

# Appendix C

## Sustainability Definitions

### Origins of Sustainability

According to Neuman (2005), sustainability is “a debate about how to live” (Neuman 2005, 17). If this is true, then policy makers, urban planners, architects, and others have debated sustainability, and the related concept of sustainable development, for centuries. However, the term itself, used in the context in which it is used today, can be traced back to a report issued by the Club of Rome in 1972 called *The Limits to Growth*. In this document, the authors concluded that “if the present growth trends in world population, industrialization, pollution, food production, and resource depletion continue unchanged, the limits to growth on this planet will be reached sometime within the next one hundred years...It is possible to alter these growth trends and to establish a condition of ecological and economic stability that is sustainable far into the future” (Meadows et al. 1972, 23-24). In 1980, a similar report, the *World Conservation Strategy*, issued by the International Union for the Conservation of Nature (IUCN) for the United Nations Environment Programme (UNEP) and the World Wildlife Fund (WWF) also called for sustainable development, which it believed could be achieved through “the conservation of living resources” (IUCN 1980, iv).

Despite the attention brought by these two documents to the concept of sustainable development, it remained relatively unimportant in policy discussions. Not until the publication of *Our Common Future*, the report of the World Commission on Environment and Development (also known as the Brundtland Commission, after Gro Harlem Brundtland, the chairwoman of the commission) in 1987 did the term gain widespread attention among international, national, and local organizations (Wheeler and Beatley 2009, 59). The report created what is perhaps the best-known definition of sustainable development: development that “meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development 1987). While this report certainly had implications for urban growth and development, the link between cities and sustainable development was strengthened in 1992 during the UN Conference on the Environment

and Development held in Rio de Janeiro (also known as the Earth Summit) (World Bank 2011, 22).

During the Earth Summit, the United Nations issued two important documents. The first, the Rio Declaration, set out a number of ways in which UN member nations and affiliated international organizations could work to promote sustainable development (Wheeler and Beatley 2009, 72). The second, known as Agenda 21, emerged as a framework for a new system of sustainable urban development that was efficient, equitable, rational and enduring (World Bank 2011, 22). Among other things, it encouraged human settlement patterns that improved “the social, economic and environmental quality of human settlements” (UNCED 1992, 7.4).

### Proliferation of Concepts and Definitions

While these reports and conferences were successful in bringing attention to the need for a change in how humans approached development, they were largely unspecific about how to define, measure, and implement sustainable development. Generally, sustainable development points to the need to ensure current development does not compromise the development potential of future generations, and to take into account economic, social, and environmental costs and benefits. There is little consensus about which one of these aspects is most important, which indicators or metrics best measure sustainability, or even which models of urban development are the most sustainable. As a result, there has been a proliferation of various, and sometimes competing, ideas about what constitutes sustainable development and how it should be operationalized and measured (Parris and Kates 2003, 13.2; Neuman 2005, 17).

Neuman (2005) divides ideas of sustainable development into five distinct intellectual

traditions, which help one to understand the variety of ways in which the term can, and has, been used. They are:

- **Capacity:** Capacity refers to the extent to which a place can support living things (Neuman 2005, 17). Also known as carrying capacity, it borrows directly from ecology, where it is defined as the “limit at which populations can be maintained by their habitat without being restricted by food, water, land, disease, or predation and without compromising their habitat’s capacity to support that population” (Elton 1927, cited in Neuman 2006, 17). *Limits to Growth* was concerned about the capacity of the earth to support human life. Similar concepts include ecological footprints.
- **Fitness:** Fitness “implies an evolutionary process marked by the mutual interaction between species and environment” (Neuman 2005, 18). In urban development, it implies that there is, and must be, a relationship between development and the environment, that development and the human systems that come with it should fit into existing environmental and ecological systems (Neuman 2006, 18). At the same time, this development also needs to be compatible with local cultures and customs.
- **Resilience:** Resilience has quickly become the latest buzzword in urban development. It is a concept borrowed from public health, and describes how well a city or community is able to adapt to or absorb sudden shocks or changes while still functioning as it did before (Neuman 2006, 18). It also refers to the ability of the city or community to recover once the shock ceases to affect it. This concept is increasingly important to consider as predictions of climate change indicate an increase in the frequency and severity of weather-related events.

**Table C.1 Sustainability definitions**

Definitions of Sustainability	Sustainability Traditions	Agency/Source
<p>“Sustainability is based on a simple principle: Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations. Sustainability is important to making sure that we have and will continue to have the water, materials, and resources to protect human health and our environment.”</p>	Capacity, balance, fitness, resilience	United States Environmental Protection Agency (2014) <sup>1</sup>
<p>“Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”</p>	Balance, capacity	World Commission on Environment and Development (1987) <sup>2</sup>
<p>“Sustainable development means that the needs of the present generation should be met without compromising the ability of future generations to meet their own needs...It is about safeguarding the earth’s capacity to support life in all its diversity and is based on the principles of democracy, gender equality, solidarity, the rule of law and respect for fundamental rights, including freedom and equal opportunities for all. It aims at the continuous improvement of the quality of life and well-being on Earth for present and future generations. To that end it promotes a dynamic economy with full employment and a high level of education, health protection, social and territorial cohesion and environmental protection in a peaceful and secure world, respecting cultural diversity.”</p>	Capacity, balance, resilience, diversity	Sustainable Development Strategy of the European Union (2006) <sup>3</sup>
<p>“Using, conserving and enhancing the community’s resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.”</p>	Capacity, fitness	Australian National Strategy for Ecologically Sustainable Development (1992) <sup>4</sup>
<p>“Social sustainability stems from actions in key thematic areas, encompassing the social realm or individuals and societies which ranges from capacity building and skills development to environmental and spatial inequalities. In this sense, social sustainability blends traditional social policy areas and principles, such as equity and health, with emerging issues concerning participation, needs, social capital, the economy, the environment, and more recently with the notions of happiness, wellbeing and quality of life.”</p>	Diversity, resilience	Oxford Institute for Sustainable Development (2011) <sup>5</sup>

Sources: 1. United States EPA 2014; 2. World Commission on Environment and Development 1987; 3. Council of the European Union 2006, 2; 4. Australian Government Department of Environment 1992; 5. Woodcraft et al. 2011, 16.

- **Diversity:** Like sustainability, diversity is a broad topic, and can range from protecting biodiversity of natural areas, to promoting a mix of land uses, or by encouraging the integration of various social and income groups (Neuman 2005, 19). Usually, diversity relates directly to the social or equity aspects of sustainability. Participation and empowerment of all citizens in decision-making processes is another important aspect.
- **Balance:** Balance is perhaps one of the most important of these five topics, as it is present in so many discussions about sustainability. In one sense, it refers to the balance between the natural environment and human development (Neuman 2006, 19), a dynamic inherent to the ideas set forth in the *World Conservation Strategy* and the Rio Declaration. However, balance is also present in decisions related to the economic, social, and environmental aspects of sustainability, as well as in the main ideas of the Brundtland report, to balance the needs of today with those of tomorrow (Neuman 2006, 19). Parris and Kates (2003) refer to this balance as a decision about what is to be sustained and what is to be developed (Parris and Kates 2003, 13.2).

While some conceptions of sustainable development fall neatly into one of these five categories, as Table C.1 shows, it is far more common for considerable overlaps between two or more of these categories to exist (Neuman 2006, 20). The breadth and variation that exists within concepts and definitions of sustainability are both a strength and a weakness (Blair et al. 2002, 3). It is good that a topic that is “a debate about how to live” considers and is open to such a wide range of voices. However, the uncertainties about what is sustainable development can frustrate policy makers and activists eager to affect and create

change in the way development is approached. What concepts organizations choose to include in their definition of sustainability is largely a reflection of their objectives, priorities, and organizational purpose (Parris and Kates 2003, 13.3).

### Other Terms Related to Sustainable Development

Just as there has been a proliferation of conceptions of sustainable development, there has also been a proliferation of terms that, while not specifically containing the word sustainable or sustainability, are still related. These topics include: ecological footprints, energy efficiency, renewable resources, resilience, carbon footprints, quality of life, smart growth, and human development. These focus on both ecological and social concerns.