

fact sheet

Global Environment Outlook - 3

Europe

Europe consists of the rich and industrialized countries of Western Europe including the European Union, Norway, and Switzerland. The countries with economies in transition include those of Central and Eastern Europe (CEE) and the Russian Federation, Ukraine, and other members of the Former Soviet Union (FSU).



GE O 3

PAST AND PRESENT: 1972 TO 2002

Land — Some 74 per cent of Europe's population is concentrated on only 15 per cent of its land surface. Key land-use issues relate to agriculture, urban sprawl, and soil degradation. Two-thirds of Europe's wetlands have been lost over the last 100 years.

The increase in sealed surfaces together with declining forest cover has boosted the frequency and size of storm run off, resulting in more floods, mudflows and landslides. Flood damage has worsened because floodplains are being developed for industry and housing.

In Eastern Europe, huge irrigation and hydroelectric projects coupled with poor water management have caused large areas to become salinized and waterlogged. This is particularly true in Azerbaijan, Belarus, the Russian Federation and Ukraine.

Soil erosion is becoming irreversible (defined as a loss of more than 1 tonne/hectare/year over 50-100 years) in some Mediterranean lands and in the black soil regions of Moldova, the Russian Federation and Ukraine.

Economic collapse in the CEE countries has led to a sharp decrease in the use of agricultural chemicals, abandonment of huge irrigation projects and agricultural land, and a decrease in livestock, with a generally beneficial effect on the land. In addition, substantial areas are being reforested.

Freshwater – Water pollution is a serious issue throughout Europe, but particularly in the Central and Eastern countries. European seas, lakes, rivers and groundwater suffered eutrophication in the 1970s and 1980s as they became overloaded with organic matter, nitrogen and phosphorous. The main source of nitrogen is fertilizer; most phosphorous comes from household and industrial wastewater.

In the CEE region, 30-40 per cent of households were still not connected to sewers in 1990 and treatment was inadequate. In the Russian Federation and Ukraine, discharges of polluted water into rivers increased during the later 1980s and the 1990s.

The amount of water abstracted for public water supply in Western Europe fell by 8-10 per cent between 1985 and 1995 as a result of improved industrial and domestic water use efficiency. Phosphorous discharges from urban wastewater treatment plants in Western Europe have fallen by 50 – 80 per cent since the early 1980s.

Forests and Biodiversity— Forests cover 45 per cent of the European landscape. While the forested area has been gradually increasing since the 1970s, forests rich in old-growth trees and indigenous species continue to decline.

Once nationalized and centrally managed forests in the Central and Eastern European countries are now under pressure from illegal tree felling. Some rare species have been pushed to the brink of extinction as a result. Vast tracts still suffer the lingering consequences of acidification.



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Degraded forests are found in the Russian Federation around industrial centres in the Urals, the Kola Peninsula, and Siberia; Chernobyl affected about 1 million ha of forests in Russia as well as large areas in Ukraine and Belarus.

Mediterranean forests have been degraded since ancient times. It is estimated that an average of 500 000 ha are burned every year by fires – almost all caused by humans.

Vast forested areas of the Republic of Komi and the Lake Baikal basin have recently been designated UNESCO World Heritage Sites, effectively halting planned logging operations. Efforts are being made throughout Europe to promote sustainable forest management by decreasing wood production from natural forests and enhancing biodiversity and other environmental services.

Agricultural land covers some 45 per cent of Europe, thereby restricting the size of most natural habitats. Habitats such as lowland forest and wetlands have undergone particularly large declines. In Spain alone, more than 60 per cent of all inland freshwater wetlands disappeared during a 25-year period.

Intensive agriculture affects water quality, land drainage, and soil erosion. It destroys and degrades habitat and its dependence on fertilizers and biocides poisons animals and water supplies. In the UK, 26 species of farmland birds declined significantly from 1968 - 1995 primarily because agriculture became more intensive.

Many large mammals such as the polar bear, wolf, lynx, and bison are now restricted to small remnants of their original habitat. Others, such as the tarpan and the saiga, have become extinct. Some 260 vertebrate species are now threatened with extinction.

In Western Europe, more than 22 million ha of agricultural land are covered by some form of agreement to maintain biodiversity and landscapes. Central and Eastern Europe still possesses a wealth of well-preserved landscapes, ecosystems and species that are rare or already extinct in Western Europe.

Coastal and Marine Areas – Europe is almost surrounded by semi-closed and closed seas, including the Adriatic, Mediterranean, Black, Azov, Caspian, and White seas. Limited water exchange with the open ocean renders these seas sensitive to pollution, which increased dramatically from the 1970s to the 1990s (although recently this trend has been halted and in some places even reversed).

Some 85 per cent of European coasts are at high or moderate risk from development-related pressures. Two-thirds of Europe's tourism is centred on the coastlines. The Mediterranean coast alone hosted some 135 million tourists in 1990 and is expected to receive 235-353 million tourists annually by 2025.

All European seas are polluted by heavy metals and persistent organic pollutants. They are also contaminated by microbes and high levels of wastewater. Wastewater from many population concentrations is often not sufficiently treated – for example, in the Mediterranean, Adriatic and Black seas.

Inflows of hazardous heavy metals and organic substances in the northeast Atlantic fell significantly between 1990 and 1998 after increasing for several decades. Phosphate concentrations have declined in some regions due to reductions in phosphate content in detergents.

Atmosphere – The main sectors and activities driving air pollution in the last three decades have been energy, transport, industry, agriculture, solvent use, and the storage and distribution of fossil fuels. In Central and Eastern Europe, the power and heavy industry sectors have traditionally been the major polluters, with transport significant only in the major cities.

The stratospheric ozone layer over Europe now thins by 6 per cent on average in the winter and spring. In the spring of 1995, stratospheric ozone levels over Europe were 10-12 per cent lower than in the 1970s. During the particularly cold winter of 1995-96, ozone concentrations over the UK fell by almost 50 per cent in the first week of March.

Although many European countries are enthusiastic proponents of the Kyoto Protocol, the region is still a major emitter of greenhouse gases. The energy sector is the main contributor (32 per cent of the European Union CO₂ emissions), while transport, combustion, manufacturing and heavy industry also play major roles.

Emissions of most key air pollutants have declined over the whole of Europe since the early 1980s. The European Union's greenhouse gas emissions dropped by 2 per cent between 1990 and 1998. In 2000, CO₂ emissions in nine of the Central and Eastern European countries were 8 per cent lower than in 1990, in most cases due to economic recession and declining industrial output.

2032: CHOICES FOR THE FUTURE

We are at a crossroads with the future in our hands. The decisions taken today and tomorrow will define the kind of environment this and future generations will enjoy. GEO-3 in its Outlook chapter outlines four policy approaches leading to different outcomes over the next 30 years. Here we highlight two of the most contrasting scenarios: Markets First and Sustainability First. One envisions a future driven by market forces; the other by far-reaching changes in values and life styles, firm policies and cooperation between all sectors of society.

Land – Built-up areas grow over time in Western Europe. Elsewhere in Europe a declining population leads to a stable or modest decrease in the total built area. Overall, there is only a fractional rise in the built up area by 2032 under *Markets First*.

Under *Sustainability First*, already compact settlement patterns combine with lower population growth to reduce settled areas throughout Europe. The built up area falls marginally.

Freshwater – Economic development in *Markets First* leads to sharp increases in water demand throughout Europe, but especially in Central and Eastern countries. The population living in areas with severe water stress rises to over 45 per cent.

Structural changes introduced under *Sustainability First* reduce water withdrawals across the region. Declines in meat consumption augment the savings achieved through water pricing and similar policies. Efforts to save water permit some currently stressed river basins to revive. Only just over 10 per cent of the people are living in severely water stressed areas by 2032.

Forests and Biodiversity – Rising pressures to develop resources and infrastructure reduce natural forests and biodiversity under *Markets First*. Infrastructure impacts around 70 per cent of the land leading to the loss of reindeer and wolf populations and of many insects and plants adapted to farming conditions.

In *Sustainability First*, present-day initiatives such as the European Union Natura 2000 take effect. Pan-European networks of protected areas and green corridors are launched to protect biodiversity. Wildlife also benefits from the rehabilitation of former agricultural land, wetlands and other habitats. Infrastructure impacts only half the land.

Coastal and Marine Areas – Tourism places ever-greater pressures on coastal zones throughout the region under *Markets First*. Salinization increases. Second homes generate growing pressures in some areas, such as the Baltic. In Eastern Europe, coastal zones are increasingly left to local authorities to manage, with somewhat unpredictable outcomes.

Integrated coastal zone management schemes based on voluntary partnerships and participatory arrangements significantly improve coastal environments under the *Sustainability First* scenario.

Atmosphere – Under *Markets First*, pollutant emissions rise, particularly from transport. Policymakers are likely to emphasize economic policies such as road and carbon taxes. Technological development

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will continue to improve the energy use per unit of activity. However, growth in travel and economic activity is expected to outweigh these improvements.

Extremely active policies are adopted for improving public transportation, both to reduce pollution and congestion and to improve energy efficiency, under *Sustainability First*. People are willing to shift to public transport and adopt other environmentally-friendly lifestyle changes.

For more information please contact

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