USAWC CIVILIAN RESEARCH PROJECT

SUSTAINABILITY: CULTURAL CONSIDERATIONS

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The views expressed in this academic research paper are those of the
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U.S. Government, the Department of Defense, or any of its agencies.

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    The US Army is a recognized leader in developing and deploying sustainability initiatives. Business experts acknowledge that most large organizations have strong strategic planning processes but are weak in the effective execution of strategic plans. Professionals in the field of organizational psychology have recently recognized that the misalignment of strategy with existing organizational culture can contribute to strategic plan execution failures. This paper examines the development and institutionalization of sustainability within organizational culture. Several elements contributing to the advancement of a culture of sustainability are reviewed. Recommendations are made to advance a culture of sustainability throughout the institutional Army.

ACKNOWLEGMENTS

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Sustainability, Organizational Cultural

"Sustainable development has clearly matured to an enduring and invaluable vision. It is conceptually solid and powerful, critically important, and achievable. Without it, worldwide stability and security will fail to exist and hence, no enduring peace. Our children and their children deserve a future of security, stability, sustainability, and peace. I don't believe we can risk the consequences of a future that does not have these features. It is up to us, the doers in this life, to ensure that future generations receive that heritage."

<div align="right">--- Lt. General Henry Hatch, Chief of Engineers, 1992</div>

In November 2005, The Army Environmental Policy Institute drafted a strategic plan addressing the six goals set forth in The Army Strategy for the Environment (October 2004): foster a sustainability ethic; strengthen Army operations; meet test, training, and mission requirements; minimize impacts and total ownership costs, enhance well-being; and drive innovation. The strategic plan addresses ways to integrate sustainability principles and practices into Army systems, processes and operations. These efforts are based on the premise that as the Army incorporates sustainability into its mission and culture, it becomes a stronger present and future Army. This paper examines the endeavor of inculcating sustainability values into Army culture, focusing on the first goal of The Army Strategy for the Environment; foster an ethic within the Army that takes us beyond environmental compliance to sustainability. The paper traces the evolution of the concept of sustainability both in the American culture at large and in the Army, examines a process for achieving cultural change and concludes with recommendations for advancing an Army culture that embraces sustainability.

The Concept of Sustainability

Sustainability is a concept, not a single ideology. Sustainability extols human civilization as an integral part of the natural world. Although various definitions of sustainability and sustainable development exist, their basic message is the same: in order for civilization to survive, the earth must be able to support future generations. Immersed in an agricultural economy, our nation's indigenous populations embraced the ideals of sustainability, viewing themselves as stewards of the land and recognized the unique roles other species played within their world. Entrenched in their culture, they understood that their civilizations would survive only if their land could support future generations. Part of Iroquois law states, "In our every deliberation, we shall consider the impacts of our decision upon the next seven generations."[1] The culture of our founding fathers also embraced concepts of land stewardship. In 1789, Thomas Jefferson wrote, "The earth belongs to each…generation during its course, fully and in its own right, no generation can contract debts greater than may be paid during the course of its own existence."[2] Over the next two hundred years, our country transformed from an agrarian

society to an urban society. As we separated from our agrarian roots, a growing percentage of the population became less aware of the connection between natural resources and day-to-day urban activities. The advancement of ecological consciousness was challenged during much of the 19th century by a spreading Dominion theology. Dominionists believe that the Bible is to be taken literally. The link between the environment and dominion theology lies in a popular interpretation of a well-known passage from the Bible's Book of Genesis, "God said unto them, Be fruitful, and multiply, and replenish the earth, and subdue it: and have dominion over the fish of the sea, and over the foul of the air, and over every living thing that moveth upon the earth."[3] In 1845, John O'Sullivan, a New York journalist, proclaimed that, "it was the nation's manifest destiny to overspread and to possess the whole of the continent which Providence has given."[4] Manifest Destiny became a term representing the belief that Americans had an obligation to settle the western territories. Thus, at times, Christianity was invoked to justify the use of natural resources with little concern for the future. Sustainability philosophies did not emerge again as mainstream topics until the 1970s. The National Environmental Protection Agency (NEPA), established in 1969, recognized the "…critical importance of restoring and maintaining environmental quality to the overall welfare and development of man " and declared to "…create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans."[5]

In 1987, a report that gained wide recognition was produced by the United Nations (UN) World Commission on Environment and Development. This document was the Bruntland *Report*, named after the Commission's Chair, Mrs. Gro Harlem Bruntland.[6] The Commission was tasked to examine our planet's environment and development problems and to formulate realistic proposals to solve them. The legacy of the Bruntland report is that it provided the first widely held definition for sustainable development: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."[7] Sustainable development has also been defined by international consensus to mean, "Development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends."[8] Sustainable development affects the economic, ecological and social aspects of societies worldwide. However, sustainability is concerned with more than just protecting the environment. The holistic focus of sustainability is to perpetuate a decent standard of living for a growing world population encompassing economic, social, and political efforts in addition to the wise use of natural resources. Sustainability embodies several interrelated principles:

- Stewardship- establishing an ecological ethic for the protection and management of life-supporting eco-systems
- Respect for Limits- preventing unsustainable natural resource use
- Fair Distribution- correcting grossly inequitable levels of human development such as employment, education, and healthcare
- Interdependence- ecologic, economic, and social systems are inextricably linked to each other
- Intergenerational Perspective- thinking long-term, 150–500 years, to guide and prioritize critical choices facing society
- Nature as a Model and Teacher- acknowledging that humans can benefit from natures' lessons
- Nature must be preserved and perpetuated if the human community is to sustain itself indefinitely

It is also helpful to understand what sustainability is not. Unsustainable trends include:
- Soil Degradation
- Deforestation
- Species Extinction
- Over Consumption
- Population Growth
- Inequitable Distribution of Resources
- Over Dependence on Non-Renewable Resources
- Pollution
- Environmentally Destructive Development
- Global Warming

Dr. Robert Dovers, a researcher at the Australian National University, noted that sustainable development may be, "…the most profound intellectual and political agenda facing human society today."[9] There are substantial obstacles to overcome to achieve a sustainable path that will secure our future. Conscious and concerted actions are required on multiple levels: governmental, private sector, communities, and individual citizens. Today, our expanded awareness of the consequences of continuing unsustainable behaviors provides an imperative to change.

KEY GOVERNMENT INITIATIVES

Development of National Strategies for Sustainable Development (1997)

Sustainable America: A New Consensus(1996)

Sustainable planning: A Multi-Service Assessment (1999)

Presidents Council on Sustainable Development (1993)

National Environmental Policy Act (1969)

Council on Environmental Quality (1978)

Army Strategy for the Environment (2004)

U.S. Army Environmental Strategy (1992)

1960	1970	1980	1990	2000
UNCONSCIOUS INCOMPETENCE	CONSCIOUS INCOMPETENCE		CONSCIOUS COMPETENCE	UNCONSCIOUS COMPETENCE
1960	1970	1980	1990	2000

Silent Spring (1962)

1st Earth Day (1970)

United Nations Conference on the Human Environment (1972)

Bruntland Commission (1987)

The Natural Step Dr. Robert (1989)

United Nations Commission on Sustainable Development, Earth Summit, *Agenda 21* (1992)

KEY WORLD EVENTS

Figure 1. The Evolution of Ecological Consciousness

The Evolution of Ecological Consciousness

From 1960 to the present, periods of ecological consciousness can be traced and their impact upon American culture and upon government agendas noted. Figure 1, *The Evolution of Ecological Consciousness*, depicts a timeline containing representative key world and United States government ecological initiatives from 1960 to 2004. A period of pre-sustainability environmentalism characterizes the 1960s. The United States, in the late 1950s and early 1960s was an exuberant and prospering nation. An ethic of limitless progress prevailed, fostered by record peacetime economic growth. For a country that had never lost a war, arguments for limit and constraint seemed almost unpatriotic. Environmental warnings were treated with annoyance. The best seller, *Silent Spring*, published in 1962 began to educate the general public about the importance of maintaining a healthy environment.[10] Written by Rachel Carson, *Silent Spring* raised public awareness to environmental and human dangers of indiscriminate use of pesticides. This book and other seminal works fusing environment and ethics contributed new substance and meaning into the environmental movement, spurring revolutionary changes in the laws affecting our air, land, and water.[11] The ecological

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awareness raised by Carson and other scholars in the 1960s led to the first Earth Day in 1970.[12] Thus, the period of pre-sustainability environmentalism created constituencies at both the popular and official levels and united four dominant concerns: 1) an awareness of the profound spiritual links between humans and the natural world; 2) a deep understanding of the biological interconnection of all parts of nature; 3) an abiding concern with the potential damage of human impact on the environment; and 4) a strongly held commitment to make ethics an integral part of all environmental activism.[13]

International events continued to influence the evolution of ecological consciousness in the United Sates. The 1972 United Nations Conference on the Human Environment in Stockholm, Sweden marked the first step toward what is considered modern day sustainability. This global forum began to find positive links between environmental concerns and economic issues such as development, growth and employment.

A turning point for ecological consciousness occurred in 1989 when Professor Karl-Henrik Robert, M.D., Ph.D. initiated an environmental movement called, The Natural Step (TNS) in Sweden. A specialist in Hematology and Oncology, Dr. Robert's research on damaged human cells sparked his interest in the relationship between the environment and human prosperity and health.[14] The Natural Step philosophy discourages focus on cause-and-effect relationships, which can be difficult to identify; and instead, encourages people to, "…just take the natural step of reducing the potential causes of environmental problems. Working with Dr. John Holmberg, Dr. Robert developed four system conditions, first order principles, for ecological sustainability:

1. Nature's functions and diversity must not be systematically subjected to increasing concentrations of substances extracted from the Earth's crust (such as fossil fuels and heavy metals).
2. Nature's functions and diversity must not be systematically subjected to increasing concentrations of substances produced by society (such as synthetic toxic substances and materials).
3. Nature's functions and diversity must not be systematically manipulated, degraded, impoverished, or over-harvested (such as over-cutting forests or driving species to extinction).
4.   Resources must be used fairly and efficiently to meet the basic needs of people worldwide (such as producing more products with less resources and distributing them equitably).[15]

Five years after the publication of the Bruntland report, *Our Common Future*, tangible results to advance sustainability emerged during the United Nations Conference on Environment and

Development (UNCED) in Rio de Janeiro, Brazil, June 1992. Also known as the Earth Summit, representatives from 180 countries convened to discuss and develop solutions for global environmental problems. Drawing over 100 heads of state, it was the largest gathering of world leaders to date. Delegates from UN agencies and international organizations as well as hundreds of nongovernmental organizations agreed on 27 environmental principles that, "…made it plain that we can no longer think of environment and economic and social development as isolated fields."[16] Among the five documents produced at UNCED, the core policy outcome was a publication called, *Agenda 21*, a blueprint for achieving global sustainability.[17] *Agenda 21* argues that furthering the sustainable development agenda will require "on-going purposeful collaboration between (loosely) governments, the private sector and community organizations (civil society) in development and implementation of national policy that integrates ecological, social, and economic dimensions over the long term."[18]

The United Nations General Assembly established The United Nations Commission on Sustainable Development (CSD) in December 1992 to address sustainable development within the United Nations system. The CSD forum, comprised of 53 members elected for terms of three years, was to ensure effective follow-up of recommendations made at the United Nations Conference on Environment and Development. The Commission reviews implementation progress of *Agenda 21* and the *Rio Declaration on Environment and Development.*[19] *Agenda 21* calls on countries to adopt national strategies for sustainable development that embrace economic, social, and environmental factors at the policy, planning, and management levels.[20] Since the1992 UNCED, many countries have established councils to address sustainable development policy on a national scale. Commonly referred to as National Councils for Sustainable Development (NCSD), they advance the implementation of *Agenda 21* through sustainable development policy building efforts. By the end of the 1990s, environmental policy in the United States had become as important as economic, trade, or national security policy in the international arena.

In the present decade, the phenomenon of globalization has allowed for greater transparency of unsustainable practices. People around the globe are more connected to each other than ever before. Technological advancements such as the internet have allowed information and money to flow more quickly than ever before. International travel and communication are commonplace. Goods and services produced in one part of the world are increasingly available in all parts of the world. At its most basic, globalization refers to an extension beyond national borders of the same market forces that have operated for centuries at all levels of human economic activity, including village markets, urban industries, and

financial centers. The most striking aspect of this phenomenon has been the integration of financial markets made possible by electronic communications. Originally addressed in global financial terms, a broadening definition of globalization began to encompass political and cultural aspects of current times. Globalization offers extensive opportunities for truly worldwide development but does not progress evenly. Although globalization has been attributed to improved living conditions in virtually all countries, the more developed countries have made the strongest gains, resulting in a growing gap between high-income and low-income countries exists. Gross economic inequality raised concerns from social activists, labor organizers, journalists, academics, and many others working on a global stage to address sustainability. Globalization has allowed a growing understanding of sustainability concepts to occur, calling attention to the critical role of public and international institutions in promoting, or hindering, sustainable development.

The concept of sustainable development continues to expand in our present world. A world which, according to the Millennium Project, has lost or is in eminent danger of losing 60% of its life -support systems.[21] The degradation of our ecosystems is predicted to grow worse by 2050 as an additional 2.6 billion people inhabit the Earth, already home to 6.5 billion people. Integrating the principles of sustainable development into national policy is one of the targets contained in the United Nations Millennium Declaration to reach the goal of environmental sustainability. For sustainable development to become a reality, profound changes must occur in the governance of organizations and in the globalization process.[22] International attention to global environmental issues spurred the US government to address the emerging issue of sustainability.

US Government Actions

Coincident with growing public awareness of environmental issues during the 1960s, Congress established NEPA in 1969, and declared that it was the continuing policy of the Federal Government to, "…use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans."[23] Similar to current, commonly used definitions of sustainability, one of the goals set forth in the 1969 Act was to "…fulfill the responsibilities of each generation as trustee of the environment for succeeding generations."[24] In addition, the NEPA process was defined as "…the systematic examination of possible and probable environmental consequences of

implementing a proposed action."[25] NEPA called for decision making processes to not only include environmental concerns but economic and technical concerns as well, recognizing that broader concepts, inclusive of sustainable development, must be considered in order to meet the requirements of future generations. Army actions requiring analysis under NEPA are those that could cause significant impacts to the human or natural environment such as: facilities construction, overall operations of installations, research and development, land use grants, projects involving chemical weapons, policies and regulations.[26]

   The Council on Environmental Quality (CEQ) was created by NEPA in 1969 to serve as the federal environmental policy arm. The CEQ produces authoritative annual reports describing conditions and trends in the quality of the environment. Later, in 1978, the Council made major advances in the areas of policy expression and clarification through implementation regulations. The CEQ is also credited with building a foundation for almost all current environmental legislation with the exception of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and asbestos control legislation.[27] In addition to developing major pollution control legislation and policy, the Council is challenged to weave economic, environmental and social aspirations into decision-making processes.[28]

   An incredible growth of environmental legislation occurred during the 1970s in response to a growing public awareness that unintended and catastrophic consequences could result from the use of chemical substances. Environmental disasters such as chemical exposure to residents of Niagara Falls from the Love Canal dump leakage in 1971 and chemical pollution fires on the Cuyahoga River in Ohio caused public outcry.[29] In the 1960s, the government began to use the regulatory process to control polluting substances. For example, Congress passed the Clean Air Act in 1963 to reduce smog and atmospheric pollution. Amendments to the Clean Air Act were passed in 1966, 1970, 1977, and 1990.[30] In response to the Love Canal disaster, Congress enacted CERCLA in 1980.[31] Also known as the Superfund, the law created a tax on petroleum and chemical industries and required the clean-up of designated toxic waste sites throughout the country.[32] Environmental legislation continued to grow throughout the 1970s, 1980s, and 1990s.

   The 1992 U.S. Army Environmental Strategy into the 21st Century addressed the environmental legislation growth trend. Based on a focus of environmental stewardship, the strategy outlined four 'pillars' supporting the vision: compliance, restoration, prevention, and conservation. One of the four efforts the strategy called for was to give, "…immediate priority to sustained compliance."[33] Spreading the environmental ethic was another critical element contained in the 1992 strategy. The main effort to disseminate an environmental ethic was a

training program. Although the 1992 strategy focused primarily on compliance with environmental law and did not directly reference sustainable development or sustainability in its lexicon, it did contain elements of a sustainability philosophy. The general goal of the forth pillar, conservation, was to: "conserve, protect, enhance environmental and natural and cultural resources, using all practical means consistent with Army missions, so that present and future generations may use and enjoy them."[34] An eight year implementation plan to execute the 1992 environmental strategy was integrated into the Army budget cycle corresponding to a two year funded program and a six-year program requirement in the Program Objective Memorandum (POM).[35]

Compliance with environmental regulations improved dramatically over the next decade. Senior leaders then began to question the value of continued spending to support environmental compliance programs. The return on investment had diminished as the majority of compliance efforts succeeded. Environmental professionals began to see themselves as more than just compliance experts. The philosophy of sustainability as a proactive measure to prevent the need for more environmental compliance spending began to take hold.

President Clinton formally advanced sustainability by issuing Executive Order number 12852 that established the US Presidential Council on Sustainable Development (PCSD) in June 1993.[36] This was the US official response to the global concern with sustainable development. Originally limited to a two-year lifespan, amendments to the order maintained the Council until 1999. Subsequently, the Council became defunct and was not resurrected under the 2000 Bush administration. An advisory body of thirty-five members, President Clinton asked the Council to recommend a national action strategy for sustainable development. The Council concluded that, "…in order to meet the needs of the present while ensuring that future generations have the same opportunities, the United States must change by moving from conflict to collaboration and adopting stewardship and individual responsibilities as tenants by which to live."[37] The PCSD made advances in proving the potential of the multi-stakeholder approach in articulating a national direction and highlighting a range of encouraging local and regional developments. Why was the PCSD discontinued? One view states that the Council had less of an international focus than most other NCSDs and may have been a model unsuited to the US political system.[38] Although the world was physically ready for the endeavors of the PCSD, perhaps culturally, the council's recommendations were ahead of their time. During this same time period, the longest-running reform effort in the history of the federal government was taking place. Over 1,200 specific changes were recommended by the National Partnership for Reinventing Government (NPRG) from 1993 to 2000.[39] The NPRG focused on transforming the

culture in major agencies to be more results-oriented, performance-based, and customer focused. The partnership made an important contribution in raising public trust in the government and creating a better workplace for Federal employees. Among their numerous accomplishments, the NPRG worked with five key regulatory agencies (EPA, FDA, FSIS, OSHA, and FAA) to improve the measurement of mission effectiveness. For example, instead of focusing on the number of tickets written for regulatory violations, the subject of clean air was addressed. This shift towards proactive thinking resulted in a reduction of food-borne illness, toxic emissions, and worker injury rates.[40] Inclusion of sustainability initiatives was the next logical step to raise public trust and improve the workplace.

The Army and Sustainability

As a federal agency, the Department of Defense (DoD) is charged with developing strategies for implementation and compliance to policy mandates. It is the responsibility of the military services to develop action plans to implement change. The impact and influence the Army has on global development patterns and environmental security is substantial. By virtue of the Army's land use, authority structure, and geographical dispersal, the Army has the potential to lead sustainability initiatives by example. The U.S. Army holds approximately 12 million acres of land but trains on most of the DoD's 24 million acres of land.[41] Approximately 260,000 soldiers serve throughout 120 countries outside of the United States.[42] By definition, sustainability crosses national boarders. By providing assistance with sustainability initiatives, the U.S. Army can help shape existing and emerging alliances, which subsequently, can increase regional stability and promote the protection of U.S. national interests. Unsustainable practices such as environmental scarcity can create social conditions such as constrained economic productivity, population movements, social segmentation, and weakening of states leading to ethnic conflicts and insurgencies. Significant indirect effects on the international community may have serious repercussions for the security interests of both developed and developing worlds. The Army sets a high standard for the DoD and the rest of the federal government in understanding and executing sustainability practices.

In concert with the civilian sector, Army environmental programs focused mainly on maintaining compliance with environmental laws during the 1980s and early 1990s. New management philosophies adopted by the Army in the early 1990s, spurred environmental management systems to shift their focus from compliance to a broadened framework of performance management embracing all three elements of the triple bottom line: mission, environment, community. Army senior leaders became increasingly concerned about risks to

installation operations. Environmental and social system dynamics were increasingly affecting installation abilities to meet test and training requirements. For example, members of the 2000 Strategic Readiness Oversite Council identified an insidious loss of installation functionality due to regional encroachment. As lands surrounding military installations were developed and inhabited, residents complained about noise and other effects from military training. Solutions to encroachment, and its second and third order effects, could no longer be found within the confines of the environmental compliance mission. Environmental offices were restructured and roles and responsibilities clarified. Forces Command (FORSCOM) developed an integrated strategy that engaged all stakeholders to ensure the long-term viability of its installations. The FORSCOM Installation Sustainability Program (ISP) initiative focused on logistical support for sustaining field operations and was the first step towards ensuring long-term sustainability of Army operations. Executive Order 13148, *Greening the Government Through Leadership in Environmental Management*, required each federal agency to integrate environmental accountability into day-to-day decision-making and long-term planning processes across all missions.[43] Executive Order 13148 aimed to provide structure through improved environmental management, stronger compliance and improved public communications. To improve support to Army missions, Raymond Fatz, Deputy Assistant Secretary of the Army, Environment, Safety and Occupational Health, directed Army installations to adopt the internationally recognized management system standard, ISO 14001 In July 2001. In addition, the Environmental Management System (EMS), a documented system for managing an organization's environmental aspects and affairs, was to be implemented no later than December 31, 2005.[44] The EMS is currently viewed as a supporting element of sustainable development as a result of a growing acceptance for managing installation natural resources in a sustainable manner.[45]

The concept of sustainability gained greater attention within the Army after October 2004, when the Chief of Staff of the Army, General Peter Schoomaker and the Acting Secretary of the Army, R.L. Brownlee endorsed the Army Strategy for the Environment (ASE) to establish "a long-range vision that enables the Army to meet its mission today and into the future."[46] The ASE became a landmark in the evolution of Army sustainability concepts. The ASE recognizes the need to develop systems thinkers in order to incorporate "the principles of sustainability across the Army and into all functional areas."[47] This visionary document identifies six goals that direct the Army towards becoming an enduring organization: foster a sustainability ethic; strengthen Army operations; meet test, training, and mission requirements; minimize impacts and total ownership costs, enhance well-being; and drive innovation.[48]

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The (not so) Obvious

Tracing the evolution of sustainability helps identify a starting point from which a sustainability ethic can be fostered in the Army. The relationship between culture and organization is dynamic as culture and organizational structure help to define one another. How can the institutionalization of a sustainability philosophy throughout the Army best be accomplished? To answer this question, the Army must be understood as a complex, values based organization; the concept of sustainability as a cultural value must be embraced; and finally, actions must be identified that will effectively influence beliefs and behaviors of Army members that are inherent in a sustainability philosophy.

The Army- A Values Based Organization

The Army is responsible for providing relevant and ready land power to combatant commanders now and in the future. The Army, in conjunction with the other armed forces, exists to provide combatant commanders the forces and capabilities necessary to execute the National Strategy, the National Defense Strategy, and the National Military Strategy. Since its inception in 1775, Army culture evolved to adopt the traditions, norms of conduct, and ideals necessary to develop professional soldiers who defend the security of the nation and its way of life.[49] The Army's most important guiding principles are written in *The Army*, FM-1 containing the Army Values, the Soldier's Creed, and the Warrior Ethos.[50] Army values form the identity of the Army and are the foundation of a Soldier's character. Characteristics of good leaders are described as far back as 1943 in an *Officers' Manual* written by Colonel James Moss.[51] A sense of duty, superior professional ability, honesty, high moral character, physical courage, and humanness were noted as the foundation of leadership.[52] Concurrent with the development of organizational culture as a field of study, *The Army*, Field Manual 100-1, began to address the "Army Ethic."[53] General John A. Wickham endorsed values as "the bedrock of our profession" in a 1986 white paper.[54] He encouraged all soldiers to live by four core values and four individual values outlined in the white paper. A part of present day Army culture, current values include:

- Loyalty- Bear true faith and allegiance to the U.S. Constitution, the Army, your unit, and other Soldiers.
- Duty- Fulfill your obligations.
- Respect- Treat people as they should be treated.
- Selfless Service- Put the welfare of the Nation, the Army, and subordinates before your own.

- Honor-   Live up to all the Army Values.
- Integrity-   Do what's right-legally and morally.
- Personal Courage-   Face fear, danger, or adversity (physical or moral)[55]

The Soldier's Creed and its embedded Warrior Ethos further describe the frame of mind of the professional Soldier, affirming who Soldiers are and what they do.[56]

The Army is a complex organization functionally organized into discrete entities known as the institutional Army and the operational Army. The institutional Army exists to support operational Army missions. Specifically, "The institutional Army provides the infrastructure and capabilities needed to rapidly expand the Army and deploy its forces", whereas, "The operational Army provides essential land-power capabilities to combatant commanders."[57] The Army's institutional organizations, including 172 installations, are transforming to meet the needs of the operational force. Current transformation focuses on the development of a modular force of rapidly deployable brigade combat teams (BCT) and on the return of 47,000 soldiers and 100,000 family members from overseas as part of the integrated global presence and basing strategy. In addition, improvements are expected from the most recent base realignments and closures that will build war-fighting excellence and improve joint capabilities.[58] Lieutenant General Barno, Assistant Chief of Staff for Installation Management (ACSIM) explains, "These changes go well beyond much needed improvements in quality of life and well-being and include such things as improving business practices to create more efficient installations and developing unit relationships to allow forces to train the way they fight."[59] Army installations can better meet this mission by incorporating a sustainability philosophy into business practices and processes. Several installations are already meeting this challenge through the effective deployment of ISPs. Installations such as Fort Bragg, North Carolina and Fort Lewis, Washington developed long-term plans that linked mission accomplishment with sustainable development.[60] The development of resource planning and execution were based on the installations' abilities to support future forces and coexist with surrounding communities. Their successes, in part can be attributed to the development of an organizational culture, or ethic, supporting a philosophy of sustainability. Values offer unique meaning and perspective to the understanding of organizational phenomena.

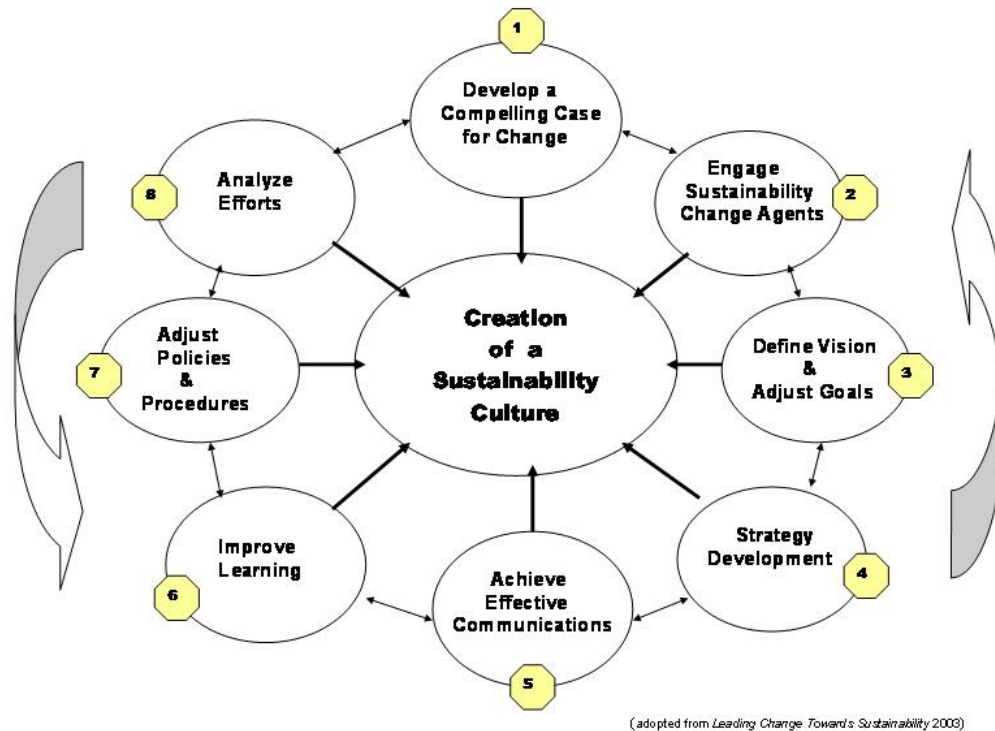*Sustainability-A Cultural Value*

The all-encompassing anthropological view of culture cannot be easily applied to an organizational domain. To effectively integrate a cultural concept into mainline organizational models, it must be recognized as a factor that affects organizational life.[61] The study of

organizational culture did not receive serious attention until the beginning of the 1980s. Until recently, culture was not recognized as an important element of organizational performance because it was viewed as an intangible and undetectable by-product of organizational performance. Embedded in the architecture of an organization, culture is key to achieving the institutionalization of desired behavior. Edgar Schein, a psychologist and organizational theorist, defines culture as, "A pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and therefore to be taught to new members as the correct way to perceive, think and feel in relation to those problems."[62] In *Army Leadership, Be, Know, Do* (FM 22-100), culture is described to consists of "…the shared attitudes, values, goals, and practices that characterize the larger institution."[63]

Generating a commitment to change is a difficult task in any organization. A sustainability strategy cannot, by its self, institutionalize desired behavioral changes. Movement towards sustainability requires whole new ways of thinking and operating. The sustainability strategic plan must contain coherent, comprehensive guidance on how to shape organizational core values- the hallmarks of influencing organizational culture.

Numerous case studies reveal both successes and failures of the institutionalization of sustainability in businesses and governments. The majority of the success stories site the importance of developing a sustainability culture within their organizations as key to their ability to execute sustainability practices and processes. Likewise, the failures site the lack of creating a sustainability culture as a primary reason for their inability to convert stated core values into specific actions; the failure of strategy execution. For example, Sweden's leaders have induced owners of fuel inefficient vehicles to trade in for hybrids by taxing fuel and CO2 emissions. Tax exemptions also exist for homeowners who switch from oil heating to renewable energy.[64] Embracing the idea of helping the planet it is part of Sweden's culture. Can organizational culture truly change to meet new circumstances? According to C. Davis Fogg, in *Implementing Your Strategic Plan,* yes it can. He points out however, that you can't make cultural change happen; you can only establish the conditions under which it can happen and keep those conditions stable until it does.[65] Transforming traditional, reactive thinking into a proactive sustainability ethic can accelerate the execution of sustainability business practices as people recognize sustainable development as the "right thing to do".

Developing a Culture of Sustainability

Figure 2   Advancing a Culture of Sustainability

Figure 2, *Advancing a Culture of Sustainability*, depicts eight key elements, planned interventions, contributing to the creation and development of a culture of sustainability.   The arrows between each element on the wheel represent the linking of actions into a continuous, self-reinforcing process of change. All phases of the change process must be completed in order for cultural changes to adhere to and influence organizational behavior long-term. Three to six years is a typical timeframe for organizations to identify the proper type of thinking, perspective, and behavior needed to drive them towards sustainability.[66] The wheel moves forward, representing progression of cultural shift as sustainable development initiatives begin to influence organizational values and beliefs. Ideally, the sustainability wheel should always be moving or advancing forward. However, moving the wheel backwards can serve as a diagnostic intervention applied to stalled sustainable development initiatives. Moving backwards forces an organization to examine the previous phases. This backward, drilling down thought process identifies weaknesses that negatively effect subsequent steps. For example, when people are unsure about what they are trying to achieve, moving backwards to the area of

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vision, goals and objectives, not only helps to clarify and focus priorities but also verifies the alignment of the cultural initiatives with operational initiatives in support of an organization's vision. The eight key areas are examined below:

1. *Develop a Compelling Case for Change*

Military culture changes over time in response to changes in society's culture, the advance of technology and the impact of leadership. Obstacles to influencing Army culture are many. First, it must be realized that Army beliefs and values are deeply embedded, encompassing: "…the customs and traditions, norms of conduct, ideals, and values that have evolved over 226 years of campaigns and battles, of shared hardship and triumph."[67]

Second, the Army is an organization of enormous size and complexity having ample opportunity to resist change at many different levels. Third, without a compelling reason or crisis to alert the Army culture for the need to change, the Army culture will most likely resist change. Researcher Bob Doppelt believes that people must feel a compelling need for change. There must be discontent with the prevailing mind-set if change efforts are to succeed. He states, "People become motivated only when explicit steps are taken to surface the controlling mind-sets and make a compelling case for change towards sustainability".[68] It is not sufficient to think that the desire for change will grow naturally once people become engaged in the transition.[69]

Undermining an organization's operating paradigm is the first step toward the development of new forms of governance and operations. For sustainability to become institutionalized throughout the Army, an accurate understanding of how well sustainability is understood and accepted in the current organizational culture must exist. Attitudinal surveys addressing sustainability concepts can be used to identify values and beliefs surrounding sustainability initiatives. If the values and norms of the organization are neutral or antithetical to sustainability issues, an extensive effort may be required to influence a cultural change. A case for change can then be targeted to those areas of an organization the exhibit what Donald Sull refers to as "active inertia."[70] Senior leaders must build a strategy to build a case for change in order to under-mind the status quo. Active inertia is an organization's tendency to stick to the status quo, to follow established patterns of behaviors even in response to dramatic environmental shifts. It is the state of accelerated "the way things are done" activity. Unfortunately, the actions that are taken are inappropriate actions. Senior leaders can build a case for change by examining organizational strategic frames, processes, relationships and values.[71] A case for change message motivating people to think more long-term might include the following points:

- A review of the current state of the world, emphasizing the global concern for corporate, social, and environmental responsibilities.
- The growing demand by the American public to become a more sustainable nation and world.
- An estimate of cost savings realized by converting from a take-make-waste economic model to a more sustainable borrow-use-return model targeting inefficient energy and water use, waste generation, and regulatory compliance issues.
- The consequences of noncompliance with a sustainability strategic plan.

The goal of the case for change message is to increase consensus about the risks of unsustainable practices and the opportunities for adopting sustainable practices throughout the institutional Army. The deployment of the message can be targeted appropriately to segments of the institutional Army that are not familiar with the philosophy of sustainability and prioritized based on mission impact.

Senior leaders have a responsibility to create and manage culture in military organizations. Edgar Schein, an MIT psychologist and organizational theorist believes that cultures begin with leaders who impose their own values and assumptions on a group. If an organization is successful, a culture will develop that defines what kinds of leadership, norms and behaviors are acceptable for future generations. As the environment of a culture changes to the point where a culture's basic assumptions no longer hold true, it is a leadership responsibility to start evolutionary change processed to enable the culture to adapt. "The ability to perceive the limitations of one's own culture and to develop the culture adaptively is the essence and ultimate challenge of leadership."[72] Leaders then, are ultimately responsible for preserving and protecting what is best about their service culture and changing those aspects of service culture that must change if the military is to successfully meet its future challenges.

2. *Engage Sustainability Change Agents*

It is highly unlikely for a culture to emerge without the influence of charismatic change agents with whom members of an organization strongly identify. The second leverage point for change in a social system is to enlist change agents to clarify purposes for change and to map out an execution strategy. Change agents play a key role in the development of a sustainability philosophy. No single individual can change an organization into a sustainable enterprise. Likewise, no single secretary, department, or council can unilaterally perform all of the functions required to set an organization on a path towards sustainability. Powerful, broad-based change agents must be empowered to plan and direct the change initiative.

The employment of carefully selected individuals and teams can overcome the multitude of barriers to creating a sustainability ethic present in strategic frameworks, processes, and relationships. Referred by various names such at "inside-outers,"[73] "cultural creatives,"[74] and even "tempered radicals,"[75] change agents effect personal change. They work from a premise that cultural change is intimately tied to individual change. Sustainability change agents influence and develop existing organizational culture to advance an acceptance of sustainable development. Change agents believe that values are the best single predictor of real behavior and they demonstrate how to use a sustainability perspective in decision making. They are able to answer the question, "Now what do we do?" for organization members. Change agent activities may include:

- Reduce collective uncertainties by facilitating a common interpretation system.
- Create social order by clarifying expectations.
- Create continuity by perpetuating key values and norms across generations of employees.
- Create a collective identity and commitment by binding employees together.
- Elucidate a vision of the future be energizing forward movement.[76]

Change agents teach important lessons and inspire evolutionary change. Senior leaders can benefit from locating and nurturing this subtle form of leadership. By both their dedication to the organization and as masters of effecting change at the grassroots level, change agents are a valuable tool for assisting senior leaders to identify barriers to change, and to recommend courses of action addressing changing needs and circumstances.

3. *Alter Vision and Goals, Adopt Sustainability Principles*

Altering vision and goals requires a clear depiction of the end-state the organization seeks to achieve and guidelines for how decisions should be made to achieve them. Goal clarification is a lever for change in a social system because it reorients the purpose of the organization. Conviction and commitment to achieving a culture of sustainability can be succinctly stated in a vision statement. While vision provides purpose and intent, sustainability principles provide a framework for decision-making. Principles are clear statements of criteria that shape how an organization will conduct itself as it pursues its purpose and vision. Principles such as The Natural Step's four 'systems conditions' or those embraced by eco-effectiveness sustainability principles provide a common language guide progress measurement. Several sets of sustainability principles have successfully served as frameworks to assist organizations achieve their sustainability goals. The most popular, TNS four-systems approach, has been adopted by

several organizations to become more sustainable. Interface, a renewable carpet company applied the four-systems approach to develop a vision, "To become a leader in industrial ecology by first becoming a sustainable corporation and eventually a restorative enterprise."[77] Likewise, the four-system principles guided Stena Metall AB, a European recycling, trading, and shipping company. The four-system principles guided Stena Metall's vision to, "Be the leader in helping industry in Europe become deposit-free."[78] A second approach, the Ecological Footprint Model, developed by Mathis Wackernagel and William Rees in 1990, examines the ecological capacity required to support the consumption of products and lifestyles. An 'ecological footprint' is the total land surface required to support an activity or a product.[79] A third approach is the cradle-to-cradle production model through eco-effectiveness. This model is based on the principle of eliminating the source of problems. Eco-effectiveness addresses the elimination of persistent toxins and bioaccumulative substances from the onset, rather than attempting to filter them out at the end of a process. When fewer harmful substances are used or generated, there is less need for environmental regulation.

One of the most effective ways to develop a sustainability vision is to choose a time period in the future and describe the ideal way the organization, unit, product, service, or community should look and operate at that time if it were completely sustainable. Starting with the ideal and then moving backward to the current state is counter-intuitive to most leaders. Vision and strategy development are usually approached in one of two ways. Reactive visioning is one in which planners look to the past to try and recreate what worked best. This rarely works because conditions continually change. The second approach, forecasting, also has limitations because it is so dependent upon how accurately the future is predicted. Forecasting efforts end up fuzzy and misaligned. Forecasting draws attention to obstacles that resistive people latch onto and use to point out all of the reasons why the strategy won't work. Ends planning, referred to as 'back-casting' in TNS framework, is successfully used by several leading sustainable organizations, e.g., General Motors, Norm-Thompson.[80] Ends' planning helps to avoid getting trapped by decision-making tools that favor the status quo like cost-benefit analysis. Once a baseline of current sustainability thought is established, determine the organization's future desired thought about sustainability. What is the ideal mindset needed to accomplish the new set of operational tasks required to become more sustainable? The answer helps establish performance goals and measurable targets aimed initially at achieving the closest available approximation to your ideal vision of a sustainability culture.

Once a clear vision of the future and principles are adopted, a sequenced set of strategies, priorities and tactics can be established to attain them. Specific actions will culminate in

success only if a new frame of reference, a new context, is developed which creates a true paradigm shift in peoples' perspectives and fundamental thinking. When people can describe in one minute or less what they are working towards and why it is important, it is safe to assume that an effective vision has been communicated.

4. *Develop Strategy*

   Effective operational and cultural-change strategies are developed in similar ways. They both start with a vision of the ideal, and then work backwards by first identifying the closest available approximation to the ideal and then establish a strategy to close the gaps between it and current conditions. After the closest approximation has been achieved, goals and objectives can be established to close the remaining gap between it and the ideal vision of sustainability. Developing strategy inclusive of sustainability principles improves planning by creating a shift from project planning to military planning. Explained best in a 1999 feasibility study for implementing sustainable development concepts and principles, " Sustainable planning eliminates the growth-based, project-based analysis and decision-making methods in existing planning and replaces them with new methodologies that lead to sustainable solutions and strategies that support mission needs."[81]

   A common mistake in strategy development is that the strategic plan is not shared among members of the organization. Creating a shared viewpoint identifying where the organization has identified itself to be and where it needs to go facilitates the desired change. The strategy should include a consensual view of the current culture as well as definitions of what change means and what it doesn't mean. The strategic plan should include specific changes that will be started, stopped, and continued outlined in goals and objectives.

   Good strategy can make the management of cultural change more systematic. There is no single 'best' model or framework to apply to a cultural change sustainability strategy. Senior leaders must use their knowledge of strategy development and strategic planning to adapt methods and frameworks to individual situations. Three frameworks currently used in the Army for effective sustainability strategic planning are: the Organizations as Systems model, the Army Performance Improvement Criteria (APIC), and the Balanced Scorecard.[82] Each of these systems approach methods have components that address organizational culture, the details of which are not in the scope of this paper. Strategy development is an on-going, dynamic process that requires a significant amount of time as well as considerable follow-up. It is important that strategic development and planning fully address the current and desired organizational culture to ensure the effective deployment of strategic goals and objectives.

5. *Achieve Effective Communications, Education and Training*

Modifying the information flows of the organization is the fifth leverage point for achieving a sustainability culture. A constant exchange of information about the need, purpose and benefit of sustainability is vital in developing a broad understanding and buy-in among employees and stakeholders. The most effective communication is interactive, not didactive. Senior leaders make proclamations, documents are distributed and a special event may be held but these passive communication methods alone are inadequate to capture attention and institutionalize a common philosophy among members of an organization. Passive communication sends information one way. Messages are sent from senior leaders *to* or *at* others.   People are told about the new sustainability vision, strategy, and goals. The sender however, is not afforded any indication about how the receiver processed the information. The original intent of passively conveyed messages is often misconstrued. Two-way communication on the other hand, actively engages people; the message becomes part of individuals' thought processes. The result is an internalization of sustainability visions and strategies as people grasp what sustainability means to them personally. Three aspects of communication may be particularly effective on Army installations: understanding the audience, repetition, and transparency.

Understand your audience

Discover the culture of the organization and the current beliefs of stakeholders with whom you want to communicate. Use surveys and focus groups together information about existing attitudes, beliefs, and behaviors of your target customers. The purpose is to assess the receptivity of people to sustainability, to uncover the types of information that will get attention, and to craft messages that will elicit the greatest support. Each unit of the organization and each stakeholder group may have different cultural orientations and therefore will require different forms or framing of information. Information that slightly exceeds the traditional mind-set of the receiver has a high likelihood of success. "Your messages must slightly expand the overall beliefs, attitudes and experiences of the audience. If the words and images you use are too far outside the experience of the audience, they are likely to be ignored or rejected. The information you share should slightly move the attitudes, beliefs and behavior of your audience beyond their current state. This is the only way to generate change".[83]

Be relentless

A one or two time attempt never works. Overwhelmed with a constant barrage of daily information, only those messages that are consistently heard and perceived as important to daily life are registered by the receiver. People need to hear the details of the sustainability initiative over and over, through multiple channels. Keep repeating the message long after you think you should stop. Most sustainability efforts vastly under-communicate their efforts. As Peter Domini, director of business development at Stena Metall understands the difference between an approach and a program. He states, "Sustainability is not a project. It's a process that will go on for years. There will be no end to it. There is no month that our people don't get information about our changes. They are also beginning to get lots of questions from customers and others about our efforts. So the information we produce has risen about 100%".[84]

Be transparent

Avoid providing information based on an assumed need to know. Selective, parceled information usually creates negative consequences. Employees need to understand how they fit into the organization's sustainability strategic framework in order to commit to the sustainability initiative. Buy-in is much more likely when employees understand: the need for change, how the vision and strategies developed, the desired outcomes, and what their role will be in support of the new culture. Stakeholders also become engaged as transparent communication opens the door to honest understanding and sharing.

6. *Improve Learning*

Sustainability presents a new mental model for decision–making. Organizations must provide training that promotes and develops skills related to their desired values and beliefs. Education and training are necessary to overcome flawed understandings and old perspectives that are inconsistent with sustainability. Although an important component of the cultural change process, education alone rarely generates long-term change or behavior.[85] Additional factors such as the pressure to conform to existing norms and values are also drivers for change. Educational efforts have greater impact on behavior when they are included in each step of the overall process.

Constant learning is a building block for achieving a long-term sustainability philosophy. More learning occurs when the topic is related to producing specific tangible outcomes than when it is theoretical in nature. When customers and stakeholders are actively involved in the learning

process, the greater the understanding and support for sustainability. Senior leaders must accept continual learning as a core focus of the organization, not as a specific event.

7. *Adjust and Align Policies and Processes*

   Senior leaders cannot order members or stakeholders to adopt sustainability based thinking and behavior. Alignment and integration of processes is necessary. Alignment refers to the, "…consistency of plans, processes, information, resource decisions, actions, results, and analysis to support key organizational-wide goals."[86] It requires the use of complementary measures and information for planning, tracking, analysis, and improvement at not only the organizational planning level but at the working unit level as well. Integration, a more advanced concept than alignment, "…is achieved when the individual components of a performance management system operates as a fully interconnected unit".[87] Alignment and integration cannot be achieved unless an organization is managed as a system, not as a collection of independently functioning entities. Symptoms of non-integrated organizations include: one-way information channels, top-down decision making and biased resource allocations. A systems approach to managing the institutionalization of sustainability can support alignment and integration efforts by ensuring that decision-making, resource allocations and information flows will consistently support the pursuit of sustainability.

   Achieving alignment and integration does not mean that the ideal vision of sustainability has been achieved. But it does mean that organizational processes, policies and procedures embrace and jointly support continued progress towards sustainability.

   As the Army develops a sustainability policy, installations may be required to develop sustainability strategies and strategic plans to not only create sustainable installations but also to develop a sustainability culture among soldiers, customers, and stakeholders. Senior leaders and sustainability change agents will have to untangle conflicting policies through proper adjustment and alignment. Achieving a sustainability culture, one that is focused on a circular borrow-use-return model, may be constrained by the existing regulatory framework. Effective policy development depends heavily upon organizational culture. If decision-makers, soldiers, customers, and stakeholders do not feel that existing policies are broken and that new ones are needed, policy development will be stymied and ineffectual. Therefore, the greatest barriers could be in the hearts and minds of people vested in compliance based strategies. Senior leaders may not be ready to hear about social welfare or environmental concerns. Other issues may seem more pressing. Change agents should prepare their cases, build internal support

and move quickly when an opportunity makes senior leaders willing to consider sustainability issues.

Process management is key to influencing organizational culture. Many organizations spend substantial time and energy adjusting the parameters of their systems or processes to create customer value and achieve business success and growth. Seeking to reduce pollution rates or increase recycling rates by 10% is an example. However, if the mental model that created the old system has not changed, adjusting processes will have little long-term effect on attitudes or behavior. It is the linking of all processes contained within the sustainability change model that will anchor sustainability in Army culture. Internal processes, systems, policies and procedures should not be changed until desired sustainability thinking and behavior is identified. Embedding sustainability into Army culture is an iterative process, achieved as members and stakeholders gain and apply new knowledge and skills into an altered form of behavior. To influence culture, organizations must make their systems and processes compatible with their values and beliefs.

8*. Analyze Efforts, Use Measurements and Feedback to Determine Cultural Change*

Measuring elements of a defined process is the only way to objectively determine the effectiveness of a strategic plan. At this point in the process of developing a sustainability ethic, the desired culture has been defined as well as the characteristics necessary to measure progress towards the desired end state. The challenge of the eighth element, using measurements and feedback to determine cultural change, is to gather the right types of data in the right way. As a shared value, sustainability can be measured as an element of organizational culture.

Value systems or attitudinal surveys and focus groups can be designed to identify attitudinal shifts towards the acceptance of a sustainability philosophy. Questionnaires contain indicators that best describe progress towards or away from the established sustainability vision and goals. A mix of leading and lagging indicators are useful. Attitudinal lag indicators measure the impacts of past actions on perceptions of human activities on the environment and socioeconomic conditions. For example, responses to the statement, "My unit/organization believes that we are safe from potential risks and liabilities because we are in compliance with laws and regulations," yield a lagging indicator. A leading indicator is obtained when the following statement is used, "Most of the members in my unit/organization understand the concept of sustainability." This leading indicator measures current beliefs that may affect the future advancement of a sustainability ethic. Survey results lend both intensity and breadth

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indexies. An intensity index represents members' agreement with the value system as a whole whereas a breadth index reflects the relative number of members who do not actually hold central values.[88]

In addition, trends can be identified using the data collected from value systems surveys. The information that the data provides can be applied as feedback to adjust operational processes striving to achieve sustainability goals. To close the process feedback loop, the design of the attitudinal survey is adjusted to generate data more relevant and current to the organization's strategic plan. Many organizations maintain reams of data but lack the ability to turn data into information that can be applied to process improvement. Good data provides the foundation for credible information which people can use to track improvements and make adjustments to the processes they own.

Perhaps the most valuable application of attitudinal surveys within large, decentralized organizations is to identify multiple value systems or subcultures. Applied to smaller Army installations for example, survey data can provide information to sustainability change agents about the challenges of inculcating a sustainability ethic throughout the entire Army.

Conclusion

As the operational Army transforms, the institutional Army must also transform. Installations are challenged with how to change to increase organizational effectiveness. Organizational improvement is heavily dependent upon the culture within that organization. According to Paul Ray and Sherry Anderson's 13 years of survey research on more than 100,000 Americans, American culture has reached a tipping point for the acceptance of sustainability as a guiding philosophy.[89] In concert with the shift in American thought, an Army ethic of sustainable development will become part of the fabric of the organization, reflected in its core values and apparent in its practices beginning at the installation level.   An ethic that Nattrass and Altomare call, "conscious competence" by integrating sustainability thinking so well into our day-to-day activities that sustainable development practices are taken for granted as the way things are done.[90] By true definition, the Army will most likely never achieve sustainability- a condition and philosophy comprising a global effort to preserve the earth for the well-being of future generations. However, as an organization, the Army can achieve sustainable development and institutionalize an invaluable ethic of sustainability that will positively impact a broad spectrum of thinkers and decision-makers throughout the DoD.

Organizations having successful sustainability ethics ensure the integration of economic, social, and environmental considerations in decision-making at all levels. They have strategic

frameworks that reflect long-term perspectives and employ cross-sectional approaches as the basis for decision-making. They consider the linkages between various political, economic, and environmental issues and impacts during the planning process. Successful organizations have a distinctive, readily identifiable culture that supersedes strategic and technological advantages. Army values, including the warrior ethos and the soldier's creed, are in agreement with the essence and purpose of the institution. A sustainability ethic is slowly integrating into existing Army values, a mind-set that is essential in order for the institutional Army to adapt to future operating environments.

Recommendations

The Army has successfully capitalized on a series of sustainability initiatives that have generated momentum towards a culture of sustainability. An ethic of sustainability will be institutionalized throughout the Army by a variety of means that shape culture as the concept matures. Integration methods are best introduced into existing organizational structure and business practices. To advance an ethic of sustainability throughout the transforming Army, efforts which successfully foster a sustainability culture need to continue. The ASE strategic plan outlines several initiatives to advance a culture of sustainability including training and education, leadership competencies, and inclusion of sustainability principles into Army doctrine.

In addition to these efforts, the Army would benefit from a coherent theory of success for achieving a culture of sustainability within its organization. At what point can the Army claim that their members value sustainability and demonstrate behaviors consistent with sustainability principles? Advancing a culture inclusive of sustainability requires the convergence of optimal individual, societal, and organizational conditions. An evolutionary and emergent process, value adoption cannot be determined solely by formal decisions.

Change agents and senior leaders should consider using value systems or attitudinal surveys to measure the trend of institutionalizing a culture of sustainability throughout the Army. Feedback will be most valuable for installations perceived to have difficulty teaching sustainability concepts and implementing sustainability initiatives. Data analyzed from surveys will identify roadblocks to cultural change.

One way to assist installations in the development of a sustainability culture is to make participation in the Army Community of Excellence Program (ACOE) mandatory for all Major Army Command (MACOM) installations. The preparation of an organizational report based on APIC accomplishes both positive tangible and intangible results. Although variable from year to

year, monetary awards for placing high in the competition have been substantial. For installations placing in the "honorable mention" category, the fact that a report was submitted for review demonstrates an organization's efforts to develop a performance based organization. Strategic planners can use the ACOE document as a roadmap to continually improve business processes during army transformation. It is an excellent outlet for introducing and encouraging senior leaders to think about all processes in their organization, including sustainable development and the creation of a sustainability ethic.

As the Army achieves a sustainability ethic, further recommendations can be made addressing joint capabilities. For example, the Army could serve as the executive agent for a Joint Service Sustainability Council (JSSC). The JSSC could formalize processes and requirements for institutionalizing sustainability concepts for all Armed Forces inclusive of doctrine, organization, training, materiel, leadership and education, personnel, and facility requirements.

> *The major problems in the world are the result*
> *of the differences between the way nature*
> *works and the way people think*
> *- Gregory Bateson*

ACCRONYMS DEFINED

ACOE	Army Community of Excellence Program
ACSIM	Army Assistant Chief of Staff for Installations Management
APIC	Army Performance Improvement Criteria
ASE	The Army Strategy for the Environment (October 2004)
BCT	Brigade Combat Team
CEQ	Council for Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CSD	United Nations Commission on Sustainable Development
DoD	Department of Defense
EMS	Environmental Management System
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FDA	Food and Drug Administration
FORSCOM	United States Army Forces Command
FSIS	Food Safety and Inspection Service
ISP	Installation Sustainability Program
JSSC	Joint Service Sustainability Council
MACOM	United States Army Major Command
NCSD	National Council on Sustainable Development
NEPA	National Environmental Protection Act
NPRG	National Partnership for Reinventing Government
OSHA	Occupational, Safety, and Health Administration
PCSD	Presidential Council on Sustainable Development
POM	Program Objective Memorandum
TNS	The Natural Step
UN	United Nations
UNCED	United Nations Conference on Environment and Development

BIBLIOGRAPHY

Army Leadership, Be, Know, Do, FM 22-100. Washington, D.C.: U.S. Department of the Army, August 1999.

Aburdene, Patricia, *Megatrends 2010: The Rise of Conscious Capitalism.* Charlottesville: Hampton Roads, 2005.

Anderson, Ray C. *Mid-course Correction: Towards a Sustainable Enterprise- The Interface Model.* White River Junction: Chelsea Green, 1998.

Archestra. Edited by Malcolm Ryder. 22 April 2005. Database online. Available: http//www.malcomryder.com/archives/2005/04/managing_strate.html: Internet. Accessed 12 September 2005.

Balta, Wayne, Vice President, Corporate Environmental Affairs, IBM International. Interview by author, 20 December 2005, phone conversation.

Blair, Margaret M. and Steven M.H. Wallman. *Unseen Wealth*. Washington, D.C: Brookings Institution Press, 2001.

Bossidy, Larry and Charan, Ram. *Execution.* New York, N.Y., Crown Business/Random House, 2002.

Carson, Rachel. *Silent Spring*. Boston: Houghton Mifflin, 1962.

Connor, Robin, and Stephen Dovers. *Institutional Change for Sustainable Development.* Northampton: Edward Elgar, 2004.

Dettmer, William H. *Strategic Navigation: A Systems Approach to Business Strategy.* Milwaukee: American Society of Quality Press, 2003.

Department of the Army Pamphlet 600-68, *Values, the Bedrock of our Profession*. White Paper, 1986. Washington D.C.: Government Printing Office, June 1986.

Doppelt, Bob. *Leading Change Towards Sustainability*. Sheffield UK: Greenleaf, 2003.

Dow Jones Sustainability Indexes. Zurich, Switzerland, 2003. Database online. Available from http://www.sustainability-indexes.com. Accessed 5 October 2005.

Dresner, Simon. *The Principles of Sustainability*. London: Earthscan, 2002.

Edwards, Andres R. *The Sustainability Revolution: Portrait of a Paradigm Shift.* Gabriola Island: New Society, 2005.

Environmental Analysis of Army Actions; Final Rule. Federal Register, 32 CFR Part 651. Washington, D.C.: U.S. Government Printing Office, 2002.

Environmental Quality-1980. Washington, D.C.: U.S. Government Printing Office, 1980.

Fogg, C. Davis. *Implementing Your Strategic Plan: How to Turn "Intent" into Effective Action for Sustainable Change.* New York: American Management Association, 1999.

Fullan, Michael. *Leadership & Sustainability: System Thinkers in Action.* Thousand Oaks: Corwin Press, 2005.

Gibson, Robert B., *Sustainability Assessment: Criteria, Processes and Applications.* London: Earthscan, 2005.

Gladwell, Malcolm. *The Tipping Point, How Little Things Can Make a Big Difference.* New York: Little, Brown and Company, 2002.

Glenn, Jerome C. and Theodore J. Gordon. *2005 State of the Future.* Washington, D.C.: American Council for the United Nations University, 2005.

Glenn, Jerome C., Theodore J. Gordon, and Renat Perlet. *Defining Environmental Security: Implications for the U.S. Army.* Army Environmental Policy Institute, AEPI-IFP-1298,1998.

Harvard Business Review on Business and the Environment. Boston: Harvard Business School Press, 2000.

Harvard Business Review on Culture and Change. Boston: Harvard Business School Press, 2002.

Hendricks, Stephenie. *Divine Destruction: Wise Use, Dominion Theology, and the Making of American Environmental Policy.* Hoboken: Melville House, 2005.

Henriques, Adrian, *The Triple Bottom Line, Does It All Add Up? Assessing the Sustainability Business and CSR.* London: Earthscan, 2004.

History of the National Partnership for Reinventing Government, Accomplishments, 1993-2000. Database on-line. Available from http://govinfo.library.unt.edu/npr/whoweare/appendixf.html.

Kaplan, Robert S. and David P. Norton. *The Strategy Focused Organization.* Boston: Harvard Business School, 2001.

Laszlo, Chris. *The Sustainable Company.* Washington, D.C: Island Press, 2003.

Lovins, Hunter, *The Next Sustainability Wave: Building Boardroom Buy-In (Conscientious Commerce).* Gabriola Island: New Society, 2005.

Mansdorf, Zach. "*What is Your Role in Sustainable Development*?" Occupational Hazards 60 (1998): 33-35. Database on-line. Available from http://proquest.umi.com/pqdweb? Accessed 11 November 2005.

McCall, Thomas, Consulting Fellow. U.S. Army Environmental Policy Institute. Interview by author, date, Arlington, VA.

Michaels, Ed. "The War for Talent." Interview by Charles Fishman. *Fast Company,* issue 16 (August 1998): 104. Available from http:/www.fastcompany.com/magazine/16/mckinsey.html. Accessed 16 December 2005.

Moss, COL James A., *Officers' Manual*. Menasha: George Banta, 1943.

Nash, James L. *"*Beyond Compliance: the Sustainability Challenge.*"* Occupational Hazards 62 (2000): 38-40. Database on-line. Available from http://proquest.umi.com/pdqweb? Accessed 3 December 2005.

National Environmental Policy Act of 1969. Washington D.C.: Government Printing Office, 1970.

National Military Strategy of the United States of America. Washington, D.C.: The White House, 2004.

Nattrass, Brian, and Mary Altomore. *The Natural Step for Business: Wealth, Ecology and the Evolutionary Corporation.* Gabriola Island: New Society, 1999.

Nattrass, Brian, and Mary Altomore. *Dancing with the Tiger, Learning Sustainability Step by Natural Step.* Gabriola Island: New Society, 2002.

Phillips COL, Jeffery, Chief, Sustainability Division, ACSIM-ODEP, U.S. Army. Interview by author, 4 November 2005, Arlington, Virginia.

President's Council on Sustainable Development, *Towards a Sustainable America: Advancing Prosperity, Opportunity, and a Healthy Environment for the 21st Century.* Washington, D.C.: The White House, 1999. Available from http://clinton2.nara.gov/PCSD/Publications/TF_Reports/amer-intro.html. Accessed 2 November 2005.

Pressman, Jeffrey and Aaron Wildavsky, *Implementation.* Los Angeles: University of California Press, 1984.

Profile of the U.S. Army- a Reference Handbook 2005. Arlington: Institute of Land Warfare, Association of the United States Army, 2005.

Ray, Paul H. and Sherry Ruth Anderson, *Cultural Creatives.* New York: Three Rivers Press, 2000.

Robert, Karl-Henrik, MD., "The Natural Step to a Sustainable Future." Available from http//www.newdimensions.org/online-journal/articles/natural-step.html. Accessed 21 September 2005.

Schien, Edgar H., *Organizational Culture.* Englewood Cliffs: Prentice Hall, Inc., 1980.

State of the World 2005, Washington D.C.: Worldwatch Institute, 2005.

Steger, Ulrich, ed. *The Business of Sustainability.* New York: Palgrave Macmillan, 2004.

Steucke, Paul, Director, Fort Lewis Sustainability Program, Interview by the author, 4 November 2005, Arlington, Virginia.

"A Sustainable Army." U.S. Army Sustainability. 17 March 2005. Available from http://www.sustainability.army.mil. Accessed 14 September 2005.

"Sustainability…Explained and Applied, An Air Force Perspective." *The Air Force Center fo Environmental Excellence*. Available from http://www.afcee.brooks.af.mil/products/so/docs/overview.doc. Accessed 13 September 2005.

Sustainability Planning, A Mulit-Service Assessment 1999. Alexandria: EDAW, Inc., 1999.

The Army, Field Manual 100-1. Washington D.C.: U.S. Department of the Army, August 1981.

The Army, Field Manual 100-1. Washington D.C.: U.S. Department of the Army, August 1986.

The Army, Field Manual 100-1. Washington D.C.: U.S. Department of the Army, August 1991.

The Army, Field Manual 100-1. Washington D.C.: U.S. Department of the Army, August 1994.

The Army, Field Manual 1. Washington D.C.: U.S. Department of the Army, June 2001.

The Army, Field Manual 1. Washington D.C.: U.S. Department of the Army, April 2005.

The Army Strategy for the Environment. Washington D.C.: Office of the Assistant Secretary of the Army for Installations and Environment, 2004.

The Bedrock of Our Profession. White Paper 1986, Department of the Army Pamphlet 600-68. Washington D.C.: Department of the Army, June 1986.

The Bible. American Standard Version.

The National Security Strategy of the United States of America. Washington D.C: The White House, 2002.

Uhl, Christopher. *Developing Ecological Consciousness: Paths to a Sustainable Future.* Lanham: Rowman & Littlefield, 2003.

United Nations Division for Sustainable Development, Commission on sustainable Development. 30 August 2005. Available from http://www.un.org/esa/sustdev/csd/csd.htm. Accessed 16 November 2005.

United Nations Division for Sustainable Development. Documents, *Agenda 21.* 22 September 2005. Available from http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21toc.htm. Accessed 16 November 2005.

U.S. Army Environmental Strategy Into The 21st Century. Washington D.C.: Office of Environment, Safety, and Occupational Health,1992.

Willard, Bob, *The Next Sustainability Wave.* Gabriola Island: New Society, 2005.

Willard, Bob, *The Sustainability Advantage: Seven Business Case Benefits of a Triple Bottom Line.* Gabriola Island: New Society, 2002.

World Commission on Environment and Development. *Notes on Our Common Future.* Conceptual Reference Database. Available from http://alcor.concordia.ca/~raojw/crd/reference/reference001377.html. Internet. Accessed 23 October 2005.

World Commission on Environment and Development. *Our Common Future.* Oxford: Oxford University Press, 1987.

ENDNOTES

[1]*Sustainable Planning, A Multi-Service Assessment, 1999* (Alexandria: EDAW, Inc., 1999), 13.

[2]Ibid.

[3]Gen. 1:27-29 ASV (American Standard Version).

[4]Stephenie Hendricks, *Divine Destruction: Wise Use, Dominion Theology, and the Making of American Environmental Policy* (Hoboken: Melville House, 2005), 27.

[5]*National Environmental Policy Act of 1969* (Washington, D.C.: U.S. Government Printing Office, 1970), 1.

[6]World Commission on Environment and Development, *Notes on Our Common Future* (Conceptual Reference Database, accessed 23 October 2005), available from http://alcor.concordia.ca/~raojw/crd/reference/reference001377.html; Internet.

[7]The World Commission on Environment and Development, *Our Common Future* (Oxford: Oxford University Press, 1987), 43.

[8]Robin Conner and Stephen Dovers, *Institutional Change for Sustainable Development* (Northampton: Edward Elgar, 2004), 31.

[9]Ibid., 203.

[10]Rachel Carson, *Silent Spring* (Boston: Houghton Mifflin, 1962), ii.

[11]Other noted works include: William Longgood, *The Poisons in Your Food*, 1960; Murray Bookchin, *Our Synthetic Environment*, 1962; and John Keneth Galbraith, *The Affluent Society*, 1958.

[12]Andres R. Edwards, *The Sustainability Revolution: Portrait of a Paradigm Shift* (Gabriola Island: New Society, 2005), 14.

[13]Ibid., 14-15.

[14]Karl-Henrik Robert, M.D., Ph.D., *Advisory Team Biography* (accessed 8 January 2005) available from http://www.interfacesustainability.com/robert.html; Internet.

[15]Bob Doppelt, *Leading Change Toward Sustainability* (Sheffield UK: Greenleaf, 2003), 44.

[16]Andres R. Edwards, *The Sustainability Revolution* (Gabriola Island: New Society, 2005), 18.

[17]Ibid.

Additional documents produced by *Agenda 21* include: a climate treaty, a biodiversity treaty, a declaration of support for forests, and the Rio Declaration on Environment and Development.

[18]Connor and Dovers, 132.

[19]United Nations Division for Sustainable Development, Commission on Sustainable Development (30 August 2005, accessed 16 November 2005): available from http://www.un.org/esa/sustdev/csd/csd.htm; Internet.

[20]United Nations Division for Sustainable Development. Documents, Agenda 21. (22 September 2005, accessed16 November 2005); available from http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21toc.htm; Internet.

[21]Jerome C. Glenn and Theodore S. Gordon, *2005 State of the Future* (Washington, D.C.: American Council for the United Nations University, 2005), 2.

[22]Adrian Henriques and Julie Richardson, eds., *The Triple Bottom Line: Does It All Add Up?* (London: Earthscan. 2004) 9.

[23]*Environmental Quality-1980*, (Washington, D.C.: U.S. Government Printing Office, 1980) 426.

[24]Ibid.

[25]*Environmental Analysis of Army Actions; Final Rule*, Federal Register, 32 CFR Part 651, (Washington, D.C.: U.S. Government Printing Office, March 2002) 15299.

[26]Ibid., 15299-15230.

[27]Alvin L. Alm, "NEPA: Past, Present, and Future," U.S. Environmental Protection Agency, (accessed 2 March 2005) available from http://www.epa.gov/history/topics/nepa/01.htm; Internet.

[28]Ibid.

[29]Paul T. Anastas and John C. Warner, *Green Chemistry: Theory and Practice* (Oxford: Oxford University Press,1998), 5.

[30]*Wikipedia*, s.v. "Clean Air Act" (encyclopedia on-line, accessed 4 April 2006) available from http://en.wikipedia.org/wiki/Clean_air_act; Internet.

[31]Wikipedia, s.v. "Superfund" (encyclopedia on-line, accessed 4 April 2006) available from http://en.wikipedia.org/wiki/Superfund; Internet.

[32]Ibid.

[33]*U.S. Army Environmental Strategy Into The 21st Century*, (Washington, D.C.: 1992) 2.

[34]Ibid., 17.

³⁵Ibid.

³⁶*Digest of Federal Resource Laws of Interest to the U.S. Fish and Wildlife Service.* (accessed 10 December 2005) available from http://www.fws.gov/laws/lawsdigest/eoindex.html; Internet.

³⁷*Towards a Sustainable America: Advancing Prosperity, Opportunity, and a Healthy Environment for the 21ˢᵗ Century,* prepared by The President's Council on Sustainable Development (Washington D.C.: 1999) Introduction, 1.

³⁸Connor and Dovers, 146.

³⁹*History of the National Partnership for Reinventing Government, Accomplishments, 1993-2000* (Government Information Library, January 2001, accessed 6 Nov 2005), available from http://govinfo.library.unt.edu/npr/whoweare/appendixf.htlm; Internet.

⁴⁰Ibid.

⁴¹David Rubenson, et al, *Does the Army Have a National Land Use Strategy?* (Rand Corporation, 1999 accessed 4 April 2006), available from http://www.rand.org/pubs/monograph_reports/MR1064/MR1064.appa.pdf; Internet.

⁴²*Profile of the U.S. Army, a Reference Handbook 2005* (Arlington*:* The Association of the United States Army, 2005), 67.

⁴³ U.S. President, Executive Order, *Greening Government Through Leadership in Environmental Management,* Executive Order 13148, April 2000 (accessed 3 March 2006), available from http://ceq.eh.doe.gov/nepa/regs/eos13148.html; Internet.

⁴⁴ Raymond J. Fatz, *Policy Letter,* (Washington, D.C.: Department of the Army, Office of the Assistant Secretary Installations and Environment, 13 July 2001).

⁴⁵Paul Steucke, Director, Fort Lewis Sustainability Program, interview by author, 4 November 2005, Arlington, Virginia 22202.

⁴⁶*The Army Strategy for the Environment,* (Washington, D.C.: Office of the Assistant Secretary of the Army for Installations and Environment, 2004).

⁴⁷Ibid.

⁴⁸Ibid.

⁴⁹*The Army*, Field Manual 1 (Washington, D.C.: U.S. Department of the Army, June 2005), 1-21.

⁵⁰Ibid., 1-62.

⁵¹Colonel James A. Moss, United States Army, Officers' Manual (Menasha: George Banta, 1943), 551.

[52]Ibid.

[53]*The Army*, Field Manual 100-1, (Washington D. C.: U.S. Department of the Army, August 1981), 23.

[54]*The Bedrock of our Profession,* White Paper 1986, Department of the Army Pamphlet 600-68 (Washington, D.C.: U.S. Government Printing Office, 1986), 1.

[55]*The Army*, Field Manual 100-1, 1-16.

[56] *The Army*, Field Manual 100-1, 1-16.

[57] *The Army*, Field Manual 100-1, 2-9, 2-10.

[58]Lt. Gen David W. Barno, "Army Installations-Hometowns of Combat Power," *Army Magazine*, October 2005, 196.

[59]Ibid.

[60]Karen J. Baker, "The 4C Concept: Improving Army Public Involvement to Achieve Sustainability," *Federal Facilities Environmental Journal*, Autumn 2005, 123.

[61]Yoash Wiener, "Forms of Value Systems: A Focus on Organizational Effectiveness and Cultural Change and Maintenance," *Academy of Management Review*, 13, 534.

[62]Edgar H. Schien, *Organizational Cultural Perspective and Leadership* (Englewood Cliffs: Prentice Hall, Inc., 1992), 12.

[63]*Army Leadership, Be, Know, Do,* Field Manual 22-100 (Washington D.C.: U.S. Department of the Army, August 1999), 3-58.

[64]Michael D. Lemonick, "Cleaner Air Over Scandinavia" *Time*, 3 April 2006, 47.

[65]Davis C. Fogg, *Implementing Your Strategic Plan: How to Turn 'Intent' into Effective Action for Sustainable Change* (New York: American Management Association, 1999), 245.

[66]Doplett, 212.

[67]*The Army*, Field Manual 1, 8.

[68]Doppelt, 92.

[69]Melissa Dittmann Tracey, "Crafting Persuasive Pro-environmental Messages," *Monitor on Psychology* 36, no. 9 (2005): 45.

[70]Donald N. Sull, "Why Good Companies Go Bad," *Harvard Business Review on Culture and Change* (Boston: Harvard Business School Press, 2002), 85.

[71]Ibid., 91.

[72]Schien, 2.

[73]Donald N. Sull, "Why Good Companies Go Bad," *Harvard Business Review on Culture and Change* (Boston: Harvard Business School Press, 2002), 104.

[74]Paul H. Ray and Sherry R. Anderson, Ph.D., *The Cultural Creatives* (New York: Three Rivers Press, 2000), xi.

[75]Debra E. Meyerson, "Radical Change, the Quiet Way," *Harvard Business Review on Culture and Change* (Boston: Harvard Business School Press, 2002), 59.

[76]Kim Cameron and Robert E. Quinn, *Diagnosing and Changing Organizational Culture* (Reading: Addison Wesley , 1999), 4.

[77]Dopplet, 139

[78]Dopplet, 139.

[79]Andres R. Edwards, *The Sustainability Revolution* (Gabriola Island: New Society, 2005), 40.

[80]Doppelt, 176.

[81] *Sustainable Planning, A Multi-Service Assessment, 1999*, 81.

[82]Phil Jessup, Headquarters, Installation Management Agency, Interview by author, 30 January 2006, Arlington, Virginia 22202.

[83]Doppelt, 167.

[84]Doppelt, 167.

[85]Doppelt, 194.

[86]A*rmy Performance Improvement Criteria* (US Army, 2004), 64.

[87]Ibid., 66.

[88]Weiner, 536.

[89]Paul H. Ray and Sherry R. Anderson, Ph.D., *The Cultural Creatives* (New York: Three Rivers Press, 2000), *ix.*

[90]Brian Nattress and Mary Altomare, *Dancing With the Tiger* (Gabriola Island: New Society, 2002), 36.