

World Human Population Now Totals 5.5 Thousand Millions

According to the 1992 revision of the *United Nations Population Estimates and Projections*, the World's human population totalled 5.5 thousand millions as of mid-1992. The current annual 1.7% growth-rate may decrease to 1% by AD 2025, but the overall total population is expected to grow to 8.5 thousand millions before levelling off.

Growth-rate Slowing

Growing at a rate of 1.7% per annum, the World's total population is projected to increase by 93 millions during 1992. By the end of the century, world population should have increased by nearly 750 millions (14%) to 6.2 thousand millions, and by AD 2025 the figure may reach 8.5 thousand millions. These increments are expected to occur even though the annual population growth-rate is projected to decline from the current 1.7% to only 1% by AD 2025.

These population figures are given in the recently-released 1992 revision of the official United Nations population estimates and projections, prepared by the Population Division of the Department of Economic and Social Development. They provide the standard set of population figures used consistently throughout the United Nations system.

Less-developed Majority

Currently, 4.3 thousand million people — 78% of the world's population — live in the less-developed regions. The total population size in the more developed regions is 1.2 thousand millions — 22% of the world's population. The average annual population growth-rate is about 0.5% in the more developed regions and 2% in the less-developed regions.

Projections suggest that the population of the more-developed regions will increase by 179 millions between AD 1992 and 2025, whereas the population of the less-developed regions is expected to increase nearly 16 times as much — by some 2.8 thousand millions. In the year 2025, it is expected that 1.4 thousand million people will live in the more-developed regions and 7.1 thousand millions in the less developed.

As a result of differences in projected growth, the distribution of the population among the world's regions is expected to continue to change. Europe's share — 9% of global population in 1992 — is projected to decline to 6% by AD 2025. Northern America and all the republics of the Commonwealth of Independent States are expected to decline from 5% of world population in 1992 to 4% by AD 2025.

Africa, which currently accounts for 12% of world population, may reach 19% by AD 2025. By then, the continent's population may have more than doubled in

size. The countries of Latin America are expected to remain at about 8% of the world's population during the period 1992–2025. The percentage of total population living in Asia is expected to change slightly — 59% in 1992 and 58% by AD 2025. Within Asia, however, China's share should continue to decline — from 22% in 1992 to 18% in AD 2025. India's population, which accounts for 16% of the world's total in 1992, is expected to retain its share in the year 2025.

World Rankings Changed

The dissolution of the Soviet Union has altered the ranking in population-size of the 10 largest countries in the world. The United States, which had been fourth in 1990 — after the Soviet Union — is now the third-largest, following China and India. The Russian Federation, the largest republic in the area of the former Soviet Union, is now the sixth-largest country of all. Six of the 10 largest countries are in Asia (China, India, Indonesia, Pakistan, Japan, and Bangladesh), one is in Latin America (Brazil), and one in Africa (Nigeria).

The results of these projections will be published very soon in the form of a wall-chart and a set of technical publications that will be available from the Population Division of the UN's Department of Economic and Social Development. These reports incorporate the results of the latest rounds of national censuses and surveys as well as the most recent data from national civil registration systems. Demographic estimates are provided for all countries and regions for the period 1950–90; and projections with various assumptions of future fertility, mortality, and migration, are available for the years 1990–2025.

In addition to incorporating new data which have latterly become available, the 1992 revision takes into account demographic changes that have resulted from extraordinary events during the past two years. Most notable is the dissolution of the Soviet Union. Estimates of international migration had to be revised for a large number of countries to take into account the new and extensive migratory movements within and to Europe (from the former Soviet Union to Israel and elsewhere), the unprecedented growth of refugees in Africa and other continents, and population movements due to the Persian Gulf crisis. In addition, the potential demographic impact on population growth of the acquired immunodeficiency syndrome (AIDS) pandemic has been figured-in for the 15 highest-prevalence countries.

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Alarming Soil Degradation Around the World Revealed by Latest Data

A recent global assessment of soil conditions reveals that 1.2 thousand million hectares (more than 3 thousand million acres) of land — an area roughly the size of China and India combined — have become seriously degraded since World War II, according to *World Resources*

1992–93, a comprehensive global-data report published by the World Resources Institute (address below). The study estimates that, in the past 45 years, about 11% (*cf.* Table I) of the Earth's vegetated land-surface has become degraded through human intervention to the point that

biological productivity is impaired, making such areas costly or even impossible to reclaim. The damage was caused mainly by overgrazing, agricultural malpractices, and deforestation.

Increased doses of fertilizers can mitigate a soil's loss of productivity, but chemicals alone cannot reverse soil degradation, and may cause further environmental damage. Without soil damage, gains in agricultural output achieved through improved technology would have been even higher. 'These findings are an early warning that we are losing potential agricultural productivity that may be critical in providing the food and other essential needs of a burgeoning global population, which is expected to double by the middle of the next century', said Dr Monkombu S. Swaminathan, head of the M.S. Swaminathan Research Foundation in India and chairman of the Editorial Advisory Board for *World Resources 1992-93*.

According to the above-cited report, *per caput* food production has declined in about 80 of the world's less-developed countries in the past decade, and soil degradation may well be a contributing factor of this decline. Further deterioration of the world's soil-base would have very serious implications, especially for poor-soil countries that cannot afford corrective measures but too-often have burgeoning human populations. The survey indicates that about two-thirds of all seriously eroded land is in Asia and Africa — regions where most of the world's poor live. In Central America, about 25% of the vegetated land is now moderately to severely degraded.

Rich-soil Countries Declining Too

The study shows that even some of the world's richest soils have lost some of their former productivity. In North America's 'breadbasket' — the prairie land extending from the US Midwest through the Great Plains into Canada — soil degradation, caused mainly by wind and water erosion, has been obscured by the use of more fertilizers and high-yielding crop varieties to sustain outputs. The Soil Conservation Service estimates that about 25% of US cropland is eroding at a rate faster than is considered remediable or steadily renewable to meet the needs of present as well as future generations.

According to the report, about 9 million hectares of the world's land are so badly damaged that they have lost nearly all biological function and are unlikely to be restored to productivity, while some 300 million hectares require a restoration effort that is beyond the capacity of most of the less-developed nations. Most of the degraded land — some 910 million hectares, or an area roughly the size of the United States — can be restored only through major efforts, such as construction of drainage ditches or contour banks. Soil that can be improved simply by changing farm practices is not included in these figures. When 'Once serious soil degradation occurs, only investment in extensive engineering works and other structural changes can restore this land to productivity — a heavy burden for any country but particularly for developing countries struggling under population pressures, poverty, and debt,' explained Allen Hammond, Editor-in-chief of *World Resources 1992-93* and director of WRI's environmental information programme.

In practice, land that requires intensive restoration is often simply abandoned, while rehabilitation of even moderately-degraded agricultural land often requires more financial investment and care than farmers can afford.

TABLE I

Human-induced Soil Degradation, 1945-80.

Region	Total Degraded Area (million hectares)	Degraded Area as a Percentage of Vegetated Land
World		
Total degraded area	1,964.4	17.0
Moderate, severe, and extreme	1,215.4	10.5
Light	749.0	6.5
Europe		
Total degraded area	218.9	23.1
Moderate, severe, and extreme	158.3	16.7
Light	60.6	6.4
Africa		
Total degraded area	494.2	22.1
Moderate, severe, and extreme	320.6	14.4
Light	173.6	7.8
Asia		
Total degraded area	747.0	19.8
Moderate, severe, and extreme	452.5	12.0
Light	294.5	7.8
Oceania		
Total degraded area	102.9	13.1
Moderate, severe, and extreme	6.2	0.8
Light	96.6	12.3
North America		
Total degraded area	95.5	5.3
Moderate, severe, and extreme	78.7	4.4
Light	16.8	0.9
Central America and Mexico		
Total degraded area	62.8	24.8
Moderate, severe, and extreme	60.9	24.1
Light	1.9	0.7
South America		
Total degraded area	243.4	14.0
Moderate, severe, and extreme	138.5	8.0
Light	104.8	6.0

Source: L.R. Oldeman, V.W.P. van Engelen & H.M. Pulles, 'The Extent of Human-induced Soil Degradation,' Annex 5 in L.R. Oldeman, R.T.A. Hakkeling & W.G. Sombroek, *World Map of the Status of Human-induced Soil Degradation: An Explanatory Note*, 2nd edn (International Soil Reference and Information Centre, Wageningen, The Netherlands, 1990), Tables 1-7.

Note: Totals may not add up because of rounding.

Damaging Practices Widespread

Overgrazing by livestock is the most prevalent cause of soil damage, affecting 35% of all degraded land. The decreased vegetation cover — at least of palatable species — commonly leads to wind and water erosion, while trampling compacts the soil, reducing its capacity to retain moisture. In Africa and Oceania, overgrazing causes 49% and 80%, respectively, of soil degradation — mainly in arid and semi-arid areas. World-wide, damaging agricultural practices account for 28% of degraded soil. North America is the region with the greatest share (66%) of soil damage from this cause.

Deforestation, which contributes to some 30% of the Earth's degraded land, is occurring most rapidly in Asia but is most widespread in South America. *World Resources 1992-93* includes an updated report, by the Food and Agriculture Organization (FAO) of the United Nations, on tropical forest losses, which confirms earlier estimates that deforestation has accelerated dramatically,

increasing by 50% during the 1980s to an average of nearly 17 million hectares per year.

Although the above findings on global soil degradation are preliminary, the figures in Table I offer the best available estimates of this serious environmental problem. The report is drawn from a three-years' Global Assessment of Soil Degradation (GLASOD) survey sponsored by the United Nations Environment Programme and coordinated by the International Soil Reference and Information Centre

in The Netherlands. The data were provided by more than 250 soil scientists around the world, the survey being part of a large-scale, 15-years' global soil study.

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St Petersburg A-Ya Society Looking for Foreign Collaborators

The St Petersburg A-Ya Society is organized to support environmental and other scientists and others who aspire to establish businesses of their own but need juridical and financial help and general guidance. The Society is a non-commercial but self-supporting organization of humanitarian orientation. Its most desirable task is to guide scientists and others through the hardships of the reconstruction period in Russia, in conditions of chronic destruction of the centralized state structures, to create independent, private establishments of high professional level.

At the present time the Society consists of an administrative staff (3 directors, 2 economists, a lawyer, and several assistants) and 80 independent private companies, realizing artistic, scientific, and technical, programmes under the Society's supervision. Among the companies are two former collective farms and a group of biologists in the geological-ecological company 'United Laboratories'.

United Laboratories is one of the companies duly organized within the structure of the A-Ya Society. It deals with geological and ecological problems (both fundamental and applied), and consists of several research groups, scientific laboratories, and individual professionals who were formerly working in such state structures as St Petersburg University, the Petroleum Institute, the Institute of Toxicology (Petersburg), and some geological groups in Ukhta (Timan-Pechora region), etc.

All of the specialists working for the United Laboratories are experienced professionals with Doctoral degrees. They are studying the basic problems of geology and ecology together with such specific practical tasks as geochemical mapping (of polluting elements), drug, toxic, and bioactive substances' effects, testing the influence of polluting substances on living organisms, and other special problems.

The St Petersburg A-Ya Society aims to promote international activities by establishing representative offices for foreign companies, societies, and other organizations, and is concerned about the exchange of scientific and cultural achievements in the form of exhibitions, conferences, international expeditions, concerts, etc. The Society is especially interested in active participation in international ecological programmes, and can suggest broadly-oriented specialists working in several neighbouring scientific areas (microbiology, toxicology, geochemistry, etc.). For further information please telephone Geneva (022) 346-3132 or 786-9383, or St Petersburg 259-1111, or otherwise contact the undersigned.

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Solid Waste Association of North America

The Solid Waste Association of North America (SWANA) was established as the Governmental Refuse Collection and Disposal Association (GRCDA) in 1961, primarily to assist municipal solid-waste management professionals who were working for local government, to meet their responsibilities in refuse collection and disposal.

Since that beginning, GRCDA has grown to address the entire spectrum of municipal solid-waste management, has broadened its membership to include both publicly and privately employed municipal solid-waste management professionals, has changed its name to reflect how the field has changed from refuse collection and disposal to municipal solid-waste management, and is now the largest member-based solid-waste association in the world. SWANA membership is principally from the US and Canada, but SWANA also has members in more than 10 other countries.

SWANA, in serving its membership and involved professionals, has a dual mission:

1. To serve as the centre of technical excellence in municipal solid-waste management; and

2. To represent the interests of the municipal solid-waste management professional.

To carry out this dual mission, SWANA has a number of programmes which are directed to serving the membership, nine of which are the following:

- SWANA trains over 6,000 individuals every year in all areas of municipal solid-waste management (MSWM).
- SWANA offers a number of speciality conferences and technical symposia in all aspects of MSWM.
- SWANA has the largest solid-waste library in the world.
- Through SWICH (Solid Waste Information Clearinghouse), SWANA provides electronic access as well as direct access to literature services and technical information.
- SWANA provides technical assistance and networking to assist practitioners in carrying out their responsibilities.
- SWANA conducts and supports professionalism in the field through training and certification of practitioners.