

State of the environment (SOE) reporting was introduced in the United States with the enactment of the 1969 National Environmental Policy Act (NEPA); it was made a global activity in the declaration adopted at the Stockholm Conference on the Human Environment in 1972. In the early years, the focus was on the state of the biophysical environment — land, freshwater, forests and wildlife, for example. People were generally reported as a threat to the environment. But SOE reporting has over the years become more integrated and now takes into account the complex human-environment interactions in assessing and reporting on the changing state of the environment.

Subsequently, SOE reporting has been established at virtually every level — local, national, sub-regional, regional and global. Many approaches have been used: some focused on media such as land and water, some on sectoral themes such as agriculture and forestry, some on issues such as land degradation and pollution (and some combined these approaches). Other frameworks have included the pressure-state-response (PSR) and later the driving force-pressure-state-impact-response (DPSIR). These different approaches have served their purpose but their inherent weakness is a linear approach to complex ecological processes and human-environment interactions. The reports often down played the fact that people not only have an impact on the environment but also that the environment has an impact on people.

Over time, therefore, a more integrated environmental assessment and reporting framework has emerged; one that aims to show the cause-and-effect of human-nature linkages. It seeks to connect causes (drivers and pressures) to environmental outcomes (state) to activities (policies and decisions) that have shaped the environment over the past three decades, and the impacts such changes now have on people.

The analysis is first by theme — socio-economic trends, land, forests, biodiversity, freshwater, coastal and marine areas, atmosphere, urban areas and disasters — but the holistic nature of the environment is emphasized where necessary. These thematic issues are analysed from first the global level then at GEO regional level: Africa, Asia and the Pacific, Europe, Latin American and the Caribbean, North America, West Asia and the Polar Regions. The global

sections highlight many of the major issues under each sector, showing trends over the past three decades. The analysis uses the 1972 Stockholm Conference as the baseline, discussing the evolution of the issue and how the international community has tried to address the problems.

At the regional level, each region identified for analysis — through various consultation processes — two or three key regional issues under each sector or theme. These issues are discussed in the following pages and are listed in the table opposite. The table highlights common issues across the different regions, showing the global nature of the environmental issues facing the world today. In addition, the table identifies some unique regional differences, which have called for unique regional responses. Throughout the report, region-specific sections and graphics are colour-coded for easy identification (see table for regional colours).

Sub-regional differentiation analyses are also provided where appropriate. National level examples are presented to stress certain developments. The ultimate purpose of policy evaluation under integrated assessment is to identify successes and failures in environmental policy development and implementation as guidance for future policy initiatives.

The analyses are supported with graphics and other illustrations developed using data specially compiled for the GEO-3 30-year assessment period. The data were compiled from many different sources and then, wherever possible, aggregated from national to sub-regional, regional and global levels, making comparisons possible at these different levels. The GEO-3 Data Portal, some of the contents of which are available on a CD-ROM available with this report, addressed some of the data issues first identified in *GEO-1* in 1997: the harmonization of national datasets and acquisition of global datasets.

This chapter emphasizes integration across regions, between the state of the environment and policy, between the past and future, between thematic areas, and among sectors, for example, environmental, economic, social, and cultural. It also tries to analyse policy (social responses) in relation to specific environmental issues, showing positive and negative policy impacts on the environment and how the environment can drive policy, both retrospectively and proactively. It covers the impacts of public and private sector policies, and regional and global policies, including multilateral environmental agreements. The

Key environmental issues by GEO region								
	Land	Forests	Biodiversity	Freshwater	Coastal and marine	Atmosphere	Urban areas	Disasters
<b>Africa</b>	<ul style="list-style-type: none"> <li>Degradation and desertification</li> <li>Inappropriate and inequitable land tenure</li> </ul>	<ul style="list-style-type: none"> <li>Deforestation</li> <li>Loss of forest quality</li> </ul>	<ul style="list-style-type: none"> <li>Habitat degradation and loss</li> <li>Bushmeat trade</li> </ul>	<ul style="list-style-type: none"> <li>Variability of water resources</li> <li>Water stress and scarcity</li> <li>Access to safe water and sanitation</li> <li>Deteriorating water quality</li> <li>Wetlands loss</li> </ul>	<ul style="list-style-type: none"> <li>Coastal area erosion and degradation</li> <li>Pollution</li> <li>Climate change and sea-level rise</li> </ul>	<ul style="list-style-type: none"> <li>Air quality</li> <li>Climate variability and vulnerability to climate change</li> <li>Floods and drought</li> </ul>	<ul style="list-style-type: none"> <li>Rapid urbanization</li> <li>Solid waste</li> <li>Water supply and sanitation</li> <li>Air pollution</li> </ul>	<ul style="list-style-type: none"> <li>Drought</li> <li>Floods</li> <li>Armed conflict</li> </ul>
<b>Asia and the Pacific</b>	<ul style="list-style-type: none"> <li>Land degradation</li> <li>Desertification</li> <li>Land use change</li> </ul>	<ul style="list-style-type: none"> <li>Forest degradation</li> <li>Deforestation</li> </ul>	<ul style="list-style-type: none"> <li>Habitat loss</li> <li>Forest loss and degradation</li> <li>Alien species</li> </ul>	<ul style="list-style-type: none"> <li>Water scarcity</li> <li>Pollution</li> </ul>	<ul style="list-style-type: none"> <li>Degradation of coastal and marine resources</li> <li>Pollution due to mining and coastal development</li> </ul>	<ul style="list-style-type: none"> <li>Air quality</li> <li>Ozone depletion</li> <li>Greenhouse gas emissions and climate change</li> </ul>	<ul style="list-style-type: none"> <li>Air pollution</li> <li>Waste management</li> <li>Water supply and sanitation</li> </ul>	<ul style="list-style-type: none"> <li>Floods</li> <li>Drought</li> <li>Volcanoes</li> <li>Earthquakes</li> </ul>
<b>Europe</b>	<ul style="list-style-type: none"> <li>Land use</li> <li>Soil degradation, sealing and contamination</li> <li>Soil erosion</li> </ul>	<ul style="list-style-type: none"> <li>Loss of natural forests</li> <li>Forest degradation</li> <li>Sustainable forest management</li> </ul>	<ul style="list-style-type: none"> <li>Agricultural intensification</li> <li>Genetically modified organisms</li> </ul>	<ul style="list-style-type: none"> <li>Water quantity and quality</li> <li>Policy and legislative framework</li> </ul>	<ul style="list-style-type: none"> <li>Coastal erosion</li> <li>Pollution</li> </ul>	<ul style="list-style-type: none"> <li>Air pollution</li> <li>Stratospheric ozone depletion</li> <li>Greenhouse gas emissions</li> </ul>	<ul style="list-style-type: none"> <li>Air quality</li> <li>Noise pollution</li> <li>Solid waste</li> </ul>	<ul style="list-style-type: none"> <li>Storms and floods</li> <li>Earthquakes</li> <li>Human-caused disasters</li> </ul>
<b>Latin America and the Caribbean</b>	<ul style="list-style-type: none"> <li>Land degradation</li> <li>Land tenure</li> </ul>	<ul style="list-style-type: none"> <li>Deforestation</li> <li>Forest degradation</li> </ul>	<ul style="list-style-type: none"> <li>Habitat loss and degradation</li> <li>Overexploitation of resources and illegal trade</li> </ul>	<ul style="list-style-type: none"> <li>Decreasing water available per capita</li> <li>Water quality</li> </ul>	<ul style="list-style-type: none"> <li>Habitat conversion and destruction</li> <li>Pollution</li> <li>Overexploitation of fisheries</li> </ul>	<ul style="list-style-type: none"> <li>Air pollution</li> <li>Ozone depletion</li> <li>Air quality</li> </ul>	<ul style="list-style-type: none"> <li>Solid waste</li> <li>Water supply and sanitation</li> <li>Air quality</li> </ul>	<ul style="list-style-type: none"> <li>Drought</li> <li>Hurricanes</li> <li>Floods</li> <li>Earthquakes</li> <li>Spills of hazardous substances</li> </ul>
<b>North America</b>	<ul style="list-style-type: none"> <li>Land degradation</li> <li>Pesticides</li> </ul>	<ul style="list-style-type: none"> <li>Forest health</li> <li>Old growth forests</li> </ul>	<ul style="list-style-type: none"> <li>Habitat destruction and degradation</li> <li>Bio-invasion</li> </ul>	<ul style="list-style-type: none"> <li>Groundwater</li> <li>Great Lakes water quality</li> </ul>	<ul style="list-style-type: none"> <li>Conversion of fragile ecosystems</li> <li>Overexploitation of marine resources</li> <li>Pollution</li> </ul>	<ul style="list-style-type: none"> <li>Stratospheric ozone depletion</li> <li>Greenhouse gases and climate change</li> </ul>	<ul style="list-style-type: none"> <li>Urban sprawl</li> <li>Ecological footprint</li> </ul>	<ul style="list-style-type: none"> <li>Floods and climate change</li> <li>Forest fires</li> </ul>
<b>West Asia</b>	<ul style="list-style-type: none"> <li>Land degradation</li> <li>Rangeland deterioration</li> </ul>	<ul style="list-style-type: none"> <li>Degradation</li> <li>Overexploitation</li> <li>Sustainable forest management</li> </ul>	<ul style="list-style-type: none"> <li>Habitat degradation and loss</li> <li>Overexploitation of species</li> </ul>	<ul style="list-style-type: none"> <li>Increasing water demand</li> <li>Overexploitation of groundwater</li> <li>Water quality</li> </ul>	<ul style="list-style-type: none"> <li>Coastal development and urbanization</li> <li>Overexploitation of resources</li> <li>Marine pollution</li> </ul>	<ul style="list-style-type: none"> <li>Air pollution</li> <li>Ozone-depleting substances</li> <li>Climate change</li> </ul>	<ul style="list-style-type: none"> <li>Land conversion</li> <li>Solid waste</li> </ul>	<ul style="list-style-type: none"> <li>Drought</li> <li>Oil discharges</li> <li>Armed conflict</li> </ul>
<b>Polar</b>	<ul style="list-style-type: none"> <li>Degradation</li> <li>Erosion</li> <li>Climate change</li> </ul>	<ul style="list-style-type: none"> <li>Boreal forest issues</li> <li>Threats to forest tundra</li> </ul>	<ul style="list-style-type: none"> <li>Climate change</li> <li>Ozone depletion</li> <li>Overexploitation</li> </ul>	<ul style="list-style-type: none"> <li>Alien species</li> <li>Pollution</li> </ul>	<ul style="list-style-type: none"> <li>Overexploitation of fisheries</li> <li>Pollution</li> <li>Climate change</li> </ul>	<ul style="list-style-type: none"> <li>Stratospheric ozone depletion</li> <li>Long-range air pollution</li> <li>Climate change</li> </ul>	<ul style="list-style-type: none"> <li>Sanitation and waste</li> </ul>	<ul style="list-style-type: none"> <li>Floods</li> <li>Oil discharges</li> <li>Pest invasion</li> </ul>

*Note:*  
This table represents the two or three key thematic issues by region which are covered in this chapter. Due to the DPSIR framework used for the analysis, one issue may be covered under two or more themes. For example, forest degradation may be a major driver of biodiversity loss in one region while in another it may be the key issue of concern

analysis takes into consideration not only environmental policy but also the impacts of general policies on environmental issues, such as broader social and economic policy trends with environmental repercussions.

Another important component of this chapter is the use of satellite images to illustrate environmental change over the past 30 years. The images were generated by Landsat, which coincidentally was launched in 1972 — the same year the Stockholm

conference was held. The Landsat images, which are placed in one or sometimes two pages at the end of each section, under the rubric ‘Our changing environment’, highlight environmental changes at different locations in different regions.