



A SUSTAINABILITY POSTSCRIPT

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Since its introduction by the Brundtland Commission in 1987, sustainable development has proven to be an enduring if elusive concept. Borrowed from natural resource management, sustainability has been incorporated into many planning and implementation procedures. Both the goal and the practice of managing a fishery or a forest sustainably so that it continues to produce fish or fiber indefinitely into the future while permitting humans to harvest a portion each year seems fairly straightforward. But meeting the needs of the present generation while not compromising the ability of future generations to meet their needs is a much more difficult concept to grasp.

Sustainable development was introduced in part to break down the unproductive debate over inevitable trade-offs between environment and development. In arguing that a sound environment is the basis for economic development, but that an adequate level of economic development is needed before human societies can maintain environmental quality, *Our Common Future* clearly succeeded in shifting the focus of discussion. In their recent book, *Financing Change*, Steven Schmidheiny and Frederico Zorraquin argue that sustainable development is a goal for society as a whole to which industry's contribution is to produce goods in an eco-efficient manner. Even being eco-efficient, the authors point out, may be insufficient to provide a sustainable society if even the best practices possible exceed the capacity of the environment to absorb the wastes or provide the raw materials of industrial production.

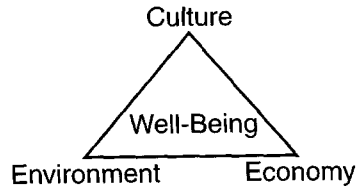
When considering sustainability in the urban context, it is clear that one is considering something other than the production of natural resources or industrial goods. A sustainable urban society must be one that does not deplete the natural resource base upon which it draws its sustenance. In some sense, it must, like industry, be eco-efficient, but something more that economics and environment need to be considered.

The needs of an individual, whether a member of the present or some future generation, must be met in order to provide some level of well-being above that of bare subsistence. In fact some critics of sustainability argue that sustainability represents too low a level of aspiration for human society. Let me suggest that it is the ongoing maintenance of some level of well-being for individuals that is the real goal of sustainable development. In order to achieve this goal, individuals join together in some sort of social

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structure and create both a culture and an economy within a particular natural environment. For urban societies, culture is the local characteristic that shapes the processes by which its members structure their economy and their relationship to the environment.

It is convenient to consider culture, economy, and environment as three corners of a sustainability triangle which encloses well-being.



Each edge of the triangle now becomes a familiar tension. The base represents the traditional debate between economic-environment trade-offs. Being at either end of the line, as some have advocated, represents a situation where that factor is the only one that matters. For example, some environmentalists argue that environmental quality should be maintained regardless of cost. Their view is at the lower left vertex of the sustainability triangle. Similarly, some economists argue that the needs of the economy are the dominate needs of society, and for example free markets or free trade become ends in themselves. This view is localized at the lower right vertex. In some societies, culture becomes the dominant value, and both environment and the economy are sacrificed in order to achieve some degree of cultural dominance. This view is localized in the neighborhood of the apex of the sustainability triangle. The culture-economy edge represents the tension that can occur when a society decides to assert its cultural autonomy or its own language at the expense of economic gain, and the culture-environment edge represents the linear tension that might occur with the continued taking of a species for historical or cultural reasons even though that species is on the brink of extinction. Scott Campbell (1996) has developed a similar planning triangle.

What I would argue is that being near a vertex or along just one edge of the triangle will not produce a state of well-being, and is certainly not sustainable. Well-being is represented by the area enclosed within the plane of the triangle, and requires the presence of a successfully functioning culture, a sound economy, and an intact environment that is capable of delivering natural resources and ecosystem services. Promoting well-being in a sustainable fashion requires that a society be located somewhere in the interior of the triangle. Just where will depend upon the values of the society, the effectiveness of the economy, and the conditions imposed by the environment.

A society that chooses to exploit its resources at too high a rate in order to raise economic value in the short run will surely not be able to sustain the well-being of its members. Certainly, this is what has happened in recent years to many communities that have traditionally depended upon the

exploitation of forests and fish. The collapse of the North Atlantic fisheries during the past decade, the closing of saw mills in Michigan earlier in this century, or the shutting down of coal mines in Britain are real-world examples of the unsustainable use of natural resources. Inefficient economies are not only environmentally destructive but may also collapse, as has occurred in parts of Eastern Europe in recent years. Societies that live at a subsistence level, on the other hand, often fail to enjoy a sense of well-being, and when their numbers increase beyond the carrying capacity of their region, the environmental losses assure that such a lifestyle is not sustainable. There is an asymmetry among these elements of sustainability. Unlike man-made laws, the rules of ecosystems may be effectively used by society, but they are not negotiable. Culture is the mediator between humans and their environment and among members of society. Sometimes elements of society or their leaders will elevate culture to a dominant position either through ideology, ethnicity, or nationalism, usually with disastrous consequences for societal sustainability. The tragic consequences of localizing around the culture vertex are all too apparent to the people of Bosnia and Rwanda.

Achieving urban sustainability requires us to locate ourselves somewhere within the sustainability triangle. Just where and with what balance among culture, economy, and environment will depend upon who we are and where we are located geographically. An understanding of politics, economics, and ecology are essential to navigating within the space defined within the triangle.

It is interesting to realize just how enduring cities can be. Nation states and their boundaries ebb and flow; yet urban centers continue to persist. Rome was not founded in a nation called Italy, nor is Moscow still the capital of the Soviet Union. Yet these ancient cities remain viable through their multiple political and technological transformations. Even the concept of cities is being transformed, and one has to wonder if the rapidly growing mega-cities of the developing world are sustainable. Yet there is hope in new approaches like those pioneered in Curitiba, Brazil, which demonstrate how a conscious attempt to utilize environmental and economic principles in a culture of shared responsibility can improve well-being, hopefully not only for the present, but for long-term future generations as well.

References

- Campbell, S. 1996. Green cities, growing cities, just cities? *Journal of the American Planning Association* 62(3):