"Summary of article by John A. Dixon and Louise A. Fallon: The Concept of Sustainability: Origins, Extensions, and Usefulness for Policy" in Frontier Issues in Economic Thought, Volume 1: A Survey of Ecological Economics. Island Press: Washington DC, 1995. pp. 93-96

Social Science Library: Frontier Thinking in Sustainable Development and Human Well-being

"Summary of article by John A. Dixon and Louise A. Fallon: The Concept of Sustainability: Origins, Extensions, and Usefulness for Policy"

The concept of sustainable development (SD) has gradually been accepted as a key organizing concept by a broad spectrum of development and environmental organizations. Indeed it is a mediating term that has bridged the span which often separates these two groups. The difficulty is that the term is so broadly defined and is used so extensively in the rhetoric of often disparate institutions that its real meaning is little understood, and there is an inadequate basis on which to evaluate the aims and outcomes of various projects carried out in the name of SD.

Definition

The definition of SD has evolved through three stages over the years:

1) Sustainability originated as a purely biological concept for a single resource, and thus was usually used within the context of a special class of renewable resources such as forests and fisheries. The goal was to establish some biologically determined maximum sustainable yield so as to reap today's bounty while preserving tomorrow's resources.

2) Sustainability developed into a physical concept for a group of resources or an ecosystem. This level of understanding evolved out of the growing awareness that the first concept paid inadequate attention to the ways different resource bases interact with one another systemically. Thus what appears sustainable for a given resource may prove to be unsustainable for an entire system; so rather than focusing upon a single resource, there is explicit attention to the variety of outputs from an entire system. Of course, not all parts of an ecosystem can be managed in harmony; some resources may be enhanced, while others may be maintained at pre-use levels, and yet others may undergo some degradation. Moreover, social and individual needs must influence the evaluation of these trade-offs in any resource management policy.

3) It is from this last point that the final understanding of sustainability, that is SD itself, has evolved. The focus shifts from specific physical stocks of given resources and systems to policies that enhance our ability to meet the needs of today without compromising our ability to meet the (larger) needs and challenges of tomorrow. This is a seductively simple concept, and there is little debate as to its basic desirability.

But SD for whom? As Richard Norgaard pointed out, "Environmentalists want environmental systems sustained. Consumers want consumption sustained. Workers want jobs sustained," etc.[1] A lively debate has developed, with people often talking at cross purposes over what to sustain, how to go about it, how to define sustainability, and how to measure progress towards this ill-defined goal. The fundamental problem is that the term "sustainability," which was originally developed in a biological/physical context, is now applied in a much broader economic/social context.

Some environmentalists and physical scientists argue that maintenance of physical stocks is the correct path to sustainability. From a socioeconomic perspective, however, because of population growth, especially in developing countries, maintenance of physical stocks will lead to declines in per capita availability of goods - this may occur even to some extent even with reductions of physical stocks. It is clear, then, that improved productivity and efficiency are a necessary component of sustainability. However, it is very difficult to say ex ante what will be a sustainable economic activity, and far easier to say ex post what was not.

A number of authors are grappling with this dilemma. One definition equates sustainability with "ideal income," i.e., the greatest amount that can be consumed today without diminishing productive possibilities tomorrow. This perspective rejects the idea of purely physical measures of sustainability, with a recognition that what constitutes a productive asset may change over time; e.g., the substitution of rain forests for equally sustainable rubber plantations in Malaysia. In addition, SD does not require that any particular activity continue indefinitely. Indeed, it will generally involve structural changes and the replacement of old activities with new ones. Additional questions center on how best to handle nonrenewable resources, and on the need to invest income from their depletion in renewable activities for the future. Some suggest that "growth" ought to refer to the quantitative expansion of the economy, and development to its qualitative enhancement. Thus SD need not mean sustainable growth.

All of these issues raise interesting and at times intractable questions which a rigorous assessment of SD must answer:

1) How should equity, both inter and intragenerational, be handled with respect to resource management decisions? Overfishing and excessive harvesting of forest products are examples of over-emphasis upon the present - a problem that may be brought on either by poverty or greed. The implication is that resource issues cannot be discussed without regard for development issues.

2) What do we leave to future generations to ensure that they are not worse off? Should we leave the same physical stock of resources, the same resource base per capita, or the potential for being at least as well off as the present generation? Each of these criteria will lead to different patterns of resource use, some of which may not be sustainable in the physical sense.

3) Will there be enough to go around? Rising population implies increasing resource use merely to maintain current levels of consumption. The implication is that resource issues cannot be divorced from population issues.

4) How far into the future do we worry about? The shorter our time horizon, the less likely that any pattern of resource use will truly be sustainable over long periods of time.

5) Are there some patterns of resource use that should not be accepted regardless of their impacts on the resource base? For example, should the negative effects of species extinction always outweigh the social welfare gains of a given activity?

6) To what extent can market forces intervene in the development process vis a vis resource use? Many factors can inhibit the proper functioning of markets, including imperfect information, greed, and uncertainty about the future, all of which tend to lead to unsustainable patterns of development. Nevertheless, market forces can be harnessed and corrected through appropriate macroeconomic policy instruments such as taxes and subsidies.

Clearly a great deal of work needs to be done to define parameters and goals in attempting to answer these questions in a more substantive manner than is currently possible. Nevertheless, the broader thinking engendered by the sustainability discussions has produced positive results, including:

1) a greater awareness of the necessity of considering the long run in resource management decisions;
2) enhanced attention to intergenerational concerns and transnational impacts;
3) greater awareness that reliance solely upon the market may not be compatible with SD; and
4) a better chance that bad development projects can be avoided.

Note

1. Richard Norgaard, "Sustainable Development: A Co-Evolutionary View," Futures (December 1988): 606-20 (see summary in this section); cited by Dixon and Fallon, 7.