

DEFINING SUSTAINABILITY AS IT APPLIES TO WATER RESOURCES: AN ECOLOGICAL ECONOMICS VIEW

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An essay to be published in *Water Resource Update* pursues a definition of sustainability based in ecological economics and applies that definition to managing water resources for competing social goals. Water plays at least three critical, but distinct, roles in the socio-environmental process. First, water is a raw material, or factor of production, of a number of marketable commodities, some of which are themselves factors of production of other final goods. These include electricity, transportation, crops, industrial goods of various kinds, and residential and commercial landscapes that generate a derived demand for water. Second, treated water for indoor domestic use is enormously valuable in producing social capital primarily through its contribution to human health, whether the water is delivered as a commodity by a private sector firm, as a public service by a government-owned utility or in some other form. Third, water in oceans, seas, rivers, lakes, wetlands, soil, and other components of the hydrologic cycle is a, if not the, critical factor of production of ecosystem services whose total value rivals that of world output of marketable goods and services. An ecological economics approach to sustainability therefore provides a valuable critique of neo-classical economics approaches to defining the highest and best use of water and guides us toward a meaningful definition of sustainable management of water resources.