

fact sheet

Global Environment Outlook - 3

Asia and the Pacific

Asia and the Pacific region includes the countries of Central Asia, South Asia, Southeast Asia, Northwest Pacific and East Asia, Australasia and the Pacific.



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PAST AND PRESENT: 1972 TO 2002

Land – Population growth and high population density, poor land management practices, and emerging inequities in land and resource access have been the major driving forces for change over the past 30 years. Intensive agriculture, including overgrazing and heavy fertilizer use, are issues in many areas. Pacific Island countries have suffered dramatically from the impacts of industries such as mining and logging.

Of the 1 997 million hectares (ha) of drylands in Asia, more than half are affected by desertification. The worst affected is Central Asia, with more than 60 per cent suffering desertification.

Activities to combat desertification include watershed management, soil and water conservation, sand dune stabilization, reforestation programmes, reclamation of waterlogged and saline lands, forest and rangeland management, and soil fertility restoration.

In Australia, community-based voluntary initiatives have proliferated to include Landcare, Dune Care, RiverWatch, Bushcare and Coastcare programmes.

Significant changes have occurred to agricultural land in some countries. In Japan, the area of agricultural land decreased from 5.8 to 4.9 million ha between 1970 and 1999 as arable land was converted to residential use.

Freshwater –The region has the lowest per capita availability of freshwater. Several countries, including Bangladesh, India, Pakistan, and the Republic of Korea, already suffer from water scarcity. About half the region's population live with severe water stress.

Rivers such as the Yellow (China), Ganges (India), and Amu and Syr Darya (Central Asia) top the list of the world's most polluted rivers.

Inadequate water supply and poor sanitation cause more than 500 000 infant deaths a year as well as huge burden of illness and disability in the region.

There is now an increasing focus on management measures such as efficient water use, conservation and protection, institutional arrangements, legal, regulatory and economic instruments and public information.

Clean-up campaigns for rivers, canals, lakes and other water bodies have become widespread.

Forests and Biodiversity – Asia and the Pacific region accounts for 18.8 per cent of global forests.

Population pressure, heavy dependence of fuel wood, timber and other products, as well as conversion of forests to agricultural, urban and industrial land are the underlying factors for deforestation in the region. Construction of irrigation schemes, dams and reservoirs as well as mining are further causes of deforestation while armed conflict has also taken a toll in some countries.



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Forest fires have become a major cause of deforestation in many countries, especially in East and Southeast Asia.

Within the region, annual deforestation rates were highest in Southeast Asia at 1 per cent, equivalent to 2.3 million ha annually. Northwest Pacific and East Asia had an increase of 1.85 million ha annually, due mainly to afforestation in China.

The Chinese government began afforestation programmes in the 1970s. Forest coverage increased from 13.9 per cent in 1993 to 17.5 per cent in 2000. By 2001, the total afforested area in China had reached 46.7 million ha. Several countries have ambitious plans for the future: Viet Nam has set a target to create 5 million ha of additional forest area in the next 10 years; the Philippines Master Plan for Forestry has set a target for 2.5 million ha to be planted between 1990 and 2015.

The Government of Bhutan mandated, in 1995, that the country must keep at least 60 per cent of its total land area under forest cover.

More than 60 per cent, some 11 million ha, of Asia's mangroves have already been converted to aquaculture and more have been cleared to make way for rice farming or urban and industrial land use.

The entire Hindu Kush-Himalayan belt has as many as 25 000 plant species, comprising 10 per cent of the world's flora. New large mammal species have been discovered in Viet Nam and Laos.

At the global level, around three-quarters of known or suspected species extinctions have occurred on isolated islands, many of which were molluscs and birds from the Asia and the Pacific region. Around 55 per cent of land and its habitats are impacted by infrastructure development.

Many countries are now party to international agreements such as the Convention on Biological Diversity. Protected areas have been set up in different countries but the proportion of protected area to total area in most countries is lower than the 10 per cent norm recommended by IUCN.

Coastal and Marine Areas – Increasing urbanization, industrialization and tourism, coupled with a growing coastal population, have contributed to the degradation of coastal areas, reduced water quality and increased pressures on marine resources.

More than half of the world's coral reefs are located in the Pacific Island countries, and large areas are already degraded. The causes range from global, large-scale changes in the ocean environment and global warming to tourism and recreation, high population density and economic development in coastal areas since the late 1980s.

Soil erosion has led to high levels of sediments in the coastal zones of South Asia. Annually, about 1.6 billion tonnes of sediment reach the Indian Ocean from rivers flowing from the Indian sub-continent.

The South Pacific tuna fishery offers a model of international cooperation for open sea fishing that may prove to be the first sustainable, multinational ocean fishery in the world.

The gradual move towards integrated planning and development of coastal and marine areas, through national, regional and global initiatives, is an encouraging trend.

Atmosphere — Of the 15 cities in the world with the highest levels of particulates, tiny specks of soot, dust and other solid pollutants linked with breathing problems and heart attacks, 12 are located in Asia. Six of these cities also have the highest levels of atmospheric sulphur dioxide (SO₂).

Although most Asian countries have low per capita vehicle ownership compared with the world average, in some places it is rising rapidly. In India, for example, the number of cars has been doubling every seven years for the past 30 years, adding to air pollution.

Per capita use of commercial energy increased annually by 1.9 per cent in South Asia and 3 per cent in East Asia and the Pacific during 1980-98.

Haze and acid rain have emerged as regional issues over the past decade, especially in Asia because of China and India's overwhelming dependence on coal. Around 0.28 million ha of forest land are reported to be damaged by acid rain in the Sichuan Basin of China.

About 40 per cent of the global infantile mortality caused by pneumonia occurs in Bangladesh, India, Indonesia and Nepal; many of these deaths are caused by pollutants from burning traditional fuels.

In a few cities, pollution levels have decreased. For example, in Japan, high fuel prices, technological advances and strict standards have reduced SO₂ and particulate emissions, and eliminated lead emissions from transport.

Many countries have developed their own standards for power plants, selected industries and vehicles, and introduced unleaded petrol, mandatory catalytic converters and low sulphur motor fuels. Tax incentives for gas or battery operated vehicles have been introduced in Nepal and Pakistan.

2032: CHOICES FOR THE FUTURE

We are at a cross roads 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 lifestyles, firm policies and cooperation between all sectors of society.

Land - Growing populations, the spread of agriculture and climatic changes indicate that land degradation will increase in many parts of the region under *Markets First*. By 2032, just over 5 per cent of the land may have been built on.

Under a *Sustainability First* future, policies such as improved land tenure and regional cooperation in managing erosion, particularly on steep slopes, limit soil damage and loss. However, the percentage of land built upon remains close to that under a market-led future by 2032.

Freshwater - Under the *Markets First* scenario, water withdrawals increase in all sectors, especially when further expansion of irrigated area is assumed. Nearly 90 per cent of people living in South Asia could be in areas of severe water stress. Over 45 per cent of those in Southeast Asia could be in the same difficulties, up from around 15 per cent now.

Water pricing and the more efficient use of water in agriculture are likely to reduce the threat under *Sustainability First*. The proportion of people living in severely, water stressed areas in South Asia falls to below the current 80 per cent. In Australia and New Zealand, the fall could be even more dramatic, down from over 55 per cent now to less than 20 per cent.

Forests and Biodiversity - Forests in the region may benefit under a *Markets First* future as advances in agricultural technologies and a fall in agricultural subsidies reduce the pressure to convert woodlands to farmland.

These advances are complemented in a *Sustainability First* world as national and local measures encourage reforestation and direct efforts to preserve wildlife. However, the attempt to address the environmental and quality of life problems in the region's mega-cities leads to a greater dispersal of settlements, increasing deforestation in some areas. The net result is that the total area of forests in both scenarios falls with South and Southeast Asia's forests suffering most, whereas those in the Northwest Pacific, East Asia, Australia and New Zealand expand.

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Under both scenarios, the region's biodiversity suffers as a result of infrastructure development. Currently over 55 per cent of the land is affected. This rises towards 80 per cent under *Markets First*.

Under *Sustainability First*, infrastructure impact is held back to between 60 and 70 per cent as communities maintain endemic, genetic, stocks of plants, animals and other life-forms to supply the biotechnology industry.

Atmosphere - Local air pollution worsens and energy-related emissions rise as result of economic growth, a rise in the number of vehicles and a dependency on coal continues under *Markets First*. Total regional emissions of carbon dioxide, the gas linked with global warming, climb from just over 2 000 million tonnes of carbon to close to 6 000 million tonnes.

In *Sustainability First*, major efforts towards decentralization with dispersed satellite cities relieve the pressures. This step, combined with better physical planning and management of urban systems, leads to more effective coordination of growth, distribution of clean industry and improved housing design. Carbon dioxide emissions climb to just over 5 000 million tonnes a year by 2032.

For more information please contact

Tim Higham, Regional Information Officer, UNEP, Bangkok, Tel: +66 2 288 2127, e-mail: higham@unep.org or
Nick Nuttall, Head of Media, UNEP, Nairobi, Tel: +254 2 623084, Mobile: +254 733 632755, e-mail:
nick.nuttall@unep.org

