

MEASURING NATURAL CAPITAL

Systematic quantitative analysis of the links between the state of the environment and economic growth has been hampered by a lack of reliable data on natural capital. Because of the increasing need for rigorous research on the subject, a number of initiatives have been directed at collecting more reliable and systematic data worldwide: data on deforestation compiled by the Food and Agriculture Organization of the United Nations; urban air pollution measurements compiled by the WHO; statistics on access to sanitation, clean water, and many other environmental aspects compiled by the UNDP; and the Global Environmental Monitoring System.

The *World Development Indicators* (WDI) is an annual publication of the World Bank and includes a large body of environmental data taken from the sources mentioned above and many others as well. By bringing together useful data from diverse sources in a user-friendly format, the WDI has rapidly become a one-stop shop for accessing environmental data. Most environmental data used in chapter 4 and elsewhere in this report have been drawn from WDI tables.

In addition to being a rich source of data, the WDI is also a useful reference on how to access other sources of data. The publication and its data tables may be accessed on the web at: www.worldbank.org/data/wdi.

Two indexes for natural capital have been constructed on the basis of data available in the WDI, namely:

- *The sustainable development index to measure environmental outcomes.* This is a change index constructed by giving equal weights to annual rates of deforestation between 1980 and 1995, decrease in water

pollution proxied by the emissions of organic water pollutants in kilograms per day per worker between the 1980s and 1990s, and decline in carbon dioxide emissions in per capita metric tons between the 1980s and 1990s.

- *The environmental policy index as a measure of government commitment to protecting natural capital.* This includes two dummy variables: one for domestic action based on the formulation of a national environmental strategy and environmental profiles and the other for international action based on signing the Convention on Climate Change.

Both indexes are preliminary and work is ongoing to develop more comprehensive and reliable indicators. The following web site gives an idea of World Bank efforts in this direction: <http://www-esd.worldbank.org/eei/>.