

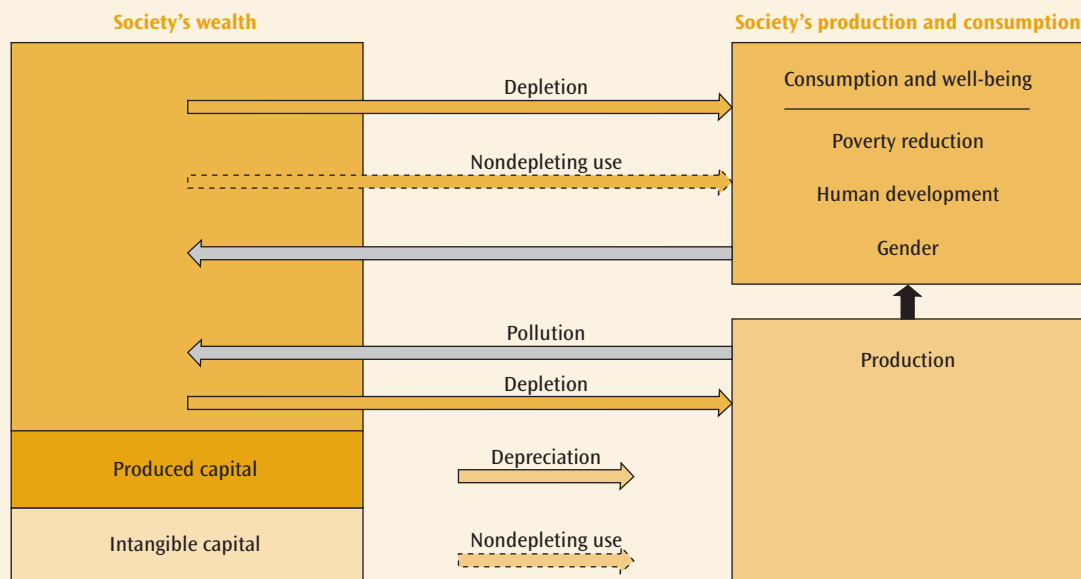
Special Theme: Environmental Sustainability

A Framework for Monitoring Environmental Sustainability

MDG 7 is simply stated: ensure environmental sustainability. However, the idea of environmental sustainability goes beyond the conservation of nature. Natural resources—and the environment in general—are different from many other economic goods and services in that they constitute simultaneously an integral part of ecological cycles, inputs to production processes, and a source of enjoyment for households and individuals. Environmental goods can be used up or depleted to make space for produced goods (such as transforming a wetland into an urban area). Yet this economic process may entail a permanent loss of environmental goods with a use or an intrinsic value for which no substitute is available. The “art” of balancing nature and development so that

social welfare does not decline over time is at the core of environmental sustainability.

A flow diagram to frame the relationship between the economy and the environment is presented in figure 1. On the right-hand side, production of man-made goods and services takes place and contributes to household well-being. Wealth (the left-hand side of the figure) sustains production and may also contribute directly to well-being. Wealth in such a framework necessarily goes beyond physical and monetary assets to include natural assets and intangibles such as human capital. Production processes may entail the depletion or depreciation of assets, as may the direct use of assets by households, whereas other uses of assets are nondepleting. Production and consumption

FIGURE 1 Framework for monitoring environmental sustainability

both lead to flows of pollution and waste, which alter the quality of natural assets in particular.

Concerns about environmental sustainability arise because, unlike labor and produced capital, the environment is often an unpriced input into production. This is true for much natural capital. Fisheries and forests in many countries are open access natural resources, as is groundwater. Lack of property rights to these resources prevents them from being used sustainably. Without appropriate institutions, an open-access fishery will be overharvested and habitat for biodiversity will be destroyed. Users of these resources will impose externalities on others. The same is true for air and water as receptors of pollution. In the absence of appropriate institutions, a power plant will impose external costs on households in the form of local air pollutants (such as particulate matter) and also on the earth's climate in the form of carbon dioxide emissions.

Concern about the externalities associated with environmental resources leads to the desire to monitor environmental externalities—levels of local air pollutants and the stock of greenhouse gases in the earth's

atmosphere—as well as stocks of natural capital—forests and fish populations—when these stocks may be used inefficiently. Correcting the externalities associated with environmental resources requires public action. Monitoring environmental sustainability also entails monitoring the ability of local and national governments to allocate environmental resources efficiently and the ability of the nations of the world to use the global commons efficiently.

Chapter 6 of this report monitors environmental sustainability at the local and national levels. It examines environmental pollution and the depletion of natural resources, including forests, water, and land. It also monitors the capacity of countries to deal with local and national environmental problems. Chapter 7 monitors the sustainability of the global commons. Avoiding adverse changes to the earth's climate, protecting biodiversity, and ensuring the sustainability of marine fisheries are three components of ensuring global environmental sustainability. Chapter 7 examines what progress has been made in protecting these environmental public goods, with an emphasis on climate change.