

## **REVIEW OF LITERATURE**

The term sustainable development has been around for over a decade now and yet many are still struggling with what sustainable development means. There are numerous definitions, although, a recent study concluded that about a third of the people surveyed preferred the Bruntland Commission's definition. The Bruntland Commission defined sustainable development as "development that meets the needs of the present without compromising the ability of the future to meet its own needs" (Cartwright, 2000; WCED, 1987). This definition of sustainable development implies that our current means of addressing design issues are not sustainable. Mike Pease had an interesting, and I believe accurate, assessment of comparing sustainability with our increasing awareness of the earth as a whole system, "we are beginning to see the long-term, global picture, and we are afraid" (Places 1995). While many have debated or attempted to redefine this definition to increase or narrow its scope, it is questionable that anyone has been able to articulate another definition that is more idealized than this one – and further more why should we?

### **Importance of Sustainable Development**

As the sustainable development definition suggests, there are numerous dynamics that influence sustainable development. Understanding these dynamics is important because as Pease eluded, the global future is daunting. The challenges that provoke such apprehension are issues such as global population, food stock, limited resources, environmental pollution, social disintegration, economic viability, crime and violence, and unmanaged growth. Geis and Kutzmark view these challenges as "either our shared doom or as our common call to action, a universal opportunity to change, improve, and optimize" (Geis and Kutzmark, internet). These ideas and concepts are integrally relevant and important to landscape architecture. To verify this

importance to landscape architecture, one can look at the principles in ASLA's Declaration on Environment and Development<sup>1</sup>.

### **Sustainable Development Theory**

The theoretical underpinning for sustainable development relates to issues concerning our Environment, our Society, and our Economy (Cartwright, 2000; Gurung, 1999; Mukoko, 1996; White, 1996; Gangloff, 1995). The Environment provides resources that every living inhabitant on earth is dependent, from clean water and air to sunlight. While the environment supplies resources for all living organisms, the human species is the largest consumer of these resources. Global resource use is increasing annually at a rate of 5.5 percent. Many of the resources that are used are nonrenewable and their supply will eventually be exhausted. For example, supplies of oil are expected to be exhausted in approximately 40 years, if current consumption rates continue. The erosion rate of topsoil is currently exceeding its ability to regenerate on roughly one-third of the planet's cropland; potentially this is more detrimental than our dwindling oil supply (Wilson, 1996).

Currently, emissions of carbon are exceeding the rate at which it can be stored, consequently increasing the likelihood of global warming. In 1994, 5,925 million tons of carbon was released into the atmosphere as a result of burning fossil fuels. This number is even more startling when compared to 1960 emissions of 2,543 million tons, an increase of approximately 230 percent (Wilson, 1996). With development continuing to sprawl with unimpeded vigor in most regions, the affects on the environment will continue to increase. Along with the environmental component, the factors concerning the social and economic cogs are equally important.

The Social aspect of sustainable development is concerned with issues such as diversity, lifestyle, health, and population. There are approximately 5.8 billion people inhabiting the planet, and it is predicted that our global population will double during the next fifty years (Beatley, 1994). Currently, one out of every five persons on the planet are desperately poor, 40 million of these people die each year as a result of malnutrition and accompanying diseases. Diversity and lifestyle are issues that affect the sustainability of the planet. Industrialized countries consume about 88 percent of the natural resources on earth, and use 73 percent of its energy. While industrialized countries consume the majority of energy and resources, they constitute only 22 percent of the global population (Wilson, 1996).

With increasing world economies, an elevated standard of living is emerging that will require dwindling resources to be thinly distributed; potentially leading to economic strife not only in the Third-World, but at home as well. Two primary issues that must be considered are economic equality and natural capital<sup>ii</sup>. The idea of economic equality is not a novel thought, but rather how one achieves this concept has so far eluded us. Rising expectations in the standard of living for industrialized and non-industrialized countries will further degrade the environment and the social structure and lead to an even greater economic inequality. Still, a primary economic goal should be to strive to achieve economic equality. While economic equality may be elusive, protecting and enhancing the earth's Natural Capital is an attainable objective.

Economic factors are the driving force behind many of the decisions that are made, and they affect our lives on a daily basis. While economic factors are an important component in achieving sustainable development, they do not occur in isolation. To meet the challenges and demands that we are confronted with, presently and in the future, we must adopt a more sustainable approach towards the way we live, and therefore, the way in which we design. If

these factors are to be addressed in a holistic manner, then landscape architecture can and should play a pivotal role in this endeavor.

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<sup>i</sup> ASLA's Declaration on Environment and Development Principles

The health and well-being of people, their cultures and settlements; of other species; and of global ecosystems are interconnected, vulnerable, and dependent on each other.

Future generations have a right to an environment with at least the same qualities and quantities of environmental assets as present generations.

Long-term economic progress and the need for environmental protection must be seen as mutually interdependent.

Environmental and cultural integrity must be maintained even while sustaining human well-being and the level of development needed to achieve it.

Human harmony with the environment is the central purpose of sustainable development, ensuring health for both nature and humankind.

In order to achieve sustainable development, environmental protection and ecological function must be integral parts of the development process.

Developed countries must acknowledge the responsibility that they bear to pursue internal and international sustainability in view of the pressures their societies place on the global environment. Since the landscape encompasses the basic processes that support life, meeting human needs require a healthy landscape. Since the landscape is a living complex, always in the flux of growth and decay, a healthy landscape requires ongoing regeneration. There is no sustainability without regeneration. Nurturing the processes of regeneration and self-renewal in the world's healthy landscape as and reestablishing these in the vast areas of the world's degraded landscapes are fundamental purposes of the profession of landscape architecture.

<sup>ii</sup> Paul Hawken describes natural capital as "resources used by humankind, such as water, minerals, oil, trees, fish, soil, air, etcetera, but also encompasses living systems, including grasslands, savannas, wetlands, estuaries, oceans, coral reefs, riparian corridors, tundra's, and rainforests" (Hawken et al, 1999). Essentially, natural capital is the backbone of our life support systems and thus should be valued as such.