

LAND AND HUMAN WELL-BEING

G L O B A L E N V I R O N M E N T O U T L O O K

The fourth *Global Environment Outlook – environment for development (GEO-4)* assessment report is published in 2007, exactly two decades since the World Commission on Environment and Development (WCED) published its seminal report – *Our Common Future* – which placed sustainable development on the agenda of governments and other stakeholders. *GEO-4* is the most comprehensive UN report on the environment prepared by about 390 experts and reviewed by more than 1 000 others across the world.

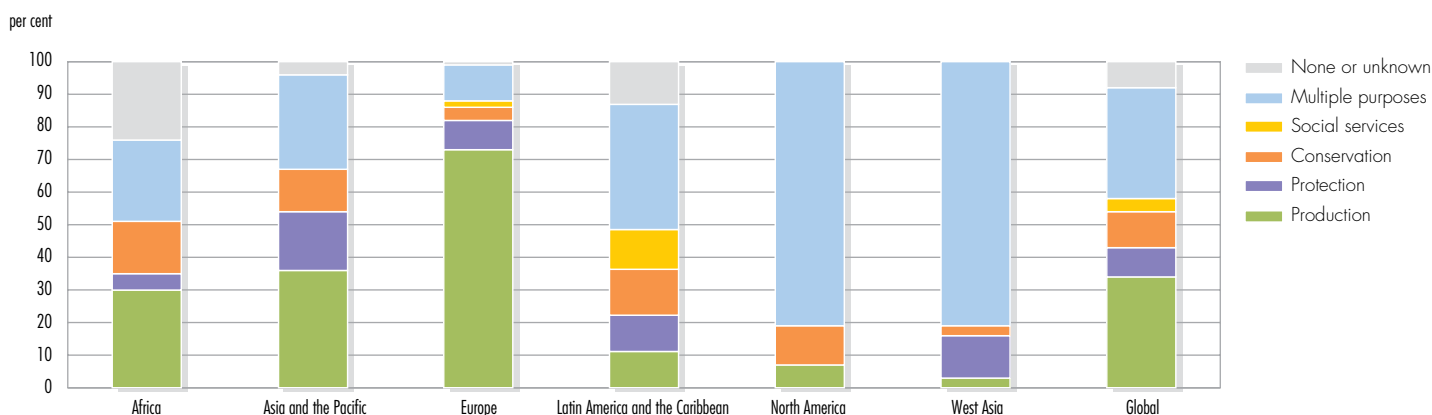
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Land use changes have had positive and negative effects on human well-being, and on the provision of ecosystem services. Enormous increase in the production of farm and forest products has brought greater wealth and more secure livelihoods for millions of people worldwide. These are some of the topical issues analysed in the report, prepared by almost 400 scientists and policy experts over a period of four years.

- The main changes in land use at the global level since 1987 have been a loss of forest (an average of 73 000 km² annually), with concomitant increases in farmland, urban areas and woodland/grassland. Forest has mostly been converted into farmland, while lands formerly used as farmland have been converted into urban areas.
- The intensity of land use for agricultural production has increased dramatically since 1987. Regionally, cereal yields have increased by 25 per cent in Asia and the Pacific, 37 per cent in West Asia, and 40 per cent in Latin America and the Caribbean. Food produced per hectare has increased from a global average of 1.8 tonnes in the 1980s to 2.5 tonnes today.

- Since 2006 and for the first time in history, more than half of the human population lives in cities. A further rise is expected, should current trends continue.
- The main causes of changes in land use and land use intensity have been increasing human population, changing consumption patterns, changes in technologies, policies and climate.
- The area covered by forests in Europe and North America increased during the period under review, reversing the historical trend of temperate forest loss. Tropical deforestation, which began later than temperate deforestation continues today. The global average annual loss of primary forest was 50 000 km², while planted and semi-natural forests increased annually by 30 000 km² on average. Continued forest degradation remains a serious concern.
- Forests are managed for various functions, including production, conservation and protection, and multiple purposes. At the local level, there are many examples of innovative, community-based approaches to sustainable

Designation of forests by region, 2005



Source: GEO Data Portal compiled from FAO



In the Pampas, rills form during rainstorms when ground cover is sparse, and gradually turn into large gullies.

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forest management. In some countries, non-wood forest products are more valuable than wood products. A significant proportion of rural household income in forested areas comes from forest products, particularly among poor households.

- Land degradation is a fundamental and persistent problem, which is driven by unsustainable land use. Recent analysis of global land degradation using satellite data since 1981 indicate that the greatest areas of concern include tropical Africa south of the equator, southeastern Africa, southeast Asia, south China, southeast Brazil and the Pampas, and the boreal forests in Alaska, Canada and eastern Siberia.
- Chemical contamination and pollution pose hazards to human health and the environment, but there is insufficient information currently on the amounts released, their toxic properties, and safe limits for exposure. A legacy of contaminated sites is common in old industrial heartlands; in Europe, for example, it is estimated that there may be more than 2 million such sites, of which 100 000 require remediation.
- Soil erosion reduces on-site production where soil is removed, and also results in off-site costs where deposited soil causes infrastructure damage and sedimentation in water bodies. Inappropriate land management, such as inappropriate tillage and overgrazing accelerate natural erosion processes. The most important factor determining actual erosion is the level of land management. Soil conservation has yielded

local successes, however apart from conservation tillage; the adoption of recommended practices has been slow.

- Depletion of soil nutrients is the most significant biophysical factor limiting crop production over large areas in the tropics, particularly in sub-Saharan Africa. The simple addition of manure or fertilizer may raise crop yields by as much as 16 times. Still, many smallholders in poor countries do not have the means to purchase fertilizer. On the other hand, the high levels of nutrient application in industrialized countries cause eutrophication.
- Desertification – land degradation in drylands – is most sharply expressed in poor countries, affecting the livelihoods of rural people. Indicators of human well-being in dryland developing countries lag far behind the rest of the world. Over the long-term, ecosystems are governed by biophysical and socioeconomic factors which change slowly.
- Demands on land resources and the risks to sustainability are likely to intensify. Population growth, economic development and urbanization will drive demands for food, water, energy and raw materials. Climate change is expected to affect agricultural production, with many regional differences in impacts. Increasing meat consumption and the shift to biofuels will place additional demands on agriculture. Opportunities exist to meet many of these challenges, such as precision farming, the management of multifunctional landscapes, and crop improvements.

Sources and credits for the information presented here are available and fully referenced in the **Fourth Global Environment Outlook - environment for development** report.