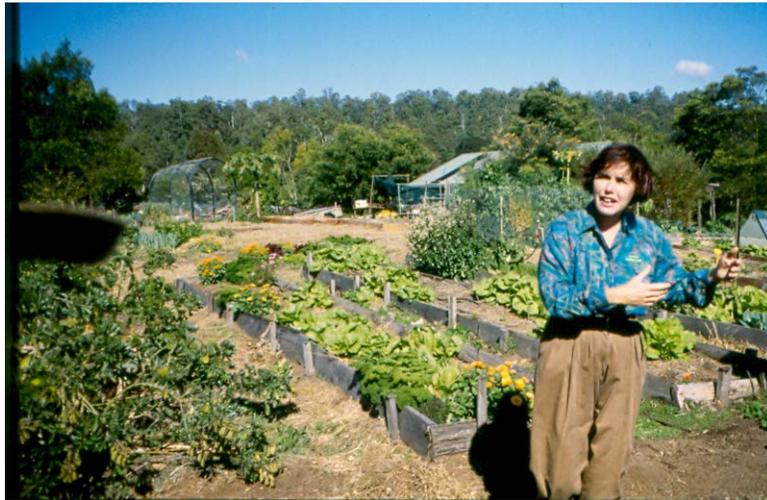


# Sustainability



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SUSTAIN: To keep someone or something alive or in existence – *American Heritage*

The elusive concept of “sustainability” has become a sort of collective mantra at the dawning of the 21<sup>st</sup> century; yet, like all popular but relatively ambiguous terms (including ‘love’ or ‘quality of life’) it can mean different things to different people depending on the context of the discussion and one’s inherent values and goals. In these days, “Sustainability is used as a rallying point for different ideological positions and interests” (Redclift, 2002, p. 189). For example, a forester may speak of a ‘sustainable yield,’ a planner may speak of ‘sustainable growth,’ and a food producer may speak of ‘sustainable agriculture’ – though these applications are not complementary with one another. Much of the current discussion focuses on ‘sustainable development;’ but this usage is actually a contradiction in terms considering that the world is already *overly*-developed and environmental systems are already *overly*-taxed so that any new development, in the sense of population or economic *growth*, is a further step in an increasingly unsustainable direction. Sustainable development is usually concerned with achieving some sort of economic, gender, or racial equality – especially in reference to the relationship between the so-called *developing* and *developed* hemispheres – yet this goal is more like rearranging the seating on the decks of the *Titanic* instead of duly altering the ship’s course.

The often-cited, seminal definition of sustainability provided by the Brundtland Report (1987) goes something to the effect: “consuming resources at a current level that does not diminish future generations’ ability to access or use those same resources.” While well-meaning in intent, this focus on achieving intergenerational equity by means of a stabilized, steady-state of *resource throughput* will inevitably lead to failure since, 1) population growth is expanding exponentially, and thus 2) the *rate* of resource consumption is likewise expanding exponentially. As the Meadows’ (1993) so skillfully point out, in an exponentially expanding system the reaction time in which to avoid overshoot is *diminishing* exponentially. Realistically, using resource throughput as a measure of sustainability would mean adapting the economic process to a *geological* time-frame, and I’m sure no one is ready to accept that.

Any attempt at moving toward sustainability within the limited mindset of current economic parameters will be a futile effort, and yet, “As the sustainability debate became more mainstream in the 1980s, much of it was influenced by neoclassical economics, and an attempt was made to translate environmental choices into market preferences, following neo-liberal orthodoxy” (Redclift, 2002, p. 190) *This will never work* because in the global capitalist system (i.e. neo-liberal orthodoxy) there must be continuous, unending growth or the system will collapse in upon itself; and the perceived potential for unlimited growth is the very crux of the problem. In a materially-closed system such as the Earth, growth must be cyclical as resources are produced, consumed, recycled and then regenerated. Additionally, as has already been pointed out, the “marketplace” does not account for the depletion of “public goods” – the free services provided by Nature – so how could market preferences in any way contribute to the long-term maintenance of these stocks? The discussion of sustainability, when used in the context of current economic parameters, is more like wishful thinking: It is being used loosely as a sort of conceptual ‘negative feedback’ with the hoped-for purpose of bringing the current system back in line so that this system can be “kept alive or in existence.” But make no mistake: this system is seriously structurally flawed and cannot be remediated; its very goal (however explicitly unstated) is to exploit the life out of living systems. How could it possibly sustain itself under these conditions?

Robert Gilman (1991), as a futurist, puts forth a more visionary though pragmatic definition of sustainability: a sustainable situation is simply one that “can be continued into the indefinite future.” If a given socio-economic process or presence is to have the chance to be continued into the indefinite future then more fundamental parameters besides resource throughput and market preferences must be considered. For example, attention must be given to the supporting socio-cultural fabric that is producing and using those resources: the socio-cultural fabric must be attended to, nurtured, stabilized, and conserved. And the socio-cultural fabric does not occur in a vacuum but is structurally coupled to a specific ecosystem and locally occurring set of environmental conditions – a place-based ecology. The local ecology then also needs to be attended to, nurtured, stabilized, and conserved. This dynamic, productive interface between the socio-cultural fabric and the local ecology finds its utilitarian expression through economic processes. Thus, in order to be sustainable and continued into the indefinite future, human economic processes must necessarily strike a symbiotic balance between the long-term needs of the local ecology and the short-term needs of the inhabiting humans.

All this seems so elementary. What is implied is that in order to be sustainable, economic processes are best organized at an *ecosystem scale*, the level of interactive continuity in which the human being lives and operates on a daily basis. The ecosystem

scale is that level where the feedback loops generated from economic processes can be most immediately and meaningfully evaluated and fine-tuned, and where available energy can be most conservatively managed. This is the scale where economics is a natural outgrowth of a vernacular, *place*-based culture – as in ‘managing the home’ – and where human beings can intimately identify with the natural systems and processes with which they interface. Extrapolating economic process beyond this scale becomes a vapid abstraction, lacking a land base and thus any real contextual basis.

What is ultimately required to achieve lasting sustainability is a complete dismantling and decentralized reorganization of the so-called global economic system, re-adapting and re-aligning the human economy with the economy of Nature. This transformation will be facilitated and enhanced by the substitution of resource and financial indicators with EMERGY indicators so that *EMERGY* is maximized, for the benefit of all. EMERGY is a measure of *real wealth* (the concept EMERGY is articulated in Odum, 1996, *Environmental Accounting*).

Even if this was understood and accepted, how would it be possible to manage an EMERGY conversion at a global scale? Where would be the points of intervention? The inputs and the outputs could conceivably be measured, but the entire process in between is unwieldy and undefined. While it is possible to create a window around larger system levels – such as ‘states’ or ‘nations’ or even the entire ‘global system’ – much ambiguity can result because of the necessary generalizations and abstractions. That is why I think it is important to repeatedly emphasize my conviction that a sustainable economic process, and its eventual EMERGY conversion, will be most efficiently organized at a human scale – a *settlement* scale. Once it is being efficiently implemented and practiced at that scale, it can be fractalized upwards from there. A top-down approach is profusely wasteful of available energy.

In summary, achieving long-lasting sustainability is a matter of structurally coupling human settlements to particular ecosystems and evaluating their mutually-productive interface, as enacted and realized through economic processes, with EMERGY analyses and measurements. In this way, integrated, place-based socio-cultural systems will have the chance to be continued into the indefinite future.