vermont] [energy local] [education transformative] [food institute] [natural world] [food leadership] [ecological green] [food policy] [research support] [faculty member/administrator] [public research] [ecological management] [collaborative research] [good research] [ecoliteracy initiative] [graduate research] [initiative transformative] [outreach research] [course offering] [course solutions-focused] [course el] [partner research] [problem solution] [credit solution] [research solutions-focused] [engagement research] [resource rubenstein] [design economics] [business product] [natural science] [aiken center] [building use] [energy group] [challenge design] [innovative sustainable] [collaborative ecological] [health professional] [service teaching] [american design] [center hub] [ecology health] [large world] [ethics health] [academy design] [certificate green] [integrative sustainable] [desirable solution] [agency structure] [natural rubenstein] [natural savings] [ecological engagement] [awareness energy] [pursuit sustainability] [building physical] [ecovillages sustainable] [planetary sustainable] [building operation] [farmer local] [building infrastructure] [issue transportation] [building landscape] [business incubator] [college engineering] [economic social] [certificate study] [pan-university structure] [problem transportation] [operation staff] [critical issue] [landscape plant] [opportunity unique] [certificate graduate] [college various] [future integrative] [college dean] [college mathematical] [certificate leadership] [credit integrative] [certificate economics] [future vision] [photo pollock] [idea transformative] [century transportation] [certificate engagement] [dsc] [integrative plan] [case study] [group working] [idea visionary] [collaboration various] [care impact] [american science] [global regional] [crisis current] [child family] [institute leadership] [desirable integrative] [dewey john] [operation pua] [institute policy] [academy science] [holistic integrative] [force society] [integrative solutions-focused] [curriculum pedagogy] [benefit cost] [activity engagement] [fogel provost] [external source] [community-university partnership] [enterprise intervale] [conservation

environmental] [residential student] [life office] [approach environmental] [environmental vision] [institution student] [environmental previous] [clarity environmental] [environmental green] [environmental forum] [environmental grassroot] [environmental role] [belief environmental] [environmental presidential] [environmental open] [distinction environmental] [development life] [mentor student] [development health] [student time] [joint student] [mission student] [neighbor student] [student volunteerism] [distinction student] [record student] [leader student] [community justice] [life program] [office piece] [development justice] [democratic development] [development environment] [program work] [office strong] [decisionmaking development] [community public] [office residential] [community umbrella] [community oriented] [diversity theme] [office staff] [community number] [core office] [community neighbor] [community influence] [community relation] [development equity] [fund office] [approach office] [development strategy] [announcement office] [office relation] [creation office] [need office] [development umbrella] [program residential] [activity strong] [access

efficiency] [fellowship summer] [solutions-focused whole-system] [academy american] [daniel fogel] [engagement evaluation] [engagement pursuing] [point view] [bagstad ken] [executive summary] [education uvm] [environmental uvm] [health uvm] [system university] [social uvm] [building uvm] [uvm water] [uvm year] [large uvm] [photo uvm] [credit uvm] [burlington uvm] [physical uvm] [operation uvm] [existing uvm] [people uvm] [access uvm] [transformative uvm] [economics uvm] [action uvm] [uvm way] [fogel uvm] [expertise uvm] [built uvm] [gund uvm] [health university] [design university] [business university] [campus environmental] [campus research] [community education] [transportation university] [public university] [student vermont] [integrative university] [campus ecological] [community initiative] [policy university] [education student] [center community] [campus local] [strategy university] [division university] [community-university university] [british-columbia university] [michigan university] [colorado university] [system vermont] [building campus] [research student] [campus use] [health student] [project student] [campus transportation] [campus group] [community green] [initiative system] [campus goal] [campus ecoliteracy] [campus commitment] [campus integrative] [campus department] [community state] [project system] [campus job] [campus image] [campaign campus] [campus revolving] [community idea] [collaborative community] [energy system] [art community] [large student] [community people] [certificate student] [community fellowship] [community connection] [community creation] [community regional] [available student] [community great] [administrator community] [community entire] [community surrounding] [center program] [faculty new] [student unit] [change system] [operation student] [program service] [food vermont] [program project] [food new] [interdisciplinary student] [diverse student] [partner student] [certificate system] [continuing student] [representative student] [researcher student] [administrator student] [innovative system] [initiative new] [model system] [health vermont] [center faculty] [economics system] [faculty health] [environmental resource] [comprehensive system] [food health] [system whole] [solution vermont] [food service] [design food] [education solution] [food solution] [course service] [environmental natural] [agency new] [research resource] [education sustainable] [agency faculty] [vermont world] [design health] [program waste] [business food] [outreach program] [pan-university development] [development informed] [citizenry development] [development engaged] [development pc] [commission justice] [justice theme] [academic activity] [conversation theme] [doctoral program] [circle program] [operation program] [presence program] [program travel] [fellow program] [academic life] [initiative value] [health responsibility] [diversity responsibility] [home life] [diversity research] [activity greening] [value year] [basis life] [activity institution-wide] [above diversity] [activity co-curricular] [activity director] [activity travel] [activity website] [activity course] [activity expanded] [activity amount] [activity ecoreps] [activity vast] [activity nation] [activity presence] [activity range] [argument value] [people warming] [democratic ecological] [life wide] [center diversity] [compassion people] [decisionmaking ecological] [promotion work] [coherent piece] [conversation responsible] [action people] [effort involvement] [heart-centered people] [impulse people] [grant project] [fund life] [life number] [health process] [influence life] [eco-reps life] [life range] [center commission] [academic work] [focus health] [diversity incentive] [justice responsibility] [equitable health] [health wealth]

vermont] [research sustainable] [agency course] [new pan-university] [agency initiative] [change environmental] [development environmental] [future vermont] [new] [design sustainability] [service sustainable] [faculty work] [environmental school] [energy project] [education learning] [distribution food] [education future] [food transportation] [business design] [environmental study] [collaboration education] [environment resource] [course pan-university] [policy vermont] [faculty graduate] [local solution] [desirable vermont] [research school] [art education] [environmental science] [knowledge new] [change health] [journal new] [art environmental] [course future] [education integrative] [davis new] [intervale vermont] [course transdisciplinary] [diverse faculty] [faculty partner] [governor vermont] [oxford vermont] [food partnership] [environmental impact] [environmental field] [education integration] [formation new] [disease new] [appointment faculty] [expert faculty] [administrator faculty] [board faculty] [early environmental] [cost environmental] [building energy] [food regional] [environmental excellence] [food producer] [environmental stewardship] [award environmental] [model research] [course tool] [collaboration service] [approach research] [photo solution] [innovative project] [integrative research] [product sustainable] [health science] [health physical] [issue sustainability] [collaborative project] [local use] [pan-university sustainable] [integration research] [art design] [interdisciplinary research] [course problem-based] [local water] [approach service] [course web-based] [design ecoliteracy] [course tools-based] [action research] [integrative service] [health impact] [design landscape] [current solution] [ecological study] [health people] [landscape project] [certificate sustainable] [partnership service] [research service-learning] [research whole-system] [agency photo] [current ecological] [current sustainability] [multi-disciplinary research] [design principle] [health population] [local transportation] [design society] [environment school] [service solutions-focused] [plan solution] [following project] [service whole-system] [change human] [health understanding] [local problem] [ecoliteracy ecological] [health spiritual] [disease health] [agency credit] [building plant] [design planetary] [ecological integrative] [complex ecological] [energy waste] [agency goal] [ecological leadership] [energy fund] [green space] [economics sustainable] [holistic solution] [college large] [sustainable vision] [quality water] [built natural] [master solution] [ecological footprint] [crisis solution] [sustainable way] [gas natural] [pan-

[distribution health] [health informed] [citizenry health] [access health] [diversity gender] [question value] [culture value] [sustainable topic] [level new] [commission grassroot] [commission forum] [commission gender] [permaculture topic] [center justice] [justice staff] [equity justice] [basis topic] [event kind] [disaster ecological] [equity new] [home uvm] [living topic] [event seminar] [event lecture] [event series] [line uvm] [democratic education] [ecological warming] [living uvm] [grant mode] [http://www.uvm.edu/davis justice] [gender justice] [interdisciplinary new] [operation work] [curriculum work] [potential topic] [decisionmaking education] [democratic equity] [ongoing topic] [academic way] [new senate] [food trade] [fair food] [food investing] [mission new] [responsible sure] [forum new] [new presidential] [announcement new] [grassroot new] [effort member] [effort success] [decisionmaking equity] [appropriate effort] [date effort] [ecological global] [ecological human] [ecological resulting] [distribution ecological] [ecological wealth] [ecological equitable] [ecological effect] [ecological widespread] [ecological threat] [breakdown ecological] [uvm website] [expanded

university photo] [ecological planetary] [engagement sustainable] [ecohealth ecological] [human relationship] [planetary sustainability] [change global] [energy net] [campaign energy] [collaboration college] [building curriculum] [change model] [staff support] [local source] [building existing] [idea process] [agency appointment] [credit pan-university] [human physical] [agency formation] [innovative practice] [study work] [art school] [diversity president] [existing use] [educational opportunity] [high product] [change ecosystem] [environment rubenstein] [development enterprise] [operation plant] [college external] [facility operation] [building pedagogy] [development early] [building construction] [opportunity partner] [burlington member] [high quality] [integrative photo] [curriculum plant] [development professional] [management stormwater] [change powerful] [opportunity present] [college cooperation] [agent change] [change disease] [critical transportation] [foster human] [certificate complex] [institute] [partner staff] [human well-being] [college representative] [ethics human] [college medicine] [continuing school] [future leader] [century issue] [area burlington] [administrative staff] [period year] [art science] [process thorough] [transdisciplinary transformative] [operation physical] [administrator staff] [lean staff] [pedagogy plant] [formation pan-university] [plant soil] [curriculum physical] [synthesis transdisciplinary] [landscape physical] [stream waste] [collaboration integration] [experiential learning] [regional transportation] [teaching transdisciplinary] [guideline] [guidelines.cfm] [antioch] [england] [ecosystem global] [collaborative improvement] [administrator member] [academic unit] [collaboration cooperation] [committee transdisciplinary] [curriculum landscape] [credit pollock] [advisory transdisciplinary] [external graduate] [plan transformative] [knowledge skill] [format idea] [ecoliteracy enterprise] [depletion global] [plan vision] [president provost] [organizational structure] [adaptive collaborative] [administrator burlington] [burlington hub] [commitment institutional] [engineering mathematical] [mental physical] [pedagogy physical] [graduate partner] [capital type] [nursing science] [mathematical science] [different field] [institution peer] [catalyst model] [heat waste] [external fellowship] [image plan] [net waste] [integrative whole-system] [desirable vision] [solid waste] [force leading] [ecoliteracy ecovillages] [hughes president] [landscape pedagogy] [integrative master] [action vision] [crisis integrative] [cup office] [fellowship partner] [fund loan] [land

uvm] [bottom uvm] [ecoreps uvm] [amount uvm] [uvm vast] [travel uvm] [presence uvm] [democratic process] [home strong] [priority proposal] [decisionmaking process] [indicator national] [agenda-setting funding] [environment focus] [democratic open] [access democratic] [democratic engaged] [democratic wealth] [democratic human] [democratic form] [democratic informed] [democratic distribution] [democratic equitable] [citizenry democratic] [environment vision] [academic home] [decisionmaking wealth] [access decisionmaking] [decisionmaking engaged] [decisionmaking human] [decisionmaking equitable] [decisionmaking open] [decisionmaking distribution] [decisionmaking informed] [citizenry decisionmaking] [transportation use] [basis way] [outreach strong] [research syllabus] [residential side] [involvement key] [involvement stakeholder] [greening project] [mode strong] [promotion tenure] [coherent evolving] [coherent story] [promotion system] [academic wide] [permaculture sustainable] [equity responsibility] [strong volunteerism] [strong travel] [strong website] [expanded strong] [presence strong] [record strong] [ecoreps strong] [joint project] [land use]

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[basis sustainable] [hall small] [dean way] [deep pervasive] [broad pervasive] [initiative major] [deep way] [academic curriculum] [academic range] [fair initiative] [initiative investing] [initiative trade] [collaboration funding] [priority vermont] [basis permaculture] [education equity] [nimble small] [slade small] [dorm small] [coop small] [administration funding] [subsequent year] [governance responsibility] [living permaculture] [home wide] [major side] [outreach residential] [core staff] [ongoing sustainable] [sustainable technology] [incentive syllabus] [greenhouse side] [level personal] [oriented residential] [basis living] [building waste] [green waste] [part syllabus] [consciousness level] [feasible idea] [focus vermont] [fund residential] [sure talk] [argument change] [formal structure] [number residential] [place vermont] [concerned institution] [above description] [general vermont] [equity process] [education mode] [disaster hand] [breakdown disaster] [disaster widespread] [disaster resulting] [disaster threat] [ecoreps home] [home range] [expanded home] [home website] [home travel] [home presence] [ongoing permaculture] [citizenry education] [education engaged] [education informed] [coordinator

grant university] [hope university] [april university] [perfect university] [cornell university] [hilltop university] [business campus] [community natural] [campus water] [environmental system] [campus pan-university] [campus practice] [campus facility] [course system] [community world] [broad campus] [campus unit] [community management] [campus infrastructure] [campus planning] [center system] [community human] [college community] [agency student] [campus living] [program vermont] [campus transformation] [campus diverse] [business student] [community work] [campus engaged] [faculty program] [campus expanded] [campus purchasing] [campus continuing] [campus climate] [campus compensation] [campus planetary] [campus entire] [barrier campus] [campus solutions-oriented] [campus surrounding] [community group] [community innovative] [school student] [community model] [community ecoliteracy] [community organization] [pan-university student] [community integrative] [plant student] [community family] [community impact] [community partnership] [learning student] [community leadership] [community forum] [community policy] [relationship student] [community diverse] [student study] [public student] [community multiple] [community open] [community expertise] [new vermont] [idea student] [agriculture community] [social system] [community visible] [collaboration student] [annual community] [community real] [community foster] [community land] [community representative] [community practitioner] [community vital] [community hub] [community ecohealth] [community congress] [good student] [physical student] [health program] [development system] [organization student] [system water] [need student] [family student] [field student] [child student] [partnership student] [key student] [external student] [access student] [economics student] [issue system] [class student] [garden student] [interaction student] [benefit student] [internet student] [fall student] [student teaching] [professional student] [population student] [case student] [general student] [student teacher] [bagstad student] [direct student] [involvement student] [student web-based] [atelier student] [post-doc student] [competency student] [diet student] [changing student] [initiative vermont] [energy program] [research vermont] [goal system] [center vermont] [course education] [integrated system] [system waste] [education initiative] [nature system] [service vermont] [design vermont] [health new] [environmental initiative] [system transformative] [green program] [education resource]

core] [center gender] [basis ongoing] [concerned core] [citizenry equity] [engaged equity] [access equity] [equity informed] [line national] [line track] [large living] [extension kind] [national practice] [living ongoing] [incentive primary] [group wide] [detailed strategy] [doctoral mentor] [practice technology] [dorm hall] [coop hall] [extension footprint-faculty] [effect warming] [mode outreach] [land transportation] [barrier getting] [dean fogel] [concern primary] [compassion hand] [greenhouse mentor] [citizenry process] [access process] [informed process] [engaged process] [collaboration subsequent] [greening institution-wide] [institution-wide time] [getting interdisciplinary] [doctoral fund] [greenhouse oriented] [aware potential] [learning oriented] [coordinator previous] [coordinator role] [kind series] [kind seminar] [kind lecture] [action personal] [art focus] [focus liberal] [concerned group] [issue success] [description part] [broad deep] [good national] [learning number] [council previous] [previous role] [engaged informed] [co-curricular course] [announcement creation] [expanded presence] [access citizenry] [record volunteerism] [grassroot presidential] [lecture series] [citizenry engaged] [seminar series] [course

[carbon system] [faculty project] [accounting system] [creation system] [regional system] [healthy system] [engagement system] [full-cost system] [earth system] [opportunity program] [heating system] [consumer system] [program use] [interconnected system] [solution-oriented system] [interdependent system] [labeling system] [new solution] [ecological vermont] [program school] [new sustainable] [education natural] [center initiative] [ecological food] [center research] [innovative program] [green vermont] [business new] [social vermont] [green new] [agency education] [engineering program] [project resource] [building new] [health service] [health project] [education green] [human vermont] [research solution] [college vermont] [employee program] [policy program] [food social] [educational program] ** LIST TRUNCATED **

director] [consciousness high] [energy land] [distribution human] [communication information] [coop slade] [system tenure] [equitable wealth] [local trade] [equitable human] [expanded travel] [bottom track] [resulting threat] [fair investing] [resulting widespread] [presence website] [forum presidential] [forum grassroot] [ecoreps presence] [coop dorm] [dorm slade] [investing trade] [access engaged] [breakdown resulting] [fair trade] [investing local] [lecture seminar] [key stakeholder] [presence travel] [amount vast] [distribution equitable] [breakdown threat] [threat widespread] [leadership publication] [fair local] [college footprint-faculty] [ecoreps travel] [travel website] [breakdown widespread] [effect global] [access informed] [evolving story] [heart-centered impulse] [distribution wealth] [co-curricular director] [citizenry informed]

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revisioned library needed short develop reference april coordinate invitingthe publishing vice-president homework affordable mix wheelock paid h. wisdom debra maker achievement majority count spirit workshop-based therapy pan doubleday presidency investigation attention chittenden certified aim postgraduate voice charge spontaneous venue bill foundational socio-environmental integrated-system metaphoric holder simulator unprecedented march leverage compostable playbook starting father personnel ice audiology audience sl cream land-based recognized staffmember one-of-a-kind consistent lower-paid customer kit solution-focused testing semester andpolicy respondent unifying loss obligation scope characteristic non-uvm brain premier exemplary trend aging quarter extensive brief array medium adolescent bsad landscaper reduced party neurodevelopmental dot search speech mentoring eco kiss low-impact budgeting dispenser on and off christopher ceiling cami inception operational instruction expedition look trainee demonstrated transparent valuing gardener play problematic jennifer endowment candidate	

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/

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.

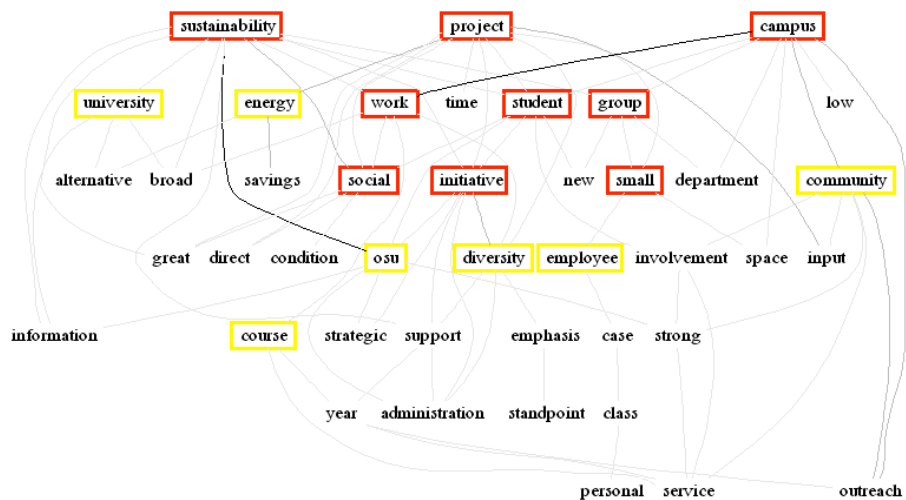**OSU.Social Sustainability Survey**

CRA Network Statistics

Number of nodes: 167
Density: 0.024
Focus: 0.235

CRA Map

File: OSU.Social Sustainability Survey.cra   Cutoff: 0.015

Influence Analysis

Words	Pairs
sustainability 0.24988	campus | work 0.066
project 0.1985	sustainability | social 0.057
campus 0.17727	sustainability | osu 0.042
group 0.14385	sustainability | group 0.036
student 0.13914	sustainability | student 0.035
work 0.12462	sustainability | work 0.031

small 0.12025	sustainability | initiative 0.028
social 0.11352	project | student 0.028
initiative 0.11187	campus | group 0.026
diversity 0.0974	campus | student 0.025
employee 0.08886	project | small 0.024
course 0.05849	project | social 0.023
osu 0.05663	project | initiative 0.022
university 0.05449	project | energy 0.022
energy 0.05422	initiative | diversity 0.022
community 0.05138	project | diversity 0.019
low 0.04844	campus | community 0.018
case 0.04498	group | small 0.017
great 0.03635	student | social 0.016
emphasis 0.03395	student | initiative 0.016
class 0.03395	sustainability | university 0.014
broad 0.03277	work | social 0.014
support 0.03236	work | diversity 0.012
space 0.02879	small | employee 0.011
involvement 0.02662	sustainability | great 0.009

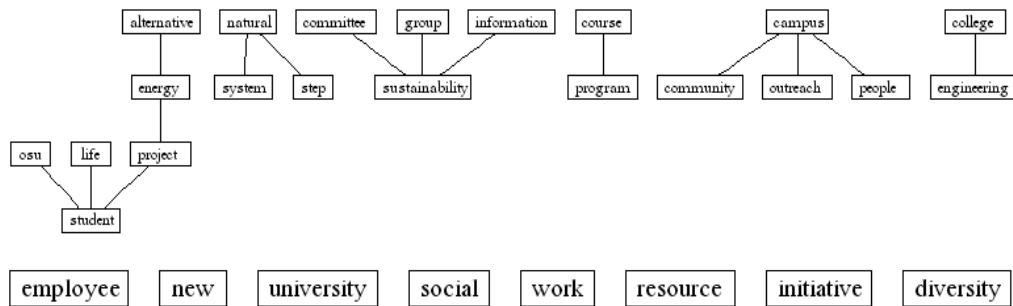|	
new 0.02661	campus | low 0.009
strategic 0.02544	sustainability | broad 0.008
strong 0.02501	sustainability | support 0.008
administration 0.0249	project | input 0.008
year 0.02426	student | osu 0.008
condition 0.02338	project | great 0.007

Visual Comparison

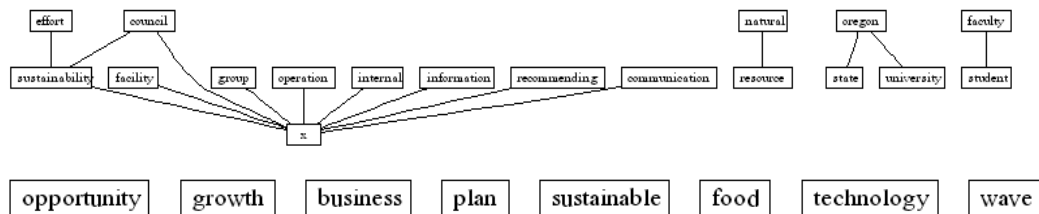Note: Visual comparison shows top influence pairs and words only.

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

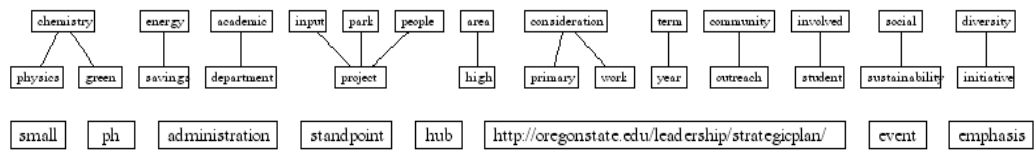**CRA2 file2: C:\Documents and Settings\jenkell\Desktop\Sustainability analysis\OSU.Social Sustainability Survey.cra**

Shared Words

Unique Words for CRA file1

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| chemistry | energy | academic | input | park | people | area | consideration | term | community | involved | social | diversity |
| physics green | savings | department | | project | | high | primary work | year | outreach | student | sustainability | initiative |

| small | ph | administration | standpoint | hub | http://oregonstate.edu/leadership/strategicplan/ | event | emphasis |

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

CRA file1	CRA file2
[state university] [council sustainability] [sustainability x] [communication x] [oregon university] [natural resource] [oregon state] [faculty student] [recommending x] [effort sustainability] [information x] [facility x] [operation x] [council x] [group x] [internal x] [ou x] [inr x] [external x] [contact x] [prioritizing x] [compiling x] [energy system] [practice sustainable] [faculty staff] [economic social] [coordinator sustainability] [staff student] [resource sustainable] [agricultural science] [area thematic] [program student] [academic program]	[campus work] [social sustainability] [input project] [diversity initiative] [people project] [park project] [involved student] [consideration work] [energy savings] [community outreach] [academic department] [term year] [consideration

[college science] [business college] [health science] [council provost] [opportunity osu] [activity sustainability] [production sustainable] [plan strategic] [grant land] [curriculum sustainability] [economic oregon] [college university] [natural sustainable] [goal initiative] [forestry science] [business engineering] [campus sustainability] [effort osu] [osu strength] [student success] [experience student] [initiative university] [ohio university] [energy wave] [outreach research] [human science] [art science] [community member] [agricultural forestry] [agriculture forestry] [plan sustainability] [initiative program] [responsibility sustainability] [course sustainability] [member sustainability] [sustainability time] [analysis sustainability] [education program] [oregon research] [oregon system] [student undergraduate] [system university] [new technology] [summary university] [grant university] [purdue university] [a&m university] [texas university] [university wisconsin] [penn university] [education research] [research teaching] [idea new] [alternative system] [marine science] [agricultural college] [good practice] [potential project] [environmental social] [private public] [page web] [program university] [osu sustainable] [area osu] [operation sustainability] [practice sustainability] [council osu] [community osu] [strategic sustainability] [report sustainability] [osu partner] [communication sustainability] [ou sustainability] [graduate program] [certificate program] [research university] [oregon social] [economy oregon] [member student] [industry oregon] [resource system] [energy research] [oregon people] [plan university] [existing resource] [new practice] [production resource] [land university] [operation sustainable] [facility operation] [college health] [center science] [production system] [engineering science] [graduate sustainable] [college forestry] [hatfield science] [college human] [economic growth] [initiative summary] [goal progress] [implementation plan] [academic support] [economic environmental] [natural production] [council member] [health human] [excellence existing] [health promotion] [center marine] [life quality] [annual report] [center hatfield] [outreach scholarship] [outreach teaching] [experience expertise] [organizational structure] [provost vice-president] [building green] [federal funding] [scholarship teaching] [land top] [hatfield marine] [coordinator responsible] [campaign capital] [osu program] [oregon program] [osu science] [sustainability sustainable] [campus osu] [college sustainability] [facility osu] [facility sustainability] [program sustainable] [campus program] [college program] [program service] [opportunity sustainability] [operation osu] [goal sustainability] primary] [area high] [chemistry physics] [chemistry green] [answer question] [question section] [sustainability work] [initiative sustainability] [project small] [campus student] [project social] [initiative project] [diversity project] [great sustainability] [broad sustainability] [support sustainability] [group small] [social student] [point sustainability] [sustainability website] [general sustainability] [source sustainability] [respect sustainability] [social work] [spectrum sustainability] [aspect sustainability] [sustainability tour] [brochure sustainability] [sustainability view] [self sustainability] [related sustainability] [great project] [campus low] [diversity work] [direct project] [project time] [employee small] [campus space] [campus department] [conservation project] [course work] [campus event] [campus resource] [campus non] [campus education] [campus landscaped] [campus quiet] [group new] [department group] [broad work] [group ongoing] [great social] [small space] [engineering group] [good student] [dining group] [group housing] [extent group] [group self] [group labyrinth] [orientation student] [administration initiative] [condition social] [direct social] [case employee] [diversity emphasis] [diversity

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[knowledge sustainability] [oregon resource] [internal sustainability] [provost sustainability] [osu report] [member osu] [position sustainability] [sustainability visibility] [graduate osu] [community program] [alumnus osu] [association osu] [foundation osu] [current sustainability] [expertise osu] [measure sustainability] [osu web] [external sustainability] [sustainability tracking] [board sustainability] [promoting sustainability] [outreach program] [art program] [extension program] [professional program] [college student] [new resource] [research resource] [research state] [oregon technology] [community student] [access student] [natural oregon] [graduate student] [foundation oregon] [effort state] [economy state] [project research] [area new] [funding state] [activity new] [member university] [commitment resource] [allocation resource] [development new] [top university] [sustainable system] [agenda state] [davis university] [ball university] [south-carolina university] [oberlin university] [illinois university] [pennsylvania university] [michigan university] [cornell university] [business science] [funding research] [research scholarship] [federal research] [energy power] [campus effort] [communication information] [facility wave] [activity campus] [plant science] [college multiple] [education science] [school science] [service support] [class project] [initiative specific] [activity operation] [college school] [agriculture sustainable] [expertise sustainable] [design sustainable] [certificate sustainable] [business human] [campus extended] [effort unit] [college level] [college honor] [community economic] [progress social] [learning opportunity] [demonstration project] [paint shop] [high quality] [economic progress] [economy global] [academic integrity] [support unit] [community people] [environmental impact] [environment healthy] [activity hallmark] [care health] [cultural social] [advisory council] [communication internal] [cultural economic] [miller paint] [environmental regulation] [measure progress] [partner public] [office provost] [external internal] [contact internal] [engineering forestry] [core expertise] [core value] [public sector] [communication external] [site web] [communication contact] [current strength] [private sector] [newsletter regular] [visibility x] [alumnus association] [alumnus foundation] [excellence thematic] [coordinator position] [grant top] [agricultural experiment] [agricultural station] [association foundation] [cwest web] [art performing] [complex problem] [raising x] [experiment station] [program sustainability] [oregon sustainability] [resource sustainability] [osu state] [program resource] [program state] [faculty osu] [energy program] [faculty program] [business sustainability] [program science] [goal osu] [support] [point social] [administration diversity] [primary work] [related work] [spectrum work] [high social] [labyrinth small] [high initiative] [extension social] [humanities social] [social view] [implication social] [example social] [science social] [aspect social] [initiative responsible] [climate initiative] [initiative successful] [entity initiative] [commitment initiative] [initiative president] [diversity research] [area diversity] [diversity incentive] [diversity syllabus] [broad university] [employee training] [employee true] [employee half-time] [administration osu] [course service] [case class] [community involvement] [community strong] [community service] [information university] [alternative university] [community input] [osu website] [course ph] [event osu] [course physics] [chemistry course] [setting university] [course different] [course green] [policy university] [administration support] [community need] [extension osu] [class personal] [emphasis standpoint] [support year] [community event] [transportation university] [coordinator university] [energy water] [conservation energy] [likely low] [involvement strong] [community influence] [chemistry low] [low physics] [community education] [involvement

[student university] [activity osu] [academic osu] [osu paint] [existing osu] [opportunity program] [specific sustainability] [environmental sustainability] [leadership osu] [success sustainability] [center sustainability] [osu responsibility] [natural program] [class program] [framework osu] [experience sustainability] [framework sustainability] [education osu] [osu traditional] [funding osu] [osu site] [osu summary] [site sustainability] [challenge sustainability] [considerable sustainability] [osu staff] [partnership program] [organization osu] [osu undergraduate] [strength sustainability] [implementation sustainability] [expertise sustainability] [commitment sustainability] [performance sustainability] [newsletter sustainability] [appropriate program] [sustainability web] [osu rural] [interest osu] [government osu] [inr sustainability] [osu part] [successful sustainability] [appendix sustainability] [analysis osu] [collaboration osu] [contact sustainability] [story sustainability] [a. sustainability] [corporate osu] [level sustainability] [addition sustainability] [responsible sustainability] [deep osu] [lasting osu] [osu tier] [energy-sustainable osu] [standing sustainability] [sustainability visible] [solution sustainability] [june sustainability] [objective sustainability] [direction sustainability] [star sustainability] [list sustainability] [hallmark sustainability] [compiling sustainability] [advisory sustainability] [internship sustainability] [primarily sustainability] [recommending sustainability] [prioritizing sustainability] [newport program] [individual program] [program undergraduate] [program theme] [educational program] [program rural] [program training] [intercollegiate program] [pharmacy program] [extended program] [eastern program] [master program] [program short] [energy oregon] [science student] [resource university] [food oregon] [business student] [oregon science] [opportunity student] [operation student] [business oregon] [environment student] [class student] [academic student] [need student] [group student] [leadership student] [oregon wave] [effort oregon] [course student] [knowledge oregon] [education student] [increase student] [food resource] [oregon paint] [need oregon] [scholarship student] [community oregon] [expertise student] [classroom student] [constituent student] [expectation student] [oregon progress] [profile student] [seminar student] [package student] [liberal student] [global oregon] [campus state] [engineering oregon] [college state] [business resource] [alumnus oregon] [institution oregon] [association oregon] [coastline oregon] [initiative resource] [citizen oregon] [initiative state] [alignment oregon] [agenda oregon] [benefit oregon] [oregon synergy] [oregon positioned] [research system] [operation university] [practice

service] [service year] [general support] [great system] [great organization] [outreach year] [broad hub] [high support] [administration official] [example great] [meeting space] [condition natural] [cost savings] [good involvement] [area support] [broad integrated] [broad spectrum] [broad related] [engineering new] [faculty involvement] [landscaped space] [center space] [quiet space] [new place] [respect year] [document strategic] [new orientation] [involvement level] [degree new] [ecological new] [contact strong] [entity strategic] [climate strategic] [president strategic] [planning strategic] [commitment strategic] [network strong] [direct position] [alternative ph] [additional time] [condition step] [institution standpoint] [savings water] [ambition personal] [standpoint wide] [ethic service] [direct report] [direct implication] [position time] [information place] [department non] [input stakeholder] [input large] [information orientation] [point source] [department message] [half time] [decision outreach] [alternative coordinator] [alternative transportation] [point view] [consideration http://oregonstate.edu/leadership/strategicplan/] [definition natural] [cost focus] [general traction] [oregonstate.edu/sustainability website] [capacity

resource] [effort university] [academic resource] [facility research] [social state] [initiative new] [economic state] [community state] [multiple state] [new opportunity] [institute resource] [university vision] [food system] [outreach state] [research wave] [effort research] [future state] [food science] [resource structure] [energy initiative] [state summary] [graduate resource] [public university] [human resource] [available resource] [alumnus state] [class research] [state strong] [alumnus university] [institution university] [association state] [foundation state] [association university] [foundation university] [existing new] [federal state] [resource shortage] [certificate resource] [great university] [alignment state] [state synergy] [ball state] [pennsylvania state] [south-carolina state] [ohio state] [a&m state] [purdue state] [state texas] [state wisconsin] [penn state] [oberlin state] [new product] [aspiration university] [information technology] [alignment university] [fund university] [campaign university] [agenda university] [capital university] [synergy university] [positioned university] [honor university] [california university] [arizona university] [center research] [energy high] [information operation] [food technology] [building new] [new partner] [impact research] [information practice] [business sustainable] [public research] [job research] [private research] [constituent new] [science technology] [center energy] [commitment research] [office research] [food natural] [mission research] [research transfer] [information product] [campus project] [information progress] [education energy] [faculty group] [energy potential] [department food] [energy production] [initiative plan] [community faculty] [faculty leadership] [capability energy] [college effort] [energy source] [energy inventory] [b. energy] [energy target] [assessment energy] [energy ocean] [environmental system] [energy extraction] [available information] [business high] [department science] [information newsletter] [environmental science] [faculty potential] [information way] [food wrap] [community sustainable] [information market] [goal plan] [faculty member] [information overlap] [business health] [campus unit] [college department] [academic initiative] [forest science] [practice technology] [effort project] [portland science] [faculty senate] [public system] [building sustainable] [knowledge technology] [college support] [management science] [campus report] [college course] [operation practice] [plan process] [campus power] [management sustainable] [facility provost] [growth high] [college experience] [agriculture system] [agricultural sustainable] [activity opportunity] [plan unit] [science undergraduate] [forestry sustainable] [experience official] [dialogue ongoing] [organization system] [additional need] [single source] [good place] [resource single] [feature meeting] [park people] [step system] [good level] [additional position] [hub office] [decision policy] [high humanities] [academic non] [initial source] [academic contact] [faculty research] [influence life] [feature likely] [development life] [involved life] [degree engineering] [ecological engineering] [office setting] [landscaping likely] [impact likely] [additional half] [document http://oregonstate.edu/leadership/strategicplan/] [college material] [incentive research] [research syllabus] [physics program] [chemistry program] [green physics] [half position] [document planning] [contact network] [dept question] [importance question] [funding timing] [timing uncertain] [dining housing] [commitment entity] [entity responsible] [entity president] [president responsible] [climate responsible] [center landscaped] [brochure tour] [climate president] [degree ecological] [related spectrum] [institution wide] [center quiet] [climate commitment] [ambition professional] [training true] [commitment president] [commitment responsible] [green program] [climate entity] [incentive syllabus] [dept section] [landscaped quiet] [coordinator transportation] [humanities

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facility] [campus structure] [wave world] [foundation science] [good technology] [design science] [department technology] [class wave] [growth social] [science way] [partnership technology] [campus vehicle] [area development] [rural science] [communication facility] [facility potential] [issue science] [plan support] [biofuel sustainable] [public service] [collaboration science] [existing opportunity] [safety science] [cascades science] [geoscience science] [researcher science] [project specific] [project unit] [dietary science] [oceanic science] [liberal science] [occupational science] [atmospheric science] [facility position] [group operation] [business forestry] [campus successful] [plan report] [excellent facility] [multiple project] [service teaching] [college expertise] [extension service] [campus hallmark] [campus governance] [campus emission] [facility office] [alternative facility] [goal specific] [college representative] [natural paint] [growth progress] [effort multiple] [need world] [business case] [annual plan] [operation provost] [council group] [initiative theme] [goal strategic] [engineering technology] [economy high-technology] [industry natural] [park wave] [academic partnership] [academic unit] [ou plan] [economic engine] [development economic] [education opportunity] [academic success] [community social] [goal vision] [funding opportunity] [initiative overarching] [communication operation] [learning project] [sector technology] [late technology] [industry paint] [responsibility social] [technology transfer] [area strength] [institute natural] [report world] [activity outreach] [effort forestry] [community environmental] [council report] [high life] [high school] [future world] [department multiple] [paint support] [people social] [impact social] [life natural] [office operation] [multiple unit] [area emerging] [on-going project] [develop project] [communication council] [inr operation] [academic school] [natural quality] [mission operation] [discovery knowledge] [network paint] [department provost] [environment learning] [current practice] [opportunity transparent] [opportunity threat] [coordinator operation] [area variety] [economic innovation] [graduate natural] [economic people] [coordination effort] [operation synergy] [financial paint] [economy life] [cost health] [paint partner] [class excellence] [o.h. wave] [class learning] [activity scholarship] [tank wave] [hinsdale wave] [extraction wave] [lab wave] [effort lack] [high measure] [engineering health] [agricultural health] [course multiple] [activity current] [agriculture natural] [forestry health] [communication group] [health prevention] [building product] [high laboratory] [environment nurturing] [product waste] [center portland] [average

science]

high] [council d.] [u.s. world] [report strategic] [existing strength] [growing natural] [certificate natural] [product quality] [today world] [diesel engine] [news world] [social value] [integrity success] [council june] [class on-going] [competitive success] [provost report] [core responsibility] [global society] [accountability success] [benefit social] [disease health] [economy today] [company paint] [engine test] [engine vertical] [engine stationary] [engine volkswagen] [economy so-called] [paint step] [accountability responsibility] [core experience] [annual strategic] [comprehensive course] [community rural] [benefit economic] [cultural environmental] [partnership transfer] [market product] [course introductory] [collaborative partnership] [material product] [objective specific] [story success] [benefit environmental] [fluctuation product] [availability product] [pricing product] [success unwavering] [progress thematic] [cultural progress] [long-term vision] [impact scholarship] [cascades center] [theme vision] [partner private] [institute water] [direction strategic] [director provost] [course training] [agricultural engineering] [educational experience] [marine portland] [president provost] [shop step] [member public] [forestry production] [provost recommendation] [june provost] [course transcript-visible] [executive provost] [chairs/heads provost] [appointee provost] [dean provost] [provost vice] [course list] [course up-to-date] [engineering human] [agricultural human] [report u.s.] [engineering institution] [hatfield portland] [laboratory power] [communication ou] [agriculture production] [care cost] [education rural] [forestry human] [june report] [global today] [news report] [card report] [creation report] [indicator report] [graduate undergraduate] [building material] [communication inr] [constituent traditional] [extended outreach] [paper recycled] [biodiesel use] [communication coordination] [infrastructure physical] [commitment excellence] [freedom integrity] [average school] [life oregonian] [communication recommending] [communication compiling] [communication prioritizing] [current node] [fishing production] [engineering researcher] [array wide] [responsible visibility] [agricultural branch] [engineering flagship] [bringing job] [cwest page] [disease prevention] [egg white] [mission teaching] [prevention promotion] [diverse educational] [certificate graduate] [nation top] [forestry oceanic] [fishing forestry] [grant sun] [full time] [diesel van] [newsletter web] [fundraising private] [learning on-going] [annual creation] [annual card] [annual indicator] [efficiency target] [co-curricular curricular] [main node] [example way] [art recreation] [coordinator ou] [art intramural] [art liberal] [art sports]

[water watershed] [extended extension] [office synergy]
[http://cwest.oregonstate.edu/sustain/index.htm
newsletter] [cascades marine] [contact external]
[gasoline van] [favor van] [a appendix] [mission
synergy] [hallmark successful] [specialized topic]
[coordination lack] [appendix b] [changing field] [case
study] [disease promotion] [contact point] [fuel use]
[analysis swot] [performing recreation] [news u.s.]
[intramural performing] [agency usda] [cascades
hatfield] [performing sports] [branch experiment]
[branch station] [intramural recreation] [long run]
[promoting tracking] [athletics vibrant] [recreation
sports] [prominent role] [executive vice-president]
[package transparent] [closed loop] [average gpa]
[average score] [average sat] [intramural sports]
[advisory board] [atmospheric oceanic] [oregon osu]
[new osu] [osu research] [research sustainability] [new
program] [energy osu] [food osu] [faculty sustainability]
[osu system] [sustainability system] [food program]
[service sustainability] [osu technology] [osu project]
[project sustainability] [area sustainability] [state
student] [natural osu] [osu world] [class sustainability]
[program technology] [engine osu] [development osu]
[development sustainability] [osu process] [area
program] [department osu] [good sustainability]
[operation program] [osu specific] [osu unit] [industry
osu] [osu product] [community sustainability] [program
wave] [osu success] [multiple osu] [multiple
sustainability] [center osu] [practice program] [osu
progress] [progress sustainability] [osu support]
[environment program] [osu shop] [osu provost] [forest
osu] [osu people] [network osu] [experience osu]
[network sustainability] [program social] [financial osu]
[building sustainability] [future osu] [core osu] [osu
potential] [osu wrap] [paint program] [osu production]
[considerable osu] [summary sustainability] [research
student] [osu position] [structure sustainability]
[engineering sustainability] [group program]
[comprehensive sustainability] [excellence osu]
[organizational sustainability] [individual sustainability]
[osu vehicle] [program specific] [program unit] [osu
wide] [earth sustainability] [annual sustainability]
[choice osu] [introductory sustainability] [osu time]
[page sustainability] [osu work] [sustainability
undergraduate] [institution sustainability] [osu
worldclass] [link osu] [osu planning] [available osu]
[strong sustainability] [link sustainability]
[interdisciplinary sustainability] [policy sustainability]
[charles.vail@oregonstate.edu osu] [design osu]
[multiple program] [commitment osu] [important osu]
[office osu] [contribution osu] [sustainability water]
[message sustainability] [design sustainability]

[charles.vail@oregonstate.edu sustainability] [extension sustainability] [osu single] [center program] [constituent osu] [osu recent] [coordinated sustainability] [care sustainability] [osu unique] [array osu] [sustainability way] [osu weakness] [emerging osu] [program strategic] [leader osu] [osu top] [idea sustainability] [advantage osu] [osu ranking] [program progress] [array sustainability] [flexible osu] [federal osu] [issue osu] [appendix osu] [c. sustainability] [problem sustainability] [laboratory osu] [coordination osu] [osu transformation] [d. sustainability] [cwest sustainability] [maximum osu] [international osu] [program support] [institutional sustainability] [national osu] [osu topic] [b. osu] [osu targeted] [part sustainability] [demonstration osu] [green sustainability] [osu u.s.] [company osu] [scientific sustainability] [coordinator osu] [level osu] [move osu] [osu responsible] [following osu] [broad osu] [b. sustainability] [osu step] [case sustainability] [major sustainability] [increasing osu] [agency osu] [osu tracking] [osu sun] [osu role] [substantial sustainability] [osu researcher] [osu usda] [device osu] [agenda osu] [focus sustainability] [osu threat] [lack osu] [osu shuttle] [osu star] [integrated sustainability] [sustainability true] [cent osu] [miller osu] [daeschel osu] [osu promoting] [osu planet] [material sustainability] [http://inr.oregonstate.edu/index.html osu] [osu relevance] [calendar sustainability] [osu secure] [http://oregonstate.edu/sustainability/ osu] [osu prominent] [governor osu] [nsf osu] [courtesy osu] [mark osu] [osu primarily] [microbiologist osu] [osu usage] [limitation osu] [osu spring] [obvious osu] [osu viticulturist] [news osu] [involved osu] [numerous osu] [duplication osu] [addressing sustainability] [increasing sustainability] [linda sustainability] [sustainability transcript-visible] [consideration sustainability] [own sustainability] [enrollment sustainability] [http://oregonstate.edu/sustainability/index.html sustainability] [meeting sustainability] [award sustainability] [depth sustainability] [sustainability swot] [finding sustainability] [model sustainability] [criterion sustainability] [http://inr.oregonstate.edu/index.html sustainability] [barrier sustainability] [relative sustainability] [defunct sustainability] [minor sustainability] [sustainability verification] [mastery sustainability] [myriad sustainability] [hunn sustainability] [purpose sustainability] [status sustainability] [legislature sustainability] [sustainability workload] [state-wide sustainability] [question sustainability] [origin sustainability] [end sustainability] [brief sustainability] [sustainability syllabus] [awareness sustainability] [governance sustainability] [involved sustainability] [description sustainability] [emission

sustainability] [e. sustainability] [sustainability up-to-date] [http://oregonstate.edu/sustainability/ sustainability] [act sustainability] [dynamics sustainability] [institutionalization sustainability] [institute program] [people program] [portland program] [financial program] [partner program] [program waste] [infrastructure program] [increase program] [funding program] [farm program] [energy student] [integrity program] ** LIST TRUNCATED **

oregon state food sustainable facility business plan technology opportunity growth operation wave effort goal practice key environment activity world knowledge council health engine economy high-technology paint existing process economic partnership specific unit environmental industry product leadership success itself-e.g access multiple appropriate responsibility progress internal banking shop provost society forest plant vision film innovation institute portland experience standard framework global super paper building offshore financial power partner future waste core biodiesel infrastructure ability increase school communication wrap potential grower traditional management discovery site farm graduation integrity quality summary production challenge grape competitive public newport structure considerable curriculum interested agricultural job comprehensive impressive change ketchum foot configuration visibility member organizational individual accountability forestry capability excellence graduate prevention grant regular learning private earth vehicle annual local wine strength excellent introductory staff innovative violation alumnus human page undergraduate choice scholarship efficiency restaurant teaching nation node worldclass link interdisciplinary long-term current available satisfaction agriculture rate curricular inventory selected sprout quantity art intellectual association diverse foundation implementation concern theme same sector egg table tenure diesel estimate expertise making lynn mineral white compensation design hot web-based charles.vail@oregonstate.edu marketing reach rfp cell-based descriptor nutritious limit coastline important performance newsletter waste-product medicine late classroom un measure budget contribution coordinated allocation action care ou commerce reconfiguration budgeting educational biofuel constituent way van recent as marine web idea achievement processing location delivery epa working triple unique ground land array club x ment team various thematic inr outstanding c. problem weakness on-campu decision-making emerging leader strategy value cultural top advantage critical d.

small emphasis administration standpoint savings input hub ph event chemistry physics http://oregonstate.edu/leadership/strategicplan/ non orientation influence feature timing traction dialogue ambition self housing implication conservation labyrinth view half-time spectrum brochure related landscaped tour ethic half dept uncertain quiet answer dining humanities oregonstate.edu/sustainability

mission ranking rural interest cwest external institutional government outcome federal flexible citizen issue appendix eco-roof laboratory part pool perspective coordination transformation freedom texture healthy field scientific shared director transfer co-curricular senate establishment full maximum century day receiving international increased line fundamental washington west regulation result connection compelling national range expanding pangea phasing b. topic proposal targeted intercollegiate analysis program/unit-level middle factor open demonstration use supportive disease expectation nurturing company story understanding u.s. major main fishery a. market safe body target belief a assessment regional collaboration tns dr. substantial investment consultation move competition reedsport physical particular tomorrow significant secondary reduction sponsored detailed performing addition obligation specialized following date base gain horizon creative aspiration retention efficient resident proposed admission visit complex risk-taking ocean procedure whole calendar backbone long disinfectant safety addressing cross-disciplinary alignment increasing maintenance painting meaningful purchasing cascades scale antimicrobial gram agency campaign organic fund standing recommendation construction promotion basic hard tracking student-faculty sun corporate rich improvement application linda study societal history saran skill recreation experiment hybrid station role solution o.h. certification vibrant necessary visible sprawl expensive impetus grid supply researcher shortage certificate geoscience providing color presentation growing usda transcript-visible collaborative agenda dollar breadth devoted engineer sustainability-related approach entire optimal device priority intervention vice-president transparent average tuition hatfield huge well-being using threat culture salem monitoring tourism branch fuel benefit june talent engagement ecology consortium picture participant objective lack applied enrollment crew difficult decreasing capital today klamath beach format own possible bio-based direction fair impor overlap shuttle post-consumer friend early representative recycling stable star intramural relationship party competitiveness relevant code osu-cascades floating outdoor changing dietary discipline pollution research and development flex-fuel e-campu student-led contributor loop enormous closed ranch renewable gasoline long-range provision http://oregonstate.edu/sustainability/index.html price circumstance panel country fundraising positive enterprise cent athletics well-run powerful capable well pressing heat november variety effectiveness-with ocked thinking list wide-ranging synergy miller board presence

poor decline basis usdoi mailing award abundant depth background avenue knowledgeable cheap knowledge-based promoting daeschel bio data needed employability aging planet nimble swot demand anepa-sponsored deep obstacle finding word kellogg off-campus total packaging http://cwest.oregonstate.edu/osustainability/newsletter/index.htm recycled remediation wasted high-tech model legacy oceanic union recognition generation america responsive conducive talented profile march s contractor overall high-level measuring judge fishing steam iww fresh drain seminar function house constant institution-wide survey inside multi-disciplinary viewer nascent package relative prevalent administrator commercial response davis region sour sea intellectually-based http://inr.oregonstate.edu/index.html oil-based month executive risk lifelong relevance sciences-are capitol watershed criterion charting boundary sensible suggestion session space-grant barrier d.c. oregonian context attainable identify entrepreneur state-of-the-art department/classroom vegetable campus-wide real interaction estuarine liberal yr entry co-generator create chosen signature legislator limited defunct non-traditional ball :: form atmosphere number short-term original sort administrative run cohesion vintner prudent chairs/heads common environmentally-friendly lead declining ad-hoc hallmark minor charge interdependent fellow money eugene gift valuable conflicting aid proportion printing wealth title institution-one wind will appointee civility buoy purdue favor south-carolina globalization retail gpa teacher high-impact hinsdale crop employer vertical sustaining authority status d.c constituency fastgrowth reconnaissance checkpoint nature component up-to-date percent brandon.trelstad@oregonstate.edu multicultural fast-changing instructor sustained duplication dual-enrollment exceptional bringing master fte keeper convinced segment sufficient pre-eminence numerous workload highlight ique elementary behavior roofing sat serious dignity left-over polluting due nega-watt viticulturist introduction demographics fixed excess entrepreneurial painter index bicycle awareness human-induced rangeland rating deal work-ready city onami integrative biomedical unified primarily internship robust evolution hanging meantime transition sophisticated b motor metrics student-designed set obvious sports land-grant state-wide tant steward david trelstad positioned unwavering cost-effective playing collecting capitalizing residential rigorous resources-based chancellor intergenerational peer truth old political cutting-edge recommending e. highly-skilled six-year operating readable non-competitive career creation atmospheric

bend pursuit user dramatic cohesive ergonomics deferred nile michigan publication limitation cross-cutting control ingredient pattern eastern tree taking content flagship timely day to day microbiologist pauling historic wood http://www.sustainableoregon.net/oregon/index.cfm linus able civic bottom conceptual genetics occupant dimension concept cornell advisory day-to-day founded jump-start lasting workplace inquiry landscape encouraging pilot-scale inventoried freshman-to-sophomore aggressive northwest fiscal request dynamic higher-quality worker corvallis county extended prioritization geometric magnitude multidisciplinary arena nih-based completed integral hand-in-hand preliminary institutionalization metropolitan extraction stream legislature card verification dean select hunn track mastery news memorial so-called spoiling specialty arizona re-emergence http://cwest.oregonstate.edu/sustain/index.htm joint noaa bio-technology bioscience spring methane optimizing pacific lesson advance hospital drive prominent honor protein non-state commodity charles nsf finite metro operated fraction ohio december act fiber lab supporting july errand electricity university-based may revenue creativity statewide attached novel dynamics warming athletic fruit depletion fast solid secure diagnosing ontario profession possibility income description spiritual i. family california aeed series overarching myriad population combination test su-il mass fleet preparatory hire lifestyle reputation untapped emission score crabshell pharmacy campus/community photo non-recycled shellfish valued lysozyme therapeutic wisconsin pre-design law vice behavioral accounting preeminent managing engaged vitamin one or more communitybased raising outgoing a&m http://oregonstate.edu/sustainability/ searchable illinois fluctuation distance clear shipping wastewater stationary home energy-sustainable designation origin chemical end patenting solar ten-year purpose equivalent articulation funded occupational supplier pilot virus effective entering status-quo audit purposeful enhancement commission composting brandon oberlin tank governor student-run mechanism imperative compiling discussion world-class bridge challenging journey employment academy funder processor difference element integration privately-funded desktop fall prioritizing pennsylvania sure indicator workforce pre-college empowerment evaluation linkage tier pro electrical proportionate short develop loyalty mix governance donation pricing pre-eminent courtesy chitosan fare attention capstone postgraduate donor preservation hackleman bill edible honesty requirement periodic volkswagen accountable reality low-income texas consistent oss willingness penn

technological mark enthusiasm sum usgs teaching/learning over-lap effectiveness trend intent equity brief benefiting selection effect bountiful on-going prosperity endeavor gpa/sat net asbestos top-quality wine-grape persistence nursery slow-growth operational instruction availability usage combined thin venture consolidating high-school	

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