

## Conclusions

The preceding sections of this chapter show that there has been immense change in both human and environmental conditions over the past 30 years. In an unprecedented period of population increase, the environment has been heavily drawn upon to meet a multiplicity of human needs. In many areas, the state of the environment is much more fragile and degraded than it was in 1972. The result is that the world can now be categorized by four major divides:

- **The Environmental Divide** — characterized by a stable or improved environment in some regions, for example Europe and North America, and a degraded environment in the other regions, mostly the developing countries;
- **The Policy Divide** — characterized by two distinct dimensions involving policy development and implementation with some regions having strength in both and others still struggling in both areas;
- **The Vulnerability Gap** — which is widening within society, between countries and across regions with the disadvantaged more at risk to environmental change and disasters; and
- **The Lifestyle Divide** — partly a result of growing poverty and of affluence. One side of the lifestyle divide is characterized by excesses of consumption by the minority one-fifth of the world population, which is responsible for close to 90 per cent of total personal consumption; the other side by extreme poverty where 1.2 billion live on less than US\$1 per day.

The four gaps are a serious threat to sustainable development. The following paragraphs highlight some of the environmental challenges facing humanity today and some of the successes that have been achieved in the past three decades.

### Environmental achievements

The policies articulated in documents such as the *Stockholm Declaration and Programme of Action*, the *World Conservation Strategy, Our Common Future*, the *Rio Declaration* and *Agenda 21*, have driven the

environmental agenda in the period 1972-2002. Binding legal regimes — some from before 1972 — now form the body of international environmental law, providing the appropriate muscle necessary to encourage compliance. Along with the policies and legal framework, the past three decades have also seen a proliferation of environmental institutions across public and private sectors, and civil society in general. Ministries or departments of environment are now common in all regions. Sustainable development and environmental standards have become part of the *lingua franca* of major corporations, with many now making annual environmental reporting part of the corporate agenda. Civil society has come of age, recording many successes at different levels — from community to the international level. Some of the successes that have been achieved since 1972 include the following:

- Addressing stratospheric ozone depletion is a notable victory for global environmental governance. However, it needs continuing vigilance.
- Concern over levels of common air pollutants has resulted in encouraging reductions in many countries, achieved through specific policy measures, including emissions and air quality standards, as well as technology-based regulations and different market-based instruments.
- More holistic approaches to land management, such as integrated plant nutrition systems and integrated pest management, have been introduced with positive results for the health of agricultural ecosystems in some regions.
- Freshwater policies have begun to move away from a riparian rights focus and towards exploring efficiency improvements and river basin management. Integrated water resources management is now widely accepted as a strategic policy initiative.
- A new theoretical understanding of the benefits of ecosystem services has emerged but, in practice, information and policy instruments to protect these have been lacking or sporadic.
- There has been a recent evolution from 'end-of-

pipe' approaches to goals for sustainability and a modest shift to a more integrated approach to environmental policies and management, focusing on the sustainability of ecosystems and watersheds, for example, rather than on sustaining yields.

- It is now recognized that poverty reduction, economic development and environmental stability should be mutual goals. This breaks with the old thinking prevalent in the 1970s and 1980s which regarded environmental protection and economic development as conflicting aims.
- Prosperity and an informed and active civil society have been key drivers of policies to address various environmental problems that became apparent early in the 30-year period in developed nations. Ambient air quality and point-source water pollution have been addressed satisfactorily in many areas; recycling has become more common; wastewater treatment has improved; pulp-and-paper industry effluents have declined and hazardous waste threats have been reduced. Protected areas have been increasingly set aside for conservation and recreation.
- Successes in the developing world have been mixed: there has been a growing democratization and participation process positively underpinning environment-development in some regions, with a growing civil society awareness of the debate.
- A natural 'cluster' of biodiversity policies is emerging, of which the CBD is the core regime, but which also includes a host of other treaties and initiatives such as CITES, CMS and the Ramsar Convention.
- Technological change has helped to relieve some environmental pressures: lower material intensity in production; a shift from materials and energy supply to the provision of services; a modest boost in renewable technology; and a significant clean-up in some regions in previously 'dirty' industries.
- In recent years, risk reduction has been placed higher on political agendas, and response mechanisms and early warning systems have been strengthened.

An overall observation is that many of the policies mentioned in this chapter have either no clearly defined and specific performance criteria or the criteria are not readily related to environmental

performance. This is true of, for example, economic policies related to taxation, trade and investment. Although some of them have significant links to environmental issues (in some cases, they are key drivers of environmental change), their built-in evaluation criteria are usually limited to economic performance. This has made their evaluation particularly challenging from an environmental and sustainable development perspective.

### Environmental challenges

Despite these achievements, a growing world population — to more than 6 000 million people (and still climbing) — is exacerbating the demand on resources and services, and increasing the generation of wastes to meet many of these demands. Overall, policy measures have not been adequate to counteract the pressures imposed by increasing poverty and uncontrolled consumption. Preceding Chapter 2 sections show indisputable evidence of continuing and widespread environmental degradation.

- Recent human impacts on the atmosphere have been enormous, with anthropogenic emissions a prime cause of environmental problems. Emissions of almost all greenhouse gases continue to rise.
- Ground-level ozone, smog and fine particulates have emerged as significant health risks, triggering or exacerbating respiratory and cardiac problems, especially in vulnerable people such as children, the elderly and asthmatics, in developed and developing nations alike.
- Overexploitation of many of the surface water resources and great aquifers upon which irrigated agriculture and domestic supplies depend has resulted in more and more countries facing water stress or scarcity. About 1 200 million people still lack access to clean drinking water and some 2 400 million to sanitation services. The consequences include the deaths of 3–5 million people annually from water-related diseases.
- The Earth's biological diversity is under increasing threat. The extinction rate of species is believed to be accelerating. Habitat destruction and/or modification are the main cause of biodiversity loss but invasive species are the second most important pressure.
- There has been a sharp global trend towards

increasingly intense exploitation and depletion of wild fish stocks. Numerous fisheries have collapsed and others are threatened with overexploitation.

- Land degradation continues to worsen, particularly in developing countries where the poor are forced onto marginal lands with fragile ecosystems and in areas where land is increasingly exploited to meet food and agricultural needs without adequate economic and political support to adopt appropriate agricultural practices.
- Many remaining forest ecosystems have been degraded and fragmented. Since 1972, extensive forest monocultures have been established in the developing world but these do not replace the ecological complexity of natural forests.
- Crop and livestock production has contributed to the large increase in reactive nitrogen in the global biosphere, contributing to the acidification and eutrophication of ecosystems.
- With almost half of the world's population living in less-developed countries, urban areas and megacities, infrastructure and municipal services are inadequate to accommodate millions of the urban poor. Urban air pollution and deteriorating water quality are having major health, economic and social impacts.
- An increase in the frequency and intensity of natural disasters over the past 30 years has put more people at greater risk, with the greatest burden falling on the poorest communities.

### Regional challenges

At the regional level, the major environmental issues include climate change, land and soil degradation, forest degradation and deforestation, freshwater stress and scarcity as well as quality/pollution, degradation and pollution of coastal and marine areas, loss of habitats and species, growth of unplanned settlements and mounting solid waste, and increasing droughts and floods. Many of the regions face similar environmental challenges, though the magnitude and extent of the problems varies.

#### Africa

In Africa, the key environmental issues include land degradation, deforestation, habitat degradation, water stress and scarcity, coastal area erosion and

degradation, floods and droughts, and armed conflict. These and other problems have contributed to environmental change that exacerbated underdevelopment, poverty and food insecurity in the region. They have also limited the effectiveness of various response measures such as the Lagos Plan of Action and other environmental policies, which have been adopted by the region over the past 30 years. Tackling the region's environmental problems is now not just an option but is critical to achieving sustainable development, without which poverty will continue to worsen, contributing to even more overexploitation of the environment.

#### Asia and the Pacific

The world's largest region in terms of land area and also human population has an eclectic portfolio of environmental challenges, reflecting the diversity of its sub-regions. Some of the key environmental issues facing the region include land and forest degradation, habitat loss, water scarcity and pollution, greenhouse gas emissions and climate change, waste management, and natural disasters such as floods, droughts and earthquakes. What emerges from the assessment in previous sections is that some parts of the region are under severe stress, placing livelihood options for millions of people at risk. Other parts of the region, for example Japan, New Zealand and Australia, are sufficiently developed to cope with inevitable environmental changes caused by both human activities and natural phenomena.

#### Europe

In Europe, many of the key environmental issues are similar to those common in Africa, and Asia and the Pacific. These include forest degradation, water quantity and quality, coastal erosion and greenhouse gas emissions. Other, more specific issues analysed include soil degradation, sealing and contamination, and genetically modified organisms. Europe is generally one of the regions that is better placed to deal with its environmental challenges because of its economic development — and there are well established legal and institutional frameworks at both national and regional levels. Despite its advantages, however, the region cannot tackle global environmental issues alone and should continue to play a key role, particularly in the area of climate change.

### Latin America and the Caribbean

The region faces many of the same environmental problems as Africa, and Asia and the Pacific. Additional issues include land tenure, overexploitation of fisheries and disasters, including hurricanes, earthquakes and spills of hazardous substances. Such problems will continue to exert heavy tolls on human life and the environment, setting back any efforts towards sustainable development. The risk is that millions of people in the region will continue to be marginalized, undermining efforts to improve socio-economic conditions and effectively manage the environment for current and future generations. Without more effective policy responses, the current trend of worsening environmental conditions is likely to continue, contributing to increased human vulnerability to environmental change.

### North America

North America, the engine of globalization, has key environmental issues that include pesticide use, management of old growth forests, bio-invasion and quality of the Great Lakes. Despite its well developed institutional and legal framework, and successful enforcement of environmental laws, the region will continue to face a number of challenges, including the effective management of the commons. Its leadership role in international environmental management is important and this should be guided by the now widely accepted principle of common but differentiated responsibilities. The participation of governments, NGOs and civil society at national, regional and international levels is critical to progress in meeting *Agenda 21* and Millennium Declaration goals and others set by subsequent fora such as the World Summit on Sustainable Development. Many regions will continue to look to North America for assistance in terms of capacity building and development aid.

### West Asia

Policy conflicts, for example those related to water management, and food production and security, have been shown to undermine efforts to achieve sustainable development. Greater synergy is critical and strategic policy development and implementation should include different stakeholders to avoid overlaps and competition which undermine effectiveness. The region has identified integrated water resources management as one of the key policy initiatives needed to improve management of its limited water resources. Countries in the region will also continue to grapple with the problems of drought and desertification, both of which place heavy limitations on environment and development.

### Polar Regions

Some of the diagnosed environmental impacts on the polar regions are also clear symptoms of the excesses of human activity across the globe. The ozone-depleting substances used by humankind have manifested themselves in these regions with the discovery of the ozone hole some two decades ago. Greenhouse gas emissions are another example of how 'local' environmental problems may end up being global. The polar regions will continue to suffer the impacts of problems generated elsewhere. However, continued cooperation across various fronts both at the regional and global levels should help address some of the existing problems and pinpoint emerging ones.