

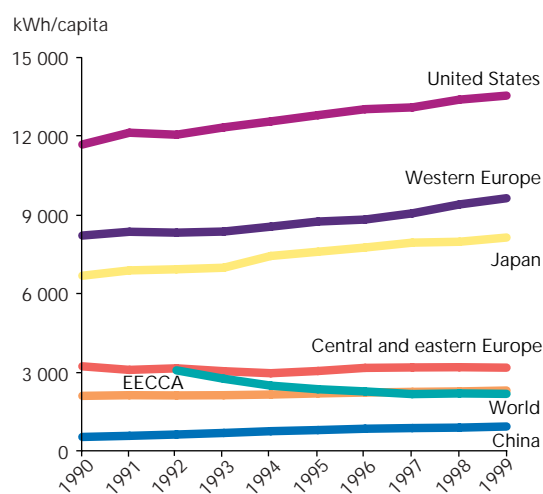
Annex III:

Comparisons with other parts of the world

Selected international comparisons for the following themes:

- Energy
- Agriculture
- Forestry
- Fisheries
- Transport
- Tourism
- Climate change
- Stratospheric ozone depletion
- Air pollution
- Waste generation and management
- Water
- Biological diversity

Theme: Energy
Indicator title: Electricity consumption per capita

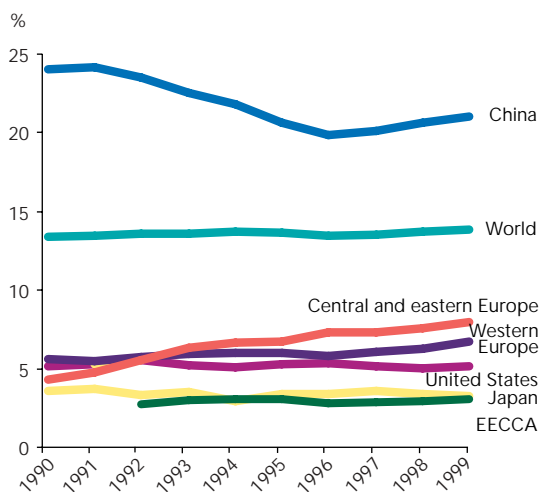


Source: IEA

All the regions and countries considered, with the exception of central and eastern Europe and eastern Europe, the Caucasus and central Asia (EECCA), show an increasing trend in electricity consumption, and all, with the exception of EECCA and China, consume above the world average. Globally, per capita consumption rose by 9 % over the period 1990–99. The United States has the highest per capita consumption of electricity, equal to more than six times the world average.

Per capita consumption in central and eastern Europe and EECCA decreased by 2 % and 29 %, respectively. Within EECCA, consumption in the Republic of Moldova and Kazakhstan dropped by about 50 %. China almost doubled its electricity consumption during the same period. Japan increased its per capita consumption by 22 %, while Western Europe and the United States increased theirs by 17 % and 16 %, respectively.

Theme: Energy
Indicator title: Percentage of energy supply from renewable resources



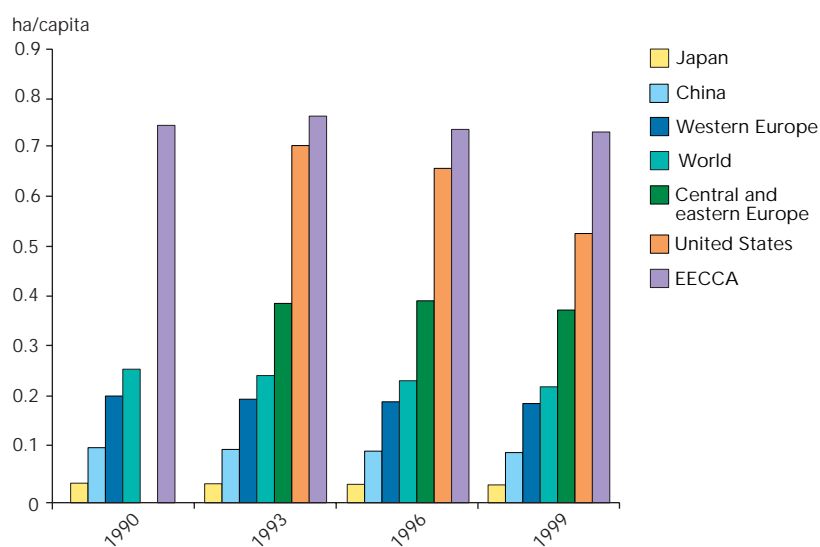
Source: IEA

China is the only country of those considered which has a percentage share of energy supply from renewable resources that is higher than the world average. It is also the only one showing a decreasing trend, from 31 % in 1980 to 21 % in 1999, although the production of energy from renewable resources grew by 25 % over the same period.

Globally, the production of energy from renewable sources increased by 16 % over the period 1990–99. A similar trend was observed in the United States (17 %), while western Europe and central and eastern Europe showed increases of 32 % and 84 %, respectively. Japan increased its production of renewable energy sources by 88 % during 1980–89 but by only 6 % between 1990 and 1999.

Eastern Europe, the Caucasus and central Asia (EECCA) was the only region showing a decrease, of 18 %, in the production of energy from renewable resources since 1992, although share of the total energy supply increased slightly, from 2.8 % to 3.1 %. In the United States the percentage of energy supply from renewable sources remained the same compared with 1990, in western Europe there was a limited increase (from 5.6 % to 6.8 %), while in central and eastern Europe the percentage almost doubled (from 4.3 % in 1990 to 8.1 % in 1999). Renewable sources contributed to 13.9 % of the average worldwide energy supply. The increase compared with 1990 was limited, mainly due to the increase in total energy production outweighing the small increase in energy production from renewable sources.

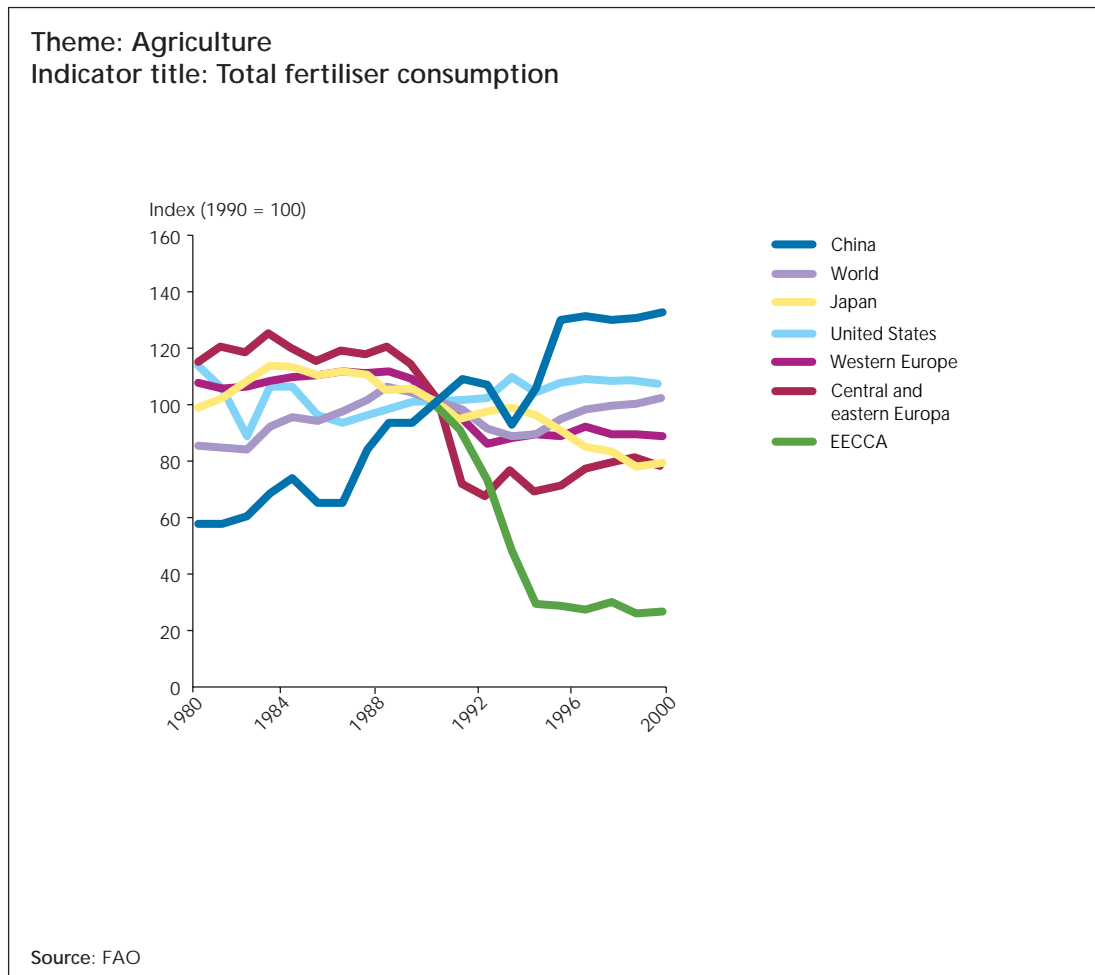
Theme: Agriculture
Indicator title: Arable land per capita



Sources: FAO, World Bank

Arable land per capita declined throughout the 1990s, for the world in general as well as for the selected regions and countries. This is the result of an increasing population combined with a slightly declining area of arable land. The only exception is China

where the arable land remained almost unchanged throughout the reference period (0.5 % increase), although this was outweighed by a 10 % increase in population.

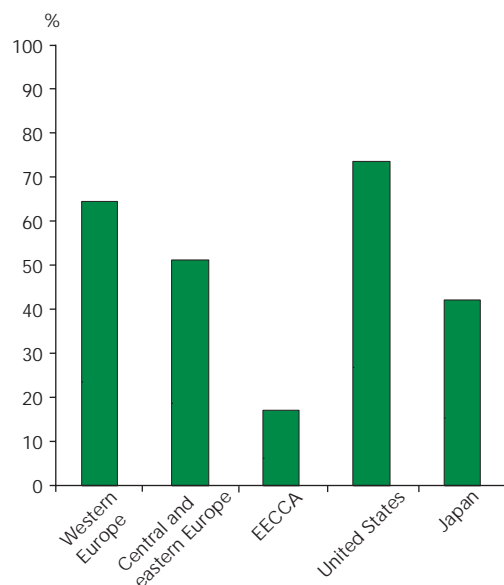


Over the period 1980–99, world fertiliser consumption grew by 20 %. Fertiliser consumption in western Europe, central and eastern Europe, and Japan rose slowly up to 1987–88; it then started to decline regularly through the 1990s. The United States, although recording the highest consumption, reports a declining trend since the beginning of the 1980s. In China, the development has been the opposite as consumption has more than doubled during

the period. In 1999 more than a quarter of the world's consumption was in China, and since 1987 its consumption has constantly exceeded that of western Europe. This development mirrors the fact that China is in the process of increasing its agricultural production and productivity, whereas western Europe, the United States and Japan are reducing the environmental impacts of a highly productive agricultural sector.

Theme: Forestry

Indicator title: Felling as a percentage of net annual increment



Notes: No data available for Greece, Luxembourg, Andorra, Monaco, San Marino, Romania, Malta, Bosnia-Herzegovina, Kyrgyzstan, Uzbekistan.

Definitions: Annual felling is the average annual standing volume of all trees, living or dead, felled during the given reference period, including the volume of trees or parts of trees that are not removed from the forest, other wooded land or other felling site. The net annual increment (NAI) is defined as the average annual volume over the given reference period of gross increment less that of natural losses on all trees.

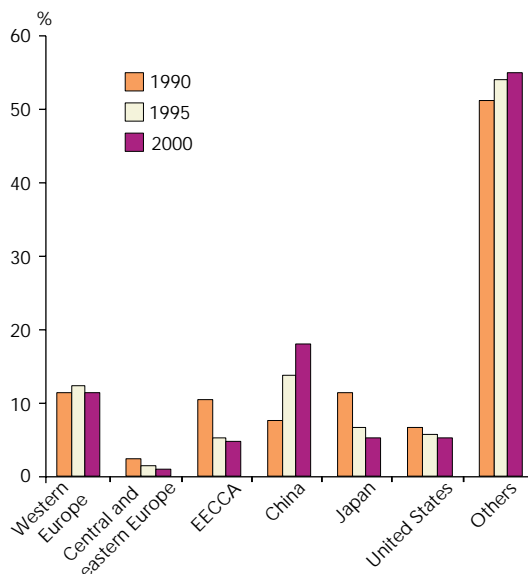
Sources: UNECE/FAO, 2000

Annual felling is lower than the net annual increment in all the regions and countries considered. Eastern Europe, the Caucasus and central Asia (EECCA) has the lowest rate of utilisation of forest resources, with

only 17 % of their net annual increment utilised, in line with the major contributor, the Russian Federation, while the United States presents a rate of utilisation of more than 70 %.

Theme: Fisheries

Indicator title: Total fish landings as share of world total



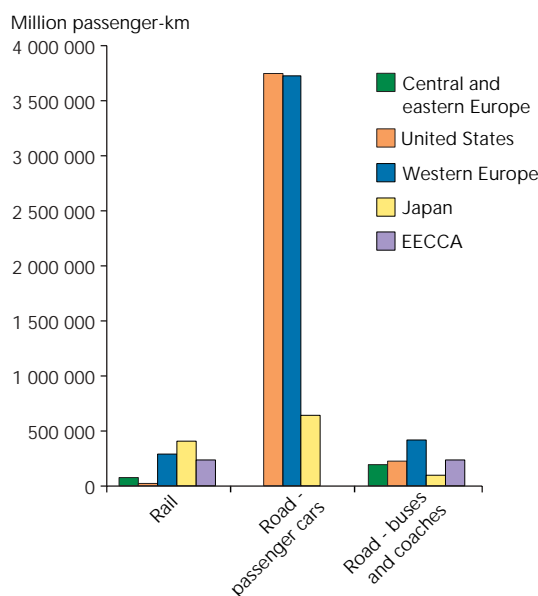
Notes: Description of data: nominal catch of fish, crustaceans and molluscs, the production of other aquatic animals, residues and plants and catches of aquatic mammals, taken for commercial, industrial, recreational and subsistence purposes from inland, brackish and marine waters. The harvest from mariculture, aquaculture and other kinds of fish farming is excluded. Data include all quantities caught and landed for both food and feed purposes but exclude discards. Catches of fish, crustaceans and molluscs are expressed in live weight, i.e. the nominal weight of the aquatic organisms at the time of capture. The harvest of aquatic plants is given in wet weight. Whales, seals and crocodiles are excluded.

Source: FAO

Since 1988 total world landings have increased by 7 %. The contribution to world landings of the groups and countries considered has, however, decreased by 4 % over the period 1990–2000, from 49 % in 1990 to 45 % in 2000. China, whose landings increased to almost three times their original figure over the period, has the highest share

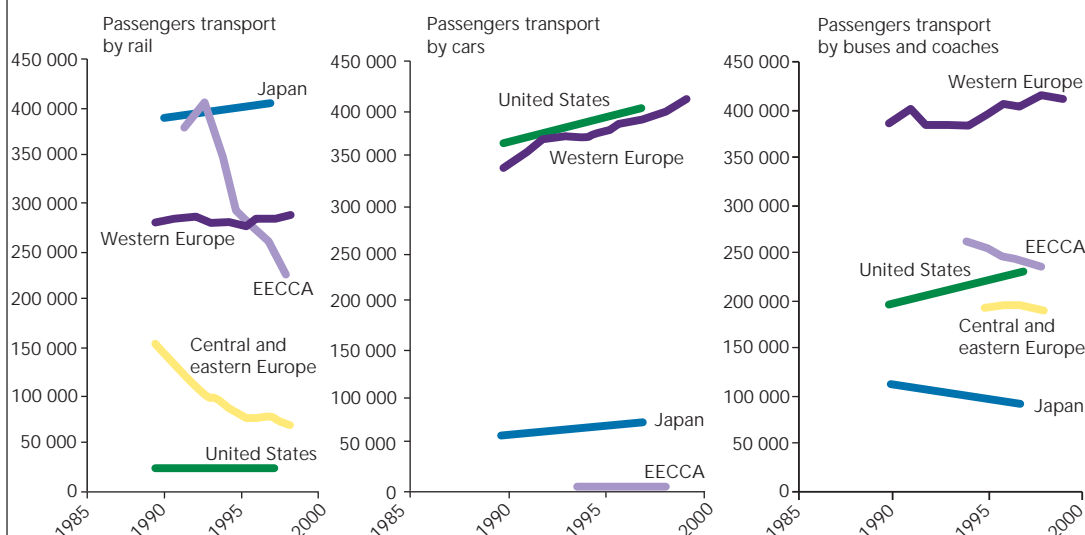
with 18 %. Landings remained constant in western Europe over the last decade, while they decreased by more than 60 % in central and eastern Europe and Japan, by 55 % in eastern Europe, the Caucasus and central Asia (EECCA) and by 16 % in the United States.

Theme: Transport
Indicator title: Passenger transport by mode



Notes: Data for latest year available: 1999 for western Europe, 1997 for United States and Japan and 1998 for all other countries and groups. No data available for Iceland, Norway, Switzerland, Liechtenstein, Andorra, Monaco, San Marino, Malta, Bosnia-Herzegovina and FR Yugoslavia; for road only: Belarus, Georgia, Russian Federation; for cars only: Ukraine, Tajikistan and Turkmenistan.

Sources: UNECE, Eurostat, OECD

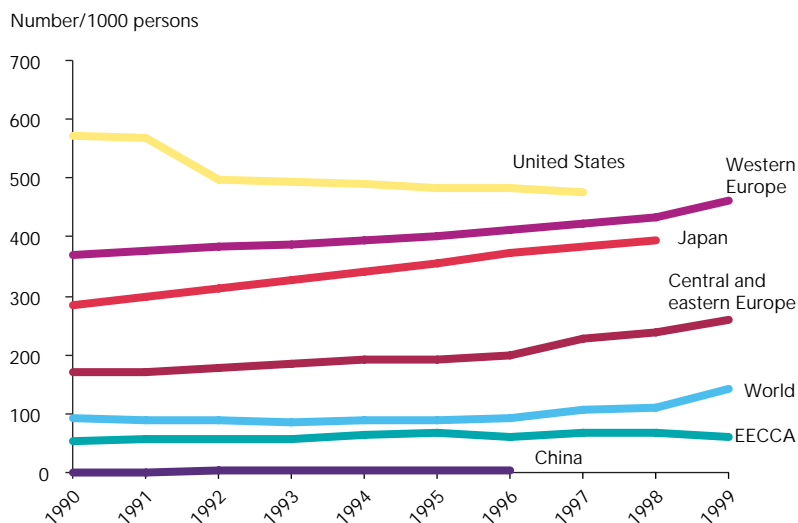


In the last decade, in western Europe, the United States and, to a lesser degree, in Japan passenger transport by rail and road increased, while in central and eastern Europe, as well as in eastern Europe, the Caucasus and central Asia (EECCA), it decreased. Over the period 1990–98 (1997 for Japan and the United States) rail passenger transport grew by 3 %, 4 % and 5 % in western Europe, Japan and the United States, respectively. In EECCA (since 1992) it decreased by 39 %, and in central and eastern Europe by 52 %.

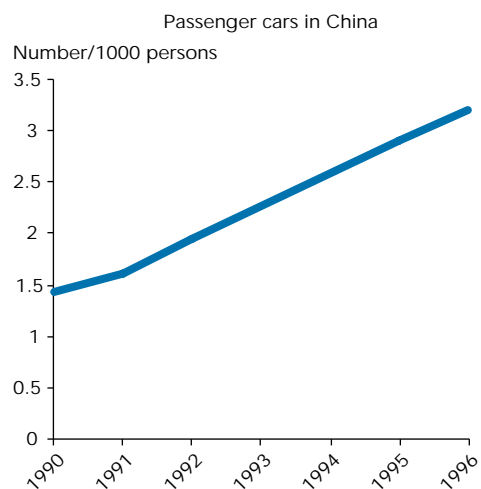
In EECCA a similar decrease, 42 %, was observed in passenger transport by car. Western Europe saw the highest increase in

passenger transport by car since 1990, with 17 %, followed by Japan (15 %) and the United States (9 %). The trend in western Europe is partly explained by increased transport demand following urban sprawl, higher car ownership, prioritisation of investments in roads and low costs of using private transport compared with public transport. The United States has increased the share of public transport in total travel, with bus transport growing by 17 %, compared with only 7 % in western Europe. In Japan public transport use decreased by 16 %. In EECCA and central and eastern Europe transport by bus and coach decreased by 11 % and 2 %, respectively.

Theme: Transport
Indicator title: Passenger cars per 1 000 persons



Sources: UNECE; World Bank for China, Japan, United States and world; and for population data.



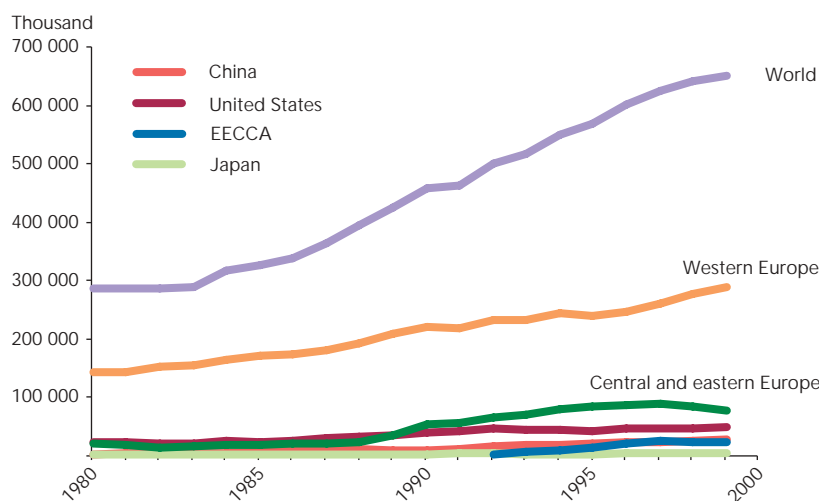
Source: World Bank

Starting from significantly different levels in 1990, western Europe, Japan and the United States are, in 1999, converging to a similar level of car ownership. During the period 1990–97, the number of cars per thousand people increased in western Europe and Japan by 14 % and 36 %, respectively, while it declined in the United States by 17 %. Although pickups, vans, sport utility vehicles and other light trucks are increasingly replacing ordinary passenger cars in the United States, the numbers of such vehicles were excluded in the total number of cars. Adding this group of trucks increases the total from 478 to 755 cars per thousand people in 1997. The figures for the United States could therefore be misleading.

An increasing trend is pronounced in central and eastern Europe with a growth of 53 % since 1990, at lower levels than Japan, western Europe and the United States, but higher than the world average. Below the world average are eastern Europe, the Caucasus and central Asia (EECCA) and China. EECCA saw an increase of 15 % throughout the 1990s.

World average car ownership was stable. In 1997, total car ownership worldwide represented approximately a quarter of the total for western Europe. And despite the more than doubling of car ownership in China between 1990 and 1996, the level is still less than 1 % of the total for western Europe in 1996. The trend is expected to continue as a result of increasing income levels.

Theme: Tourism
Indicator title: Number of tourist arrivals



Notes: A tourist is an overnight visitor, i.e. a visitor who stays at least one night in a collective or private accommodation in the place visited. Arrivals refer to actual arrivals and not to the number of people travelling; one person visiting a country several times during the year is counted each time as a new arrival. The term 'visitor' describes 'any person travelling to a place other than that of his/her usual environment for less than 12 months and whose main purpose of visit is other than the exercise of an activity remunerated from within the place visited'.

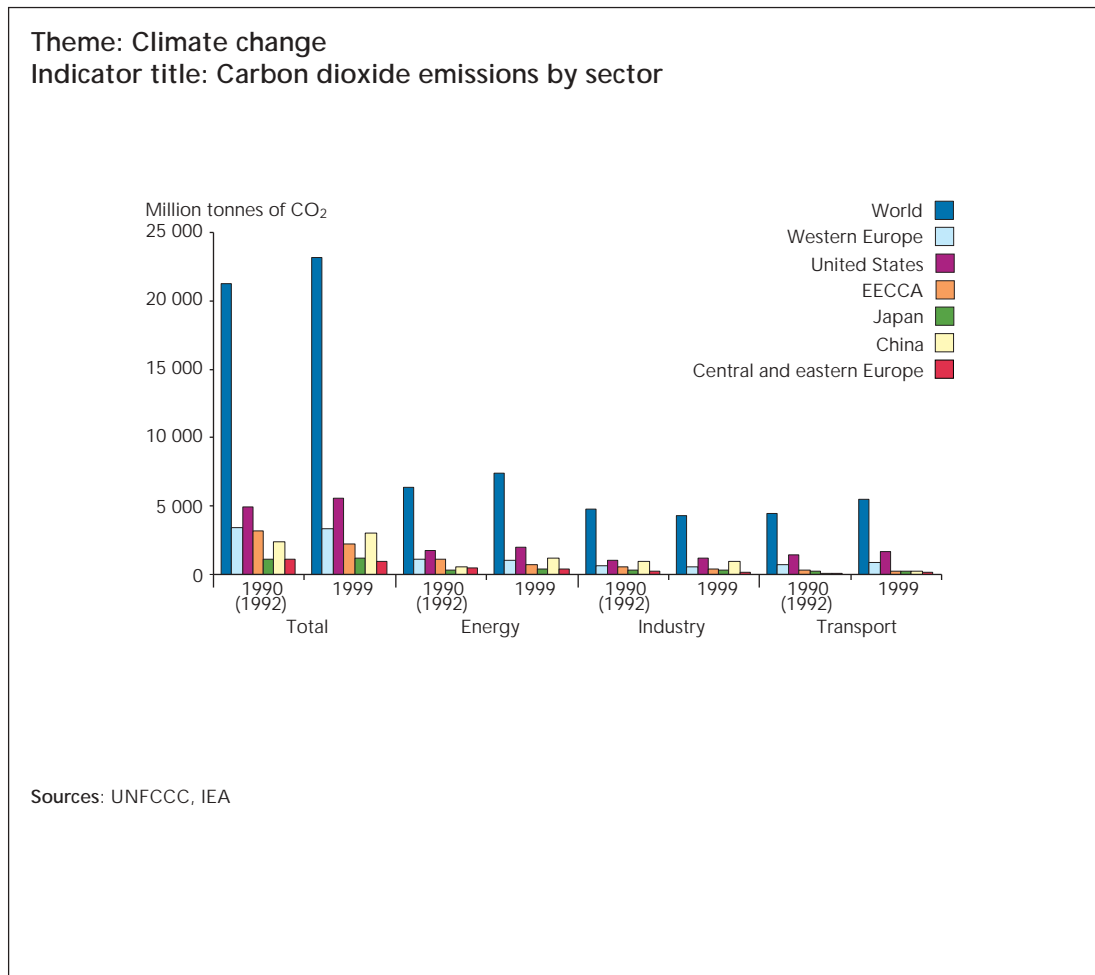
Source: WTO

Western Europe contributed the largest share of the world's total tourist arrivals in 1999 (44 %), compared with 12 % from central and eastern Europe and 4 % from eastern Europe, the Caucasus and central Asia (EECCA). The United States, China and Japan contributed 7 %, 4 % and 1 % of arrivals, respectively. Between 1985 and 1999, the number of tourist arrivals worldwide increased tremendously. In 1998 France, Italy and Spain were at the top of the list of the 40 most popular tourist destinations in terms of international arrivals. Also included in the list were the United States, China and Japan.

The trends in western Europe and the United States follow the worldwide growth

pattern, with the number of tourist arrivals at least doubling between 1980 and 1999. Over the same period arrivals in China increased by almost eight times the original figure, and in Japan by four times. Compared with 1990, arrivals in central and eastern Europe increased by 45 % and, compared with 1992, arrivals in EECCA increased by more than four times the original figure.

International tourism was projected to grow at an annual average rate of 4.3 % through to the year 2020. However, growth in the normally buoyant tourism sector came to a halt in 2001 and international arrivals declined by 1.3 % (this may be attributed to the September 11 event).



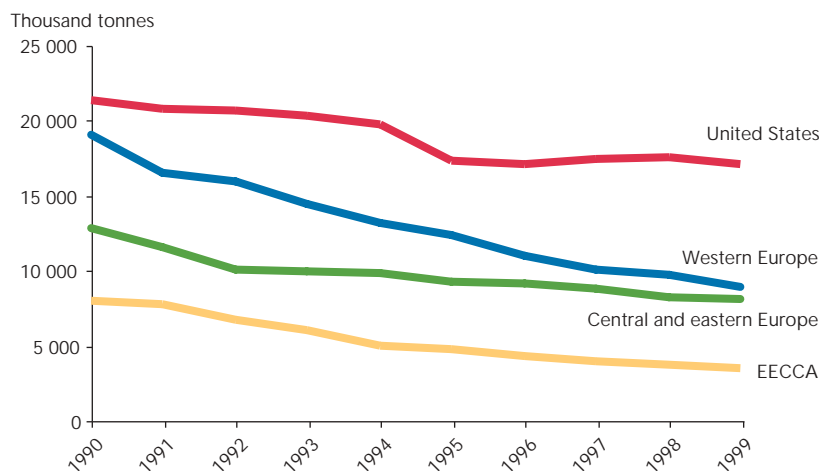
Total carbon dioxide (CO₂) emissions decreased by 1.4 % in western Europe between 1990 and 1999; between 1992 and 1999 emissions decreased by 10 % in central and eastern Europe and by 29 % in eastern Europe, the Caucasus and central Asia (EECCA). Overall world emissions increased by 9 %. The United States, Japan and China increased their emissions by 13 %, 9 % and 25 %, respectively.

While CO₂ emissions from the industry and energy sectors in western, central and

eastern Europe decreased, the emissions from transport increased by almost 23 % in western Europe and by 27 % in central and eastern Europe. EECCA was the only region where CO₂ emissions from the transport sector decreased (by 34 %). The transport sector accounted for the large increases in the United States, Japan and worldwide.

In China on the other hand, the biggest increase in emissions came from energy industries: 108 %. CO₂ emissions from transport in China increased by 75 %.

Theme: Air Pollution
Indicator title: Sulphur dioxide emissions

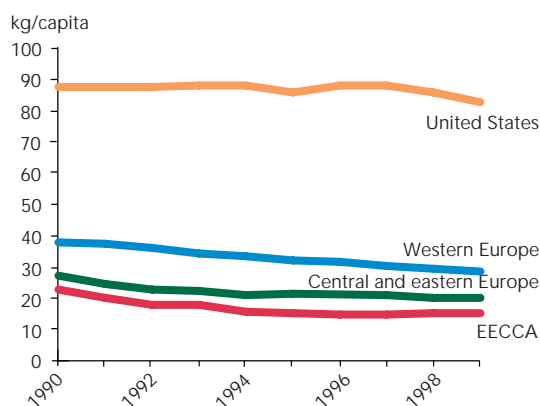


Sources: EEA, EMEP/MSC-W

Taken as a whole, as well as individually, the 21 Parties to the 1985 Sulphur protocol have reached their target by reducing 1980 sulphur emissions by at least 30 %. The 1994 Oslo protocol sets differentiated emission reduction obligations for the Parties, by the years 2005 and 2010. In all groups and countries considered the trend is decreasing. In western Europe and in eastern Europe,

the Caucasus and central Asia (EECCA) emissions decreased by 53 % and 56 %, respectively, over the period 1990–99. In central and eastern Europe they decreased by 37 %, and in the United States by only 20 %. In transition economies, the reduction of air pollutants is also a result of economic restructuring.

Theme: Air pollution
Indicator title: Emissions of nitrogen oxides

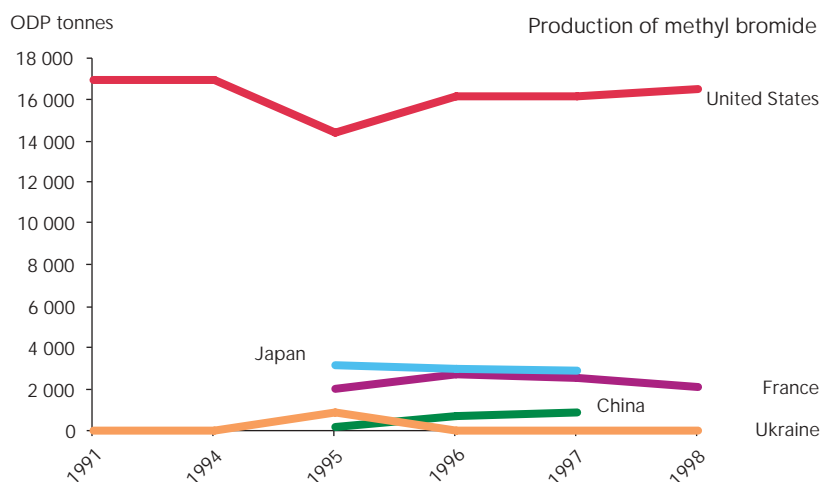


Sources: EEA, EMEP/MSC-W, World Bank

Although the per capita emissions of the United States decreased by 6 % over the period 1990–99, it has the highest emissions of nitrogen oxides (NO_x) in total as well as per capita. The United States is also the only country with a positive trend in total emissions, with an increase of 5 % over the period 1990–99.

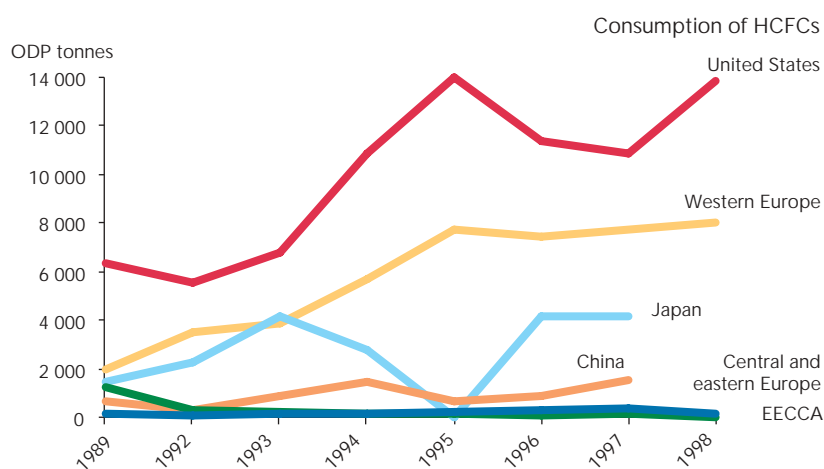
Western Europe, central and eastern Europe, and eastern Europe, the Caucasus and central Asia (EECCA), all decreased their NO_x emissions. Per capita, the reductions of emissions were 26 %, 29 % and 37 %, respectively.

Theme: Stratospheric ozone depletion
Indicator title: Production and consumption of selected ozone-depleting substances



Notes: Data available only for France, Romania, Ukraine, Japan, China, United States. Romania is not shown in the graph because of low values.

Source: UNEP Ozone Secretariat



Notes: No data available for Andorra, San Marino, Albania, Armenia, Kazakhstan, Kyrgyzstan, Tajikistan.

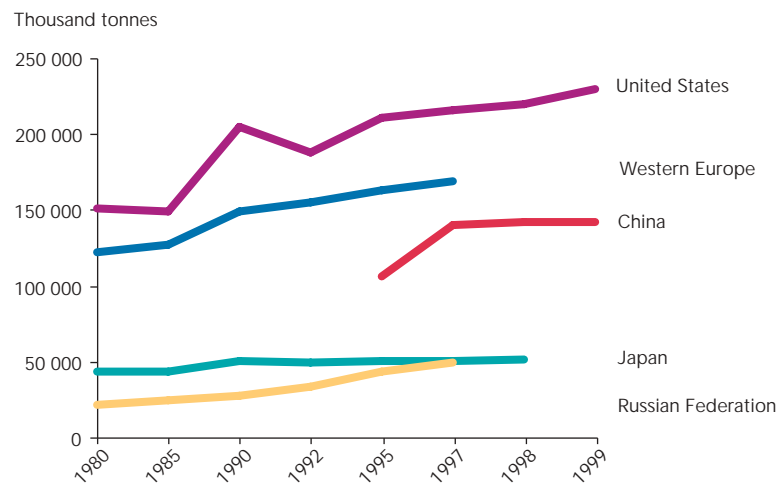
Sources: UNEP Ozone Secretariat

In developed countries, the production of ozone-depleting substances (ODS) has been phased out in accordance with the requirements of the Montreal protocol, except for methyl bromide. Between 1991 and 1998, France and the United States reduced production of methyl bromide by 17 % and 3 %, respectively. Japan reduced production by 14 % between 1991 and 1997. On the other hand China increased its consumption by 265 % between 1995 and 1997.

Developing countries, which account for 83 % of the remaining global chlorofluorocarbon (CFC) consumption, are allowed to extend the period to phase out the production of ozone-depleting substances. China has seen a big increase in the production and consumption of halons in recent years.

Hydrochlorofluorocarbons (HCFCs) have replaced CFCs in most developed countries.

Theme: Waste generation and management
Indicator title: Municipal waste generation



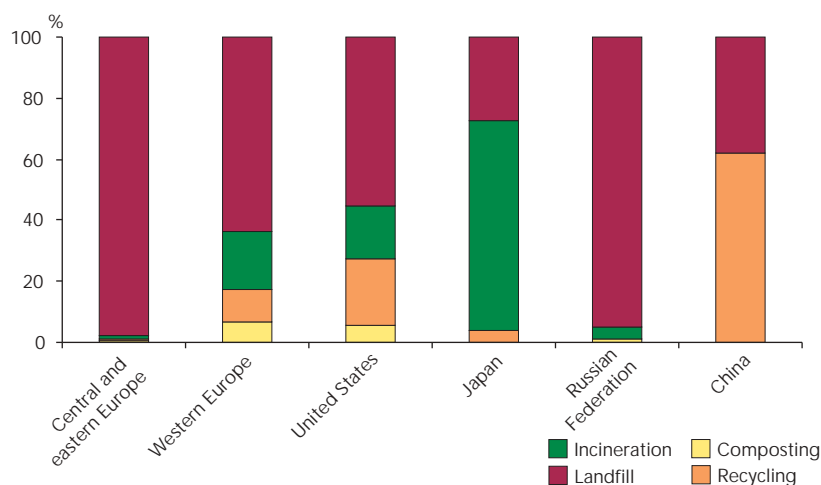
Note: Western Europe includes EU-15 (aggregate value), Norway and Switzerland.

Sources: National sources, OECD

Western Europe, the United States and the Russian Federation show an increasing trend in the generation of municipal waste. For China and Japan a more stable trend is observed. Between 1980 and 1997 western Europe saw an increase of 38 % in generation of municipal waste, the United States 43 % and the Russian Federation 127 %. Over the same period Japan increased its municipal waste production by only 16 %.

One of the main driving forces for this trend in all countries is the general growth of consumption. The level of municipal waste production appears to be correlated with the level of industrialisation and the level of income. In western European countries and Japan the daily generation of municipal waste by one person is approximately of 1.1–1.2 kg, whereas in the United States it is almost equal to 2 kg.

Theme: Waste generation and management
Indicator title: Recycling and disposal of municipal waste



Note: Central and eastern Europe includes only Czech Republic, Hungary, Poland, Turkey and Slovakia.

Sources: National sources, OECD, Eurostat

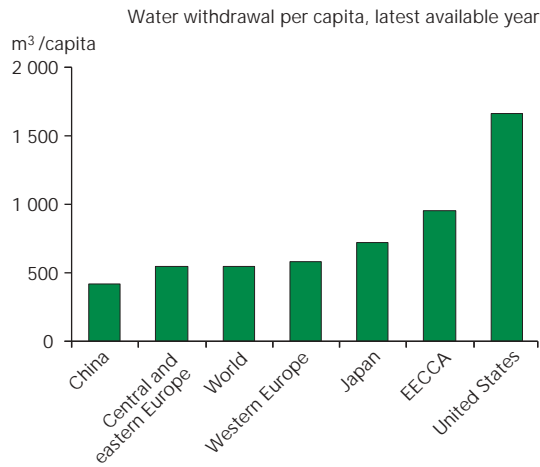
The only method of waste disposal in central and eastern Europe, as well as in the Russian Federation, is landfill. In western Europe landfill still represents 63 % of waste management methods, followed by incineration (18 %).

Compared to the United States (which also relies predominantly on landfill in waste management), western Europe recycles and composts less (17 % in western Europe against 27 % in the United States). Though in many EU countries the rate of reuse of

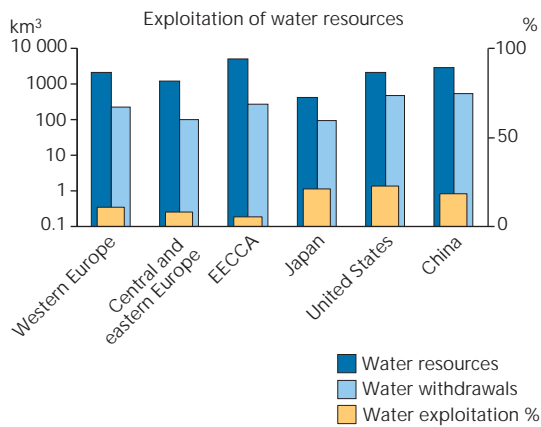
waste is higher than in the United States, the aggregated figure remains low because main waste generators (Italy, the United Kingdom and France — Germany is an exception) recycle and compost less than 10 % of the total amount of waste.

In Japan, the most common method of waste disposal is incineration (76 %). China has reported 62 % of its municipal solid waste treated in 1999, but ways of treatment have not been specified.

Theme: Water
Indicator title: Water withdrawal



Sources: FAO Aquastat, World Bank.



Notes: Logarithmic scale on the left vertical axis for water resources (in km³).

Definitions: total water withdrawal is the annual quantity of water extracted from the resources for agricultural, industrial and domestic purposes. It does not include other withdrawals.

Sources: FAO Aquastat, World Bank.

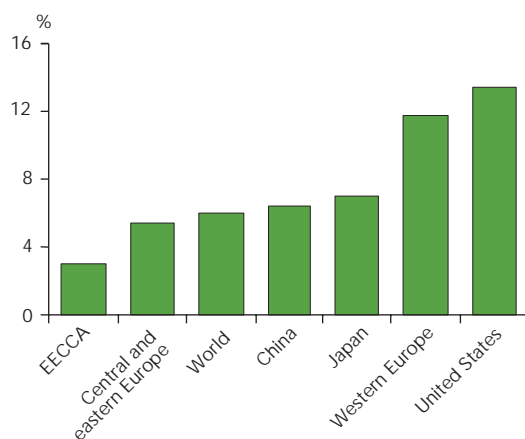
Water withdrawal per capita in western, central and eastern Europe is comparable to the world average. The United States has the highest level of water withdrawals per capita, equal to almost three times the global average.

Although eastern Europe, the Caucasus and central Asia (EECCA) has a high level of water withdrawals, it also has the lowest water

exploitation percentage (5 %) of all regions and countries considered, due to the large water resources available. Western Europe and central and eastern Europe have comparable water exploitation levels (8 % and 11 %, respectively), while China, Japan and the United States have water exploitation percentages of 19 %, 21 % and 23 %, respectively.

Theme: Biological diversity

Indicator title: Protected areas as percentage of total land area



Note: Protected areas corresponding to IUCN categories I-V, sites that do not qualify for an IUCN management category (for example production forest reserves, recommended or proposed sites) are excluded.

Sources: UNEP-WCMC prototype database for protected areas data and FAO for total land area

The United States and western Europe have designated as protected areas (IUCN categories I-V) the highest percentage of their territory (13 % and 12 %, respectively). Globally, protected areas represent 6 % of the world land area. Japan, China, central

and eastern Europe are on average levels with 7 %, 6 % and 5 % of protected areas (also IUCN categories I-V), respectively. In eastern Europe, the Caucasus and central Asia (EECCA) only 3 % of the total land area is protected.

European Environment Agency

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