NATIONAL INSTITUTE OF PUBLIC HEALTH AND THE ENVIRONMENT

BILTHOVEN, THE NETHERLANDS

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**A Hundred Year (1890 - 1990) Database
for Integrated Environmental Assessments
(HYDE, version 1.1).**

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# Preface

This report is an update from the first HYDE data base report (RIVM report nr. 481507008).
The data base was originally designed for testing and validation of the IMAGE 2 model, with
the reasoning that models used for integrated environment assessments (IEA's), which make
projections for the next hundred years, should also be able to simulate a one hundred year
historical period. HYDE is incorporated in RIVM's information infrastructure, and is already
used for other IEA's, such as UNEP's Global Environmental Outlook and the annual Dutch
Environmental Outlook.

The project was supported by the Directorate-General of the National Institute of Public
Health and the Environment (RIVM) and the United Nations Environmental Programme
(UNEP).

Jaap van Woerden,

Leader, International Data Logistics RIVM

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# Abstract

Testing against historical data is an important step in the validation of simulation models. Because of their wide scope and coverage, global change models require a large amount of data for testing. This update of an earlier version of a hundred-year database used to test global change models reports data on population, gross domestic product, added value of industry and services, land use, and livestock, as well as on specific data categories for the systems: energy/economy, atmosphere/ocean and terrestrial environment. Where possible, data are organized according to country for the period 1890 - 1990. Some of the data show geographic detail.

# Samenvatting

Het testen met historische gegevens is een belangerijke stap tijdens de validatie van simulatiemodellen. Vanwege de brede strekking en omvang hebben 'global change' modellen een enorme behoefte aan historische data. Dit rapport presenteert een update van het eerste HYDE rapport (Klein Goldewijk and Battjes, 1995), met een verbeterde en uitgebreide verzameling historische gegevens. De database bestaat niet alleen uit algemene onderwerpen zoals bevolking, nationaal produkt, toegevoegde waarde van industrie en diensten, maar bevat ook specifieke data wat betreft de energie/economie sector, de atmosfeer en de oceanen, en de terrestrische biosfeer. Waar mogelijk zijn de data op landen basis verzameld voor de periode 1890 - 1990. Sommige data zijn geografisch expliciet.

# 1. Introduction

This report is an update of the previous RIVM report (nr. 481507008). An important initiative for the update was publication of a new 0.5 x 0.5 degree longitude/latitude population data base of NCGIA (Tobler et al., 1995), which is now used as a starting point for historical gridded population calculations. Because population data are important in many calculations, it resulted in modified land cover estimates, as well as estimates for GDP, value added, private consumption. Furthermore, numerous new data have been incorporated in many tables.

The first version of this data base originally was set up for testing and validation of the IMAGE 2 model (Alcamo, 1994). The main aim of the model is to use state-of-the-art models to assist policy makers in the development and evaluation of future scenarios to mitigate the negative effects of global change. The modelling framework consists of three subsystems that cover the different aspects of the earth system (see Figure 1).
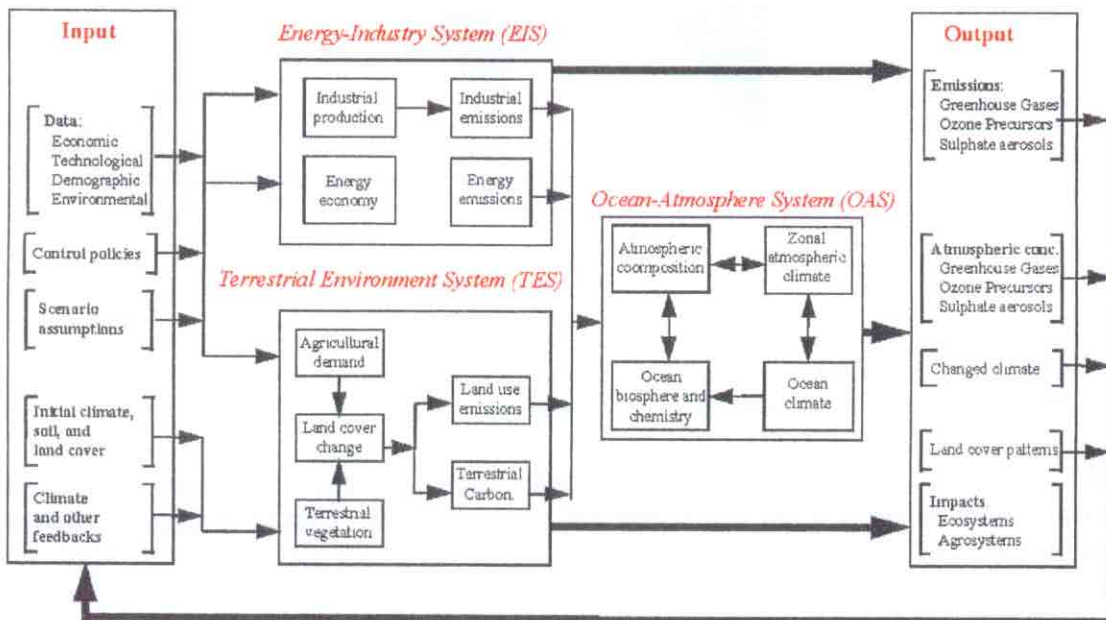


Figure 1. Schematic diagram of IMAGE 2 showing its framework and linkages.

Many calculations in IMAGE and other models are performed on a 0.5° by 0.5° longitude/latitude grid. This is because nearly all potential impacts of climate change (impacts on ecosystems, agriculture and coastal flooding) have a strong spatial variability. Moreover, land use related greenhouse gas emissions depend on local environmental conditions and human activity. There are also other reasons for using grid-scale information. First, policy makers are interested in regional/national policies to adress climate change. Second, grid-scale information makes model caluclations more testable against observations as compared to more aggregated models.

Nevertheless, it is infeasable to perform grid based calculations for economic models, because of the difficulty in specifying economic/demographic factors on a country scale for the entire world over the long horizon of the model. Therefore, the world has been divided into 13 world regions (Figure 2), according to economic and geographic similarity. This classification also takes into account the regional aggregations used by the IPCC, OECD, FAO, UN and IEA. It should be noted, however, that IMAGE has the additional requirement that countries within a region be adjacent or nearby because of the model's approach to global land cover simulation.



| | | | | |
|---|---|---|---|---|
| Canada | Africa | CIS | China + CPA | Japan |
| USA | OECD Europe | Middle East | East Asia | |
| Latin America | Eastern Europe | India + SA | Oceania | |
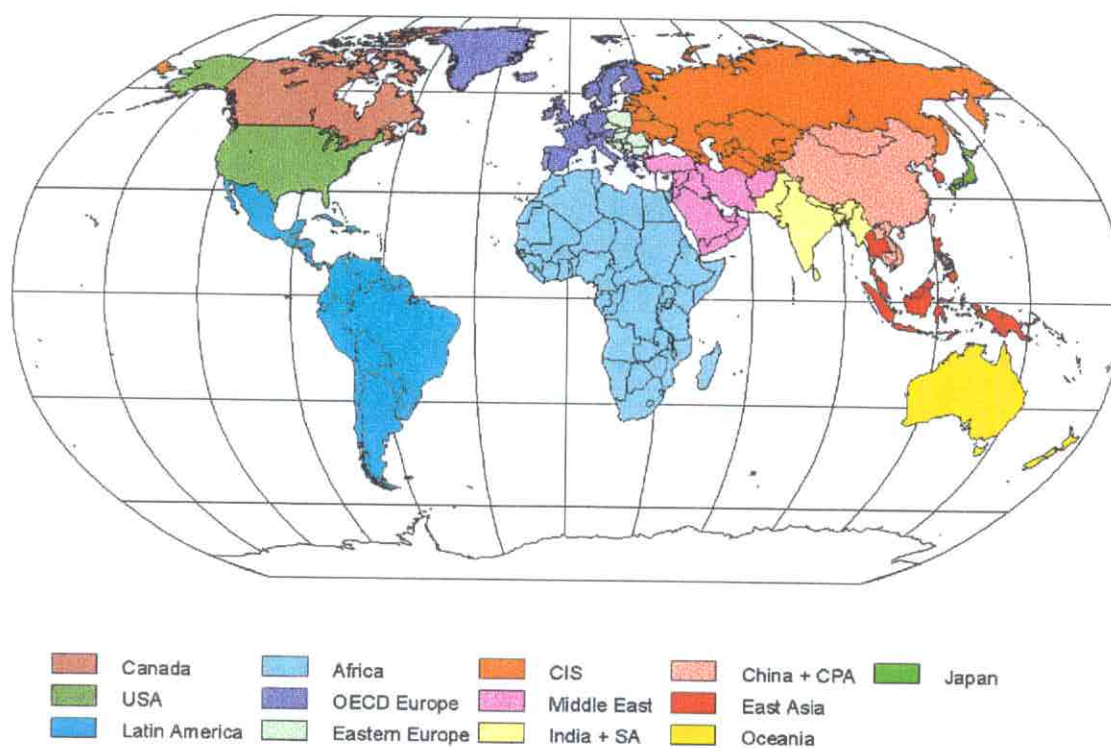
Besides the testing of IMAGE, HYDE is also used for other integrated environmental assessents, such as the Global Environmental Outlook of the United Nations Enviromental Programme (UNEP, 1997), the technical background report for GEO (RIVM/UNEP, 1997), the TARGETS project (Rotmans and De Vries, 1997) and the Dutch National Environmental Outlook (RIVM, 1997).

In order to make an estimate of the quality of the presented data, an attempt has been made to rank each data entry into one of the following quality categories: 1 = acceptable, 2 = poor, 3 = very poor.

Still, this data base is far from complete. Work is now being done to include historical fuel consumption data (coal, oil, gas), and historical emissions estimates based on those fuel consumption data, in compliance to the EDGAR project (Olivier *et al.*, 1996).

Technical note: Table 1,2,etc or Figure 1,2,etc refer to tables and figures in the text, Table A1, A2, etc and Figure A1,A2,etc refer to tables and figures in the Appendix.

# 2. Basic driving factors

## 2.1 Population

Spatial resolution:      0.5° x 0.5° latitude/longitude, country
Temporal resolution:   1890 - 1990, with 1 year timestep
Quality:                      1

In general, acceptable historical data on population are scarce. The United States of America started with their census in 1790, but reasonably regularly censuses began in the middle of the nineteenth century for most of the American countries. Former British colonies in general started much earlier and have more consistent censuses than other countries (Mitchell, 1982). For most African and Asian countries official censuses started only after the Second World War. The historical territorial shifts in Europe (Austria-Hungary split after First World War, Germany, Poland, Czechoslovakia, etc.) makes it difficult to give consistent time series of population data (Mitchell, 1975), and even nowadays the world keeps changing. Former Yugoslavia is still taken as one country. A summary of estimated global population numbers are given in Table 1.

Table 1. Global population numbers by various authors (in millions).

| Year | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Woytinsk.[1] | 1,400 | 1,608 | 1,715 | 1,866 | 1,950 | 2,170 | 2,400 | - | - | - | - |
| Oxf. Ec. Atl. | - | - | - | 1,860 | - | 2,295 | - | 2,991 | - | - | - |
| Tuve | - | 1,580 | 1,660 | 1,810 | 2,010 | 2,240 | 2,490 | 2,980 | 3,630 | - | - |
| Durand | - | 1,668 | - | - | - | - | - | - | - | 3967[2] | - |
| Bogue | - | - | - | - | - | - | 2,524 | 3,037 | 3,696 | 4,432 | - |
| Merrick et al. | - | 1,630 | - | - | - | - | 2,516 | - | - | - | - |
| Winkler Prins | - | 1,610 | - | - | 2,070 | 2,295 | 2,500 | 2,990 | 3,765 | - | - |
| Grigg | - | 1,668 | - | - | - | - | 2,486 | 2,982 | 3,632 | 4,414 | - |
| WRI | - | - | - | - | - | - | 2,516 | 3,014 | 3,698 | 4,453 | 5,292 |
| Demeny | - | 1,650 | - | - | - | - | - | - | - | 4,453 | - |
| Richards | - | - | - | 2,000 | - | - | - | - | - | 4,430 | - |
| United Nations | - | - | - | - | - | - | 2,511 | 3,013 | 3,688 | 4,433 | 5,273 |
| Stern & K. | 1,497 | 1,622 | 1,760 | 1,910 | 2,086 | 2,291 | 2,516 | 3,019 | 3,697 | 4,447 | 5,295 |

Sources: Woytinsky and Woytinsky (1953), Oxford Economic Atlas of the World (1972), Tuve (1976), Durand (1977), Bogue (1985), Merrick (1986), Winkler Prins (1987), Grigg (1987), WRI (1987), Demeny (1990), Richards (1990), UN (1994), Stern and Kaufmann (1995).

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[1] Global population estimates of Woytinski & Woytinski (1953) for 1890, 1910, 1920 and 1930 derived from figure 13, p. 35.

[2] 1975 value

The starting point for the updated global georeferenced historical population map is the 1994 0.5 x 0.5 degree longitude/latitude population density data base from NCGIA Tobler et al. (1995). The NCGIA data base was overlayed with the IMAGE 2.1 country borders, and grid cells of the NCGIA data base belonging to IMAGE 2.1 countries were aggregated to country totals. The IMAGE 2.1 country totals were adjusted to equal to the country totals of the UN population data base for 1994. The UN data base presents data for the period 1950 - 1995. Conversion from UN country numbers into IMAGE 2.1 regions are presented in Table A2 and A3. Countries which were to small to assign at least one grid cell to, were omitted. The population data from Mitchell (1975, 1982, 1983) provides country population estimates for most countries of the world for a long historical time path (1890 - 1970). In order to link the historical country data points from Mitchell with the 1950 base year of the UN, a logistic curve was determined through the earliest available data point and the 1950 UN data point, on a country basis. The growth rate of this curve is calculated by:

$$x = (\frac{POP_{rec}}{POP_{his}})^{\frac{1}{(T_{rec}-T_{his})}} - 1$$

with $POP_{rec}$ and $POP_{his}$ the most recent and most historic population estimate, x the growth rate and $T_{rec}$ and $T_{his}$ the years of the population estimates. With this curve, the earlier historic values were calculated. Results obtained in this way, were checked against other available sources.

Country estimates for several countries were corrected when the time period between $POP_{rec}$ and $POP_{his}$ was too small, resulting in large deviations in the 1890 estimate. The historical country population numbers were then estimated with regional growth rates Durand (1977).

As final step in the process, the population densities were scaled to a 0.5° x 0.5° lon/lat grid by using the country *totals* combined with the same population *distribution* as in the NCGIA database, under the assumption that high population density areas remain in the same place in time (see Figure A1. Population density map of 1890). A table with country estimates is listed in the Appendix, Table A4. The regional population estimates are presented in Table 2.

Table 2. Regional population estimates for the period 1890 - 1990 (in millions).

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 18 | 21 | 24 | 27 |
| USA | 63 | 73 | 85 | 98 | 113 | 131 | 152 | 181 | 205 | 228 | 250 |
| Lat. America | 54 | 64 | 77 | 93 | 112 | 136 | 177 | 232 | 305 | 389 | 486 |
| Africa | 83 | 93 | 108 | 127 | 150 | 179 | 199 | 250 | 324 | 427 | 569 |
| OECD Eur. | 216 | 229 | 242 | 256 | 272 | 288 | 306 | 328 | 354 | 370 | 379 |
| Eastern Eur. | 66 | 68 | 71 | 74 | 77 | 82 | 86 | 98 | 106 | 115 | 120 |
| CIS | 114 | 123 | 133 | 143 | 155 | 167 | 180 | 214 | 243 | 266 | 289 |
| Middle East | 45 | 44 | 47 | 51 | 56 | 62 | 69 | 89 | 115 | 151 | 201 |
| India + SA | 274 | 299 | 327 | 358 | 392 | 431 | 473 | 586 | 740 | 927 | 1,158 |
| China + CPA | 513 | 523 | 536 | 551 | 567 | 584 | 610 | 722 | 913 | 1,096 | 1,276 |
| East Asia | 55 | 64 | 76 | 90 | 106 | 126 | 150 | 187 | 241 | 304 | 370 |
| Oceania | 4 | 5 | 6 | 7 | 8 | 9 | 11 | 14 | 17 | 20 | 22 |
| Japan | 40 | 45 | 51 | 58 | 65 | 74 | 84 | 94 | 104 | 117 | 124 |
| World | 1,532 | 1,636 | 1,766 | 1,914 | 2,083 | 2,281 | 2,511 | 3,013 | 3,688 | 4,433 | 5,273 |

Regional population data are used in the Energy Economy model as a driving factor for the demand for end-use energy and food. For calculations in the Energy Economy model concerning the demand for fuelwood, it is necessary to know what percentage of the total population is urban (living in cities, towns, etc.) and which fraction is rural. Until the nineteenth century almost 75% of the total population was dependent upon agriculture for their livelihood. Furthermore, the great majority were subsistence farmers (Grigg, 1987). As population numbers increased the farmers had two options: either increase their productivity or expand the agricultural area which was the easiest but most costly way. When farmers found ways to increase productivity per hectare, each farmers could provide more people with food, thus creating opportunities for small towns to evolve to big cities. The degree of urbanization is reasonably well known for the states of USA and Europe. The American Bureau of the Census (1976) estimated for the USA in 1890 that 35% of the people lived in cities and towns. This percentage steadily increased up to 74% in 1970, with a slowing down during the Thirties. The value for the USA for 1890 agrees well with the data given for Europe by Grigg (1987), who estimated an urbanization degree of 31%. The global trend that more and more people are moving towards big cities is also illustrated by a table of the United Nations (1980) listed in Berry (1990). Table 3 presents the estimates for the percentage rural population for different regions.

Table 3. Percentage rural population, for the period 1890 - 1990.

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| USA[3] | 65.0 | 60.3 | 54.3 | 48.8 | 43.8 | 43.5 | 36.2 | 32.9 | 29.5 | 26.3 | 25.1 |
| Latin Am. | 95.0 | 95.0 | 93.0 | 90.0 | 83.0 | 72.0 | 58.8 | 50.5 | 42.7 | 35.3 | 28.5 |
| Africa | 95.0 | 95.0 | 95.0 | 95.0 | 93.0 | 90.0 | 85.2 | 81.6 | 77.2 | 71.2 | 66.1 |
| W. Europe[4] | 65.0 | 60.0 | 55.0 | 50.0 | 45.0 | 41.0 | 37.0 | 33.4 | 28.0 | 23.2 | 22.3 |
| E. Europe[4] | 88.0 | 87.0 | 85.0 | 80.0 | 76.0 | 69.0 | 62.0 | 55.5 | 49.0 | 43.7 | 39.3 |
| USSR | 88.0 | 87.0 | 86.0 | 85.0 | 82.0 | 67.0 | 60.7 | 51.2 | 43.3 | 35.2 | 34.2 |
| South Asia | 95.0 | 94.0 | 92.0 | 90.0 | 88.0 | 86.0 | 84.1 | 81.7 | 78.8 | 75.2 | 72.0 |
| China[5] | 95.0 | 95.0 | 95.0 | 95.0 | 94.0 | 92.0 | 89.4 | 83.2 | 82.6 | 79.7 | 66.6 |
| East Asia | 95.0 | 95.0 | 95.0 | 95.0 | 93.0 | 90.0 | 83.3 | 75.5 | 71.8 | 67.3 | 65.0 |
| Oceania | 65.0 | 60.0 | 55.0 | 50.0 | 45.0 | 41.0 | 38.8 | 33.8 | 29.2 | 24.3 | 19.9 |
| Japan | 70.0 | 65.0 | 60.0 | 56.0 | 52.0 | 48.0 | 44.0 | 37.5 | 28.8 | 23.8 | 23.0 |
| World | 86.0 | 84.0 | 82.0 | 80.2 | 77.0 | 73.0 | 71.1 | 66.3 | 62.8 | 59.0 | 57.0 |

Sources: 1890-1940 own estimates, 1950 - 1980 from the United Nations 1980 (Table 7-5 in Berry (1990)), completed with WRI data (1986, 1992-1993).

## 2.2    Gross Domestic Product

Spatial resolution:    regional
Temporal resolution:   1890 - 1990, with 5 year timestep
Quality:               1

GDP figures at market prices are used to determine the National Income, instead of using GNP[6] figures. Data on historic trends of GDP per caput are given by Maddison (1989, 1991 and 1994), for several countries. The growth rate of GDP per caput for these countries were used to estimate the trend of GDP for the world regions for the period 1890-1970. Maddison (1991 and 1994) gives GDP figures in constant international dollars which are based on Purchasing Power Parity figures. For the period 1970-1990, GDP figures are derived from the World Bank (1993) in local currencies. These figures are converted into US 1990 dollars. Population figures are derived from Chapter 2.1.

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[3] Bureau of the Census (1909).

[4] Numbers for 1890 for Eastern and Western Europe from Grigg (1987)

[5] Numbers for China for 1950 and 1970 from Ren and Lin (1991)

[6] GDP includes foreign industries in the country and does not include national industries in foreign countries, whereas GNP only considers al national industries (also those situated in foreign countries). In general, GNP and GDP do not differ much.

*Canada, USA, OECD Europe, Oceania and Japan.*

The trend in GDP per caput of Canada, USA, Austria, Belgium, Denmark, Finland, France, Germany, Italy, The Netherlands, Norway, Sweden Switzerland and UK is computed by using the GDP indices (at constant prices) of Maddison (1994). The GDP trend of Australia, New Zealand, Greece, Ireland, Portugal and Spain is calculated by using indices of Maddison (1989) for the period 1900-1970. The average annual growth of GDP for the 1890-1900 period is assumed to be the same as in 1900.

*Africa and Latin America.*

Maddison (1994) estimates total GDP in 1990 international dollars (based on Purchasing Power Parity) for the period 1900-1970 for Africa. The average annual growth rate of Africa during 1890-1900 is assumed to be the same of that in 1900. This methodology has also been applied to the IMAGE region Latin America. The estimates of the trend of GDP per caput of Africa are based on Cameroon, Egypt, Ethiopia, Ghana, Kenya, Morocco, Nigeria, South Africa, Tanzania and Zaire. For Latin America the countries Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela are taken into account.

*Eastern Europe and CIS.*

Indices given by Maddison (1989) are used for the region Eastern Europe (based on 6 countries). For Bulgaria, Czechoslovakia, Hungary and Yugoslavia, the indices cover the period 1913-1970. Annual GDP growth rates of Rumania for the period 1913-1950 are assumed to be equal to those of Yugoslavia, because these two countries show a similar pattern in GDP figures during 1950-1987. For the same reason, the annual GDP growth rate of Poland is assumed to be similar to that of Hungary, during 1913-1929. The annual growth rate for all countries during 1890-1913 is assumed to be equal to the growth rate during 1913-1929. The GDP trend of CIS for the period 1900-1970 is computed with indices presented in Maddison (1989). The average annual GDP growth rate during 1890-1900 is assumed to be the same as in the period 1900-1913. For 1970-1990, GDP figures are derived from UN-ECE (1991) and Eurostat (1991), because the World Bank does not present these data.

*Middle East, India + SA, East Asia and China + CPA.*

Maddison (1989) gives indices of GDP figures for Turkey during 1900-1970. Turkey is the only country in the Middle East region with data on GDP for 1900-1970. It should be noted that the GDP trend of Turkey was not similar to the trend in other countries in the Middle East during 1970-1990 (see Appendix Figure A2-1). This can be explained by the fact that Turkey is not an oil exporting country, in contrast to Iran, Iraq and Saudi Arabia. The GDP trends of Iran and Saudi Arabia seem to correspond to that of Turkey, for the period 1960-1970. The GDP trend of Iraq also shows a similar pattern to that of Turkey, for the early Fifties. Similarities in the GDP trends from 1950 to 1970 can be explained by the smaller impact of oil export on GDP of Iran, Iraq and Saudi Arabia. Therefore the assumption is made here, that the trend in GDP of Iran, Iraq and Saudi Arabia also corresponds to that of Turkey for the period 1890-1950/1960.

Maddison (1989) gives GDP indices for Bangladesh, India and Pakistan, from 1900 to 1970. From 1890 to 1900, the annual GDP growth rate is assumed equal to that of 1900. This methodology is applied also to Indonesia, South Korea, Philippines and Thailand. Maddison (1989) provides indices for the trend in GDP of China and Taiwan for the period 1900-1970. From 1890 to 1900, the annual GDP growth rate is set to the 1900 value. Mitchell (1982) gives figures of the GDP of Hong Kong at constant prices for 1963-1975. Data on GDP of Hong Kong for 1970-1990 are obtained from the World Bank (1993). For the period 1890-1963, the annual growth rate of GDP of Hong Kong is assumed equal to that of Thailand, because of the similarity in the GDP trend during 1963-1990 (see Appendix Figure A2-2). At first, GDP figures of Taiwan were also included in computing the GDP per capita trend of the IMAGE region China + CPA for 1890-1990. However, these estimates did not correspond with the GDP per capita figures of the World Bank, who included more countries. Thus, GDP per caput estimates coincide better with the World Bank when Taiwan is not included in the calculations. Therefore, Taiwan's GDP per caput data are not included in the growth rate of the China region for 1890-1970.
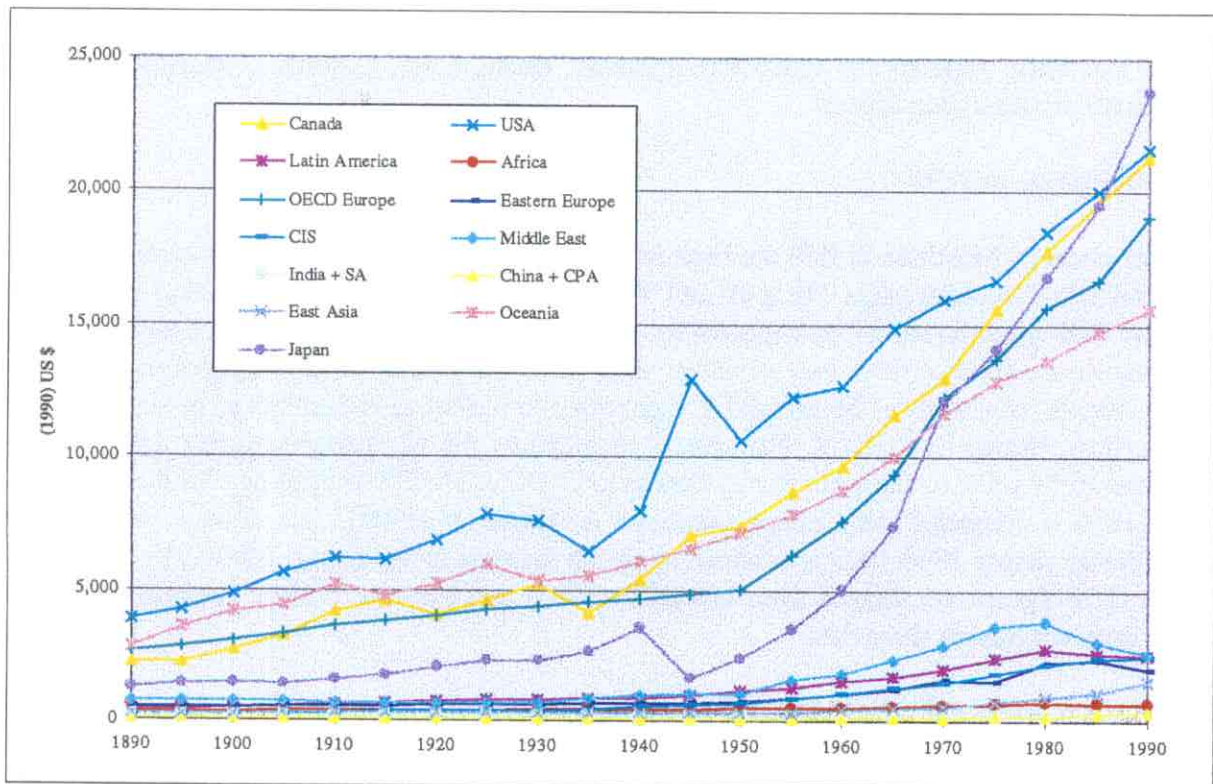


Figure 2. Regional GDP per capita (in 1990 US$).

Summing up, for 1890-1970 the GDP figures are computed by using the indices as described above and the GDP level of 1970, which is derived from the World Bank (1993). As already mentioned above, GDP figures for 1970-1990 are mainly derived from the World Bank (1993). Population data from the United Nations and Mitchell (see chapter 2.1) are used to compute GDP per capita numbers for each region for the period 1890-1990. Estimates on GDP per capita per region are presented in Table 4.

Table 4. GDP per capita (in 1990 US$).

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 2,238 | 2,812 | 4,305 | 4,313 | 5,485 | 5,714 | 7,791 | 9,353 | 13,001 | 17,797 | 21,273 |
| USA | 3,876 | 4,869 | 6,193 | 6,888 | 7,646 | 7,972 | 10,696 | 12,415 | 15,931 | 18,527 | 21,583 |
| Lat. Am. | 338 | 429 | 545 | 650 | 753 | 835 | 1,104 | 1,473 | 2,024 | 2,820 | 2,569 |
| Africa | 266 | 289 | 303 | 328 | 359 | 388 | 413 | 480 | 613 | 706 | 646 |
| OECD Eur. | 2,888 | 3,365 | 3,954 | 4,388 | 4,779 | 5,088 | 5,479 | 8,279 | 12,268 | 15,670 | 19,065 |
| Eastern Eur. | 391 | 419 | 448 | 478 | 508 | 539 | 570 | 812 | 1,213 | 2,000 | 1,913 |
| CIS | 193 | 253 | 332 | 365 | 376 | 609 | 719 | 1,038 | 1,452 | 2,159 | 2,476 |
| M. East | 636 | 689 | 713 | 732 | 780 | 1,173 | 1,245 | 1,915 | 2,883 | 3,829 | 2,823 |
| India + SA | 175 | 177 | 179 | 177 | 175 | 173 | 171 | 196 | 209 | 250 | 328 |
| China + CPA | 44 | 47 | 50 | 52 | 54 | 56 | 55 | 85 | 127 | 197 | 386 |
| East Asia | 276 | 290 | 308 | 308 | 302 | 296 | 290 | 410 | 569 | 932 | 1,508 |
| Oceania | 4,493 | 4,320 | 5,551 | 5,470 | 5,572 | 6,369 | 7,508 | 8,751 | 11,670 | 13,623 | 15,579 |
| Japan | 1,251 | 1,418 | 1,556 | 2,017 | 2,238 | 3,492 | 2,395 | 4,960 | 12,088 | 16,782 | 23,734 |

## 2.3 Value Added: Industry and Services

Spatial resolution: regional
Temporal resolution: 1890 - 1990, with 5 year timestep
Quality: 1

The historical data about value added are needed as input to the IMAGE 2.1 Energy-Economy model in order to compute energy consumption. For scenario analysis it is difficult to estimate future value added data. On the other hand future scenarios of GDP/cap can be derived from the literature. Therefore to specifiy future value added data, a historical relationship between GDP/cap and value added as percentage of GDP is first derived. Next, estimates of future GDP/cap and this relationship are used to specify future value added.

This section describes the value added of industry and services. For 1890-1970, the contribution of value added of industry and services to the total GDP are only computed for the reference countries listed in Maddison (1994). For 1970-1990, data are derived mainly from the World Bank (1993). In the Energy Economy model of the Energy-Industry Subsystem of IMAGE 2, the value added of industry and services are used as input for simulating the activity in the industrial and commercial sectors.

*Current vs. Constant Prices*

Historical data on value added of industry and services are scarce. The procedure for calculation of the value added of industry and services varies from country to country and over time for most countries. The latter is not only the consequence of a lack of data but also of territorial shifts. Most of these figures are given in percentages of GDP (at factor cost or market prices) and are often based on current prices. However, percentages based on current prices can not be used here, because GDP figures at constant prices are used in the IMAGE 2 model. For some countries, the value added of industry and services in percentages of GDP at current prices differ strongly from those at constant prices. This is the consequence of differences in the deflator of the value added of the sectors agriculture, industry and services. To illustrate these differences, some estimates of the deflator of value added for different sectors are given in Table 5 for selected countries.

Table 5. Deflator of value added from agriculture, industry, services and total GDP for selected countries for 1990 (1970=100).

|           | Agriculture | Industry | Services | Total GDP |
|-----------|-------------|----------|----------|-----------|
| India     | 508.1       | 536.6    | 507.4    | 522.6     |
| Japan     | 215.7       | 206.5    | 296.4    | 245.0     |
| S. Africa | 742.9       | 1,693.0  | 1,019.4  | 1,309.0   |
| Turkey    | 62,597.0    | 78,945.0 | 71,524.0 | 69,732.0  |
| UK        | 1,187.6     | 1,097.0  | 512.6    | 680.5     |
| USA       | 258.0       | 293.1    | 342.2    | 322.9     |
| Venezuela | 2,038.6     | 4,257.7  | 322.9    | 2,695.1   |

Source: World Bank (1993).

These differences in deflators result in large differences in estimating the share of value added of services and industry at constant prices vs. current prices (Table 6). From Table 6 can be concluded that already in 1970 the value added of industry and services in percentages of GDP at current prices can not be used as indication for the value added at constant prices, and there is no reason to assume that data before 1970 will result in a better fit. Therefore, decided was to estimate value added data in 1990 constant prices.

Historic data on value added in constant prices are even more scarce than data on value added at current prices. The World Bank (1993) provides data on value added at constant prices for the period 1970-1990 for a considerable number of countries[7]. The OECD (1972, 1975) presents data on value added for a number of OECD countries, for the period 1960-1970. Kuznets (1971) gives value added at constant prices and current prices for a number of countries with a time period varying from 1850-1967 to 1950-1967. A disadvantage of using different sources is that the procedure for calculating value added may not be similar for each source. Therefore, changes in the distribution of GDP towards the value added of industry and services may be the result of

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[7] It should be noted that the countries which are considered here are the same countries of which the GDP per capita was computed.

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differences in the way of calculating the value added instead of actual changes in economic activities. One should be aware of this when interpreting the trend in value added data.

Table 6. Share of value added of industry and services for 1970 in % GDP in 1990 constant prices.

| | Constant prices | | Current prices | |
| | Industry | Services | Industry | Services |
| --- | --- | --- | --- | --- |
| India | 20.7 | 29.4 | 20.2 | 30.3 |
| Japan | 38.7 | 56.2 | 46.7 | 47.2 |
| S. Africa | 48.0 | 38.0 | 37.1 | 48.8 |
| Turkey | 27.7 | 39.9 | 24.5 | 38.9 |
| UK | 61.4 | 34.4 | 38.1 | 45.7 |
| USA | 31.3 | 66.5 | 34.5 | 62.8 |
| Venezuela | 62.1 | 36.7 | 39.5 | 54.5 |

Source: World Bank (1993).

## Deflators

Various reference years are used in the literature for determining value added of industry and services at constant prices. All thess data should be converted to the share of value added of industry and services in GDP at 1990 prices, so the reference year should be 1990. These kinds of conversions requires data on the deflator within the sectors industry and services. In most cases the deflator is computed by using data on value added for a year presented in several prices. For instance, the value added of industry and services of 1970 is given in 1990 prices (constant prices, with reference year 1990) and in 1970 prices (current prices). Value added of industry and services of other years which are also given at 1970 prices can now be converted into 1990 prices by using the computed deflator. In most cases, however, the conversion is not that simple and requires more conversion steps. Note that the computed deflator may include a correction factor, because the way of calculating the value added is not equal for each source. The actual deflator of the value added of industry and agriculture and the computed deflator of 1990 for a number of countries are presented in Table 7 to get an idea of the differences. The actual deflators are derived from the World Bank (1992) and the computed deflators are obtained by using 1970 prices (OECD, 1975) and 1990 prices (World Bank, 1992). Especially for Italy, the computed deflators deviate strongly from the actual deflators. This is most probably the result of a new calculation method by the World Bank (1993), because data on value added that were previously given by the World Bank (1976) were consistent with those given by the OECD. Obviously, this makes interpreting the figures properly even more difficult.

Table 7. Actual deflator of value added of industry and services according to the World Bank and computed deflators for 1990 (1970 = 100).

|  | Actual | | Computed | |
|  | Industry | Services | Industry | Services |
| --- | --- | --- | --- | --- |
| Austria | 222 | 332 | 214 | 320 |
| Finland | 511 | 678 | 495 | 797 |
| Germany | 212 | 239 | 209 | 273 |
| Italy | 911 | 1,280 | 1,200 | 1,704 |
| Turkey | 78,992 | 71,579 | 67,948 | 67,315 |

Source: World Bank (1992); OECD (1975).

## Canada, USA and OECD Europe

Data on value added for Canada, USA and a number of OECD countries are obtained from the World Bank (1976, 1993), OECD (1972, 1975) and Kuznets (1971). Table 8 gives an overview of the time period of which data has come available for the reference countries.

Table 8. First available year of value added data of industry and services at constant prices. The numbers represent the amount of figures before 1970 that could be computed into 1990 prices.

| Country | Year | Nr. | Country | Year | Nr. |
| --- | --- | --- | --- | --- | --- |
| Canada | 1950 | 3 | Ireland | 1960 | 2 |
| USA | 1895 | 5 | Italy | 1895 | 5 |
| Austria | 1960 | 2 | Netherlands | 1960 | 2 |
| Belgium | 1910 | 4 | Norway | 1950 | 3 |
| Denmark | 1950 | 3 | Portugal | No data | |
| Finland | 1960 | 2 | Spain | 1960 | 2 |
| France | 1890 | 4 | Sweden | 1865 | 4 |
| Germany | 1855 | 5 | Switzerland | No data | |
| Greece | 1960 | 2 | UK | 1960 | 2 |

Source: World Bank (1976, 1992); Kuznets (1971); (OECD) (1972, 1975).

This table demonstrates that only for a few countries sufficient data are available for studying the historical trend in the shares of the value added of industry and services. Data for non-OECD countries is even more scarce. For most reference countries data have come available for 1960-1990. Only for Argentina, Colombia, Peru, Morocco, India and South Korea some data are available from before 1960.

The results of the historical relationship between limited data on population and GDP are presented in Figure A3. From these figures can be concluded that the relation between the share of the value added of industry and services and the GDP per capita is relatively constant for all regions except the first category (regions 6,7,and 10).

Figure A4 presents the share of value added and services related to GDP per capita, but it distinguishes data before 1970 and after 1970. From this figure can be concluded that time does not appear to have much influence on the relation between the share of value added of industry and services in GDP and the GDP per capita. The regions CIS, Eastern Europe and China + CPA are omitted in this figure because the value added data show a different pattern, and therefore are dealt with separately.

The relation between value added of services and GDP per capita that is shown in Table 9 is fitted by making a linear regression between the share of value added and the logarithmic value of the GDP per capita. In order to fit the share of the value added of industry two of these linear regressions were carried out, because the share of the value added of industry is decreasing slowly when the GDP per capita exceeds the level of (1990)US$ 3,000. Although the $R^2$ of these fits are rather low, the results are still used here, because this fit is preferred over 'manual' fitting. This resulted in a discontinuous function, so the fit of the second interval was adjusted in such a way that the new fit is continuous at the point where GDP/cap = 3,000 and it approaches the old fit when the GDP/cap = 25,000. Note that no $R^2$ is computed of this 'new' fit, because it is not determined by linear regression. Results are presented in Appendix Figure A5-1 and A5-2.

A similar method is used to obtain the relation between the value added of agriculture, industry and services for the IMAGE regions Eastern Europe, CIS and China and C.P. Asia. The value added of agriculture and industry appear to relate linear to the logarithmic value of the GDP per capita, with a $R^2$ of 0.93 and 0.88, respectively. However, this applies to a lesser extent to the value added of services. Therefore, it is assumed that the sum of the share of value added of agriculture, industry and services equals 1, and thus value added services equals 1 - $VA_{agr}$ - $VA_{ind}$, where $VA_{agr}$ and $VA_{ind}$ represent the value added of agriculture and industry, respectively. The results of fitting the value added of industry and services are presented in Table 9 and in Figure A6.

Table 9. The relation between share of value added of industry and services and the GDP per capita. (Share of value added = A * log(GDP per capita) + B. Region II consists of the regions Eastern Europe, CIS and China + C.P. Asia, and region I consists of the rest of the world regions. The T value is a measure for the confidence to accept the hypotheses A = 0.

| Region | Sector | A | B | | $R^2$ | T-value |
|--------|--------|------|-------|-----------------|-------|---------|
| I | Services | 0.16 | -0.05 | | 0.84 | 20.01 |
| | Industry | 0.17 | -0.18 | if GDP < 3,000 | 0.73 | 9.62 |
| | Indusrty | -0.11 | 0.80 | if GDP >= 3,000 | - | - |
| II | Services | -0.01 | 0.36 | | - | - |
| | Industry | 0.20 | -0.11 | | 0.88 | 9.85 |
| | Agriculture | -0.19 | 0.76 | | 0.93 | 13.33 |

For 1970-1990, the share of value added of industry and services are mainly derived from the World Bank (1993) for almost all countries. Data are derived from UNCTAD (1992) in order to complete data on value added in constant prices of the World Bank (1993), for Canada, USA, Australia, New Zealand and France. The deflator of value added of industry and services is assumed to have a similar growth rate as the GDP deflator from 1989 to 1990, for New Zealand,

Greece and Spain. For the UK, the share of value added is derived from the World Bank (1992). For Canada the deflator of value added of industry and services is assumed to be equal to the 1990 deflator of GDP.

For 1890-1970, the share of value added is assumed to grow similary to the pattern as described above. Let $FVA_{S,R,Y}$ be the fitted share of value added of sector S of region R in the year Y, as it described above and let $WBVA_{S,R,1970}$ be the value added of sector S of region R in 1970 as it is given by the World Bank (1993). For 1890-1969, the share of the value added (of sector S of region R in the year Y) is computed as follows:

$$VA_{S,R,Y} = FVA_{S,R,Y} * WBVA_{S,R,1970} * (FVA_{S,R, 1970})^{-1}$$

The value added of industry and services in (1990)US$ is now computed by multiplying the share of the value added with the GDP per capita as it is given above. This results in the following tables:

Table 10. Value added services (1990 US dollars/cap yr).

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 968 | 1,139 | 1,846 | 1,850 | 2,427 | 2,541 | 3,600 | 4,418 | 6,382 | 10,188 | 12,168 |
| USA | 2,171 | 2,809 | 3,683 | 4,152 | 4,667 | 4,891 | 6,796 | 8,026 | 10,593 | 12,741 | 14,869 |
| Lat. Am. | 128 | 170 | 225 | 277 | 329 | 371 | 514 | 717 | 1,034 | 1,471 | 1,399 |
| Africa | 78 | 87 | 92 | 101 | 113 | 123 | 133 | 159 | 212 | 273 | 278 |
| OECD Eur. | 1,225 | 1,458 | 1,749 | 1,968 | 2,168 | 2,327 | 2,529 | 4,022 | 6,241 | 9,257 | 11,920 |
| Eastern Eur. | 108 | 116 | 123 | 132 | 140 | 148 | 157 | 222 | 330 | 622 | 727 |
| CIS | 57 | 75 | 98 | 107 | 111 | 178 | 209 | 301 | 419 | 604 | 688 |
| M. East | 117 | 128 | 133 | 137 | 148 | 238 | 255 | 428 | 1,139 | 1,767 | 1,249 |
| India + SA | 51 | 52 | 52 | 52 | 51 | 50 | 50 | 59 | 68 | 84 | 122 |
| China + CPA | 9 | 10 | 10 | 11 | 11 | 12 | 11 | 17 | 26 | 45 | 103 |
| East Asia | 98 | 104 | 111 | 112 | 109 | 106 | 104 | 157 | 231 | 389 | 670 |
| Oceania | 2,420 | 2,315 | 3,072 | 3,022 | 3,085 | 3,586 | 4,314 | 5,122 | 7,066 | 9,092 | 10,835 |
| Japan | 519 | 600 | 667 | 899 | 1,012 | 1,680 | 1,094 | 2,499 | 6,788 | 9,816 | 13,174 |

Table 11. Value added industry (1990 US dollars/cap yr).

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 1,066 | 1,261 | 1,714 | 1,717 | 2,120 | 2,198 | 2,882 | 3,379 | 4,493 | 5,506 | 6,079 |
| USA | 1,456 | 1,780 | 2,197 | 2,412 | 2,641 | 2,740 | 3,536 | 4,023 | 4,986 | 5,444 | 6,560 |
| Lat. Am. | 86 | 117 | 157 | 196 | 234 | 266 | 373 | 528 | 770 | 1,098 | 928 |
| Africa | 80 · | 89 | 94 | 104 | 117 | 129 | 140 | 169 | 229 | 264 | 217 |
| OECD Eur. | 1,576 | 1,671 | 1,926 | 2,111 | 2,276 | 2,405 | 2,566 | 3,681 | 5,176 | 5,844 | 6,572 |
| Eastern Eur. | 178 | 194 | 210 | 227 | 244 | 262 | 280 | 427 | 685 | 1,187 | 938 |
| CIS | 68 | 96 | 134 | 150 | 156 | 278 | 339 | 524 | 776 | 1,240 | 1,456 |
| M. East | 116 | 128 | 133 | 137 | 149 | 244 | 262 | 447 | 1,211 | 1,445 | 995 |
| India + SA | 33 | 33 | 34 | 34 | 33 | 32 | 32 | 38 | 45 | 53 | 81 |
| China + CPA | 7 | 8 | 9 | 9 | 10 | 10 | 10 | 18 | 30 | 58 | 120 |
| East Asia | 62 | 67 | 72 | 72 | 70 | 68 | 66 | 103 | 156 | 334 | 605 |
| Oceania | 1,931 | 1,865 | 2,325 | 2,295 | 2,332 | 2,622 | 3,027 | 3,459 | 4,440 | 4,797 | 4,973 |
| Japan | 535 | 622 | 695 | 946 | 1,069 | 1,581 | 1,159 | 2,154 | 4,682 | 6,460 | 9,970 |

## 2.4 Private consumption

Spatial resolution:     regional
Temporal resolution:    1890 - 1990, with 5 year timestep
Quality:                1

Private consumption data are used in the Energy Economy model as an indicator of the activity in the end-use sector Residential. The World Bank (1976) provides estimates for private consumption in constant prices for many countries of the world for 1950-1970, and estimates for the period 1970 - 1990 for the same countries are derived from the World Bank reports of 1992 and 1993. Data from these countries are used to determine the ratio between private consumption and GDP in constant prices for the period 1950-1990.

For Portugal and Iran the deflator of private consumption is assumed equal to the deflator of GDP for 1989-1990 World Bank (1992). The same method is applied for determining the deflator of private consumption of Ethiopia for 1987-1990. For Egypt, the ratio between private consumption and GDP is derived from the World Bank (1976) for 1965-1973. The growth rate of the private consumption in constant prices for 1973-1974 is assumed to follow the average growth rate of 1965-1973. The same method is applied to Venezuela. For Zaire the assumption is made that the ratio between private consumption and GDP of 1990 equals the ratio of 1989.

For most countries the historical trend of GDP has already been discussed above. However, more countries are considered here than the so-called reference countries. Note, that in some cases data are available for a shorter period (1950-1990) here. For all the considered countries, GDP data is derived from World Bank (1976) and World Bank (1993) for 1950-1970 and 1970-1990, respectively. Exceptions are Algeria, Benin, Burundi, Congo, Iran, Czechoslovakia and Yugoslavia where data from World Bank (1993) are supplemented with data of World Bank (1992).

Figure A7 shows the results of this exercise. From Figure A7-1 can be concluded that the ratio between private consumption and GDP does not vary much with time or between regions. Note, that this remark has also been made with the ratio between value added of industry and services (see above). Figure A7-2 distinguishes the ratio of private consumption of Non-OECD regions (Latin America, Africa, Eastern Europe, CIS, Middle East, India + SA, China + CPA and East Asia) and OECD regions (Canada, USA, OECD Europe, Oceania and Japan). The ratio between private consumption and GDP of the industrial regions appears to be rather constant. The ratio does not show an obvious pattern for the developing countries. Nevertheless, the ratio between private consumption and GDP for 1890-1970 is assumed equal to the average regional value of 1950-1990 for each region. Average values for 1970-1990 are only considered for CIS, Eastern Europe and Middle East, because of poor data of private consumption before 1970. For 1970-1990, the real ratios are used. For each region, the private consumption per capita in (1990)US$ is now computed by multiplying the obtained ratio with the regional GDP per capita data. The results are presented in table 12.

Table 12. Private consumption (1990 US dollars/cap yr).

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 1,419 | 1,637 | 2,506 | 2,510 | 3,193 | 3,326 | 4,535 | 5,444 | 7,211 | 10,372 | 12,613 |
| USA | 2,497 | 3,136 | 3,989 | 4,437 | 4,925 | 5,135 | 6,889 | 7,997 | 10,054 | 11,978 | 14,540 |
| Lat. Am. | 212 | 269 | 342 | 408 | 473 | 524 | 693 | 924 | 1,302 | 1,833 | 1,642 |
| Africa | 172 | 186 | 196 | 212 | 232 | 250 | 267 | 310 | 384 | 467 | 419 |
| OECD Eur. | 1,710 | 1,993 | 2,341 | 2,598 | 2,829 | 3,013 | 3,244 | 4,902 | 6,991 | 9,146 | 11,249 |
| Eastern Eur. | 225 | 241 | 258 | 275 | 292 | 310 | 328 | 467 | 754 | 1,106 | 1,064 |
| CIS | 137 | 179 | 235 | 259 | 266 | 432 | 509 | 735 | 1,002 | 1,546 | 1,783 |
| M. East | 360 | 390 | 404 | 415 | 442 | 665 | 705 | 1,105 | 1,620 | 1,953 | 1,863 |
| India + SA | 126 | 127 | 129 | 128 | 126 | 125 | 123 | 141 | 159 | 185 | 219 |
| China + CPA | 26 | 28 | 30 | 31 | 32 | 33 | 32 | 50 | 94 | 146 | 201 |
| East Asia | 168 | 177 | 187 | 187 | 183 | 180 | 176 | 249 | 381 | 568 | 843 |
| Oceania | 2,768 | 2,662 | 3,420 | 3,370 | 3,433 | 3,924 | 4,626 | 5,391 | 6,932 | 8,276 | 9,560 |
| Japan | 760 | 862 | 946 | 1,226 | 1,360 | 2,122 | 1,456 | 3,014 | 7,041 | 10,110 | 13,620 |

For estimates with a five year interval of GDP, Value Added Industry and Services and Private Consumption, all per capita in 1990 US dollars, see Appendix Table A5.

## 2.5 Number of passenger cars

Spatial resolution:       regional
Temporal resolution:   1890 - 1990, with 10 year timestep
Quality:                     2

Passenger cars are used in the Energy Economy model as an activity indicator for the end-use sector Transport. Numbers for all regions for the period 1970 -1990 were taken from the World

Bank (1990). Historical number were derived from Mitchell (1975, 1982, 1983) for all regions except CIS, but the numbers for CIS are assumed to follow the same historical growth pattern per capita as Eastern Europe, keeping the same ratio between the total number of CIS and Eastern Europe as in 1970. Table 13 presents estimates for the number of cars per million persons.

Table 13. Number of cars/Mpersons

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | 693 | 28,178 | 100,699 | 102,015 | 150,202 | 238,630 | 326,731 | 426,300 | 472,386 |
| USA | - | 93 | 4,683 | 80,198 | 201,355 | 210,718 | 274,537 | 347,132 | 449,847 | 520,047 | 566,108 |
| Lat. Am. | - | - | - | 571 | 7,511 | 6,291 | 9,591 | 26,686 | 30,192 | 63,983 | 72,647 |
| Africa | - | - | - | 173 | 1,969 | 2,718 | 4,997 | 9,021 | 11,605 | 14,045 | 15,092 |
| OECD Eur. | - | 13 | 1,132 | 2,971 | 17,558 | 25,801 | 24,944 | 87,622 | 197,076 | 291,747 | 375,015 |
| Eastern Eur. | - | - | - | 182 | 3,221 | 4,117 | 5,659 | 11,378 | 34,367 | 95,594 | 144,961 |
| CIS | - | - | - | 88 | 1,301 | 1,769 | 4,497 | 6,697 | 18,308 | 33,482 | 58,971 |
| M. East | - | - | - | 76 | 1,161 | 1,590 | 1,879 | 4,309 | 11,682 | 29,521 | 40,672 |
| India + SA | - | - | - | - | 31 | 295 | 276 | 723 | 1,372 | 1,714 | 2,939 |
| China + CPA | - | - | - | - | 5 | 38 | 61 | 110 | 191 | 789 | 2,653 |
| East Asia | - | - | - | 72 | 650 | 753 | 1,303 | 2,513 | 4,588 | 8,959 | 15,560 |
| Oceania | - | - | - | 8,246 | 63,288 | 104,709 | 142,911 | 219,119 | 306,965 | 381,406 | 413,007 |
| Japan | - | - | - | 16 | 9,858 | 12,735 | 15,727 | 42,332 | 101,934 | 202,591 | 254,101 |

Source: Mitchell (1975, 1982, 1983), World Bank (1990).

## 2.6 Temperature and precipitation data

Spatial resolution:    0.5° x 0.5° latitude/longitude
Temporal resolution:  1930 - 1960, with 1 year timestep
Quality:             1

Temperature and precipitation are principal variables of any climate change model. Besides being used to check climate calculations in IMAGE 2.1, they are used in the Terrestrial Vegetation model as input for the BIOME model and the FAO Crop Suitability model Leemans and van den Born (1994). Furthermore, in the Terrestrial Carbon Model climate data are needed for calculating feedback processes Klein Goldewijk et al. (1994). Data used are the Leemans and Cramer (1991) climate data base for the period 1930-1960. Also a preliminary version of the new 1960-1990 climate data base of Cramer and Leemans is used (Leemans, pers. comm.).

The Global Historical Climatology Network (GHCN) is a comprehensive source of both historical temperature and precipitation records. Version 1 contained data from more than 6,000 temperature stations, 7,500 precipiation stations and 2,000 pressure stations. The earliest data record was from 1697, the most recent from 1990. Global decadal and century scale temperature changes are presented in Table 14, and graphically in Figure 3.

Table 14. Global temperature changes on a decadal and century scale.

| Surface trends ($^{\circ}$C / Century) | | | | |
|---|---|---|---|---|
| LAND | 1850s | 1880 | 1900 | 1930 |
| Hansen & Wilson | 0.53 | 0.53 | 0.49 | 0.37 |
| Jones | 0.46 | 0.55 | 0.53 | 0.42 |
| NOAA | | | | |
| (YO.1 / 5 x 5 grids) | 0.36 | 0.50 | 0.45 | 0.27 |
| (YO.1 / 80 Euqal area) | 0.36 | 0.47 | 0.44 | 0.31 |
| OCEAN | | | | |
| UK MET | 0.41 | 0.49 | 0.59 | 0.30 |
| LAND & OCEAN | | | | |
| Jones & UK MET | 0.41 | 0.52 | 0.58 | 0.48 |

Source: NOAA/NESDIS/NCDC

**Global and Hemispheric Annual Temperature Variations Between 1854 and 1991.**
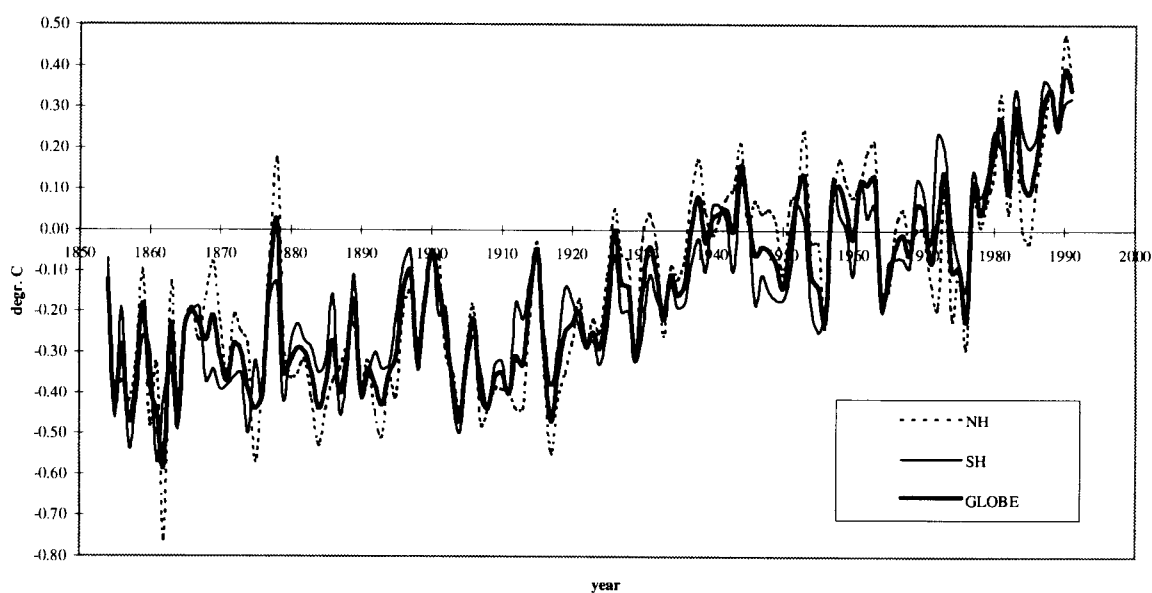


Figure 3. Historical temperature variations 1854 - 1991.

Source: CDIAC, NDP-041. Jones, et al. (1994).

# 3.    Energy/Industry Economic data

## 3.1    Energy data

### 3.1.1    Final energy consumption

Spatial resolution:        regional
Temporal resolution:    1900, 1925, 1938, 1950, 1955, 1960, 1965, 1970 - 1990
Quality:                        before 1925: 3, 1925 - 1965: 2, after 1970: 1

### Electricity

Partial data for industrial consumption of electricity for some European countries are provided by Svennilson (1954) for 1929, 1938 and 1950. Consumption in industry rose by 60% between 1929 and 1938, and by another 45% up to 1950. Table 15 provides per capita consumption of electricity outside industry and transport. The data refer to consumption for household use, commercial activities, administration, handicrafts, farms, streetlightning, hospitals, etc. The total consumption of electricity for 12 European countries rose from 46 kWh/cap in 1929, to 95 kWh/cap in 1938 and 229 kWh/cap in 1950.

Table 15. Per capita consumption of electricity outside industry and transport , selected countries  (kWh/cap).

| Country | 1929 | 1938 | 1950 |
|---|---|---|---|
| Norway | 547 | 747 | 1,562 |
| Switzerland | 249 | 317 | 724 |
| Austria | 62 | 71 | 156 |
| UK | 58 | 187 | 423 |
| Belgium-Lux. | 56 | 69 | 130 |
| Denmark | 37 | 79 | 183 |
| France | 31 | 57 | 102 |
| Czechoslovakia | 20 | 26 | 74 |
| Ireland | 12 | 55 | 171 |
| Poland | 6 | 12 | 46 |
| Greece | 4 | 11 | 31 |
| Bulgaria | 4 | 7 | 31 |
| Total | 46 | 95 | 229 |

Source: Svennilson (1954).

Darmstadter (1971) presents data for total electricity consumption per region and for individual countries for the period 1925 - 1965. Aggregated regional data are presented in Table 16.

Table 16. Electricity consumption per region (in PJ).

| Region | 1925 | 1938 | 1950 | 1955 | 1960 | 1965 |
|---|---|---|---|---|---|---|
| Canada | 34 | 96 | 192 | 283 | 393 | 507 |
| USA | 292 | 511 | 1,405 | 2,280 | 3,056 | 4,166 |
| Lat. Am. | 16 | 39 | 93 | 157 | 258 | 378 |
| Africa | 8 | 27 | 56 | 90 | 143 | 210 |
| OECD Eur. | 251 | 579 | 951 | 1,491 | 2,160 | 3,098 |
| East. Eur. | 17 | 42 | 98 | 177 | 300 | 482 |
| CIS | 11 | 143 | 327 | 613 | 1,052 | 1,819 |
| M. East | 1 | 2 | 7 | 18 | 37 | 59 |
| India + SA | 2 | 8 | 20 | 44 | 81 | 150 |
| China + CPA | 7 | 19 | 39 | 67 | 159 | 252 |
| East Asia | 0 | 4 | 7 | 19 | 32 | 50 |
| Oceania | 7 | 21 | 46 | 76 | 116 | 175 |
| Japan | 29 | 118 | 162 | 229 | 401 | 677 |
| World | 675 | 1,609 | 3,402 | 5,544 | 8,187 | 12,023 |

Source: Darmstadter (1971).

The hydroelectric share of total electricity consumption is also estimated by Darmstadter (1971) (Table 17).

Table 17. Share of hydroelectricity in electricity consumption (%).

| Region | 1925 | 1938 | 1950 | 1955 | 1960 | 1965 |
|---|---|---|---|---|---|---|
| Canada | 92.9 | 89.1 | 94.6 | 91.6 | 92.2 | 82.9 |
| USA | 33.0 | 34.6 | 26.3 | 19.0 | 18.2 | 17.0 |
| Lat. Am. | 70.0 | 58.3 | 55.3 | 50.3 | 49.0 | 48.9 |
| Africa | 2.9 | 6.6 | 8.8 | 13.0 | 16.8 | 22.6 |
| OECD Eur. | 44.0 | 40.5 | 44.8 | 41.0 | 40.6 | 35.7 |
| East. Eur. | 7.8 | 8.9 | 5.0 | 5.9 | 5.6 | 6.4 |
| CIS | 8.6 | 12.9 | 14.0 | 13.6 | 17.4 | 15.8 |
| M. East | 11.2 | 5.4 | 4.5 | 4.1 | 11.1 | 16.7 |
| Far east | 77.8 | 72.2 | 78.1 | 66.6 | 48.7 | 37.7 |
| Oceania | 34.6 | 35.8 | 35.1 | 31.2 | 31.0 | 35.7 |
| Japan | 93.1 | 72.6 | 85.2 | 76.4 | 52.4 | 37.6 |
| World | 41.7 | 40.5 | 36.7 | 30.8 | 29.9 | 26.9 |

Source: Darmstadter (1971).

The world wide consumption of hydroelectricity increased at the average annual rate of 6.3 percent during the period 1925-1965 somewhat lower than the 7.4 percent rate recorded by the total electricity consumption.

## Fuel types and sectors

Global estimates of energy consumption per fuel type are also given by Darmstadter (1971). Table 18 is derived with a conversion factor of 1 metric tons coal equivalent to 29.30 x 10$^9$ Joules.

Table 18. World energy consumption per fuel type (in EJ), excluding biofuels.

| Fuel type | 1925 | 1938 | 1950 | 1955 | 1960 | 1965 |
|---|---|---|---|---|---|---|
| Solid | 36.0 | 37.8 | 46.7 | 53.2 | 58.6 | 67.1 |
| Liquid | 5.8 | 11.0 | 21.2 | 32.0 | 43.9 | 63.3 |
| Natural Gas | 1.4 | 2.9 | 7.4 | 11.4 | 17.9 | 26.7 |
| Hydroelectr. | 0.3 | 0.7 | 1.3 | 1.7 | 2.5 | 3.3 |
| World | 43.5 | 52.4 | 76.5 | 98.4 | 122.9 | 160.4 |

Source: Darmstadter (1971).

The traditional biofuel consumption per capita for each IMAGE region for 1980 is calculated with IEA data for energy consumption, and UN population data. Under the assumption that the per capita biofuel conumption remained constant over time, the historical biofuel consumption is calculated with the historical population estimates from HYDE (see Table 2). Results for the energy consumption per fuel type, including biofuels are presented in Table 19.

Table 19. World energy consumption per fuel type (in EJ), including biofuels.

| Fuel type | 1900 | 1925 | 1938 | 1950 | 1955 | 1960 | 1971 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Coal | 12.62 | 36.01 | 37.86 | 46.65 | 53.59 | 59.28 | 32.11 | 31.14 | 36.87 |
| Electricity | 0.02 | 0.68 | 1.61 | 3.40 | 5.58 | 8.19 | 15.75 | 23.95 | 33.87 |
| Gas | 0.25 | 1.41 | 2.93 | 7.45 | 11.49 | 18.00 | 23.99 | 37.39 | 38.98 |
| Mod. biofuel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.14 |
| Oil | 0.63 | 5.76 | 11.02 | 21.10 | 31.69 | 43.23 | 73.82 | 90.49 | 107.77 |
| Trad. Biofuel | 8.51 | 17.59 | 20.75 | 23.28 | 25.37 | 27.49 | 34.52 | 42.81 | 49.51 |
| World | 22.03 | 61.44 | 74.17 | 101.88 | 127.71 | 156.16 | 180.19 | 224.83 | 267.14 |

Source: 1900 - 1925 own estimates, 1925 - 1960 Darmstadter + own estimates for biofuels, 1970 - 1990 IEA.

The same data are also available per sector. Results are presented in Table 20.

Table 20.  World energy consumption per sector (in EJ), including biofuels.

| Fuel type | 1900 | 1925 | 1938 | 1950 | 1955 | 1960 | 1971 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Industry | 10.65 | 31.21 | 34.53 | 46.03 | 55.57 | 67.74 | 67.05 | 78.76 | 87.25 |
| Other | 0.54 | 2.33 | 2.60 | 3.90 | 5.05 | 6.97 | 8.87 | 10.76 | 12.16 |
| Residences | 8.62 | 21.69 | 26.19 | 31.48 | 37.87 | 43.03 | 52.15 | 65.18 | 77.49 |
| Services | 1.26 | 2.07 | 3.51 | 6.44 | 8.96 | 11.13 | 12.34 | 17.01 | 20.79 |
| Transport | 0.95 | 4.15 | 7.34 | 14.01 | 20.27 | 26.38 | 39.77 | 44.38 | 54.11 |
| World | 22.03 | 61.44 | 74.17 | 101.88 | 127.71 | 156.16 | 180.19 | 225.82 | 267.14 |

Source: 1900 - 1925 own estimates, 1925 - 1960 Darmstadter + own estimates for biofuels, 1970 - 1990 IEA.

Total

The total energy consumption is presented in Table 21.

Table 21.  Total energy consumption per region (in EJ).

| Region | 1900 | 1925 | 1938 | 1950 | 1955 | 1960 | 1971 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|
| Canada | 0.38 | 1.14 | 1.41 | 2.56 | 3.09 | 3.68 | 4.84 | 6.25 | 6.26 |
| USA | 6.92 | 22.67 | 21.74 | 38.29 | 44.27 | 50.35 | 49.38 | 53.10 | 55.33 |
| Lat. Am. | 0.57 | 1.59 | 2.28 | 3.35 | 4.76 | 6.45 | 8.02 | 12.37 | 15.37 |
| Africa | 1.27 | 2.65 | 3.61 | 4.78 | 5.76 | 6.58 | 8.69 | 11.54 | 14.35 |
| OECD Eur. | 5.17 | 15.05 | 19.13 | 16.79 | 21.39 | 24.32 | 33.79 | 37.27 | 38.64 |
| East. Eur. | 0.63 | 1.83 | 2.25 | 6.61 | 9.38 | 11.88 | 6.67 | 8.86 | 7.24 |
| CIS | 0.88 | 1.97 | 6.67 | 10.63 | 15.64 | 21.38 | 23.43 | 31.17 | 33.09 |
| M. East | 0.35 | 0.77 | 1.06 | 1.29 | 1.70 | 2.33 | 3.63 | 6.86 | 10.39 |
| India + SA | 2.22 | 4.67 | 5.48 | 6.17 | 7.07 | 8.23 | 10.43 | 13.73 | 18.65 |
| China + CPA | 2.55 | 5.51 | 5.88 | 6.51 | 8.69 | 13.33 | 16.52 | 24.65 | 33.75 |
| East Asia | 0.63 | 1.39 | 2.24 | 2.62 | 2.79 | 2.72 | 4.92 | 7.26 | 11.14 |
| Oceania | 0.16 | 0.48 | 0.57 | 0.92 | 1.18 | 1.45 | 1.65 | 2.13 | 2.63 |
| Japan | 0.29 | 0.90 | 1.86 | 1.37 | 2.00 | 3.45 | 8.22 | 9.64 | 11.20 |
| Sum | 22.03 | 61.44 | 74.17 | 101.88 | 127.71 | 156.16 | 180.19 | 224.83 | 258.04 |
| *Other global estimates* | | | | | | | | | |
| Darmstadter | | 43.50 | 52.40 | 7650 | 98.40 | 122.90 | - | - | - |
| IEA | - | - | - | - | - | 181.15 | 224.80 | 258.04 |

Source: for 1900 own estimates, Darmstadter (1971), IEA.
Note: Darmstadter excluding biofuels.

Total includes the following sectors: Industry, Other, Residences, Services, and Transport, and the following energy carriers: coal, electricity, gas, oil and modern and traditional biofuels. In general, energy consumption in different parts of the world increases along with overall economic development. Worldwide energy consumption increased from 43 EJ in 1925 to nearly 160 EJ in

1965, representing a yearly growth rate of 3.3 percent (Darmstadter, 1971). Growth in global energy consumption declined somewhat after 1965, especially influenced by the developments in The People's Republic of China. According to Darmstadter, the data of the United Nations Statistical Office show a decline in energy consumption of nearly 20 percent in the Centrally Planned Asia region in the energy consumption between 1965 and 1967, with a recovery to the 1965 level barely achieved in 1968. Slower growth in Eastern Europe also contributed to the worldwide deceleration. With only one exception, all regions show recorded faster growth in energy consumption after the Second World War than in the period before. The exception is the former USSR, whose growth rates are comparable during the two periods.

For the period after 1970 data are presented in IEA (1991), Pepper et al. (1992), and Berdowski et al. (1993). Due to different methods for classifying energy uses, the estimates for 1965 of Darmstadter and the 1971 estimate of the IEA for USA, Eastern Europe and CIS do not match well.

### 3.1.2  Conversion efficiency of primary energy carriers to electricity

Spatial resolution:      regional
Temporal resolution:    1890 - 1980, with irregular intervals
Quality:                1

Estimates of the efficiency of electricity generation from coal are taken from (Etemad et al., 1991). From 1890 until 1939 the following countries belong to the high efficiency producers: Belgium, Canada, Czechoslovakia, Denmark, Germany, Finland, France, Italy, the Netherlands, New Zealand, Norway, Sweden, Switzerland, United Kingdom and the United States. The group of average efficiency producers consists of the following countries: Albania, Argentina, Australia, Austria, Brazil, Bulgaria, Chile, Greece, Hungary, Ireland, Israel, Japan, Luxembourg, Poland, Portugal, Romania, South Africa, Spain, Uruguay, USSR and Yugoslavia. The group of low efficiency countries includes all of the Third World, except the countries listed in the average efficiency producers.

Table 22. Efficiency expressed in % of maximum theoretical efficiency.

| Category[8] | 1890 | 1900 | 1913 | 1920 | 1930 | 1938 | 1950 | 1960 | 1970 | 1980 |
|---|---|---|---|---|---|---|---|---|---|---|
| Advanced countries | 3.5 | 3.8 | 5.8 | 8.8 | 17.5 | 20.1 | 21.5 | 29.2 | 34.4 | 35.8 |
| Average countries | 3.4 | 3.6 | 5.3 | 7.2 | 11.7 | 16.4 | 20.0 | 25.2 | 29.8 | 32.1 |
| Backward countries | 3.3 | 3.4 | 5.0 | 6.3 | 10.2 | 14.1 | 18.6 | 21.5 | 26.0 | 29.4 |

Source: Etemad, et al. (1991).

For the period after the Second World War (1940-1980) estimates are available for the six most efficient industrialized countries (Belgium, Germany, France, Netherlands, Italy, UK), an average of the whole industrialized countries, and the six least efficient industrialized countries (Bulgaria, Czechoslovakia, Greece, Portugal, Romania, Spain). Table 22 presents the conversion efficiency of

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[8] Category names as presented by Etemad et al. (1991).

primary energy carriers to electricity for three classes of countries. For Third World countries Etemad *et al.* (1991) calculated the average weighted coefficient of the main thermal electricity producers. The selected coefficients representing the amount of kg coal equivalent used to generate one kWh of electricity are as follows: for 1950 about 0.82; 1960, 0.70; 1970, 0.53; and in 1980 about 0.45.

### 3.1.3 Electricity generation.

Spatial resolution:     regional
Temporal resolution:   1900 -1975, with 1 year timesteps.
Quality:               2

Historically, coal has been an important fuel for electricity generation. In 1929 about 7 percent of world energy consumption was produced by steam-coal used at thermal power stations; by 1965 it already increased to 12 percent. A related statistic is the proportion of world coal output going into electricity. In 1929 the figure was about 9 percent, and in 1965 it was about 29 percent. Darmstadter (1971) presents a table with the global amount of selected secondary energy products (Table 23).

Table 23. Global primary energy production, and selected energy product (in million metric tons of coal eq.)

|  | 1929 | 1950 | 1965 |
|---|---|---|---|
| *Primary energy production* | | | |
| Solid fuels | 1,437.6 | 1,608.6 | 2,292.7 |
| Liquid fuels | 318.7 | 813.2 | 2,342.8 |
| Natural gas | 77.0 | 252.0 | 912.2 |
| Hydroelectricity | 14.7 | 43.4 | 112.6 |
| Total | 1,847.9 | 2,717.1 | 5,660.4 |
| *Selected energy product* | | | |
| Electricity[9] | 145.0 | 367.0 | 1,037.3 |
| % of primary energ. prod. | 7.8 | 13.5 | 18.3 |

Source: Darmstadter (1971).

Mitchell (1975, 1982, 1983) provides estimates for the output of electric energy (in Gigawatt hours) for the period 1900 - 1975 on a country basis.

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[9] Electricity refers to the primary fuel input into electricity generation (including the caloric value of hydro) rather than electricity produced.

### 3.1.4 Fuel-prices per sector (end-use)

Spatial resolution:     country
Temporal resolution:    1890 - 1949, in irregular intervals.
Quality:                3

Historical data for fuel-prices are not widespread and difficult to compare. An example with comparative price indicators of electricity and coal in the United Kingdom, France and the USA during 1890 - 1949 is presented in Table 24, derived from Svennilson (1954). Prices were given in current local prices and are converted into (1990) US dollars.

Table 24. Prices of electricity and coal in the UK, France and USA .

| Country | | 1913 | 1925 | 1929 | 1938 | 1948 |
|---|---|---|---|---|---|---|
| UK | | | | | | |
| | Household | - | 47.6 | 35.3 | 12.6 | $9.3^{10}$ |
| | Industry | - | 12.4 | 10.1 | 5.2 | $6.1^{11}$ |
| | Coal | - | 24.1 | 19.5 | 15.6 | $36.3^{11}$ |
| France | | | | | | |
| | Household | 82.8 | 29.6 | 36.3 | 22.1 | 13.3 |
| | Other | 27.2 | 15.1 | 16.5 | 8.5 | 4.1 |
| | Coal | 24.3 | 24.9 | 28.8 | 18.5 | 26.3 |
| USA | | | | | | |
| | Household | 55.8 | 45.3 | 38.6 | 16.0 | 11.5 |
| | Industry | 13.8 | 13.6 | 12.4 | 7.2 | 5.8 |
| | Coal | 7.8 | 14.0 | 12.0 | 8.3 | 21.0 |

Source: Svennilson (1954).

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[10] 1949 value.

[11] Household, Industry and Other in 1990 US$ cents per kWh, Coalin 1990 US$ per ton.

## 3.2    Industry/Economic data

### 3.2.1    Production of cement

Spatial resolution:      country
Temporal resolution:    1950 - 1982
Quality:                1

The production of cement is used amongst other things to calculate $CO_2$-emissions. Emission data for cement are available for all regions for the period 1950 - 1990 (Marland et al., 1994). The cement production data are re-calculated with an emission factor provided by Marland *et al* of 0.136. Estimates for the period 1929 - 1950 are presented by Woytinsky and Woytinsky (1953), where Latin America is represented by Mexico, Colombia, Brazil, Peru, Chile, Uruguay and Argentina. Africa consists of Egypt and South Africa. China + CPA consists of China and Indochina, data for China only for 1929 and 1939. The regions East Asia and Middle East consist only of Indonesia and Turkey resp. The cement production estimates are presented in Figure 4 and Table 28. Urquhart and Buckley (1965) present data for Canada starting in 1890.

Table 25.  Global and regional cement production (in 1000 metric tons).

| Region | 1890 | 1900 | 1910 | 1920 | 1929 | 1939 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 18 | 73 | 832 | 1,164 | 2,150 | 1,003 | 2,941 | 5,147 | 7,353 | 10,294 | 11,765 |
| USA | - | - | - | - | 29,481 | 21,267 | 38,971 | 55,882 | 66,176 | 68,382 | 69,853 |
| Latin America | - | - | - | - | 965 | 3,038 | 8,088 | 17,647 | 36,029 | 75,735 | 83,824 |
| Africa | - | - | - | - | 556 | 1,321 | 4,412 | 8,824 | 17,647 | 31,618 | 51,471 |
| OECD Eur. | - | - | - | - | 29,237 | 40,280 | 49,265 | 99,265 | 177,941 | 207,353 | 199,265 |
| Eastern Eur. | - | - | - | - | 4,003 | 4,564 | 8,088 | 22,794 | 41,912 | 68,382 | 55,147 |
| CIS | - | - | - | - | 2,367 | 5,700 | 10,294 | 45,588 | 95,588 | 125,000 | 137,500 |
| Middle East | - | - | - | - | 65 | 284 | 1,471 | 5,882 | 15,441 | 39,706 | 75,735 |
| India + SA | - | - | - | - | 570 | 1,748 | 2,941 | 8,088 | 13,235 | 17,647 | 49,265 |
| China + CPA | - | - | - | - | 369 | 846 | 735 | 16,176 | 14,706 | 88,971 | 222,794 |
| East Asia | - | - | - | - | 149 | 170 | 735 | 5,147 | 21,324 | 55,882 | 105,882 |
| Oceania | - | - | - | - | 800 | 1,118 | 1,471 | 2,941 | 4,412 | 5,147 | 6,618 |
| Japan | - | - | - | - | 3,277 | 6,199 | 4,412 | 22,794 | 57,353 | 88,235 | 84,559 |
| | | | | | | | | | | | |
| Sum | n.a | n.a | n.a | n.a. | 0.074 | 0.088 | 0.134 | 0.316 | 0.569 | 0.882 | 1.154 |
| | | | | | | | | | | | |
| *Other global estimates* | | | | | | | | | | | |
| Woytinski | - | - | - | - | 0.074 | 0.093 | 0.122 | - | - | - | - |
| Marland | - | - | - | - | - | - | 0.133 | 0.317 | 0.571 | 0.881 | 1.154 |
| Solomon | - | - | - | - | - | - | - | - | - | - | 1.160 |

Source: Woytinsky and Woytinsky (1953), Marland et al. (1994), Solomon (1996).

### 3.2.2   Production of coal

Spatial resolution:          country
Temporal resolution:      1890 - 1980, with 1 year timestep.
Quality:                          1

Data on the production of hard coal and brown coal are given in Etemad et al. (1991) on a country basis, for the period 1890 - 1980. They have been aggregated into regions and converted into coal equivalents (Table 22). Conversion factors are given in Appendix Table A6-1. Following Etemad *et al.* (1991) a conversion factor of 1.0000 for hard coal and 0.3385 for brown coal was used for countries were no factor was given. When a range was given for a country the average value is used. A second conversion was made into metric tons of oil equivalents using the following ratio: 1 metric ton of coal equivalent = 0.7 metric ton of oil equivalent (IPCC/OECD, 1993). Figure 4 and Table 25 present the coal production data for the IMAGE regions.
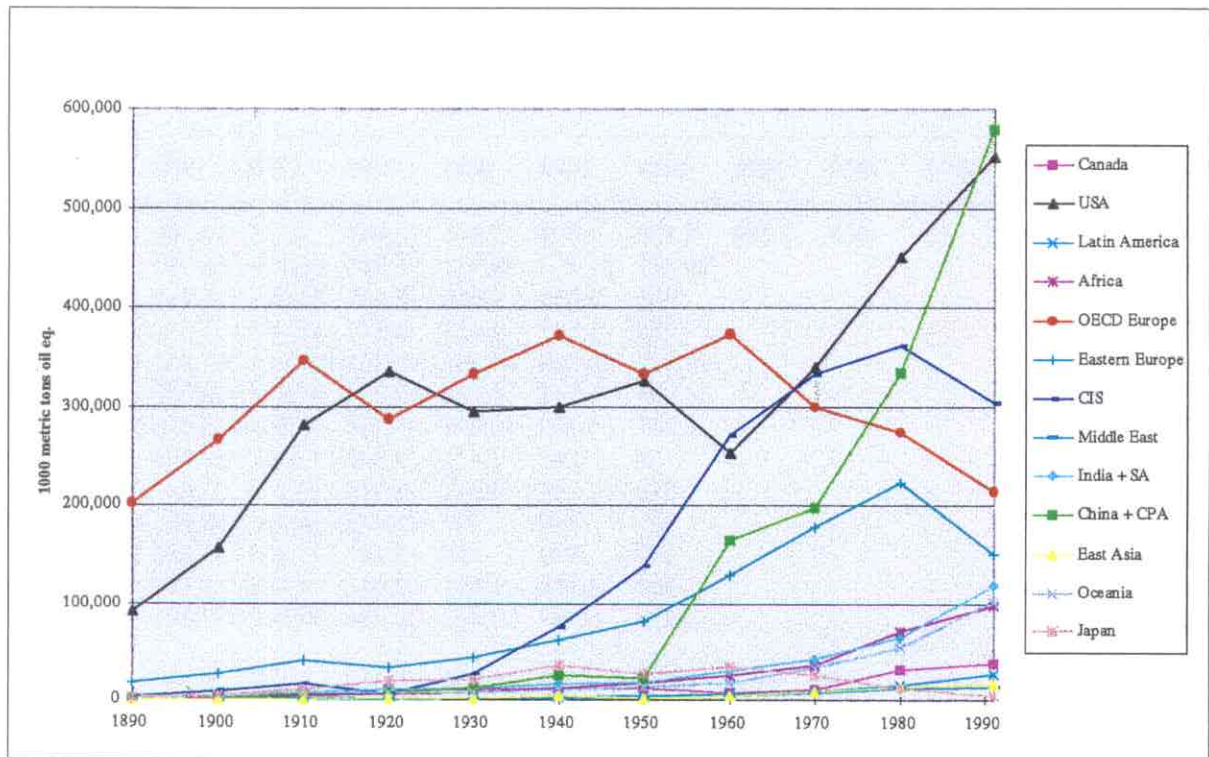


Figure 4. Regional production of coal for 1890 - 1990.

Table 26. Coal production (in 1000 metric tons of oil equivalents).

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 1,932 | 3,661 | 7,637 | 11,204 | 10,440 | 11,314 | 12,711 | 7,782 | 11,260 | 32,168 | 36,959 |
| USA | 91,406 | 156,633 | 281,032 | 335,240 | 294,335 | 298,867 | 325,721 | 252,861 | 339,838 | 451,153 | 552,259 |
| Lat. Am. | 81 | 701 | 1,829 | 1,844 | 1,981 | 3,082 | 4,170 | 5,836 | 8,358 | 15,628 | 26,495 |
| Africa | 63 | 1,166 | 4,000 | 6,299 | 7,657 | 11,513 | 17,771 | 25,800 | 35,595 | 70,823 | 97,594 |
| OECD E. | 201,547 | 265,628 | 345,918 | 286,978 | 332,974 | 370,762 | 332,616 | 373,251 | 299,296 | 274,120 | 213,727 |
| East. Eur. | 17,693 | 26,825 | 41,312 | 33,752 | 42,888 | 61,271 | 81,193 | 129,469 | 176,727 | 221,985 | 150,130 |
| CIS | 3,321 | 8,696 | 15,861 | 5,737 | 27,722 | 75,673 | 138,611 | 271,170 | 331,582 | 360,524 | 303,867 |
| M. East | 98 | 223 | 516 | 246 | 973 | 1,886 | 3,337 | 5,228 | 7,442 | 11,704 | 12,949 |
| India+SA | 1,188 | 3,321 | 7,127 | 11,075 | 12,410 | 16,030 | 18,516 | 29,505 | 42,114 | 64,395 | 119,335 |
| China+CPA | 11 | 192 | 5,722 | 7,852 | 12,145 | 25,492 | 22,745 | 163,586 | 197,137 | 333,353 | 579,208 |
| East Asia | 16 | 155 | 456 | 1,086 | 2,088 | 5,099 | 1,344 | 4,098 | 8,386 | 14,123 | 16,771 |
| Oceania | 2,603 | 4,198 | 6,962 | 7,891 | 7,364 | 10,117 | 12,995 | 17,944 | 32,458 | 54,757 | 101,727 |
| Japan | 1,764 | 5,248 | 10,956 | 18,845 | 20,558 | 35,362 | 26,436 | 34,256 | 25,449 | 11,874 | 5,089 |
| *Global total (in Mtons)* | | | | | | | | | | | |
| World | 0.322 | 0.477 | 0.729 | 0.728 | 0.774 | 0.926 | 0.998 | 1.321 | 1.516 | 1.917 | 2.216 |

Source: Etemad et al. (1991).

A more elaborate table is presented in Table A7, with coal production data expressed in oil and coal equivalents, metric tons and PetaJoules for the period 1890 - 1991. Also, other estimates of Etemad et al. (1983) and Hubbert (1993) are converted into different units for comparison reasons.

### 3.2.3 Production of oil

Spatial resolution:      country
Temporal resolution:    1890 - 1980, with 1 year timestep.
Quality:                1

Crude oil production data are given in (Etemad et al., 1991). For the period 1890 - 1980 the production was given in thousand metric tons and converted into metric tons of oil equivalent done with the multiplier 0.7. Results are presented in Figure 5 and Table 26.
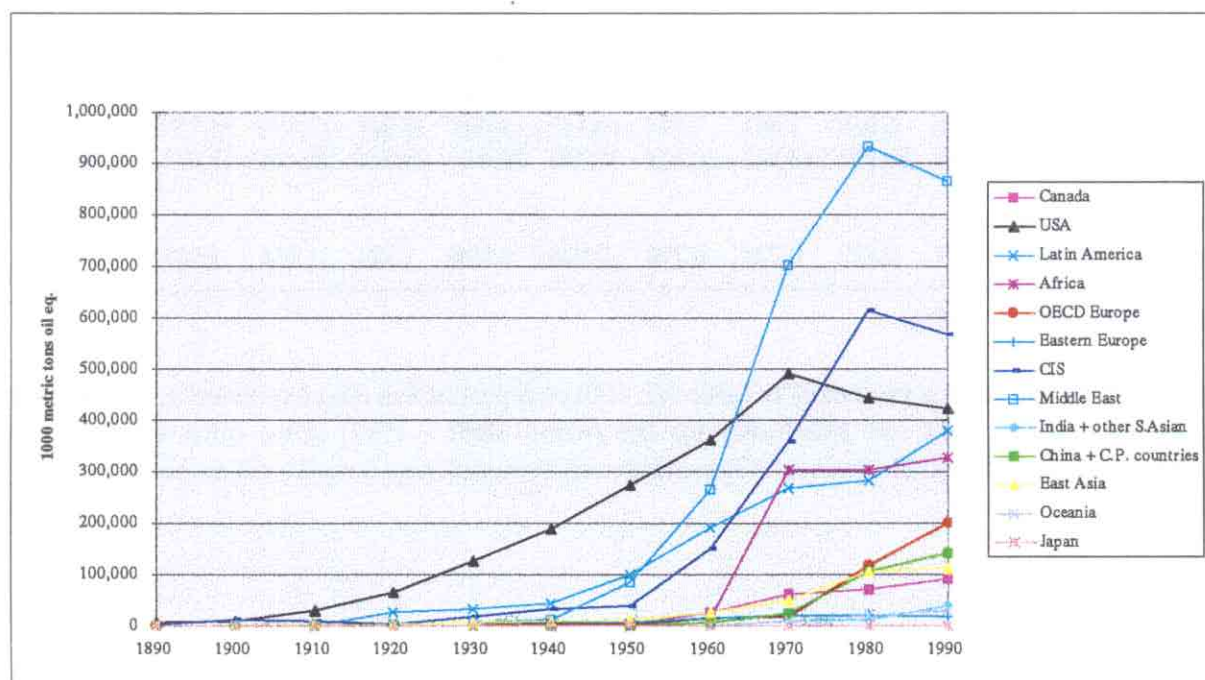


Figure 5. Regional production of oil for 1890 - 1990.

Remarkable is the dramatic increase in oil production in the Middle East, CIS and Africa after 1950, this in contrast with the steady growth in production in USA. Another striking effect is the sudden decrease in production in several regions during the 80s, probably due to the global economic recession at that time.

Table 27. Production of oil (in 1000 metric tons of oil equivalents).

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|--------|------|------|------|------|------|------|------|------|------|------|------|
| Canada | 108 | 124 | 43 | 26 | 200 | 1,148 | 3,976 | 25,968 | 63,116 | 71,672 | 91,120 |
| USA | 6,220 | 8,635 | 28,465 | 63,549 | 126,674 | 189,449 | 274,480 | 360,340 | 491,197 | 443,012 | 424,253 |
| Lat. Am. | 4 | 39 | 703 | 25,551 | 32,271 | 42,943 | 100,523 | 191,581 | 266,347 | 283,679 | 377,952 |
| Africa | - | - | - | 152 | 292 | 951 | 2,697 | 14,047 | 303,189 | 303,583 | 326,802 |
| OECD E. | 16 | 53 | 152 | 97 | 263 | 1,594 | 3,826 | 14,377 | 16,584 | 117,916 | 198,724 |
| Eastern Eur. | 149 | 608 | 3,152 | 1,918 | 6,595 | 6,968 | 6,134 | 15,189 | 20,987 | 21,244 | 17,488 |
| CIS | 3,819 | 10,528 | 9,713 | 3,970 | 18,833 | 31,660 | 38,560 | 150,520 | 359,394 | 614,065 | 566,738 |
| M. East | - | - | - | 1,804 | ·6,267 | 13,160 | 86,369 | 265,977 | 702,546 | 931,974 | 863,269 |
| India+SA | 16 | 147 | 833 | 1,191 | 1,242 | 1,428 | 513 | 1,384 | 8,205 | 11,648 | 37,031 |
| China+CPA | - | - | - | - | 51 | 601 | 209 | 5,631 | 24,449 | 106,890 | 140,837 |
| East Asia | 0 | 317 | 1,550 | 2,557 | 5,833 | 9,120 | 11,454 | 25,916 | 51,055 | 104,593 | 111,833 |
| Oceania | - | - | - | - | - | - | 1 | 1 | 8,706 | 19,515 | 30,055 |
| Japan | 8 | 116 | 262 | 319 | 287 | 303 | 298 | 535 | 784 | 436 | 550 |
| *Global total (in Mtons)* | | | | | | | | | | | |
| World | 0.010 | 0.021 | 0.045 | 0.101 | 0.199 | 0.299 | 0.529 | 1.071 | 2.317 | 3.030 | 3.187 |

Source: Etemad et al. (1991).

A more elaborate table is presented in Table A8, with oil production data expressed in oil and coal equivalents, metric tons and PetaJoules for the period 1890 - 1990.

### 3.2.4    Production of natural gas

Spatial resolution:        country
Temporal resolution:    1890 - 1980, with 1 year timestep
Quality:                         1

The production of natural gas is taken from Etemad et al. (1991). The estimates for the period 1890 -1980 were given in million cubic meters. The factors used to convert them into metric tons of coal equivalents are listed in Appendix Table A6-2. A conversion factor of 1.3314 was used following Etemad *et al.* (1991) for countries not listed. Coal equivalents were converted into metric tons of oil equivalent with the multiplier 0.7. Results are presented in Table 27.
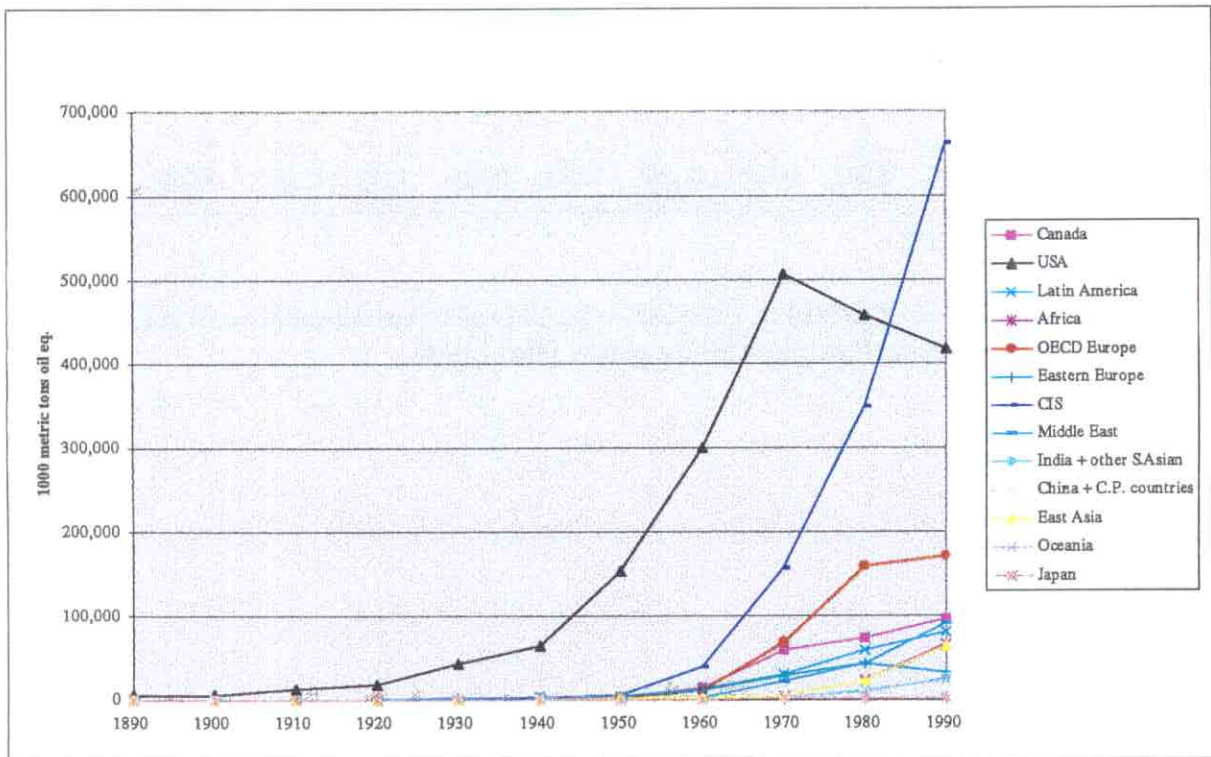


Figure 6. Regional production of gas for 1890 - 1990.

Table 28. Production of gas (in 1000 metric tons of oil equivalents).

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | 139 | 441 | 667 | 1,024 | 1,823 | 14,457 | 58,457 | 72,996 | 95,372 |
| USA | 5,575 | 5,580 | 11,717 | 17,710 | 41,997 | 64,923 | 153,499 | 298,400 | 508,015 | 457,966 | 419,092 |
| Lat. Am. | - | - | - | 22 | 687 | 2,800 | 4,074 | 12,887 | 30,246 | 58,555 | 79,461 |
| Africa | - | - | - | - | - | 39 | 79 | 192 | 3,934 | 23,397 | 66,226 |
| OECD Eur. | - | 1 | 7 | 42 | 91 | 174 | 1,588 | 10,222 | 67,708 | 159,282 | 171,727 |
| Eastern Eur. | - | - | - | 321 | 1,287 | 1,590 | 3,729 | 10,294 | 29,349 | 42,858 | 31,966 |
| CIS | - | - | - | 8 | 448 | 1,219 | 4,594 | 38,610 | 157,132 | 348,839 | 662,563 |
| M. East | - | - | - | - | - | - | 1 | 1,878 | 20,485 | 43,342 | 90,880 |
| India + SA | - | - | - | - | - | - | 1 | 637 | 3,641 | 9,184 | 24,154 |
| China + CPA | - | - | - | - | 13 | 78 | 19 | 518 | 2,555 | 14,006 | 14,191 |
| East Asia | - | - | - | 29 | 475 | 620 | 914 | 2,412 | 3,508 | 23,535 | 63,406 |
| Oceania | - | - | - | - | - | - | - | - | 1,391 | 10,235 | 23,031 |
| Japan | - | - | - | 28 | 40 | 47 | 62 | 658 | 1,999 | 2,104 | 1,936 |
| *Global total (in Mtons)* | | | | | | | | | | | |
| World | 0.006 | 0.006 | 0.012 | 0.019 | 0.046 | 0.073 | 0.170 | 0.392 | 0.888 | 1.267 | 1.744 |

Source: Etemad et al. (1991).

A more elaborate table is presented in Table A9, with oil production data expressed in oil and coal equivalents, million cubic meters and PetaJoules for the period 1890 - 1990.

## 3.2.5   Production of iron

Spatial resolution:       country
Temporal resolution:   1890 - 1975, with 1 year timestep
Quality:                       1

Iron production figures are used for methane emission estimates. Historical data are available for the period 1890 - 1970 for Iron Ore (see Appendix), and Pig Iron (Mitchell 1975, 1982, 1983, 1993, 1995). Note that Mitchell presents no data for the East Asian pig iron production for the post-World War II period until 1970. See Table 29. A more extensive table including iron ore, pig iron production and consumption with a 5 year interval is presented in Appendix A 10.
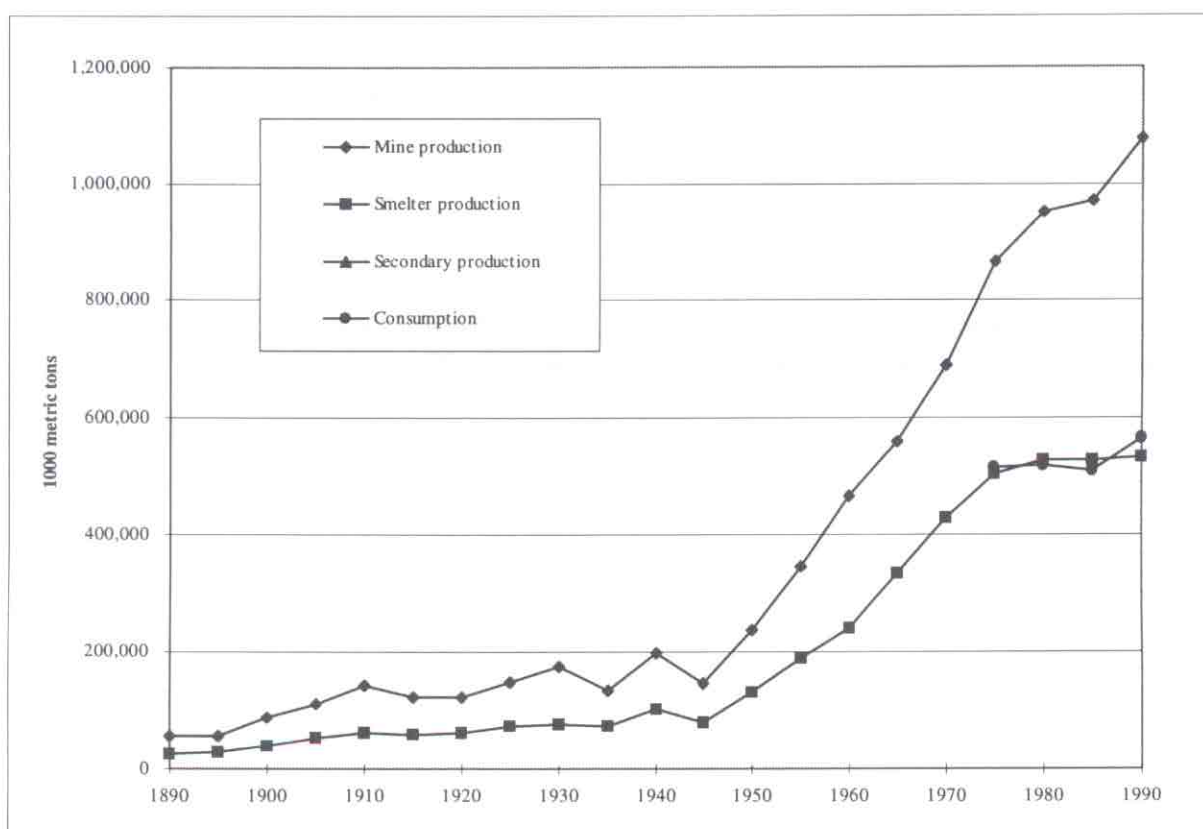


Figure 7. Global iron production and consumption for 1890 - 1990.

Table 29. Pig iron production (in 1000 metric tons).

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 20 | 90 | 726 | 1,015 | 825 | 1,223 | 2,266 | 4,025 | 8,424 | 11,182 | 9,739 |
| USA | 9,350 | 14,011 | 27,742 | 37,519 | 32,261 | 43,027 | 60,211 | 62,250 | 85,141 | 63,748 | 50,690 |
| Lat. Am. | - | - | 45 | 42 | 93 | 285 | 1,084 | 2,776 | 8,761 | 21,336 | 33,363 |
| Africa | - | - | - | - | 31 | 304 | 767 | 2,229 | 5,412 | 10,534 | 10,843 |
| OECD E. | 15,612 | 21,232 | 30,504 | 21,323 | 34,223 | 32,247 | 37,185 | 78,865 | 109,545 | 105,354 | 101,162 |
| Eastern E. | 965 | 1,456 | 2,007 | 1,245 | 2,276 | 3,168 | 4,495 | 12,740 | 21,523 | 23,626 | 27,833 |
| CIS | 928 | 2,937 | 3,047 | 116 | 4,964 | 14,902 | 19,175 | 46,757 | 81,634 | 133,000 | 130,000 |
| M. East | - | - | - | - | - | - | 83 | 113 | 248 | 1,298 | 3,500 | 14,281 |
| India + SA | - | - | - | 317 | 1,199 | 2,044 | 1,708 | 4,275 | 7,118 | 8,718 | 12,017 |
| China + CPA | - | - | - | 259 | 376 | 1,106 | 900 | 28,372 | 24,400 | 45,214 | 61,870 |
| East Asia | - | - | - | 84 | 150 | 303 | - | - | 35 | 5,716 | 12,725 |
| Oceania | - | - | 41 | 350 | 313 | 1,231 | 1,115 | 2,698 | 5,769 | 7,313 | 5,518 |
| Japan | - | 30 | 72 | 530 | 1,188 | 3,658 | 2,299 | 12,341 | 69,714 | 89,130 | 80,230 |
| | | | | | | | | | | | |
| Sum | 26,875 | 39,756 | 64,184 | 62,800 | 77,899 | 103,681 | 131,318 | 257,576 | 428,774 | 528,371 | 532,360 |

*Other global estimates*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Daniels | 27,178 | 40,446 | 65,979 | 62,626 | 79,696 | 104,068 | 132,689 | 252,811 | 428,200 | 508,053 | 530,255 |
| Houck | - | - | - | - | - | - | - | - | - | - | 531,000 |

Source: Mitchell (1975, 1982, 1982, 1993, 1995), Daniëls and van der Wal (1993), Houck (1996).

3.2.6   Production of steel

Spatial resolution:       national
Temporal resolution:    1890 - 1975, with 1 year timestep
Quality:                        1

The world production of steel in 1994 was 726 million tons, somewhat lower than 1990. The global picture is however mixed by the initial reduction in steel production in early 90s in the countries in Eastern Europe and the former U.S.S.R. and a small but steadily increase in production elsewhere worldwide. Steel scrap is an important raw material for the steel industry. Since scrap comes from such sources as old buildings, industrial economies, industrial machinery, discarded cars and consumer durables, and manufacturing operations, the mature industrialized economies are the main exporters of scrap (Fenton ,1996).
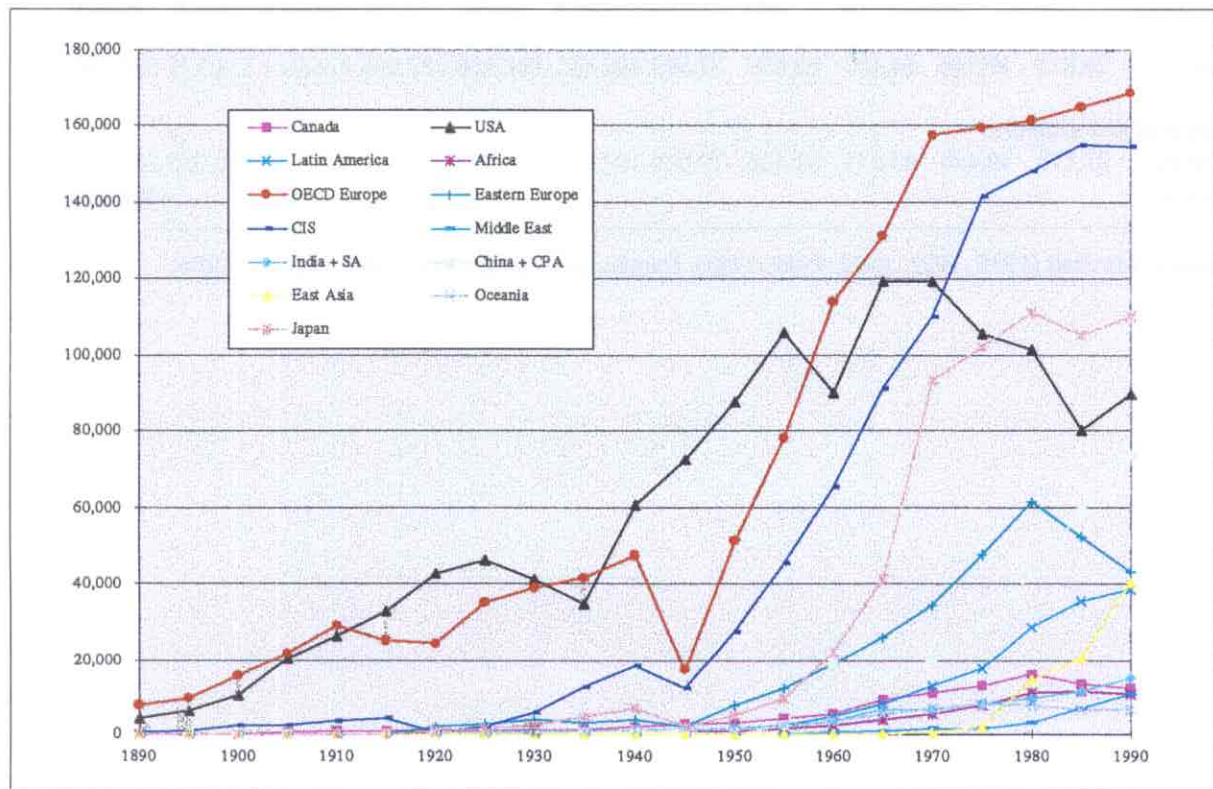


Figure 8. Regional steel production for 1890 - 1990.

Steel production data are used to compute methane emission estimates. Crude steel data are available for the period 1890 - 1990 from Mitchell (1975, 1982, 1983). For Africa only data for steel ingots and castings were given. Data for 1980 and 1990 are taken from OECD (1992). Results are presented in Table 30. A more extensive table with a 5 year interval is presented in Appendix A 11.

Table 30.  Crude steel production (in 1000 metric tons).

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | 24 | 746 | 1,118 | 1,026 | 2,045 | 3,070 | 5,270 | 11,198 | 15,900 | 12,200 |
| USA | 4,346 | 10,352 | 26,154 | 42,809 | 41,352 | 60,765 | 87,848 | 90,067 | 119,309 | 101,500 | 89,700 |
| Lat. Am. | - | - | 68 | 32 | 124 | 312 | 1,365 | 4,733 | 12,918 | 29,100 | 38,400 |
| Africa | - | - | - | - | 40 | 363 | 839 | 2,366 | 5,255 | 10,500 | 10,700 |
| OECD Eur. | 7,644 | 15,554 | 29,173 | 24,332 | 38,827 | 47,231 | 51,043 | 113,864 | 157,475 | 161,200 | 168,500 |
| Eastern Eur. | - | - | - | 2,079 | 3,666 | 3,952 | 7,673 | 18,837 | 34,400 | 61,300 | 43,000 |
| CIS | 378 | 2,216 | 3,314 | 194 | 5,761 | 18,317 | 27,329 | 65,294 | 110,328 | 147,900 | 154,400 |
| M. East | - | - | - | - | - | 38 | 91 | 306 | 1,432 | 3,100 | 10,626 |
| India + SA | - | - | 63 | 159 | 629 | 1,312 | 1,461 | 3,286 | 6,462 | 9,500 | 15,000 |
| China + CPA | - | - | 3 | 68 | 15 | 534 | 158 | 18,510 | 20,200 | 42,900 | 73,500 |
| East Asia | - | - | - | - | - | - | 4 | 50 | 481 | 14,400 | 40,400 |
| Oceania | - | - | 14 | 263 | 320 | 1,326 | 1,275 | 3,620 | 6,874 | 7,800 | 7,400 |
| Japan | - | 1 | 9 | 811 | 2,289 | 6,856 | 4,839 | 22,138 | 93,322 | 111,400 | 110,300 |
| Sum | 12,368 | 28,147 | 59,544 | 71,865 | 94,049 | 143,051 | 186,995 | 348,341 | 579,654 | 716,692 | 773,279 |

*Other global estimates*

| | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| v.Daatselaar | - | 28,000 | 60,000 | 72,000 | 95,000 | 140,000 | 189,000 | 334,740 | 588,260 | 719,230 | 900,000 |
| WRI | - | - | - | - | - | - | - | - | - | 713,813 | 771,979 |
| Houck | - | - | - | - | - | - | - | - | - | - | 771,000 |

Source: Mitchell (1975, 1982, 1982), WRI (1992), OECD (1992).

### 3.2.7 Production of copper

Spatial resolution:      country
Temporal resolution:   1890 - 1990
Quality:                 1

Copper ranks third in world metal consumption after steel and aluminium. Major copper producing countries are Chile (24% of the global mine production) and the United States (19%). Copper use is dominated by electrical and electronic applications. Until the mid-50s copper consumption kept in pace with the production. Since then, the global copper consumption has steadily outgrown the production, in 1990 by 4%, and consumption patterns shifted towards the rapidly developing Asian countries.
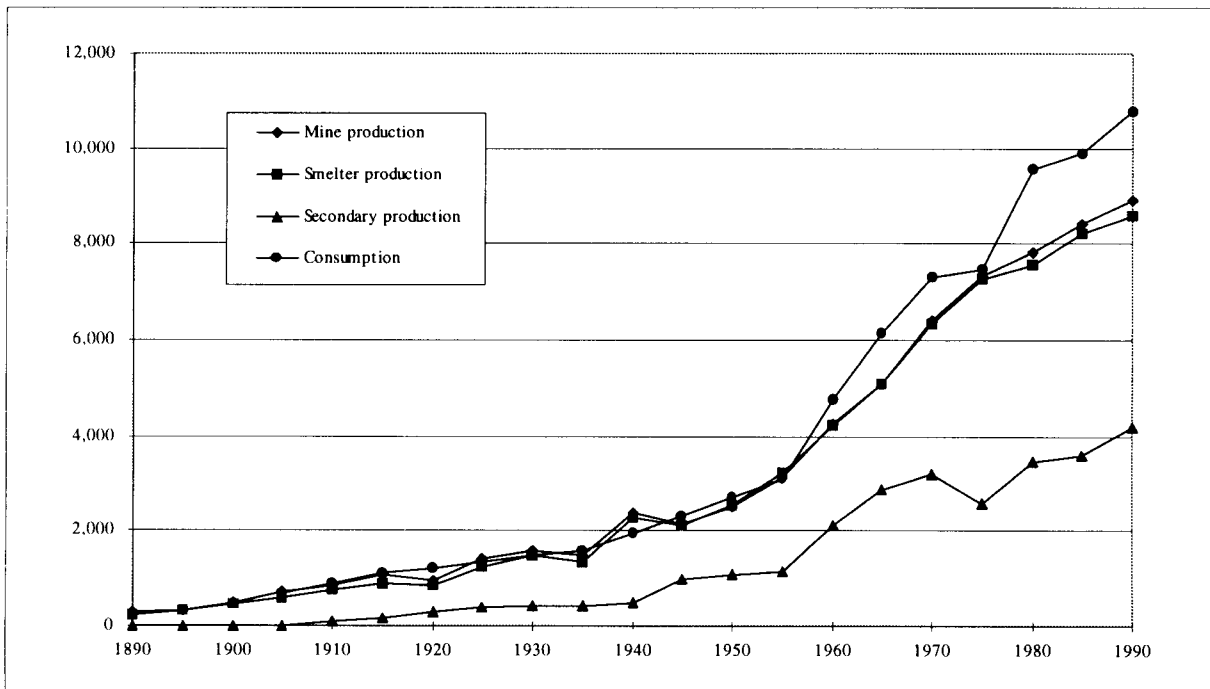


Figure 9. Global copper production and consumption for 1890 - 1990.

Copper production data are used for the calculation of $SO_2$ emissions. Schmitz (1979) presents data for global non-ferrous metal production, including annual world primary copper mine and smelter production from 1700 to 1976. The sum of the regions is not equal to the world total given by the Metallgesellschaft, probably some countries were not included in the regional estimates. A good source for statistics on non-metal production after 1960 are the reports of the Metallgesellschaft. The results are presented in Table 31. A more extensive table including mine and smelter production with a 5 year interval is presented in Appendix A 12.

Table 31. Copper production (primary smelter output, in 1000 metric tons).

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | 1 | 13 | 15 | 102 | 256 | 210 | 361 | 450 | 424 | 476 |
| USA | 122 | 287 | 528 | 601 | 730 | 922 | 915 | 1,119 | 1,489 | 1,008 | 1,159 |
| Lat. Am. | - | 21 | 18 | 123 | 308 | 412 | 414 | 726 | 884 | 1,367 | 1,897 |
| Africa | - | - | 2 | 22 | 154 | 429 | 490 | 913 | 1,235 | 1,280 | 1,033 |
| OECD Eur. | 118 | 120 | 141 | 61 | 106 | 69 | 67 | 150 | 256 | 391 | 505 |
| Eastern Eur | - | - | - | 2 | 25 | 43 | 40 | 69 | 216 | 452 | 538 |
| CIS | - | - | 22 | 2 | 35 | 112 | 255 | 500 | 925 | 1,150 | 990 |
| M. East | - | - | - | - | - | 9 | 12 | 26 | 20 | 16 | 104 |
| India + SA | - | - | - | - | - | - | - | - | 9 | 29 | 41 |
| China + CPA | - | - | - | - | 1 | 5 | 2 | 100 | 117 | 184 | 396 |
| East Asia | - | - | - | - | - | - | - | - | 5 | 64 | 339 |
| Oceania | 8 | 22 | 38 | 24 | 15 | 21 | 16 | 72 | 112 | 171 | 192 |
| Japan | - | - | - | - | - | - | 113 | 186 | 501 | 890 | 893 |
| | | | | | | | | | | | |
| Sum | 245 | 450 | 761 | 850 | 1,475 | 2,279 | 2,533 | 4,221 | 6,320 | 7,540 | 8,561 |

*Other global primary smelter production estimates*

| | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Schmitz | 281 | 499 | 890 | 946 | 1,578 | 2,413 | 2,519 | 4,287 | 6,310 | - | - |
| Woytinski[11] | 266 | 478 | 858 | 986 | 1,922 | 2,175 | 2,480 | - | - | - | - |
| Metallges. | 281 | 499 | 890 | 946 | 1,578 | 2,413 | 2,519 | 4,287 | 6,320 | 7,675 | 8,561 |
| v.Daatselaar | - | 450 | 900 | 1,100 | 1,700 | 2,600 | 2,700 | 4,090 | 6,300 | 7,700 | 9,030 |
| Daniels | - | 500 | 900 | 1,100 | 1,700 | 2,600 | 2,700 | 4,760 | 7,291 | 9,375 | 10,781 |

*Global Summary*

| | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MP | 288 | 500 | 874 | 966 | 1,566 | 2,359 | 2,489 | 4,242 | 6,403 | 7,817 | 8,913 |
| PP | 245 | 450 | 761 | 850 | 1,475 | 2,279 | 2,533 | 4,221 | 6,320 | 7,540 | 8,561 |
| SP | 0 | 0 | 87 | 283 | 424 | 484 | 1,088 | 2,113 | 3,210 | 3,470 | 4,191 |
| CO | - | - | 906 | 1,236 | 1,470 | 1,953 | 2,712 | 4,756 | 7,291 | 9,546 | 10,791 |

Source: Woytinsky and Woytinsky (1953), Schmitz (1979), Metallgesellschaft (1971, 1981, 1992), Daniëls and van der Wal (1993), van Daatselaar (1994).

Note: MP = Mine Production, PP = Primary Smelter Production, SP = Secondary production from Old and New Scrap, CO = Consumption.

---

[11] Woytinski presents world totals for 1889, 1899, 1909, 1919, 1929, 1939 and 1950.

### 3.2.8  Production of lead

Spatial resolution:     regional
Temporal resolution:   1890 - 1990
Quality:                1

Lead is one of the oldest metals used by humankind. Todays major use is in lead-acid batteries. Lead in gasoline, in the developed regions the second largest use of lead is steadily phasing out, to eliminate environmental and health hazards. Also in some countries the use of lead shot for hunting purposes is already forbidden. The five main producers of lead are Australia, United States, China, Mexico and Canada. Secondary production has recently increased by the great number of scrap batteries who are collected nowadays (Smith, 1996).
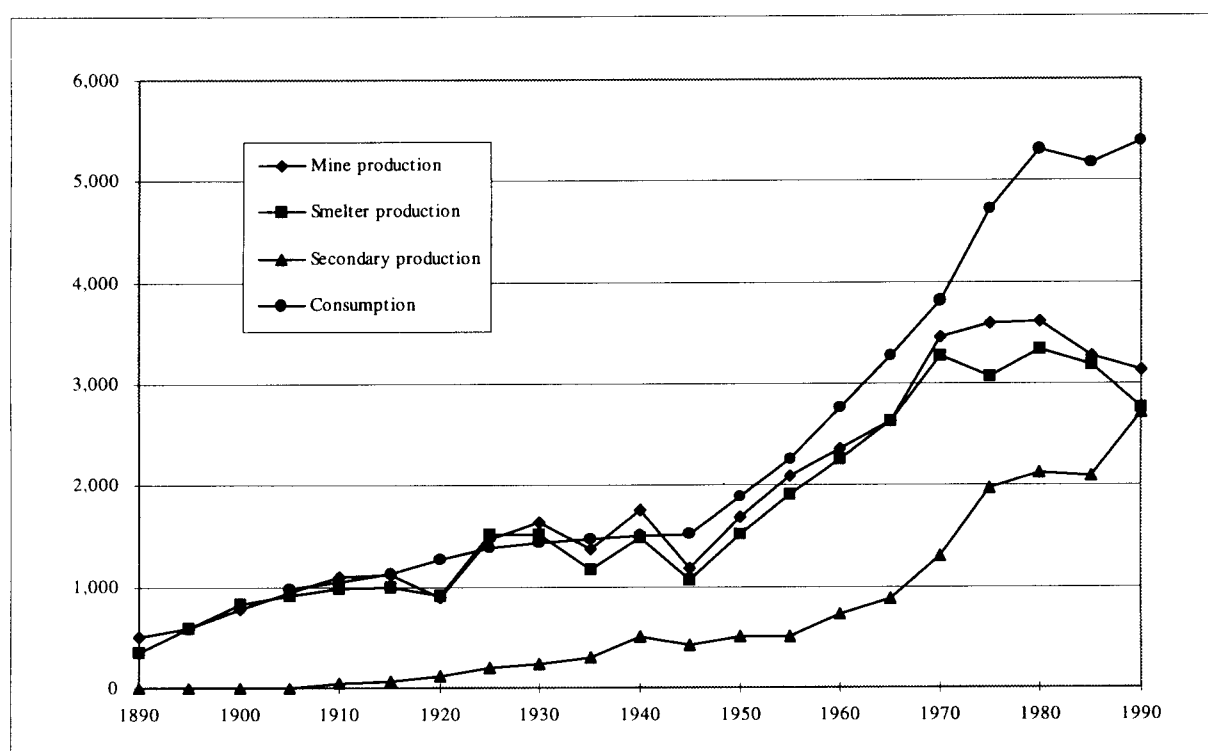


Figure 10. Global lead production and consumption for 1890 - 1990.

Primary smelter production data of lead are used for the calculation of $SO_2$ emissions. Data for mine and smelter production of lead for the period 1890-1955 were derived from Schmitz (1979). Regional totals may not match to the world total, probably Schmitz (1979) only presented the most important country data. Estimates for the period 1960-1970 were derived from Metallgesellschaft (1991), and for the period 1980-1990 from Metallgesellschaft (1992). Consumption data are derived from Metalgesellschaft. Results are presented in Table 32, a more extensive table including mine and smelter production with a 5 year interval is presented in Appendix A 13.

Table 32. Lead production (primary smelter ouput, in 1000 metric tons).

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | 15 | 13 | 138 | 200 | 155 | 144 | 186 | 163 | 87 |
| USA | 147 | 343 | 427 | 480 | 583 | 294 | 461 | 347 | 615 | 549 | 404 |
| Lat. Am. | - | - | - | 82 | 240 | 237 | 288 | 284 | 284 | 294 | 278 |
| Africa | - | - | - | 11 | 19 | 28 | 50 | 66 | 143 | 111 | 104 |
| OECD Eur. | 165 | 390 | 459 | 310 | 302 | 287 | 293 | 539 | 834 | 689 | 673 |
| Eastern Eur | - | - | - | 2 | 55 | 30 | 91 | 190 | 246 | 287 | 127 |
| CIS | - | - | - | - | - | - | - | 320 | 500 | 640 | 270 |
| M. East | - | - | - | - | - | - | - | - | 4 | 4 | - |
| India + SA | - | - | - | - | - | - | - | - | 10 | 21 | 27 |
| China + CPA | - | - | - | - | 3 | 9 | - | 100 | 152 | 205 | 336 |
| East Asia | - | - | - | - | - | - | - | - | 4 | 6 | 40 |
| Oceania | 42 | 88 | 75 | 4 | 171 | 192 | 163 | 193 | 180 | 201 | 212 |
| Japan | - | - | - | 4 | 4 | 17 | 11 | 69 | 179 | 175 | 205 |
| Sum | 353 | 821 | 975 | 907 | 1,517 | 1,484 | 1,511 | 2,252 | 3,267 | 3,343 | 2,761 |
| *Other global estimates* | | | | | | | | | | | |
| Schmitz | 540 | 871 | 1,127 | 873 | 1,659 | 1,736 | 1,850 | 2,717 | 3,983 | - | - |
| Woytinski[12] | - | - | 1,219 | - | 1,819 | 1,735 | 1,610 | - | - | - | - |
| Metallges. | - | 871 | 1,127 | 873 | 1,659 | 1,736 | 1,850 | 2,717 | 3,267 | 3,343 | 2,761 |
| v.Daatselaar | - | 1,000 | 1,000 | 1,300 | 1,700 | 1,900 | 1,800 | 2,400 | 3,400 | 3,630 | 3,320 |
| *Global Summary* | | | | | | | | | | | |
| MP | 500 | 775 | 1,101 | 894 | 1,629 | 1,761 | 1,692 | 2,356 | 3,463 | 3,603 | 3,130 |
| PP | 353 | 821 | 975 | 907 | 1,517 | 1,484 | 1,511 | 2,252 | 3,267 | 3,343 | 2,761 |
| SP | 0 | 0 | 50 | 113 | 232 | 506 | 506 | 730 | 1,295 | 2,129 | 2,710 |
| CO | - | - | 1,053 | 1,258 | 1,429 | 1,495 | 1,888 | 2,759 | 3,806 | 5,311 | 5,393 |

Source: Woytinsky and Woytinsky (1953), Schmitz (1979), Metallgesellschaft (1991, 1992), van Daatselaar (1994).

Note: MP = Mine Production, PP = Primary Smelter Production, SP = Secondary production from Old and New Scrap, CO = Consumption.

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[12] Woytinski & Woytinski (1953) present estimates for 1915, 1929, 1939 and 1950.

## 3.2.9    Production of zinc

Spatial resolution:      regional
Temporal resolution:    1890 - 1990
Quality:                         1

Smelter production data from zinc are used for the calculation of $SO_2$ emissions. Mine and smelter output of zinc for the period 1890-1955 were derived from Schmitz (1979). Regional totals may not match to the world total, probably Schmitz (1979) only presented the most important country data. Estimates for the period 1960-1970 were derived from Metallgesellschaft (1991), and for the period 1980-1990 from Metallgesellschaft (1992). Results are presented in Table 33, a more extensive table including mine and smelter production with a 5 year interval is presented in Appendix A 14.
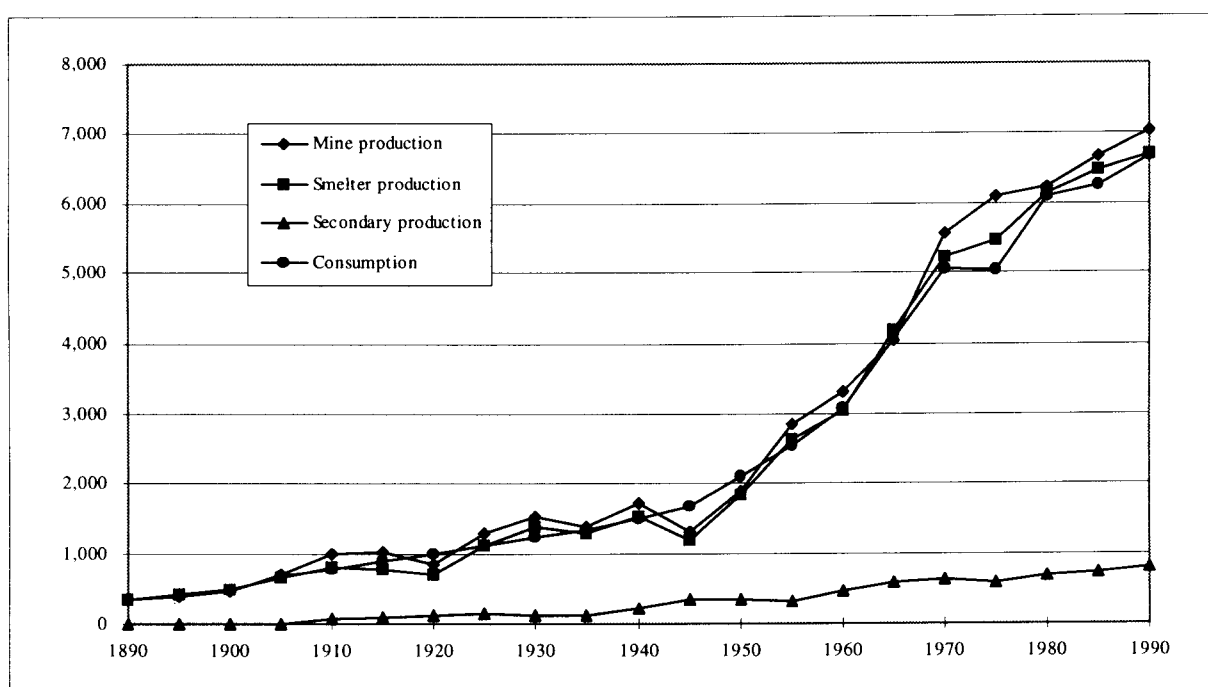


Figure 11. Global zinc production and consumption for 1890 - 1990.

Table 33. Zinc production (smelter output, in 1000 metric tons).

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | - | 18 | 110 | 169 | 185 | 237 | 418 | 592 | 592 |
| USA | 58 | 112 | 244 | 420 | 452 | 613 | 765 | 725 | 866 | 370 | 358 |
| Lat. Am. | - | - | - | - | 29 | 35 | 59 | 131 | 191 | 313 | 500 |
| Africa | - | - | - | - | 18 | 13 | 23 | 84 | 144 | 188 | 165 |
| OECD Eur. | 284 | 355 | 546 | 243 | 498 | 550 | 559 | 830 | 1,326 | 1,746 | 2,039 |
| Eastern Eur | - | 6 | 9 | 6 | 193 | 16 | 126 | 228 | 394 | 436 | 329 |
| CIS | - | - | - | - | - | - | - | 395 | 725 | 1,060 | 640 |
| M. East | - | - | - | - | - | - | - | - | - | 13 | 20 |
| India + SA | - | - | - | - | - | - | - | - | 23 | 44 | 79 |
| China + CPA | - | - | - | - | - | - | - | 120 | 190 | 270 | 646 |
| East Asia | - | - | - | - | - | - | - | - | 2 | 76 | 328 |
| Oceania | - | - | 1 | 10 | 56 | 76 | 84 | 122 | 256 | 301 | 301 |
| Japan | - | - | - | 16 | 25 | 61 | 46 | 176 | 681 | 739 | 688 |
| | | | | | | | | | | | |
| Sum | 341 | 474 | 800 | 713 | 1,381 | 1,532 | 1,847 | 3,048 | 5,218 | 6,147 | 6,685 |

*Other global smelter production estimates*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Schmitz | 349 | 479 | 810 | 708 | 1,400 | 1,669 | 2,060 | 3,151 | 5,230 | - | - |
| Woytinski[13] | - | - | - | - | 1,450 | 1,650 | 1,870 | - | - | - | - |
| Metallges. | - | 479 | 810 | 706 | 1,400 | 1,669 | 2,060 | 3,151 | 5,218 | 6,147 | 6,685 |
| v.Daatselaar | - | - | - | - | 1,500 | 1,800 | 2,300 | 3,080 | 5,040 | 6,140 | 6,973 |
| Daniels | - | 1,000 | 1,170 | 1,330 | 1,500 | 1,800 | 2,300 | 3,480 | 5,650 | 5,800 | 7,300 |

*Global Summary*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MP | 345 | 458 | 1,001 | 848 | 1,512 | 1,708 | 1,894 | 3,308 | 5,561 | 6,248 | 7,023 |
| PP | 341 | 474 | 800 | 713 | 1,381 | 1,532 | 1,847 | 3,048 | 5,218 | 6,147 | 6,685 |
| SP | 0 | 0 | 63 | 128 | 116 | 208 | 343 | 466 | 631 | 684 | 799 |
| CO | - | - | 779 | 996 | 1,222 | 1,506 | 2,101 | 3,072 | 5,042 | 6,101 | 6,661 |

Source: Woytinsky and Woytinsky (1953), Schmitz (1979), Metallgesellschaft (1991, 1992), Daniëls and van der Wal (1993), van Daatselaar (1994).

Note: MP = Mine Production, PP = Primary Smelter Production, SP = Secondary production, CO = Consumption.

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[13] Woytinski & Woytinski (1953) present estimates for 1929, 1939 and 1950.

3.2.10          Production of aluminium

Spatial resolution:      regional
Temporal resolution:   1890 - 1990
Quality:                 1

Aluminium is the second most abundant metal element in the Earth's crust after silicon, but it has only been produced commercially for slightly more than 100 years. Nowadays, it is the second most widely used metal after iron and important in virtually all segments of the world economy (Plunkert, 1996). The United States was in 1990 still the world largest producer of primary aluminium, although its share in global production decreased from 40% in 1960 to 23% in 1990. Australia and Canada have emerged as major producers since then, and nowadays countries like Brazil, China, Norway, Venezuela and some Persian Gulf states are entering the world market.

In secondary production a difference is made between new scrap (a.k.a. home or runaround scrap) and old scrap. Home scrap is recycled within the company generating the scrap and does not enter the market. Old scrap is generated by companies who do not want to or can deal with the scrap, and this part does enter the market (Plunkert, 1996). The recycling of e.g. softdrink cans, and car parts is still beginning to emerge in some industrialized countries. Results are presented in Table 34. A more elaborate table with 5 year interval is presented in Table A15.
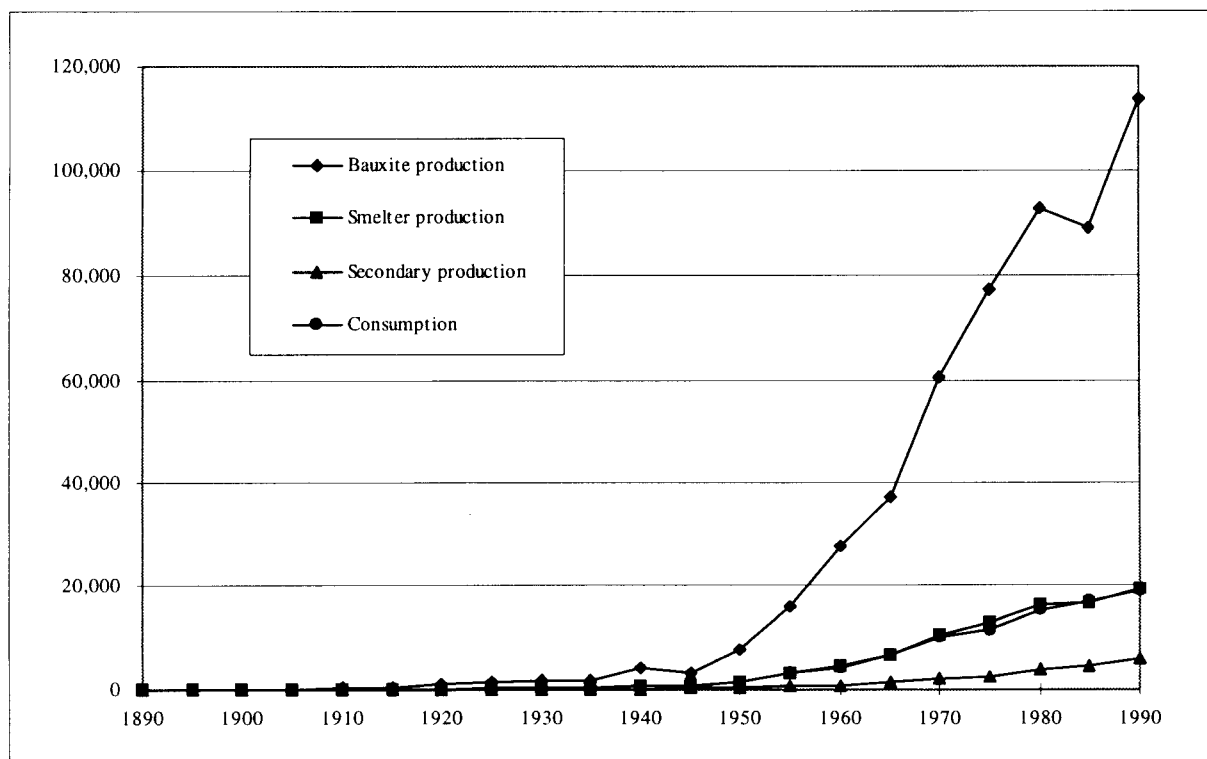


Figure 12. Global aluminium production and consumption for 1890 - 1990.

Table 34. Aluminium production (smelter output, in 1000 metric tons).

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | 4 | 12 | 35 | 99 | 360 | 691 | 963 | 1,075 | 1,567 |
| USA | - | 3 | 16 | 63 | 104 | 187 | 652 | 1,827 | 3,607 | 4,654 | 4,048 |
| Lat. Am. | - | - | - | - | - | - | - | 18 | 253 | 824 | 1,789 |
| Africa | - | - | - | - | - | - | - | 44 | 271 | 437 | 601 |
| OECD Eur. | - | 4 | 21 | 53 | 128 | 390 | 241 | 884 | 3,153 | 3,657 | 3,582 |
| Eastern Eur | - | - | - | - | - | 3 | 19 | 141 | 589 | 613 | 709 |
| CIS | - | - | - | - | - | 44 | 140 | 640 | 1,700 | 2,420 | 3,523 |
| M. East | - | - | - | - | - | - | - | - | 10 | 211 | 507 |
| India + SA | - | - | - | - | - | - | 4 | 18 | 161 | 185 | 433 |
| China + CPA | - | - | - | - | - | 13 | 2 | 88 | 157 | 421 | 865 |
| East Asia | - | - | - | - | - | - | - | - | 17 | 18 | 194 |
| Oceania | - | - | - | - | - | - | - | 12 | 206 | 460 | 1,492 |
| Japan | - | - | - | - | - | 27 | 25 | 133 | 728 | 1,092 | 34 |
| | | | | | | | | | | | |
| Sum | - | 7 | 41 | 128 | 267 | 762 | 1,442 | 4,496 | 10,254 | 16,064 | 19,347 |

*Other global smelter production estimates*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Schmitz | - | 7 | 44 | 126 | 269 | 783 | 1,507 | 4,543 | 10,257 | - | - |
| Metallges. | - | 6 | 44 | 126 | 269 | 783 | 1,507 | 4,543 | 10,302 | 16,860 | 18,120 |
| Daniels | - | - | - | 200 | 500 | 1,100 | 2,100 | 5,020 | 9,980 | 15,860 | 17,910 |
| v.Daatselaar | - | 10 | 30 | 200 | 500 | 1,100 | 2,100 | 5,020 | 9,980 | 15,860 | 18,020 |

*Global Summary*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MP | 21 | 82 | 359 | 889 | 1,666 | 4,017 | 7,657 | 27,620 | 60,710 | 92,623 | 113,923 |
| PP | - | 7 | 41 | 128 | 267 | 762 | 1,442 | 4,496 | 10,254 | 16,064 | 19,347 |
| SP | - | - | - | 15 | 40 | 127 | 400 | 738 | 2,169 | 3,787 | 5,785 |
| CO | - | - | 56 | 135 | 283 | 824 | 2,098 | 4,166 | 10,027 | 15,321 | 19,091 |

Source: Schmitz (1979), Metallgesellschaft (1991, 1992), Daniëls and van der Wal (1993), van Daatselaar (1994).

Note: MP = Mine Production, PP = Primary Smelter Production, SP = Secondary production, CO = Consumption.

3.2.11        Production of nickel

Spatial resolution:     regional
Temporal resolution:   1890 - 1990
Quality:                1

Russia, Canada, Australia, Indonesia and New Caledonia are the major producers of nickel worldwide. Nickel is widely used in batteries, with its health and environmental hazard potential. More and more countries developed regulations for enviromentally sound recycling of nickel-cadmium batteries, thermostats, etc. Still, secondary production is very low compared to other metals (Kuck, 1996). Resultes are presented in Table 35. A more elaborate table with 5 year interval is presented in Table A16.
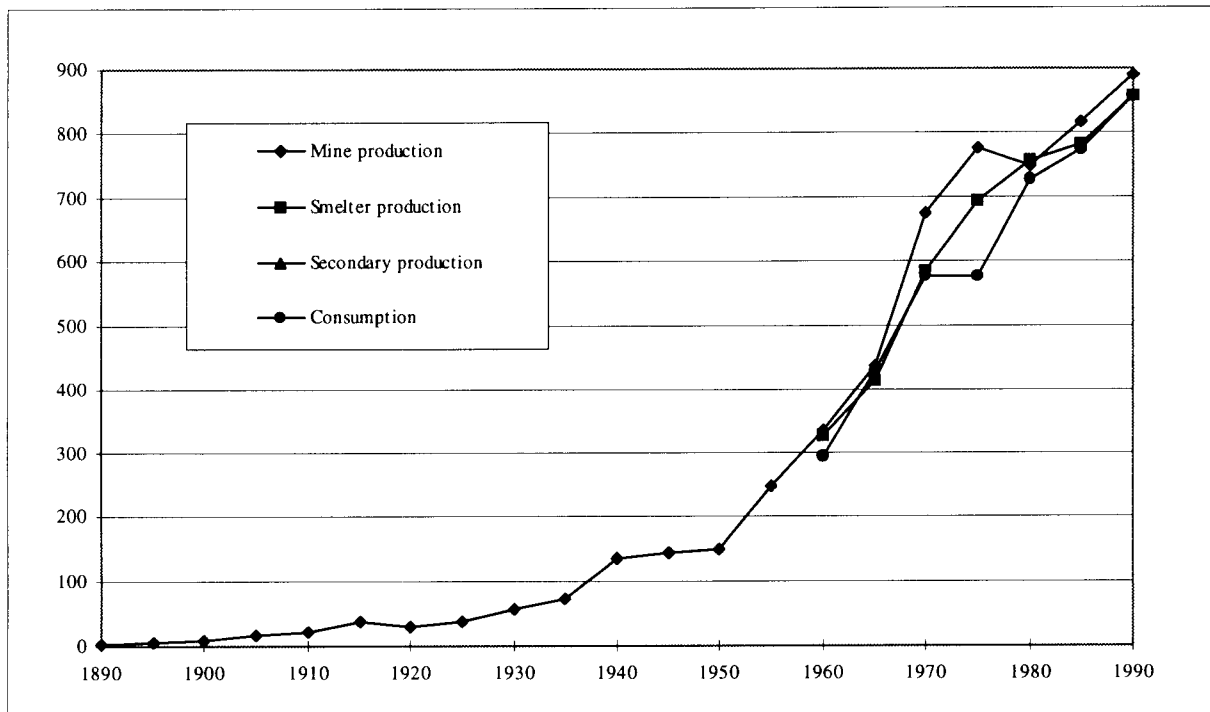


Figure 13. Global nickel production and consumption for 1890 - 1990.

Table 35. Nickel production (smelter output, in 1000 metric tons).

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | - | - | - | - | - | 128 | 189 | 152 | 127 |
| USA | - | - | - | - | - | - | - | 12 | 14 | 40 | 4 |
| Lat. Am. | - | - | - | - | - | - | - | 15 | 21 | 39 | 82 |
| Africa | - | - | - | - | - | - | - | 1 | 14 | 33 | 47 |
| OECD Eur. | - | - | - | - | - | - | - | 78 | 101 | 96 | 130 |
| Eastern Eur | - | - | - | - | - | - | - | 4 | 4 | 10 | 12 |
| CIS | - | - | - | - | - | - | - | 58 | 124 | 168 | 230 |
| M. East | - | - | - | - | - | - | - | - | - | - | - |
| India + SA | - | - | - | - | - | - | - | - | - | - | - |
| China + CPA | - | - | - | - | - | - | - | - | - | 11 | 38 |
| East Asia | - | - | - | - | - | - | - | - | - | 27 | 13 |
| Oceania | - | - | - | - | - | - | - | 11 | 28 | 71 | 75 |
| Japan | - | - | - | - | - | - | - | 19 | 26 | 109 | 100 |
| Sum | - | - | - | - | - | - | | 326 | 693 | 757 | 858 |

*Other global smelter production estimates*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Metallges. | - | 8 | 19 | 24 | - | - | 148 | 326 | 693 | 733 | 858 |
| Daniels | - | - | - | - | 70 | 130 | 150 | 350 | 250 | 350 | 469 |

*Global Summary*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MP | 3 | 9 | 22 | 30 | 58 | 137 | 149 | 335 | 675 | 748 | 889 |
| PP | - | - | - | - | - | - | - | 326 | 585 | 757 | 858 |
| SP | - | - | - | - | - | - | - | - | - | - | - |
| CO | - | - | - | - | - | - | - | 293 | 576 | 725 | 856 |

Source: Metallgesellschaft (1991, 1992), Daniëls and van der Wal (1993).

Note: MP = Mine Production, PP = Primary Smelter Production, SP = Secondary production, CO = Consumption.

3.2.12          Production of magnesium

Spatial resolution:     regional
Temporal resolution:    1890 - 1990
Quality:                1

Magnesium is the eight most abundant element in the Earth's crust and the most plentiful element dissolved in seawater. Magnesium and magnesium compounds are recovered from seawater, well and lake brines, as well from minerals such as magnesite, dolomite and olivine. The United States is the world's largest producer. Magnesium is used in products as beverage cans, cars, aircrafts and machinery (Kuck. 1996). Results are presented in Table 36. A more elaborate table with 5 year interval is presented in Table A17.
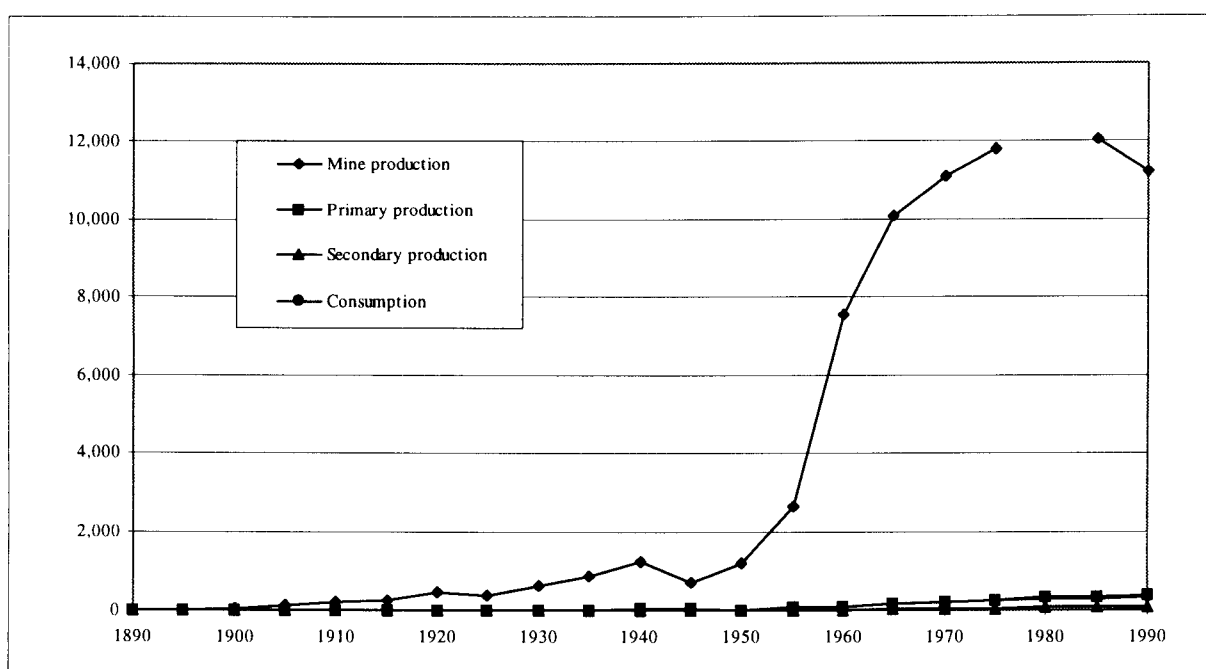


Figure 14. Global magnesium production and consumption for 1890 - 1990.

Table 36. Magnesium production (smelter output, in 1000 metric tons).

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | - | - | - | - | 2 | 7 | 10 | 9 | 27 |
| USA | - | - | - | - | - | 6 | 14 | 36 | 102 | 154 | 139 |
| Lat. Am. | - | - | - | - | - | - | - | - | - | - | 9 |
| Africa | - | - | - | - | - | - | - | - | - | - | - |
| OECD Eur. | - | - | - | - | 1 | 21 | 2 | 24 | 52 | 63 | 69 |
| Eastern Eur | - | - | - | - | - | - | - | - | - | 3 | 6 |
| CIS | - | - | - | - | - | - | - | 25 | 50 | 75 | 90 |
| M. East | - | - | - | - | - | - | - | - | - | - | - |
| India + SA | - | - | - | - | - | - | - | - | - | - | 1 |
| China + CPA | - | - | - | - | - | - | - | 1 | 1 | 7 | 16 |
| East Asia | - | - | - | - | - | - | - | - | - | - | - |
| Oceania | - | - | - | - | - | - | - | - | - | - | - |
| Japan | - | - | - | - | - | - | - | 2 | 10 | 9 | 13 |
| | | | | | | | | | | | |
| Sum | - | - | - | - | 1 | 27 | 17 | 95 | 226 | 321 | 369 |

*Other global smelter production estimates*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Schmitz | - | - | - | - | 1 | 39 | 37 | 94 | 215 | - | - |
| Metallges. | - | - | - | - | 1 | 39 | 37 | 94 | 220 | 319 | 369 |

*Global Summary*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MP | - | 60 | 218 | 440 | 600 | 1,249 | 1,117 | 7,538 | 11,120 | 11.803 | 11,137 |
| PP | - | - | - | - | 1 | 27 | 17 | 95 | 226 | 321 | 369 |
| SP | - | - | - | - | - | 2 | 7 | 18 | 25 | 64 | 76 |
| CO | - | - | - | - | - | - | - | - | 218 | 284 | 344 |

Source: Schmitz (1979), Metallgesellschaft (1991, 1992).

Note: MP = Mine Production, PP = Primary Smelter Production, SP = Secondary production, CO = Consumption.

3.2.13        Production of tin

Spatial resolution:      regional
Temporal resolution:    1890 - 1990
Quality:                1

Tin is also one of the oldest metals known to humanity. Because of its hardening effects on copper, tin was used in bronze (a copper-tin alloy) as early as 3000 B.C. Today it is used as a protective coating or as an alloy with other metals. Word production is widespread over many countries. For many decades mining took place in developing countries and the tin concentrates were shipped to the industrialized countries. Today, more and more tin smelting takes place in the mining country itself. Scrap tin is important for some countries to meet domestic demand. In the United States e.g. scrap tin supplies about 20% of total tin demand (Carlin, 1996). Results are presented in Table 37. A more elaborate table with 5 year interval is presented in Table A18.
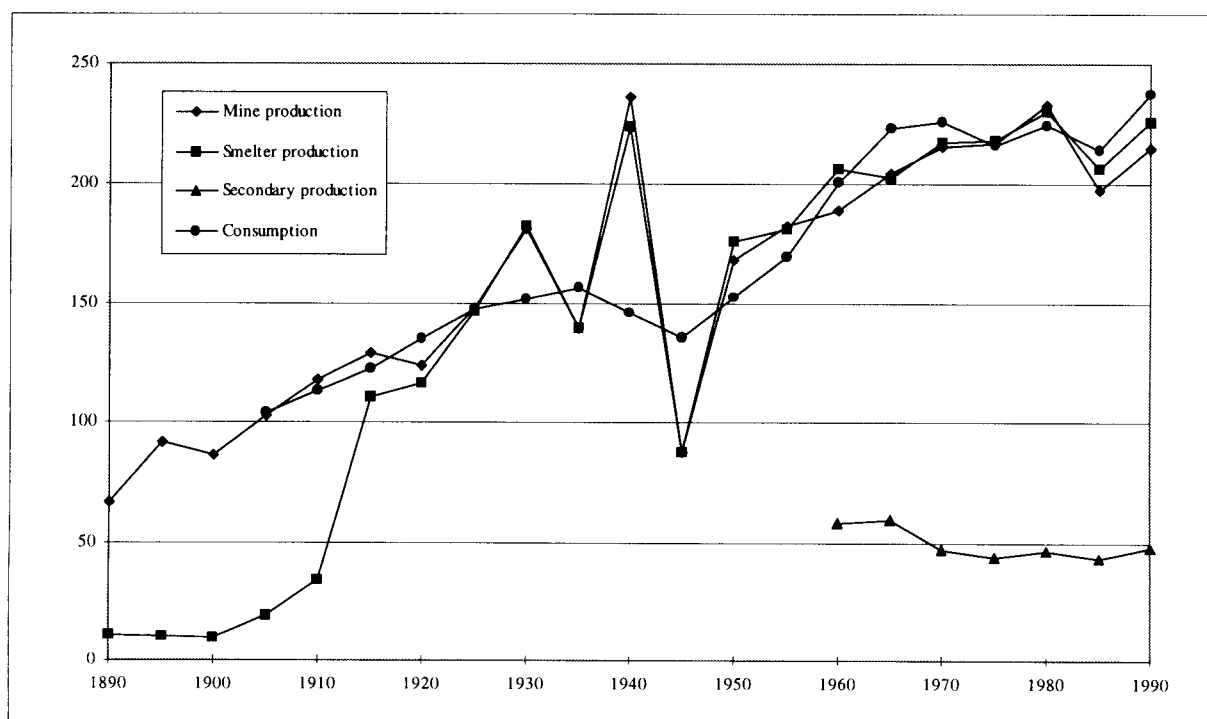


Figure 15. Global tin production and consumption for 1890 - 1990.

Table 37. Tin production (primary smelter output, in 1000 metric tons).

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | - | - | - | - | - | - | - | - | - |
| USA | - | - | - | - | - | 1 | 33 | 14 | 5 | 4 | - |
| Lat. Am. | - | - | 1 | - | - | - | - | 3 | 6 | 24 | 56 |
| Africa | - | - | - | - | - | 2 | 4 | 4 | 12 | 7 | 3 |
| OECD Eur. | 11 | 10 | 28 | 24 | 59 | 51 | 62 | 52 | 39 | 17 | 17 |
| Eastern Eur | - | - | - | - | - | - | - | - | - | - | - |
| CIS | - | - | - | - | - | - | - | 20 | 10 | 17 | 13 |
| M. East | - | - | - | - | - | - | - | - | - | - | - |
| India + SA | - | - | - | - | - | - | - | - | - | - | 1 |
| China + CPA | - | - | - | 11 | 7 | 7 | 4 | 30 | 22 | 15 | 38 |
| East Asia | - | - | - | 64 | 113 | 151 | 70 | 79 | 118 | 141 | 98 |
| Oceania | - | - | 5 | 4 | 2 | 4 | 2 | 2 | 5 | 5 | - |
| Japan | - | - | - | - | 1 | 2 | - | 2 | 1 | 1 | 1 |
| | | | | | | | | | | | |
| Sum | 11 | 10 | 34 | 116 | 182 | 224 | 176 | 207 | 217 | 231 | 226 |

*Other global smelter production estimates*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Schmitz | 57 | 79 | 116 | 122 | 181 | 233 | 187 | 195 | 220 | - | - |
| Metallges. | - | - | 116 | 122 | 181 | 233 | 187 | 195 | 222 | 244 | 234 |

*Global Summary*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MP | 67 | 87 | 118 | 124 | 181 | 236 | 168 | 189 | 205 | 217 | 215 |
| PP | 11 | 10 | 34 | 116 | 182 | 224 | 176 | 207 | 217 | 231 | 226 |
| SP | - | - | - | - | - | - | - | 59 | 48 | 47 | 49 |
| CO | - | - | 113 | 135 | 152 | 146 | 152 | 201 | 226 | 224 | 238 |

Source: Schmitz (1979), Metallgesellschaft (1991, 1992).

Note: MP = Mine Production, PP = Primary Smelter Production, SP = Secondary production, CO = Consumption.

3.2.14        Production of nitric acid (N-fertilizer)

Spatial resolution:      country
Temporal resolution:   1890 - 1990, 10 year timestep
Quality:                    2
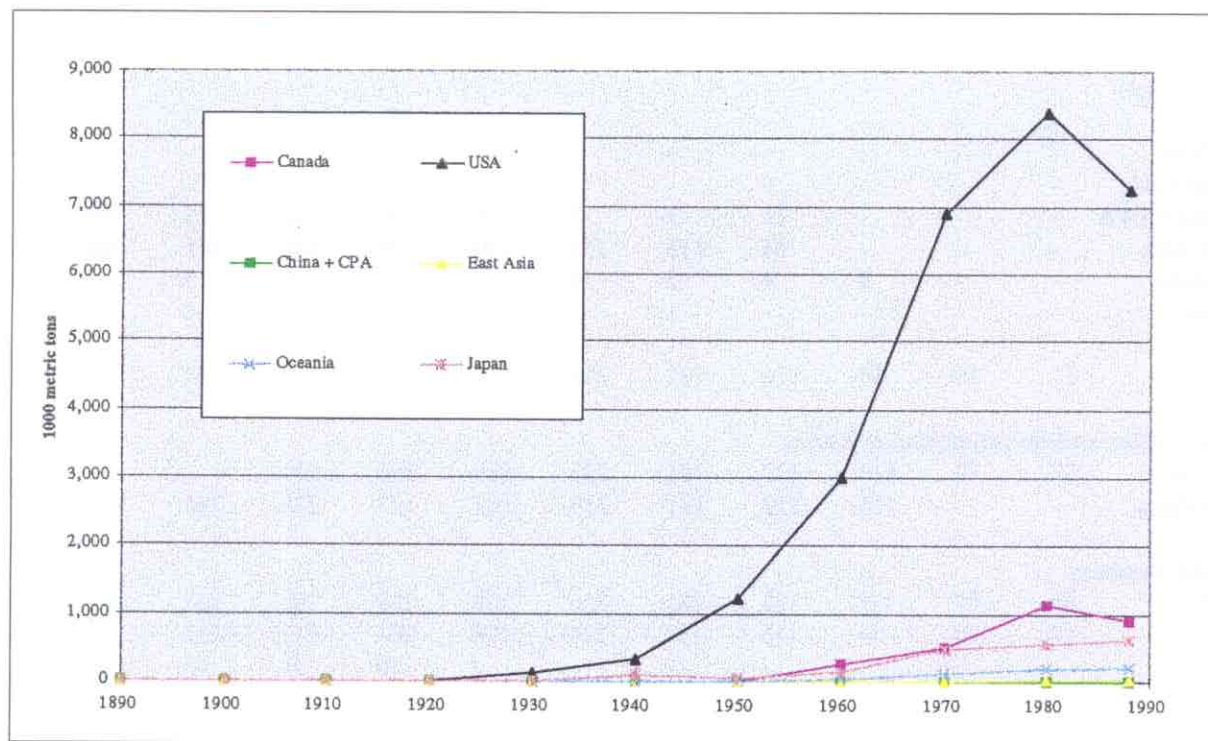


Figure 16. Historical regional nitric acid production for 1890 - 1990.

Nitric acid is used directly for myriad uses, including salt formation reactions to produce metal nitrates, and in metal degeasing, treating and pickling for the graphic and galvanic industries (Cantrell, 1996). The nitric acid production data are used for $N_2O$ emission calculations. Production emerged in some regions since 1930 (Mitchell, 1975; 1982; 1983; 1993; 1995). Table A19 presents the numbers for the most important regions with nitric acid production. Note that in the historical tables of Mitchell (1975), nitric acid production in Europe and CIS was not presented.

3.2.15       Production of sulphuric acid

Spatial resolution:       country
Temporal resolution:      1890 - 1990, 10 year timestep
Quality:                  2
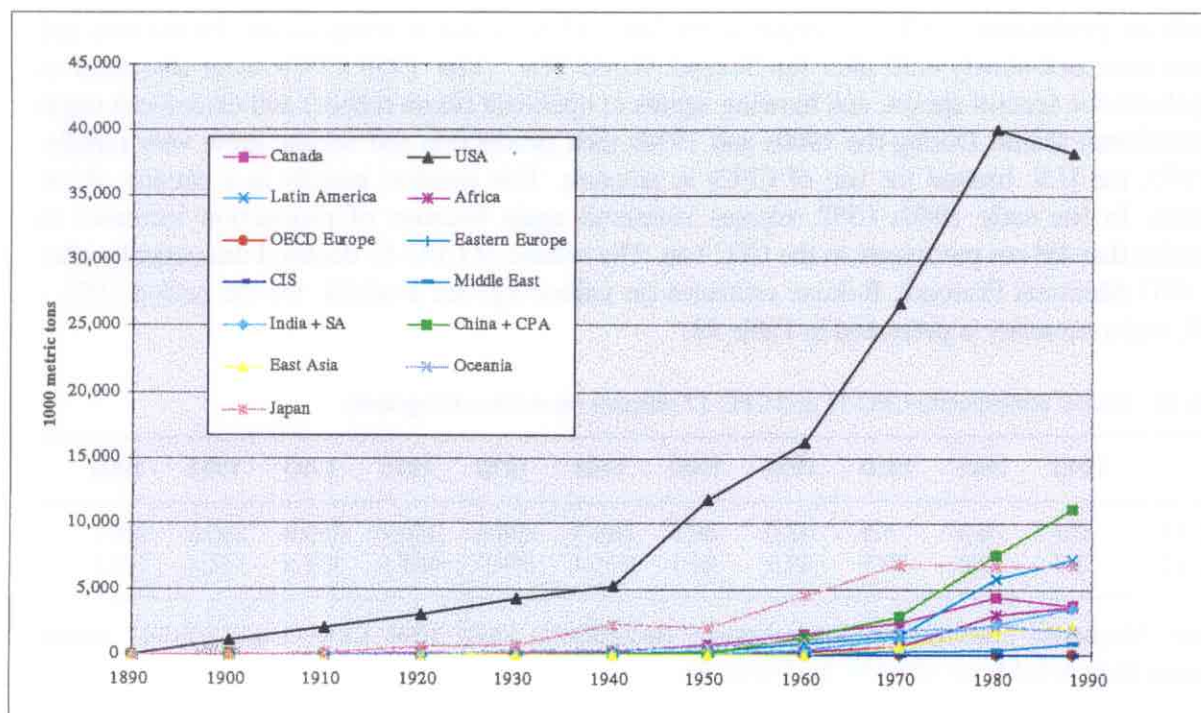


Figure 17. Historical regional sulphuric acid production for 1890 - 1990.

Sulphur is widely used in industrial and fertilizer complexes. Sulphuric acid production is the major end use for sulphur and sulphuric acid has been regarded as one of the best indexes of a nation's industrial development (Ober, 1996). USA is the largest producer and consumer of sulphur and sulhpuric acid in the world. Byproduct sulphuric acid at copper, lead, molybdenum, and zinc roasters and smelters amounted in 1995 to 12% of the total domestic production in all forms in the USA. The seven largest acid plants (all at copper mines) accounted for 85% of the output. The five largest producers of byproduct sulphuric aicd were all copper producers (Ober, 1996). Historical production emerged in some regions already in 1900 (Mitchell, 1975; 1982; 1983; 1993; 1995). Table A19 presents the numbers for the most important regions with sulphuric acid production.

3.2.16        Production of CFC-11 and CFC-12.

Spatial resolution:      country
Temporal resolution:   1940 - 1989, with 1 year timestep
Quality:                1

Significant production of CFC-11 began in the late 1930s for use in refrigeration. Production and release increased slowly until after the Second World War. After 1950 CFC's were also used as propellants for aerosol sprays, and blowing agents in open-cell (foam rubber) and closed-cell (rigid polyurethane) foams. During the 1960s and 1970s their production and release grew very rapidly. In 1975, the U.S. banned the use of CFCs in areosols. This resulted initially in a decline of the releases. In the early 1980s CFC releases increased again because of production increases in countries that did not participate in the CFC ban. The release of CFC-11 declined dramatically after the 1987 Montreal Protocol. Release estimates (in million kg) are available for the period 1931 - 1992, and a summary is presented in Table 38.

Table 38.  Global atmospheric CFC-11 and CFC-12 releases (in million kilograms).

|        | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|--------|------|------|------|------|------|------|------|------|------|------|------|
| CFC-11 | 0.1  | 0.3  | 5.5  | 23.0 | 40.5 | 108.3 | 206.6 | 310.9 | 250.8 | 280.8 | 216.1 |
| CFC-12 | 2.3  | 8.0  | 29.5 | 48.2 | 89.1 | 175.4 | 299.9 | 404.1 | 332.5 | 368.4 | 310.5 |

Source: Alternative Fluorocarbons Environmental Acceptability Study 1994. CFC-11 and CFC-12 release estimates from AFEAS. pp. 472-478. In: Trends '93.

# 4. Energy/Industry Emission data

## 4.1 Emission estimates for different greenhouse gases

### 4.1.1 Carbon dioxide

Spatial resolution:     global, regional, national
Temporal resolution:    1890 - 1990, with 1 year timestep
Quality:                2 before 1970, 1 after 1970
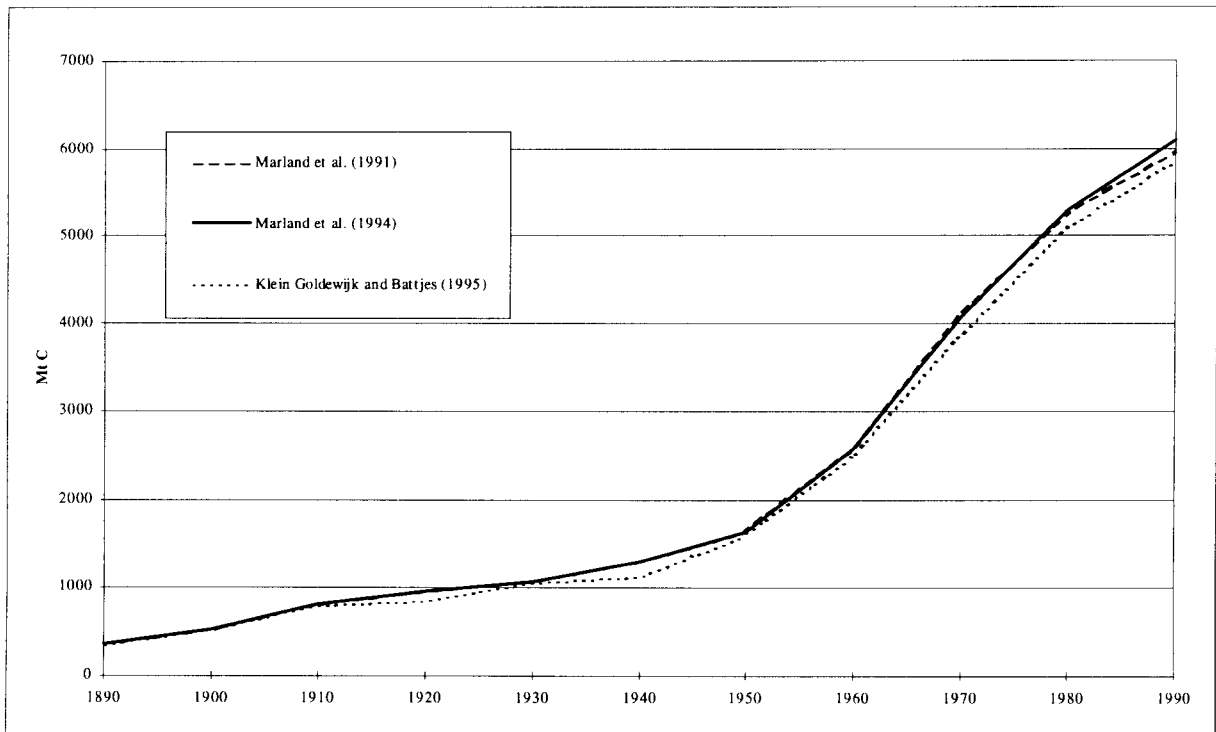


Figure 18. Global carbon dioxide emission estimates for 1890 - 1990.

Global carbon dioxide emission estimates stemming from coal, lignite, crude petroleum and natural gas are available for the period 1860 - 1949 (Keeling, 1994). The regional emission data for that period are calculated with the production data for coal, oil and natural gas presented in Etemad et al. (1991). Country production data are converted into emission estimates with the factors listed in Appendix A1 and A6, and aggregated to the IMAGE regional level. Global, regional and some country emission estimates for the period 1950 - 1990 are presented by Marland et al. (1994). A summary of global carbon dioxide emission estimates for different fuel types is presented in Table 40. A more elaborate table is presented in Appendix A20 for fuel types per region.

Table 39. Summary of historical carbon dioxide emissions (in Mt C).

| | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 2.1 | 3.9 | 7.9 | 12.1 | 13.6 | 11.3 | 42.3 | 52.7 | 90.6 | 117.4 | 114.3 |
| USA | 101.0 | 176.2 | 325.2 | 408.7 | 487.5 | 442.6 | 696.1 | 799.5 | 1,165.5 | 1,261.7 | 1,346.5 |
| Latin Am. | 0.0 | 0.8 | 2.7 | 24.3 | 24.3 | 36.0 | 45.4 | 84.1 | 143.9 | 243.9 | 273.6 |
| Africa | 0.1 | 1.1 | 4.3 | 7.0 | 9.0 | 10.7 | 26.6 | 43.2 | 82.4 | 140.1 | 180.7 |
| OECD Eur. | 211.3 | 278.4 | 354.6 | 291.9 | 370.4 | 375.5 | 383.7 | 536.5 | 792.0 | 881.4 | 829.1 |
| Eastern Eur. | 22.0 | 26.8 | 45.6 | 39.7 | 51.0 | 48.8 | 107.7 | 195.3 | 278.5 | 372.2 | 318.0 |
| CIS | 6.5 | 23.8 | 23.2 | 9.9 | 30.4 | 97.2 | 185.8 | 396.0 | 628.3 | 923.0 | 1,013.0 |
| Middle East | 0.1 | 0.2 | 0.6 | 2.7 | 5.3 | 13.1 | 4.2 | 24.3 | 73.6 | 139.3 | 228.7 |
| India + SA | 1.3 | 3.6 | 7.8 | 12.2 | 14.8 | 15.8 | 18.4 | 33.2 | 53.3 | 95.5 | 184.3 |
| China + CPA | 0.0 | 0.2 | 6.7 | 9.4 | 12.1 | 19.7 | 22.1 | 224.2 | 240.0 | 446.9 | 734.6 |
| East Asia | 0.0 | 0.5 | 1.7 | 3.6 | 6.3 | 9.3 | 9.1 | 24.6 | 65.4 | 140.3 | 240.8 |
| Oceania | 2.7 | 4.4 | 6.9 | 8.5 | 8.9 | 9.3 | 17.6 | 28.0 | 45.0 | 62.0 | 81.7 |
| Japan | 1.9 | 5.4 | 11.4 | 19.3 | 23.3 | 31.6 | 28.2 | 63.9 | 202.5 | 254.9 | 294.8 |
| Sum[14] | 349.0 | 525.2 | 798.5 | 849.5 | 1,056.8 | 1,120.7 | 1,587.3 | 2,505.5 | 3,861.0 | 5,078.6 | 5,840.1 |

*Other global estimates*
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CDIAC[15] | 349.8 | 524.9 | 804.7 | 958.9 | 1,077.5 | 1,300.4 | 1,638.0 | 2,586.0 | 4,090.0 | 5,264.0 | 5,965.0 |

The regional breakdown of Marland *et al.* does not always match the IMAGE breakdown. We used the country estimates of Canada, USA, former USSR and Japan, and the regional estimates of Africa and Middle East for the corresponding IMAGE regions. The Marland *et al.* estimate of the Other America region (includes Greenland) is used for Latin America, the regional estimate for Eastern Europe minus the country estimate for the former USSR is used for the IMAGE region Eastern Europe, and Western Europe (including Yugoslavia) is used for OECD Europe. The country estimate of Marland *et al.* for India is taken for the regional estimate of India + SA, and the regional estimate for Centrally Planned Asia is used for China + CPA. The regional estimate of Marland *et al.* for Oceania minus the country estimate for Japan is used for the IMAGE region Oceania. Table A-20 presents regional carbon dioxide emission estimates per fuel type for 1890 - 1990. Note that no cement and gas flaring emissions are included before 1950.

---

[14] Total of IMAGE regions.

[15] Global total according to Keeling (1994) and Marland et al (1994).

## 4.1.2  Methane

Spatial resolution:  global
Temporal resolution:  1890 - 1990, with irregular intervals
Quality:  3
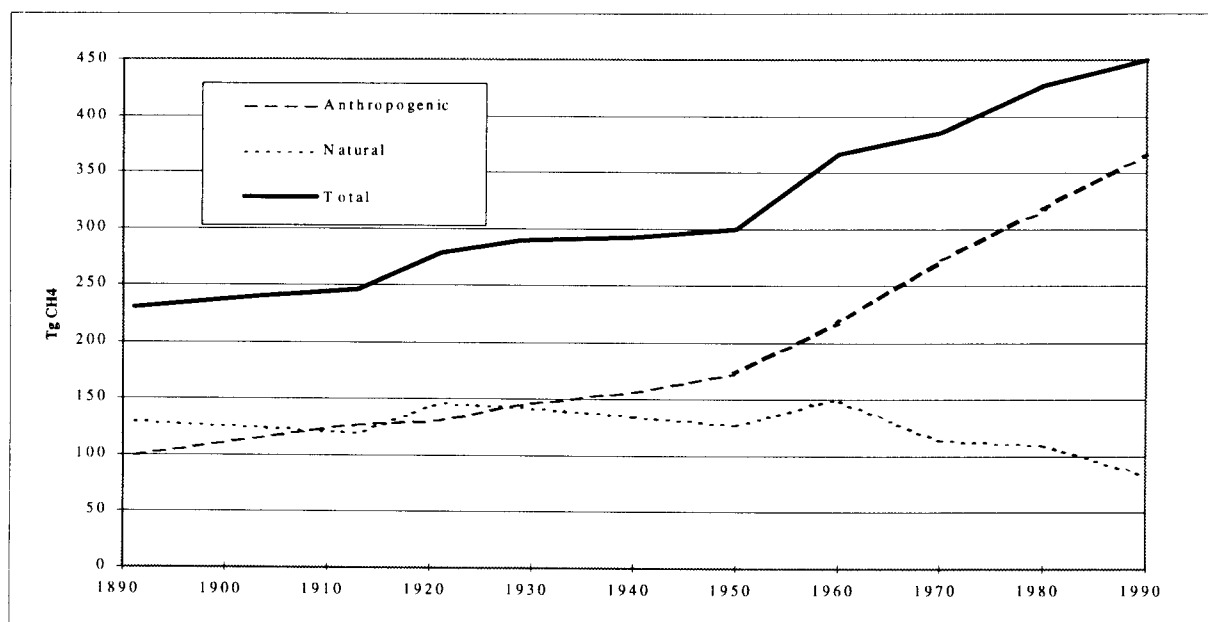


Figure 19. Global anthropogenic and natural methane emission estimates for 1890 - 1990.

Stern and Kaufmann (1995) present estimates for global anthropogenic and natural methane emissions from 1860 - 1991. They distinguish the following source categories: gas flaring, gas supply, coal mining, biomass burning, animals, rice, and landfills. They compared their results to the Khalil and Rasmussen (1994) deconvolution estimates. A summary of global methane emission estimates is presented in Table 40.

Table 40. Summary of historical global methane emissions (in Tg CH4 ).

|        | 1891 | 1903 | 1913 | 1921 | 1929 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|--------|------|------|------|------|------|------|------|------|------|------|------|
| Anthrop. | 100.4 | 114.9 | 127.4 | 131.5 | 145.9 | 157.3 | 172.9 | 216.8 | 272.1 | 316.7 | 366.4 |
| Natural | 129.6 | 125.1 | 119.6 | 146.5 | 143.1 | 134.7 | 127.1 | 150.2 | 113.9 | 110.3 | 83.6 |
| Total  | 230.0 | 240.0 | 247.0 | 278.0 | 289.0 | 292.0 | 300.0 | 367.0 | 386.0 | 427.0 | 450.0 |

Sources: [Stern, 1995 #349] (1995), Table 2. Note: data from Stern and Kaufmann refer to the 'd[OH] = 0' scenario.

The trends show an increasing anthropogenic emission of methane, although the increase has slowed down in recent years (slower population growth resulted in a retarding increase in rice and livestock emissions, an increase in energy prices reduced gas flaring levels, fuel substitution away from coal, reduction of tropical deforestation in the late 1980s in South and Central America).

## 4.1.3    Sulphur dioxide

Spatial resolution:       global, regional, national
Temporal resolution:    1890 - 1990, with irregular intervals
Quality:                         3
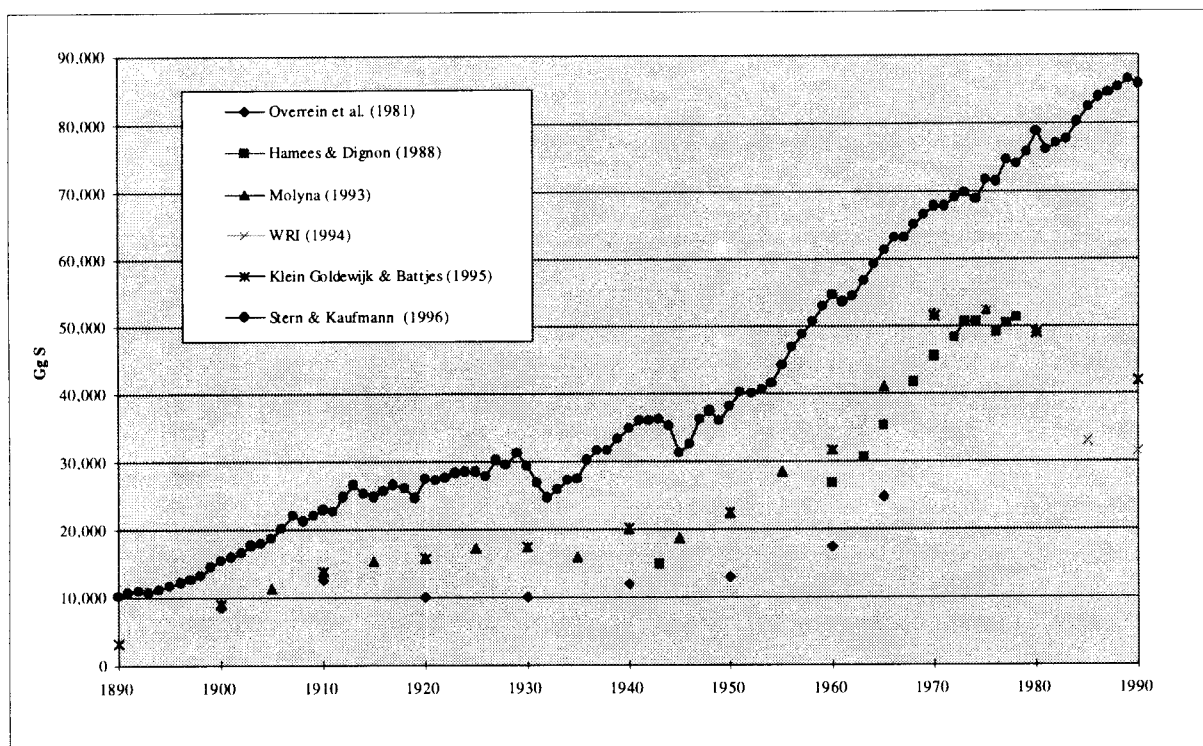


Figure 20. Global sulphur emission estimates for 1900 - 1990.

Historical emission estimates for the United States are presented in Gschwandtner et al. (1985). The total country estimates are presented in several ways, per fuel type (bituminous coal, residual oil, other) and per source category (electric utilities, industrial, commercial, residential and other) for the period 1900 - 1980. Emission estimates per state are presented as totals. The U.S. National Acid Precipitation Assessment Program (NAPAP) presents extensive $SO_2$ emission estimates for the United States in several reports. Placet (1991) concludes that during the period 1900 - 1970 the U.S. $SO_2$-emission estimates increased by a factor of three, from 9 to 28 Tg. After enactment of the Clean Air Act in 1970 the sulphur emissions declined steadily, Placet (1991) estimated that during the period 1970 - 1988 the U.S. anthopogenic emissions of $SO_2$ decreased with 27-29%.

Husar (1994) stated the likely consensus of the long-term fluctuations included recessions, major wars, fuel switchting (e.g. within a country from mining regions with a different sulphur content of coal), and environmental concerns. There has also been a shift from manufacturing to power plants as the main emitters of sulphur. Another point of interest is the ongoing increase in recycling of fuel and ore-bound sulphur. Ayres (in Darmstadter et al. (1987)) presents trends of recovery rates. The recovery of sulphur from natural gas and zinc processing reaches almost a 100%, while the recovery from copper, lead ores, and oil products approaches 50%. Unfortunately, the sulphur recovery from coal that is responsible for most of the sulphur mobilization id still insignificant.

Baumaffe (1987) presented $SO_2$ emission estimates for 1980 and 1982 for most European OECD countries, for many source categories. A good reference for Europe (including former USSR) is the report of the EMEP programme for monitoring and evaluation of the long range transmission of air pollutants in Europe (Mylona, 1993; WRI, 1994). According to Ryaboshapko (1983) anthropogenic $SO_2$ emissions have increased from less than 3 Tg S per year globally in 1860, 15 in 1900, 40 in 1940 and about 80 in 1980. The different sulphur dioxide emission estimates are summarized in Table 41.

Table 41. Summary of historical anthropogenic sulphur dioxide emissions (in kt S).

| | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | - | - | - | - | - | - | 3,339 | 2,322 | 1,663 |
| USA | - | 4,550 | 7,850 | 9,600 | 9,600 | 9,350 | 9,650 | 10,100 | 14,120 | 11,890 | 10,530 |
| OECD Eur. | 3,024 | 3,797 | 5,260 | 4,867 | 6,106 | 6,774 | 6,632 | 10,106 | 13,620 | 13,393 | 8,797 |
| Eastern Eur. | 73 | 143 | 211 | 1,073 | 903 | 1,235 | 1,703 | 2,978 | 5,368 | 6,447 | 5,575 |
| USSR | 135 | 400 | 450 | 250 | 800 | 2,675 | 4,415 | 8,293 | 12,305 | 14,178 | 14,713 |
| Middle East | 5 | 13 | 25 | 20 | 45 | 88 | 88 | 138 | 288 | 138 | 199 |
| India + SA | - | - | - | - | - | - | - | - | - | 1,165 | - |
| China + CPA | - | - | - | - | - | - | - | - | - | 7,475 | - |
| East Asia | - | - | - | - | - | - | - | - | - | 2,051 | - |
| Japan | - | - | - | - | - | - | - | - | 2,487 | 632 | 438 |
| | | | | | | | | | | | |
| Sum | 3,237 | 8,903 | 13,796 | 15,810 | 17,454 | 20,122 | 22,488 | 31,615 | 51,527 | 49,000 | 41,915 |

*Other global estimates*

| | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Overrein | - | 8,500 | 12,500 | 10,000 | 10,000 | 12,000 | 13,000 | 17,500 | - | - | - |
| Ham. & Dignon | - | - | - | - | - | - | - | 26,900 | 45,600 | 51,300 | - |
| Mylona [16] | - | 8,878 | 13,772 | 15,789 | 17,415 | 20,069 | 22,444 | 31,604 | 46,750 | 50,138 | - |
| Ryaboshapko | - | 15,000 | - | - | - | 40,000 | - | - | - | 80,000 | - |
| WRI | - | - | - | - | - | - | - | - | 51,879 | 49,431 | 31,384 |
| Stern & K. | 10,000 | 16,000 | 23,000 | 28,000 | 29,000 | 35,000 | 38,000 | 54,000 | 68,000 | 79,000 | 86,000 |
| EDGAR | - | - | - | - | - | - | - | - | - | - | 74,200 |

Sources: Overrein et al., Ryaboshapko (1983), Hameed and Dignon (1988), Mylona (1993), WRI (1994), Stern and Kaufmann (1996). Note: data from Stern and Kaufmann (1996) taken from Figure 1, page 13.

Stern and Kaufmann (1996) estimated a rise of global sulphur emissions from 2.8 million tons in 1860 to 79.3 million tons in 1993, which is an increase of 28 fold. They compared their estimates with Dignon and Hameed (1989) who estimated 2 million tons in 1860 and Möller (1984), with 2.5 million tons emitted sulphate.

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[16] Countries presented in Mylona (1993) plus estimates of Canada and USA from Placet (1991).

4.1.4   Nitrous oxide   *Nitrogen Oxides*

Spatial resolution:      global, regional, national
Temporal resolution:   1890 - 1990, with irregular intervals
Quality:                 3

*NOx ?*
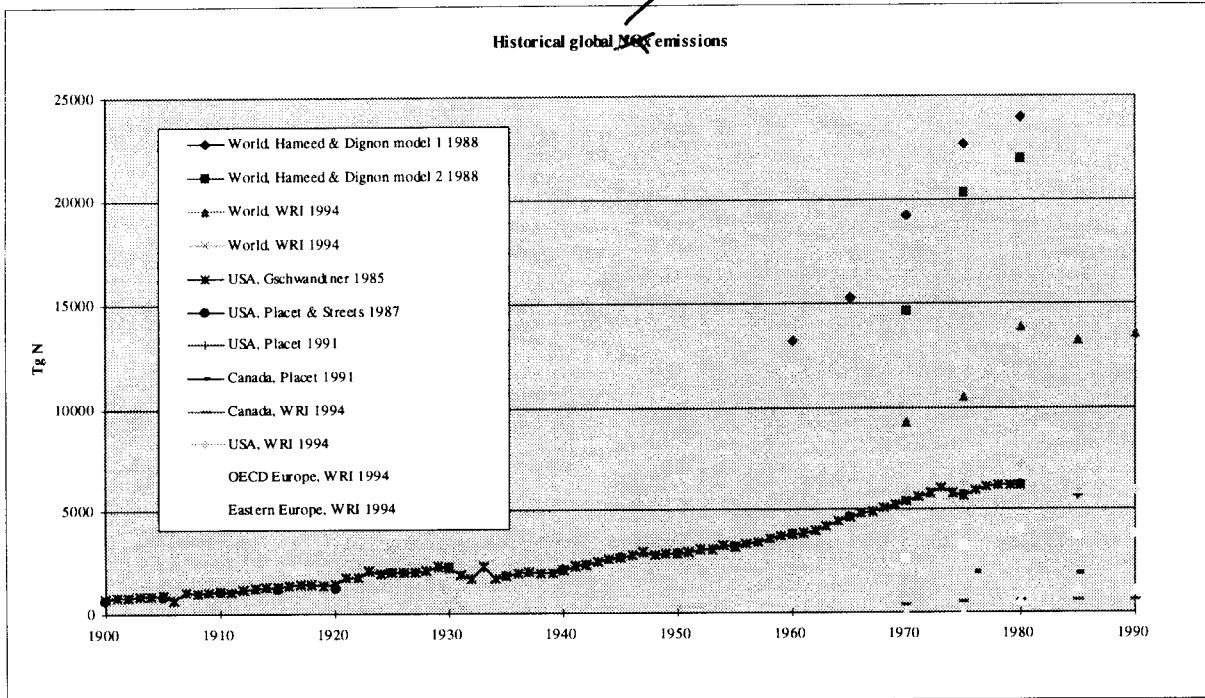


Figure 21. Global nitrous oxide emission estimates for 1900 - 1990.

Historical emission estimates of nitrous oxide for the United States are presented in Gschwandtner et al. (1985). The total country estimates are presented in several ways, per fuel type (bituminous coal, residual oil, distillate oil, natural gas, gasoline + diesel and other), and per source category (electric utilities, industrial, pipelines, highway vehicles and other) for the period 1900 - 1980. Emission estimates per state are presented as totals. Placet (1991) presents U.S. $NO_2$ emission estimates for 1900 - 1970 and 1970 - 1988 (see Table 42). Total U.S. $NO_2$ emissions increased between 1900 and 1970 almost tenfold from 2 to 18 Tg, but emissions in 1988 are estimated to be lower by 9-15% than at their peak in 1978 (Placet, 1991).

Table 42. Summary of historical anthropogenic NOx emissions (in kt N).

| | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | - | - | - | - | - | - | 415 | 596 | 585 |
| USA | - | 720 | 1,131 | 1,423 | 2,211 | 2,084 | 2,843 | 3,754 | 5,770 | 7,170 | 5,898 |
| OECD Europe | - | - | - | - | - | - | - | - | 2,589 | 4,008 | 3,776 |
| Eastern Europe | - | - | - | - | - | - | - | - | - | 604 | 1,049 |
| USSR | - | - | - | - | - | - | - | - | - | 1,038 | 1,758 |
| Middle East | - | - | - | - | - | - | - | - | - | 53 | 53 |
| India + SA | - | - | - | - | - | - | - | - | | | |
| China + CPA | - | - | - | - | - | - | - | - | | | |
| East Asia | - | - | - | - | - | - | - | - | | | |
| Japan | - | - | - | - | - | - | - | - | 502 | 426 | 396 |
| | | | | | | | | | | | |
| Sum | - | 720 | 1,131 | 1,423 | 2,211 | 2,084 | 2,843 | 3,754 | 9,276 | 13,895 | 13,515 |
| | | | | | | | | | | | |
| *Other global estimates* | | | | | | | | | | | |
| Hameed & Dignon[17] | - | - | - | - | - | - | - | 13,200 | 19,240 | 23,960 | - |
| Hameed & Dignon[18] | - | - | - | - | - | - | - | - | 14,620 | 21,980 | - |
| WRI | - | - | - | - | - | - | - | - | 9,277 | 13,844 | 13,515 |

Source: Gschwandtner et al. (1985), Hameed and Dignon (1988), Alcamo et al. (1990), WRI (1994).

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[17] Model 1 results

[18] Model 2 results

## 4.1.5    Volatile organic compounds

Baumaffe (1987) presented VOC emission estimates for 1982 for most European OECD countries, for many source categories. Historical VOC estimates for the USA are presented in several reports of the NAPAP. Placet (1991) estimates an increase of the VOC emissions for the USA by a factor two between 1900 and 1970, from 11 to 24 Tg VOC, with a decrease by 27-39% in the period 1970 - 1988 (Table 43). The ECE/EB (1989) report presents a table with VOC emission estimates for some European countries and Canada plus USA for the period 1980 - 1988, and estimates until 2000.

Table 43. Summary of historical anthropogenic VOC emissions (in kt VOC).

|  | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1985 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | - | - | - | - | - | - | - | 2,099 | 1,798 |
| USA[19] | - | 11,000 | 11,000 | 11,000 | 18,000 | 16,500 | 16,500 | 22,000 | 24,000 | 21,000 | 20,000 |
| OECD Eur. | - | - | - | - | - | - | - | - | - | 10,954 | 9,018 |
| Czechosl. | - | - | - | - | - | - | - | - | - | - | 400 |
| USSR | - | - | - | - | - | - | - | - | - | - | 7,300 |
| Sum | - | 11,000 | 11,000 | 11,000 | 18,000 | 16,500 | 16,500 | 22,000 | 24,000 | 34,053 | 38,516 |
| *Other global estimates* | | | | | | | | | | | |
| ECE | - | - | - | - | - | - | - | - | - | 31,430 | 31,516 |

Source: Lubkert & de Tilly (1987), ECE/EB (1989), Placet (1991).

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[19] Note: the data for USA before 1980 are estimated from figures, the USSR value is for 1987.

## 4.2    Emission factors for $CO_2$

Spatial resolution:    regional
Temporal resolution:    only for the late 1980s
Quality:    1

Fuel types considered are coal, oil, gas, traditional fuelwood (incl. charcoal and bagasse) and other biomass (ethanol, methanol produced from energy crops e.g. sugar cane). Sectors include electricity generation, industry/other fuel transformation (non-electric), residential/commercial/other, transportation. Emission factors for carbon dioxide are given by the IPCC for different fuel types and sectors (Rotty, 1983; IEA, 1991; IPCC/OECD, 1993). Fuel types are seperated in Solids, Liquids, Gases, Biomass and Bunkers. Each fuel type is further divided to primary and secondary fuels (Appendix Table A12). The emission factors for $CO_2$ for the late 1980s for energy consumption (combustion) are presented in Table 44.

Table 44. Emission factors for CO2 for energy consumption (in g CO2 /GJ).

| Fuel type | Sector | E.F | E.F[20] |
|---|---|---|---|
| Coal | | | |
| | Electricity | 94.6 | 96.4 |
| | Industry/Other Fuel Transformation | 94.6 | 96.4 |
| | Residential/Commercial/Other | 94.6 | 96.4 |
| | Transportation | 94.6 | 96.4 |
| Oil | | | |
| | Electricity | 73.3 | 73.3 |
| | Industry/Other Fuel Transformation | 73.3 | 73.3 |
| | Residential/Commercial/Other | 73.3 | 73.3 |
| | Transportation | 73.3 | 73.3 |
| Gas | | | |
| | Electricity | 56.1 | 55.7 |
| | Industry/Other Fuel Transformation | 56.1 | 55.7 |
| | Residential/Commercial/Other | 56.1 | 55.7 |
| | Transportation | 56.1 | 55.7 |
| Fuelwood[21] | | | |
| | Industry/Transportation | 77.4 | 77.4 |
| | Other sectors | 77.4 | 77.4 |
| Other biomass[22] | | | |
| | All sectors | 77.4 | 77.4 |

Sources: IEA (1991); de Soete (1993).

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[20] Correction for Eastern Europe due to a high share of brown coal.

[21] Traditional biofuels like fuelwood, charcoal and bagasse.

[22] Modern biofuels like ethanol and methanol produced from energy crops like sugar cane.

## 4.3 Emission factors for CH₄

Spatial resolution: regional
Temporal resolution: only for the late 1980s
Quality: 1

Methane is a moderately reactive trace gas with a chemical lifetime in the atmosphere of about 10 years. Pre-industrial sources of methane were primarily natural wetlands, with relatively minor contributions from wild animals, vegetation fires, and oceans. Contemporary sources also include large methane emissions from rice fields, domestic ruminants, the burning of agricultural biomass, organic wastes in sewage systems and landfills, fossil fuel combustion and the leakage during distribution of natural gas.

Preliminary estimates for methane emission factors for biomass burning includes savanna, forest, fuelwood, and the production and burning of charcoal (Delmas, 1993). Other important data sources are IEA (1991) and de Soete (1993), see Table 45. Some emission factors for animals from EPA are presented in Hogan (1993), expressed as kg $CH_4$ head$^{-1}$ yr$^{-1}$.

Table 45. Emission factors for $CH_4$ for energy consumption (in g $CH_4$ /GJ).

| Fuel type | Sector | EF | Range |
|---|---|---|---|
| **Coal** | | | |
| | Electricity | 1 | |
| | Industry/Other Fuel Transformation | 2 | 2 - 10 |
| | Residential/Commercial/Other | 300 | 200 - 400 |
| | Transportation | 17 | |
| **Oil** | | | |
| | Electricity | 1 | |
| | Industry/Other Fuel Transformation | 3 | |
| | Residential/Commercial/Other | 2 | 2 - 3 |
| | Transportation | 37 | |
| **Gas** | | | |
| | Electricity | 5 | |
| | Industry/Other Fuel Transformation | 1 | |
| | Residential/Commercial/Other | 1 | |
| | Transportation | 37 | |
| **Fuelwood** | | | |
| | Industry/Transportation | 500 | 250 - 800 |
| | Other sectors | 500 | 250 - 800 |
| **Other biomass** | | | |
| | All sectors | 250 | 100 - 300 |

Sources: IEA (1991); de Soete (1993).

Ebert et al. (1993) listed ranges for methane emission factors for oil and gas production, crude oil transportation, refining, storage tanks, the processing of natural gas, pipelines, and the distribution of natural gas (Table 46). These figures are given for the regions OECD (USA, Canada, OECD Europe, Oceania, Japan), CIS/EE (former USSR, Eastern Europe), CPA (China region) and Others (rest of the world).

Table 46. Emission factors for $CH_4$ for handling and prod. of oil and gas (in g $CH_4$ /GJ).

| Process | OECD | CIS | Western Europe | Other oil export. countr. | Rest of the World |
|---|---|---|---|---|---|
| Oil production | 0.3 - 4.7 | 0.3 - 4.7 | 0.3 - 4.7 | 0.3 - 4.7 | 0.3 - 4.7 |
| Gas production | 39.5 - 104.2 | 218.0 - 567.6 | 14.8 - 27.0 | 39.6 - 96.0 | 39.6 - 96.0 |
| Oil & gas prod. | 2.9 - 13.9 | 63.0 - 29.7 | 3.0 - 18.0 | 739.7 - 1019.2 | 170.0 - 209.0 |
| Crude oil transport. | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| Crude oil refining | 0.09 - 0.14 | 0.09 - 0.14 | 0.09 - 0.14 | 0.09 - 0.14 | 0.09 - 0.14 |
| Crude oil stor. tanks | 0.02 - 0.26 | 0.02 - 0.26 | 0.02 - 0.26 | 0.02 - 0.26 | 0.02 - 0.26 |
| Nat. gas processing | 59.7- 116.6 | 340.0 - 715.8 | 1.8 | 116.6 - 340.0 | 116.6 - 340.0 |
| Nat. gas pipelines | 59.7- 116.6 | 340.0 - 715.8 | 1.8 | 116.6 - 340.0 | 116.6 - 340.0 |
| Nat. gas distribution | 59.7- 116.6 | 340.0 - 715.8 | 1.8 | 116.6 - 340.0 | 116.6 - 340.0 |

Source: Ebert et al. (1993).

Note that most emission factor estimates for the CIS are higher than those for some other regions, because of more inefficient construction and maintenance of industrial capacity.

## 4.4 Emission factors for $N_2O$

Spatial resolution:    regional
Temporal resolution:  1993
Quality:              2

Estimates for stationary combustion facilities, road vehicles, non-road transport, industrial sources are taken from Olivier (1993) and Reimer et al. (1992), see Table 47. Other important data sources are IEA (1991) and de Soete (1993). A 1990 $N_2O$ emission factor estimate for the Netherlands is published by Ybema and Okken (1993). A global average emission factor of 130 kg $N_2O$-N/ton for adipic acid production is given by Reimer et al. (1992), while Olivier (1993) gives an emission factor of 300 g $N_2O$/kg for the same process. The latter provided also a global average emission factor for nitric acid production of 17 kg $N_2O$-N/ton $HNO_3$-N, with a range of 7-27 kg $N_2O$-N/ton $HNO_3$-N (or 2-9 kg $N_2O$).

Table 47. Emission factors for $N_2O$ for energy consumption (in g $N_2O$/GJ).

| Fuel type | Sector | EF | Range |
|---|---|---|---|
| Coal | | | |
| | Electricity | 1.4 | |
| | Industry/Other Fuel Transformation | 1.4 | |
| | Residential/Commercial/Other | 1.4 | |
| | Transport | 1.0 | |
| Oil | | | |
| | Electricity | 0.6 | |
| | Industry/Other Fuel Transformation | 0.6 | |
| | Residential/Commercial/Other | 0.6 | |
| | Transport[23] | 1.0 | 0.5 - 13.0 |
| Gas | | | |
| | Electricity | 0.1 | |
| | Industry/Other Fuel Transformation | 0.1 | |
| | Residential/Commercial/Other | 0.1 | |
| | Transport | n.a. | |
| Fuelwood | | | |
| | Industry/Transport | 10.0 | |
| | Other sectors | 10.0 | |
| Other biomass | | | |
| | All sectors | 0.1 | |

Sources: IEA (1991); de Soete (1993).

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[23] 10.0 g $N_2O$/GJ (range 0.9 - 13.0) for Canada and USA correction for passenger cars with 3-way catalytic convertors.

## 4.5    Emission factors for $NO_x$

Spatial resolution:     regional
Temporal resolution:    only for late 1980s
Quality:                1

Table 48.  Emission factors for $NO_2$ for energy consumption (in g $NO_2$ /GJ).

| Fuel type | Sector | EF | EF[24] |
|---|---|---|---|
| Coal | | | |
| | Electricity | 558 | 457 |
| | Industry/Other Fuel Transformation | 251 | 156 |
| | Residential/Commercial/Other | 183 | 142 |
| | Transport | 1,037 | 831 |
| Oil | | | |
| | Electricity | 200 | 200 |
| | Industry/Other Fuel Transformation | 100 | 100 |
| | Residential/Commercial/Other | 50 | 61 |
| | Transport | 750 | 375 |
| Gas | | | |
| | Electricity | 190 | 190 |
| | Industry/Other Fuel Transformation | 98 | 98 |
| | Residential/Commercial/Other | 50 | 50 |
| | Transport | 376 | 376 |
| Fuelwood | | | |
| | Industry/Transport | 500 | 500 |
| | Other sectors | 500 | 500 |
| Other biomass | | | |
| | All sectors | 100 | 100 |

Sources: IEA (1991); de Soete (1993).

---

[24] A correction was made for Canada, USA, Western Europe, Oceania and Japan.

## 4.6 Emission factors for CO

Spatial resolution:       regional
Temporal resolution:   only for the late 1980s
Quality:                      1

Table 49. Emission factors for CO for energy consumption (in g CO/GJ).

| Fuel type | Sector | EF | EF |
|---|---|---|---|
| Coal | | | |
| | Electricity | 50 | [25] 210 |
| | Industry/Other Fuel Transformation | 210 | [26] 80 |
| | Residential/Commercial/Other | 3,580 | |
| | Transport | 711 | |
| Oil | | | |
| | Electricity | 15 | |
| | Industry/Other Fuel Transformation | 15 | |
| | Residential/Commercial/Other | 15 | |
| | Transport | 6,650 | |
| | Canada and USA | | 1,680 |
| | Western Euope | | 5,750 |
| | Japan | | 1,880 |
| Gas | | | |
| | Electricity | 25 | |
| | Industry/Other Fuel Transformation | 15 | |
| | Residential/Commercial/Other | 10 | |
| | Transport | 12,589 | [13] 2,787 |
| Fuelwood | | | |
| | Industry/Transport | 1,500 | |
| | Other sectors | 6,600 | |
| Other biomass | | | |
| | All sectors | 1,500 | |

Sources: IEA (1991); de Soete (1993).

Some estimates for 1990 for the Netherlands are presented by Ybema and Okken (1993).

---

[25] For CIS and Eastern Europe.

[26] For Canada, USA, Western Europe, Oceania and Japan.

## 4.7 Emission factors for VOC

Spatial resolution:     global
Temporal resolution:    1992
Quality:                3

Although there is more literature on this subject, due to time constraints this item is not yet satisfactorily dealt with in the current data base. Work is underway to include it in the next version. Piccot et al. (1992) presents a global average emission factor for two sources of VOC emissions. Both the consumptive use of solvents and other miscellaneous VOC sources are estimated to emit 1,000 kg VOC/ton (solvent).

## 4.8 Emission factors for $SO_2$

Spatial resolution:     global
Temporal resolution:    1993
Quality:                3

Although there is more literature on this subject, due to time constraints this item is not yet satisfactorily dealt with in the current data base. Work is underway to include it in the next version. Spiro et al. (1992) estimates a global average emission factor of 1,060 kg S/ton for copper smelting.

## 4.9 Emission factors for cement

Spatial resolution:     global
Temporal resolution:    1993
Quality:                2

Emission factors for cement production are presented in (Keeling, 1973). Marland et al. (1989) estimate a global average emission factor for cement production of 499 kg $CO_2$ / ton cement.

# 5. Terrestrial Environment data

## 5.1 Historical land cover

Spatial resolution:   0.5° x 0.5° latitude/longitude
Temporal resolution:  1890 - 1990, with 10 year timesteps
Quality:              for 1890 - 1960 quality 3, for 1960 - 1990 quality 1

### 5.1.1 Gridded land cover for 1970

Conversion of land cover is an important issue in global change studies. In the IMAGE 2.1 model changes in land cover are computed in the Land Cover model and these changes influence the flux of $CO_2$ and other greenhouse gases between the terrestrial biosphere and the atmosphere. Because there are no accurate global land cover maps for 1890 we generated our own, using land cover data on country or region totals and allocating them according to population and livestock densities. The assumption is that population density is an indicator of agricultural activity and therefore agricultural land, and that methane emissions are an indicator for the distribution of livestock and the resulting use of pasture land. The methane emissions data base is derived from the 1° x 1° degree latitude/longitude cattle density data base of Lerner et al. (1988). We preferred to use the methane emissions, and not the cattle density data base, because in this way not only cattle could be taken into account, but also other livestock categories (e.g. goats, sheep and pigs). The initial amount of agricultural land for 1970 is derived from the Olson Major World Ecosystems Data Base (Olson et al., 1985) and data from the FAO AGROSTAT Data Base (FAO, 1990). Agricultural land is defined here as the sum of the FAO categories Arable land + Permanent Crops + Permanent Pasture.

The undisturbed natural ecosystems are simulated with the BIOME model of Prentice et al. (1992) driven with climate from the IIASA Climate data base of Leemans and Cramer (1991). In Table 50 the land cover types are listed with the corresponding Olson World Ecosytem classes, which are used for the initialization of the BIOME model (e.g. for albedo).

Table 50. Land cover types used for BIOME with the corresponding Olson World Ecosystem classes .

| IMAGE 2.1 Land Cover Types | | Olson World Ecosystem Classes | | |
|---|---|---|---|---|
| 1 | Agricultural land | 1 | CCX | City complexes. |
| | | 30 | CFS | Cool farm land and settlements, more or less snowy. |
| | | 31 | MFS | Mild/hot farm land and settlements. |
| | | 36 | PRA | Paddy rice and associated land mosaics. |
| | | 37 | WCI | Warm/hot cropland, irrigated extensively. |
| | | 38 | CCI | Cool cropland with irrigation of variable extent. |
| | | 39 | CCP | Cold cropland and pasture, irrigated locally. |
| 2 | Fallow forest | - | - | - |
| 3 | Ice | 17 | ICE | Antarctic ice cap. |
| | | 69 | PDL | Polar desert with rock Lichens, locally abundant or productive but provide little food. |
| | | 70 | GLA | Glaciers in polar or alpine complex, with rock fringes. |

| 4 | Tundra | 53 | TUN | Tundra (polar, alpine). |
|---|---|---|---|---|
| 5 | Wooded tundra | 63 | WTM | Wooded tundra margin or mountain scrub/meadow. |
| 6 | Boreal forest | 21 | MBC | Main boreal conifer forest, closed or open. |
| | | 44 | MBF | Mires include peaty bogs and fens (mostly in high latitudes). |
| | | 60 | SDT | Southern dry Taiga or similar aspen/birch with northern and/or mountain conifers. |
| | | 61 | LT | Larch Taiga with deciduous conifer. |
| | | 62 | NMT | Northern maritime Taiga typifies a wide latitude belt or a narrow altitude belt above denser forest or woodland. |
| 7 | Cool conifer forest | 20 | SRC | Snowy, rainy coastal conifer forest. |
| | | 22 | SNB | Snowy non-boreal conifer forest. |
| 8 | Temperate mixed forest | 23 | CDF | Conifer/deciduous forest, snow persisting in winter. |
| | | 24 | TBC | Temperate broadleaf/conifer forest: with deciduous and/or evergreen hardwood trees. |
| | | 27 | NSC | Non-snowy conifer forest. |
| | | 54 | TER | Temperate evergreen rainforest (e.g. in Chile). |
| | | 55 | SFW | Snowy field/woods complex. |
| | | 57 | SFF | Snowy forest/field, commonly openings are pasture and/or mires. |
| 9 | Temperate deciduous forest | 25 | SDF | Snowy deciduous forest, i.e. summergreen (= cold deciduous forest). |
| 10 | Warm mixed forest | 26 | TBF | Temperate broadleaf forest: deciduous, semideciduous, and some temp.subtropical broadleaf evergreen types that are least active in winter. |
| | | 56 | FFR | Forest/field complex with regrowth after disturbances, mixed with crops and/or other non-wooded lands. |
| | | 58 | FWG | Field/woods with grass and/or cropland. |
| 11 | Steppe | 2 | SSG | Short or sparse grass/shrub of semiarid climates. |
| | | 40 | CGS | Cool grass/shrub, snowy in most years. |
| | | 41 | MGS | Mild/warm/hot grass/shrub. |
| | | 42 | CSM | Cold steppe/meadow +/- larch woods (in Siberia), scrub (Bering sea) or tundra (Tibetian highlands). |
| | | 52 | CSS | Cool/cold shrub semidesert/steppe. |
| | | 64 | HMW | Heath and moorland, wild or artificially managed, as by burning and/or grazing. |
| 12 | Hot desert | 8 | DMB | Desert, mostly bare stone, clay or sand. |
| | | 50 | SDB | Sand desert, partly blowing dunes. |
| | | 51 | SDS | Semidesert/desert scrub/succulent/sparse grass. |
| | | 71 | SSF | Salt/soda flats desert playas, occasionally with intermittent lakes. |
| 13 | Scrubland | 6 | TBE | Temperate/tropical-montane broadleaf evergreen covers warm temperate or montane broadleaf evergreen forest (Africa only). |
| | | 16 | BES | Broadleaf evergreen shrub. |
| | | 46 | MES | Mediterranean-type evergreen (mostly) broadleaf scrub and forest relics. |
| | | 47 | DHS | Dry or highland scrub, or open woodland. |
| | | 48 | DEW | Dry evergreen woodland or low forest, mapped |

|    |                 |    |     | mostly in interior Australia and South America. |
|----|-----------------|----|-----|--------------------------------------------------|
|    |                 | 49 | HVI | Hot-mild volcanic "islands" (Galapagos), with local denser forest on some older lava flows but wide area of sparse cover on recent lavas. |
|    |                 | 59 | STW | Succulent and thorn woods or scrub is widespread. |
| 14 | Savanna         | 43 | SGW | Savanna/grass, seasonal woods: trees or shrubs above grass groundcover may be interspersed on many scales in savanna belts of varying drought duration and high fire frequency. |
| 15 | Tropical woodland | 32 | RGD | Rain-green (drought-deciduous) or very seasonal dry evergreen forests to open woodlands, very frequently burned. |
| 16 | Tropical forest | 28 | TMC | Tropical montane complexes, typically evergreen, including dwarfed ("elfin") forest, opening to grass, or tall or short forbs (puna, paramo). |
|    |                 | 29 | TBS | Tropical broadleaf seasonal forest, with dry or cool season. |
|    |                 | 33 | TRF | Tropical rain forest. |
|    |                 | 45 | MOS | Marsh or other swampy wetlands include various transitions to or mixtures with trees. |
|    |                 | 72 | MSM | Mangrove and non-saline swamps and tidal Mudflats (Africa only). |

## 5.1.2 Regional trends for the period 1890 - 1970

One of the few estimates of historical global land transformation rates is presented by Richards (1990). Together with the FAO (1990) estimates for pasture we calculated the amount of forest, grassland, pasture and cropland for the period 1700 - 1980 for the regions listed by Richards. Results suggest a loss of the global forest area with 19% (6,215 Mha in 1700 to 5,053 Mha in 1980), and the grassland area even declined with 45% (6,334 to 3,453 Mha). Grassland was mostly converted into pasture, which increased from 526 Mha in 1700 to 3,335 Mha in 1980. Also the amount of cropland increased more than fivefold from 265 to 1,501 Mha, mostly at the expense of forests (Richards, 1990). Results for 10 regions are presented in Appendix Table A13.

An extensive study for South- and Southeast Asia was carried out by Flint and Richards (1994), see also Richards and Flint (1994), and Table 51. They reported estimates of cultivated land for 1880, 1920, 1950 and 1980. The first column shows the results of Flint and Richards, the second column shows the range of estimates calculated with the different conversion rates.

Table 51. Estimates of net cultivated land for 1920, 1950 and 1970 for South- and Southeast Asia (in Mha) .

| Country | F & R 1920 | Calc. 1920 | F & R 1950 | Calc. 1950 | F & R 1970 | Calc. 1970 |
|---|---|---|---|---|---|---|
| Bangladesh | 7 | 6-8 | 8 | 7 | 8 | 9 |
| India | 107 | 95-131 | 123 | 134-135 | 141 | 165 |
| Indonesia | 12 | 6-10 | 17 | 11-14 | 22 | 18 |
| Malaysia | 2 | 2-3 | 3 | 3 | 4 | 4 |
| Myanmar | 6 | 6-8 | 6 | 8-9 | 8 | 10 |
| Philippines | 3 | 2-4 | 5 | 5 | 6 | 7 |
| Thailand | 4 | 5-8 | 8 | 8-11 | 13 | 14 |
| Vietnam | 5 | 2-3 | 4 | 5 | 6 | 6 |

Source: Flint and Richards (1994).

Table 52 highlights the problem of validation of historical land cover.

Table 52. Historical estimates of cropland for selected countries (in Mha).

| Source | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 |
|---|---|---|---|---|---|---|---|---|---|
| **USA** | | | | | | | | | |
| Census[a] | 99 | 128 | 139 | 161 | 165 | 160 | 164 | 157 | 154 |
| Census[b] | 99 | 169 | 177 | 197 | 191 | 182 | 198 | 185 | 174 |
| Census[c] | 116 | 145 | 162 | 184 | 183 | 177 | 182 | 172 | 165 |
| HYDE,Pop.based[d] | 108 | 127 | 146 | 165 | 181 | 185 | 189 | 189 | 189 |
| HYDE, FAO[e] | 108 | 127 | 146 | 165 | 181 | 185 | 189 | 189 | 189 |
| HYDE, Richards[f] | 119 | 142 | 165 | 188 | 189 | 190 | 191 | 190 | 189 |
| FAO | | | | | | | | 180 | 189 |
| Grigg [g] | - | 128 | - | - | 166 | - | - | 158 | - |
| **CIS** | | | | | | | | | |
| Grigg* | - | 113 | - | - | 109 | - | - | 196 | - |
| HYDE | 129 | 144 | 160 | 178 | 192 | 206 | 215 | 224 | 233 |
| FAO | - | - | - | - | - | - | - | 235 | 227 |
| **Canada** | | | | | | | | | |
| Grigg* | - | 8 | - | - | 23 | - | - | 25 | - |
| Urquhart & Buckley** | 11 | 12 | 19 | 28 | 34 | 37 | 39 | - | - |
| HYDE | 25 | 29 | 34 | 38 | 42 | 43 | 44 | 44 | 44 |
| FAO | - | - | - | - | - | - | - | 43 | 44 |

\* Only expansion of cropland. \*\* Area in farms, total Improved land; derived from Series L7-14, p.352.

Source: U.S. Bureau of the Census (1976). [a]only cropland, [b]cropland + farm woodland not used for pasture, [c]cropland + farm woodland special use (roads,etc.) + other use. [d,e,f] Calculated backwards from year 1970 (FAO Agrostat data) with conversion rates from Houghton, resp. Appendices 2, 3 and 5. [g] Grigg (1987). Urquhart and Buckley (1965).

America is one of the few regions in the world where reasonable historical time series about land cover are available. But even the estimates of the U.S. Bureau of the Census can be aggregated in several ways, depending on the definition of a particular land cover type. And so for the year 1970

these estimates differ already 20 Mha (about 15%). Regional estimates of expansion of cropland for USA, Russia, Canada, Argentina and Autralia for 1850, 1900, 1930 and 1960 are given by Grigg (1987).

Table 53 is a summary of the estimates of Mitchell (1975, 1982 and 1983) for the area of main agricultural crops, during the period 1890 - 1970 (Except for Europe and CIS, for which Mitchell only presented estimates up to 1969). In general, the areas have been increasing during the 1890 - 1950 period, with temporarily setbacks during wars. After 1950, the areas in Canada, USA and Japan decreased slowly, probably due to intensification of their agricultural production. The situation in Europe stabilized, while in the rest of the world the area for main agricultural crops still increased.

Table 53. Regional estimates for areas of main agricultural crops, smoothed over a 5 year period (in Mha) .

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 |
|---|---|---|---|---|---|---|---|---|---|
| Canada | 2.1 | 3.6 | 9.0 | 16.9 | 18.7 | 18.2 | 19.5 | 18.0 | 16.8 |
| USA | 63.5 | 75.7 | 82.8 | 91.3 | 88.7 | 85.9 | 84.7 | 70.4 | 65.4 |
| Lat. Am. | 1.6 | 6.5 | 14.8 | 17.1 | 22.0 | 21.5 | 28.9 | 36.1 | 44.2 |
| Africa | 3.1 | 5.1 | 6.5 | 10.4 | 14.4 | 16.1 | 26.2 | 38.6 | 44.8 |
| OECD Eur. | 57.5 | 60.6 | 64.8 | 55.2 | 57.3 | 51.8 | 51.4 | 51.1 | - |
| Eastern Eur. | 13.2 | 16.5 | 17.3 | 33.1 | 40.8 | 28.7 | 31.2 | 31.3 | - |
| CIS | 64.8 | 78.2 | 96.6 | 71.4 | 96.7 | 89.3 | 114.1 | 125.6 | - |
| Middle East | - | - | 0.7 | 1.2 | 7.5 | 10.5 | 16.2 | 22.8 | 27.1 |
| India + SA | 37.4 | 64.3 | 70.1 | 73.2 | 70.4 | 84.0 | 104.5 | 122.1 | 133.6 |
| China + CPA | - | - | 2.6 | 5.4 | 49.9 | 37.7 | 63.7 | 128.3 | 156.4 |
| East Asia | - | - | 6.8 | 13.4 | 15.0 | 14.7 | 20.8 | 26.8 | 30.5 |
| Oceania | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.5 | 1.1 |
| Japan | 4.6 | 5.4 | 5.6 | 5.6 | 5.3 | 5.6 | 5.8 | 5.6 | 3.5 |
| Sum | 248.0 | 316.2 | 378.0 | 394.6 | 486.9 | 464.2 | 567.4 | 677.0 | 523.4 |

Source: Mitchell (1975, 1982, 1983).

## 5.1.3 Gridded land cover for 1890

Historical estimates of cropland areas were calculated using the conversion rates given by Houghton et al. (1983). Starting point for our calculations were the agricultural areas given by the FAO on a country basis. The definition of cropland applied to the FAO categories resulted in the aggregation of 'Arable land' plus 'Permanent crops'. Taking 1970 as base year, the areas were calculated back in time with the conversion rates given for the different regions and with different time intervals. Houghton *et al.* (1983) give three different estimates for the historical conversion rates, a first one is the population-based estimate, the second one is based on Production Yearbooks of the FAO and the third one is based on data derived from Richards (1982).

When the conversion rates given by Houghton were applied to the FAO 1970 data, some regions could have obtained negative values for the area of cropland, but then were set to zero. This was due to the fact that some countries had a relative high conversion rate compared to the initial 1970 area, or that some countries in the IMAGE classification fell into a Houghton region with a relative

high conversion rate. Country results for each of the three different conversion estimates are presented in Appendix Table A23-I, A23-II and A23-III, and the global estimates are listed in table 54.

Table 54. Global historical estimates for cropland (in Mha).

| Source | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 |
|---|---|---|---|---|---|---|---|---|---|
| Pop.based | 679 | 741 | 811 | 883 | 965 | 1,052 | 1,135 | 1,247 | 1,373 |
| FAO prod.book | 696 | 758 | 830 | 899 | 971 | 1,044 | 1,117 | 1,245 | 1,373 |
| Richards | 574 | 650 | 729 | 809 | 895 | 995 | 1,098 | 1,234 | 1,373 |
| Houghton[27] | 700 | 760 | 800 | 840 | 980 | 1,060 | 1,220 | 1,320 | 1,420 |
| Esser[28] | 1,280 | 1,390 | 1,480 | 1,570 | 1,680 | 1,800 | 1,910 | 2,000 | 2,060 |
| FAO Agrostat | - | - | - | - | - | - | - | 1,331 | 1,377 |

The next step in constructing a georeferenced land cover data base was converting the country data (see Appendices A23) into grid based data. We compared the country totals obtained by the conversion rates of Houghton with the FAO country totals. The agricultural area was distributed according to the population density map of 1890 (see chapter 1.1, and Appendix Table A4), with the restriction that grid cells that were not agricultural land in 1970, were also not agricultural land in 1890 (see Appendix Figure A1, Historical population distribution 1890).

The following procedure was used to estimate the amount of pasture in 1890. First, the regional amount of pasture was calculated. These amounts of pasture on a region level were obtained from a recalculation from Houghton et al. (1983) and Richards (1990). The allocation of pasture was done according to the methane emission density map of Lerner et al. (1988) based on livestock densities. Grid cells with emissions were sorted from high emissions to low emissions, and pasture was allocated to these grid cells until the total amount of pasture for a region or country was used. Maps of the calculated historical cropland and pasture are presented in the Appendix, Figures A8, A9 and A10.

## 5.2 Human food consumption

Spatial resolution:      regional
Temporal resolution:   irregular intervals
Quality:                      3 before 1960, 1 after 1960

Svennilson (1954) gives estimates for consumption of cereals (wheat and rye) for all European countries during 1909-13, 1924-28 and 1934-38. Tuve (1976) listed the upper and lower 20% of the countries with their food supply in calories per capita, and the percentage animal origin. The most affluent countries had in 1970 between 37-45% of their food supply provided by animals, with the exception of the USSR with 20%. The poorest countries had a minimum of 2-3% (Indonesia,

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[27] Model results from Houghton et al. (1983) estimated from figure 3.

[28] Estimated from Figure 2 of Esser (1989).

Rwanda, Ghana) and a maximum of 13-21% (Philippines, Bolivia, Somalia). Gray (1990) presents a table of the food consumption in de USSR, see Appendix Table A24-1 and A24-2.

In IMAGE 2.1 the human food consumption is expressed as daily caloric intake per capita. The intake is divided into 12 categories; temperate and tropical cereals, maize, rice, pulses, roots and tubers, oilcrops, meat and bovine, milk (excl. butter), pigmeat, meat of sheep and goats, and poultry. The daily caloric intake is derived from the FAO (1990), they used a region specific conversion factor for each food category. The human food consumption is presented in Table 55. An extended table is presented in the Appendix Table A25. with the daily caloric intake per capita for the different agricultural crops for each region.

Table 55. Daily caloric intake per region per person, smoothed over a 5 year period (in kcal/cap).

| Region | Total 1970 | Total 1988 | Animal products 1970 | 1988 | Vegetable products 1970 | 1988 |
|---|---|---|---|---|---|---|
| Canada | 1,811 | 2,034 | 849 | 813 | 961 | 1,220 |
| USA | 2,011 | 2,327 | 957 | 953 | 1,054 | 1,374 |
| Latin America | 1,710 | 1,849 | 329 | 375 | 1,381 | 1,473 |
| Africa | 1,600 | 1,737 | 125 | 130 | 1,475 | 1,608 |
| OECD Eur. | 1,936 | 2,131 | 714 | 857 | 1,222 | 1,274 |
| Eastern Eur. | 2,362 | 2,364 | 543 | 669 | 1,819 | 1,694 |
| CIS | 2,377 | 2,295 | 585 | 642 | 1,791 | 1,653 |
| Middle East | 1,807 | 2,118 | 191 | 222 | 1,616 | 1,896 |
| India + SA | 1,688 | 1,819 | 84 | 118 | 1,604 | 1,701 |
| China + CPA | 1,847 | 2,341 | 97 | 230 | 1,750 | 2,111 |
| East Asia | 1,621 | 1,897 | 72 | 114 | 1,549 | 1,784 |
| Oceania | 2,037 | 2,056 | 1,041 | 968 | 995 | 1,088 |
| Japan | 1,867 | 1,932 | 207 | 335 | 1,659 | 1,597 |

Source: FAO (1990).

## 5.3 Consumption of crops by animals

Spatial resolution: country
Temporal resolution: 1961 - 1990, with 1 year timesteps
Quality: 1

The consumption of crops by animals (defined as *feed*) is calculated for the period 1961 - 1990 using the data from the FAO (1990). Other data for the USA for 1975 - 1989 are presented by (Hogan, 1993). Although there is more literature on this subject, due to time constraints this item is not yet satisfactorily dealt with in the current data base. Work is underway to include it in the next version.

## 5.4   Net trade of agricultural products

Spatial resolution:      country
Temporal resolution:   1961 - 1990, with 1 year timesteps
Quality:                 1

The net trade for agricultural products for the period 1961 - 1990 are presented by the FAO (1990). Although there is more literature on this subject, due to time constraints this item is not yet satisfactorily dealt with in the current data base. Work is underway to include it in the next version.

## 5.5   Area of main agricultural crops

Spatial resolution:      country
Temporal resolution:   1890 - 1990, with 1 year timesteps
Quality:                 2 before 1960, 1 after 1960

Most statistics of this nature are in units of area sown, or area under crops on a particular date during the summer. Some series may be of areas harvested. In principle, statistics relate to the calendar year in which the majority of the crop is harvested. Korea before 1945 is assigned to the Republic of Korea (region East Asia). Sources are the historical statistics of Mitchell (1975, 1982 and 1983). Most regions show an increase in sown areas, with temporary fall backs in some regions during the First (1914-1918) and Second World War (1938-1945), the Russian Revolution of (1917-1925), and the Chinese Cultural Revolution in the 1960s. Figures with the harvested areas for the main agricultural crops per region are presented in the Appendix Figures A11-1 to A11-13 and Table A26. One should be careful in interpreting the figures, because the data are smoothed over a 5 year period, despite data gaps. This can sometimes explain the 'dip' in the data, but most of the times there would have been a serious decrease anyway for those years due to wars or other events. See also Table 56.

## 5.6   Production of crops

Spatial resolution:      country
Temporal resolution:   1890 - 1990, with 1 year timesteps
Quality:                 2 before 1960, 1 after 1960

Historical output estimates for the main agricultural crops for many countries are presented by (Mitchell, 1975, 1982, 1983). Some data are given in hectolitres and are converted into tons assuming that the output in the year of conversion (given in hectolitres) is equal to the output in the year before the conversion (given in metric tons). The ratio between those years is used to convert the whole period given in hectolitres. Production was presented as total output.

Table 56. Production of main agricultural crops in the USA, smoothed over a 5 year period (in tons/ha) .

| Crop | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 |
|------|------|------|------|------|------|------|------|------|------|
| Wheat | 0.93 | 0.90 | 1.66 | 0.93 | 0.91 | 1.15 | 1.15 | 1.69 | 2.09 |
| Barley | 1.25 | 1.31 | 1.16 | 1.19 | 1.08 | 1.34 | 1.52 | 1.76 | 2.27 |
| Oats | 0.91 | 1.07 | 1.09 | 1.07 | 0.94 | 1.14 | 1.20 | 1.58 | 1.81 |
| Rye | 0.84 | 0.82 | 0.83 | 0.84 | 0.67 | 0.77 | 0.74 | 1.14 | 1.63 |
| Maize | 1.51 | 1.63 | 1.63 | 1.81 | 1.39 | 2.01 | 2.47 | 3.37 | 5.12 |
| Buckwheat | 0.77 | 0.93 | 0.91 | 0.91 | 0.87 | 0.94 | 0.91 | 1.05 | - |
| Potatoes | 5.23 | 6.10 | 6.70 | 7.24 | 7.24 | 8.33 | 16.94 | 21.46 | 26.20 |
| Sugar beet | - | - | 23.69 | 21.89 | 25.01 | 28.08 | 34.65 | 38.52 | 44.21 |
| Sugar cane | - | - | 2.50 | 2.31 | 2.54 | 3.59 | 3.05 | 4.15 | 4.58 |
| Rice | 1.29 | 1.55 | 1.81 | 1.95 | 2.37 | 2.30 | 2.71 | 4.19 | 5.07 |
| Sw. potatoe | 5.29 | 5.54 | 5.82 | 5.72 | 5.00 | 5.31 | 6.00 | 9.24 | 11.82 |
| Sorghum | - | - | - | 1.10 | 0.82 | 1.07 | 1.24 | 2.64 | 3.15 |

Source: Mitchell (1975, 1982, 1983).

Table 56 is an example of the region USA where the production per hectare has been computed with the areal estimates, also provided by Mitchell. Figures with the historical trend in output for the main agricultural crops per region are presented in the Appendix Table A27 and Figures A12-1_13. More recent production data can be retrieved from FAO (1995).

## 5.7 Number of animals

Spatial resolution: country
Temporal resolution: 1890 - 1990, with 1 year timesteps
Quality: 3 before 1920-30, 1 after 1930

The number of animals has increased considerably during this century. Estimates for all countries are given by (Mitchell, 1975, 1982, 1983), although before 1920-30 few data existed for most countries. Therefore, total regional numbers have been estimated by the authors, and sometimes calculated backwards by relating the number of animals to population (livestock/capita). Figure 22 and Table 57 are summaries of the different livestock categories.
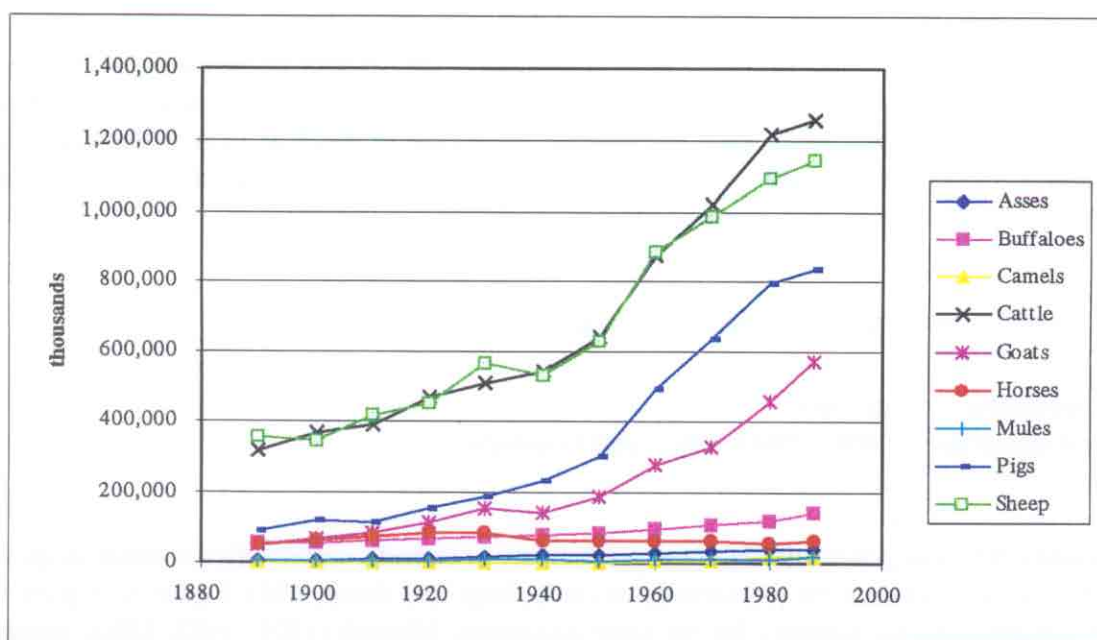
Figure 22. Global livestock numbers for 1890 - 1990.

Table 57. Global number of livestock (in million heads).

|  | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Asses | 6 | 7 | 10 | 12 | 17 | 21 | 24 | 31 | 35 | 38 | 44 |
| Buffaloes[29] | 55 | 58 | 62 | 66 | 71 | 77 | 83 | 98 | 107 | 122 | 139 |
| Camels | .5 | .6 | .9 | 1 | 1 | 2 | 2 | 4 | 6 | 17 | 20 |
| Cattle | 319 | 368 | 391 | 472 | 513 | 547 | 644 | 870 | 1,016 | 1,218 | 1,294 |
| Goats | 52 | 67 | 83 | 114 | 153 | 141 | 187 | 280 | 325 | 466 | 587 |
| Horses | 51 | 62 | 73 | 87 | 88 | 70 | 69 | 78 | 81 | 60 | 61 |
| Mules | 3 | 4 | 6 | 8 | 9 | 9 | 8 | 11 | 14 | 13 | 15 |
| Pigs | 90 | 122 | 115 | 154 | 187 | 229 | 300 | 490 | 634 | 796 | 856 |
| Poultry | 706 | 831 | 828 | 873 | 1,203 | 1,200 | 1,372 | 1,793 | 2,734 | 7,125 | 10,770 |
| Reindeer | 43 | 47 | 50 | 53 | 64 | 77 | 87 | 181 | 200 | na | na |
| Sheep | 356 | 346 | 418 | 453 | 567 | 531 | 631 | 885 | 1,001 | 1,092 | 1,216 |

Source: Mitchell (1975, 1982, 1983), FAO (1990).

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[29] Note: Buffaloes 1960 and 1970 are own estimates.

A more extensive table for each region is given in Appendix Table A28. In general, livestock has been increasing ever since pre-industrial times. However, some distinct historical events do show up in the numbers. Numbers declined sometimes dramatically during the First and Second World War in most countries involved. Also, the Russian revolution of 1917 and the Chinese Cultural Revolution of 1964 left their mark on livestock numbers. Note that the number of horses decreased over time, due to the switch from horsepower to tractors/cars.

## 5.8    Productivity of animals (meat, milk, eggs per unit)

Spatial resolution:       country
Temporal resolution:    1890 - 1990, with 1 year timesteps
Quality:                       2

Canada and USA have good data about the productivity of animals, particularly for cattle, hogs and sheep. Figure A14 presents the pruductivity of cattle, hogs and sheep, while Figure A15 gives the ratio of slaughtered/total numbers for the same categories. Mitchell (1975, 1982, 1983) presents estimates of milk and meat prodcution on a country basis for the period 1890 - 1970. Hogan (1993) conducted an extensive study for the USA and provides data for the period 1975 - 1989. For the period 1961 - 1990 the FAO (1990) data can be used. Although there is more literature on this subject, due to time constraints this item is not yet satisfactorily dealt with in the current data base. Work is underway to include it in the next version.

## 5.9    Consumption of fertilizer

Spatial resolution:       country
Temporal resolution:    1940 - 1990, with 1 year timesteps
Quality:                       3 before 1960, 1 after 1960

In general, chemical fertilizers were not widely used before 1950. In China, chemical fertilizers were not used until they were imported at the beginning of this century, though Chinese peasants have always been highly skilled in the applications of manures (Weixin, 1991). The use of chemical fertilizers started really to rise after 1949. In 1952, China consumed only 78 kton fertilizer (expressed as N, $P_2O_5$ and $K_2O$), which corresponds with 0.6 kg per ha sown. Some thirty years later it has increased up to 120.0 kg/ha in 1985. Undoubtedly, it was the result of China's rapid industrial growth during the last decades, together with the great importance given to Chinese agriculture (Weixin, 1991). The FAO provides good estimates of the fertilizer consumption after 1960. In Appendix Table A21. the consumption of three fertilizer components are presented. They show a considerable increase in global fertilizer consumption after 1950.

# 6.    Atmosphere/Ocean data

An important data source concerning global change data is the Carbon Dioxide Information Analysis Center (CDIAC), in Oak Ridge, Tennessee. They published a compendium of the most important trends of data on global change (Trends '93; Boden et al., 1994). It is a well documented and reviewed compilation of historical and modern records in concentrations and emissions of the most important greenhouse gases (carbon dioxide, methane, nitrous oxide, chlorofluorocarbons, hydrochlorofluorocarbons and halons). Additional trace gas data are presented including historical atmospheric $CO_2$, $CH_4$ and $N_2O$ derived from ice cores. Spatial coverage ranges from individual sites to regional (country) and global estimates. Also, long-term temperature and precipitation records are included, as well as time-series records for atmospheric aerosols and isotopic $^{14}C$ measurements for atmospheric $CO_2$ from several sites.

Please note that this chapter does not pretend to present new data but simply tries to summarize the information, and inform the readers about important data sources. In this chapter, one of the most elaborate sources is Trends '93, and we acknowledge the remark on page XXV of that report about citing the data and figures. We therefore urge the reader to use the citation used in Trends '93 at the bottom of most pages.

## 6.1    Concentration of $CO_2$

Spatial resolution:        global
Temporal resolution:    1900 - 1990, with 1 year timesteps
Quality:                        1

The atmospheric $CO_2$ concentration, at 354 ppmv in 1990, is about 26% greater than the pre-industrial value (ca.1800-1850) of about 280 ppmv, see Table 58.

Table 58. Historical global greenhouse gas concentrations.

| Gas | Units | 1900 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|
| $CO_2$ | ppmv | 279.7 | 316.2 | 324.8 | 337.3 | 353.9 |
| CO | ppbv | - | - | - | - | 95.0 |
| $CH_4$ | ppbv | 974.1 | 1,272.0 | 1,420.9 | 1,569.0 | 1,717.0 |
| $N_2O$ | ppbv | 292.0 | 296.6 | 298.8 | 302.6 | 309.7 |
| CFC-11 | ppbv | 0.00 | 0.03 | 0.12 | 0.27 | 0.48 |
| CFC-12 | ppbv | 0.00 | 0.02 | 0.07 | 0.16 | 0.28 |

Source: IPCC (1990).

This rise is caused by anthropogenic emissions from fossil fuel combustion and burning of biomass (deforestation, shifting cultivation). The concentration of carbon dioxide has been monitored since 1958 at Mauna Loa, Hawaii. It is the longest time series of a greenhouse gas concentration that exist. The IPCC gives global estimates for the years 1900, 1960, 1970, 1980 and 1990 (IPCC, 1990; IPCC, 1992).

A historical $CO_2$ record derived from ice cores is presented in Barnola et al. (1994), with a time-series from the Vostok station in Antarctica from 160,000 to 1,700 years BP. A more recent time-series is the Siple Sation record of Neftel et al. (1994), which covers the period 1734 to 1983.

Two different measurements of the $^{14}C$ value in atmospheric $CO_2$ in Central Europe are presented in Levin et al. (1994), one high altitude experiment in Schauinsland (period 1976-1992) and another in Vermunt (period 1959-1983). Another experiment is presented by Manning and Melhuish (1994) and is located in Wellington, New Zealand and are given for the period 1954 - 1994.

Furthermore there are 58 modern records of monthly and annual atmospheric $CO_2$ concentrations from 63 sites presented in Trends '93, which include 49 land-based and 14 shipboard sites (see for exact citations pages 16-190, of Boden et al., 1994).

## 6.2    Concentration of CH₄

Spatial resolution:      global
Temporal resolution:   1900 - 1990, with irregular intervals
Quality:                1

Current atmospheric methane concentration, at 1.7 ppmv in 1990, is now more than double the pre-industrial value of about 0.8 ppmv. Human activities such as rice cultivation, domestic ruminant rearing, biomass burning, coal mining, and natural gas venting have increased the input of $CH_4$ into the atmosphere. The IPCC (1990, 1992) global estimates are given for the years 1900, 1960, 1970, 1980 and 1990, see Table 51.

Trends '93 provides historical and modern $CH_4$ records, including 8 ice core drilling sites, global monthly averages derived from 2 different globally distributed monitoring networks, and monthly atmospheric $CH_4$ concentration records from 51 globally distributed sites, which include 38 land-based and 14 shipboard sites (see for exact citations pages 225-371, of Boden et al., 1994).

## 6.3    Concentration of N₂O

Spatial resolution:    global
Temporal resolution:    1900 - 1990, with irregular intervals
Quality:    1

The atmospheric nitrous oxide concentration in 1990, at 310 ppbv, is about 35% greater than the pre-industrial figure of about 228 ppbv. $N_2O$ is emitted through biomass burning and combustion of fossil fuels (cars), but also through agricultural practices which use artificial made fertilizers. The IPCC (1990, 1992) global estimates are given for the years 1900, 1960, 1970, 1980 and 1990, see Table 51.

Ice core measurements are presented in Leuenberger and Siegenthaler (1994) for the Byrd Station in Antarctica (period 43,000 - 680 years BP) and for Dye 3 station in Greenland (period 1781 - 1947). Khalil and Rasmussen (1994) presents data for Byrd Station Crête and Camp Century in Greenland (period 390 - 160 years BP) and for Byrd Station in Antarctica (period 3100 - 150 years BP). An estimate for Law Dome in Antarctica is presented by Etheridge et al. (1994), for the period 1520 - 1966.

Atmospheric nitrous oxide mixing ratios are presented by Prinn et al. (1994), who provides data for 6 different site locations in the world. The location and the period of records for the sites are Adrigole, Ireland (1978-1983); Ragged Point, Barbados (1978-1991); Cape Grim, Tasmania (1978-1991), Cape Meares, Oregon (1980-1989), Mace Head, Ireland (1987-1991), and Samoa (1978-1989). Furthermore, these stations measured not only $N_2O$, but also CFC-11 and CFC-12 atmospheric mixing ratios, for which the same periods apply.

## 6.4    Concentration of $SO_x$

Spatial resolution:    global
Temporal resolution:    early 1980s
Quality:    2

Sulfur is emitted by anthropogenic activities through fossil fuel combustion and biomass burning, especially during this century in the developed regions of the world. Also natural processes like vulcanic eruptions, oceanic DMS (dimethylsulphide) production, and soil and plant activities are significant sources of $H_2S$ and $SO_x$. The current industrial $SO_2$ emission is about 50-80 Tg S per year, roughly half of which is oxidised to aerosol sulfate before being deposited (Langner and Rodhe, 1991). Approximately 90% of the emissions are from industrial regions in the Northern Hemisphere, and little $SO_2$ or sulfate aerosol is transported to the Southern Hemisphere.

## 6.5    Concentration of CO

Spatial resolution:    global
Temporal resolution:   late 1980s
Quality:               2

Carbon monoxide has a great spatial and temporal variability because of its short lifetime (2-3 months). This variability combined with an inadequate monitoring network resulted in a poor historical long-term trend of CO concentrations. The IPCC estimates that the concentration of CO is (1) about a factor two greater in the Northern than in the Southern Hemisphere where the annual average is about 50 - 60 ppbv, and (2) increases with latitude in the Northern Hemisphere, (3) exhibits strong seasonal variability (IPCC; 1990, 1992).

## 6.6    Concentration of CFC-11, CFC-12

Spatial resolution:    global
Temporal resolution:   1900 - 1990, with irregular intervals
Quality:               1

Most halocarbons are exclusively of industrial origin. They are used as aerosol propellants, refrigerants, foam blowing agents, solvents, and fire retardants (see also chapter 2.2.12). The concentration of CFC-11 and CFC-12 has been increasing from zero in 1900 to 0.48 resp. 0.28 ppbv in 1990. The IPCC gives global estimates for the years 1960, 1970, 1980 and 1990 (IPCC; 1990, 1992), see Table 51. For atmospheric mixing ratios see also chapter 6.3

## 6.7    Concentration of $O_3$

Spatial resolution:    global
Temporal resolution:   1978 - 1991, with 1 year timesteps
Quality:               2

Data for ozone are available through NASA's TOMS (Total Ozone Mapping Spectrometer) project. Daily gridded ($1.25°$ latitude by $1°$ longitude) ozone data are provided for the period 1978 to 1991 by Guimararaes and McPeters (1991), Guimararaes and McPeters (1991), Larko and McPeters (1992), Krueger et al. (1991).

## 6.8    Cloud cover

Spatial resolution:    global
Temporal resolution:   1970s
Quality:               2

Due to time constraints this subject is not (yet) included in this study. Therefore only a few possible sources are listed: USAF/USDC (1971), Atkinson and Sadler (1970), Sadler (1975), Sadler et al. (1976), Shideler and Sadler (1979).

## 6.9    Ocean temperature

Spatial resolution:    5° x 5° longitude/latitude
Temporal resolution:   1982
Quality:               1

Ocean temperatures are presented in the Climatological Atlas of the world Ocean (Levitus, 1982). These data are grid based (5° x 5° longitude/latitude) and consist of annual mean temperature on several depths, varying in depth from surface to 5500 meters.

## 6.10    Oceanic $^{14}C$ series

Spatial resolution:    global
Temporal resolution:   early 1980s
Quality:               2

Due to time constraints this subject is not (yet) included in this study. Therefore only a possible source is listed: Broecker et al. (1985) provides distribution patterns of radiocarbon bomb experiments (GEOSECS program).

## 6.11    Sea-ice coverage

Spatial resolution:    1 x 1° longitude/latitude
Temporal resolution:   1901-1990
Quality:               1

The National Snow and Ice Data Center (NSIDC) is a data and information resource for snow and ice processes, especially for interactions among snow, ice, atmosphere and ocean. They hold a large library collection of monographs, technical reports and journals, and also archive digital snow and ice data. An interesting source is a 1° x 1° longitude/latitude data base of "Artic Sea Ice, 1901-1956", produced by the Danish Meteorological Institute from shipboard, shore and aerial observations. The same grid is used by another data base, called the "Artic and Southern Ocean Sea Ice Concentration 1953-1990". Other interesting references are Walsh and Johnson (1978), Walsh (1978) and Zwally et al. (1982).

## Acknowledgements

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# APPENDIX

## Table A1. Units and conversion factors

kilo (k) = $10^3$     thousand
mega (M) = $10^6$     million
giga (G) = $10^9$     billion
tera (T) = $10^{12}$    trillion
Peta (P) = $10^{15}$    quadrillion
exa (E) = $10^{18}$     -


ppmv = parts per million by volume ($10^6$)
ppbv = parts per billion by volume ($10^9$)
pptv = parts per trillion by volume ($10^{12}$)


g      gram
J      Joule
ton    metric ton = 1,000 kg
1 ha   10,000 $m^2$
1 $km^2$  100 ha


| | |
|---|---|
| 1 metric ton of oil equivalent | 41.868 GJ |
| 1 metric ton of coal equivalent | 29.30 GJ |
| 1 metric ton of coal equivalent | 0.7 metric ton of oil equivalent |
| 1 kWh | 3.6 MJ |
| 1 cal | 4.2 J |

Table A2. Conversion of United Nations ISO-Numeric country code into IMAGE 2 regions.

| ISO-NUM | IMAGE Region | IMAGE Country | ISO-2 | ISO-3 | Name |
|---|---|---|---|---|---|
| 4 | 8 | 1 | AF | AFG | AFGHANISTAN |
| 8 | 4 | 2 | AL | ALB | ALBANIA |
| 10 | 0 | 0 | AQ | ATA | ANTARCTICA |
| 12 | 12 | 3 | DZ | DZA | ALGERIA |
| 16 | 5 | 0 | AS | ASM | AMERICAN SAMOA |
| 20 | 4 | 0 | AD | AND | ANDORRA |
| 24 | 4 | 4 | AO | AGO | ANGOLA |
| 28 | 3 | 0 | AG | ATG | ANTIGUA AND BARBUDA |
| 32 | 3 | 5 | AR | ARG | ARGENTINA |
| 36 | 12 | 6 | AU | AUS | AUSTRALIA |
| 40 | 4 | 7 | AT | AUT | AUSTRIA |
| 44 | 3 | 0 | BS | BHS | BAHAMAS |
| 48 | 8 | 8 | BH | BHR | BAHRAIN |
| 50 | 9 | 0 | BD | BGD | BANGLADESH |
| 52 | 3 | 0 | BB | BRB | BARBADOS |
| 56 | 4 | 9 | BE | BEL | BELGIUM |
| 60 | 3 | 0 | BM | BMU | BERMUDA |
| 64 | 12 | 0 | BT | BTN | BHUTAN |
| 68 | 5 | 13 | BO | BOL | BOLIVIA |
| 72 | 4 | 14 | BW | BWA | BOTSWANA |
| 74 | 0 | 0 | BV | BVT | BOUVET ISLAND |
| 76 | 5 | 15 | BR | BRA | BRAZIL |
| 84 | 3 | 10 | BZ | BLZ | BELIZE |
| 86 | 9 | 0 | IO | IOT | BRIT.INDIAN OCEAN TERRIT |
| 90 | 12 | 0 | SB | SLB | SOLOMON ISLANDS |
| 92 | 3 | 0 | VG | VGB | VIRGIN ISLANDS (BRITISH) |
| 96 | 11 | 16 | BN | BRN | BRUNEI DARUSSALAM |
| 100 | 6 | 17 | BG | BGR | BULGARIA |
| 104 | 9 | 18 | BU | BUR | MYANMAR |
| 108 | 4 | 19 | BI | BDI | BURUNDI |
| 112 | 7 | 0 | BY | BYS | BYELORUSSIAN SSR |
| 116 | 10 | 70 | KH | KHM | KAMPUCHEA, DEMOCRATIC |
| 120 | 4 | 20 | CM | CMR | CAMEROON |
| 124 | 1 | 21 | CA | CAN | CANADA |
| 132 | 3 | 0 | CV | CPV | CAPE VERDE |
| 136 | 3 | 0 | KY | CYM | CAYMAN ISLANDS |
| 140 | 4 | 22 | CF | CAF | CENTRAL AFRICAN REPUBLIC |
| 144 | 9 | 118 | LK | LKA | SRI LANKA |
| 148 | 4 | 23 | TD | TCD | CHAD |
| 152 | 5 | 24 | CL | CHL | CHILE |
| 156 | 10 | 25 | CN | CHN | CHINA |
| 158 | 10 | 0 | TW | TWN | TAIWAN, PROV. OF CHINA |
| 162 | 12 | 0 | CX | CXR | CHRISTMAS ISLAND |
| 166 | 12 | 0 | CC | CCK | COCOS (KEELING) ISLANDS |
| 170 | 5 | 26 | CO | COL | COLOMBIA |
| 174 | 4 | 0 | KM | COM | COMOROS |
| 178 | 4 | 27 | CG | COG | CONGO |
| 180 | 4 | 143 | ZR | ZAR | ZAIRE |
| 184 | 12 | 0 | CK | COK | COOK ISLANDS |
| 188 | 3 | 28 | CR | CRI | COSTA RICA |
| 192 | 3 | 29 | CU | CUB | CUBA |
| 196 | 9 | 30 | CY | CYP | CYPRUS |
| 200 | 6 | 31 | CS | CSK | CZECHOSLOVAKIA |
| 204 | 4 | 0 | BJ | BEN | BENIN |
| 208 | 5 | 32 | DK | DNK | DENMARK |
| 212 | 3 | 0 | DM | DMA | DOMINICA |
| 214 | 3 | 34 | DO | DOM | DOMINICAN REPUBLIC |
| 218 | 5 | 35 | EC | ECU | ECUADOR |
| 222 | 3 | 37 | SV | SLV | EL SALVADOR |
| 226 | 4 | 38 | GQ | GNQ | EQUATORIAL GUINEA |
| 230 | 4 | 39 | ET | ETH | ETHIOPIA |
| 234 | 0 | 0 | FO | FRO | FAROE ISLANDS |
| 238 | 5 | 0 | FK | FLK | FALKLAND IS. (MALVINAS) |
| 242 | 12 | 41 | FJ | FJI | FIJI |
| 246 | 5 | 42 | FI | FIN | FINLAND |
| 250 | 5 | 43 | FR | FRA | FRANCE |
| 254 | 5 | 44 | GF | GUF | FRENCH GUIANA |
| 258 | 0 | 0 | PF | PYF | FRENCH POLYNESIA |
| 260 | 0 | 0 | TF | ATF | FRENCH SOUTHERN TERRIT. |
| 262 | 4 | 0 | DJ | DJI | DJIBOUTI |
| 266 | 4 | 33 | GA | GAB | GABON |
| 270 | 4 | 45 | GM | GMB | GAMBIA |
| 278 | 6 | 46 | DD | DDR | GERMAN DEMOCRATIC REP. |
| 279 | 5 | 139 | DE | DEU | GERMANY |
| 280 | 5 | 0 | DE | DEU | GERMANY, FED. REP. OF |
| 288 | 4 | 47 | GH | GHA | GHANA |
| 292 | 5 | 0 | GI | GIB | GIBRALTAR |
| 296 | 12 | 0 | KI | KIR | KIRIBATI |
| 300 | 6 | 49 | GR | GRC | GREECE |
| 304 | 5 | 0 | GL | GRL | GREENLAND |
| 308 | 3 | 0 | GD | GRD | GRENADA |
| 312 | 3 | 0 | GP | GLP | GUADELOUPE |
| 316 | 12 | 0 | GU | GUM | GUAM |
| 320 | 3 | 51 | GT | GTM | GUATEMALA |
| 324 | 4 | 52 | GN | GIN | GUINEA |
| 328 | 3 | 54 | GY | GUY | GUYANA |
| 332 | 3 | 55 | HT | HTI | HAITI |
| 334 | 12 | 0 | HM | HMD | HEARD AND MCDONALD IS. |
| 336 | 5 | 0 | VA | VAT | VATICAN CITY STATE |
| 340 | 3 | 56 | HN | HND | HONDURAS |
| 344 | 10 | 0 | HK | HKG | HONG KONG |
| 348 | 6 | 57 | HU | HUN | HUNGARY |
| 352 | 5 | 58 | IS | ISL | ICELAND |
| 356 | 9 | 59 | IN | IND | INDIA |
| 360 | 11 | 60 | ID | IDN | INDONESIA |
| 364 | 8 | 61 | IR | IRN | IRAN, ISLAMIC REP. OF |
| 368 | 8 | 62 | IQ | IRQ | IRAQ |
| 372 | 5 | 63 | IE | IRL | IRELAND |
| 376 | 8 | 64 | IL | ISR | ISRAEL |
| 380 | 6 | 65 | IT | ITA | ITALY |
| 384 | 4 | 66 | CI | CIV | COTE D'IVOIRE |
| 388 | 3 | 67 | JM | JAM | JAMAICA |
| 392 | 13 | 68 | JP | JPN | JAPAN |
| 400 | 8 | 69 | JO | JOR | JORDAN |
| 404 | 4 | 71 | KE | KEN | KENYA |
| 408 | 10 | 96 | KP | PRK | KOREA, DEM. PEOPLES REP |
| 410 | 11 | 115 | KR | KOR | KOREA, REPUBLIC OF |
| 414 | 8 | 72 | KW | KWT | KUWAIT |
| 418 | 10 | 73 | LA | LAO | LAO PEOPLE'S DEM. REP. |
| 422 | 8 | 74 | LB | LBN | LEBANON |
| 426 | 4 | 75 | LS | LSO | LESOTHO |
| 430 | 4 | 76 | LR | LBR | LIBERIA |
| 434 | 8 | 77 | LY | LBY | LIBYAN ARAB JAMAHIRIYA |
| 438 | 5 | 0 | LI | LIE | LIECHTENSTEIN |
| 442 | 5 | 0 | LU | LUX | LUXEMBOURG |
| 446 | 10 | 0 | MO | MAC | MACAU |
| 450 | 4 | 78 | MG | MDG | MADAGASCAR |
| 454 | 4 | 81 | MW | MWI | MALAWI |
| 458 | 11 | 79 | MY | MYS | MALAYSIA |
| 462 | 9 | 0 | MV | MDV | MALDIVES |
| 466 | 4 | 80 | ML | MLI | MALI |
| 470 | 5 | 0 | MT | MLT | MALTA |
| 474 | 3 | 0 | MQ | MTQ | MARTINIQUE |
| 478 | 4 | 82 | MR | MRT | MAURETANIA |
| 480 | 4 | 0 | MU | MUS | MAURITIUS |
| 484 | 3 | 83 | MX | MEX | MEXICO |
| 492 | 5 | 0 | MC | MCO | MONACO |
| 496 | 10 | 84 | MN | MNG | MONGOLIA |
| 500 | 3 | 0 | MS | MSR | MONTSERRAT |
| 504 | 12 | 85 | MA | MAR | MOROCCO |
| 508 | 4 | 86 | MZ | MOZ | MOZAMBIQUE |
| 512 | 8 | 98 | OM | OMN | OMAN |
| 516 | 4 | 87 | NA | NAM | NAMIBIA |
| 520 | 12 | 0 | NR | NRU | NAURU |
| 524 | 9 | 88 | NP | NPL | NEPAL |
| 528 | 5 | 89 | NL | NLD | NETHERLANDS |
| 532 | 3 | 0 | AN | ANT | NETHERLANDS ANTILLES |
| 533 | 3 | 0 | AW | ABW | ARUBA |
| 536 | 8 | 0 | NT | NTZ | NEUTRAL ZONE |
| 540 | 12 | 90 | NC | NCL | NEW CALEDONIA |
| 548 | 12 | 92 | VU | VUT | VANUATU |
| 554 | 12 | 93 | NZ | NZL | NEW ZEALAND |
| 558 | 3 | 94 | NI | NIC | NICARAGUA |
| 562 | 4 | 95 | NE | NER | NIGER |
| 566 | 4 | 96 | NG | NGA | NIGERIA |
| 570 | 12 | 0 | NU | NIU | NIUE |
| 574 | 5 | 97 | NF | NFK | NORFOLK ISLAND |
| 578 | 5 | 0 | NO | NOR | NORWAY |
| 580 | 12 | 0 | MP | MNP | NORTHERN MARIANA ISLANDS |
| 581 | 12 | 2 | UM | UMI | US MINOR OUTLYING IS. |
| 583 | 12 | 0 | FM | FSM | MICRONESIA |
| 584 | 12 | 0 | MH | MHL | MARSHALL ISLANDS |
| 585 | 12 | 0 | PW | PLW | PALAU |
| 586 | 9 | 99 | PK | PAK | PAKISTAN |
| 590 | 3 | 100 | PA | PAN | PANAMA |
| 598 | 12 | 91 | PG | PNG | PAPUA NEW GUINEA |
| 600 | 5 | 101 | PY | PRY | PARAGUAY |
| 604 | 5 | 102 | PE | PER | PERU |
| 608 | 11 | 103 | PH | PHL | PHILIPPINES |
| 612 | 12 | 0 | PN | PCN | PITCAIRN |
| 616 | 6 | 104 | PL | POL | POLAND |
| 620 | 5 | 105 | PT | PRT | PORTUGAL |
| 624 | 4 | 53 | GW | GNB | GUINEA-BISSAU |
| 628 | 11 | 0 | TP | TMP | EAST TIMOR |
| 630 | 3 | 106 | PR | PRI | PUERTO RICO |
| 634 | 8 | 107 | QA | QAT | QATAR |
| 638 | 4 | 0 | RE | REU | REUNION |
| 642 | 6 | 108 | RO | ROM | ROMANIA |
| 646 | 4 | 109 | RW | RWA | RWANDA |
| 654 | 5 | 0 | SH | SHN | ST. HELENA |
| 659 | 3 | 0 | KN | KNA | ST. KITTS AND NEVIS |
| 660 | 3 | 0 | AI | AIA | ANGUILLA |
| 662 | 3 | 112 | LC | LCA | SAINT LUCIA |
| 666 | 5 | 0 | PM | SPM | ST. PIERRE AND MIQUELON |
| 670 | 3 | 0 | VC | VCT | SAINT VINCENT/GRENADINES |
| 674 | 5 | 0 | SM | SMR | SAN MARINO |
| 678 | 4 | 0 | ST | STP | SAO TOME AND PRINCIPE |
| 682 | 8 | 110 | SA | SAU | SAUDI ARABIA |
| 686 | 4 | 111 | SN | SEN | SENEGAL |
| 690 | 4 | 0 | SC | SYC | SEYCHELLES |
| 694 | 4 | 112 | SL | SLE | SIERRA LEONE |
| 702 | 11 | 0 | SG | SGP | SINGAPORE |
| 704 | 10 | 138 | VN | VNM | VIETNAM |
| 706 | 4 | 113 | SO | SOM | SOMALIA |
| 710 | 4 | 114 | ZA | ZAF | SOUTH AFRICA |
| 716 | 4 | 145 | ZW | ZWE | ZIMBABWE |
| 720 | 8 | 0 | YD | YMD | YEMEN, DEMOCRATIC |
| 724 | 5 | 117 | ES | ESP | SPAIN |
| 732 | 4 | 140 | EH | ESH | WESTERN SAHARA |
| 736 | 4 | 119 | SD | SDN | SUDAN |
| 740 | 5 | 120 | SR | SUR | SURINAME |
| 744 | 5 | 0 | SJ | SJM | SVALBARD AND JAN MAYEN |
| 748 | 4 | 121 | SZ | SWZ | SWAZILAND |
| 752 | 5 | 122 | SE | SWE | SWEDEN |
| 756 | 5 | 123 | CH | CHE | SWITZERLAND |
| 760 | 8 | 124 | SY | SYR | SYRIAN ARAB REPUBLIC |
| 764 | 11 | 126 | TH | THA | THAILAND |
| 768 | 4 | 0 | TG | TGO | TOGO |
| 772 | 12 | 0 | TK | TKL | TOKELAU |
| 776 | 12 | 0 | TO | TON | TONGA |
| 780 | 3 | 129 | TT | TTO | TRINIDAD AND TOBAGO |
| 784 | 8 | 133 | AE | ARE | UNITED ARAB EMIRATES |
| 788 | 12 | 130 | TN | TUN | TUNESIA |
| 792 | 8 | 131 | TR | TUR | TURKEY |
| 796 | 3 | 0 | TC | TCA | TURKS AND CAICOS ISLANDS |
| 798 | 12 | 0 | TV | TUV | TUVALU |
| 800 | 4 | 132 | UG | UGA | UGANDA |
| 804 | 7 | 0 | UA | UKR | UKRAINIAN SSR |
| 810 | 7 | 0 | SU | SUN | USSR |
| 818 | 4 | 36 | EG | EGY | EGYPT |
| 826 | 5 | 48 | GB | GBR | UNITED KINGDOM |
| 834 | 4 | 125 | TZ | TZA | TANZANIA, UNITED REP. OF |
| 840 | 1 | 134 | US | USA | UNITED STATES OF AMERICA |
| 850 | 3 | 0 | VI | VIR | VIRGIN ISLANDS (US) |
| 854 | 4 | 135 | BF | BFA | BURKINA FASO |
| 858 | 5 | 136 | UY | URY | URUGUAY |
| 862 | 5 | 137 | VE | VEN | VENEZUELA |
| 876 | 12 | 0 | WF | WLF | WALLIS AND FUTUNA IS |
| 882 | 12 | 0 | WS | WSM | SAMOA |
| 886 | 8 | 141 | YE | YEM | YEMEN |
| 890 | 6 | 142 | YU | YUG | YUGOSLAVIA |
| 894 | 4 | 144 | ZM | ZMB | ZAMBIA |

# Table 3. Aggregation of countries into IMAGE regions.

| Nr | Region | Countries |
|---|---|---|
| 1 | Canada | Canada |
| 2 | USA | USA, Bermuda, St. Pierre and Miquelon, US Minor Outlying Islands |
| 3 | Latin America | Anquilla, Argentina, Aruba, Bahamas, Barbados, Belize, Bolivia, Bouvet Islands, Brazil, Cayman Islands, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Falkland Islands, French Guiana, Grenada, Guadeloupe, Guatemala, Guyana, Haiti, Honduras, Jamaica, Martinique, Montserrat, Netherlands Antilles, Mexico, Nicaragua, Paraguay, Panama, Peru, Puerto Rico, St. Lucia, St. Vincent/Grenadines, St. Kitss and St. Nevis, Surinam, Trinidad and Tobago, Turks and Caicos Islands, Uruguay, Venezuela, Virgin Islands (UK), Virgin Islands (USA). |
| 4 | Africa | Algeria, Angola, Benin, Botswana, British Indian Ocean Territory, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Cote d'Ivoire, Djibouti, Egypt, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libyan Arab Jamhiriya, Madagascar, Malawi, Mali, Morocco, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Reunion, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, St. Helena, Sudan, Swaziland, Tanzania, Togo, Tunesia, Uganda, Western Sahara, Zaire, Zambia, Zimbabwe |
| 5 | OECD Europe | Andorra, Austria, Belgium, Denmark, Faroe Islands, Finland, France, Germany, Gibraltar, Greece, Greenland, Iceland, Ireland, Italy, Liechtenstein, Luxembourg, Malta, Monaco, Netherlands (excl. Antilles), Norway, Portugal, Spain, San Marino, Svalbard and Jan Mayen, Sweden, Switzerland, United Kingdom, Vatican City |
| 6 | Eastern Europe | Albania, Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia, former Yugoslavia |
| 7 | CIS | former USSR |
| 8 | Middle East | Afghanistan, Bahrain, Cyprus, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Neutral Zone, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, Turkey, United Arab Emirates, Yemen, Yemen (democratic) |
| 9 | India + SA | Bangladesh, Bhutan, India, Maldives, Myanmar, Nepal, Pakistan, Sikkim, Sri Lanka |
| 10 | China + CPA | China, Hong Kong, Kampuchea, Korea (Dem. People's Republic), Laos, Macao, Mongolia, Taiwan, Vietnam |
| 11 | East Asia | Brunei Darussalam, Indonesia, Malaysia, Korea (Republic of), Papua New Guinea, Philippines, Singapore, Thailand, East Timor |
| 12 | Oceania | Australia, New Zealand, Polynesia, Micronesia, Melanesia |
| 13 | Japan | Japan |

**A4. National population estimates and regional summary for 1890 - 1990 (In thousands).**

| ISO Numeric | IMAGE Region | IMAGE Country | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 8 | 1 | 3,563 | 3,617 | 3,671 | 4,014 | 4,388 | 4,798 | 5,245 | 5,735 | 6,270 | 6,855 | 7,494 | 8,194 | 8,958 | 9,734 | 10,775 | 12,071 | 13,623 | 15,378 | 16,063 | 14,519 | 16,556 |
| 8 | 5 | 2 | 667 | 702 | 739 | 777 | 818 | 861 | 906 | 953 | 1,003 | 1,055 | 1,111 | 1,169 | 1,230 | 1,389 | 1,611 | 1,870 | 2,138 | 2,424 | 2,671 | 2,962 | 3,250 |
| 10 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 4 | 4 | 4,073 | 4,341 | 4,627 | 4,931 | 5,256 | 5,602 | 5,971 | 6,364 | 6,783 | 7,229 | 7,705 | 8,212 | 8,753 | 9,715 | 10,800 | 11,923 | 13,746 | 16,018 | 18,740 | 21,788 | 24,960 |
| 16 | 12 | 5 | 7 | 7 | 8 | 9 | 9 | 10 | 11 | 12 | 13 | 15 | 16 | 17 | 19 | 20 | 20 | 24 | 27 | 30 | 32 | 39 | 47 |
| 20 | 5 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | 4 | 7 | 4,934 | 4,861 | 4,790 | 4,720 | 4,650 | 4,582 | 4,515 | 4,448 | 4,383 | 4,319 | 4,255 | 4,193 | 4,131 | 4,437 | 4,816 | 5,180 | 5,588 | 6,110 | 6,993 | 7,976 | 9,194 |
| 28 | 3 | 8 | 18 | 19 | 21 | 23 | 24 | 26 | 29 | 31 | 33 | 36 | 39 | 42 | 46 | 52 | 55 | 59 | 66 | 63 | 61 | 63 | 65 |
| 32 | 3 | 9 | 3,461 | 3,955 | 4,519 | 5,164 | 5,901 | 6,743 | 7,705 | 8,804 | 10,060 | 11,495 | 13,135 | 15,009 | 17,150 | 18,928 | 20,616 | 22,283 | 23,962 | 26,052 | 28,237 | 30,331 | 32,322 |
| 36 | 12 | 10 | 3,123 | 3,385 | 3,670 | 3,978 | 4,312 | 4,674 | 5,067 | 5,492 | 5,953 | 6,453 | 6,995 | 7,582 | 8,219 | 9,240 | 10,315 | 11,387 | 12,552 | 13,627 | 14,695 | 15,758 | 17,086 |
| 40 | 5 | 11 | 6,509 | 6,543 | 6,578 | 6,613 | 6,648 | 6,683 | 6,719 | 6,754 | 6,790 | 6,826 | 6,862 | 6,898 | 6,935 | 6,947 | 7,048 | 7,271 | 7,467 | 7,579 | 7,549 | 7,558 | 7,712 |
| 44 | 3 | 12 | 31 | 33 | 36 | 39 | 42 | 45 | 49 | 53 | 58 | 62 | 67 | 73 | 79 | 89 | 110 | 136 | 170 | 186 | 210 | 233 | 255 |
| 48 | 8 | 13 | 46 | 47 | 48 | 52 | 57 | 62 | 68 | 74 | 81 | 89 | 97 | 106 | 116 | 134 | 156 | 191 | 220 | 272 | 347 | 429 | 503 |
| 50 | 9 | 14 | 26,971 | 27,973 | 29,012 | 30,090 | 31,208 | 32,367 | 33,570 | 34,817 | 36,110 | 37,452 | 38,843 | 40,286 | 41,783 | 45,486 | 51,419 | 58,312 | 66,671 | 76,582 | 88,221 | 100,862 | 113,684 |
| 52 | 3 | 15 | 84 | 89 | 95 | 103 | 112 | 121 | 131 | 142 | 154 | 166 | 180 | 195 | 211 | 227 | 231 | 235 | 239 | 246 | 249 | 253 | 257 |
| 56 | 5 | 16 | 6,280 | 6,449 | 6,623 | 6,801 | 6,984 | 7,172 | 7,366 | 7,564 | 7,768 | 7,977 | 8,192 | 8,412 | 8,639 | 8,868 | 9,153 | 9,464 | 9,656 | 9,796 | 9,852 | 9,858 | 9,967 |
| 60 | 3 | 17 | 15 | 17 | 18 | 19 | 21 | 22 | 24 | 26 | 28 | 31 | 33 | 36 | 39 | 42 | 45 | 50 | 53 | 53 | 54 | 56 | 61 |
| 64 | 9 | 18 | 292 | 296 | 301 | 329 | 360 | 393 | 430 | 470 | 514 | 562 | 614 | 671 | 734 | 789 | 855 | 932 | 1,020 | 1,123 | 1,242 | 1,379 | 1,539 |
| 68 | 3 | 19 | 1,224 | 1,310 | 1,402 | 1,501 | 1,606 | 1,719 | 1,840 | 1,969 | 2,108 | 2,256 | 2,415 | 2,584 | 2,766 | 3,072 | 3,428 | 3,841 | 4,325 | 4,894 | 5,581 | 6,342 | 7,171 |
| 72 | 4 | 20 | 85 | 96 | 109 | 124 | 141 | 160 | 182 | 206 | 234 | 266 | 302 | 343 | 389 | 433 | 481 | 549 | 623 | 755 | 902 | 1,068 | 1,238 |
| 74 | 3 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 76 | 3 | 22 | 14,464 | 16,128 | 17,984 | 20,053 | 22,361 | 24,934 | 27,803 | 31,002 | 34,570 | 38,547 | 42,983 | 47,929 | 53,444 | 62,567 | 72,594 | 84,292 | 95,847 | 108,032 | 121,286 | 135,564 | 149,042 |
| 84 | 3 | 23 | 31 | 33 | 35 | 37 | 40 | 42 | 45 | 48 | 52 | 55 | 59 | 63 | 67 | 78 | 91 | 108 | 120 | 129 | 146 | 166 | 189 |
| 86 | 9 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 90 | 12 | 25 | 32 | 34 | 37 | 40 | 44 | 48 | 53 | 58 | 63 | 69 | 75 | 82 | 90 | 102 | 118 | 137 | 161 | 190 | 227 | 270 | 320 |
| 92 | 3 | 26 | 2 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 6 | 9 | 10 | 11 | 12 | 14 | 16 |
| 96 | 11 | 27 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 29 | 32 | 36 | 39 | 43 | 48 | 63 | 82 | 102 | 130 | 161 | 193 | 226 | 257 |
| 100 | 6 | 28 | 3,177 | 3,403 | 3,646 | 3,905 | 4,183 | 4,481 | 4,800 | 5,141 | 5,507 | 5,899 | 6,319 | 6,769 | 7,251 | 7,499 | 7,867 | 8,201 | 8,490 | 8,722 | 8,862 | 8,960 | 8,991 |
| 104 | 9 | 29 | 3,738 | 4,258 | 4,850 | 5,525 | 6,293 | 7,168 | 8,165 | 9,300 | 10,593 | 12,066 | 13,744 | 15,655 | 17,832 | 19,561 | 21,746 | 24,167 | 27,102 | 30,441 | 33,821 | 37,544 | 41,825 |
| 108 | 4 | 30 | 1,435 | 1,464 | 1,493 | 1,570 | 1,650 | 1,734 | 1,822 | 1,915 | 2,013 | 2,115 | 2,223 | 2,337 | 2,456 | 2,687 | 2,941 | 3,213 | 3,514 | 3,680 | 4,130 | 4,750 | 5,492 |
| 112 | 7 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 116 | 10 | 32 | 1,275 | 1,413 | 1,565 | 1,733 | 1,919 | 2,126 | 2,354 | 2,608 | 2,888 | 3,199 | 3,543 | 3,924 | 4,346 | 4,840 | 5,433 | 6,141 | 6,938 | 7,098 | 6,498 | 7,327 | 8,336 |
| 120 | 4 | 33 | 2,609 | 2,662 | 2,716 | 2,854 | 3,000 | 3,153 | 3,313 | 3,482 | 3,660 | 3,847 | 4,043 | 4,249 | 4,466 | 4,843 | 5,296 | 5,881 | 6,612 | 7,526 | 8,655 | 9,969 | 11,524 |
| 124 | 1 | 34 | 4,748 | 5,188 | 5,668 | 6,193 | 6,766 | 7,392 | 8,076 | 8,824 | 9,641 | 10,533 | 11,508 | 12,573 | 13,737 | 15,736 | 17,909 | 19,678 | 21,324 | 22,727 | 24,070 | 25,181 | 26,639 |
| 132 | 3 | 35 | 58 | 62 | 66 | 71 | 77 | 84 | 91 | 98 | 106 | 115 | 125 | 135 | 146 | 169 | 196 | 229 | 267 | 278 | 289 | 324 | 363 |
| 136 | 12 | 36 | 2 | 2 | 1 | 3 | 3 | 3 | 0 | 2 | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 10 | 3 | 17 | 21 | 27 |
| 140 | 4 | 37 | 471 | 513 | 559 | 608 | 663 | 722 | 786 | 857 | 933 | 1,017 | 1,107 | 1,206 | 1,314 | 1,414 | 1,534 | 1,677 | 1,849 | 2,057 | 2,313 | 2,631 | 3,008 |
| 144 | 9 | 38 | 2,961 | 3,205 | 3,470 | 3,757 | 4,068 | 4,404 | 4,768 | 5,162 | 5,588 | 6,050 | 6,550 | 7,092 | 7,678 | 8,723 | 9,889 | 11,164 | 12,514 | 13,603 | 14,819 | 16,110 | 17,217 |
| 148 | 4 | 39 | 513 | 588 | 675 | 774 | 888 | 1,018 | 1,168 | 1,339 | 1,536 | 1,762 | 2,021 | 2,317 | 2,658 | 2,838 | 3,064 | 3,334 | 3,652 | 4,030 | 4,477 | 5,018 | 5,553 |
| 152 | 4 | 40 | 2,613 | 2,804 | 3,008 | 3,228 | 3,463 | 3,716 | 3,987 | 4,278 | 4,590 | 4,924 | 5,283 | 5,669 | 6,082 | 6,776 | 7,614 | 8,579 | 9,504 | 10,350 | 11,145 | 12,122 | 13,173 |
| 156 | 10 | 41 | 491,045 | 495,502 | 500,000 | 504,539 | 509,118 | 513,740 | 518,403 | 523,109 | 527,857 | 532,648 | 537,483 | 542,362 | 547,284 | 600,092 | 646,880 | 716,748 | 816,170 | 911,268 | 978,492 | 1,051,438 | 1,133,239 |
| 158 | 10 | 42 | 2,974 | 3,018 | 3,064 | 3,350 | 3,662 | 4,004 | 4,378 | 4,786 | 5,233 | 5,721 | 6,254 | 6,838 | 7,476 | 8,913 | 10,612 | 12,442 | 14,505 | 16,001 | 17,642 | 19,135 | 20,230 |
| 162 | 12 | 43 | 0 | 0 | 1 | 3 | 3 | 3 | 0 | 2 | 2 | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 |
| 166 | 12 | 44 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 170 | 3 | 45 | 3,212 | 3,583 | 3,998 | 4,460 | 4,976 | 5,552 | 6,194 | 6,911 | 7,710 | 8,602 | 9,597 | 10,707 | 11,946 | 13,759 | 15,939 | 18,506 | 21,360 | 23,776 | 26,525 | 29,481 | 32,300 |
| 174 | 4 | 46 | 101 | 103 | 105 | 111 | 116 | 122 | 128 | 135 | 142 | 149 | 157 | 165 | 173 | 194 | 215 | 240 | 275 | 316 | 383 | 455 | 543 |
| 178 | 4 | 47 | 189 | 213 | 240 | 271 | 306 | 346 | 390 | 441 | 498 | 562 | 634 | 716 | 808 | 889 | 988 | 1,111 | 1,263 | 1,447 | 1,669 | 1,922 | 2,229 |
| 180 | 4 | 48 | 3,301 | 3,680 | 4,103 | 4,575 | 5,101 | 5,688 | 6,341 | 7,071 | 7,884 | 8,790 | 9,801 | 10,928 | 12,184 | 13,604 | 15,333 | 17,558 | 20,270 | 23,251 | 27,009 | 31,667 | 37,391 |
| 184 | 12 | 49 | 5 | 6 | 6 | 7 | 7 | 8 | 9 | 10 | 10 | 11 | 13 | 14 | 15 | 16 | 18 | 19 | 21 | 19 | 18 | 18 | 17 |
| 188 | 3 | 50 | 233 | 259 | 289 | 323 | 360 | 401 | 448 | 499 | 557 | 621 | 693 | 773 | 862 | 1,025 | 1,236 | 1,482 | 1,731 | 1,968 | 2,284 | 2,642 | 3,035 |
| 192 | 5 | 51 | 1,734 | 1,919 | 2,124 | 2,350 | 2,601 | 2,878 | 3,185 | 3,525 | 3,901 | 4,317 | 4,777 | 5,286 | 5,850 | 6,417 | 6,985 | 7,754 | 8,520 | 9,306 | 9,679 | 10,078 | 10,608 |
| 196 | 5 | 52 | 206 | 222 | 238 | 256 | 276 | 297 | 319 | 343 | 369 | 397 | 427 | 459 | 494 | 530 | 573 | 582 | 615 | 609 | 629 | 665 | 702 |
| 200 | 6 | 53 | 14,248 | 14,083 | 13,920 | 13,758 | 13,599 | 13,442 | 13,286 | 13,132 | 12,980 | 12,830 | 12,681 | 12,534 | 12,389 | 13,093 | 13,654 | 14,159 | 14,334 | 14,802 | 15,311 | 15,500 | 15,662 |
| 204 | 4 | 54 | 361 | 417 | 482 | 557 | 643 | 743 | 859 | 993 | 1,147 | 1,326 | 1,532 | 1,770 | 2,046 | 2,111 | 2,237 | 2,430 | 2,693 | 3,033 | 3,459 | 3,982 | 4,622 |
| 208 | 5 | 55 | 2,172 | 2,298 | 2,431 | 2,572 | 2,721 | 2,879 | 3,046 | 3,222 | 3,409 | 3,607 | 3,816 | 4,037 | 4,271 | 4,439 | 4,581 | 4,758 | 4,929 | 5,060 | 5,123 | 5,122 | 5,140 |
| 212 | 3 | 56 | 20 | 22 | 23 | 25 | 27 | 29 | 32 | 34 | 37 | 40 | 44 | 47 | 51 | 57 | 60 | 66 | 70 | 72 | 75 | 73 | 72 |
| 214 | 3 | 57 | 340 | 400 | 470 | 552 | 648 | 762 | 895 | 1,051 | 1,235 | 1,451 | 1,705 | 2,003 | 2,353 | 2,737 | 3,231 | 3,806 | 4,423 | 5,048 | 5,697 | 6,416 | 7,170 |
| 218 | 3 | 58 | 1,315 | 1,403 | 1,497 | 1,620 | 1,754 | 1,899 | 2,056 | 2,226 | 2,410 | 2,609 | 2,824 | 3,057 | 3,310 | 3,806 | 4,413 | 5,162 | 6,051 | 7,035 | 8,123 | 9,309 | 10,547 |
| 222 | 3 | 59 | 869 | 929 | 994 | 1,062 | 1,136 | 1,214 | 1,299 | 1,388 | 1,484 | 1,587 | 1,697 | 1,814 | 1,940 | 2,214 | 2,570 | 3,006 | 3,588 | 4,085 | 4,525 | 4,739 | 5,172 |

A4. National population estimates and regional summary for 1890 - 1990 (in thousands), continued.

| ISO Numeric | IMAGE Region | IMAGE Country | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 226 | 4 | 60 | 132 | 135 | 137 | 144 | 152 | 160 | 168 | 176 | 185 | 195 | 205 | 215 | 226 | 238 | 252 | 270 | 291 | 225 | 217 | 312 | 352 |
| 230 | 4 | 61 | 11,435 | 11,666 | 11,901 | 12,508 | 13,146 | 13,817 | 14,522 | 15,262 | 16,041 | 16,859 | 17,719 | 18,623 | 19,573 | 21,680 | 24,191 | 27,150 | 30,623 | 34,309 | 38,749 | 43,083 | 49,831 |
| 234 | 5 | 62 | 24 | 25 | 25 | 26 | 26 | 27 | 28 | 28 | 29 | 29 | 30 | 30 | 31 | 33 | 35 | 37 | 39 | 41 | 43 | 46 | 47 |
| 238 | 3 | 63 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 242 | 12 | 64 | 119 | 128 | 138 | 149 | 160 | 172 | 186 | 200 | 215 | 232 | 249 | 268 | 289 | 336 | 394 | 464 | 520 | 576 | 634 | 699 | 726 |
| 246 | 5 | 65 | 2,380 | 2,486 | 2,596 | 2,711 | 2,832 | 2,958 | 3,089 | 3,226 | 3,369 | 3,519 | 3,675 | 3,839 | 4,009 | 4,235 | 4,430 | 4,564 | 4,606 | 4,711 | 4,780 | 4,902 | 4,982 |
| 250 | 5 | 66 | 38,073 | 38,373 | 38,675 | 38,979 | 39,286 | 39,595 | 39,907 | 40,221 | 40,538 | 40,857 | 41,178 | 41,502 | 41,829 | 43,428 | 45,684 | 48,758 | 50,772 | 52,699 | 53,880 | 55,170 | 56,718 |
| 254 | 3 | 67 | 21 | 22 | 22 | 22 | 23 | 23 | 23 | 23 | 24 | 24 | 24 | 25 | 25 | 29 | 33 | 40 | 49 | 58 | 69 | 83 | 98 |
| 258 | 12 | 68 | 22 | 23 | 25 | 27 | 30 | 33 | 36 | 39 | 43 | 47 | 51 | 56 | 61 | 69 | 79 | 93 | 111 | 130 | 151 | 174 | 198 |
| 260 | 12 | 69 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 262 | 4 | 70 | 35 | 36 | 36 | 38 | 40 | 42 | 45 | 47 | 49 | 52 | 54 | 57 | 60 | 69 | 80 | 114 | 169 | 243 | 304 | 380 | 440 |
| 266 | 4 | 71 | 337 | 347 | 356 | 366 | 377 | 387 | 398 | 409 | 420 | 432 | 444 | 456 | 469 | 477 | 486 | 495 | 504 | 637 | 806 | 985 | 1,159 |
| 270 | 4 | 72 | 13 | 17 | 22 | 29 | 37 | 48 | 63 | 81 | 105 | 136 | 175 | 227 | 294 | 313 | 352 | 404 | 464 | 548 | 641 | 745 | 861 |
| 278 | 5 | 73 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 279 | 5 | 74 | 53,279 | 54,625 | 56,004 | 57,133 | 58,285 | 59,460 | 60,659 | 61,882 | 63,129 | 64,402 | 65,700 | 67,025 | 68,376 | 70,326 | 72,673 | 76,031 | 77,709 | 78,679 | 78,303 | 77,668 | 77,573 |
| 280 | 5 | 75 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 288 | 4 | 76 | 1,444 | 1,599 | 1,770 | 1,960 | 2,170 | 2,403 | 2,660 | 2,945 | 3,261 | 3,610 | 3,997 | 4,426 | 4,900 | 5,759 | 6,774 | 7,828 | 8,612 | 9,831 | 10,736 | 12,839 | 15,020 |
| 292 | 5 | 77 | 18 | 18 | 19 | 19 | 20 | 20 | 20 | 21 | 21 | 22 | 22 | 23 | 23 | 24 | 24 | 25 | 26 | 30 | 30 | 29 | 31 |
| 296 | 12 | 78 | 11 | 12 | 13 | 14 | 16 | 17 | 19 | 20 | 22 | 24 | 27 | 29 | 32 | 36 | 41 | 44 | 49 | 54 | 58 | 64 | 71 |
| 300 | 5 | 79 | 2,141 | 2,379 | 2,643 | 2,936 | 3,262 | 3,623 | 4,025 | 4,472 | 4,968 | 5,519 | 6,131 | 6,811 | 7,566 | 7,966 | 8,327 | 8,551 | 8,793 | 9,047 | 9,643 | 9,934 | 10,123 |
| 304 | 5 | 80 | 18 | 18 | 19 | 19 | 20 | 20 | 20 | 21 | 21 | 22 | 22 | 23 | 23 | 27 | 33 | 40 | 46 | 50 | 50 | 53 | 56 |
| 308 | 3 | 81 | 30 | 32 | 34 | 37 | 40 | 44 | 47 | 51 | 55 | 60 | 65 | 70 | 76 | 85 | 90 | 97 | 94 | 92 | 89 | 90 | 91 |
| 312 | 12 | 82 | 83 | 89 | 95 | 103 | 111 | 120 | 130 | 141 | 153 | 166 | 179 | 194 | 210 | 236 | 275 | 300 | 320 | 329 | 327 | 355 | 390 |
| 316 | 12 | 83 | 21 | 23 | 25 | 27 | 29 | 32 | 35 | 38 | 42 | 46 | 50 | 55 | 60 | 63 | 67 | 76 | 85 | 95 | 107 | 120 | 134 |
| 320 | 3 | 84 | 1,309 | 1,402 | 1,501 | 1,607 | 1,720 | 1,842 | 1,972 | 2,111 | 2,260 | 2,419 | 2,590 | 2,773 | 2,969 | 3,431 | 3,964 | 4,568 | 5,246 | 6,023 | 6,917 | 7,963 | 9,197 |
| 324 | 4 | 85 | 18 | 28 | 42 | 63 | 95 | 143 | 216 | 326 | 492 | 743 | 1,120 | 1,690 | 2,550 | 2,826 | 3,136 | 3,488 | 3,900 | 4,149 | 4,461 | 4,987 | 5,755 |
| 328 | 3 | 86 | 276 | 286 | 296 | 307 | 318 | 330 | 342 | 354 | 367 | 380 | 394 | 408 | 423 | 486 | 569 | 645 | 709 | 734 | 759 | 790 | 796 |
| 332 | 3 | 87 | 1,296 | 1,382 | 1,475 | 1,596 | 1,728 | 1,871 | 2,026 | 2,193 | 2,374 | 2,570 | 2,782 | 3,012 | 3,261 | 3,508 | 3,804 | 4,143 | 4,520 | 4,920 | 5,353 | 5,865 | 6,486 |
| 334 | 12 | 88 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 336 | 5 | 89 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 340 | 3 | 90 | 356 | 399 | 447 | 501 | 562 | 630 | 706 | 791 | 887 | 994 | 1,115 | 1,250 | 1,401 | 1,640 | 1,935 | 2,293 | 2,627 | 3,081 | 3,662 | 4,383 | 5,138 |
| 344 | 10 | 91 | 785 | 797 | 809 | 884 | 967 | 1,057 | 1,156 | 1,264 | 1,382 | 1,511 | 1,651 | 1,806 | 1,974 | 2,490 | 3,075 | 3,692 | 3,942 | 4,396 | 5,039 | 5,456 | 5,709 |
| 348 | 6 | 92 | 6,877 | 7,054 | 7,236 | 7,423 | 7,615 | 7,812 | 8,013 | 8,220 | 8,433 | 8,650 | 8,874 | 9,103 | 9,338 | 9,825 | 9,984 | 10,148 | 10,338 | 10,532 | 10,711 | 10,649 | 10,553 |
| 352 | 5 | 93 | 71 | 75 | 80 | 85 | 90 | 95 | 101 | 107 | 113 | 120 | 127 | 135 | 143 | 158 | 176 | 192 | 204 | 218 | 228 | 241 | 255 |
| 356 | 9 | 94 | 219,454 | 228,565 | 238,055 | 247,939 | 258,233 | 268,955 | 280,122 | 291,752 | 303,866 | 316,482 | 329,622 | 343,308 | 357,561 | 395,096 | 442,344 | 495,157 | 554,911 | 620,701 | 688,856 | 766,651 | 846,191 |
| 360 | 11 | 95 | 35,081 | 37,558 | 40,209 | 43,048 | 46,086 | 49,340 | 52,823 | 56,552 | 60,544 | 64,819 | 69,394 | 74,293 | 79,538 | 86,552 | 96,194 | 107,041 | 120,280 | 135,666 | 150,958 | 167,332 | 184,283 |
| 364 | 8 | 96 | 6,727 | 6,829 | 6,932 | 7,579 | 8,286 | 9,059 | 9,904 | 10,828 | 11,838 | 12,943 | 14,150 | 15,471 | 16,914 | 19,021 | 21,552 | 24,663 | 28,429 | 33,344 | 39,254 | 48,916 | 58,267 |
| 368 | 8 | 97 | 2,052 | 2,083 | 2,114 | 2,311 | 2,527 | 2,763 | 3,020 | 3,302 | 3,610 | 3,947 | 4,315 | 4,718 | 5,158 | 5,911 | 6,847 | 7,976 | 9,356 | 11,020 | 13,007 | 15,319 | 18,080 |
| 372 | 5 | 98 | 2,865 | 2,874 | 2,882 | 2,891 | 2,899 | 2,908 | 2,917 | 2,925 | 2,934 | 2,943 | 2,951 | 2,960 | 2,969 | 2,921 | 2,834 | 2,876 | 2,954 | 3,177 | 3,401 | 3,552 | 3,503 |
| 376 | 8 | 99 | 500 | 508 | 516 | 564 | 616 | 674 | 737 | 805 | 880 | 963 | 1,052 | 1,151 | 1,258 | 1,748 | 2,114 | 2,563 | 2,974 | 3,455 | 3,878 | 4,233 | 4,660 |
| 380 | 5 | 100 | 30,393 | 31,523 | 32,696 | 33,911 | 35,173 | 36,480 | 37,837 | 39,244 | 40,703 | 42,217 | 43,787 | 45,415 | 47,104 | 48,633 | 50,200 | 52,112 | 53,822 | 55,441 | 56,434 | 57,141 | 57,663 |
| 384 | 4 | 101 | 1,622 | 1,655 | 1,688 | 1,774 | 1,865 | 1,960 | 2,060 | 2,165 | 2,275 | 2,391 | 2,513 | 2,641 | 2,776 | 3,221 | 3,799 | 4,527 | 5,515 | 6,755 | 8,194 | 9,936 | 11,980 |
| 388 | 3 | 102 | 631 | 674 | 720 | 770 | 823 | 880 | 941 | 1,005 | 1,075 | 1,149 | 1,228 | 1,313 | 1,403 | 1,542 | 1,629 | 1,760 | 1,869 | 2,013 | 2,133 | 2,311 | 2,420 |
| 392 | 13 | 103 | 39,902 | 42,440 | 45,139 | 48,010 | 51,063 | 54,311 | 57,765 | 61,439 | 65,346 | 69,502 | 73,923 | 78,624 | 83,625 | 89,815 | 94,096 | 98,881 | 104,331 | 111,524 | 116,807 | 120,837 | 123,537 |
| 400 | 8 | 104 | 492 | 499 | 507 | 554 | 606 | 663 | 724 | 792 | 866 | 947 | 1,035 | 1,131 | 1,237 | 1,447 | 1,695 | 1,962 | 2,299 | 2,600 | 2,923 | 3,407 | 4,009 |
| 404 | 4 | 105 | 995 | 1,159 | 1,352 | 1,576 | 1,837 | 2,141 | 2,496 | 2,910 | 3,392 | 3,955 | 4,610 | 5,374 | 6,265 | 7,189 | 8,332 | 9,749 | 11,498 | 13,741 | 16,632 | 19,873 | 23,585 |
| 408 | 10 | 106 | 3,868 | 3,927 | 3,986 | 4,358 | 4,765 | 5,209 | 5,695 | 6,226 | 6,807 | 7,442 | 8,137 | 8,896 | 9,726 | 9,070 | 10,789 | 12,408 | 14,619 | 16,562 | 18,260 | 19,888 | 21,771 |
| 410 | 11 | 107 | 5,970 | 6,612 | 7,324 | 8,112 | 8,985 | 9,953 | 11,024 | 12,210 | 13,525 | 14,980 | 16,593 | 18,379 | 20,357 | 21,422 | 25,003 | 28,530 | 31,923 | 35,281 | 38,124 | 40,806 | 43,377 |
| 414 | 8 | 108 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 418 | 10 | 109 | 364 | 415 | 473 | 539 | 614 | 701 | 799 | 911 | 1,038 | 1,184 | 1,350 | 1,539 | 1,755 | 1,944 | 2,177 | 2,432 | 2,713 | 3,024 | 3,205 | 3,594 | 4,202 |
| 422 | 8 | 110 | 574 | 583 | 591 | 647 | 707 | 773 | 845 | 924 | 1,010 | 1,104 | 1,207 | 1,320 | 1,443 | 1,613 | 1,857 | 2,151 | 2,469 | 2,767 | 2,669 | 2,668 | 2,740 |
| 426 | 4 | 111 | 215 | 238 | 263 | 292 | 323 | 358 | 397 | 440 | 487 | 540 | 598 | 662 | 734 | 794 | 870 | 963 | 1,064 | 1,187 | 1,339 | 1,539 | 1,747 |
| 430 | 4 | 112 | 481 | 491 | 501 | 527 | 553 | 582 | 611 | 643 | 675 | 710 | 746 | 784 | 824 | 914 | 1,039 | 1,195 | 1,385 | 1,609 | 1,876 | 2,199 | 2,575 |
| 434 | 8 | 113 | 409 | 415 | 422 | 461 | 504 | 551 | 603 | 659 | 720 | 787 | 861 | 941 | 1,029 | 1,126 | 1,349 | 1,623 | 1,986 | 2,446 | 3,043 | 3,786 | 4,545 |
| 438 | 5 | 114 | 11 | 11 | 11 | 12 | 12 | 12 | 12 | 13 | 13 | 13 | 13 | 14 | 14 | 15 | 16 | 19 | 21 | 24 | 26 | 27 | 28 |
| 442 | 5 | 115 | 231 | 236 | 242 | 247 | 252 | 257 | 263 | 268 | 273 | 279 | 284 | 290 | 296 | 305 | 314 | 332 | 339 | 362 | 364 | 367 | 373 |
| 446 | 10 | 116 | 75 | 76 | 77 | 84 | 92 | 101 | 110 | 120 | 132 | 144 | 157 | 172 | 188 | 180 | 169 | 223 | 245 | 260 | 323 | 392 | 463 |
| 450 | 4 | 117 | 1,978 | 2,107 | 2,245 | 2,392 | 2,548 | 2,715 | 2,892 | 3,081 | 3,283 | 3,497 | 3,726 | 3,969 | 4,229 | 4,720 | 5,312 | 6,019 | 6,745 | 7,599 | 8,790 | 10,242 | 12,010 |
| 454 | 4 | 118 | 543 | 624 | 717 | 824 | 947 | 1,088 | 1,250 | 1,437 | 1,652 | 1,898 | 2,181 | 2,507 | 2,881 | 3,169 | 3,529 | 3,975 | 4,518 | 5,244 | 6,183 | 7,335 | 9,582 |

A4. National population estimates and regional summary for 1890 - 1990 (in thousands), continued.

| ISO Numeric | IMAGE Region | IMAGE Country | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 458 | 11 | 119 | 684 | 821 | 985 | 1,183 | 1,419 | 1,703 | 2,044 | 2,454 | 2,945 | 3,534 | 4,242 | 5,091 | 6,110 | 7,000 | 8,140 | 9,502 | 10,853 | 12,258 | 13,763 | 15,677 | 17,891 |
| 462 | 9 | 120 | 33 | 33 | 34 | 37 | 40 | 44 | 48 | 52 | 57 | 63 | 69 | 75 | 82 | 90 | 99 | 109 | 121 | 137 | 158 | 183 | 213 |
| 466 | 4 | 121 | 2,529 | 2,599 | 2,672 | 2,747 | 2,824 | 2,902 | 2,984 | 3,067 | 3,153 | 3,241 | 3,331 | 3,424 | 3,520 | 3,911 | 4,375 | 4,922 | 5,484 | 6,169 | 6,863 | 7,915 | 9,214 |
| 470 | 5 | 122 | 243 | 249 | 256 | 261 | 266 | 271 | 277 | 282 | 288 | 294 | 300 | 306 | 312 | 314 | 312 | 305 | 303 | 304 | 324 | 344 | 354 |
| 474 | 3 | 123 | 88 | 94 | 100 | 109 | 118 | 127 | 138 | 149 | 162 | 175 | 189 | 205 | 222 | 246 | 282 | 311 | 326 | 329 | 326 | 341 | 360 |
| 478 | 4 | 124 | 482 | 492 | 502 | 527 | 554 | 582 | 612 | 643 | 676 | 711 | 747 | 785 | 825 | 901 | 991 | 1,096 | 1,221 | 1,371 | 1,551 | 1,766 | 2,024 |
| 480 | 4 | 125 | 288 | 294 | 300 | 315 | 331 | 348 | 366 | 384 | 404 | 425 | 446 | 469 | 493 | 571 | 660 | 753 | 826 | 892 | 966 | 1,020 | 1,075 |
| 484 | 3 | 126 | 11,838 | 12,692 | 13,607 | 14,588 | 15,640 | 16,768 | 17,976 | 19,273 | 20,662 | 22,152 | 23,749 | 25,461 | 27,297 | 31,330 | 36,530 | 42,864 | 50,328 | 58,876 | 67,046 | 75,594 | 84,486 |
| 492 | 5 | 127 | 17 | 18 | 18 | 18 | 19 | 19 | 20 | 20 | 20 | 21 | 21 | 22 | 22 | 21 | 23 | 23 | 24 | 25 | 26 | 27 | 27 |
| 496 | 10 | 128 | 303 | 307 | 312 | 341 | 373 | 408 | 446 | 487 | 533 | 582 | 637 | 696 | 761 | 850 | 959 | 1,094 | 1,256 | 1,447 | 1,663 | 1,909 | 2,190 |
| 500 | 3 | 129 | 6 | 6 | 6 | 7 | 7 | 8 | 9 | 9 | 10 | 11 | 12 | 13 | 14 | 13 | 12 | 12 | 11 | 12 | 12 | 11 | 11 |
| 504 | 4 | 130 | 2,785 | 3,069 | 3,383 | 3,729 | 4,110 | 4,530 | 4,993 | 5,503 | 6,066 | 6,686 | 7,369 | 8,123 | 8,953 | 10,132 | 11,626 | 13,323 | 15,310 | 17,305 | 19,382 | 22,025 | 25,061 |
| 508 | 4 | 131 | 1,827 | 2,022 | 2,239 | 2,479 | 2,745 | 3,039 | 3,365 | 3,725 | 4,125 | 4,567 | 5,056 | 5,598 | 6,198 | 6,744 | 7,461 | 8,338 | 9,395 | 10,498 | 12,095 | 13,547 | 14,200 |
| 512 | 8 | 132 | 164 | 167 | 169 | 185 | 202 | 221 | 242 | 264 | 289 | 316 | 346 | 378 | 413 | 455 | 505 | 571 | 654 | 766 | 988 | 1,263 | 1,524 |
| 516 | 4 | 133 | 97 | 112 | 128 | 147 | 169 | 194 | 223 | 256 | 294 | 337 | 387 | 445 | 511 | 566 | 633 | 713 | 810 | 926 | 1,066 | 1,235 | 1,439 |
| 520 | 12 | 134 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 6 | 7 | 7 | 8 | 8 | 10 |
| 524 | 9 | 135 | 3,254 | 3,303 | 3,353 | 3,666 | 4,008 | 4,382 | 4,791 | 5,238 | 5,727 | 6,261 | 6,845 | 7,484 | 8,182 | 8,675 | 9,404 | 10,344 | 11,488 | 13,000 | 14,858 | 17,136 | 19,571 |
| 528 | 5 | 136 | 4,571 | 4,884 | 5,218 | 5,575 | 5,956 | 6,364 | 6,799 | 7,265 | 7,762 | 8,293 | 8,860 | 9,466 | 10,114 | 10,751 | 11,480 | 12,292 | 13,032 | 13,653 | 14,144 | 14,484 | 14,943 |
| 532 | 3 | 137 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 533 | 3 | 138 | 23 | 24 | 26 | 28 | 30 | 33 | 35 | 38 | 41 | 45 | 49 | 53 | 57 | 58 | 59 | 60 | 61 | 62 | 60 | 61 | 61 |
| 536 | 8 | 139 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 540 | 12 | 140 | 20 | 21 | 23 | 25 | 27 | 30 | 33 | 36 | 39 | 43 | 47 | 51 | 56 | 65 | 77 | 91 | 112 | 133 | 140 | 154 | 168 |
| 548 | 12 | 141 | 19 | 20 | 21 | 23 | 25 | 28 | 30 | 33 | 36 | 40 | 44 | 48 | 52 | 58 | 65 | 74 | 86 | 100 | 116 | 133 | 150 |
| 554 | 12 | 142 | 615 | 676 | 743 | 816 | 897 | 986 | 1,083 | 1,191 | 1,308 | 1,438 | 1,580 | 1,736 | 1,908 | 2,136 | 2,372 | 2,628 | 2,820 | 3,083 | 3,113 | 3,229 | 3,392 |
| 558 | 3 | 143 | 379 | 415 | 454 | 496 | 542 | 593 | 649 | 709 | 776 | 848 | 927 | 1,014 | 1,109 | 1,287 | 1,502 | 1,758 | 2,063 | 2,426 | 2,802 | 3,229 | 3,676 |
| 562 | 4 | 144 | 1,402 | 1,430 | 1,459 | 1,534 | 1,612 | 1,694 | 1,781 | 1,871 | 1,967 | 2,067 | 2,173 | 2,284 | 2,400 | 2,689 | 3,028 | 3,660 | 4,165 | 4,771 | 5,586 | 6,608 | 7,731 |
| 566 | 4 | 145 | 2,835 | 3,477 | 4,266 | 5,233 | 6,420 | 7,876 | 9,662 | 11,853 | 14,541 | 17,839 | 21,884 | 26,847 | 32,935 | 37,094 | 42,305 | 48,676 | 56,581 | 66,346 | 78,430 | 92,016 | 108,542 |
| 570 | 12 | 146 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 3 | 3 | 2 |
| 574 | 12 | 147 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 578 | 5 | 148 | 2,001 | 2,084 | 2,171 | 2,262 | 2,356 | 2,454 | 2,556 | 2,662 | 2,773 | 2,889 | 3,009 | 3,134 | 3,265 | 3,427 | 3,581 | 3,723 | 3,877 | 4,007 | 4,086 | 4,153 | 4,246 |
| 580 | 12 | 149 | 2 | 3 | 2 | 2 | 3 | 4 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 8 | 10 | 11 | 13 | 15 | 17 | 19 | 43 |
| 581 | 2 | 150 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 583 | 12 | 151 | 11 | 12 | 13 | 14 | 16 | 17 | 19 | 20 | 22 | 24 | 27 | 29 | 32 | 37 | 44 | 50 | 58 | 68 | 76 | 87 | 103 |
| 584 | 12 | 152 | 5 | 5 | 5 | 6 | 6 | 7 | 8 | 8 | 9 | 10 | 11 | 12 | 13 | 15 | 17 | 20 | 23 | 27 | 31 | 38 | 46 |
| 585 | 12 | 153 | 2 | 2 | 5 | 6 | 6 | 7 | 8 | 8 | 9 | 5 | 5 | 6 | 6 | 6 | 8 | 9 | 10 | 11 | 12 | 14 | 15 |
| 586 | 9 | 154 | 17,202 | 18,436 | 19,759 | 21,177 | 22,697 | 24,325 | 26,071 | 27,942 | 29,947 | 32,096 | 34,399 | 36,867 | 39,513 | 44,194 | 49,955 | 57,145 | 65,706 | 74,734 | 85,299 | 100,676 | 118,122 |
| 590 | 3 | 155 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 598 | 11 | 156 | 642 | 651 | 661 | 723 | 790 | 864 | 944 | 1,033 | 1,129 | 1,234 | 1,349 | 1,475 | 1,613 | 1,744 | 1,920 | 2,148 | 2,422 | 2,729 | 3,086 | 3,460 | 3,875 |
| 600 | 3 | 157 | 292 | 332 | 377 | 429 | 487 | 553 | 628 | 714 | 811 | 921 | 1,047 | 1,189 | 1,351 | 1,552 | 1,774 | 2,051 | 2,351 | 2,682 | 3,147 | 3,693 | 4,277 |
| 604 | 3 | 158 | 3,286 | 3,525 | 3,781 | 4,056 | 4,351 | 4,668 | 5,008 | 5,372 | 5,763 | 6,182 | 6,632 | 7,114 | 7,632 | 8,672 | 9,931 | 11,467 | 13,193 | 15,161 | 17,295 | 19,417 | 21,550 |
| 608 | 11 | 159 | 5,772 | 6,428 | 7,158 | 7,971 | 8,876 | 9,884 | 11,007 | 12,257 | 13,649 | 15,199 | 16,925 | 18,847 | 20,988 | 23,913 | 27,561 | 32,030 | 37,540 | 43,010 | 48,684 | 55,395 | 62,437 |
| 612 | 12 | 160 | 10 | 10 | 10 | 11 | 12 | 13 | 15 | 16 | 17 | 19 | 21 | 23 | 25 | 35 | 45 | 70 | 111 | 155 | 163 | 171 | 0 |
| 616 | 6 | 161 | 25,163 | 25,134 | 25,106 | 25,078 | 25,049 | 25,021 | 24,993 | 24,965 | 24,936 | 24,908 | 24,880 | 24,852 | 24,824 | 27,281 | 29,561 | 31,496 | 32,526 | 34,022 | 35,574 | 37,203 | 38,180 |
| 620 | 5 | 162 | 5,060 | 5,279 | 5,507 | 5,744 | 5,993 | 6,251 | 6,521 | 6,803 | 7,097 | 7,404 | 7,723 | 8,057 | 8,405 | 8,610 | 8,826 | 9,129 | 9,044 | 9,093 | 9,766 | 9,904 | 9,868 |
| 624 | 4 | 163 | 295 | 301 | 307 | 323 | 339 | 356 | 375 | 394 | 414 | 435 | 457 | 480 | 505 | 522 | 542 | 524 | 525 | 627 | 795 | 873 | 964 |
| 626 | 11 | 164 | 172 | 175 | 177 | 194 | 212 | 232 | 254 | 277 | 303 | 331 | 362 | 396 | 433 | 462 | 501 | 549 | 605 | 672 | 581 | 659 | 756 |
| 630 | 3 | 165 | 839 | 910 | 986 | 1,070 | 1,160 | 1,258 | 1,364 | 1,480 | 1,604 | 1,740 | 1,887 | 2,046 | 2,219 | 2,250 | 2,358 | 2,594 | 2,718 | 2,993 | 3,206 | 3,377 | 3,530 |
| 634 | 8 | 166 | 10 | 10 | 10 | 11 | 12 | 13 | 15 | 16 | 17 | 19 | 21 | 23 | 25 | 35 | 45 | 70 | 111 | 171 | 229 | 358 | 427 |
| 638 | 4 | 167 | 141 | 144 | 147 | 155 | 163 | 171 | 180 | 189 | 198 | 208 | 219 | 230 | 242 | 285 | 335 | 390 | 461 | 483 | 506 | 550 | 604 |
| 642 | 6 | 168 | 4,987 | 5,504 | 6,076 | 6,706 | 7,403 | 8,171 | 9,019 | 9,955 | 10,988 | 12,129 | 13,388 | 14,777 | 16,311 | 17,486 | 18,407 | 19,032 | 20,253 | 21,245 | 22,201 | 22,725 | 23,207 |
| 646 | 4 | 169 | 1,239 | 1,264 | 1,289 | 1,355 | 1,424 | 1,497 | 1,573 | 1,653 | 1,737 | 1,826 | 1,919 | 2,017 | 2,120 | 2,391 | 2,742 | 3,183 | 3,728 | 4,384 | 5,163 | 5,960 | 7,027 |
| 654 | 4 | 170 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 7 |
| 659 | 3 | 171 | 17 | 19 | 20 | 22 | 23 | 25 | 27 | 30 | 32 | 35 | 38 | 41 | 44 | 50 | 51 | 49 | 47 | 45 | 44 | 43 | 42 |
| 660 | 3 | 172 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 662 | 2 | 173 | 31 | 33 | 36 | 39 | 42 | 45 | 49 | 53 | 58 | 62 | 67 | 73 | 79 | 83 | 86 | 94 | 101 | 108 | 115 | 124 | 133 |
| 666 | 2 | 174 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 |
| 670 | 3 | 175 | 27 | 28 | 30 | 33 | 36 | 38 | 42 | 45 | 49 | 53 | 57 | 62 | 67 | 73 | 80 | 84 | 87 | 93 | 98 | 102 | 107 |
| 674 | 5 | 176 | 10 | 10 | 11 | 11 | 11 | 11 | 12 | 12 | 12 | 12 | 12 | 13 | 13 | 14 | 15 | 17 | 19 | 20 | 21 | 22 | 23 |
| 678 | 4 | 177 | 35 | 36 | 36 | 38 | 40 | 42 | 45 | 47 | 49 | 52 | 54 | 57 | 60 | 62 | 64 | 68 | 73 | 81 | 94 | 106 | 119 |

**A4. National population estimates and regional summary for 1890 - 1990 (In thousands), continued.**

| ISO Numeric | IMAGE Region | IMAGE Country | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 682 | 8 | 178 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 686 | 4 | 179 | 1,461 | 1,490 | 1,520 | 1,598 | 1,679 | 1,765 | 1,855 | 1,949 | 2,049 | 2,153 | 2,263 | 2,379 | 2,500 | 2,811 | 3,187 | 3,626 | 4,158 | 4,806 | 5,538 | 6,375 | 7,327 |
| 690 | 4 | 180 | 20 | 20 | 21 | 22 | 23 | 24 | 25 | 27 | 28 | 29 | 31 | 32 | 34 | 38 | 42 | 47 | 53 | 59 | 62 | 67 | 71 |
| 694 | 4 | 181 | 890 | 950 | 1,014 | 1,082 | 1,155 | 1,232 | 1,315 | 1,404 | 1,498 | 1,599 | 1,707 | 1,821 | 1,944 | 2,081 | 2,241 | 2,429 | 2,656 | 2,931 | 3,263 | 3,665 | 4,151 |
| 702 | 11 | 182 | 406 | 413 | 419 | 458 | 501 | 547 | 598 | 654 | 715 | 782 | 855 | 935 | 1,022 | 1,306 | 1,634 | 1,880 | 2,075 | 2,263 | 2,415 | 2,558 | 2,710 |
| 704 | 10 | 183 | 11,914 | 12,094 | 12,276 | 13,422 | 14,674 | 16,043 | 17,540 | 19,176 | 20,965 | 22,921 | 25,060 | 27,398 | 29,954 | 32,009 | 34,743 | 38,341 | 42,729 | 48,030 | 53,711 | 59,898 | 66,688 |
| 706 | 4 | 184 | 1,795 | 1,831 | 1,868 | 1,963 | 2,063 | 2,169 | 2,279 | 2,395 | 2,518 | 2,646 | 2,781 | 2,923 | 3,072 | 3,401 | 3,785 | 4,239 | 4,791 | 5,471 | 6,713 | 7,875 | 8,677 |
| 710 | 4 | 185 | 3,849 | 4,279 | 4,755 | 5,286 | 5,875 | 6,530 | 7,258 | 8,067 | 8,966 | 9,965 | 11,076 | 12,311 | 13,683 | 15,385 | 17,396 | 19,832 | 22,458 | 25,842 | 29,529 | 33,597 | 37,959 |
| 716 | 4 | 186 | 344 | 409 | 486 | 577 | 686 | 816 | 969 | 1,152 | 1,369 | 1,627 | 1,933 | 2,297 | 2,730 | 3,257 | 3,812 | 4,466 | 5,260 | 6,143 | 7,126 | 8,370 | 9,947 |
| 720 | 8 | 187 | 395 | 401 | 407 | 444 | 486 | 531 | 581 | 635 | 694 | 759 | 830 | 907 | 992 | 1,088 | 1,208 | 1,351 | 1,497 | 1,654 | 1,861 | 2,137 | 2,491 |
| 724 | 5 | 188 | 17,945 | 18,623 | 19,327 | 20,058 | 20,816 | 21,603 | 22,419 | 23,267 | 24,146 | 25,059 | 26,006 | 26,989 | 28,009 | 29,199 | 30,455 | 32,056 | 33,779 | 35,596 | 37,542 | 38,474 | 38,959 |
| 732 | 4 | 189 | 8 | 8 | 9 | 9 | 9 | 10 | 10 | 11 | 11 | 12 | 13 | 13 | 14 | 21 | 32 | 50 | 76 | 117 | 130 | 185 | 230 |
| 736 | 4 | 190 | 5,369 | 5,477 | 5,588 | 5,873 | 6,172 | 6,487 | 6,818 | 7,166 | 7,532 | 7,916 | 8,320 | 8,744 | 9,190 | 10,150 | 11,165 | 12,359 | 13,859 | 16,012 | 18,681 | 21,822 | 25,203 |
| 740 | 3 | 191 | 63 | 70 | 78 | 86 | 95 | 105 | 117 | 129 | 143 | 158 | 175 | 194 | 215 | 250 | 290 | 332 | 372 | 364 | 352 | 383 | 422 |
| 744 | 5 | 192 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 748 | 4 | 193 | 61 | 69 | 78 | 88 | 100 | 112 | 127 | 144 | 162 | 183 | 207 | 234 | 264 | 291 | 326 | 370 | 419 | 482 | 565 | 659 | 751 |
| 752 | 5 | 194 | 4,785 | 4,940 | 5,100 | 5,265 | 5,436 | 5,612 | 5,793 | 5,981 | 6,175 | 6,374 | 6,581 | 6,794 | 7,014 | 7,262 | 7,480 | 7,734 | 8,043 | 8,193 | 8,310 | 8,350 | 8,566 |
| 756 | 5 | 195 | 2,978 | 3,093 | 3,212 | 3,337 | 3,466 | 3,600 | 3,739 | 3,883 | 4,033 | 4,189 | 4,351 | 4,519 | 4,694 | 4,980 | 5,362 | 5,857 | 6,187 | 6,339 | 6,319 | 6,470 | 6,712 |
| 760 | 8 | 196 | 1,390 | 1,411 | 1,432 | 1,566 | 1,712 | 1,872 | 2,047 | 2,237 | 2,446 | 2,674 | 2,924 | 3,197 | 3,495 | 3,967 | 4,561 | 5,325 | 6,258 | 7,438 | 8,704 | 10,348 | 12,355 |
| 764 | 11 | 197 | 5,986 | 6,620 | 7,320 | 8,094 | 8,951 | 9,898 | 10,945 | 12,103 | 13,383 | 14,799 | 16,364 | 18,096 | 20,010 | 22,762 | 26,392 | 30,641 | 35,745 | 41,359 | 46,718 | 51,187 | 54,677 |
| 768 | 4 | 198 | 369 | 411 | 457 | 509 | 566 | 630 | 700 | 779 | 867 | 965 | 1,074 | 1,194 | 1,329 | 1,414 | 1,514 | 1,627 | 2,020 | 2,285 | 2,615 | 3,028 | 3,531 |
| 772 | 12 | 199 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 776 | 12 | 200 | 15 | 16 | 17 | 18 | 20 | 22 | 24 | 26 | 29 | 31 | 34 | 38 | 41 | 53 | 64 | 74 | 82 | 88 | 92 | 94 | 96 |
| 780 | 3 | 201 | 214 | 234 | 257 | 281 | 308 | 337 | 369 | 404 | 442 | 484 | 530 | 581 | 636 | 721 | 843 | 896 | 971 | 1,012 | 1,082 | 1,160 | 1,236 |
| 784 | 8 | 202 | 28 | 28 | 29 | 31 | 34 | 37 | 41 | 45 | 49 | 54 | 59 | 64 | 70 | 79 | 90 | 144 | 223 | 505 | 1,015 | 1,349 | 1,589 |
| 788 | 8 | 203 | 1,404 | 1,516 | 1,638 | 1,768 | 1,909 | 2,062 | 2,227 | 2,404 | 2,596 | 2,803 | 3,027 | 3,269 | 3,530 | 3,860 | 4,221 | 4,630 | 5,127 | 5,611 | 6,384 | 7,261 | 8,057 |
| 792 | 8 | 204 | 25,476 | 25,050 | 24,631 | 24,219 | 23,814 | 23,416 | 23,024 | 22,639 | 22,261 | 21,889 | 21,523 | 21,163 | 20,809 | 23,859 | 27,509 | 31,151 | 35,321 | 40,025 | 44,438 | 50,345 | 55,991 |
| 796 | 3 | 205 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 7 | 9 | 12 |
| 798 | 12 | 206 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 800 | 4 | 207 | 2,154 | 2,301 | 2,458 | 2,626 | 2,806 | 2,997 | 3,202 | 3,421 | 3,655 | 3,905 | 4,172 | 4,457 | 4,762 | 5,556 | 6,562 | 8,047 | 9,806 | 11,183 | 13,120 | 15,033 | 17,560 |
| 804 | 7 | 208 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 810 | 7 | 209 | 113,966 | 118,394 | 122,995 | 127,775 | 132,740 | 137,898 | 143,257 | 148,823 | 154,607 | 160,615 | 166,856 | 173,340 | 180,076 | 196,160 | 214,330 | 230,937 | 242,806 | 254,470 | 265,543 | 277,538 | 289,345 |
| 818 | 4 | 210 | 10,414 | 11,011 | 11,642 | 12,309 | 13,015 | 13,761 | 14,550 | 15,384 | 16,266 | 17,199 | 18,185 | 19,228 | 20,330 | 22,990 | 25,922 | 29,389 | 33,053 | 36,289 | 40,875 | 46,511 | 52,426 |
| 826 | 5 | 211 | 32,791 | 33,999 | 35,251 | 36,550 | 37,896 | 39,292 | 40,740 | 42,241 | 43,797 | 45,410 | 47,083 | 48,818 | 50,616 | 51,199 | 52,372 | 54,350 | 55,632 | 56,226 | 56,330 | 56,618 | 57,411 |
| 834 | 4 | 212 | 4,607 | 4,700 | 4,795 | 5,040 | 5,297 | 5,567 | 5,851 | 6,149 | 6,463 | 6,793 | 7,139 | 7,503 | 7,886 | 8,915 | 10,205 | 11,781 | 13,694 | 15,900 | 18,581 | 21,895 | 25,993 |
| 840 | 2 | 213 | 62,948 | 67,757 | 72,932 | 78,504 | 84,501 | 90,956 | 97,904 | 105,383 | 113,433 | 122,098 | 131,425 | 141,464 | 152,271 | 165,932 | 180,671 | 194,303 | 205,051 | 215,972 | 227,757 | 238,466 | 249,975 |
| 850 | 3 | 214 | 11 | 11 | 12 | 13 | 14 | 15 | 17 | 18 | 20 | 21 | 23 | 25 | 27 | 28 | 33 | 44 | 64 | 95 | 98 | 107 | 107 |
| 854 | 4 | 215 | 2,135 | 2,178 | 2,222 | 2,335 | 2,454 | 2,579 | 2,711 | 2,849 | 2,995 | 3,147 | 3,308 | 3,477 | 3,654 | 4,012 | 4,452 | 4,961 | 5,550 | 6,202 | 6,957 | 7,881 | 8,993 |
| 858 | 3 | 216 | 481 | 547 | 622 | 707 | 803 | 913 | 1,038 | 1,180 | 1,341 | 1,524 | 1,733 | 1,970 | 2,239 | 2,372 | 2,538 | 2,693 | 2,808 | 2,829 | 2,914 | 3,008 | 3,094 |
| 862 | 3 | 217 | 2,294 | 2,448 | 2,613 | 2,789 | 2,976 | 3,176 | 3,390 | 3,618 | 3,861 | 4,121 | 4,398 | 4,693 | 5,009 | 6,148 | 7,502 | 8,970 | 10,604 | 12,665 | 15,024 | 17,164 | 19,321 |
| 876 | 12 | 218 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 882 | 12 | 219 | 28 | 30 | 32 | 35 | 39 | 42 | 46 | 51 | 55 | 60 | 66 | 72 | 79 | 94 | 110 | 127 | 142 | 151 | 155 | 157 | 158 |
| 886 | 8 | 220 | 1,322 | 1,342 | 1,362 | 1,489 | 1,628 | 1,780 | 1,946 | 2,128 | 2,327 | 2,544 | 2,781 | 3,040 | 3,324 | 3,646 | 4,039 | 4,492 | 4,835 | 5,337 | 6,357 | 7,621 | 9,196 |
| 890 | 6 | 221 | 11,304 | 11,705 | 12,120 | 12,488 | 12,867 | 13,258 | 13,661 | 14,075 | 14,503 | 14,943 | 15,397 | 15,864 | 16,346 | 17,519 | 18,402 | 19,434 | 20,371 | 21,352 | 22,304 | 23,124 | 23,809 |
| 894 | 4 | 222 | 521 | 593 | 674 | 766 | 872 | 991 | 1,128 | 1,282 | 1,458 | 1,659 | 1,886 | 2,145 | 2,440 | 2,753 | 3,141 | 3,614 | 4,189 | 4,841 | 5,738 | 6,864 | 8,138 |
| Sum | | | 1,537,478 | 1,588,872 | 1,643,477 | 1,705,888 | 1,772,536 | 1,843,823 | 1,920,188 | 2,002,074 | 2,090,088 | 2,184,841 | 2,287,034 | 2,397,521 | 2,517,256 | 2,752,164 | 3,018,731 | 3,334,197 | 3,694,173 | 4,073,041 | 4,439,228 | 4,843,252 | 5,278,841 |

A 5. Regional GDP, value added industry and services, and private consumption per capita for 1890 - 1990.

**GDP per capita in (1990)US$**

| | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 2,438 | 2,380 | 2,812 | 3,522 | 4,305 | 4,774 | 4,313 | 4,912 | 5,485 | 4,375 | 5,714 | 7,373 | 7,791 | 8,764 | 9,353 | 11,256 | 13,001 | 15,598 | 17,797 | 19,592 | 21,273 |
| USA | 3,876 | 4,269 | 4,869 | 5,655 | 6,193 | 6,135 | 6,888 | 7,878 | 7,646 | 6,434 | 7,972 | 13,001 | 10,696 | 12,175 | 12,415 | 14,607 | 15,931 | 16,695 | 18,527 | 20,038 | 21,866 |
| Latin America | 338 | 381 | 429 | 484 | 545 | 600 | 650 | 703 | 753 | 776 | 835 | 961 | 1,104 | 1,269 | 1,473 | 1,669 | 2,024 | 2,438 | 2,820 | 2,605 | 2,569 |
| Africa | 266 | 277 | 289 | 296 | 303 | 313 | 328 | 343 | 359 | 373 | 388 | 400 | 413 | 467 | 480 | 551 | 613 | 669 | 706 | 673 | 646 |
| OECD Europe | 2,888 | 3,118 | 3,365 | 3,648 | 3,954 | 4,183 | 4,388 | 4,601 | 4,779 | 4,939 | 5,088 | 5,270 | 5,479 | 6,880 | 8,279 | 10,078 | 12,268 | 13,739 | 15,670 | 16,683 | 19,065 |
| Eastern Europe | 391 | 405 | 419 | 433 | 448 | 463 | 478 | 493 | 508 | 524 | 539 | 555 | 570 | 675 | 812 | 987 | 1,213 | 1,743 | 2,000 | 2,121 | 1,913 |
| CIS | 193 | 221 | 253 | 290 | 332 | 362 | 365 | 368 | 376 | 478 | 609 | 662 | 719 | 862 | 1,038 | 1,222 | 1,452 | 1,832 | 2,159 | 2,418 | 2,476 |
| Middle East | 636 | 662 | 689 | 702 | 713 | 723 | 732 | 738 | 780 | 999 | 1,173 | 1,210 | 1,245 | 1,759 | 1,950 | 2,475 | 2,883 | 3,663 | 3,829 | 3,153 | 2,823 |
| India + SA | 175 | 176 | 177 | 178 | 179 | 179 | 177 | 176 | 175 | 174 | 173 | 172 | 171 | 184 | 196 | 208 | 220 | 224 | 238 | 276 | 327 |
| China + CPA | 44 | 46 | 47 | 49 | 50 | 52 | 52 | 53 | 54 | 55 | 56 | 56 | 55 | 68 | 85 | 105 | 127 | 152 | 197 | 276 | 369 |
| East Asia | 276 | 283 | 290 | 299 | 308 | 312 | 308 | 305 | 302 | 299 | 296 | 293 | 290 | 350 | 410 | 483 | 569 | 723 | 932 | 1,108 | 1,508 |
| Oceania | 4,493 | 3,781 | 4,320 | 4,596 | 5,551 | 5,046 | 5,470 | 6,262 | 5,572 | 5,843 | 6,369 | 6,866 | 7,508 | 8,055 | 8,751 | 9,913 | 11,670 | 12,841 | 13,623 | 14,759 | 15,579 |
| Japan | 1,251 | 1,361 | 1,418 | 1,389 | 1,556 | 1,721 | 2,017 | 2,248 | 2,238 | 2,600 | 3,492 | 1,606 | 2,395 | 3,447 | 4,960 | 7,383 | 12,088 | 14,061 | 16,782 | 19,492 | 23,734 |
| World | 751 | 813 | 897 | 989 | 1,086 | 1,131 | 1,220 | 1,324 | 1,353 | 1,340 | 1,508 | 1,799 | 1,748 | 2,062 | 2,288 | 2,685 | 3,079 | 3,317 | 3,636 | 3,726 | 3,986 |

**Value added industry per capita in (1990)US$**

| | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 1,066 | 1,036 | 1,261 | 1,436 | 1,714 | 1,877 | 1,717 | 1,925 | 2,120 | 1,739 | 2,198 | 2,747 | 2,882 | 3,193 | 3,379 | 3,967 | 4,493 | 5,051 | 5,506 | 5,966 | 6,079 |
| USA | 1,456 | 1,585 | 1,780 | 2,029 | 2,197 | 2,179 | 2,412 | 2,711 | 2,641 | 2,272 | 2,740 | 4,186 | 3,536 | 3,956 | 4,023 | 4,628 | 4,986 | 4,922 | 5,444 | 5,889 | 6,560 |
| Latin America | 86 | 100 | 117 | 135 | 157 | 177 | 196 | 216 | 234 | 243 | 266 | 315 | 373 | 441 | 528 | 612 | 770 | 926 | 1,098 | 955 | 928 |
| Africa | 80 | 84 | 89 | 92 | 94 | 98 | 104 | 111 | 117 | 123 | 129 | 135 | 140 | 163 | 169 | 201 | 229 | 234 | 264 | 239 | 217 |
| OECD Europe | 1,576 | 1,561 | 1,671 | 1,794 | 1,926 | 2,024 | 2,111 | 2,201 | 2,276 | 2,343 | 2,405 | 2,480 | 2,566 | 3,132 | 3,681 | 4,367 | 5,176 | 5,415 | 5,844 | 5,873 | 6,572 |
| Eastern Europe | 172 | 179 | 187 | 195 | 203 | 211 | 220 | 229 | 238 | 247 | 256 | 265 | 274 | 337 | 422 | 535 | 685 | 1,043 | 1,187 | 1,210 | 938 |
| CIS | 63 | 75 | 90 | 107 | 127 | 142 | 143 | 145 | 149 | 201 | 271 | 300 | 332 | 415 | 519 | 632 | 776 | 1,021 | 1,240 | 1,416 | 1,456 |
| Middle East | 116 | 121 | 128 | 130 | 133 | 135 | 137 | 139 | 149 | 201 | 244 | 253 | 262 | 396 | 447 | 593 | 709 | 1,181 | 1,038 | 805 | 936 |
| India + SA | 33 | 33 | 33 | 34 | 34 | 34 | 34 | 33 | 33 | 33 | 32 | 32 | 32 | 35 | 38 | 41 | 45 | 46 | 53 | 63 | 81 |
| China + CPA | 6 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 9 | 9 | 9 | 9 | 9 | 13 | 17 | 23 | 30 | 41 | 58 | 84 | 120 |
| East Asia | 62 | 64 | 67 | 69 | 72 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 84 | 103 | 127 | 156 | 230 | 334 | 403 | 605 |
| Oceania | 1,931 | 1,658 | 1,865 | 1,970 | 2,325 | 2,138 | 2,295 | 2,584 | 2,332 | 2,432 | 2,622 | 2,800 | 3,027 | 3,219 | 3,459 | 3,855 | 4,440 | 4,499 | 4,797 | 4,898 | 4,973 |
| Japan | 535 | 592 | 622 | 606 | 695 | 784 | 946 | 1,075 | 1,069 | 1,276 | 1,581 | 722 | 1,159 | 1,563 | 2,154 | 3,052 | 4,682 | 5,349 | 6,460 | 7,655 | 9,970 |
| World | 338 | 346 | 379 | 412 | 450 | 469 | 501 | 538 | 550 | 552 | 608 | 686 | 684 | 795 | 880 | 1,016 | 1,153 | 1,202 | 1,294 | 1,295 | 1,400 |

**Value added services per capita in (1990)US$**

| | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 968 | 942 | 1,139 | 1,471 | 1,846 | 2,075 | 1,850 | 2,143 | 2,427 | 1,881 | 2,541 | 3,385 | 3,600 | 4,108 | 4,418 | 5,434 | 6,382 | 8,528 | 10,188 | 11,154 | 12,168 |
| USA | 2,171 | 2,422 | 2,809 | 3,325 | 3,683 | 3,645 | 4,152 | 4,827 | 4,667 | 3,845 | 4,891 | 8,449 | 6,796 | 7,853 | 8,026 | 9,618 | 10,593 | 11,415 | 12,741 | 13,743 | 14,869 |
| Latin America | 128 | 147 | 170 | 196 | 225 | 252 | 277 | 304 | 329 | 341 | 371 | 438 | 514 | 604 | 717 | 828 | 1,034 | 1,290 | 1,471 | 1,396 | 1,399 |
| Africa | 78 | 83 | 87 | 89 | 92 | 95 | 101 | 107 | 113 | 118 | 123 | 128 | 133 | 154 | 159 | 187 | 212 | 249 | 273 | 284 | 278 |
| OECD Europe | 1,225 | 1,336 | 1,458 | 1,597 | 1,749 | 1,865 | 1,968 | 2,077 | 2,168 | 2,250 | 2,327 | 2,420 | 2,529 | 3,267 | 4,022 | 5,011 | 6,241 | 7,679 | 9,257 | 10,274 | 11,920 |
| Eastern Europe | 115 | 119 | 123 | 127 | 131 | 135 | 139 | 143 | 147 | 151 | 155 | 159 | 163 | 191 | 227 | 272 | 330 | 499 | 622 | 657 | 727 |
| CIS | 64 | 72 | 82 | 93 | 106 | 115 | 116 | 117 | 119 | 149 | 187 | 202 | 218 | 258 | 307 | 357 | 419 | 519 | 604 | 671 | 688 |
| Middle East | 117 | 122 | 128 | 131 | 136 | 136 | 137 | 139 | 148 | 198 | 238 | 247 | 255 | 380 | 428 | 561 | 668 | 1,255 | 1,251 | 1,296 | 1,147 |
| India + SA | 51 | 51 | 52 | 52 | 52 | 52 | 52 | 52 | 51 | 51 | 50 | 50 | 50 | 54 | 59 | 63 | 68 | 74 | 84 | 101 | 122 |
| China + CPA | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 12 | 16 | 20 | 26 | 33 | 45 | 73 | 103 |
| East Asia | 98 | 101 | 104 | 107 | 111 | 113 | 112 | 110 | 109 | 107 | 106 | 105 | 104 | 130 | 157 | 191 | 231 | 294 | 389 | 477 | 670 |
| Oceania | 2,420 | 1,991 | 2,315 | 2,483 | 3,072 | 2,759 | 3,022 | 3,518 | 3,085 | 3,255 | 3,586 | 3,902 | 4,314 | 4,668 | 5,122 | 5,888 | 7,066 | 8,245 | 9,092 | 10,057 | 10,835 |
| Japan | 519 | 572 | 600 | 585 | 667 | 750 | 899 | 1,018 | 1,012 | 1,202 | 1,680 | 692 | 1,094 | 1,656 | 2,499 | 3,911 | 6,788 | 8,075 | 9,816 | 11,282 | 13,174 |
| World | 322 | 354 | 399 | 450 | 503 | 525 | 577 | 640 | 653 | 633 | 732 | 939 | 887 | 1,061 | 1,180 | 1,412 | 1,641 | 1,855 | 2,080 | 2,175 | 2,327 |

**Private consumption per capita in (1990) US$**

| | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 1,419 | 1,385 | 1,637 | 2,050 | 2,506 | 2,779 | 2,510 | 2,859 | 3,193 | 2,547 | 3,326 | 4,292 | 4,535 | 5,101 | 5,444 | 6,552 | 7,211 | 9,168 | 10,372 | 11,325 | 12,613 |
| USA | 2,497 | 2,750 | 3,136 | 3,642 | 3,989 | 3,951 | 4,437 | 5,074 | 4,925 | 4,144 | 5,135 | 8,374 | 6,889 | 7,842 | 7,997 | 9,408 | 10,054 | 10,887 | 11,978 | 13,263 | 14,540 |
| Latin America | 212 | 239 | 269 | 303 | 342 | 377 | 408 | 441 | 473 | 487 | 524 | 603 | 693 | 796 | 924 | 1,047 | 1,133 | 1,372 | 1,678 | 1,575 | 1,564 |
| Africa | 172 | 179 | 186 | 191 | 196 | 202 | 212 | 222 | 232 | 241 | 250 | 259 | 267 | 301 | 310 | 356 | 480 | 525 | 560 | 538 | 492 |
| OECD Europe | 1,710 | 1,846 | 1,993 | 2,160 | 2,341 | 2,477 | 2,598 | 2,724 | 2,829 | 2,924 | 3,013 | 3,120 | 3,244 | 4,073 | 4,902 | 5,967 | 7,142 | 8,209 | 9,344 | 9,910 | 11,479 |
| Eastern Europe | 225 | 233 | 241 | 249 | 258 | 266 | 275 | 284 | 292 | 301 | 310 | 319 | 328 | 388 | 467 | 568 | 754 | 990 | 1,106 | 1,137 | 1,064 |
| CIS | 137 | 157 | 179 | 205 | 235 | 256 | 259 | 261 | 266 | 338 | 432 | 469 | 509 | 611 | 735 | 866 | 1,002 | 1,290 | 1,546 | 1,699 | 1,783 |
| Middle East | 360 | 375 | 390 | 398 | 404 | 410 | 415 | 418 | 442 | 566 | 665 | 686 | 705 | 997 | 1,105 | 1,402 | 994 | 1,458 | 1,146 | 1,394 | 1,525 |
| India + SA | 126 | 127 | 127 | 128 | 129 | 129 | 128 | 127 | 126 | 126 | 125 | 124 | 123 | 133 | 141 | 150 | 169 | 163 | 178 | 198 | 220 |
| China + CPA | 26 | 27 | 28 | 29 | 30 | 30 | 31 | 31 | 32 | 33 | 33 | 33 | 32 | 40 | 50 | 62 | 80 | 91 | 119 | 168 | 202 |
| East Asia | 168 | 172 | 177 | 182 | 187 | 190 | 187 | 185 | 183 | 182 | 180 | 178 | 176 | 213 | 249 | 294 | 363 | 450 | 560 | 643 | 832 |
| Oceania | 2,768 | 2,329 | 2,662 | 2,832 | 3,420 | 3,109 | 3,370 | 3,858 | 3,433 | 3,600 | 3,924 | 4,230 | 4,626 | 4,963 | 5,391 | 6,107 | 7,226 | 8,228 | 8,775 | 9,412 | 10,109 |
| Japan | 760 | 827 | 862 | 844 | 946 | 1,046 | 1,226 | 1,366 | 1,360 | 1,580 | 2,122 | 976 | 1,456 | 2,095 | 3,014 | 4,487 | 7,041 | 8,640 | 10,110 | 11,591 | 13,620 |
| World | 460 | 499 | 550 | 608 | 668 | 696 | 751 | 816 | 834 | 824 | 930 | 1,119 | 1,084 | 1,277 | 1,414 | 1,658 | 1,846 | 2,038 | 2,217 | 2,302 | 2,467 |

## Table A6-1. Conversion factors for metric tons hard and brown coal to coal equivalents.

| Country | Hard coal | Country | Hard coal | Country | Brown coal |
|---|---|---|---|---|---|
| Afghanistan | 1.0000 | Netherland | 1.0000 | Albania | 0.3385 |
| Algeria | 1.0000 | New Zeal. | 0.8330 | Australia | 0.3230 |
| Argentina | 1.0000 | Niger | 1.0000 | Austria | 0.4735 |
| Australia | 0.8050 | Nigeria | 1.0000 | Bulgaria | 0.5000 |
| Austria | 1.0000 | Norway | 1.0145 | Burundi | 0.3385 |
| Belgium | 0.9150 | Pakistan | 1.0000 | Canada | 0.6015 |
| Botswana | 1.0000 | Peru | 1.0000 | Chile | 0.5860 |
| Brazil | 0.7685 | Phillipines | 0.6750 | Czechosl. | 0.4415 |
| Bulgaria | 1.0000 | Poland | 0.8100 | Denmark | 0.3385 |
| Canada | 1.0000 | Portugal | 1.0000 | France | 0.6000 |
| Chile | 0.9860 | Romania | 1.0000 | GDR | 0.2880 |
| China | 0.7140 | South Africa | 0.8280 | GFR | 0.2880 |
| CIS | 0.8235 | Spain | 0.8150 | Greece | 0.3385 |
| Colombia | 1.0000 | Swaziland | 1.0000 | Hungary | 0.4180 |
| Czechosl. | 0.8535 | Sweden | 0.9290 | India | 0.3300 |
| France | 1.0000 | Taiwan | 1.0000 | Italy | 0.2995 |
| Germany | 0.9520 | Tanzania | 1.0000 | Japan | 0.3300 |
| Germany | 0.9520 | Thailand | 1.0000 | Korea DPR | 0.6000 |
| Greenland | 1.0000 | Turkey | 0.9290 | Korea rep. | 0.3385 |
| Hungary | 0.5640 | UK | 0.8410 | Mongolia | 0.3385 |
| India | 0.7815 | USA | 0.9185 | Myanmar | 0.3385 |
| Indonesia | 1.0000 | Venezuela | 1.0000 | Nepal | 0.3385 |
| Iran | 1.0000 | Vietnam | 1.0000 | Netherl. | 0.3385 |
| Ireland | 1.0000 | Vietnam | 1.0000 | New zeal. | 0.5795 |
| Italy | 1.0000 | Yugoslavia | 0.8380 | Philippines | 0.6670 |
| Japan | 0.9425 | Zaire | 1.0000 | Poland | 0.3000 |
| Korea DPR | 0.6935 | Zambia | 1.0000 | Portugal | 0.5000 |
| Korea rep. | 1.0000 | Zimbabwe | 1.0000 | Rumania | 0.3300 |
| Madagascar | 1.0000 | | | Spain | 0.4485 |
| Malaysia | 1.0000 | | | Thailand | 0.3385 |
| Mexico | 1.0000 | | | Tunisia | 0.3385 |
| Mongolia | 1.0000 | | | Turkey | 0.4970 |
| Morocco | 1.0000 | | | Usa | 0.5205 |
| Mozambique | 1.0000 | | | Ussr | 0.5000 |
| Myanmar | 1.0000 | | | Yugosl. | 0.4160 |

Source: Etemad et al. (1991).


## Table A6-2. Regional conversion factors used for conversion of 1 m3 gas into 1 metric ton of coal eq.

| | |
|---|---|
| Canada | 1.2972 |
| USA | 1.1980 |
| Latin America | 1.2972 |
| Africa | 1.3314 |
| OECD Europe | 1.1812 |
| Eastern Europe | 1.1763 |
| CIS | 1.1430 |
| Middle East | 1.2965 |
| India region | 1.2402 |
| China region | 1.3314 |
| East Asia | 1.3314 |
| Oceania | 1.2961 |
| Japan | 1.2480 |

Source: Etemad et al. (1991).

**A7. Coal production expressed in oil and coal equivalents, metric tons and Joules for 1890 - 1991.**

| | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1991 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **In 1000 metric tons of oil equivalents** | | | | | | | | | | | |
| Canada | 1,932 | 3,661 | 7,637 | 11,204 | 10,440 | 11,314 | 12,711 | 7,782 | 11,260 | 32,168 | 36,959 |
| USA | 91,406 | 156,633 | 281,032 | 335,240 | 294,335 | 298,867 | 325,721 | 252,861 | 339,838 | 451,153 | 552,259 |
| Latin America | 81 | 701 | 1,829 | 1,844 | 1,981 | 3,082 | 4,170 | 5,836 | 8,358 | 15,628 | 26,495 |
| Africa | 63 | 1,166 | 4,000 | 6,299 | 7,657 | 11,513 | 17,771 | 25,800 | 35,595 | 70,823 | 97,594 |
| OECD Europe | 201,547 | 265,628 | 345,918 | 286,978 | 332,974 | 370,762 | 332,616 | 373,251 | 299,296 | 274,120 | 213,727 |
| Eastern Europe | 17,693 | 26,825 | 41,312 | 33,752 | 42,888 | 61,271 | 81,193 | 129,469 | 176,727 | 221,985 | 150,130 |
| CIS | 3,321 | 8,696 | 15,861 | 5,737 | 27,722 | 75,673 | 138,611 | 271,170 | 331,582 | 360,524 | 303,867 |
| Middle East | 98 | 223 | 516 | 246 | 973 | 1,886 | 3,337 | 5,228 | 7,442 | 11,704 | 12,949 |
| India + SA | 1,188 | 3,321 | 7,127 | 11,075 | 12,410 | 16,030 | 18,516 | 29,505 | 42,114 | 64,395 | 119,335 |
| China + CPA | 11 | 192 | 5,722 | 7,852 | 12,145 | 25,492 | 22,745 | 163,586 | 197,137 | 333,353 | 579,208 |
| East Asia | 16 | 155 | 456 | 1,086 | 2,088 | 5,099 | 1,344 | 4,098 | 8,386 | 14,123 | 16,771 |
| Oceania | 2,603 | 4,198 | 6,962 | 7,891 | 7,364 | 10,117 | 12,995 | 17,944 | 32,458 | 54,757 | 101,727 |
| Japan | 1,764 | 5,248 | 10,956 | 18,845 | 20,558 | 35,362 | 26,436 | 34,256 | 25,449 | 11,874 | 5,089 |
| Klein Goldewijk & Battjes (1995) | 321,724 | 476,647 | 729,329 | 728,048 | 773,532 | 926,468 | 998,167 | 1,320,785 | 1,515,641 | 1,916,608 | 2,216,110 |
| Hubbert (1993) | 367,501 | 534,547 | 768,411 | 835,230 | 935,457 | 1,102,503 | 1,236,140 | 1,737,278 | 2,004,552 | - | - |
| Etemad et al. (1991) | 334,711 | 499,818 | 752,504 | 865,022 | 858,174 | 842,052 | 1,011,521 | 1,363,171 | 1,518,969 | 1,917,000 | - |
| **In 1000 metric tons of coal equivalents** | | | | | | | | | | | |
| Canada | 2,760 | 5,231 | 10,910 | 16,006 | 14,914 | 16,163 | 18,159 | 11,117 | 16,085 | 45,954 | 52,799 |
| USA | 130,580 | 223,761 | 401,475 | 478,914 | 420,478 | 426,953 | 465,316 | 361,230 | 485,483 | 644,505 | 788,942 |
| Latin America | 116 | 1,002 | 2,613 | 2,635 | 2,829 | 4,403 | 5,957 | 8,337 | 11,939 | 22,326 | 37,850 |
| Africa | 91 | 1,665 | 5,714 | 8,998 | 10,939 | 16,448 | 25,387 | 36,856 | 50,850 | 101,176 | 139,420 |
| OECD Europe | 287,925 | 379,469 | 494,169 | 409,969 | 475,677 | 529,660 | 475,165 | 533,216 | 427,565 | 391,600 | 305,324 |
| Eastern Europe | 25,276 | 38,321 | 59,017 | 48,216 | 61,268 | 87,530 | 115,990 | 184,956 | 252,467 | 317,122 | 214,471 |
| CIS | 4,744 | 12,423 | 22,658 | 8,196 | 39,603 | 108,104 | 198,016 | 387,386 | 473,688 | 515,035 | 434,096 |
| Middle East | 140 | 319 | 737 | 351 | 1,390 | 2,695 | 4,768 | 7,469 | 10,631 | 16,721 | 18,498 |
| India + SA | 1,698 | 4,745 | 10,181 | 15,821 | 17,728 | 22,900 | 26,451 | 42,150 | 60,163 | 91,993 | 170,478 |
| China + CPA | 16 | 274 | 8,175 | 11,217 | 17,350 | 36,417 | 32,493 | 233,694 | 281,624 | 476,219 | 827,440 |
| East Asia | 23 | 221 | 651 | 1,551 | 2,982 | 7,284 | 1,920 | 5,855 | 11,980 | 20,176 | 23,959 |
| Oceania | 3,719 | 5,997 | 9,946 | 11,272 | 10,520 | 14,452 | 18,565 | 25,634 | 46,369 | 78,224 | 145,324 |
| Japan | 2,520 | 7,497 | 15,652 | 26,922 | 29,368 | 50,518 | 37,766 | 48,937 | 36,356 | 16,962 | 7,270 |
| Klein Goldewijk & Battjes (1995) | 459,606 | 680,924 | 1,041,898 | 1,040,068 | 1,105,046 | 1,323,526 | 1,425,953 | 1,886,836 | 2,165,201 | 2,738,012 | 3,165,871 |
| Hubbert (1993) | 525,002 | 763,639 | 1,097,731 | 1,193,185 | 1,336,368 | 1,575,005 | 1,765,915 | 2,481,826 | 2,863,645 | - | - |
| Etemad et al. (1991) | 478,159 | 714,026 | 1,075,006 | 1,235,745 | 1,225,963 | 1,202,932 | 1,445,030 | 1,947,387 | 2,169,956 | 2,738,571 | - |
| **In 1000 metric tons** | | | | | | | | | | | |
| Canada | 2,760 | 5,231 | 10,910 | 17,153 | 16,545 | 16,355 | 18,849 | 11,703 | 17,509 | 42,649 | 52,799 |
| USA | 142,166 | 243,616 | 437,098 | 521,409 | 457,788 | 465,710 | 507,738 | 394,068 | 529,101 | 714,534 | 858,946 |
| Latin America | 116 | 1,008 | 2,629 | 2,721 | 2,946 | 4,730 | 6,583 | 8,914 | 13,206 | 24,845 | 39,226 |
| Africa | 109 | 2,011 | 6,866 | 10,753 | 12,949 | 19,472 | 29,913 | 43,480 | 60,349 | 121,159 | 141,289 |
| OECD Europe | 341,578 | 458,670 | 600,303 | 530,871 | 621,775 | 728,397 | 660,492 | 791,704 | 712,653 | 693,436 | 318,555 |
| Eastern Europe | 36,568 | 55,638 | 82,521 | 70,416 | 88,079 | 125,843 | 163,851 | 271,333 | 392,884 | 487,449 | 254,037 |
| CIS | 5,727 | 15,086 | 27,760 | 10,584 | 48,600 | 149,241 | 260,226 | 506,013 | 615,360 | 689,498 | 527,135 |
| Middle East | 150 | 343 | 794 | 378 | 1,496 | 2,916 | 5,366 | 8,639 | 12,881 | 23,201 | 18,946 |
| India + SA | 2,172 | 6,071 | 13,027 | 20,245 | 22,685 | 29,303 | 33,758 | 53,640 | 78,318 | 119,192 | 183,870 |
| China + CPA | 16 | 277 | 11,193 | 14,961 | 22,958 | 49,091 | 45,364 | 325,186 | 392,829 | 666,104 | 918,103 |
| East Asia | 23 | 221 | 657 | 1,563 | 2,989 | 7,293 | 1,984 | 5,962 | 12,244 | 21,099 | 25,625 |
| Oceania | 4,597 | 7,411 | 12,284 | 14,464 | 14,257 | 20,262 | 26,851 | 39,536 | 71,376 | 114,497 | 177,441 |
| Japan | 2,674 | 7,947 | 16,665 | 28,672 | 31,236 | 53,494 | 40,653 | 52,785 | 38,693 | 18,015 | 7,714 |
| Klein Goldewijk & Battjes (1995) | 538,658 | 803,530 | 1,222,707 | 1,244,189 | 1,344,302 | 1,672,107 | 1,801,627 | 2,512,964 | 2,947,404 | 3,735,679 | 3,523,686 |
| Hubbert (1993) | 550,000 | 800,000 | 1,150,000 | 1,250,000 | 1,400,000 | 1,650,000 | 1,850,000 | 2,600,000 | 3,000,000 | - | - |
| Etemad et al. (1991) | 537,728 | 802,156 | 1,226,873 | 1,242,879 | 1,346,194 | 1,651,771 | 1,799,208 | 2,518,608 | 2,932,483 | 3,728,067 | - |
| **in PetaJoules** | | | | | | | | | | | |
| Canada | 81 | 153 | 320 | 469 | 437 | 474 | 532 | 326 | 471 | 1,346 | 1,547 |
| USA | 3,826 | 6,556 | 11,763 | 14,032 | 12,320 | 12,510 | 13,634 | 10,584 | 14,225 | 18,884 | 23,116 |
| Latin America | 3 | 29 | 77 | 77 | 83 | 129 | 175 | 244 | 350 | 654 | 1,109 |
| Africa | 3 | 49 | 167 | 264 | 321 | 482 | 744 | 1,080 | 1,490 | 2,964 | 4,085 |
| OECD Europe | 8,436 | 11,118 | 14,479 | 12,012 | 13,937 | 15,519 | 13,922 | 15,623 | 12,528 | 11,474 | 8,946 |
| Eastern Europe | 741 | 1,123 | 1,729 | 1,413 | 1,795 | 2,565 | 3,399 | 5,419 | 7,397 | 9,292 | 6,284 |
| CIS | 139 | 364 | 664 | 240 | 1,160 | 3,167 | 5,802 | 11,350 | 13,879 | 15,091 | 12,719 |
| Middle East | 4 | 9 | 22 | 10 | 41 | 79 | 140 | 219 | 311 | 490 | 542 |
| India + SA | 50 | 139 | 298 | 464 | 519 | 671 | 775 | 1,235 | 1,763 | 2,695 | 4,995 |
| China + CPA | 0 | 8 | 240 | 329 | 508 | 1,067 | 952 | 6,847 | 8,252 | 13,953 | 24,244 |
| East Asia | 1 | 6 | 19 | 45 | 87 | 213 | 56 | 172 | 351 | 591 | 702 |
| Oceania | 109 | 176 | 291 | 330 | 308 | 423 | 544 | 751 | 1,359 | 2,292 | 4,258 |
| Japan | 74 | 220 | 459 | 789 | 860 | 1,480 | 1,107 | 1,434 | 1,065 | 497 | 213 |
| Klein Goldewijk & Battjes (1995) | 13,466 | 19,951 | 30,528 | 30,474 | 32,378 | 38,779 | 41,780 | 55,284 | 63,440 | 80,224 | 92,760 |
| Hubbert (1993) | 15,383 | 22,375 | 32,164 | 34,960 | 39,156 | 46,148 | 51,741 | 72,717 | 83,905 | - | - |
| Etemad et al. (1991) | 14,010 | 20,921 | 31,498 | 36,207 | 35,921 | 35,246 | 42,339 | 57,058 | 63,580 | 80,240 | - |
| UNEP (1993) | - | - | - | - | - | - | - | - | - | 76,878 | 97,199 |
| WRI (1994) | - | - | - | - | - | - | - | - | - | - | 93,689 |

**A8. Production of oil expressed in oil and coal equivalents, metric tons and Joules for 1890 - 1990.**

| | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **In 1000 metric tons of oil equivalents** | | | | | | | | | | | |
| Canada | 108 | 124 | 43 | 26 | 200 | 1,148 | 3,976 | 25,968 | 63,116 | 71,672 | 91,120 |
| USA | 6,220 | 8,635 | 28,465 | 63,549 | 126,674 | 189,449 | 274,480 | 360,340 | 491,197 | 443,012 | 424,253 |
| Latin America | 4 | 39 | 703 | 25,551 | 32,271 | 42,943 | 100,523 | 191,581 | 266,347 | 283,679 | 377,952 |
| Africa | 0 | 0 | 0 | 152 | 292 | 951 | 2,697 | 14,047 | 303,189 | 303,583 | 326,802 |
| OECD Europe | 16 | 53 | 152 | 97 | 263 | 1,594 | 3,826 | 14,377 | 16,584 | 117,916 | 198,724 |
| Eastern Europe | 149 | 608 | 3,152 | 1,918 | 6,595 | 6,968 | 6,134 | 15,189 | 20,987 | 21,244 | 17,488 |
| CIS | 3,819 | 10,528 | 9,713 | 3,970 | 18,833 | 31,660 | 38,560 | 150,520 | 359,394 | 614,065 | 566,738 |
| Middle East | 0 | 0 | 0 | 1,804 | 6,267 | 13,160 | 86,369 | 265,977 | 702,546 | 931,974 | 863,269 |
| India + other S.Asian | 16 | 147 | 833 | 1,191 | 1,242 | 1,428 | 513 | 1,384 | 8,205 | 11,648 | 37,031 |
| China + C.P. countries | 0 | 0 | 0 | 0 | 51 | 601 | 209 | 5,631 | 24,449 | 106,890 | 140,837 |
| East Asia | 0 | 317 | 1,550 | 2,557 | 5,833 | 9,120 | 11,454 | 25,916 | 51,055 | 104,593 | 111,833 |
| Oceania | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 8,706 | 19,515 | 30,055 |
| Japan | 8 | 116 | 262 | 319 | 287 | 303 | 298 | 535 | 784 | 436 | 550 |
| Sum | 10,340 | 20,566 | 44,872 | 101,133 | 198,806 | 299,326 | 529,040 | 1,071,468 | 2,316,560 | 3,030,227 | 3,186,649 |
| **In 1000 metric tons of coal equivalents** | | | | | | | | | | | |
| Canada | 154 | 177 | 61 | 38 | 285 | 1,640 | 5,680 | 37,097 | 90,166 | 102,389 | 130,171 |
| USA | 8,886 | 12,335 | 40,665 | 90,784 | 180,963 | 270,641 | 392,115 | 514,772 | 701,710 | 632,875 | 606,075 |
| Latin America | 6 | 55 | 1,005 | 36,501 | 46,101 | 61,348 | 143,605 | 273,688 | 380,496 | 405,256 | 539,932 |
| Africa | 0 | 0 | 0 | 217 | 417 | 1,358 | 3,852 | 20,068 | 433,127 | 433,690 | 466,860 |
| OECD Europe | 23 | 76 | 217 | 138 | 375 | 2,277 | 5,465 | 20,539 | 23,692 | 168,451 | 283,891 |
| Eastern Europe | 212 | 868 | 4,502 | 2,740 | 9,421 | 9,955 | 8,764 | 21,698 | 29,982 | 30,348 | 24,983 |
| CIS | 5,455 | 15,040 | 13,875 | 5,672 | 26,904 | 45,228 | 55,085 | 215,029 | 513,420 | 877,235 | 809,625 |
| Middle East | 0 | 0 | 0 | 2,577 | 8,953 | 18,800 | 123,385 | 379,967 | 1,003,637 | 1,331,391 | 1,233,242 |
| India + other S.Asian | 23 | 209 | 1,190 | 1,702 | 1,774 | 2,040 | 733 | 1,978 | 11,722 | 16,640 | 52,901 |
| China + C.P. countries | 0 | 0 | 0 | 0 | 73 | 858 | 298 | 8,044 | 34,928 | 152,700 | 201,195 |
| East Asia | 0 | 452 | 2,215 | 3,653 | 8,333 | 13,029 | 16,362 | 37,023 | 72,935 | 149,419 | 159,761 |
| Oceania | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 12,437 | 27,879 | 42,935 |
| Japan | 12 | 166 | 374 | 455 | 410 | 433 | 426 | 765 | 1,120 | 622 | 785 |
| Sum | 14,771 | 29,379 | 64,103 | 144,476 | 284,009 | 427,608 | 755,772 | 1,530,669 | 3,309,371 | 4,328,895 | 4,552,356 |
| **in 1000 metric tons** | | | | | | | | | | | |
| Canada | 106 | 122 | 42 | 26 | 196 | 1,128 | 3,906 | 25,509 | 62,000 | 70,405 | 89,509 |
| USA | 6,110 | 8,482 | 27,962 | 62,425 | 124,434 | 186,099 | 269,627 | 353,969 | 482,512 | 435,179 | 416,751 |
| Latin America | 4 | 38 | 691 | 25,099 | 31,700 | 42,184 | 98,746 | 188,194 | 261,638 | 278,663 | 371,270 |
| Africa | 0 | 0 | 0 | 149 | 287 | 934 | 2,649 | 13,799 | 297,828 | 298,215 | 321,024 |
| OECD Europe | 16 | 52 | 149 | 95 | 258 | 1,566 | 3,758 | 14,123 | 16,291 | 115,831 | 195,210 |
| Eastern Europe | 146 | 597 | 3,096 | 1,884 | 6,478 | 6,845 | 6,026 | 14,920 | 20,616 | 20,868 | 17,179 |
| CIS | 3,751 | 10,342 | 9,541 | 3,900 | 18,500 | 31,100 | 37,878 | 147,859 | 353,039 | 603,207 | 556,717 |
| Middle East | 0 | 0 | 0 | 1,772 | 6,156 | 12,927 | 84,842 | 261,274 | 690,124 | 915,495 | 848,005 |
| India + other S.Asian | 16 | 144 | 818 | 1,170 | 1,220 | 1,403 | 504 | 1,360 | 8,060 | 11,442 | 36,376 |
| China + C.P. countries | 0 | 0 | 0 | 0 | 50 | 590 | 205 | 5,531 | 24,017 | 105,000 | 138,346 |
| East Asia | 0 | 311 | 1,523 | 2,512 | 5,730 | 8,959 | 11,251 | 25,458 | 50,152 | 102,744 | 109,855 |
| Oceania | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 8,552 | 19,170 | 29,523 |
| Japan | 8 | 114 | 257 | 313 | 282 | 298 | 293 | 526 | 770 | 428 | 540 |
| Sum | 10,157 | 20,202 | 44,079 | 99,345 | 195,291 | 294,033 | 519,686 | 1,052,523 | 2,275,599 | 2,976,647 | 3,130,304 |
| **in PetaJoules** | | | | | | | | | | | |
| Canada | 5 | 5 | 2 | 1 | 8 | 48 | 166 | 1,087 | 2,642 | 3,000 | 3,814 |
| USA | 260 | 361 | 1,191 | 2,660 | 5,302 | 7,930 | 11,489 | 15,083 | 20,560 | 18,543 | 17,758 |
| Latin America | 0 | 2 | 29 | 1,069 | 1,351 | 1,797 | 4,208 | 8,019 | 11,149 | 11,874 | 15,820 |
| Africa | 0 | 0 | 0 | 6 | 12 | 40 | 113 | 588 | 12,691 | 12,707 | 13,679 |
| OECD Europe | 1 | 2 | 6 | 4 | 11 | 67 | 160 | 602 | 694 | 4,936 | 8,318 |
| Eastern Europe | 6 | 25 | 132 | 80 | 276 | 292 | 257 | 636 | 878 | 889 | 732 |
| CIS | 160 | 441 | 407 | 166 | 788 | 1,325 | 1,614 | 6,300 | 15,043 | 25,703 | 23,722 |
| Middle East | 0 | 0 | 0 | 76 | 262 | 551 | 3,615 | 11,133 | 29,407 | 39,010 | 36,134 |
| India + other S.Asian | 1 | 6 | 35 | 50 | 52 | 60 | 21 | 58 | 343 | 488 | 1,550 |
| China + C.P. countries | 0 | 0 | 0 | 0 | 2 | 25 | 9 | 236 | 1,023 | 4,474 | 5,895 |
| East Asia | 0 | 13 | 65 | 107 | 244 | 382 | 479 | 1,085 | 2,137 | 4,378 | 4,681 |
| Oceania | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 364 | 817 | 1,258 |
| Japan | 0 | 5 | 11 | 13 | 12 | 13 | 12 | 22 | 33 | 18 | 23 |
| Sum | 433 | 861 | 1,878 | 4,233 | 8,321 | 12,529 | 22,144 | 44,849 | 96,965 | 126,837 | 133,384 |
| WRI (1994) | - | - | - | - | - | - | - | - | - | - | 132,992 |
| UNEP (1993), table 6.5, p.28 | - | - | - | - | - | - | - | - | - | 129,586 | 133,393 |

**A9. Production of natural gas expressed in oil and coal equivalents, cubic meters and PetaJoules for 1890 - 1990.**

| | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **In 1000 metric tons of oil equivalents** | | | | | | | | | | | |
| Canada | 0 | 0 | 139 | 441 | 667 | 1,024 | 1,823 | 14,814 | 58,457 | 72,996 | 95,372 |
| USA | 5,575 | 5,580 | 11,717 | 17,710 | 41,997 | 64,923 | 153,499 | 298,400 | 508,015 | 457,966 | 419,092 |
| Latin America | 0 | 0 | 0 | 22 | 687 | 2,800 | 4,074 | 12,887 | 30,246 | 58,555 | 79,461 |
| Africa | 0 | 0 | 0 | 0 | 0 | 39 | 79 | 192 | 3,934 | 23,397 | 66,226 |
| OECD Europe | 0 | 1 | 7 | 42 | 91 | 174 | 1,588 | 10,222 | 67,708 | 159,282 | 171,727 |
| Eastern Europe | 0 | 0 | 0 | 321 | 1,287 | 1,590 | 3,729 | 10,294 | 29,349 | 42,858 | 31,966 |
| CIS | 0 | 0 | 0 | 8 | 448 | 1,219 | 4,594 | 38,610 | 157,132 | 348,839 | 662,563 |
| Middle East | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1,878 | 20,485 | 43,342 | 90,880 |
| India + other S.Asian | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 637 | 3,641 | 9,184 | 24,154 |
| China + C.P. countries | 0 | 0 | 0 | 0 | 13 | 78 | 19 | 518 | 2,555 | 14,006 | 14,191 |
| East Asia | 0 | 0 | 0 | 29 | 475 | 620 | 914 | 2,412 | 3,508 | 23,535 | 63,406 |
| Oceania | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,391 | 10,235 | 23,031 |
| Japan | 0 | 0 | 0 | 28 | 40 | 47 | 62 | 658 | 1,999 | 2,104 | 1,936 |
| Total | 5,575 | 5,581 | 11,862 | 18,601 | 45,704 | 72,514 | 170,382 | 391,520 | 888,420 | 1,266,298 | 1,744,004 |
| **In 1000 metric tons of coal equivalents** | | | | | | | | | | | |
| Canada | 0 | 0 | 198 | 630 | 952 | 1,462 | 2,604 | 21,162 | 83,510 | 104,279 | 136,246 |
| USA | 7,965 | 7,971 | 16,739 | 25,300 | 59,996 | 92,747 | 219,284 | 426,286 | 725,736 | 654,238 | 598,703 |
| Latin America | 0 | 0 | 0 | 32 | 981 | 4,000 | 5,821 | 18,410 | 43,209 | 83,650 | 113,515 |
| Africa | 0 | 0 | 0 | 0 | 0 | 56 | 113 | 275 | 5,620 | 33,424 | 94,608 |
| OECD Europe | 0 | 1 | 9 | 61 | 130 | 248 | 2,268 | 14,603 | 96,726 | 227,546 | 245,324 |
| Eastern Europe | 0 | 0 | 0 | 459 | 1,838 | 2,272 | 5,327 | 14,705 | 41,927 | 61,226 | 45,666 |
| CIS | 0 | 0 | 0 | 11 | 639 | 1,742 | 6,562 | 55,157 | 224,474 | 498,341 | 946,519 |
| Middle East | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2,682 | 29,264 | 61,918 | 129,829 |
| India + other S.Asian | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 910 | 5,201 | 13,120 | 34,505 |
| China + C.P. countries | 0 | 0 | 0 | 0 | 18 | 112 | 27 | 739 | 3,649 | 20,008 | 20,273 |
| East Asia | 0 | 0 | 0 | 41 | 678 | 886 | 1,306 | 3,445 | 5,012 | 33,621 | 90,580 |
| Oceania | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1,987 | 14,621 | 32,901 |
| Japan | 0 | 0 | 0 | 39 | 57 | 68 | 88 | 940 | 2,855 | 3,005 | 2,765 |
| Total | 7,965 | 7,972 | 16,946 | 26,572 | 65,291 | 103,592 | 243,403 | 559,315 | 1,269,171 | 1,808,998 | 2,491,434 |
| **In million cubic meters** | | | | | | | | | | | |
| Canada | 0 | 0 | 153 | 485 | 734 | 1,127 | 2,008 | 16,314 | 64,377 | 80,388 | 123,717 |
| USA | 6,648 | 6,654 | 13,972 | 21,118 | 50,080 | 77,418 | 183,042 | 355,831 | 605,790 | 546,108 | 502,072 |
| Latin America | 0 | 0 | 0 | 25 | 756 | 3,084 | 4,487 | 14,192 | 33,311 | 64,488 | 103,073 |
| Africa | 0 | 0 | 0 | 0 | 0 | 42 | 85 | 206 | 4,221 | 25,104 | 88,173 |
| OECD Europe | 0 | 1 | 8 | 51 | 110 | 210 | 1,920 | 12,363 | 81,888 | 192,638 | 202,845 |
| Eastern Europe | 0 | 0 | 0 | 390 | 1,563 | 1,931 | 4,529 | 12,502 | 35,645 | 52,052 | 37,600 |
| CIS | 0 | 0 | 0 | 9 | 559 | 1,524 | 5,741 | 48,256 | 196,390 | 435,994 | 757,310 |
| Middle East | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2,069 | 22,572 | 47,759 | 117,822 |
| India + other S.Asian | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 733 | 4,194 | 10,578 | 29,956 |
| China + C.P. countries | 0 | 0 | 0 | 0 | 14 | 84 | 20 | 555 | 2,741 | 15,028 | 18,894 |
| East Asia | 0 | 0 | 0 | 31 | 510 | 665 | 981 | 2,588 | 3,764 | 25,252 | 84,419 |
| Oceania | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,533 | 11,281 | 29,849 |
| Japan | 0 | 0 | 0 | 32 | 45 | 54 | 70 | 753 | 2,288 | 2,408 | 2,416 |
| Total | 6,648 | 6,655 | 14,133 | 22,142 | 54,372 | 86,139 | 202,885 | 466,363 | 1,058,713 | 1,509,080 | 2,098,145 |
| **In PetaJoules** | | | | | | | | | | | |
| Canada | 0 | 0 | 6 | 18 | 28 | 43 | 76 | 620 | 2,447 | 3,055 | 3,992 |
| USA | 233 | 234 | 490 | 741 | 1,758 | 2,717 | 6,425 | 12,490 | 21,264 | 19,169 | 17,542 |
| Latin America | 0 | 0 | 0 | 1 | 29 | 117 | 171 | 539 | 1,266 | 2,451 | 3,326 |
| Africa | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 8 | 165 | 979 | 2,772 |
| OECD Europe | 0 | 0 | 0 | 2 | 4 | 7 | 66 | 428 | 2,834 | 6,667 | 7,188 |
| Eastern Europe | 0 | 0 | 0 | 13 | 54 | 67 | 156 | 431 | 1,228 | 1,794 | 1,338 |
| CIS | 0 | 0 | 0 | 0 | 19 | 51 | 192 | 1,616 | 6,577 | 14,601 | 27,733 |
| Middle East | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 79 | 857 | 1,814 | 3,804 |
| India + other S.Asian | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 152 | 384 | 1,011 |
| China + C.P. countries | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 22 | 107 | 586 | 594 |
| East Asia | 0 | 0 | 0 | 1 | 20 | 26 | 38 | 101 | 147 | 985 | 2,654 |
| Oceania | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 | 428 | 964 |
| Japan | 0 | 0 | 0 | 1 | 2 | 2 | 3 | 28 | 84 | 88 | 81 |
| Total | 233 | 234 | 497 | 779 | 1,913 | 3,035 | 7,132 | 16,388 | 37,187 | 53,004 | 72,999 |
| WRI (1994) | - | - | - | - | - | - | - | - | - | - | 76,275 |
| UNEP (1993) | - | - | - | - | - | - | - | - | - | 53,998 | 73,083 |

## A10. Iron ore and pig iron production for 1890 - 1990.

*Iron ore production (in 1000 metric tons).*

| | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 70 | 93 | 434 | 1,017 | 1,362 | 1,149 | 717 | 1,150 | 1,473 | 673 | 1,909 | 2,013 | 3,270 | 14,772 | 19,551 | 34,208 | 47,458 | 44,893 | 49,068 | 39,502 | 36,443 |
| USA | 16,293 | 16,214 | 27,738 | 43,080 | 57,930 | 56,417 | 68,689 | 62,902 | 59,346 | 31,030 | 74,879 | 89,794 | 99,618 | 104,656 | 90,209 | 88,842 | 91,200 | 80,132 | 70,730 | 49,533 | 59,032 |
| Latin America | 370 | 388 | 457 | 574 | 1,496 | 843 | 113 | 1,877 | 2,000 | 1,031 | 1,634 | 1,103 | 5,470 | 15,331 | 39,658 | 59,946 | 85,605 | 155,929 | 176,368 | 200,519 | 238,290 |
| Africa | 475 | 318 | 602 | 569 | 1,398 | 1,208 | 1,544 | 3,386 | 2,245 | 2,416 | 2,163 | 2,213 | 3,961 | 6,868 | 9,278 | 25,322 | 38,336 | 34,395 | 36,787 | 33,364 | 33,194 |
| OECD Europe | 37,460 | 37,834 | 52,110 | 61,451 | 76,282 | 55,376 | 47,366 | 73,068 | 92,198 | 66,547 | 71,682 | 29,924 | 77,202 | 117,281 | 143,959 | 134,283 | 132,194 | 143,720 | 155,246 | 166,772 | 178,298 |
| Eastern Europe | | | | | | | 274 | 456 | 1,001 | 657 | 963 | 102 | 1,913 | 3,691 | 5,842 | 7,845 | 8,488 | 8,859 | 9,230 | 9,601 | 9,972 |
| CIS | 1,736 | 2,851 | 6,001 | 4,976 | 5,742 | 5,940 | 170 | 2,220 | 10,663 | 26,845 | 29,886 | 15,864 | 39,651 | 71,862 | 105,857 | 153,432 | 186,134 | 232,792 | 244,703 | 247,639 | 236,000 |
| Middle East | | | | | | | | | | | 85 | 82 | 143 | 479 | 494 | 876 | 1,666 | 1,910 | 1,897 | 3,305 | 4,019 |
| India + SA | | | 65 | 104 | 55 | 396 | 567 | 1,569 | 1,177 | 1,519 | 2,032 | 1,494 | 1,991 | 4,041 | 10,131 | 14,520 | 19,654 | 26,147 | 41,934 | 42,545 | 52,000 |
| China + CPA | | | | | | 596 | 1,783 | 1,395 | 2,007 | 2,190 | 7,293 | 783 | | | 31,800 | 24,397 | 28,014 | 36,260 | 68,072 | 80,000 | 118,000 |
| East Asia | | | | | | | | | 505 | 918 | 1,968 | 9 | 648 | 1,653 | 4,055 | 5,165 | 3,995 | 1,052 | 597 | 599 | 660 |
| Oceania | | | 32 | 107 | 88 | 290 | 444 | 601 | 950 | 1,938 | 2,355 | 1,642 | 2,403 | 3,630 | 4,425 | 6,803 | 45,119 | 98,159 | 95,529 | 97,447 | 110,000 |
| Japan | 16 | 26 | 25 | 53 | 67 | 83 | 180 | 76 | 117 | 251 | 496 | 935 | 490 | 855 | 1,574 | 1,427 | 916 | 426 | 294 | 212 | 60 |
| Sum | 56,420 | 57,724 | 87,464 | 111,931 | 144,420 | 122,298 | 121,847 | 148,976 | 173,682 | 136,015 | 197,325 | 145,958 | 236,760 | 345,319 | 466,833 | 557,066 | 688,779 | 864,674 | 950,455 | 971,038 | 1,075,968 |
| **Other global estimates** | | | | | | | | | | | | | | | | | | | | | |
| Woytinski (1953) | 58,000 | | 92,000 | | 178,000 | | 127,000 | | 203,000 | | 204,000 | | 245,000 | | | | | | | | |
| Kirk (1996) | | | | | | | | | | | | | | | | | | | | | 983,000 |

Source: Mitchell (1975, 1982, 1983, 1993, 1995), World Resources (1992), Kirk (1996).

Note: World Resources data are used for CIS 1975 and all regions 1980-1990.
Note: The 1990 data for the regions Africa, Latin America, China, India, East Asia, Oceania are for 1988.
Note: Data for 1990 for OECD and Eastern Europe from W.S. Kirk (USGS on the Internet), data for 1975 - 1985 interpolated.

*Output of pig iron (in 1000 metric tons).*

| | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 20 | 39 | 90 | 477 | 726 | 829 | 1,015 | 606 | 825 | 667 | 1,323 | 1,769 | 2,266 | 3,089 | 4,025 | 6,582 | 8,424 | 9,309 | 11,182 | 9,887 | 9,739 |
| USA | 9,350 | 9,598 | 14,011 | 23,361 | 27,742 | 30,396 | 37,519 | 37,289 | 32,261 | 21,175 | 43,027 | 49,855 | 60,211 | 71,906 | 62,250 | 82,480 | 85,141 | 74,342 | 63,748 | 46,789 | 50,676 |
| Latin America | | | | | 45 | 0 | 42 | 79 | 93 | 127 | 285 | 487 | 1,084 | 1,789 | 2,776 | 5,100 | 8,761 | 13,071 | 21,336 | 27,479 | 33,363 |
| Africa | | | | | | 0 | 0 | 0 | 31 | 173 | 304 | 556 | 767 | 1,358 | 2,229 | 4,053 | 5,412 | 7,057 | 10,534 | 11,160 | 10,843 |
| OECD Europe | 15,612 | 17,639 | 21,232 | 27,165 | 30,504 | 24,338 | 21,323 | 32,004 | 34,223 | 32,234 | 32,247 | 13,090 | 37,185 | 56,589 | 78,865 | 92,321 | 109,545 | 107,449 | 105,354 | 103,258 | 101,162 |
| Eastern Europe | 299 | 349 | 456 | 421 | 502 | 388 | 1,174 | 1,641 | 2,276 | 1,496 | 3,168 | 905 | 4,495 | 8,086 | 12,740 | 17,103 | 21,523 | 21,523 | 23,626 | 27,833 | 29,936 |
| CIS | 928 | 1,455 | 2,937 | 2,736 | 3,047 | 3,764 | 116 | 1,309 | 4,964 | 12,490 | 14,902 | 8,803 | 19,175 | 33,310 | 46,757 | 66,184 | 81,634 | 128,000 | 133,000 | 136,000 | 110,000 |
| Middle East | | | | | | | | | 0 | 0 | 83 | 70 | 113 | 201 | 248 | 500 | 1,298 | 1,369 | 3,500 | 4,850 | 14,281 |
| India + SA | | | | | | 0 | 317 | 902 | 1,199 | 1,490 | 2,044 | 1,428 | 1,708 | 1,925 | 4,275 | 7,124 | 7,118 | 8,558 | 8,718 | 10,014 | 12,017 |
| China + CPA | | | | | | 0 | 259 | 292 | 526 | 859 | 1,409 | 352 | 900 | 3,990 | 12,272 | 20,485 | 24,400 | 34,900 | 45,214 | 53,139 | 61,870 |
| East Asia | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 1,228 | 5,716 | 9,009 | 12,725 |
| Oceania | | | 30 | 55 | 41 | 149 | 350 | 446 | 313 | 710 | 1,231 | 1,136 | 1,115 | 1,899 | 2,698 | 3,999 | 5,769 | 7,598 | 7,313 | 5,387 | 5,518 |
| Japan | | | | | 72 | 321 | 530 | 697 | 1,188 | 1,965 | 3,658 | 984 | 2,299 | 5,426 | 12,341 | 28,160 | 69,714 | 89,016 | 89,130 | 82,134 | 80,230 |
| Sum | 26,209 | 29,080 | 38,756 | 54,215 | 62,679 | 60,185 | 62,645 | 75,265 | 77,899 | 73,386 | 103,681 | 79,435 | 131,318 | 189,568 | 241,476 | 334,091 | 428,774 | 503,420 | 528,371 | 526,939 | 532,360 |
| **Other global estimates** | | | | | | | | | | | | | | | | | | | | | |
| World (Daniels, 1994) | 27,178 | | 40,446 | | 65,979 | | 62,626 | | 79,969 | | 104,068 | | 132,689 | 189,992 | 252,811 | 326,000 | 428,200 | 471,200 | 508,053 | 499,425 | 530,255 |
| U.S. Bureau of Mines (1996) | | | | | | | | | | | | | | | | | | | | | 531,000 |

Source: Mitchell (1975, 1982, 1983, 1993, 1995), Sugimoto (The Chinese steel industry, 1993, Resources Policy. Data used for China, Japan, USA 1990), Pochney (Soviet statistics since 1950, 1991. Data used for CIS 1975-1985).

Note: The 1990 data for the regions Africa, Latin America, China, India, East Asia, Oceania are for 1988.
Note: Data 1960 from China has been changed from 28.372 (Mitchell) into 12.272 (Wang, Mineral resources and basic industries in the People's Republic of China).
Note: Data for 1990 for OECD and Eastern Europe from G.Houck (USGS on the Internet), data for 1975 - 1985 interpolated.

# A11. Steel production and consumption for 1890 - 1990.

*Crude Steel production (in 1000 metric tons), primary production.*

| | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 0 | 17 | 24 | 410 | 746 | 926 | 1,118 | 765 | 1,026 | 957 | 2,045 | 2,611 | 3,070 | 4,114 | 5,270 | 9,132 | 11,198 | 13,025 | 15,900 | 13,459 | 12,200 |
| USA | 4,346 | 6,213 | 10,352 | 20,345 | 26,154 | 32,667 | 42,809 | 46,122 | 41,352 | 34,640 | 60,765 | 72,304 | 87,848 | 106,173 | 90,067 | 119,260 | 119,309 | 105,817 | 101,500 | 80,069 | 89,700 |
| Latin America | 0 | 0 | 0 | 0 | 68 | 0 | 32 | 84 | 124 | 175 | 312 | 436 | 1,365 | 2,257 | 4,733 | 8,125 | 12,918 | 17,639 | 28,561 | 35,534 | 38,400 |
| Africa | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 40 | 188 | 363 | 543 | 839 | 1,639 | 2,366 | 3,625 | 5,255 | 7,445 | 11,231 | 11,628 | 10,700 |
| OECD Europe | 7,644 | 9,722 | 15,554 | 21,816 | 29,173 | 25,151 | 24,332 | 35,186 | 38,827 | 41,740 | 47,231 | 17,306 | 51,043 | 78,241 | 113,864 | 131,335 | 157,475 | 159,338 | 161,200 | 164,850 | 168,500 |
| Eastern Europe | 0 | 0 | 0 | 0 | 0 | 0 | 2,079 | 2,642 | 3,666 | 2,886 | 3,952 | 1,795 | 7,673 | 12,174 | 18,837 | 25,990 | 34,400 | 47,850 | 61,300 | 52,150 | 43,000 |
| CIS | 378 | 879 | 2,216 | 2,266 | 3,314 | 4,120 | 194 | 1,868 | 5,761 | 12,588 | 18,317 | 12,252 | 27,329 | 45,272 | 65,294 | 91,021 | 110,328 | 141,327 | 147,900 | 154,670 | 154,400 |
| Middle East | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 64 | 91 | 188 | 306 | 665 | 1,432 | 1,517 | 3,100 | 6,707 | 10,626 |
| India + SA | 0 | 0 | 0 | 0 | 63 | 0 | 159 | 456 | 629 | 876 | 1,312 | 1,388 | 1,461 | 1,732 | 3,286 | 6,470 | 6,462 | 7,960 | 9,500 | 11,288 | 15,000 |
| China + CPA | 0 | 0 | 0 | 0 | 3 | 48 | 68 | 30 | 15 | 257 | 534 | 260 | 158 | 2,225 | 18,510 | 15,000 | 20,200 | 29,000 | 42,900 | 58,596 | 73,500 |
| East Asia | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11 | 50 | 185 | 481 | 2,010 | 14,400 | 20,557 | 40,400 |
| Oceania | 0 | 0 | 0 | 0 | 0 | 77 | 263 | 405 | 320 | 708 | 1,326 | 1,413 | 1,275 | 2,276 | 3,620 | 5,213 | 6,874 | 7,856 | 7,800 | 6,529 | 6,553 |
| Japan | 0 | 0 | 1 | 6 | 9 | 20 | 811 | 1,336 | 2,289 | 4,704 | 6,856 | 2,082 | 4,839 | 9,408 | 22,138 | 41,161 | 93,322 | 102,313 | 111,400 | 105,278 | 110,300 |
| Sum | 12,368 | 16,831 | 28,147 | 44,843 | 59,544 | 63,009 | 71,865 | 88,931 | 94,049 | 99,719 | 143,051 | 112,454 | 186,995 | 265,710 | 348,341 | 457,182 | 579,654 | 643,097 | 716,692 | 721,315 | 773,279 |
| *Other global estimates* | | | | | | | | | | | | | | | | | | | | | |
| v.Daatselaar (1994) | | | 28,000 | 44,000 | 60,000 | 66,000 | 72,000 | 89,000 | 95,000 | 98,000 | 140,000 | 113,000 | 189,000 | 265,000 | 334,740 | 452,230 | 588,260 | 642,630 | 719,230 | 721,380 | 900,000 |
| Daniels (1994) | | | | | | | | | | | | | | | 334,741 | | 588,255 | | 719,230 | | |
| Houck (1996) | | | | | | | | | | | | | | | | | | | | | 771,000 |

Source: Mitchell (1975, 1982, 1983), OECD Steel Comittee (1992)

Note: Africa,China,India,Japan,Middle east: Steel ingots and castings
Note: Data for 1980,1990 from OECD Steel Comittee
Note: Data for USSR 1975 and all regions 1985 from World Resources (1992)
Note: data for 1975 and 1985 for OECD and Eastern Europe interpolated.
Note: data for 1975 and 1985 for OECD and Eastern Europe interpolated.
Note: data for 1990 for USA G.Houck (USGS on the Internet), data for 1975 - 1985 interpolated.

*Consumption of steel (in 1000 metric tons).*

| | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | | | | | | | | | | | | | | | | | | | | | |
| USA | | | | | | | | | | | | | | | | | | 116,821 | 114,433 | 105,593 | 102,351 |
| Latin America | | | | | | | | | | | | | | | | | | | | | |
| Africa | | | | | | | | | | | | | | | | | | | | | |
| OECD Europe | | | | | | | | | | | | | | | | | | | | | |
| Eastern Europe | | | | | | | | | | | | | | | | | | | | | |
| CIS | | | | | | | | | | | | | | | | | | 141,031 | 150,330 | 157,161 | 166,319 |
| Middle East | | | | | | | | | | | | | | | | | | | | | |
| India + SA | | | | | | | | | | | | | | | | | | 8,066 | 10,900 | 14,400 | 20,036 |
| China + CPA | | | | | | | | | | | | | | | | | | 29,110 | 43,005 | 71,428 | 69,504 |
| East Asia | | | | | | | | | | | | | | | | | | | | | |
| Oceania | | | | | | | | | | | | | | | | | | | | | |
| Japan | | | | | | | | | | | | | | | | | | 68,080 | 79,007 | 73,377 | 93,278 |
| Sum | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 363,128 | 397,675 | 421,959 | 451,488 |
| *Other global estimates* | | | | | | | | | | | | | | | | | | | | | |
| Tilton (1990) | | | | | | | | | | | | | | | 334,741 | 452,228 | 588,255 | 642,630 | 719,230 | 721,380 | |
| WRI (1992) | | | | | | | | | | | | | | | | | | 644,153 | 718,921 | 720,568 | 794,470 |

Source: World Resources Institute (1992).

# A 12. Copper production and consumption for 1890 - 1990.

*Mine production of copper (in 1000 metric tons).*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 5 | 5 | 11 | 26 | 26 | 46 | 37 | 51 | 139 | 193 | 307 | 220 | 240 | 296 | 399 | 461 | 610 | 734 | 708 | 739 | 794 |
| USA | 118 | 173 | 275 | 403 | 494 | 675 | 555 | 761 | 640 | 351 | 796 | 701 | 825 | 906 | 980 | 1,226 | 1,560 | 1,282 | 1,168 | 1,105 | 1,588 |
| Latin America | 33 | 37 | 59 | 113 | 124 | 124 | 202 | 303 | 362 | 344 | 464 | 579 | 481 | 553 | 798 | 850 | 992 | 1,088 | 1,619 | 1,975 | 2,245 |
| Africa | 7 | 7 | 7 | 7 | 12 | 29 | 27 | 108 | 172 | 290 | 431 | 381 | 501 | 647 | 983 | 1,122 | 1,295 | 1,462 | 1,358 | 1,367 | 1,143 |
| OECD Europe | 95 | 66 | 87 | 83 | 97 | 83 | 44 | 87 | 111 | 102 | 82 | 46 | 76 | 99 | 118 | 107 | 133 | 197 | 183 | 220 | 283 |
| Eastern Europe | | | | | 5 | 3 | 2 | 7 | 27 | 32 | 44 | 8 | 45 | 40 | 65 | 123 | 263 | 455 | 568 | 641 | 530 |
| CIS | 6 | 6 | 8 | 9 | 23 | 26 | 2 | 7 | 30 | 55 | 110 | 122 | 218 | 400 | 500 | 750 | 925 | 1,100 | 1,150 | 1,030 | 900 |
| Middle East | | | 1 | 1 | 1 | | | | 5 | 12 | 18 | 10 | 27 | 51 | 72 | 68 | 60 | 47 | 22 | 85 | 55 |
| India + other S.Asian | | | | | | | 1 | 3 | 4 | 9 | 8 | 7 | 9 | 8 | 9 | 10 | 10 | 24 | 27 | 65 | 56 |
| China + C.P. countries | | | | | | | 0 | 1 | | | | | | | 74 | 89 | 116 | 157 | 193 | 350 | 432 |
| East Asia | 7 | 10 | 23 | 31 | 43 | 39 | 27 | 12 | 15 | 18 | 9 | 27 | 10 | 18 | 45 | 64 | 162 | 294 | 389 | 344 | 374 |
| Oceania | 18 | 19 | 29 | 37 | 49 | 75 | 69 | 66 | 62 | 63 | 22 | 29 | 18 | 48 | 111 | 92 | 158 | 392 | 379 | 435 | 500 |
| Japan | | | | | | | | | | | 68 | | 39 | 73 | 89 | 107 | 120 | 85 | 53 | 43 | 13 |
| **Sum** | 288 | 322 | 500 | 709 | 874 | 1,099 | 966 | 1,406 | 1,566 | 1,468 | 2,359 | 2,130 | 2,489 | 3,137 | 4,242 | 5,067 | 6,403 | 7,317 | 7,817 | 8,398 | 8,913 |
| *Other global estimates* | | | | | | | | | | | | | | | | | | | | | |
| Woytinski (1953) | 277 | | | | | 1,006 | 1,417 | | 1,951 | 1,467 | | 2,527 | 2,250 | | | | | | | | |
| Metallgesellschaft (1992) | | 335 | 452 | 693 | 872 | 1,058 | 967 | 1,410 | 1,596 | 1,467 | 2,397 | 2,172 | 2,525 | 3,112 | 4,242 | 4,963 | 6,403 | 7,317 | 7,816 | 8,398 | 8,987 |
| Schmitz (1979) | | | 495 | 706 | 858 | 1,057 | 960 | 1,407 | 1,540 | 1,440 | 2,360 | 2,132 | 2,488 | 3,130 | 4,418 | 5,100 | 6,460 | 7,296 | | | |

Source: Schmitz (1979), Metallgesellschaft (1971, 1991, 1992).

Note: Woytinski gives copper ore estimates for 1913, 1918, 1929, 1944 and 1950.
Note: Metallgesellschaft data for 1970-1990, table p.29-33.

*Production of copper (in 1000 metric tons), primary smelter output.*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | | | 1 | 11 | 13 | 14 | 15 | 24 | 102 | 176 | 256 | 198 | 210 | 262 | 361 | 390 | 450 | 488 | 424 | 490 | 476 |
| USA | 122 | 178 | 287 | 413 | 528 | 566 | 601 | 833 | 730 | 379 | 922 | 784 | 915 | 1,004 | 1,119 | 1,301 | 1,489 | 1,313 | 1,008 | 941 | 1,159 |
| Latin America | | 20 | 21 | 23 | 18 | 86 | 123 | 208 | 308 | 330 | 412 | 541 | 414 | 484 | 726 | 785 | 888 | 958 | 1,367 | 1,604 | 1,897 |
| Africa | | | | | 2 | 18 | 22 | 92 | 154 | 264 | 429 | 381 | 490 | 727 | 913 | 1,058 | 1,282 | 1,357 | 1,280 | 1,249 | 1,033 |
| OECD Europe | 118 | 115 | 120 | 119 | 141 | 121 | 61 | 79 | 106 | 91 | 69 | 38 | 67 | 73 | 150 | 209 | 273 | 410 | 409 | 448 | 505 |
| Eastern Europe | | | | | | 6 | 2 | 7 | 25 | 39 | 43 | 10 | 40 | 32 | 69 | 110 | 248 | 475 | 548 | 637 | 538 |
| CIS | | | | 9 | 22 | 26 | 2 | 7 | 35 | 63 | 112 | 122 | 255 | 420 | 500 | 750 | 925 | 1,100 | 1,150 | 1,140 | 990 |
| Middle East | | | | | | | | | | | 9 | 10 | 12 | 24 | | 26 | 20 | 34 | 29 | 88 | 104 |
| India + other S.Asian | | | | | | | | | | | | | | | | | 9 | 22 | 29 | 16 | 41 |
| China + C.P. countries | | | | | | | | 2 | 1 | 2 | 5 | 1 | 2 | 15 | 100 | 100 | 117 | 175 | 184 | 352 | 396 |
| East Asia | 6 | 8 | 22 | 24 | 38 | 39 | 24 | 11 | 15 | 11 | 21 | 26 | 16 | 38 | 72 | 74 | 5 | 10 | 64 | 274 | 339 |
| Oceania | | | | | | | | | | | | | | | | | 112 | 180 | 171 | 164 | 192 |
| Japan | | | | | | | | | | | | | 113 | 154 | 186 | 267 | 501 | 742 | 890 | 802 | 893 |
| **Sum** | 245 | 321 | 450 | 598 | 761 | 876 | 850 | 1,261 | 1,475 | 1,354 | 2,279 | 2,112 | 2,533 | 3,233 | 4,221 | 5,070 | 6,320 | 7,265 | 7,540 | 8,221 | 8,561 |
| *Other global estimates* | | | | | | | | | | | | | | | | | | | | | |
| Woytinski (1953) | 266 | | 478 | 654 | 858 | 924 | 986 | 1,382 | 1,922 | 1,303 | 2,175 | 2,584 | 2,480 | 3,087 | 4,287 | 4,964 | 6,310 | 7,274 | | | |
| Schmitz (1979) | 281 | 354 | 499 | 694 | 890 | 1,092 | 946 | 1,395 | 1,578 | 1,455 | 2,413 | 2,167 | 2,519 | | | | | | | | |
| Metallgesellschaft (1992) | | | 499 | 694 | 890 | 1,092 | 946 | 1,395 | 1,578 | 1,455 | 2,413 | 2,167 | 2,519 | 3,087 | 4,287 | 4,964 | 6,320 | 7,276 | 7,675 | 8,222 | 8,561 |
| v.Daatselaar (1994) | | | 450 | 700 | 900 | 1,000 | 1,100 | 1,400 | 1,700 | 2,150 | 2,600 | 2,650 | 2,700 | 3,080 | 4,090 | 5,050 | 6,300 | 7,270 | 7,700 | 8,200 | 9,030 |
| Daniels (1994) | | | 500 | | 900 | | 1,100 | | 1,700 | | 2,600 | | 2,700 | 3,770 | 4,760 | 6,221 | 7,291 | 7,458 | 9,375 | 9,670 | 10,781 |

Source: Woytinski & Woytinski (1953), Schmitz (1979), Metallgesellschaft (1991, 1992).

Note: For Canada, Italy , and the USA the 1914 production level was used for the production in 1915. For mexico and Yugoslavia the 1913 production was used for the 1915 level
Note: The same method has been applied to generate a primary coppersmelter output of Canada in 1920, for China in 1920, for Germany in 1945.
Note: For Spain, the smelter production of copper in 1915 has been computed by taking average growth of the copper production between 1910 and 1920. The same method was applied to compute the copper smelter output of Canada in 1940.
Note: Note that no copper smelter output has been assigned to the IMAGE regions India and East Asia, during 1890-1975. This is not necessarily the result of a lack in data, because refinery production statistics are presented in [Schmitz, 1979].

# A 12. Copper production and consumption for 1890 - 1990, continued.

*Secondary production of copper (in 1000 metric tons), old and new scrap.*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | | | | | | | | | | | | | | | 40 | 48 | 61 | 45 | 57 | 51 | 83 |
| USA | | | | | 87 | 178 | 283 | 381 | 424 | 407 | 483 | 913 | 886 | 897 | 906 | 1,276 | 1,245 | 963 | 1,299 | 1,174 | 1,387 |
| Latin America | | | | | | | | | | | | | | | | | 35 | 52 | 78 | 83 | 64 |
| Africa | | | | | | | | | | | | | | | | | | | | | |
| OECD Europe | | | | | | | | | 0 | 8 | 1 | 57 | 153 | 222 | 924 | 1,185 | 1,284 | 1,009 | 1,340 | 1,404 | 1,578 |
| Eastern Europe | | | | | | | | | | | | | | | | | 43 | 62 | 80 | 88 | 53 |
| CIS | | | | | | | | | | | | | | | | | | | | | |
| Middle East | | | | | | | | | | | | | | | | | | | | | |
| India + other S.Asian | | | | | | | | | | | | | | | | | | | | | |
| China + C.P. countries | | | | | | | | | | | | | | | | | | | | 21 | 53 |
| East Asia | | | | | | | | | | | | | | | | | | 12 | 14 | 35 | 160 |
| Oceania | | | | | | | | | | | | | | | 12 | 34 | 78 | 64 | 75 | 72 | 64 |
| Japan | | | | | | | | | | | | 14 | 48 | 32 | 231 | 318 | 464 | 367 | 527 | 654 | 748 |
| **Sum** | 0 | 0 | 0 | 0 | 87 | 178 | 283 | 381 | 424 | 416 | 484 | 984 | 1,088 | 1,151 | 2,113 | 2,860 | 3,210 | 2,574 | 3,470 | 3,581 | 4,191 |
| *Other global estimates* | | | | | | | | | | | | | | | | | | | | | |
| Schmitz (1979), refined metal | | | | | | | | | 1,800 | 1,764 | 2,582 | 2,302 | 3,187 | 3,832 | 4,998 | 6,059 | 7,578 | 8,392 | | | |
| Schmitz (1979), scrap | | | | | | | | | 424 | 416 | 490 | 988 | 1,094 | 1,160 | 1,132 | 1,522 | 3,298 | 2,725 | | | |
| Metallgesellschaft (1991), ref. | | | | | | | | | | 1,764 | 2,582 | 2,302 | 3,187 | 3,832 | 4,998 | 6,059 | 7,592 | 8,177 | 9,271 | 9,724 | 10,706 |
| v.Daatselaar (1994), sec.prod. | | | 20 | 40 | 50 | 50 | 120 | 160 | 300 | 380 | 460 | 380 | 480 | 590 | 660 | 1,210 | 1,350 | 1,210 | 1,490 | 1,700 | 1,980 |

Source: Schmitz (1979). Metallgesellschaft (1971, 1981, 1992).

Note: Schmitz data are used from 1890-1955, Metallgesellschaft data from 1960-1990 (except Latin America 1960, 1965: Schmitz)

Note: Data for OECD Europe from Sweden 1974 is used for Sweden 1975.

*Consumption of refined copper (in 1000 metric tons).*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | | | | | | | | | | | | | | | 107 | 209 | 229 | 185 | 209 | 223 | 185 |
| USA | | | | | | | | | | | | | | | 1,225 | 1,819 | 1,860 | 1,397 | 1,866 | 2,144 | 2,144 |
| Latin America | | | | | | | | | | | | | | | 90 | 167 | 183 | 307 | 488 | 431 | 386 |
| Africa | | | | | | | | | | | | | | | 35 | 45 | 44 | 87 | 116 | 90 | 94 |
| OECD Europe | | | | | | | | | | | | | | | 1,886 | 2,108 | 2,489 | 2,414 | 2,847 | 2,732 | 3,180 |
| Eastern Europe | | | | | | | | | | | | | | | 195 | 271 | 312 | 475 | 605 | 612 | 456 |
| CIS | | | | | | | | | | | | | | | 652 | 783 | 950 | 1,220 | 1,300 | 1,190 | 900 |
| Middle East | | | | | | | | | | | | | | | 18 | 15 | 26 | 30 | 66 | 99 | 215 |
| India + other S.Asian | | | | | | | | | | | | | | | 62 | 62 | 55 | 35 | 71 | 83 | 135 |
| China + C.P. countries | | | | | | | | | | | | | | | 110 | 120 | 199 | 342 | 431 | 663 | 910 |
| East Asia | | | | | | | | | | | | | | | | | 10 | 35 | 90 | 266 | 484 |
| Oceania | | | | | | | | | | | | | | | 72 | 102 | 114 | 98 | 132 | 126 | 125 |
| Japan | | | | | | | | | | | | | | | 304 | 428 | 821 | 827 | 1,326 | 1,226 | 1,578 |
| **Sum** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,756 | 6,127 | 7,291 | 7,452 | 9,546 | 9,885 | 10,790 |
| World (Metallgesellschaft, 1981) | | | | 686 | | 1,126 | | 1,346 | | 1,595 | | 2,310 | | 3,114 | 4,756 | 6,127 | 7,291 | 7,452 | 9,546 | 9,885 | 10,791 |
| World (Tilton, 1990) | | | | | | | | | | | | | | | 4,756 | 6,193 | 7,291 | 7,444 | 9,389 | 9,613 | 10,791 |

Source: Metallgesellschaft (1971, 1981, 1993).

Note: World totals of Metallgesellschaft are averages of decades until 1955. Consumption of copper until 1955 is primary copper. Consumption of copper from 1960 to 1990 is refined copper.

# A 13. Lead production and consumption for 1890 - 1990.

*Mine production of lead (in 1000 metric tons), metal content.*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | | 8 | 29 | 26 | 15 | 21 | 16 | 115 | 169 | 189 | 244 | 183 | 150 | 184 | 193 | 275 | 395 | 353 | 297 | 285 | 241 |
| USA | 129 | 143 | 253 | 293 | 347 | 492 | 451 | 621 | 506 | 300 | 415 | 355 | 391 | 307 | 224 | 273 | 519 | 564 | 550 | 424 | 497 |
| Latin America | 22 | 68 | 80 | 75 | 121 | 31 | 83 | 169 | 268 | 215 | 287 | 285 | 352 | 377 | 418 | 403 | 432 | 452 | 452 | 490 | 455 |
| Africa | | | 4 | 19 | 30 | 18 | 26 | 31 | 56 | 13 | 50 | 13 | 97 | 195 | 181 | 232 | 203 | 163 | 277 | 277 | 176 |
| OECD Europe | 305 | 321 | 322 | 332 | 355 | 362 | 259 | 246 | 267 | 207 | 210 | 74 | 167 | 240 | 271 | 247 | 356 | 285 | 336 | 295 | 257 |
| Eastern Europe | | | | | | | 9 | 42 | 23 | 70 | 74 | 23 | 122 | 189 | 244 | 267 | 331 | 352 | 313 | 277 | 201 |
| CIS | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 11 | 37 | 75 | 70 | 170 | 231 | 320 | 350 | 470 | 600 | 580 | 260 | 245 |
| Middle East | | 2 | 3 | 10 | 13 | 1 | 1 | 5 | 11 | 3 | | | 0 | 3 | 2 | 5 | 29 | 57 | 19 | 32 | 28 |
| India + SA | | | | | 13 | 14 | 27 | 50 | 116 | 91 | 91 | | 2 | 31 | 23 | 23 | 10 | 22 | 28 | 37 | 28 |
| China + CPA | | | | | | | | | 0 | 2 | 7 | | | | 130 | 140 | 180 | 260 | 285 | 311 | 385 |
| East Asia | | | | | | | | | | | | | | | | | 16 | 18 | 25 | 38 | 37 |
| Oceania | 42 | 38 | 83 | 192 | 203 | 165 | 19 | 190 | 197 | 225 | 293 | 165 | 230 | 301 | 313 | 368 | 458 | 408 | 398 | 498 | 561 |
| Japan | 1 | 2 | 2 | 2 | 4 | 5 | 4 | 3 | 4 | 7 | 15 | 7 | 11 | 26 | 40 | 55 | 64 | 51 | 45 | 50 | 19 |
| **Sum** | 500 | 582 | 775 | 949 | 1,101 | 1,110 | 894 | 1,473 | 1,629 | 1,359 | 1,761 | 1,173 | 1,692 | 2,083 | 2,356 | 2,637 | 3,463 | 3,583 | 3,603 | 3,272 | 3,130 |
| *Other global estimates* | | | | | | | | | | | | | | | | | | | | | |
| Woytinski (1953) | 587 | 651 | 871 | 969 | 1,127 | 1,228 | 927 | 1,580 | 1,684 | 1,369 | 1,650 | 1,175 | 1,500 | | | | | | | | |
| Schmitz (1979) | | | | | | 1,058 | | | 1,603 | 1,369 | 1,762 | 1,175 | 1,686 | 2,160 | 2,430 | 2,730 | 3,410 | 3,556 | | | |
| Metallgesellschaft (1991) | | | | | | 1,100 | 859 | 1,501 | 1,603 | 1,369 | 1,762 | 1,175 | 1,686 | 2,178 | 2,376 | 2,741 | 3,463 | 3,583 | 3,603 | 3,272 | 3,130 |

Source: Schmitz (1979), Metallgesellschaft (1991, 1993).

*Primary smelter production of lead (in 1000 metric tons).*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | | | | 7 | 15 | 20 | 13 | 97 | 138 | 149 | 200 | 148 | 155 | 135 | 144 | 169 | 186 | 172 | 163 | 173 | 87 |
| USA | 147 | 219 | 343 | 362 | 427 | 499 | 480 | 696 | 583 | 294 | 484 | 402 | 461 | 455 | 347 | 379 | 615 | 579 | 549 | 494 | 404 |
| Latin America | | | | | | | 82 | 143 | 240 | 191 | 237 | 263 | 288 | 287 | 284 | 291 | 301 | 299 | 294 | 329 | 278 |
| Africa | | | | | | | 11 | 14 | 19 | 26 | 28 | 9 | 50 | 69 | 66 | 120 | 143 | 95 | 111 | 112 | 104 |
| OECD Europe | 165 | 340 | 390 | 432 | 459 | 374 | 310 | 378 | 302 | 280 | 287 | 45 | 293 | 386 | 539 | 578 | 749 | 639 | 689 | 744 | 673 |
| Eastern Europe | | | | | | | 2 | 33 | 55 | 36 | 30 | 23 | 91 | 126 | 190 | 267 | 246 | 301 | 287 | 263 | 127 |
| CIS | | | | | | | | | | | | | | 231 | 320 | 370 | 500 | 570 | 640 | 300 | 270 |
| Middle East | | | | | | | | | | | | | | | | | 4 | 2 | 4 | | |
| India + SA | | | | | | | | | | | | 1 | | | | | 10 | 8 | 21 | 25 | 27 |
| China + CPA | | | | | | | | | 3 | 3 | 9 | 1 | | | 100 | 150 | 152 | 91 | 205 | 288 | 336 |
| East Asia | | | | | | | | | | | | | | | | 1 | 4 | 6 | 6 | 19 | 40 |
| Oceania | 42 | 38 | 88 | 107 | 75 | 99 | 4 | 149 | 171 | 184 | 192 | 158 | 163 | 190 | 193 | 196 | 180 | 160 | 201 | 200 | 212 |
| Japan | | | | | | | 4 | 3 | 4 | 7 | 17 | 15 | 11 | 33 | 69 | 103 | 179 | 152 | 175 | 234 | 205 |
| **Sum** | 353 | 597 | 821 | 908 | 975 | 992 | 907 | 1,511 | 1,517 | 1,171 | 1,484 | 1,063 | 1,511 | 1,913 | 2,252 | 2,625 | 3,267 | 3,072 | 3,343 | 3,181 | 2,761 |
| *Other global estimates* | | | | | | | | | | | | | | | | | | | | | |
| Woytinski (1953) | 540 | 638 | 871 | 969 | 1,127 | 1,219 | 873 | 1,510 | 1,819 | 1,380 | 1,735 | 1,180 | 1,610 | | | | | | | | |
| Schmitz (1979) | | | 871 | 969 | 1,127 | 1,150 | 873 | 1,510 | 1,659 | 1,380 | 1,736 | 1,180 | 1,850 | 2,411 | 2,717 | 3,208 | 3,983 | 4,037 | | | |
| Metallgesellschaft (1991) | | | 871 | 969 | 1,127 | 1,150 | 873 | 1,510 | 1,659 | 1,380 | 1,736 | 1,180 | 1,850 | 2,411 | 2,717 | 3,208 | 3,267 | 3,182 | 3,343 | 3,181 | 2,761 |
| v.Daatselaar (1994) | | | 1,000 | 900 | 1,000 | 1,500 | 1,300 | 1,600 | 1,700 | 1,800 | 1,900 | 1,120 | 1,800 | 2,180 | 2,400 | 2,740 | 3,400 | 3,600 | 3,630 | 3,240 | 3,320 |

Source: Schmitz (1979), Metallgesellschaft (1991, 1993).

Note: Woytinski gives estimates for 1913, 1929, 1939 and 1950.

**A 13. Lead production and consumption for 1890 - 1900, continued.**

*Secondary production of lead (in 1000 metric tons), old and new scrap.*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | | | | | | | | | | | | | | | 22 | 38 | 32 | 41 | 72 | 67 | 96 |
| USA | | | | | 50 | 72 | 113 | 206 | 232 | 294 | 484 | 402 | 461 | 455 | 347 | 379 | 615 | 580 | 675 | 616 | 923 |
| Latin America | | | | | | | | | | | | | | | | | 19 | 36 | 139 | 166 | 169 |
| Africa | | | | | | | | | | | | | | | | | | 20 | 48 | 57 | 58 |
| OECD Europe | | | | | | | | | | 8 | 14 | 22 | 39 | 49 | 278 | 393 | 537 | 786 | 696 | 627 | 825 |
| Eastern Europe | | | | | | | | | | | | | | | | | | 70 | 78 | 115 | 143 |
| CIS | | | | | | | | | | | | | | | | | | 130 | 140 | 140 | 140 |
| Middle East | | | | | | | | | | | | | | | | | | 14 | 14 | 42 | 48 |
| India + SA | | | | | | | | | | | | | | | | | | 12 | 23 | 11 | 21 |
| China + CPA | | | | | | | | | | | | | | | | | | 134 | 52 | 48 | 43 |
| East Asia | | | | | | | | | | | | | | | | | | 7 | 17 | 49 | 101 |
| Oceania | | | | | | | | | | | | | | | 16 | 23 | 26 | 46 | 45 | 22 | 21 |
| Japan | | | | | | | | | | | 9 | 1 | 6 | 4 | 67 | 50 | 66 | 100 | 130 | 133 | 122 |
| Sum | 0 | 0 | 0 | 0 | 50 | 72 | 113 | 206 | 232 | 303 | 506 | 426 | 506 | 509 | 730 | 883 | 1,295 | 1,974 | 2,129 | 2,093 | 2,710 |
| *Other global estimates* | | | | | | | | | | | | | | | | | | | | | |
| Metallgesellschaft (1971, 1981, 199 | | | | | | | | | | | | | | | 930 | 1,179 | 1,224 | 1,688 | 2,022 | 2,034 | 2,518 |
| Schmitz (1979) | | | | | 50 | 72 | 113 | 206 | 232 | 262 | 259 | 353 | 482 | 509 | 773 | 968 | 1,307 | 1,370 | | | |
| v.Daatselaar (1994) | | | 250 | 230 | 330 | 500 | 430 | 690 | 730 | 770 | 1,020 | 600 | 850 | 1,030 | 1,130 | 1,290 | 1,600 | 1,690 | 1,950 | 1,900 | 1,950 |

Sources: Schmitz (1979), Metallgesellschaft (1993).

Note: Metallgesellschaft data are used for the period 1975 - 1990. They are calculated in the following way: refined production (including secondary lead) - smelter production + unrefined old scrap.

*Consumption of refined lead (in 1000 metric tons).*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | | | | | | | | | | | | | | | 41 | 57 | 60 | 89 | 104 | 117 | 83 |
| USA | | | | | | | | | | | | | | | 647 | 754 | 826 | 1,123 | 1,094 | 1,124 | 1,311 |
| Latin America | | | | | | | | | | | | | | | 85 | 136 | 170 | 232 | 259 | 300 | 254 |
| Africa | | | | | | | | | | | | | | | 24 | 29 | 37 | 77 | 92 | 104 | 118 |
| OECD Europe | | | | | | | | | | | | | | | 1,038 | 1,155 | 1,310 | 1,329 | 1,552 | 1,556 | 1,692 |
| Eastern Europe | | | | | | | | | | | | | | | 214 | 281 | 377 | 482 | 505 | 424 | 295 |
| CIS | | | | | | | | | | | | | | | 320 | 385 | 483 | 700 | 800 | 465 | 380 |
| Middle East | | | | | | | | | | | | | | | 11 | 20 | 44 | 48 | 58 | 70 | 73 |
| India + other S.Asian | | | | | | | | | | | | | | | 25 | 37 | 42 | 54 | 79 | 86 | 89 |
| China + C.P. countries | | | | | | | | | | | | | | | 76 | 115 | 180 | 212 | 241 | 312 | 360 |
| East Asia | | | | | | | | | | | | | | | | | | 20 | 46 | 146 | 258 |
| Oceania | | | | | | | | | | | | | | | 54 | 64 | 68 | 93 | 89 | 69 | 64 |
| Japan | | | | | | | | | | | | | | | 100 | 147 | 211 | 261 | 393 | 397 | 416 |
| Sum | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,633 | 3,179 | 3,806 | 4,719 | 5,311 | 5,169 | 5,393 |
| *Other global estimates* | | | | | | | | | | | | | | | | | | | | | |
| Metallgesellschaft (1981, 1993) | | | | 981 | | 1,126 | | 1,390 | | 1,468 | | 1,521 | | 2,256 | 2,759 | 3,263 | 3,806 | 4,719 | 5,311 | 5,169 | 5,393 |
| Tilton (1990) | | | | | | | | | | | | | | | 2,621 | 3,182 | 3,914 | 4,759 | 5,396 | 5,421 | |

Source: Metallgesellschaft (1971, 1981, 1993).

Note: World totals of Metallgesellschaft are averages of decades until 1955.

A 14. Production and consumption of zinc for 1890 - 1990.

*Production of zinc (in 1000 metric tons), mine production (metal content).*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | | | 0 | 4 | 2 | 6 | 18 | 50 | 152 | 218 | 257 | 286 | 284 | 393 | 390 | 826 | 1,253 | 1,230 | 1,059 | 1,172 | 1,203 |
| USA | 58 | 81 | 112 | 185 | 294 | 533 | 533 | 645 | 506 | 300 | 415 | 355 | 391 | 307 | 224 | 273 | 485 | 426 | 368 | 252 | 543 |
| Latin America | | | 0 | 4 | 16 | 6 | 16 | 46 | 141 | 149 | 162 | 306 | 345 | 479 | 583 | 531 | 683 | 839 | 1,035 | 1,209 | 1,267 |
| Africa | 4 | | 16 | 35 | 42 | | 11 | 31 | 30 | 30 | 35 | 44 | 131 | 231 | 267 | 285 | 249 | 276 | 240 | 270 | 240 |
| OECD Europe | 269 | 269 | 300 | 387 | 409 | 298 | 242 | 191 | 361 | 296 | 438 | 92 | 294 | 424 | 519 | 474 | 674 | 610 | 931 | 975 | 827 |
| Eastern Europe | 9 | 19 | 16 | 33 | 20 | | 8 | 140 | 108 | 133 | 32 | 44 | 171 | 269 | 278 | 356 | 428 | 456 | 449 | 393 | 309 |
| CIS | 4 | 5 | 6 | 8 | 9 | 6 | 0 | 2 | 4 | | | | | 235 | 375 | 470 | 700 | 1,010 | 1,000 | 640 | 610 |
| Middle East | | | | | | | | | 6 | 9 | | | | 5 | 13 | 24 | 53 | 106 | 45 | 59 | 54 |
| India + other S.Asian | | | | | | | | 8 | 62 | 59 | 52 | | 0 | 17 | 16 | 13 | 12 | 25 | 36 | 56 | 72 |
| China + C.P. countries | | | | | | 7 | | 15 | 1 | 0 | 1 | | | | 165 | 205 | 230 | 305 | 290 | 545 | 729 |
| East Asia | | | | | | | | | | | | | | | | 7 | 27 | 62 | 63 | 97 | 104 |
| Oceania | | | 7 | 42 | 209 | 134 | 10 | 144 | 123 | 148 | 246 | 153 | 226 | 287 | 323 | 355 | 489 | 501 | 494 | 759 | 939 |
| Japan | | | | | | 21 | 5 | 10 | 20 | 30 | 70 | 31 | 52 | 109 | 157 | 221 | 280 | 254 | 238 | 253 | 127 |
| Sum | 345 | 378 | 458 | 697 | 1,001 | 1,010 | 848 | 1,282 | 1,512 | 1,372 | 1,708 | 1,310 | 1,894 | 2,842 | 3,308 | 4,041 | 5,561 | 6,098 | 6,248 | 6,678 | 7,023 |
| Other global estimates | | | | | | | | | | | | | | | | | | | | | |
| Woytinski (1953) | 344 | 415 | 480 | 660 | 810 | 1,139 | | | 1,713 | | 1,870 | | 1,850 | | | | | | | | |
| Schmitz (1979) | | | | | | 1,042 | 821 | 1,311 | 1,509 | 1,501 | 1,971 | 1,555 | 2,210 | | | | | | | | |
| Metallgesellschaft (1992) | | | | | | 1,042 | 821 | 1,311 | 1,509 | 1,501 | 1,971 | 1,555 | 2,210 | | | | | | | 6,678 | 7,023 |

Sources: Schmitz (1979), Metallgesellschaft (1971, 1981, 1993).

*Production of zinc (in 1000 metric tons), primary smelter production.*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | | | | | | 5 | 18 | 35 | 110 | 136 | 169 | 165 | 185 | 233 | 237 | 325 | 418 | 427 | 592 | 692 | 592 |
| USA | 58 | 81 | 112 | 185 | 244 | 444 | 420 | 520 | 452 | 382 | 613 | 694 | 765 | 874 | 725 | 902 | 866 | 450 | 370 | 334 | 358 |
| Latin America | | | | | | | | 1 | 29 | 32 | 35 | 52 | 59 | 87 | 131 | 144 | 191 | 288 | 313 | 491 | 500 |
| Africa | | | | | | | | | 18 | 21 | 13 | 16 | 23 | 62 | 84 | 104 | 144 | 181 | 188 | 216 | 165 |
| OECD Europe | 284 | 326 | 355 | 455 | 546 | 309 | 243 | 386 | 498 | 515 | 550 | 104 | 559 | 753 | 830 | 887 | 1,326 | 1,390 | 1,746 | 1,826 | 2,039 |
| Eastern Europe | | | 6 | 8 | 9 | | 6 | 114 | 193 | 98 | 16 | 38 | 126 | 171 | 228 | 562 | 394 | 473 | 436 | 468 | 329 |
| CIS | | | | | | | | 2 | | | | | | 235 | 395 | 535 | 725 | 1,030 | 1,060 | 710 | 640 |
| Middle East | | | | | | | | | | | | | | | | | 4 | 19 | 12 | 22 | 20 |
| India + other S.Asian | | | | | | | | | | | | | | | | | 23 | 26 | 44 | 71 | 79 |
| China + C.P. countries | | | | | | | | | | | | | | | 120 | 165 | 190 | 290 | 270 | 436 | 646 |
| East Asia | | | | | | | | | | | | | | | | | | 2 | 76 | 171 | 328 |
| Oceania | | | | | 1 | 5 | 10 | 46 | 56 | 69 | 76 | 82 | 84 | 103 | 122 | 202 | 256 | 193 | 301 | 289 | 301 |
| Japan | | | | | | 21 | 16 | 17 | 25 | 34 | 61 | 26 | 46 | 109 | 176 | 354 | 681 | 698 | 739 | 740 | 688 |
| Sum | 341 | 408 | 474 | 648 | 800 | 783 | 713 | 1,121 | 1,381 | 1,286 | 1,532 | 1,175 | 1,847 | 2,627 | 3,048 | 4,180 | 5,218 | 5,467 | 6,147 | 6,466 | 6,685 |
| Other global estimates | | | | | | | | | | | | | | | | | | | | | |
| Woytinski (1953) | 349 | | | | | 1,053 | | | 1,450 | | 1,650 | | 1,870 | | | | | | | | |
| Schmitz (1979) | | 417 | 479 | 659 | 810 | 833 | 708 | 1,135 | 1,400 | 1,337 | 1,669 | 1,284 | 2,060 | 2,739 | 3,151 | 4,068 | 5,218 | 5,467 | 6,147 | 6,466 | 6,685 |
| Metallgesellschaft (1992) | | | 479 | 659 | 810 | 833 | 708 | 1,135 | 1,400 | 1,337 | 1,669 | 1,284 | 2,060 | 2,739 | 3,151 | 4,068 | 5,218 | 5,467 | 6,147 | 6,466 | 6,685 |
| Daniels (1994) | | | | | | | | | 1,500 | | 1,800 | | 2,300 | 2,690 | 3,080 | 4,050 | 5,040 | 5,050 | 6,140 | 6,508 | 6,973 |
| v.Daatselaar (1994) | | | 1,000 | 1,080 | 1,170 | 1,250 | 1,330 | 1,420 | 1,500 | 1,650 | 1,800 | 1,270 | 2,300 | 2,950 | 3,480 | 4,230 | 5,650 | 5,910 | 5,800 | 6,550 | 7,300 |

Sources: Schmitz (1979), Metallgesellschaft (1971, 1981, 1993).

Note: Woytinski gives estimates for 1913, 1929, 1939 and 1950.

**A 14. Production and consumption of zinc for 1890 - 1990, continued.**

*Secondary production of zinc (in 1000 metric tons), old and new scrap.*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | | | | | | | | | | | | | | | 4 | 2 | 3 | 4 | 1 | . | |
| USA | . | . | . | . | 63 | 99 | 128 | 142 | 116 | 117 | 201 | 327 | 296 | 276 | 241 | 321 | 308 | 257 | 275 | 274 | 246 |
| Latin America | | | | | | | | | | | | | | | | | 3 | 8 | 26 | 7 | 7 |
| Africa | | | | | | | | | | | | | | | | | | | | | |
| OECD Europe | | | | | | | | | | | 7 | 6 | 48 | 43 | 202 | 218 | 264 | 250 | 195 | 251 | 255 |
| Eastern Europe | | | | | | | | | | | | | | | | | | | | | |
| CIS | | | | | | | | | | | | | | | | | | | | | |
| Middle East | | | | | | | | | | | | | | | | | | | | | |
| India + other S.Asian | | | | | | | | | | | | | | | | | | | | 9 | 20 |
| China + C.P. countries | | | | | | | | | | | | | | | | | | | | 24 | 107 |
| East Asia | | | | | | | | | | | | | | | | | | | | | |
| Oceania | | | | | | | | | | | | | | | 0 | 3 | 8 | 7 | 5 | 5 | 3 |
| Japan | | | | | | | | | | | | | | | 20 | 33 | 44 | 48 | 183 | 161 | 161 |
| Sum | 0 | 0 | 0 | 0 | 63 | 99 | 128 | 142 | 116 | 117 | 208 | 333 | 343 | 319 | 466 | 576 | 631 | 573 | 684 | 731 | 799 |
| | | | | | | | | | | | | | | | | | | | | | |
| Other global estimates | | | | | | | | | | | | | | | | | | | | | |
| Schmitz (1979) | | | | | 63 | 99 | 128 | 142 | 116 | 117 | 208 | 333 | 343 | 319 | 462 | 574 | 887 | 794 | | | |
| Metallgesellschaft (1992) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 574 | 702 |
| v.Daatselaar (1994) | . | . | . | . | . | . | . | . | 80 | 90 | 90 | 70 | 150 | 190 | 260 | 320 | 360 | 380 | 500 | 650 | 720 |

Sources: Schmitz (1979), Metallgesellschaft (1971, 1981, 1993)

Note: Data for Austria 1960 = 1961, 1975 = 1974 and for Brazil 1970 = 1971.
Note: Schmitz data are used until 1975. Metallgesellschaft data are used from 1960 until 1990.

*Consumption of zinc (in 1000 metric tons).*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | | | | | | | | | | | | | | | 51 | 95 | 107 | 150 | 133 | 157 | 122 |
| USA | | | | | | | | | | | | | | | 790 | 1,221 | 1,074 | 839 | 810 | 961 | 992 |
| Latin America | | | | | | | | | | | | | | | 78 | 107 | 165 | 227 | 341 | 357 | 360 |
| Africa | | | | | | | | | | | | | | | 30 | 43 | 77 | 102 | 133 | 137 | 142 |
| OECD Europe | | | | | | | | | | | | | | | 1,136 | 1,299 | 1,516 | 1,323 | 1,696 | 1,622 | 1,846 |
| Eastern Europe | | | | | | | | | | | | | | | 182 | 237 | 311 | 415 | 463 | 456 | 324 |
| CIS | | | | | | | | | | | | | | | 371 | 401 | 680 | 900 | 1,030 | 760 | 640 |
| Middle East | | | | | | | | | | | | | | | 22 | 53 | 25 | 36 | 32 | 81 | 91 |
| India + other S.Asian | | | | | | | | | | | | | | | 60 | 70 | 97 | 82 | 109 | 152 | 170 |
| China + C.P. countries | | | | | | | | | | | | | | | 70 | 100 | 189 | 227 | 284 | 452 | 622 |
| East Asia | | | | | | | | | | | | | | | | | 57 | 90 | 195 | 244 | 403 |
| Oceania | | | | | | | | | | | | | | | 93 | 99 | 122 | 90 | 120 | 107 | 134 |
| Japan | | | | | | | | | | | | | | | 189 | 330 | 623 | 547 | 756 | 780 | 814 |
| Sum | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,072 | 4,054 | 5,042 | 5,028 | 6,101 | 6,265 | 6,661 |
| | | | | | | | | | | | | | | | | | | | | | |
| Other global estimates | | | | | | | | | | | | | | | | | | | | | |
| Metallgesellschaft (1971, 1981, 1993) | . | . | . | 673 | . | 886 | . | 1,107 | . | 1,337 | . | 1,675 | . | 2,527 | 3,072 | 4,054 | 5,042 | 5,028 | 6,101 | 6,265 | 6,661 |
| Tilton (1990) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 3,081 | 4,086 | 5,042 | 4,980 | 6,192 | 6,492 | - |

Source: Metallgesellschaft (1971, 1981, 1993).

Note: Data until 1980 are defined as primary (raw) zinc, data after 1980 are defined as refined zinc.
Note: World data from Metallgesellschaft are annual averages of decades until 1955.

**A 15. Production and consumption of aluminium for 1890 - 1990.**

*Mine production of bauxite (in 1000 metric tons of bauxite).*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | | | | | | | | | | | | | | | | | | | | | |
| USA | 2 | 18 | 24 | 58 | 153 | 305 | 529 | 322 | 336 | 249 | 446 | 997 | 1,356 | 1,817 | 2,030 | 1,681 | 2,115 | 1,800 | 1,559 | 674 | 495 |
| Latin America | | | | 1 | 5 | 6 | 45 | 284 | 414 | 253 | 1,234 | 1,447 | 3,743 | 6,370 | 12,959 | 17,442 | 24,702 | 22,409 | 25,159 | 18,029 | 26,374 |
| Africa | | | | | | | | | | | | 149 | 131 | 611 | 1,577 | 2,134 | 3,288 | 9,508 | 14,302 | 15,345 | 17,983 |
| OECD Europe | 19 | 18 | 59 | 104 | 201 | 62 | 280 | 697 | 772 | 693 | 1,135 | 283 | 1,038 | 2,321 | 3,299 | 4,190 | 5,557 | 5,610 | 5,211 | 3,967 | 2,986 |
| Eastern Europe | | | | | | 59 | 28 | 79 | 128 | 433 | 851 | 44 | 789 | 2,069 | 2,303 | 3,160 | 4,897 | 5,975 | 6,788 | 6,667 | 5,783 |
| CIS | | | | | | | | | | | | | | | 3,500 | 4,700 | 6,500 | 6,600 | 6,400 | 5,700 | 7,500 |
| Middle East | | | | | | | | | 12 | | | | | | | 10 | 52 | 558 | 417 | 214 | 872 |
| India + other S.Asian | | | | | | 1 | 6 | 10 | 3 | 8 | 8 | 14 | 65 | 82 | 388 | 706 | 1,375 | 1,094 | 1,740 | 2,343 | 5,280 |
| China + C.P. countries | | | | | | | | | | | | | | | 350 | 500 | 600 | 1,000 | 1,700 | 2,800 | 3,655 |
| East Asia | | | | | | | | | | 10 | 339 | 266 | 531 | 490 | 1,144 | 1,682 | 2,368 | 1,697 | 2,169 | 1,323 | 1,604 |
| Oceania | | | | | | | | | 1 | 1 | 4 | 4 | 4 | 8 | 71 | 1,186 | 9,256 | 21,034 | 27,178 | 31,839 | 41,391 |
| Japan | | | | | | | | | | | | | | | | | | | | | |
| Sum | 21 | 35 | 82 | 163 | 359 | 433 | 889 | 1,393 | 1,666 | 1,647 | 4,017 | 3,203 | 7,657 | 15,828 | 27,620 | 37,392 | 60,710 | 77,285 | 92,623 | 88,901 | 113,923 |
| *Other global estimates* | | | | | | | | | | | | | | | | | | | | | |
| Schmitz (1979) | 21 | 35 | 88 | 160 | 356 | 376 | 866 | 1,384 | 1,706 | 1,785 | 4,345 | 3,716 | 8,418 | 17,760 | 27,620 | 37,292 | 60,612 | 77,045 | | 88,901 | |
| Metallgesellschaft (1993) | | | 88 | 160 | 356 | 376 | 866 | 1,384 | 1,706 | 1,785 | 4,345 | 3,716 | 8,418 | 17,760 | 27,620 | 37,292 | 60,710 | 77,285 | 92,623 | 88,901 | 113,923 |

Source: Schmitz (1979), Metallgesellschaft (1971, 1981, 1993).

Note: Data CIS 1930 = 1931.

*Primary production of aluminium (in 1000 metric tons).*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | | | | | 4 | 6 | 12 | 15 | 35 | 21 | 99 | 196 | 360 | 556 | 691 | 753 | 963 | 867 | 1,075 | 1,282 | 1,567 |
| USA | | | 3 | 5 | 16 | 41 | 63 | 64 | 104 | 54 | 187 | 449 | 652 | 1,420 | 1,827 | 2,498 | 3,607 | 3,519 | 4,654 | 3,500 | 4,048 |
| Latin America | | | | | | | | | | | | | | 6 | 18 | 51 | 168 | 253 | 824 | 1,164 | 1,789 |
| Africa | | | | | | | | | | | | | | 8 | 44 | 51 | 165 | 271 | 437 | 473 | 601 |
| OECD Europe | | 1 | 4 | 6 | 21 | 29 | 53 | 103 | 128 | 152 | 390 | 87 | 241 | 513 | 884 | 1,288 | 2,028 | 3,125 | 3,657 | 3,393 | 3,582 |
| Eastern Europe | | | | | | | | | | 0 | 3 | 2 | 19 | 93 | 141 | 176 | 345 | 589 | 613 | 748 | 709 |
| CIS | | | | | | | | | | | 44 | | 140 | 410 | 640 | 1,300 | 1,700 | 2,150 | 2,420 | 3,250 | 3,523 |
| Middle East | | | | | | | | | | | | | | | | | 10 | 162 | 211 | 425 | 507 |
| India + other S.Asian | | | | | | | | | | | | 2 | 4 | 7 | 18 | 62 | 161 | 167 | 185 | 267 | 433 |
| China + C.P. countries | | | | | | | | | | | 13 | 11 | 2 | 7 | 88 | 119 | 157 | 208 | 421 | 510 | 865 |
| East Asia | | | | | | | | | | | | | | | 12 | | 17 | 18 | 18 | 234 | 194 |
| Oceania | | | | | | | | | | | | | | | | 87 | 206 | 323 | 460 | 1,095 | 1,492 |
| Japan | | | | | | | | | | 3 | 27 | 17 | 25 | 58 | 133 | 294 | 728 | 1,013 | 1,092 | 227 | 34 |
| Sum | | | 7 | 11 | 41 | 76 | 128 | 181 | 267 | 230 | 762 | 764 | 1,442 | 3,078 | 4,496 | 6,679 | 10,254 | 12,665 | 16,064 | 16,568 | 19,347 |
| *Other global estimates* | | | | | | | | | | | | | | | | | | | | | |
| Schmitz (1979) | | 1 | 7 | 13 | 44 | 78 | 126 | 181 | 269 | 258 | 783 | 870 | 1,507 | 3,105 | 4,543 | 6,586 | 10,257 | 12,705 | 16,086 | 15,618 | 18,120 |
| Metallgesellschaft (1991) | | | 6 | 13 | 44 | 78 | 126 | 181 | 269 | 258 | 783 | 870 | 1,507 | 3,105 | 4,543 | 6,586 | 10,302 | 12,838 | 16,086 | 15,618 | 18,120 |
| Daniels (1994) | | | | | | | 200 | | 500 | | 1,100 | | 2,100 | 3,680 | 5,020 | 6,680 | 9,980 | 11,350 | 15,300 | 15,860 | 17,910 |
| v.Daatselaar (1994) | | | 10 | 20 | 30 | 70 | 200 | 280 | 500 | 800 | 1,100 | 720 | 2,100 | 3,680 | 5,020 | 6,680 | 9,980 | 11,350 | 15,300 | 15,860 | 18,020 |

Sources: Schmitz (1979), Metallgesellschaft (1981).

Note: Schmitz data are used from 1890 until 1975.

Note: Different annual figures are used in the next cases: Brazil 1955 = 1956, Bahrain 1970 = 1971, Cameroun 1955 = 1956, Hungary 1935 = 1936, USSR 1940 = 1938 and 1950 = 1948.

# A 15. Production and consumption of aluminium for 1890 - 1990, continued.

*Secondary production of aluminium (in 1000 metric tons), old and new scrap.*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | | | | | | | | | | | | | | | | | 32 | 26 | 75 | 74 | 84 |
| USA | | | | | | 7 | 15 | 40 | 35 | 46 | 73 | 270 | 221 | 305 | 298 | 581 | 937 | 1,124 | 1,540 | 1,762 | 2,393 |
| Latin America | | | | | | | | | | | | | | | 3 | 5 | 23 | 49 | 87 | 113 | 175 |
| Africa | | | | | | | | | | | | | | | 3 | 6 | 7 | 10 | 17 | 37 | 45 |
| OECD Europe | | | | | | | | | 5 | 9 | 51 | 95 | 175 | 255 | 363 | 563 | 808 | 833 | 1,182 | 1,311 | 1,720 |
| Eastern Europe | | | | | | | | | | | | | | | | | | 2 | 20 | 45 | 51 |
| CIS | | | | | | | | | | | | | | | | | | | | | |
| Middle East | | | | | | | | | | | | | | | 8 | 15 | 19 | 35 | 24 | 55 | 85 |
| India + other S.Asian | | | | | | | | | | | | | | | | | 3 | 6 | 13 | 38 | 64 |
| China + C.P. countries | | | | | | | | | | | | | | | | | | | 4 | 18 | 40 |
| East Asia | | | | | | | | | | | | | | | 5 | 14 | 19 | 25 | 37 | 50 | 38 |
| Oceania | | | | | | | | | | | | | | | | | | | | | |
| Japan | | | | | | | | | | | 3 | 10 | 4 | 10 | 50 | 124 | 322 | 424 | 789 | 861 | 1,090 |
| **Sum** | 0 | 0 | 0 | 0 | 0 | 7 | 15 | 40 | 40 | 55 | 127 | 376 | 400 | 569 | 738 | 1,329 | 2,169 | 2,535 | 3,787 | 4,363 | 5,785 |
| *Other global estimates* | | | | | | | | | | | | | | | | | | | | | |
| Metallgesellschaft (1971, 1981) | | | | | | 7 | 15 | 40 | 40 | 55 | | 376 | 400 | 569 | 856 | 1,504 | 2,183 | 2,600 | 3,816 | 4,363 | 5,785 |
| Schmitz (1979) | | | | | | | | | | | 124 | | | | 716 | 1,282 | 2,181 | 2,590 | | | |
| v.Daatselaar (1994) | | | | | | | | | 30 | 40 | 70 | 50 | 130 | 230 | 260 | 390 | 580 | 850 | 1,610 | 2,800 | 3,180 |

Sources: Schmitz (1979), Metallgesellschaft (1981, 1993).

Note: Schmitz data are used from 1890 until 1975. Where Schmitz data were not available, Metallgesellschaft data are used.
Note: Data Japan 1940 = 1941.

*Consumption of primary aluminium (in 1000 metric tons).*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | | | | | | | | | | | | | | | 102 | 169 | 220 | 286 | 292 | 345 | 387 |
| USA | | | | | | | | | | | | | | | 1,541 | 2,852 | 3,488 | 3,265 | 4,473 | 4,282 | 4,331 |
| Latin America | | | | | | | | | | | | | | | 64 | 121 | 202 | 404 | 604 | 700 | 684 |
| Africa | | | | | | | | | | | | | | | 14 | 28 | 71 | 114 | 179 | 204 | 230 |
| OECD Europe | | | | | | | | | | | | | | | 1,313 | 1,650 | 2,661 | 2,879 | 3,913 | 4,019 | 4,674 |
| Eastern Europe | | | | | | | | | | | | | | | 173 | 235 | 476 | 727 | 813 | 859 | 607 |
| CIS | | | | | | | | | | | | | | | 632 | 971 | 1,330 | 1,580 | 1,850 | 2,700 | 2,700 |
| Middle East | | | | | | | | | | | | | | | 23 | 48 | 54 | 128 | 160 | 263 | 482 |
| India + other S.Asian | | | | | | | | | | | | | | | 25 | 71 | 162 | 145 | 234 | 319 | 458 |
| China + C.P. countries | | | | | | | | | | | | | | | 90 | 97 | 279 | 528 | 736 | 945 | 1,146 |
| East Asia | | | | | | | | | | | | | | | | | 35 | 75 | 187 | 265 | 658 |
| Oceania | | | | | | | | | | | | | | | 39 | 76 | 138 | 153 | 244 | 323 | 318 |
| Japan | | | | | | | | | | | | | | | 151 | 288 | 911 | 1,171 | 1,637 | 1,695 | 2,415 |
| **Sum** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,166 | 6,605 | 10,027 | 11,454 | 15,321 | 16,919 | 19,091 |
| *Other global estimates* | | | | | | | | | | | | | | | | | | | | | |
| Metallgesellschaft (1971) | | | | 17 | | 94 | | 176 | | 390 | | 1,258 | | 2,939 | 4,166 | 6,605 | 10,027 | 11,454 | 15,321 | 16,919 | 19,091 |
| Tilton (1990) | | | | | | | | | | | | | | | 4,166 | 6,649 | 9,983 | 11,457 | 15,299 | 16,253 | |

Source: Metallgesellschaft (1971, 1981, 1993).

Note: Metallgesellschaft world data are annual averages of decades of total consumption (primary and secundary) of aluminium until 1955.
Note: Other data are figures of primary consumption of aluminium. Total consumption data are available by Metallgesellschaft (1960 - 1990).

# A 16. Production and consumption of nickel for 1890 - 1990.

*Production of nickel (in 1000 metric tons), mine production (metal content).*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | 1 | 2 | 3 | 9 | 17 | 31 | 28 | 33 | 47 | 63 | 111 | 111 | 112 | 159 | 195 | 235 | 278 | 242 | 195 | 170 | 196 |
| USA | . | . | . | . | . | . | . | . | . | . | 1 | 1 | 1 | 3 | 11 | 12 | 12 | 13 | 13 | 6 | 0 |
| Latin America | . | . | . | . | . | . | . | 1 | 1 | . | 1 | 1 | 1 | 14 | 13 | 29 | 40 | 67 | 63 | 96 | 108 |
| Africa | . | . | . | . | . | . | 0 | . | . | 1 | 1 | 1 | . | 2 | 3 | 4 | 23 | 40 | 56 | 60 | 62 |
| OECD Europe | . | . | . | . | 2 | . | . | . | . | 1 | 1 | 1 | . | . | 4 | 4 | 17 | 23 | 24 | 27 | 33 |
| Eastern Europe | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 3 | 5 | 7 | 9 | 11 | 10 | 14 |
| CIS | . | . | . | . | . | . | . | . | 1 | 1 | 11 | 14 | 27 | 45 | 53 | 80 | 109 | 125 | 143 | 190 | 212 |
| Middle East | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| India + other S.Asian | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| China + C.P. countries | . | . | . | . | . | . | . | . | 1 | 2 | . | . | 4 | . | 0 | 0 | 0 | 8 | 11 | 0 | 0 |
| East Asia | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 0 | 4 | 11 | 24 | . | 26 | 26 |
| Oceania | 2 | 3 | 6 | 7 | 5 | 5 | 2 | 3 | 9 | 8 | 12 | 4 | 4 | 25 | 54 | 65 | 179 | 224 | 156 | 158 | 153 |
| Japan | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 11 | 24 | 75 | 73 | 84 |
| Sum | 3 | 4 | 9 | 15 | 22 | 39 | 30 | 38 | 58 | 74 | 137 | 143 | 149 | 248 | 335 | 438 | 675 | 775 | 748 | 815 | 889 |
| **Other global estimates** | | | | | | | | | | | | | | | | | | | | | |
| Schmitz (1979) | 3 | 4 | 10 | 16 | 23 | 39 | 31 | 37 | 60 | 77 | 138 | 144 | 148 | 249 | 342 | 437 | 666 | 744 | 733 | 780 | |
| Metallgesellschaft (1991, 1993) | | | 8 | 16 | 24 | 42 | 33 | 37 | 60 | 77 | 138 | 144 | 148 | 249 | 342 | 437 | 663 | 753 | 738 | 815 | 889 |

Source: Schmitz (1979), Metallgesellschaft (1991, 1993).

*Production of nickel (in 1000 metric tons), primary smelter production.*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 128 | 160 | 189 | 158 | 152 | 117 | 127 |
| USA | . | . | . | . | . | . | . | . | . | . | . | . | . | 3 | 12 | 13 | 14 | 20 | 40 | 33 | 4 |
| Latin America | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 15 | 27 | 21 | 48 | 39 | 69 | 82 |
| Africa | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 3 | 14 | 27 | 33 | 36 | 47 |
| OECD Europe | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 78 | 84 | 101 | 111 | 96 | 99 | 130 |
| Eastern Europe | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 4 | 5 | 4 | 6 | 10 | 11 | 12 |
| CIS | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 58 | 80 | 124 | 143 | 168 | 198 | 230 |
| Middle East | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| India + other S.Asian | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| China + C.P. countries | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 11 | 27 | 38 |
| East Asia | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 11 | 16 | . | 9 | 27 | 20 | 13 |
| Oceania | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 19 | 26 | 28 | 86 | 71 | 77 | 75 |
| Japan | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 90 | 78 | 109 | 95 | 100 |
| Sum | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 326 | 413 | 585 | 693 | 757 | 780 | 858 |
| **Other global estimates** | | | | | | | | | | | | | | | | | | | | | |
| Metallgesellschaft (1991, 1993) | | | 8 | 13 | 19 | 35 | 24 | | 70 | | 130 | | 148 | 240 | 326 | 415 | 585 | 693 | 733 | 780 | 858 |
| Daniels (1994) | | | | | | | | | | | | | 150 | 250 | 350 | 429 | 469 | 250 | 350 | 429 | 469 |

Source: Metallgesellschaft (1971, 1981, 1993).

# A 16. Production and consumption of nickel for 1890 - 1990, continued.

*Consumption of nickel (in 1000 metric tons).*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 4 | 8 | 15 | 11 | 12 | 9 | 15 |
| USA | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 98 | 156 | 149 | 133 | 148 | 148 | 128 |
| Latin America | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 2 | 3 | 9 | 17 | 16 | 16 |
| Africa | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 0 | 2 | 4 | 6 | 7 | 10 | 10 |
| OECD Europe | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 95 | 120 | 174 | 168 | 217 | 226 | 288 |
| Eastern Europe | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 0 | 1 | 1 | 26 | 29 | 37 | 25 |
| CIS | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 1 | 1 | 115 | 132 | 138 | 115 |
| Middle East | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 2 | 11 | 3 | 4 |
| India + other S.Asian | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 1 | 2 | 3 | 7 | 14 | 14 |
| China + C.P. countries | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 18 | 18 | 28 | 48 |
| East Asia | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 2 | 5 | 4 | 25 |
| Oceania | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 2 | 3 | 4 | 3 | . | 4 | 2 |
| Japan | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 18 | 27 | 99 | 83 | 122 | 134 | 166 |
| Sum | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 219 | 319 | 451 | 577 | 725 | 771 | 856 |
| **Global estimates** | | | | | | | | | | | | | | | | | | | | | |
| Metallgesellschaft (1971, 1981, 1993) | | | | | | | | | | | | | | | 293 | 429 | 576 | 577 | 725 | 771 | 856 |

Source: Metallgesellschaft (1971, 1981, 1993).

# A 17. Production and consumption of magnesium for 1890 - 1990.

*Mine production of magnesite (in 1000 metric tons).*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1986 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | . | . | . | . | . | 15 | 4 | 5 | 25 | 27 | 39 | . | . | . | . | 71 | . | . | . | 44 | 60 |
| USA | . | . | 2 | 4 | 11 | 28 | 276 | 110 | 117 | 161 | 302 | 305 | 390 | 596 | 453 | . | . | . | . | 207 | 90 |
| Latin America | . | . | . | . | . | 1 | 1 | 2 | 2 | 2 | 12 | 11 | 20 | 28 | 63 | 124 | 225 | 297 | 295 | 292 | 278 |
| Africa | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 68 | 123 | 102 | 125 | 104 | 84 | 147 |
| OECD Europe | . | . | 58 | 130 | 201 | 207 | 117 | 106 | 393 | 388 | 490 | 125 | 589 | 1,083 | 1,867 | 2,235 | 2,587 | 3,004 | 2,826 | 2,648 | 2,679 |
| Eastern Europe | . | . | . | . | . | . | . | 37 | 7 | 115 | 38 | 186 | 89 | 800 | 1,418 | 2,391 | 3,479 | 3,303 | 2,209 | 1,116 | 778 |
| CIS | . | . | . | . | . | . | 21 | 71 | . | . | . | . | . | . | 2,400 | 2,900 | 1,420 | 1,570 | 1,748 | 1,925 | 1,700 |
| Middle East | . | . | . | . | . | . | . | . | 0 | 1 | 1 | 1 | 0 | . | 156 | 58 | 300 | 518 | 913 | 1,309 | 814 |
| India + SA | . | . | . | . | . | 8 | 15 | 30 | 17 | 17 | 44 | 29 | 54 | 58 | . | 239 | 354 | 266 | 376 | 487 | 520 |
| China + CPA | . | . | . | . | . | . | . | . | 30 | 154 | 297 | 23 | . | . | 1,050 | 1,900 | 2,630 | 2,700 | 3,300 | 3,900 | 4,100 |
| East Asia | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 1 |
| Oceania | . | . | . | . | . | 2 | 7 | 15 | 9 | 17 | 25 | 24 | 36 | 59 | 63 | 27 | 24 | 21 | 31 | 41 | 60 |
| Japan | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Sum | 0 | 0 | 60 | 136 | 218 | 260 | 440 | 376 | 600 | 881 | 1,249 | 703 | 1,177 | 2,624 | 7,538 | 10,067 | 11,120 | 11,803 | 11,803 | 12,054 | 11,228 |
| Global estimates | | | | | | | | | | | | | | | | | | | | | |
| Schmitz (1979) | . | . | 65 | 136 | 218 | 259 | 423 | 269 | 700 | 900 | 1,410 | 550 | 1,200 | 2,080 | 7,544 | 9,350 | 11,130 | . | . | 12,054 | 11,227 |
| Kramer (1996) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 12,054 | 11,227 |

Source: Schmitz (1979).

Note: World data Schmitz 1900 = 1901.
Note: Data Austria 1900 = 1901, Bulgaria 1940 = 1939, Canada 1940 = 1939, Czechoslovakia 1935 = 1933, 1945 = 1947, 1955 = 1953, Germany 1945 = 1944, Yugoslavia 1945 = 1946.
Note: Data all regions 1975 = 1974.

*Primary production of magnesium (in 1000 metric tons).*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | . | . | . | . | . | . | . | . | . | . | . | 3 | . | . | 7 | 9 | 10 | 4 | 9 | 8 | 27 |
| USA | . | . | . | . | . | . | . | 0 | 0 | 2 | 6 | 30 | 14 | 56 | 36 | 74 | 102 | 106 | 154 | 127 | 139 |
| Latin America | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 3 | 9 |
| Africa | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OECD Europe | . | . | . | . | . | . | . | . | 1 | 11 | 21 | 5 | 2 | 21 | 24 | 41 | 52 | 57 | 63 | 76 | 69 |
| Eastern Europe | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 0 | 0 | 1 | 1 | 3 | 5 | 6 |
| CIS | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 25 | 33 | 50 | 70 | 75 | 85 | 90 |
| Middle East | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| India + SA | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 0 | 1 |
| China + CPA | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 | 1 | 1 | 3 | 7 | 9 | 16 |
| East Asia | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Oceania | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Japan | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 2 | 4 | 10 | 9 | 9 | 9 | 13 |
| Sum | . | . | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 13 | 27 | 38 | 17 | 76 | 95 | 162 | 226 | 249 | 321 | 321 | 369 |
| Other global estimates | | | | | | | | | | | | | | | | | | | | | |
| Schmitz (1979) | . | . | . | . | . | . | . | . | . | 14 | 39 | 49 | 37 | 94 | 94 | 160 | 215 | 245 | 319 | . | . |
| Metallgesellschaft (1993) | . | . | . | . | . | 0 | . | 1 | 1 | 14 | 39 | 49 | 37 | 94 | 94 | 160 | 220 | 249 | 321 | 321 | 369 |
| Kramer (1996) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 354 |

Source: Schmitz (1979).

# A 17. Production and consumption of magnesium for 1890 - 1990, continued.

*Secondary production of magnesium (in 1000 metric tons).*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| USA | - | - | - | - | - | - | - | - | - | .. | 2 | 8 | 7 | 9 | 9 | 12 | 11 | 25 | 37 | 41 | 55 |
| Latin America | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 2 | 2 |
| Africa | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| OECD Europe | - | - | - | - | - | - | - | - | - | - | - | 4 | - | - | 6 | 7 | 5 | 4 | 3 | 1 | 1 |
| Eastern Europe | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| CIS | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 8 |
| Middle East | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| India + SA | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| China + CPA | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| East Asia | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Oceania | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Japan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 3 | 4 | 9 | 9 | 24 | 21 | 23 |
| Sum | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 7 | 9 | 18 | 24 | 25 | 37 | 64 | 65 | 88 |
| Other global estimates | | | | | | | | | | | | | | | | | | | | | |
| Kramer (1996) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 88 |

Source: Schmitz (1979), Metallgesellschaft (1971, 1981, 1993).

*Consumption of magnesium (in 1000 metric tons).*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 5 | 5 | 5 | 7 | 15 |
| USA | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 85 | 85 | 87 | 84 | 96 |
| Latin America | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 4 | 12 | 18 | 8 | 12 |
| Africa | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 1 | 3 | 2 | 4 |
| OECD Europe | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 76 | 53 | 69 | 69 | 69 |
| Eastern Europe | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 5 | 7 | 8 | 10 | 6 |
| CIS | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 28 | 50 | 60 | 76 | 87 |
| Middle East | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | 4 | 5 |
| India + other S.Asian | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | 0 | 2 |
| China + C.P. countries | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 5 | 10 | 15 | 17 |
| East Asia | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | 2 | 2 |
| Oceania | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 2 | 1 | 3 | 3 | 4 |
| Japan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 12 | 11 | 19 | 22 | 26 |
| Sum | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 218 | 231 | 284 | 301 | 344 |
| Global estimates | | | | | | | | | | | | | | | | | | | | | |
| Metallgesellschaft (1981, 1993) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 182 | 166 | 204 | 301 | 344 |

Source: Metallgesellschaft (1981, 1993).

Note: World totals of Metallgesellschaft are averages of decades until 1955.

# A 18. Production and consumption of tin for 1890 - 1990.

*Mine production of tin (in 1000 metric tons), metal content.*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 4 |
| USA | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | W | W |
| Latin America | 2 | 4 | 9 | 17 | 23 | 22 | 30 | 33 | 39 | 29 | 40 | 45 | 32 | 29 | 22 | 27 | 36 | 38 | 37 | 47 | 61 |
| Africa | - | 0 | - | - | 3 | 7 | 7 | 9 | 10 | 14 | 25 | 29 | 23 | 25 | 21 | 21 | 20 | 16 | 12 | 9 | 5 |
| OECD Europe | 10 | 7 | 4 | 5 | 5 | 6 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 5 | 3 | 4 | 3 | 5 | 4 | 8 | 7 |
| Eastern Europe | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CIS | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 20 | 23 | 10 | 15 | 17 | 16 | 13 |
| Middle East | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| India + SA | - | - | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 5 | 5 | 0 | 2 | 1 | 1 | 1 | 0 | 0 | 1 | 2 | 1 |
| China + CPA | 3 | 3 | 3 | 5 | 7 | 8 | 11 | 10 | 8 | 11 | 13 | 2 | 4 | 12 | 30 | 25 | 23 | 21 | 17 | 21 | 43 |
| East Asia | 45 | 72 | 66 | 69 | 73 | 80 | 66 | 89 | 115 | 74 | 143 | 6 | 102 | 107 | 88 | 99 | 115 | 112 | 135 | 86 | 73 |
| Oceania | 8 | 6 | 4 | 8 | 7 | 6 | 5 | 3 | 2 | 3 | 4 | 2 | 2 | 2 | 2 | 4 | 9 | 10 | 10 | 6 | 7 |
| Japan | - | - | - | - | - | 0 | 0 | 0 | 1 | 2 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - |
| Sum | 67 | 92 | 87 | 103 | 118 | 129 | 124 | 148 | 181 | 139 | 236 | 88 | 168 | 182 | 189 | 205 | 216 | 217 | 233 | 197 | 215 |
| *Other global estimates* | | | | | | | | | | | | | | | | | | | | | |
| Schmitz (1979) | 67 | 92 | 87 | 101 | 118 | 130 | 124 | 148 | 182 | 141 | 239 | 89 | 169 | 183 | 167 | 181 | 206 | 194 | - | - | - |
| Metallgesellschaft (1993) | - | - | 80 | 100 | 119 | 130 | 124 | 147 | 173 | 142 | 239 | 94 | 177 | 194 | 177 | 191 | 217 | 218 | 236 | 197 | 215 |

Sources: Schmitz (1979), Metallgesellschaft (1971, 1981, 1993).

Note: Schmitz data are used from 1890 - 1955, Metallgesellschaft data from 1960 - 1990.
Note: W = withheld by USGS to avoid disclosing company proprietary data

*Primary smelter production of tin (in 1000 metric tons).*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| USA | - | - | - | - | - | - | 13 | - | 0 | 0 | 1 | 41 | 33 | 23 | 14 | 3 | 5 | 7 | 4 | 3 | - |
| Latin America | - | - | - | 1 | - | - | 0 | 0 | - | - | 0 | 0 | 0 | 2 | 3 | 6 | 6 | 15 | 24 | 39 | 56 |
| Africa | - | - | - | - | 1 | - | - | - | - | 2 | 8 | 10 | 4 | 4 | 4 | 13 | 12 | 8 | 7 | 6 | 3 |
| OECD Europe | 11 | 10 | 10 | 18 | 28 | 29 | 24 | 43 | 59 | 55 | 51 | 29 | 62 | 68 | 52 | 48 | 39 | 27 | 17 | 20 | 17 |
| Eastern Europe | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 |
| CIS | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 20 | 23 | 10 | 16 | 17 | 19 | 13 |
| Middle East | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| India + SA | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 1 |
| China + CPA | - | - | - | - | - | 8 | 11 | 9 | 7 | 9 | 7 | 2 | 4 | 9 | 30 | 25 | 22 | 22 | 15 | 25 | 38 |
| East Asia | - | - | - | - | - | 70 | 64 | 91 | 113 | 70 | 151 | 3 | 70 | 74 | 79 | 80 | 118 | 118 | 141 | 90 | 98 |
| Oceania | - | - | - | - | 5 | 4 | 4 | 3 | 2 | 3 | 4 | 2 | 2 | 2 | 2 | 3 | 5 | 5 | 5 | 3 | 0 |
| Japan | - | - | - | - | - | - | 0 | 0 | 1 | 2 | 2 | 0 | 0 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| Sum | 11 | 10 | 10 | 20 | 34 | 111 | 116 | 146 | 182 | 140 | 224 | 88 | 176 | 181 | 207 | 203 | 217 | 218 | 231 | 206 | 226 |
| *Other global estimates* | | | | | | | | | | | | | | | | | | | | | |
| Schmitz (1979) | 57 | 76 | 79 | 102 | 116 | 130 | 122 | 149 | 181 | 150 | 233 | 97 | 187 | 198 | 195 | 190 | 220 | 220 | - | - | - |
| Metallgesellschaft (1993) | - | - | - | 102 | 116 | 130 | 122 | 149 | 181 | 150 | 233 | 97 | 187 | 198 | 195 | 190 | 222 | 226 | 244 | 216 | 234 |

Sources: Schmitz (1979), Metallgesellschaft (1971, 1981, 1993)

**A 18. Production and consumption of tin for 1890 - 1990, continued.**

*Secondary production of tin (in 1000 metric tons).*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 | 0 |
| USA | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 22 | 26 | 20 | 16 | 16 | 14 | 18 |
| Latin America | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 2 | 2 |
| Africa | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | - |
| OECD Europe | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 31 | 30 | 21 | 22 | 22 | 22 | 23 |
| Eastern Europe | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| CIS | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Middle East | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| India + SA | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 |
| China + CPA | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| East Asia | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Oceania | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| Japan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 4 | 4 | 5 | 5 | 6 | 6 | 6 |
| Sum | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 | 60 | 48 | 44 | 47 | 44 | 49 |
| *Other global estimates* | | | | | | | | | | | | | | | | | | | | | |
| Schmitz (1979) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 52 | 40 | - | - | - |

Source: Metallgesellschaft (1971, 1981, 1993).

Note: Secondary production includes new and old scrap. Figures of old scrap and new scrap are separate available.

*Consumption of tin from smelter output (in 1000 metric tons).*

| Region | 1890 | 1895 | 1900 | 1905 | 1910 | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 4 | 5 | 5 | 4 | 5 | 4 | 4 |
| USA | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 52 | 60 | 54 | 44 | 46 | 38 | 37 |
| Latin America | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 5 | 6 | 6 | 9 | 11 | 12 | 12 |
| Africa | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 3 | 4 | 4 | 4 | 4 | 3 | 3 |
| OECD Europe | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 70 | 66 | 69 | 63 | 61 | 53 | 64 |
| Eastern Europe | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 7 | 9 | 13 | 14 | 15 | 12 | 7 |
| CIS | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 26 | 29 | 17 | 23 | 25 | 32 | 20 |
| Middle East | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 3 | 4 | 4 | 4 | 5 | 3 | 3 |
| India + other S.Asian | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 4 | 5 | 5 | 3 | 3 | 3 | 3 |
| China + C.P. countries | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 8 | 15 | 15 | 15 | 15 | 16 | 35 |
| East Asia | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 2 | 6 | 17 |
| Oceania | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 4 | 5 | 4 | 4 | 3 | 3 | 1 |
| Japan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 15 | 17 | 29 | 28 | 31 | 32 | 34 |
| Sum | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 201 | 223 | 226 | 216 | 224 | 214 | 238 |
| *Other global estimates* | | | | | | | | | | | | | | | | | | | | | |
| Tilton (1979) | - | - | - | - | - | - | - | - | - | - | - | 135 | - | 169 | 201 | 209 | 226 | 212 | 222 | 213 | - |
| Metallgesellschaft (1971, 1993) | - | - | - | 104 | - | 122 | - | 147 | - | 156 | - | 135 | - | 169 | 201 | 223 | 226 | 216 | 224 | 214 | 238 |

Source: Metallgesellschaft (1971, 1991, 1993).

Note: World totals of Metallgesellschaft are averages of decades until 1955.
Note: Data are primary consumption figures. Secundary refined tin is not included, except for USA.

**A19. Nitric and sulphuric acid production for 1890 - 1988.**

*Nitric acid production ( thousands of metric tons)*

|  | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1988 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | - | - | - | - | - | 243 | 503 | 1,128 | 907 |
| USA | - | - | - | - | 106 | 315 | 1,212 | 3,007 | 6,897 | 8,373 | 7,249 |
| Latin America | - | - | - | - | - | - | - | 14 | 32 | - | - |
| Africa | - | - | - | - | - | - | - | - | - | - | - |
| OECD Europe | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| Eastern Europe | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| CIS | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| Middle East | - | - | - | - | .. | - | - | - | - | .. | - |
| India + SA | - | - | - | - | - | - | - | - | - | - | - |
| China + CPA | - | - | - | - | - | - | - | - | - | - | - |
| East Asia | - | - | - | - | - | - | - | - | - | 20 | 33 |
| Oceania | - | - | - | - | - | 1 | 7 | 17 | 126 | 180 | 204 |
| Japan | - | - | - | - | 3 | 91 | 38 | 130 | 474 | 565 | 618 |
| Total | 0 | 0 | 0 | 0 | 109 | 407 | 1,257 | 3,411 | 8,032 | 10,266 | 9,011 |

Source: Mitchell (1975, 1982, 1983, 1993, 1995)

*Sulphuric acid production ( thousands of metric tons)*

|  | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1988 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | - | - | - | 62 | 91 | 273 | 686 | 1,518 | 2,475 | 4,295 | 3,805 |
| USA | - | 1,068 | 2,045 | 3,015 | 4,198 | 5,208 | 11,820 | 16,223 | 26,784 | 40,050 | 38,229 |
| Latin America | - | - | - | - | - | 78 | 284 | 800 | 1,458 | 5,753 | 7,268 |
| Africa | - | - | - | - | 16 | 13 | 67 | 276 | 617 | 3,000 | 3,676 |
| OECD Europe | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| Eastern Europe | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| CIS | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| Middle East | - | - | - | - | - | - | 11 | 168 | 231 | 363 | 896 |
| India + SA | - | - | - | - | 26 | 39 | 104 | 367 | 1,228 | 2,284 | 3,495 |
| China + CPA | - | - | - | - | - | - | 69 | 1,330 | 2,914 | 7,643 | 11,113 |
| East Asia | - | - | - | - | - | - | - | 3 | 599 | 1,804 | 2,196 |
| Oceania | - | - | - | - | 283 | 376 | 622 | 1,088 | 1,762 | 2,175 | 1,818 |
| Japan | 4 | 28 | 67 | 590 | 701 | 2,278 | 2,030 | 4,452 | 6,925 | 6,777 | 6,767 |
| Total | 4 | 1,096 | 2,112 | 3,667 | 5,315 | 8,265 | 15,693 | 26,225 | 44,993 | 74,144 | 79,263 |

Source: Mitchell (1975, 1982, 1983, 1993, 1995)

Note: nitric and sulphuric acid production for Europe and CIS were not given in Mitchell (1975).

## A 20. Global and regional carbon dioxide emission estimates for 1890 - 1990 (in Mt C).

| REGION | FUEL TYPE | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canada | Solid | 2.1 | 3.8 | 7.7 | 11.8 | 13.2 | 10.5 | 26.6 | 13.6 | 16.1 | 21.3 | 24.6 |
| | Liquid | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.4 | 14.3 | 31.6 | 55.1 | 67.4 | 52.8 |
| | Gas | 0.0 | 0.0 | 0.2 | 0.2 | 0.3 | 0.4 | 1.0 | 5.9 | 17.1 | 26.4 | 34.1 |
| | Cement | - | - | - | - | - | - | 0.4 | 0.7 | 1.0 | 1.4 | 1.6 |
| | Gas flaring | - | - | - | - | - | - | 0.0 | 0.9 | 1.3 | 0.9 | 1.2 |
| | Total | 2.1 | 3.9 | 7.9 | 12.1 | 13.6 | 11.3 | 42.3 | 52.7 | 90.6 | 117.4 | 114.3 |
| USA | Solid | 93.1 | 166.2 | 296.8 | 333.9 | 362.7 | 281.1 | 347.1 | 253.4 | 322.4 | 394.6 | 498.4 |
| | Liquid | 4.7 | 6.6 | 21.3 | 63.1 | 101.0 | 128.0 | 244.8 | 349.8 | 514.8 | 583.5 | 562.7 |
| | Gas | 3.2 | 3.4 | 7.1 | 11.7 | 23.7 | 33.4 | 87.1 | 180.4 | 312.1 | 272.5 | 273.7 |
| | Cement | - | - | - | - | - | - | 5.3 | 7.6 | 9.0 | 9.3 | 9.5 |
| | Gas flaring | - | - | - | - | - | - | 11.8 | 8.3 | 7.2 | 1.8 | 2.2 |
| | Total | 101.0 | 176.2 | 325.2 | 408.7 | 487.5 | 442.6 | 696.1 | 799.5 | 1,165.5 | 1,261.7 | 1,346.5 |
| Latin America | Solid | 0.0 | 0.7 | 1.8 | 2.0 | 2.2 | 3.1 | 6.0 | 7.0 | 9.0 | 16.0 | 23.0 |
| | Liquid | 0.0 | 0.1 | 0.9 | 22.3 | 21.9 | 31.2 | 29.0 | 57.0 | 98.0 | 177.0 | 186.0 |
| | Gas | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 1.8 | 1.0 | 6.0 | 16.0 | 32.0 | 46.0 |
| | Cement | - | - | - | - | - | - | 1.1 | 2.4 | 4.9 | 10.3 | 11.4 |
| | Gas flaring | - | - | - | - | - | - | 8.3 | 11.7 | 16.0 | 8.6 | 7.2 |
| | Total | 0.0 | 0.8 | 2.7 | 24.3 | 24.3 | 36.0 | 45.4 | 84.1 | 143.9 | 243.9 | 273.6 |
| Africa | Solid | 0.1 | 1.1 | 4.3 | 6.9 | 8.8 | 10.5 | 19.0 | 29.0 | 39.0 | 54.0 | 74.0 |
| | Liquid | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.2 | 7.0 | 13.0 | 26.0 | 52.0 | 69.0 |
| | Gas | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.0 | 16.0 |
| | Cement | - | - | - | - | - | - | 0.6 | 1.2 | 2.4 | 4.3 | 7.0 |
| | Gas flaring | - | - | - | - | - | - | 0.0 | 0.0 | 15.0 | 20.8 | 14.7 |
| | Total | 0.1 | 1.1 | 4.3 | 7.0 | 9.0 | 10.7 | 26.6 | 43.2 | 82.4 | 140.1 | 180.7 |
| OECD Europe | Solid | 211.3 | 278.3 | 354.5 | 291.8 | 370.2 | 374.9 | 336.0 | 372.0 | 305.0 | 276.0 | 279.0 |
| | Liquid | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.5 | 40.0 | 145.0 | 423.0 | 458.0 | 378.0 |
| | Gas | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 1.0 | 6.0 | 39.0 | 114.0 | 139.0 |
| | Cement | - | - | - | - | - | - | 6.7 | 13.5 | 24.2 | 28.2 | 27.1 |
| | Gas flaring | - | - | - | - | - | - | 0.0 | 0.0 | 0.8 | 5.2 | 6.0 |
| | Total | 211.3 | 278.4 | 354.6 | 291.9 | 370.4 | 375.5 | 383.7 | 536.5 | 792.0 | 881.4 | 829.1 |
| Eastern Europe | Solid | 21.9 | 26.3 | 43.1 | 37.8 | 46.5 | 41.2 | 101.4 | 174.0 | 211.7 | 248.6 | 213.5 |
| | Liquid | 0.1 | 0.5 | 2.5 | 1.6 | 4.0 | 6.3 | 3.3 | 11.6 | 40.8 | 73.2 | 57.3 |
| | Gas | 0.0 | 0.0 | 0.0 | 0.3 | 0.5 | 1.3 | 1.9 | 6.6 | 20.2 | 41.0 | 39.7 |
| | Cement | - | - | - | - | - | - | 1.1 | 3.1 | 5.7 | 9.3 | 7.5 |
| | Gas flaring | - | - | - | - | - | - | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| | Total | 22.0 | 26.8 | 45.6 | 39.7 | 51.0 | 48.8 | 107.7 | 195.3 | 278.5 | 372.2 | 318.0 |
| CIS | Solid | 3.5 | 15.7 | 16.0 | 6.3 | 20.9 | 73.8 | 148.6 | 266.0 | 323.3 | 390.4 | 338.5 |
| | Liquid | 3.0 | 8.0 | 7.2 | 3.6 | 9.3 | 22.4 | 32.7 | 99.4 | 203.2 | 331.8 | 330.7 |
| | Gas | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 1.1 | 3.1 | 24.4 | 88.8 | 178.0 | 318.3 |
| | Cement | - | - | - | - | - | - | 1.4 | 6.2 | 13.0 | 17.0 | 18.7 |
| | Gas flaring | - | - | - | - | - | - | 0.0 | 0.0 | 0.0 | 5.8 | 6.8 |
| | Total | 6.5 | 23.8 | 23.2 | 9.9 | 30.4 | 97.2 | 185.8 | 396.0 | 628.3 | 923.0 | 1,013.0 |
| Middle East | Solid | 0.1 | 0.2 | 0.6 | 0.3 | 0.9 | 1.7 | 2.0 | 3.0 | 5.0 | 8.0 | 21.0 |
| | Liquid | 0.0 | 0.0 | 0.0 | 2.4 | 4.4 | 11.5 | 2.0 | 16.0 | 27.0 | 74.0 | 134.0 |
| | Gas | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 8.0 | 15.0 | 51.0 |
| | Cement | - | - | - | - | - | - | 0.2 | 0.8 | 2.1 | 5.4 | 10.3 |
| | Gas flaring | - | - | - | - | - | - | 0.0 | 3.5 | 31.5 | 36.9 | 12.4 |
| | Total | 0.1 | 0.2 | 0.6 | 2.7 | 5.3 | 13.1 | 4.2 | 24.3 | 73.6 | 139.3 | 228.7 |
| India + SA | Solid | 1.2 | 3.5 | 7.1 | 11.2 | 13.2 | 14.7 | 16.0 | 26.8 | 37.7 | 69.7 | 130.1 |
| | Liquid | 0.0 | 0.1 | 0.7 | 1.0 | 1.7 | 1.0 | 2.0 | 5.3 | 13.1 | 22.4 | 39.6 |
| | Gas | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.7 | 5.2 |
| | Cement | - | - | - | - | - | - | 0.4 | 1.1 | 1.8 | 2.4 | 6.7 |
| | Gas flaring | - | - | - | - | - | - | 0.0 | 0.0 | 0.4 | 0.3 | 2.7 |
| | Total | 1.3 | 3.6 | 7.8 | 12.2 | 14.8 | 15.8 | 18.4 | 33.2 | 53.3 | 95.5 | 184.3 |
| China + CPA | Solid | 0.0 | 0.2 | 6.7 | 9.4 | 12.0 | 19.5 | 22.0 | 214.0 | 205.0 | 353.0 | 597.0 |
| | Liquid | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 7.0 | 31.0 | 74.0 | 99.0 |
| | Gas | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 2.0 | 7.0 | 8.0 |
| | Cement | - | - | - | - | - | - | 0.1 | 2.2 | 2.0 | 12.1 | 30.3 |
| | Gas flaring | - | - | - | - | - | - | 0.0 | 0.0 | 0.0 | 0.8 | 0.3 |
| | Total | 0.0 | 0.2 | 6.7 | 9.4 | 12.1 | 19.7 | 22.1 | 224.2 | 240.0 | 446.9 | 734.6 |
| East Asia | Solid | 0.0 | 0.2 | 0.5 | 1.2 | 2.1 | 2.7 | 4.0 | 8.2 | 11.3 | 20.3 | 53.9 |
| | Liquid | 0.0 | 0.3 | 1.2 | 2.3 | 4.0 | 6.1 | 5.0 | 13.7 | 44.9 | 96.6 | 139.4 |
| | Gas | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.5 | 0.0 | 2.0 | 2.7 | 8.3 | 24.8 |
| | Cement | - | - | - | - | - | - | 0.1 | 0.7 | 2.9 | 7.6 | 14.4 |
| | Gas flaring | - | - | - | - | - | - | 0.0 | 0.0 | 3.6 | 7.5 | 8.3 |
| | Total | 0.0 | 0.5 | 1.7 | 3.6 | 6.3 | 9.3 | 9.1 | 24.6 | 65.4 | 140.3 | 240.8 |
| Oceania | Solid | 2.7 | 4.4 | 6.9 | 8.5 | 8.9 | 9.3 | 13.6 | 18.6 | 21.7 | 29.2 | 40.9 |
| | Liquid | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.8 | 9.0 | 21.7 | 27.0 | 27.8 |
| | Gas | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 4.9 | 12.0 |
| | Cement | - | - | - | - | - | - | 0.2 | 0.4 | 0.7 | 0.8 | 1.0 |
| | Gas flaring | - | - | - | - | - | - | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| | Total | 2.7 | 4.4 | 6.9 | 8.5 | 8.9 | 9.3 | 17.6 | 28.0 | 45.0 | 62.0 | 81.7 |
| Japan | Solid | 1.9 | 5.4 | 11.2 | 19.1 | 23.1 | 31.3 | 26.4 | 38.4 | 63.3 | 62.8 | 84.1 |
| | Liquid | 0.0 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 1.2 | 22.0 | 129.3 | 167.0 | 172.2 |
| | Gas | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 2.1 | 13.1 | 27.0 |
| | Cement | - | - | - | - | - | - | 0.6 | 3.1 | 7.8 | 12.0 | 11.5 |
| | Gas flaring | - | - | - | - | - | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Total | 1.9 | 5.4 | 11.4 | 19.3 | 23.3 | 31.6 | 28.2 | 63.9 | 202.5 | 254.9 | 294.8 |
| World | Total | 349.0 | 525.2 | 798.5 | 849.3 | 1,056.8 | 1,120.7 | 1,587.3 | 2,505.5 | 3,861.0 | 5,078.6 | 5,840.1 |

**Global CDIAC estimates**

| | FUEL TYPE | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Solid | 339.7 | 505.4 | 762.2 | 870.0 | 897.9 | 1,033.0 | 1,077.0 | 1,419.0 | 1,571.0 | 1,921.0 | 2,392.0 |
| | Liquid | 8.1 | 15.8 | 34.5 | 76.3 | 151.2 | 224.5 | 423.0 | 850.0 | 1,838.0 | 2,409.0 | 2,419.0 |
| | Gas | 2.0 | 3.7 | 8.0 | 12.6 | 28.4 | 42.9 | 97.0 | 235.0 | 516.0 | 725.0 | 946.0 |
| | Cement | - | - | - | - | - | - | 18.0 | 43.0 | 78.0 | 120.0 | 152.0 |
| | Gas flaring | - | - | - | - | - | - | 23.0 | 39.0 | 87.0 | 89.0 | 56.0 |
| 1991 estimate | Total | 349.8 | 524.9 | 804.7 | 958.9 | 1,077.5 | 1,300.4 | 1,638.0 | 2,586.0 | 4,090.0 | 5,264.0 | 5,965.0 |
| 1993 estimate | Total | 349.8 | 524.9 | 804.7 | 958.9 | 1,077.5 | 1,300.4 | 1,638.0 | 2,586.0 | 4,084.0 | 5,292.0 | 6,098.0 |

Note: emissions from the historical cement production data from Table 28 are not yet included.
Note: estimates for the period 1890 - 1940 calculated from Etemad et al. (1991).
Note: estimates for the period 1950 - 1990 are derived from Marland et al. (1994).

# A 21. Emission factors for Carbon Dioxide (IPCC defaults).

| Fuel | | Emission factor kg C / GJ | Emission factor kg CO2 / GJ |
|---|---|---|---|
| **Solid** | *Primary fuels* | | |
| | Coking coal | 25.8 | 94.6 |
| | Steam coal | 25.8 | 94.6 |
| | Lignite | 26.1 | 95.7 |
| | Sub-bituminous coal | 27.6 | 101.2 |
| | Peat | 28.9 | 106.0 |
| | *Secondary fuels* | | |
| | BKB and Patent fuel | 25.8 * | 94.6 |
| | Coke | 29.5 | 108.2 |
| **Liquid** | *Primary fuels* | | |
| | Crude oil | 20.0 | 73.3 |
| | Natural gas liquids | 15.2 | 55.7 |
| | *Secondary fuels* | | |
| | Gasoline | 18.9 | 69.3 |
| | Kerosene | 19.6 | 71.9 |
| | Jet fuel | 19.5 | 71.5 |
| | Gas/Diesel oil | 20.2 | 74.1 |
| | Residential fuel oil | 21.1 | 77.4 |
| | LPG | 17.2 | 63.1 |
| | Naphta | 20.0 * | 73.3 |
| | Bitumen | 22.0 | 80.7 |
| | Lubricants | 20.0 * | 73.3 |
| | Petroleum coke | 27.5 | 100.8 |
| | Refinary feedstocks | 20.0 * | 73.3 |
| | Other oil | 20.0 * | 73.3 |
| **Gaseous** | Natural gas (dry) | 15.3 | 56.1 |
| **Biomass** | Solid biomass | 25.8 * | 94.6 |
| | Liquid | 20.0 * | 73.3 |
| **Bunkers** | Jet fuel bunkers | 19.5 | 71.5 |
| | Gas/Diesel oil bunkers | 20.2 | 74.1 |
| | Residual fuel oil bunkers | 21.1 | 77.4 |
| | Other oil bunkers | 20.0 * | 73.3 |

* This value is a default value until a fuel specific carbon emission factor is determined.
For oil products and liquid biomass the default factor is that of crude oil.
For coal products and solid biomass products the default is that of steam coal.

Source: IPCC/OECD Draft Guidelines for National Greenhouse Gas Inventories (1993).

**A22. Global and regional land use estimates 1700 - 1980 (in ▓▓ha).**

| | | 1700 | 1850 | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **N.America** | | | | | | | | | | | | | |
| | forest | 1,016 | 971 | 956 | 952 | 948 | 944 | 942 | 941 | 939 | 940 | 941 | 942 |
| | grass | 911 | 908 | 723 | 676 | 630 | 584 | 563 | 543 | 522 | 523 | 524 | 525 |
| | pasture | 4 | 6 | 133 | 164 | 196 | 227 | 240 | 254 | 267 | 266 | 266 | 265 |
| | cropland | 3 | 50 | 124 | 142 | 161 | 179 | 188 | 197 | 206 | 205 | 204 | 203 |
| | total | 1,934 | 1,935 | 1,935 | 1,934 | 1,934 | 1,934 | 1,934 | 1,934 | 1,934 | 1,934 | 1,935 | 1,935 |
| **Europe** | | | | | | | | | | | | | |
| | forest | 230 | 205 | 202 | 201 | 201 | 200 | 200 | 199 | 199 | 203 | 208 | 212 |
| | grass | 115 | 64 | 57 | 55 | 54 | 52 | 51 | 50 | 49 | 50 | 51 | 52 |
| | pasture | 75 | 86 | 87 | 87 | 87 | 87 | 87 | 87 | 87 | 87 | 87 | 86 |
| | cropland | 67 | 132 | 141 | 143 | 145 | 147 | 149 | 150 | 152 | 147 | 142 | 137 |
| | total | 487 | 487 | 487 | 486 | 487 | 486 | 486 | 487 | 487 | 487 | 487 | 487 |
| **USSR** | | | | | | | | | | | | | |
| | forest | 1,138 | 1,067 | 1,021 | 1,010 | 998 | 987 | 975 | 964 | 952 | 948 | 945 | 941 |
| | grass | 1,015 | 995 | 883 | 855 | 827 | 799 | 773 | 746 | 720 | 710 | 701 | 691 |
| | pasture | 53 | 83 | 193 | 220 | 247 | 275 | 300 | 325 | 350 | 358 | 366 | 374 |
| | cropland | 33 | 94 | 142 | 154 | 166 | 178 | 191 | 203 | 216 | 222 | 227 | 233 |
| | total | 2,239 | 2,239 | 2,239 | 2,239 | 2,239 | 2,239 | 2,239 | 2,239 | 2,238 | 2,238 | 2,239 | 2,239 |
| **Pacific developed** | | | | | | | | | | | | | |
| | forest | 267 | 267 | 264 | 263 | 262 | 261 | 260 | 259 | 258 | 254 | 250 | 246 |
| | grass | 615 | 599 | 529 | 512 | 494 | 477 | 452 | 426 | 401 | 319 | 236 | 154 |
| | pasture | 24 | 39 | 104 | 121 | 137 | 153 | 177 | 200 | 224 | 300 | 377 | 454 |
| | cropland | 5 | 6 | 13 | 15 | 17 | 19 | 22 | 25 | 28 | 38 | 48 | 58 |
| | total | 911 | 911 | 911 | 910 | 911 | 910 | 910 | 911 | 911 | 911 | 912 | 912 |
| **China** | | | | | | | | | | | | | |
| | forest | 135 | 96 | 86 | 84 | 81 | 79 | 76 | 72 | 69 | 65 | 62 | 58 |
| | grass | 868 | 765 | 740 | 734 | 728 | 722 | 707 | 693 | 679 | 608 | 537 | 466 |
| | pasture | 83 | 179 | 202 | 208 | 214 | 219 | 233 | 246 | 259 | 325 | 391 | 457 |
| | cropland | 29 | 75 | 86 | 89 | 92 | 95 | 99 | 104 | 108 | 117 | 125 | 134 |
| | total | 1,115 | 1,115 | 1,115 | 1,115 | 1,115 | 1,115 | 1,115 | 1,115 | 1,115 | 1,115 | 1,115 | 1,115 |
| **Latin America** | | | | | | | | | | | | | |
| | forest | 1,445 | 1,420 | 1,391 | 1,384 | 1,376 | 1,369 | 1,337 | 1,305 | 1,273 | 1,232 | 1,192 | 1,151 |
| | grass | 571 | 549 | 522 | 515 | 509 | 502 | 462 | 423 | 383 | 322 | 262 | 201 |
| | pasture | 37 | 72 | 113 | 123 | 134 | 144 | 202 | 259 | 317 | 400 | 483 | 566 |
| | cropland | 7 | 18 | 33 | 37 | 41 | 45 | 59 | 73 | 87 | 105 | 124 | 142 |
| | total | 2,060 | 2,059 | 2,059 | 2,060 | 2,060 | 2,060 | 2,060 | 2,060 | 2,060 | 2,060 | 2,060 | 2,060 |
| **North+Middle Africa** | | | | | | | | | | | | | |
| | forest | 38 | 34 | 30 | 29 | 28 | 27 | 24 | 21 | 18 | 17 | 15 | 14 |
| | grass | 1,069 | 1,052 | 1,035 | 1,031 | 1,027 | 1,022 | 1,002 | 981 | 960 | 912 | 863 | 815 |
| | pasture | 54 | 67 | 80 | 83 | 86 | 90 | 105 | 121 | 137 | 173 | 209 | 245 |
| | cropland | 20 | 27 | 36 | 38 | 41 | 43 | 51 | 58 | 66 | 80 | 93 | 107 |
| | total | 1,181 | 1,180 | 1,181 | 1,181 | 1,181 | 1,182 | 1,182 | 1,181 | 1,181 | 1,181 | 1,181 | 1,181 |
| **Tropical Africa** | | | | | | | | | | | | | |
| | forest | 1,358 | 1,336 | 1,301 | 1,292 | 1,284 | 1,275 | 1,246 | 1,217 | 1,188 | 1,150 | 1,112 | 1,074 |
| | grass | 865 | 825 | 745 | 725 | 705 | 686 | 621 | 556 | 491 | 440 | 388 | 337 |
| | pasture | 187 | 236 | 333 | 357 | 381 | 405 | 483 | 561 | 639 | 700 | 760 | 821 |
| | cropland | 44 | 57 | 75 | 79 | 84 | 88 | 104 | 120 | 136 | 165 | 193 | 222 |
| | total | 2,454 | 2,454 | 2,454 | 2,454 | 2,454 | 2,454 | 2,454 | 2,454 | 2,454 | 2,454 | 2,454 | 2,454 |
| **South Asia** | | | | | | | | | | | | | |
| | forest | 335 | 317 | 301 | 297 | 293 | 289 | 276 | 264 | 251 | 227 | 204 | 180 |
| | grass | 182 | 178 | 170 | 168 | 166 | 164 | 160 | 156 | 152 | 147 | 142 | 136 |
| | pasture | 7 | 11 | 19 | 21 | 23 | 26 | 30 | 34 | 38 | 42 | 46 | 51 |
| | cropland | 53 | 71 | 86 | 90 | 94 | 98 | 111 | 123 | 136 | 161 | 185 | 210 |
| | total | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 |
| **Southeast Asia** | | | | | | | | | | | | | |
| | forest | 253 | 252 | 249 | 248 | 248 | 247 | 245 | 244 | 242 | 240 | 237 | 235 |
| | grass | 123 | 120 | 112 | 110 | 108 | 107 | 102 | 98 | 94 | 88 | 82 | 77 |
| | pasture | 2 | 3 | 6 | 6 | 7 | 7 | 9 | 10 | 11 | 13 | 14 | 15 |
| | cropland | 4 | 7 | 15 | 17 | 19 | 21 | 26 | 30 | 35 | 42 | 48 | 55 |
| | total | 382 | 382 | 382 | 382 | 382 | 382 | 382 | 382 | 382 | 382 | 382 | 382 |
| **World** | | | | | | | | | | | | | |
| | forest | 6,215 | 5,965 | 5,801 | 5,760 | 5,719 | 5,678 | 5,582 | 5,485 | 5,389 | 5,277 | 5,165 | 5,053 |
| | grass | 6,334 | 6,055 | 5,517 | 5,383 | 5,249 | 5,114 | 4,893 | 4,672 | 4,451 | 4,119 | 3,786 | 3,453 |
| | pasture | 526 | 782 | 1,269 | 1,390 | 1,512 | 1,634 | 1,865 | 2,097 | 2,329 | 2,664 | 2,999 | 3,335 |
| | cropland | 265 | 537 | 752 | 806 | 859 | 913 | 999 | 1,084 | 1,170 | 1,280 | 1,391 | 1,501 |
| | total | 13,340 | 13,339 | 13,339 | 13,339 | 13,339 | 13,339 | 13,339 | 13,339 | 13,339 | 13,340 | 13,341 | 13,342 |

Sources: FAO (1990), Richards (1991).

**A 23-I. Total amount of arable area per country, calculated with Appendix 2, from Houghton et al. (1983), in 1000 ha.**

| Reg. | Cntr. | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 1 | 4,651 | 4,800 | 4,975 | 5,149 | 5,463 | 5,987 | 6,510 | 7,109 | 8,013 |
| 6 | 2 | 554 | 561 | 567 | 573 | 579 | 585 | 591 | 598 | 598 |
| 4 | 3 | 2,093 | 2,275 | 2,523 | 2,772 | 3,201 | 3,900 | 4,598 | 5,703 | 6,893 |
| 4 | 4 | 458 | 553 | 735 | 917 | 1,193 | 1,610 | 2,027 | 2,671 | 3,392 |
| 3 | 5 | 5,224 | 6,104 | 7,523 | 8,943 | 11,151 | 14,544 | 17,937 | 22,024 | 26,227 |
| 12 | 6 | 6,854 | 8,799 | 10,745 | 12,690 | 14,635 | 16,580 | 18,526 | 29,972 | 41,418 |
| 5 | 7 | 1,558 | 1,575 | 1,592 | 1,610 | 1,627 | 1,644 | 1,662 | 1,679 | 1,679 |
| 9 | 8 | 5,276 | 5,445 | 5,643 | 5,841 | 6,197 | 6,791 | 7,385 | 8,065 | 9,090 |
| 5 | 9 | 856 | 865 | 875 | 884 | 894 | 903 | 913 | 922 | 922 |
| 3 | 10 | 9 | 11 | 13 | 15 | 19 | 25 | 31 | 38 | 45 |
| 4 | 11 | 216 | 261 | 347 | 433 | 563 | 759 | 956 | 1,260 | 1,600 |
| 9 | 12 | 61 | 63 | 65 | 67 | 71 | 78 | 85 | 93 | 104 |
| 3 | 13 | 338 | 395 | 487 | 579 | 722 | 941 | 1,161 | 1,425 | 1,697 |
| 4 | 14 | 158 | 191 | 254 | 316 | 412 | 555 | 699 | 921 | 1,170 |
| 3 | 15 | 6,834 | 7,984 | 9,842 | 11,699 | 14,587 | 19,025 | 23,464 | 28,811 | 34,309 |
| 11 | 16 | 6 | 7 | 7 | 8 | 9 | 11 | 12 | 14 | 16 |
| 6 | 17 | 4,205 | 4,252 | 4,299 | 4,345 | 4,392 | 4,439 | 4,486 | 4,533 | 4,533 |
| 9 | 18 | 6,049 | 6,242 | 6,469 | 6,696 | 7,105 | 7,785 | 8,466 | 9,245 | 10,420 |
| 4 | 19 | 158 | 191 | 254 | 317 | 412 | 556 | 699 | 922 | 1,170 |
| 4 | 20 | 811 | 978 | 1,300 | 1,622 | 2,110 | 2,847 | 3,584 | 4,724 | 5,998 |
| 1 | 21 | 25,025 | 29,396 | 33,766 | 38,136 | 41,821 | 42,763 | 43,705 | 43,705 | 43,705 |
| 4 | 22 | 247 | 298 | 397 | 495 | 644 | 869 | 1,094 | 1,441 | 1,830 |
| 4 | 23 | 392 | 473 | 629 | 784 | 1,020 | 1,377 | 1,733 | 2,284 | 2,900 |
| 3 | 24 | 800 | 935 | 1,153 | 1,370 | 1,708 | 2,228 | 2,748 | 3,374 | 4,018 |
| 10 | 25 | 62,207 | 64,690 | 67,172 | 70,493 | 74,173 | 78,694 | 83,575 | 92,150 | 102,528 |
| 3 | 26 | 1,004 | 1,173 | 1,446 | 1,719 | 2,144 | 2,796 | 3,448 | 4,234 | 5,042 |
| 4 | 27 | 19 | 22 | 30 | 37 | 48 | 65 | 82 | 108 | 137 |
| 3 | 28 | 98 | 115 | 141 | 168 | 209 | 273 | 337 | 414 | 493 |
| 3 | 29 | 509 | 595 | 734 | 872 | 1,087 | 1,418 | 1,749 | 2,147 | 2,557 |
| 8 | 30 | 48 | 53 | 58 | 64 | 74 | 90 | 106 | 132 | 159 |
| 6 | 31 | 4,949 | 5,005 | 5,060 | 5,115 | 5,170 | 5,226 | 5,281 | 5,336 | 5,336 |
| 5 | 32 | 2,487 | 2,515 | 2,542 | 2,570 | 2,598 | 2,626 | 2,653 | 2,681 | 2,681 |
| 4 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 34 | 226 | 264 | 325 | 387 | 482 | 629 | 775 | 952 | 1,134 |
| 3 | 35 | 509 | 595 | 733 | 871 | 1,086 | 1,417 | 1,747 | 2,146 | 2,555 |
| 4 | 36 | 861 | 936 | 1,039 | 1,141 | 1,317 | 1,605 | 1,893 | 2,347 | 2,837 |
| 3 | 37 | 127 | 148 | 183 | 217 | 271 | 353 | 435 | 534 | 636 |
| 4 | 38 | 31 | 37 | 49 | 61 | 80 | 108 | 136 | 179 | 227 |
| 4 | 39 | 1,803 | 2,174 | 2,891 | 3,608 | 4,693 | 6,332 | 7,971 | 10,505 | 13,340 |
| 3 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 41 | 37 | 48 | 59 | 69 | 80 | 90 | 101 | 163 | 226 |
| 5 | 42 | 2,474 | 2,502 | 2,529 | 2,557 | 2,584 | 2,612 | 2,640 | 2,667 | 2,667 |
| 5 | 43 | 17,621 | 17,818 | 18,015 | 18,211 | 18,408 | 18,605 | 18,802 | 18,998 | 18,998 |
| 3 | 44 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 2 |
| 4 | 45 | 38 | 46 | 61 | 76 | 99 | 134 | 169 | 222 | 282 |
| 4 | 46 | 18 | 22 | 29 | 36 | 46 | 63 | 79 | 104 | 132 |
| 4 | 47 | 396 | 478 | 635 | 793 | 1,031 | 1,392 | 1,752 | 2,309 | 2,932 |
| 5 | 48 | 6,732 | 6,807 | 6,882 | 6,957 | 7,032 | 7,107 | 7,182 | 7,258 | 7,258 |
| 5 | 49 | 3,624 | 3,665 | 3,705 | 3,746 | 3,786 | 3,827 | 3,867 | 3,908 | 3,908 |
| 5 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 51 | 311 | 363 | 448 | 532 | 664 | 866 | 1,067 | 1,311 | 1,561 |
| 4 | 52 | 92 | 111 | 148 | 185 | 240 | 324 | 408 | 537 | 682 |
| 4 | 53 | 37 | 45 | 60 | 74 | 97 | 131 | 164 | 217 | 275 |
| 3 | 54 | 74 | 86 | 106 | 126 | 158 | 206 | 254 | 311 | 371 |
| 3 | 55 | 161 | 188 | 232 | 276 | 344 | 449 | 553 | 679 | 809 |
| 3 | 56 | 308 | 360 | 443 | 527 | 657 | 857 | 1,057 | 1,297 | 1,545 |
| 6 | 57 | 5,186 | 5,243 | 5,301 | 5,359 | 5,417 | 5,475 | 5,533 | 5,591 | 5,591 |
| 5 | 58 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 |
| 9 | 59 | 95,653 | 98,707 | 102,298 | 105,889 | 112,348 | 123,115 | 133,882 | 146,201 | 164,780 |
| 11 | 60 | 6,778 | 7,558 | 8,580 | 9,602 | 10,858 | 12,468 | 14,078 | 15,861 | 18,202 |
| 8 | 61 | 4,853 | 5,275 | 5,852 | 6,429 | 7,422 | 9,043 | 10,663 | 13,224 | 15,985 |
| 8 | 62 | 1,526 | 1,658 | 1,840 | 2,021 | 2,334 | 2,843 | 3,352 | 4,157 | 5,025 |
| 5 | 63 | 1,273 | 1,287 | 1,301 | 1,315 | 1,330 | 1,344 | 1,358 | 1,372 | 1,372 |
| 8 | 64 | 124 | 135 | 150 | 165 | 190 | 231 | 273 | 338 | 409 |
| 5 | 65 | 12,956 | 13,100 | 13,245 | 13,389 | 13,534 | 13,679 | 13,823 | 13,968 | 13,968 |
| 4 | 66 | 374 | 451 | 599 | 748 | 973 | 1,313 | 1,653 | 2,178 | 2,766 |
| 3 | 67 | 49 | 58 | 71 | 85 | 105 | 138 | 170 | 208 | 248 |
| 13 | 68 | 906 | 1,163 | 1,421 | 1,678 | 1,935 | 2,192 | 2,449 | 3,963 | 5,476 |
| 8 | 69 | 95 | 103 | 115 | 126 | 146 | 177 | 209 | 259 | 313 |
| 10 | 70 | 1,141 | 1,272 | 1,444 | 1,616 | 1,828 | 2,099 | 2,370 | 2,670 | 3,064 |
| 4 | 71 | 279 | 336 | 447 | 558 | 726 | 980 | 1,233 | 1,625 | 2,064 |
| 8 | 72 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| 10 | 73 | 314 | 350 | 397 | 444 | 502 | 577 | 651 | 734 | 842 |
| 8 | 74 | 99 | 107 | 119 | 131 | 151 | 184 | 217 | 269 | 325 |
| 4 | 75 | 49 | 59 | 79 | 98 | 128 | 172 | 217 | 286 | 363 |

| Reg. | Cntr. | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 76 | 50 | 60 | 80 | 99 | 129 | 174 | 219 | 289 | 367 |
| 4 | 77 | 615 | 669 | 742 | 815 | 941 | 1,147 | 1,352 | 1,677 | 2,027 |
| 4 | 78 | 320 | 386 | 514 | 641 | 834 | 1,125 | 1,416 | 1,866 | 2,370 |
| 11 | 79 | 1,650 | 1,840 | 2,088 | 2,337 | 2,643 | 3,035 | 3,426 | 3,860 | 4,430 |
| 4 | 80 | 234 | 282 | 375 | 468 | 609 | 821 | 1,034 | 1,362 | 1,730 |
| 4 | 81 | 285 | 344 | 457 | 571 | 742 | 1,002 | 1,261 | 1,662 | 2,110 |
| 4 | 82 | 37 | 45 | 59 | 74 | 96 | 130 | 163 | 215 | 273 |
| 3 | 83 | 4,634 | 5,414 | 6,673 | 7,933 | 9,891 | 12,900 | 15,910 | 19,536 | 23,264 |
| 10 | 84 | 463 | 482 | 500 | 525 | 552 | 586 | 622 | 686 | 764 |
| 4 | 85 | 2,274 | 2,471 | 2,742 | 3,012 | 3,478 | 4,237 | 4,996 | 6,196 | 7,489 |
| 4 | 86 | 400 | 482 | 641 | 800 | 1,041 | 1,404 | 1,768 | 2,329 | 2,958 |
| 4 | 87 | 88 | 106 | 141 | 176 | 229 | 309 | 389 | 513 | 651 |
| 9 | 88 | 1,130 | 1,166 | 1,208 | 1,251 | 1,327 | 1,454 | 1,581 | 1,727 | 1,946 |
| 8 | 89 | 56 | 61 | 68 | 75 | 86 | 105 | 124 | 153 | 185 |
| 12 | 90 | 2 | 3 | 3 | 4 | 5 | 5 | 6 | 10 | 13 |
| 11 | 91 | 57 | 74 | 90 | 106 | 122 | 138 | 155 | 250 | 346 |
| 12 | 92 | 83 | 107 | 131 | 154 | 178 | 202 | 225 | 364 | 504 |
| 3 | 93 | 240 | 280 | 346 | 411 | 512 | 668 | 824 | 1,012 | 1,205 |
| 4 | 94 | 354 | 427 | 568 | 709 | 922 | 1,244 | 1,566 | 2,064 | 2,621 |
| 4 | 95 | 4,022 | 4,850 | 6,450 | 8,049 | 10,469 | 14,126 | 17,782 | 23,436 | 29,760 |
| 10 | 96 | 296 | 380 | 464 | 548 | 632 | 716 | 800 | 1,294 | 1,788 |
| 5 | 97 | 758 | 766 | 775 | 783 | 792 | 800 | 809 | 817 | 817 |
| 8 | 98 | 10 | 11 | 12 | 13 | 15 | 18 | 21 | 26 | 32 |
| 9 | 99 | 11,167 | 11,524 | 11,943 | 12,363 | 13,117 | 14,374 | 15,631 | 17,069 | 19,238 |
| 3 | 100 | 109 | 127 | 156 | 186 | 232 | 302 | 373 | 458 | 545 |
| 3 | 101 | 183 | 214 | 263 | 313 | 390 | 509 | 627 | 770 | 917 |
| 3 | 102 | 565 | 660 | 813 | 967 | 1,206 | 1,572 | 1,939 | 2,381 | 2,835 |
| 11 | 103 | 2,646 | 2,950 | 3,349 | 3,748 | 4,238 | 4,867 | 5,495 | 6,191 | 7,105 |
| 6 | 104 | 14,205 | 14,364 | 14,522 | 14,681 | 14,840 | 14,998 | 15,157 | 15,315 | 15,315 |
| 5 | 105 | 2,866 | 2,898 | 2,930 | 2,962 | 2,994 | 3,026 | 3,058 | 3,090 | 3,090 |
| 3 | 106 | 42 | 49 | 61 | 72 | 90 | 117 | 145 | 178 | 212 |
| 8 | 107 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| 6 | 108 | 9,759 | 9,868 | 9,977 | 10,086 | 10,195 | 10,304 | 10,413 | 10,522 | 10,522 |
| 4 | 109 | 98 | 119 | 158 | 197 | 256 | 346 | 435 | 573 | 728 |
| 8 | 110 | 432 | 470 | 521 | 573 | 661 | 806 | 950 | 1,178 | 1,424 |
| 4 | 111 | 318 | 383 | 509 | 636 | 827 | 1,115 | 1,404 | 1,851 | 2,350 |
| 4 | 112 | 71 | 86 | 114 | 142 | 185 | 249 | 314 | 413 | 525 |
| 4 | 113 | 128 | 155 | 206 | 257 | 334 | 451 | 568 | 748 | 950 |
| 4 | 114 | 1,785 | 2,153 | 2,863 | 3,573 | 4,648 | 6,271 | 7,894 | 10,405 | 13,212 |
| 11 | 115 | 379 | 486 | 594 | 701 | 809 | 916 | 1,024 | 1,656 | 2,288 |
| 7 | 116 | 128,875 | 143,975 | 159,584 | 175,702 | 191,819 | 206,480 | 215,314 | 224,147 | 232,980 |
| 5 | 117 | 19,303 | 19,518 | 19,734 | 19,949 | 20,165 | 20,380 | 20,596 | 20,811 | 20,811 |
| 9 | 118 | 1,100 | 1,135 | 1,176 | 1,217 | 1,292 | 1,415 | 1,539 | 1,681 | 1,894 |
| 4 | 119 | 1,581 | 1,907 | 2,536 | 3,164 | 4,116 | 5,553 | 6,991 | 9,214 | 11,700 |
| 3 | 120 | 8 | 9 | 11 | 13 | 17 | 22 | 27 | 33 | 39 |
| 4 | 121 | 21 | 26 | 34 | 42 | 55 | 74 | 94 | 123 | 157 |
| 5 | 122 | 2,824 | 2,855 | 2,887 | 2,918 | 2,950 | 2,981 | 3,013 | 3,044 | 3,044 |
| 5 | 123 | 359 | 363 | 367 | 371 | 375 | 379 | 383 | 387 | 387 |
| 8 | 124 | 1,795 | 1,951 | 2,165 | 2,378 | 2,746 | 3,345 | 3,944 | 4,891 | 5,913 |
| 4 | 125 | 438 | 528 | 702 | 876 | 1,139 | 1,537 | 1,935 | 2,550 | 3,238 |
| 11 | 126 | 5,161 | 5,755 | 6,533 | 7,311 | 8,268 | 9,493 | 10,719 | 12,077 | 13,859 |
| 5 | 127 | 795 | 804 | 813 | 822 | 830 | 839 | 848 | 857 | 857 |
| 4 | 128 | 80 | 97 | 129 | 161 | 209 | 282 | 356 | 469 | 595 |
| 3 | 129 | 20 | 23 | 29 | 34 | 43 | 56 | 69 | 85 | 101 |
| 4 | 130 | 1,361 | 1,479 | 1,641 | 1,803 | 2,082 | 2,536 | 2,991 | 3,709 | 4,483 |
| 8 | 131 | 8,353 | 9,079 | 10,072 | 11,065 | 12,775 | 15,564 | 18,354 | 22,760 | 27,512 |
| 4 | 132 | 675 | 814 | 1,083 | 1,352 | 1,758 | 2,372 | 2,986 | 3,935 | 4,997 |
| 8 | 133 | 3 | 4 | 4 | 5 | 5 | 6 | 8 | 9 | 11 |
| 2 | 134 | 108,050 | 126,919 | 145,787 | 164,656 | 180,565 | 184,633 | 188,702 | 188,702 | 188,702 |
| 4 | 135 | 302 | 365 | 485 | 605 | 787 | 1,062 | 1,337 | 1,762 | 2,238 |
| 3 | 136 | 284 | 332 | 409 | 486 | 606 | 791 | 975 | 1,197 | 1,426 |
| 3 | 137 | 698 | 815 | 1,005 | 1,194 | 1,489 | 1,942 | 2,395 | 2,941 | 3,502 |
| 10 | 138 | 2,255 | 2,515 | 2,855 | 3,195 | 3,613 | 4,148 | 4,684 | 5,277 | 6,056 |
| 5 | 139 | 11,543 | 11,671 | 11,800 | 11,929 | 12,058 | 12,187 | 12,316 | 12,445 | 12,445 |
| 4 | 140 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8 | 141 | 431 | 468 | 520 | 571 | 659 | 803 | 947 | 1,174 | 1,419 |
| 6 | 142 | 7,604 | 7,689 | 7,774 | 7,859 | 7,944 | 8,028 | 8,113 | 8,198 | 8,198 |
| 4 | 143 | 980 | 1,182 | 1,571 | 1,961 | 2,550 | 3,441 | 4,332 | 5,709 | 7,250 |
| 4 | 144 | 670 | 807 | 1,074 | 1,340 | 1,743 | 2,351 | 2,960 | 3,901 | 4,954 |
| 4 | 145 | 321 | 388 | 516 | 643 | 837 | 1,129 | 1,421 | 1,873 | 2,379 |
| Total | | 679,991 | 741,062 | 810,873 | 882,040 | 963,883 | 1,051,532 | 1,133,715 | 1,246,397 | 1,373,913 |

**A 23-I. Total amount of arable area per region, calculated with Appendix 2, from Houghton et al. (1983), in Mha.**

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 |
|--------|------|------|------|------|------|------|------|------|------|
| 1 | 25 | 29 | 34 | 38 | 42 | 43 | 44 | 44 | 44 |
| 2 | 108 | 127 | 146 | 165 | 181 | 185 | 189 | 189 | 189 |
| 3 | 23 | 27 | 34 | 40 | 50 | 65 | 80 | 98 | 117 |
| 4 | 26 | 31 | 39 | 47 | 60 | 80 | 99 | 129 | 163 |
| 5 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 95 |
| 6 | 46 | 47 | 47 | 48 | 49 | 49 | 50 | 50 | 50 |
| 7 | 129 | 144 | 160 | 176 | 192 | 206 | 215 | 224 | 233 |
| 8 | 22 | 24 | 26 | 29 | 33 | 39 | 46 | 56 | 67 |
| 9 | 120 | 124 | 129 | 133 | 141 | 155 | 169 | 184 | 207 |
| 10 | 67 | 70 | 73 | 77 | 81 | 87 | 93 | 103 | 115 |
| 11 | 17 | 19 | 21 | 24 | 27 | 31 | 35 | 40 | 46 |
| 12 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 31 | 42 |
| 13 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 4 | 5 |
| Total | 679 | 741 | 811 | 883 | 965 | 1,052 | 1,135 | 1,247 | 1,373 |

**A 23-II. Total amount of arable area per country, calculated with Appendix 3, from Houghton et al. (1983), in 1000 ha.**

| Reg. | Cntr. | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 1 | 5,932 | 6,144 | 6,356 | 6,388 | 6,388 | 6,388 | 6,556 | 7,109 | 8,013 |
| 6 | 2 | 554 | 561 | 567 | 573 | 579 | 585 | 591 | 598 | 598 |
| 4 | 3 | 2,860 | 3,043 | 3,293 | 3,543 | 3,951 | 4,652 | 5,352 | 6,284 | 6,893 |
| 4 | 4 | 314 | 408 | 589 | 770 | 1,068 | 1,484 | 1,899 | 2,671 | 3,392 |
| 3 | 5 | 2,744 | 3,609 | 5,014 | 6,418 | 8,513 | 11,891 | 15,270 | 20,748 | 26,227 |
| 12 | 6 | 6,854 | 8,799 | 10,745 | 12,690 | 14,635 | 16,580 | 18,526 | 29,972 | 41,418 |
| 5 | 7 | 1,558 | 1,575 | 1,592 | 1,610 | 1,627 | 1,644 | 1,662 | 1,679 | 1,679 |
| 9 | 8 | 6,729 | 6,970 | 7,210 | 7,246 | 7,246 | 7,246 | 7,437 | 8,065 | 9,090 |
| 5 | 9 | 856 | 865 | 875 | 884 | 894 | 903 | 913 | 922 | 922 |
| 3 | 10 | 5 | 6 | 9 | 11 | 15 | 21 | 26 | 36 | 45 |
| 4 | 11 | 148 | 192 | 278 | 363 | 504 | 700 | 896 | 1,260 | 1,600 |
| 9 | 12 | 77 | 80 | 83 | 83 | 83 | 83 | 85 | 93 | 104 |
| 3 | 13 | 178 | 234 | 324 | 415 | 551 | 770 | 988 | 1,343 | 1,697 |
| 4 | 14 | 108 | 141 | 203 | 265 | 368 | 512 | 655 | 921 | 1,170 |
| 3 | 15 | 3,589 | 4,721 | 6,559 | 8,396 | 11,136 | 15,556 | 19,975 | 27,142 | 34,309 |
| 11 | 16 | 3 | 4 | 5 | 5 | 7 | 8 | 9 | 13 | 16 |
| 6 | 17 | 4,205 | 4,252 | 4,299 | 4,345 | 4,392 | 4,439 | 4,486 | 4,533 | 4,533 |
| 9 | 18 | 7,714 | 7,990 | 8,266 | 8,307 | 8,307 | 8,307 | 8,525 | 9,245 | 10,420 |
| 4 | 19 | 108 | 141 | 203 | 266 | 368 | 512 | 655 | 922 | 1,170 |
| 4 | 20 | 556 | 721 | 1,041 | 1,361 | 1,888 | 2,623 | 3,358 | 4,723 | 5,998 |
| 1 | 21 | 25,025 | 29,396 | 33,766 | 38,136 | 41,821 | 42,763 | 43,705 | 43,705 | 43,705 |
| 4 | 22 | 170 | 220 | 318 | 415 | 576 | 800 | 1,025 | 1,441 | 1,830 |
| 4 | 23 | 269 | 348 | 503 | 658 | 913 | 1,268 | 1,624 | 2,284 | 2,900 |
| 3 | 24 | 420 | 553 | 768 | 983 | 1,304 | 1,822 | 2,339 | 3,179 | 4,018 |
| 10 | 25 | 62,207 | 64,690 | 67,172 | 70,493 | 74,173 | 78,694 | 83,575 | 92,150 | 102,528 |
| 3 | 26 | 527 | 694 | 964 | 1,234 | 1,636 | 2,286 | 2,935 | 3,989 | 5,042 |
| 4 | 27 | 13 | 16 | 24 | 31 | 43 | 60 | 77 | 108 | 137 |
| 3 | 28 | 52 | 68 | 94 | 121 | 160 | 223 | 287 | 390 | 493 |
| 3 | 29 | 268 | 352 | 489 | 626 | 830 | 1,159 | 1,489 | 2,023 | 2,557 |
| 8 | 30 | 66 | 70 | 76 | 82 | 91 | 107 | 124 | 145 | 159 |
| 6 | 31 | 4,949 | 5,005 | 5,060 | 5,115 | 5,170 | 5,226 | 5,281 | 5,336 | 5,336 |
| 5 | 32 | 2,487 | 2,515 | 2,542 | 2,570 | 2,598 | 2,626 | 2,653 | 2,681 | 2,681 |
| 4 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 34 | 119 | 156 | 217 | 278 | 368 | 514 | 660 | 897 | 1,134 |
| 3 | 35 | 267 | 352 | 488 | 625 | 829 | 1,158 | 1,488 | 2,021 | 2,555 |
| 4 | 36 | 1,177 | 1,253 | 1,356 | 1,458 | 1,626 | 1,915 | 2,203 | 2,587 | 2,837 |
| 3 | 37 | 67 | 88 | 122 | 156 | 207 | 289 | 370 | 503 | 636 |
| 4 | 38 | 21 | 27 | 39 | 52 | 72 | 99 | 127 | 179 | 227 |
| 4 | 39 | 1,236 | 1,603 | 2,314 | 3,026 | 4,199 | 5,834 | 7,469 | 10,505 | 13,340 |
| 3 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 41 | 37 | 48 | 59 | 69 | 80 | 90 | 101 | 163 | 226 |
| 5 | 42 | 2,474 | 2,502 | 2,529 | 2,557 | 2,584 | 2,612 | 2,640 | 2,667 | 2,667 |
| 5 | 43 | 17,621 | 17,818 | 18,015 | 18,211 | 18,408 | 18,605 | 18,802 | 18,998 | 18,998 |
| 3 | 44 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 |
| 4 | 45 | 26 | 34 | 49 | 64 | 89 | 123 | 158 | 222 | 282 |
| 4 | 46 | 12 | 16 | 23 | 30 | 42 | 58 | 74 | 104 | 132 |
| 4 | 47 | 272 | 352 | 509 | 665 | 923 | 1,282 | 1,641 | 2,309 | 2,932 |
| 5 | 48 | 6,732 | 6,807 | 6,882 | 6,957 | 7,032 | 7,107 | 7,182 | 7,258 | 7,258 |
| 5 | 49 | 3,624 | 3,665 | 3,705 | 3,746 | 3,786 | 3,827 | 3,867 | 3,908 | 3,908 |
| 5 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 51 | 163 | 215 | 298 | 382 | 507 | 708 | 909 | 1,235 | 1,561 |
| 4 | 52 | 63 | 82 | 118 | 155 | 215 | 298 | 382 | 537 | 682 |
| 4 | 53 | 26 | 33 | 48 | 62 | 87 | 120 | 154 | 217 | 275 |
| 3 | 54 | 39 | 51 | 71 | 91 | 120 | 168 | 216 | 293 | 371 |
| 3 | 55 | 85 | 111 | 155 | 198 | 263 | 367 | 471 | 640 | 809 |
| 3 | 56 | 162 | 213 | 295 | 378 | 502 | 701 | 900 | 1,222 | 1,545 |
| 6 | 57 | 5,186 | 5,243 | 5,301 | 5,359 | 5,417 | 5,475 | 5,533 | 5,591 | 5,591 |
| 5 | 58 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 |
| 9 | 59 | 121,984 | 126,347 | 130,710 | 131,364 | 131,364 | 131,364 | 134,812 | 146,201 | 164,780 |
| 11 | 60 | 3,363 | 4,133 | 5,144 | 6,154 | 7,457 | 9,054 | 10,650 | 14,823 | 18,202 |
| 8 | 61 | 6,632 | 7,057 | 7,637 | 8,217 | 9,162 | 10,787 | 12,411 | 14,573 | 15,985 |
| 8 | 62 | 2,085 | 2,219 | 2,401 | 2,583 | 2,881 | 3,391 | 3,902 | 4,582 | 5,025 |
| 5 | 63 | 1,273 | 1,287 | 1,301 | 1,315 | 1,330 | 1,344 | 1,358 | 1,372 | 1,372 |
| 8 | 64 | 170 | 181 | 195 | 210 | 234 | 276 | 318 | 373 | 409 |
| 5 | 65 | 12,956 | 13,100 | 13,245 | 13,389 | 13,534 | 13,679 | 13,823 | 13,968 | 13,968 |
| 4 | 66 | 256 | 332 | 480 | 628 | 871 | 1,210 | 1,549 | 2,178 | 2,766 |
| 3 | 67 | 26 | 34 | 47 | 61 | 81 | 112 | 144 | 196 | 248 |
| 13 | 68 | 906 | 1,163 | 1,421 | 1,678 | 1,935 | 2,192 | 2,449 | 3,963 | 5,476 |
| 8 | 69 | 130 | 138 | 150 | 161 | 180 | 212 | 243 | 286 | 313 |
| 10 | 70 | 566 | 696 | 866 | 1,036 | 1,255 | 1,524 | 1,793 | 2,495 | 3,064 |
| 4 | 71 | 191 | 248 | 358 | 468 | 650 | 903 | 1,156 | 1,625 | 2,064 |
| 8 | 72 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10 | 73 | 156 | 191 | 238 | 285 | 345 | 419 | 493 | 686 | 842 |
| 8 | 74 | 135 | 144 | 155 | 167 | 186 | 219 | 253 | 297 | 325 |
| 4 | 75 | 34 | 44 | 63 | 82 | 114 | 159 | 203 | 286 | 363 |

| Reg. | Cntr. | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 76 | 34 | 44 | 64 | 83 | 116 | 160 | 205 | 289 | 367 |
| 4 | 77 | 841 | 895 | 968 | 1,042 | 1,162 | 1,368 | 1,574 | 1,848 | 2,027 |
| 4 | 78 | 220 | 285 | 411 | 538 | 746 | 1,037 | 1,327 | 1,866 | 2,370 |
| 11 | 79 | 819 | 1,006 | 1,252 | 1,498 | 1,815 | 2,204 | 2,592 | 3,608 | 4,430 |
| 4 | 80 | 160 | 208 | 300 | 392 | 545 | 757 | 969 | 1,362 | 1,730 |
| 4 | 81 | 196 | 254 | 366 | 479 | 664 | 923 | 1,182 | 1,662 | 2,110 |
| 4 | 82 | 25 | 33 | 47 | 62 | 86 | 119 | 153 | 215 | 273 |
| 3 | 83 | 2,434 | 3,201 | 4,447 | 5,693 | 7,551 | 10,548 | 13,545 | 18,404 | 23,264 |
| 10 | 84 | 463 | 482 | 500 | 525 | 552 | 586 | 622 | 686 | 764 |
| 4 | 85 | 3,107 | 3,306 | 3,578 | 3,850 | 4,293 | 5,054 | 5,815 | 6,828 | 7,489 |
| 4 | 86 | 274 | 355 | 513 | 671 | 931 | 1,294 | 1,656 | 2,329 | 2,958 |
| 4 | 87 | 60 | 78 | 113 | 148 | 205 | 285 | 365 | 513 | 651 |
| 9 | 88 | 1,441 | 1,492 | 1,544 | 1,552 | 1,552 | 1,552 | 1,592 | 1,727 | 1,946 |
| 8 | 89 | 77 | 82 | 89 | 95 | 106 | 125 | 144 | 169 | 185 |
| 12 | 90 | 2 | 3 | 3 | 4 | 5 | 5 | 6 | 10 | 13 |
| 11 | 91 | 57 | 74 | 90 | 106 | 122 | 138 | 155 | 250 | 346 |
| 12 | 92 | 83 | 107 | 131 | 154 | 178 | 202 | 225 | 364 | 504 |
| 3 | 93 | 126 | 166 | 230 | 295 | 391 | 546 | 702 | 953 | 1,205 |
| 4 | 94 | 243 | 315 | 455 | 595 | 825 | 1,146 | 1,467 | 2,064 | 2,621 |
| 4 | 95 | 2,757 | 3,575 | 5,163 | 6,751 | 9,368 | 13,015 | 16,662 | 23,434 | 29,760 |
| 10 | 96 | 296 | 380 | 464 | 548 | 632 | 716 | 800 | 1,294 | 1,788 |
| 5 | 97 | 758 | 766 | 775 | 783 | 792 | 800 | 809 | 817 | 817 |
| 8 | 98 | 13 | 14 | 15 | 16 | 18 | 22 | 25 | 29 | 32 |
| 9 | 99 | 14,242 | 14,751 | 15,260 | 15,337 | 15,337 | 15,337 | 15,739 | 17,069 | 19,238 |
| 3 | 100 | 57 | 75 | 104 | 133 | 177 | 247 | 317 | 431 | 545 |
| 3 | 101 | 96 | 126 | 175 | 225 | 298 | 416 | 534 | 726 | 917 |
| 3 | 102 | 297 | 390 | 542 | 694 | 920 | 1,286 | 1,651 | 2,243 | 2,835 |
| 11 | 103 | 1,313 | 1,613 | 2,008 | 2,402 | 2,911 | 3,534 | 4,157 | 5,786 | 7,105 |
| 6 | 104 | 14,205 | 14,364 | 14,522 | 14,681 | 14,840 | 14,998 | 15,157 | 15,315 | 15,315 |
| 5 | 105 | 2,866 | 2,898 | 2,930 | 2,962 | 2,994 | 3,026 | 3,058 | 3,090 | 3,090 |
| 3 | 106 | 22 | 29 | 40 | 52 | 69 | 96 | 123 | 167 | 212 |
| 8 | 107 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6 | 108 | 9,759 | 9,868 | 9,977 | 10,086 | 10,195 | 10,304 | 10,413 | 10,522 | 10,522 |
| 4 | 109 | 67 | 88 | 126 | 165 | 229 | 318 | 408 | 573 | 728 |
| 8 | 110 | 591 | 629 | 680 | 732 | 816 | 961 | 1,106 | 1,298 | 1,424 |
| 4 | 111 | 218 | 282 | 408 | 533 | 740 | 1,028 | 1,316 | 1,851 | 2,350 |
| 4 | 112 | 49 | 63 | 91 | 119 | 165 | 230 | 294 | 413 | 525 |
| 4 | 113 | 88 | 114 | 165 | 216 | 299 | 416 | 532 | 748 | 950 |
| 4 | 114 | 1,224 | 1,587 | 2,292 | 2,997 | 4,159 | 5,778 | 7,397 | 10,404 | 13,212 |
| 11 | 115 | 379 | 486 | 594 | 701 | 809 | 916 | 1,024 | 1,656 | 2,288 |
| 7 | 116 | 128,875 | 143,975 | 159,584 | 175,702 | 191,819 | 206,480 | 215,314 | 224,147 | 232,980 |
| 5 | 117 | 19,303 | 19,518 | 19,734 | 19,949 | 20,165 | 20,380 | 20,596 | 20,811 | 20,811 |
| 9 | 118 | 1,402 | 1,452 | 1,503 | 1,510 | 1,510 | 1,510 | 1,550 | 1,681 | 1,894 |
| 4 | 119 | 1,084 | 1,406 | 2,030 | 2,654 | 3,683 | 5,117 | 6,551 | 9,213 | 11,700 |
| 3 | 120 | 4 | 5 | 7 | 10 | 13 | 18 | 23 | 31 | 39 |
| 4 | 121 | 15 | 19 | 27 | 36 | 49 | 69 | 88 | 123 | 157 |
| 5 | 122 | 2,824 | 2,855 | 2,887 | 2,918 | 2,950 | 2,981 | 3,013 | 3,044 | 3,044 |
| 5 | 123 | 359 | 363 | 367 | 371 | 375 | 379 | 383 | 387 | 387 |
| 8 | 124 | 2,453 | 2,610 | 2,825 | 3,039 | 3,389 | 3,990 | 4,591 | 5,391 | 5,913 |
| 4 | 125 | 300 | 389 | 562 | 735 | 1,019 | 1,416 | 1,813 | 2,550 | 3,238 |
| 11 | 126 | 2,561 | 3,147 | 3,917 | 4,686 | 5,678 | 6,894 | 8,109 | 11,287 | 13,859 |
| 5 | 127 | 795 | 804 | 813 | 822 | 830 | 839 | 848 | 857 | 857 |
| 4 | 128 | 55 | 72 | 103 | 135 | 187 | 260 | 333 | 469 | 595 |
| 3 | 129 | 11 | 14 | 19 | 25 | 33 | 46 | 59 | 80 | 101 |
| 4 | 130 | 1,860 | 1,979 | 2,142 | 2,304 | 2,569 | 3,025 | 3,481 | 4,087 | 4,483 |
| 8 | 131 | 11,415 | 12,146 | 13,144 | 14,143 | 15,770 | 18,565 | 21,361 | 25,082 | 27,512 |
| 4 | 132 | 463 | 600 | 867 | 1,134 | 1,573 | 2,185 | 2,798 | 3,935 | 4,997 |
| 8 | 133 | 5 | 5 | 5 | 6 | 6 | 8 | 9 | 10 | 11 |
| 2 | 134 | 108,050 | 126,919 | 145,787 | 164,656 | 180,565 | 184,633 | 188,702 | 188,702 | 188,702 |
| 4 | 135 | 207 | 269 | 388 | 508 | 705 | 979 | 1,253 | 1,762 | 2,238 |
| 3 | 136 | 149 | 196 | 273 | 349 | 463 | 646 | 830 | 1,128 | 1,426 |
| 3 | 137 | 366 | 482 | 670 | 857 | 1,137 | 1,588 | 2,039 | 2,771 | 3,502 |
| 10 | 138 | 1,119 | 1,375 | 1,711 | 2,048 | 2,481 | 3,012 | 3,543 | 4,932 | 6,056 |
| 5 | 139 | 11,543 | 11,671 | 11,800 | 11,929 | 12,058 | 12,187 | 12,316 | 12,445 | 12,445 |
| 4 | 140 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8 | 141 | 589 | 627 | 678 | 730 | 814 | 958 | 1,102 | 1,294 | 1,419 |
| 6 | 142 | 7,604 | 7,689 | 7,774 | 7,859 | 7,944 | 8,028 | 8,113 | 8,198 | 8,198 |
| 4 | 143 | 672 | 871 | 1,258 | 1,645 | 2,282 | 3,171 | 4,059 | 5,709 | 7,250 |
| 4 | 144 | 459 | 595 | 860 | 1,124 | 1,560 | 2,167 | 2,774 | 3,901 | 4,954 |
| 4 | 145 | 220 | 286 | 413 | 540 | 749 | 1,040 | 1,332 | 1,873 | 2,379 |
| Total | | 696,536 | 759,188 | 829,873 | 897,061 | 970,762 | 1,044,201 | 1,116,683 | 1,244,588 | 1,373,913 |

**A 23-II. Total amount of arable area per region, calculated with Appendix 3, from Houghton et al. (1983), in 1000 ha.**

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 |
|--------|------|------|------|------|------|------|------|------|------|
| 1 | 25 | 29 | 34 | 38 | 42 | 43 | 44 | 44 | 44 |
| 2 | 108 | 127 | 146 | 165 | 181 | 185 | 189 | 189 | 189 |
| 3 | 12 | 16 | 22 | 29 | 38 | 53 | 68 | 93 | 117 |
| 4 | 23 | 27 | 36 | 44 | 57 | 77 | 96 | 131 | 163 |
| 5 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 95 |
| 6 | 46 | 47 | 47 | 48 | 49 | 49 | 50 | 50 | 50 |
| 7 | 129 | 144 | 160 | 176 | 192 | 206 | 215 | 224 | 233 |
| 8 | 30 | 32 | 34 | 37 | 40 | 46 | 52 | 61 | 67 |
| 9 | 154 | 159 | 165 | 165 | 165 | 165 | 170 | 184 | 207 |
| 10 | 65 | 68 | 71 | 75 | 79 | 85 | 91 | 102 | 115 |
| 11 | 8 | 10 | 13 | 16 | 19 | 23 | 27 | 37 | 46 |
| 12 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 31 | 42 |
| 13 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 4 | 5 |
| Total | 696 | 758 | 830 | 899 | 971 | 1,044 | 1,117 | 1,245 | 1,373 |

A 23-III. Total amount of arable area per country, calculated with Appendix 5, from Houghton et al. (1983), in 1000 ha.

| Reg. | Cntr. | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 |
|------|-------|------|------|------|------|------|------|------|------|------|
| 8 | 1 | 2,917 | 3,478 | 4,039 | 4,600 | 5,237 | 5,874 | 6,510 | 7,109 | 8,013 |
| 6 | 2 | 524 | 534 | 544 | 554 | 572 | 589 | 607 | 624 | 598 |
| 4 | 3 | 3,495 | 3,863 | 4,231 | 4,598 | 4,598 | 4,598 | 4,598 | 5,703 | 6,893 |
| 4 | 4 | 0 | 0 | 0 | 0 | 429 | 1,228 | 2,027 | 2,671 | 3,392 |
| 3 | 5 | 5,071 | 6,998 | 8,925 | 10,852 | 13,329 | 15,806 | 18,283 | 22,140 | 26,227 |
| 12 | 6 | 0 | 0 | 715 | 2,669 | 6,264 | 9,859 | 13,455 | 27,436 | 41,418 |
| 5 | 7 | 1,471 | 1,500 | 1,529 | 1,558 | 1,607 | 1,656 | 1,704 | 1,753 | 1,679 |
| 9 | 8 | 3,309 | 3,945 | 4,582 | 5,218 | 5,940 | 6,663 | 7,385 | 8,065 | 9,090 |
| 5 | 9 | 808 | 824 | 840 | 856 | 883 | 909 | 936 | 963 | 922 |
| 3 | 10 | 9 | 12 | 15 | 19 | 23 | 27 | 32 | 38 | 45 |
| 4 | 11 | 0 | 0 | 0 | 0 | 202 | 579 | 956 | 1,260 | 1,600 |
| 9 | 12 | 38 | 45 | 53 | 60 | 68 | 77 | 85 | 93 | 104 |
| 3 | 13 | 328 | 453 | 578 | 702 | 863 | 1,023 | 1,183 | 1,433 | 1,697 |
| 4 | 14 | 0 | 0 | 0 | 0 | 148 | 424 | 699 | 921 | 1,170 |
| 3 | 15 | 6,634 | 9,155 | 11,675 | 14,196 | 17,436 | 20,677 | 23,917 | 28,962 | 34,309 |
| 11 | 16 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 14 | 16 |
| 6 | 17 | 3,971 | 4,049 | 4,128 | 4,206 | 4,338 | 4,469 | 4,601 | 4,732 | 4,533 |
| 9 | 18 | 3,793 | 4,523 | 5,252 | 5,982 | 6,810 | 7,638 | 8,466 | 9,245 | 10,420 |
| 4 | 19 | 0 | 0 | 0 | 0 | 148 | 424 | 699 | 922 | 1,170 |
| 4 | 20 | 0 | 0 | 0 | 0 | 758 | 2,171 | 3,584 | 4,724 | 5,998 |
| 1 | 21 | 27,451 | 32,781 | 38,111 | 43,441 | 43,742 | 44,043 | 44,344 | 44,025 | 43,705 |
| 4 | 22 | 0 | 0 | 0 | 0 | 231 | 662 | 1,094 | 1,441 | 1,830 |
| 4 | 23 | 0 | 0 | 0 | 0 | 367 | 1,050 | 1,733 | 2,284 | 2,900 |
| 3 | 24 | 777 | 1,072 | 1,367 | 1,663 | 2,042 | 2,422 | 2,801 | 3,392 | 4,018 |
| 10 | 25 | 52,217 | 57,995 | 63,773 | 69,552 | 71,832 | 74,112 | 76,392 | 89,460 | 102,528 |
| 3 | 26 | 975 | 1,345 | 1,716 | 2,086 | 2,562 | 3,038 | 3,515 | 4,256 | 5,042 |
| 4 | 27 | 0 | 0 | 0 | 0 | 17 | 50 | 82 | 108 | 137 |
| 3 | 28 | 95 | 131 | 168 | 204 | 250 | 297 | 343 | 416 | 493 |
| 3 | 29 | 495 | 682 | 870 | 1,058 | 1,300 | 1,541 | 1,783 | 2,159 | 2,557 |
| 8 | 30 | 81 | 89 | 98 | 106 | 106 | 106 | 106 | 132 | 159 |
| 6 | 31 | 4,675 | 4,767 | 4,859 | 4,951 | 5,106 | 5,261 | 5,416 | 5,571 | 5,336 |
| 5 | 32 | 2,349 | 2,395 | 2,441 | 2,488 | 2,565 | 2,643 | 2,721 | 2,799 | 2,681 |
| 4 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 34 | 219 | 303 | 386 | 469 | 576 | 683 | 790 | 957 | 1,134 |
| 3 | 35 | 494 | 682 | 870 | 1,057 | 1,299 | 1,540 | 1,781 | 2,157 | 2,555 |
| 4 | 36 | 1,439 | 1,590 | 1,741 | 1,893 | 1,893 | 1,893 | 1,893 | 2,347 | 2,837 |
| 3 | 37 | 123 | 170 | 217 | 263 | 323 | 383 | 444 | 537 | 636 |
| 4 | 38 | 0 | 0 | 0 | 0 | 29 | 82 | 136 | 179 | 227 |
| 4 | 39 | 0 | 0 | 0 | 0 | 1,686 | 4,829 | 7,971 | 10,505 | 13,340 |
| 3 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 41 | 0 | 0 | 4 | 15 | 34 | 54 | 73 | 149 | 226 |
| 5 | 42 | 2,336 | 2,383 | 2,429 | 2,475 | 2,552 | 2,630 | 2,707 | 2,784 | 2,667 |
| 5 | 43 | 16,642 | 16,970 | 17,298 | 17,626 | 18,178 | 18,730 | 19,281 | 19,833 | 18,998 |
| 3 | 44 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 |
| 4 | 45 | 0 | 0 | 0 | 0 | 36 | 102 | 169 | 222 | 282 |
| 4 | 46 | 0 | 0 | 0 | 0 | 17 | 48 | 79 | 104 | 132 |
| 4 | 47 | 0 | 0 | 0 | 0 | 371 | 1,061 | 1,752 | 2,309 | 2,932 |
| 5 | 48 | 6,358 | 6,483 | 6,608 | 6,734 | 6,944 | 7,155 | 7,366 | 7,577 | 7,258 |
| 5 | 49 | 3,423 | 3,491 | 3,558 | 3,625 | 3,739 | 3,852 | 3,966 | 4,079 | 3,908 |
| 5 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 51 | 302 | 417 | 531 | 646 | 793 | 941 | 1,088 | 1,318 | 1,561 |
| 4 | 52 | 0 | 0 | 0 | 0 | 86 | 247 | 408 | 537 | 682 |
| 4 | 53 | 0 | 0 | 0 | 0 | 35 | 100 | 164 | 217 | 275 |
| 3 | 54 | 72 | 99 | 126 | 153 | 188 | 223 | 258 | 313 | 371 |
| 3 | 55 | 156 | 216 | 275 | 335 | 411 | 487 | 564 | 683 | 809 |
| 3 | 56 | 299 | 412 | 526 | 639 | 785 | 931 | 1,077 | 1,304 | 1,545 |
| 6 | 57 | 4,898 | 4,994 | 5,091 | 5,187 | 5,349 | 5,512 | 5,674 | 5,837 | 5,591 |
| 5 | 58 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 |
| 9 | 59 | 59,981 | 71,518 | 83,055 | 94,592 | 107,689 | 120,785 | 133,882 | 146,201 | 164,780 |
| 11 | 60 | 7,011 | 8,102 | 9,194 | 10,285 | 11,549 | 12,814 | 14,078 | 15,861 | 18,202 |
| 8 | 61 | 8,105 | 8,958 | 9,810 | 10,663 | 10,663 | 10,663 | 10,663 | 13,224 | 15,985 |
| 8 | 62 | 2,548 | 2,816 | 3,084 | 3,352 | 3,352 | 3,352 | 3,352 | 4,157 | 5,025 |
| 5 | 63 | 1,202 | 1,226 | 1,249 | 1,273 | 1,313 | 1,353 | 1,393 | 1,433 | 1,372 |
| 8 | 64 | 207 | 229 | 251 | 273 | 273 | 273 | 273 | 338 | 409 |
| 5 | 65 | 12,236 | 12,477 | 12,718 | 12,959 | 13,365 | 13,771 | 14,176 | 14,582 | 13,968 |
| 4 | 66 | 0 | 0 | 0 | 0 | 350 | 1,001 | 1,653 | 2,178 | 2,766 |
| 3 | 67 | 48 | 66 | 84 | 103 | 126 | 150 | 173 | 209 | 248 |
| 13 | 68 | 0 | 0 | 95 | 353 | 828 | 1,304 | 1,779 | 3,628 | 5,476 |
| 8 | 69 | 159 | 176 | 192 | 209 | 209 | 209 | 209 | 259 | 313 |
| 10 | 70 | 1,180 | 1,364 | 1,548 | 1,732 | 1,944 | 2,157 | 2,370 | 2,670 | 3,064 |
| 4 | 71 | 0 | 0 | 0 | 0 | 261 | 747 | 1,233 | 1,625 | 2,064 |
| 8 | 72 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10 | 73 | 324 | 375 | 425 | 476 | 534 | 593 | 651 | 734 | 842 |
| 8 | 74 | 165 | 182 | 200 | 217 | 217 | 217 | 217 | 269 | 325 |
| 4 | 75 | 0 | 0 | 0 | 0 | 46 | 131 | 217 | 286 | 363 |

| Reg. | Cntr. | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 76 | 0 | 0 | 0 | 0 | 46 | 133 | 219 | 289 | 367 |
| 4 | 77 | 1,028 | 1,136 | 1,244 | 1,352 | 1,352 | 1,352 | 1,352 | 1,677 | 2,027 |
| 4 | 78 | 0 | 0 | 0 | 0 | 300 | 858 | 1,416 | 1,866 | 2,370 |
| 11 | 79 | 1,706 | 1,972 | 2,238 | 2,503 | 2,811 | 3,119 | 3,426 | 3,860 | 4,430 |
| 4 | 80 | 0 | 0 | 0 | 0 | 219 | 626 | 1,034 | 1,362 | 1,730 |
| 4 | 81 | 0 | 0 | 0 | 0 | 267 | 764 | 1,261 | 1,662 | 2,110 |
| 4 | 82 | 0 | 0 | 0 | 0 | 35 | 99 | 163 | 215 | 273 |
| 3 | 83 | 4,498 | 6,207 | 7,917 | 9,626 | 11,823 | 14,020 | 16,217 | 19,638 | 23,264 |
| 10 | 84 | 389 | 432 | 475 | 518 | 535 | 552 | 569 | 666 | 764 |
| 4 | 85 | 3,797 | 4,197 | 4,596 | 4,996 | 4,996 | 4,996 | 4,996 | 6,196 | 7,489 |
| 4 | 86 | 0 | 0 | 0 | 0 | 374 | 1,071 | 1,768 | 2,329 | 2,958 |
| 4 | 87 | 0 | 0 | 0 | 0 | 82 | 236 | 389 | 513 | 651 |
| 9 | 88 | 709 | 845 | 981 | 1,117 | 1,272 | 1,427 | 1,581 | 1,727 | 1,946 |
| 8 | 89 | 94 | 104 | 114 | 124 | 124 | 124 | 124 | 153 | 185 |
| 12 | 90 | 0 | 0 | 0 | 1 | 2 | 3 | 4 | 9 | 13 |
| 11 | 91 | 0 | 0 | 6 | 22 | 52 | 82 | 112 | 229 | 346 |
| 12 | 92 | 0 | 0 | 9 | 32 | 76 | 120 | 164 | 334 | 504 |
| 3 | 93 | 233 | 322 | 410 | 499 | 612 | 726 | 840 | 1,017 | 1,205 |
| 4 | 94 | 0 | 0 | 0 | 0 | 331 | 949 | 1,566 | 2,064 | 2,621 |
| 4 | 95 | 0 | 0 | 0 | 0 | 3,762 | 10,772 | 17,782 | 23,436 | 29,760 |
| 10 | 96 | 0 | 0 | 31 | 115 | 270 | 426 | 581 | 1,184 | 1,788 |
| 5 | 97 | 716 | 730 | 744 | 758 | 782 | 806 | 829 | 853 | 817 |
| 8 | 98 | 16 | 18 | 20 | 21 | 21 | 21 | 21 | 26 | 32 |
| 9 | 99 | 7,003 | 8,350 | 9,697 | 11,044 | 12,573 | 14,102 | 15,631 | 17,069 | 19,238 |
| 3 | 100 | 105 | 145 | 186 | 226 | 277 | 329 | 380 | 460 | 545 |
| 3 | 101 | 177 | 245 | 312 | 380 | 466 | 553 | 640 | 774 | 917 |
| 3 | 102 | 548 | 757 | 965 | 1,173 | 1,441 | 1,709 | 1,977 | 2,394 | 2,835 |
| 11 | 103 | 2,737 | 3,163 | 3,589 | 4,015 | 4,508 | 5,002 | 5,495 | 6,191 | 7,105 |
| 6 | 104 | 13,416 | 13,681 | 13,945 | 14,209 | 14,654 | 15,099 | 15,544 | 15,988 | 15,315 |
| 5 | 105 | 2,707 | 2,760 | 2,814 | 2,867 | 2,957 | 3,047 | 3,136 | 3,226 | 3,090 |
| 3 | 106 | 41 | 57 | 72 | 88 | 108 | 128 | 148 | 179 | 212 |
| 8 | 107 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6 | 108 | 9,217 | 9,399 | 9,581 | 9,762 | 10,068 | 10,373 | 10,679 | 10,984 | 10,522 |
| 4 | 109 | 0 | 0 | 0 | 0 | 92 | 264 | 435 | 573 | 728 |
| 8 | 110 | 722 | 798 | 874 | 950 | 950 | 950 | 950 | 1,178 | 1,424 |
| 4 | 111 | 0 | 0 | 0 | 0 | 297 | 851 | 1,404 | 1,851 | 2,350 |
| 4 | 112 | 0 | 0 | 0 | 0 | 66 | 190 | 314 | 413 | 525 |
| 4 | 113 | 0 | 0 | 0 | 0 | 120 | 344 | 568 | 748 | 950 |
| 4 | 114 | 0 | 0 | 0 | 0 | 1,670 | 4,782 | 7,894 | 10,405 | 13,212 |
| 11 | 115 | 0 | 0 | 40 | 147 | 346 | 545 | 743 | 1,516 | 2,288 |
| 7 | 116 | 83,609 | 92,983 | 102,357 | 111,731 | 135,981 | 160,231 | 184,480 | 208,730 | 232,980 |
| 5 | 117 | 18,231 | 18,590 | 18,949 | 19,309 | 19,913 | 20,517 | 21,122 | 21,726 | 20,811 |
| 9 | 118 | 690 | 822 | 955 | 1,087 | 1,238 | 1,389 | 1,539 | 1,681 | 1,894 |
| 4 | 119 | 0 | 0 | 0 | 0 | 1,479 | 4,235 | 6,991 | 9,214 | 11,700 |
| 3 | 120 | 8 | 10 | 13 | 16 | 20 | 23 | 27 | 33 | 39 |
| 4 | 121 | 0 | 0 | 0 | 0 | 20 | 57 | 94 | 123 | 157 |
| 5 | 122 | 2,667 | 2,719 | 2,772 | 2,824 | 2,913 | 3,001 | 3,090 | 3,178 | 3,044 |
| 5 | 123 | 339 | 346 | 352 | 359 | 370 | 381 | 393 | 404 | 387 |
| 8 | 124 | 2,998 | 3,313 | 3,629 | 3,944 | 3,944 | 3,944 | 3,944 | 4,891 | 5,913 |
| 4 | 125 | 0 | 0 | 0 | 0 | 409 | 1,172 | 1,935 | 2,550 | 3,238 |
| 11 | 126 | 5,338 | 6,169 | 7,000 | 7,832 | 8,794 | 9,757 | 10,719 | 12,077 | 13,859 |
| 5 | 127 | 751 | 766 | 780 | 795 | 820 | 845 | 870 | 895 | 857 |
| 4 | 128 | 0 | 0 | 0 | 0 | 75 | 215 | 356 | 469 | 595 |
| 3 | 129 | 20 | 27 | 34 | 42 | 51 | 61 | 70 | 85 | 101 |
| 4 | 130 | 2,273 | 2,512 | 2,751 | 2,991 | 2,991 | 2,991 | 2,991 | 3,709 | 4,483 |
| 8 | 131 | 13,949 | 15,417 | 16,885 | 18,354 | 18,354 | 18,354 | 18,354 | 22,760 | 27,512 |
| 4 | 132 | 0 | 0 | 0 | 0 | 632 | 1,809 | 2,986 | 3,935 | 4,997 |
| 8 | 133 | 6 | 6 | 7 | 8 | 8 | 8 | 8 | 9 | 11 |
| 2 | 134 | 118,522 | 141,535 | 164,547 | 187,560 | 188,860 | 190,160 | 191,460 | 190,081 | 188,702 |
| 4 | 135 | 0 | 0 | 0 | 0 | 283 | 810 | 1,337 | 1,762 | 2,238 |
| 3 | 136 | 276 | 380 | 485 | 590 | 725 | 859 | 994 | 1,203 | 1,426 |
| 3 | 137 | 677 | 935 | 1,192 | 1,449 | 1,780 | 2,111 | 2,442 | 2,957 | 3,502 |
| 10 | 138 | 2,333 | 2,696 | 3,059 | 3,422 | 3,843 | 4,263 | 4,684 | 5,277 | 6,056 |
| 5 | 139 | 10,901 | 11,116 | 11,331 | 11,546 | 11,907 | 12,269 | 12,630 | 12,991 | 12,445 |
| 4 | 140 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8 | 141 | 720 | 795 | 871 | 947 | 947 | 947 | 947 | 1,174 | 1,419 |
| 6 | 142 | 7,182 | 7,323 | 7,465 | 7,606 | 7,844 | 8,082 | 8,320 | 8,558 | 8,198 |
| 4 | 143 | 0 | 0 | 0 | 0 | 916 | 2,624 | 4,332 | 5,709 | 7,250 |
| 4 | 144 | 0 | 0 | 0 | 0 | 626 | 1,793 | 2,960 | 3,901 | 4,954 |
| 4 | 145 | 0 | 0 | 0 | 0 | 301 | 861 | 1,421 | 1,873 | 2,379 |
| Total | | 572,765 | 650,123 | 728,381 | 808,194 | 894,613 | 996,247 | 1,097,879 | 1,233,670 | 1,373,913 |

**A 23-III. Total amount of arable area per region, calculated with Appendix 5, from Houghton et al. (1983), in 1000 ha.**

| Region | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 27 | 33 | 38 | 43 | 44 | 44 | 44 | 44 | 44 |
| 2 | 119 | 142 | 165 | 188 | 189 | 190 | 191 | 190 | 189 |
| 3 | 23 | 31 | 40 | 49 | 60 | 71 | 82 | 99 | 117 |
| 4 | 12 | 13 | 15 | 16 | 33 | 66 | 99 | 129 | 163 |
| 5 | 83 | 85 | 86 | 88 | 91 | 94 | 96 | 99 | 95 |
| 6 | 44 | 45 | 46 | 46 | 48 | 49 | 51 | 52 | 50 |
| 7 | 84 | 93 | 102 | 112 | 136 | 160 | 184 | 209 | 233 |
| 8 | 33 | 36 | 40 | 44 | 44 | 45 | 46 | 56 | 67 |
| 9 | 76 | 90 | 105 | 119 | 136 | 152 | 169 | 184 | 207 |
| 10 | 56 | 63 | 69 | 76 | 79 | 82 | 85 | 100 | 115 |
| 11 | 17 | 19 | 22 | 25 | 28 | 31 | 35 | 40 | 46 |
| 12 | 0 | 0 | 1 | 3 | 6 | 10 | 14 | 28 | 42 |
| 13 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 4 | 5 |
| Total | 574 | 650 | 729 | 809 | 895 | 995 | 1,098 | 1,234 | 1,373 |

**A 24-1. Total consumption (in grain) of cereals (wheat and rye) in Europe, in kg/cap and kcal/cap.**

| Country | 1909-13 kg/cap | 1924-28 kg/cap | 1934-38 kg/cap | 1909-13 kcal/cap | 1924-28 kcal/cap | 1934-38 kcal/cap | 1934-38 as % of 1909-13 |
|---|---|---|---|---|---|---|---|
| Austria | 163 | 198 | 192 | 441,404 | 536,184 | 519,936 | 118 |
| Bel-lux | 313 | 260 | 245 | 847,604 | 704,080 | 663,460 | 78 |
| Denmark | 343 | 274 | 288 | 928,844 | 741,992 | 779,904 | 84 |
| Finland | 232 | 190 | 189 | 628,256 | 514,520 | 511,812 | 81 |
| France | 277 | 241 | 220 | 750,116 | 652,628 | 595,760 | 79 |
| Germany | 254 | 195 | 195 | 687,832 | 528,060 | 528,060 | 77 |
| Greece | 198 | 145 | 180 | 536,184 | 392,660 | 487,440 | 91 |
| Ireland | - | 182 | 205 | - | 492,856 | 555,140 | - |
| Italy | 191 | 206 | 184 | 517,228 | 557,848 | 498,272 | 96 |
| Netherlands | 235 | 190 | 183 | 636,380 | 514,520 | 495,564 | 78 |
| Norway | 154 | 144 | 144 | 417,032 | 389,952 | 389,952 | 94 |
| Portugal | 85 | 88 | 80 | 230,180 | 238,304 | 216,640 | 94 |
| Spain | 218 | 200 | 198 | 590,344 | 541,600 | 536,184 | 91 |
| Sweden | 197 | 185 | 171 | 533,476 | 500,980 | 463,068 | 87 |
| Switserland | 159 | 146 | 161 | 430,572 | 395,368 | 435,988 | 101 |
| UK | 177 | 156 | 154 | 479,316 | 422,448 | 417,032 | 87 |
| Bulgaria | 236 | 216 | 273 | 639,088 | 584,928 | 739,284 | 116 |
| Czechoslovakia | - | 247 | 208 | - | 668,876 | 563,264 | - |
| Hungary | 216 | 247 | 261 | 584,928 | 668,876 | 706,788 | 121 |
| Poland | - | 240 | 237 | - | 649,920 | 641,796 | - |
| Romania | 137 | 160 | 162 | 370,996 | 433,280 | 438,696 | 118 |
| Yugoslavia | 112 | 153 | 164 | 303,296 | 414,324 | 444,112 | 146 |

Source: Svennilson (1954)

| conversion factors used: | caloric value of wheat | 2775 | kcal/kg |
|---|---|---|---|
| | caloric value of rye | 2641 | kcal/kg |
| | average | 2708 | kcal/kg |

**A 24-2. Food consumption in the USSR, in units per person per year.**

| Commodity | Unit | 1913 | 1950 | 1960 | 1970 | 1980 | 1984 |
|---|---|---|---|---|---|---|---|
| meat | kg | 29 | 26 | 40 | 48 | 58 | 60 |
| fish | kg | 7 | 7 | 10 | 15 | 18 | 18 |
| eggs | eggs | 48 | 60 | 118 | 159 | 239 | 256 |
| milk | kg | 154 | 172 | 240 | 307 | 314 | 317 |
| vegetable oil | kg | - | 3 | 5 | 7 | 9 | 10 |
| sugar | kg | 8 | 12 | 28 | 39 | 44 | 49 |
| grain | kg | 200 | 172 | 164 | 149 | 139 | 135 |
| potatoes | kg | 114 | 241 | 143 | 130 | 109 | 110 |
| vegetables | kg | 40 | 51 | 70 | 82 | 97 | 103 |
| fruit | kg | 11 | 11 | 22 | 35 | 38 | 45 |

Source: Gray (1990).

A 25. Daily caloric intake per region, (with regional conversion factors) in kcal/cap.

| | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Canada** | | | | | | | | | | | | | | | | | | | |
| maize | 19 | 20 | 22 | 22 | 22 | 23 | 22 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 |
| meat, bovine | 233 | 233 | 236 | 246 | 258 | 266 | 270 | 266 | 256 | 243 | 233 | 227 | 226 | 225 | 224 | 222 | 220 | 219 | 217 |
| meat sheep/goats | 12 | 11 | 10 | 9 | 9 | 7 | 6 | 6 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 5 | 6 |
| milk (excl butter) | 329 | 327 | 326 | 322 | 319 | 314 | 306 | 295 | 291 | 286 | 287 | 287 | 288 | 288 | 288 | 285 | 284 | 282 | 281 |
| oil crops | 165 | 171 | 180 | 190 | 201 | 212 | 222 | 230 | 236 | 246 | 255 | 264 | 273 | 287 | 301 | 315 | 323 | 331 | 339 |
| pigmeat | 145 | 147 | 151 | 146 | 141 | 137 | 136 | 137 | 146 | 152 | 156 | 160 | 160 | 158 | 156 | 157 | 157 | 158 | 156 |
| poultry meat | 131 | 133 | 132 | 130 | 129 | 129 | 128 | 130 | 133 | 134 | 136 | 137 | 137 | 139 | 141 | 144 | 147 | 151 | 154 |
| pulses | 18 | 18 | 21 | 21 | 19 | 18 | 20 | 20 | 21 | 20 | 23 | 23 | 23 | 23 | 27 | 30 | 33 | 39 | 42 |
| rice | 30 | 31 | 31 | 32 | 31 | 31 | 31 | 32 | 34 | 36 | 38 | 40 | 41 | 43 | 45 | 47 | 48 | 50 | 52 |
| roots & tubers | 119 | 117 | 115 | 116 | 115 | 115 | 116 | 119 | 119 | 117 | 115 | 116 | 110 | 108 | 113 | 114 | 112 | 114 | 114 |
| temp cereals | 610 | 610 | 606 | 602 | 614 | 616 | 615 | 611 | 614 | 604 | 602 | 601 | 608 | 614 | 623 | 630 | 644 | 650 | 651 |
| trop cereals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| total | 1,811 | 1,818 | 1,830 | 1,836 | 1,858 | 1,868 | 1,872 | 1,869 | 1,874 | 1,866 | 1,871 | 1,882 | 1,893 | 1,910 | 1,944 | 1,970 | 1,995 | 2,021 | 2,034 |
| meat | 849 | 850 | 855 | 853 | 855 | 853 | 846 | 834 | 830 | 821 | 817 | 817 | 816 | 815 | 815 | 813 | 814 | 815 | 813 |
| vegetable | 961 | 968 | 974 | 983 | 1,003 | 1,015 | 1,025 | 1,034 | 1,044 | 1,045 | 1,054 | 1,065 | 1,076 | 1,095 | 1,129 | 1,157 | 1,181 | 1,205 | 1,220 |
| **USA** | | | | | | | | | | | | | | | | | | | |
| maize | 50 | 48 | 46 | 46 | 47 | 49 | 51 | 54 | 55 | 58 | 59 | 62 | 65 | 69 | 75 | 83 | 88 | 92 | 96 |
| meat, bovine | 288 | 286 | 288 | 291 | 298 | 302 | 307 | 302 | 292 | 280 | 270 | 264 | 264 | 266 | 267 | 264 | 260 | 254 | 246 |
| meat sheep/goats | 9 | 9 | 8 | 8 | 7 | 6 | 6 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| milk (excl butter) | 364 | 363 | 359 | 355 | 352 | 349 | 346 | 345 | 345 | 342 | 341 | 340 | 342 | 345 | 351 | 358 | 362 | 364 | 365 |
| oil crops | 326 | 341 | 353 | 356 | 369 | 376 | 385 | 392 | 403 | 410 | 421 | 430 | 441 | 457 | 467 | 477 | 490 | 492 | 489 |
| pigmeat | 142 | 140 | 140 | 135 | 129 | 126 | 126 | 127 | 136 | 141 | 142 | 145 | 144 | 141 | 138 | 138 | 138 | 139 | 137 |
| poultry meat | 153 | 153 | 153 | 152 | 151 | 151 | 153 | 156 | 161 | 164 | 168 | 171 | 173 | 176 | 179 | 184 | 189 | 194 | 200 |
| pulses | 30 | 31 | 29 | 29 | 29 | 29 | 27 | 28 | 27 | 26 | 27 | 28 | 27 | 28 | 29 | 28 | 28 | 29 | 29 |
| rice | 34 | 33 | 33 | 32 | 33 | 32 | 33 | 32 | 33 | 35 | 38 | 41 | 45 | 44 | 44 | 45 | 48 | 52 | 58 |
| roots & tubers | 95 | 95 | 95 | 95 | 96 | 96 | 96 | 95 | 94 | 92 | 91 | 91 | 92 | 93 | 95 | 96 | 97 | 98 | 97 |
| temp cereals | 518 | 518 | 517 | 519 | 527 | 531 | 532 | 537 | 538 | 534 | 536 | 536 | 537 | 544 | 552 | 562 | 577 | 584 | 597 |
| trop cereals | 0 | 0 | 0 | 1 | 3 | 4 | 5 | 6 | 6 | 5 | 5 | 5 | 5 | 7 | 7 | 8 | 9 | 9 | 8 |
| total | 2,011 | 2,019 | 2,020 | 2,019 | 2,039 | 2,051 | 2,066 | 2,080 | 2,096 | 2,093 | 2,103 | 2,117 | 2,138 | 2,175 | 2,209 | 2,247 | 2,290 | 2,311 | 2,327 |
| meat | 957 | 952 | 948 | 940 | 937 | 934 | 937 | 936 | 939 | 933 | 926 | 925 | 927 | 932 | 939 | 948 | 954 | 955 | 953 |
| vegetable | 1,054 | 1,067 | 1,072 | 1,078 | 1,102 | 1,117 | 1,129 | 1,144 | 1,157 | 1,160 | 1,177 | 1,192 | 1,211 | 1,243 | 1,270 | 1,299 | 1,336 | 1,356 | 1,374 |
| **Latin America** | | | | | | | | | | | | | | | | | | | |
| maize | 388 | 387 | 384 | 383 | 383 | 384 | 385 | 384 | 384 | 383 | 382 | 382 | 381 | 383 | 386 | 391 | 393 | 396 | 397 |
| meat, bovine | 117 | 114 | 111 | 111 | 114 | 118 | 122 | 123 | 122 | 120 | 117 | 113 | 109 | 107 | 105 | 105 | 106 | 111 | 114 |
| meat sheep/goats | 9 | 8 | 8 | 7 | 7 | 6 | 6 | 6 | 6 | 6 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| milk (excl butter) | 129 | 129 | 132 | 134 | 137 | 140 | 141 | 141 | 143 | 143 | 144 | 145 | 145 | 143 | 144 | 143 | 144 | 145 | 145 |
| oil crops | 101 | 102 | 108 | 114 | 119 | 127 | 140 | 148 | 157 | 169 | 178 | 185 | 190 | 195 | 198 | 204 | 210 | 216 | 221 |
| pigmeat | 42 | 43 | 44 | 45 | 47 | 49 | 50 | 53 | 55 | 56 | 57 | 58 | 58 | 56 | 54 | 51 | 49 | 46 | 44 |
| poultry meat | 33 | 34 | 36 | 37 | 39 | 40 | 42 | 45 | 48 | 51 | 54 | 56 | 57 | 58 | 59 | 61 | 63 | 66 | 68 |
| pulses | 133 | 130 | 128 | 125 | 117 | 110 | 107 | 104 | 103 | 105 | 107 | 109 | 112 | 112 | 111 | 108 | 105 | 101 | 101 |
| rice | 221 | 221 | 222 | 223 | 225 | 229 | 233 | 238 | 241 | 242 | 244 | 246 | 247 | 250 | 250 | 251 | 253 | 254 | 257 |
| roots & tubers | 185 | 180 | 174 | 167 | 160 | 154 | 151 | 148 | 144 | 141 | 139 | 135 | 133 | 131 | 129 | 126 | 125 | 124 | 122 |
| temp cereals | 345 | 349 | 353 | 356 | 362 | 369 | 372 | 376 | 380 | 383 | 387 | 394 | 399 | 400 | 398 | 396 | 390 | 379 | 372 |
| trop cereals | 7 | 7 | 7 | 7 | 6 | 6 | 6 | 6 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 |
| total | 1,710 | 1,703 | 1,706 | 1,710 | 1,715 | 1,732 | 1,754 | 1,770 | 1,786 | 1,806 | 1,820 | 1,832 | 1,841 | 1,844 | 1,843 | 1,845 | 1,846 | 1,846 | 1,849 |
| meat | 329 | 328 | 330 | 334 | 343 | 353 | 362 | 367 | 373 | 376 | 377 | 377 | 374 | 369 | 367 | 365 | 367 | 372 | 376 |
| vegetable | 1,381 | 1,375 | 1,376 | 1,376 | 1,372 | 1,379 | 1,392 | 1,403 | 1,413 | 1,429 | 1,442 | 1,456 | 1,467 | 1,475 | 1,477 | 1,480 | 1,479 | 1,474 | 1,473 |
| **Africa** | | | | | | | | | | | | | | | | | | | |
| maize | 331 | 329 | 326 | 328 | 331 | 332 | 332 | 334 | 330 | 330 | 330 | 329 | 333 | 337 | 338 | 339 | 344 | 348 | 350 |
| meat, bovine | 35 | 34 | 34 | 34 | 34 | 34 | 34 | 35 | 35 | 36 | 36 | 36 | 36 | 36 | 35 | 35 | 35 | 34 | 34 |
| meat sheep/goats | 15 | 15 | 14 | 14 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 12 | 12 | 12 | 12 | 12 |
| milk (excl butter) | 58 | 57 | 57 | 56 | 56 | 57 | 58 | 60 | 62 | 64 | 65 | 66 | 65 | 65 | 64 | 63 | 61 | 61 | 60 |
| oil crops | 98 | 101 | 106 | 106 | 106 | 109 | 112 | 111 | 114 | 116 | 116 | 114 | 112 | 109 | 111 | 112 | 114 | 117 | 120 |
| pigmeat | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| poultry meat | 11 | 11 | 11 | 12 | 12 | 12 | 13 | 13 | 14 | 14 | 15 | 16 | 16 | 16 | 17 | 17 | 17 | 17 | 17 |
| pulses | 86 | 85 | 84 | 83 | 82 | 82 | 82 | 82 | 81 | 79 | 79 | 78 | 75 | 74 | 74 | 73 | 74 | 75 | 77 |
| rice | 110 | 111 | 113 | 114 | 115 | 118 | 122 | 126 | 132 | 137 | 140 | 143 | 144 | 144 | 144 | 143 | 141 | 142 | 143 |
| roots & tubers | 261 | 261 | 261 | 262 | 264 | 267 | 268 | 269 | 267 | 266 | 268 | 268 | 269 | 271 | 273 | 273 | 276 | 282 | 285 |
| temp cereals | 286 | 292 | 297 | 302 | 306 | 313 | 322 | 331 | 341 | 351 | 359 | 364 | 367 | 369 | 372 | 372 | 375 | 373 | 372 |
| trop cereals | 303 | 300 | 299 | 296 | 291 | 287 | 277 | 262 | 256 | 252 | 248 | 249 | 244 | 243 | 247 | 253 | 256 | 265 | 261 |
| total | 1,600 | 1,602 | 1,607 | 1,612 | 1,617 | 1,630 | 1,640 | 1,642 | 1,651 | 1,664 | 1,675 | 1,682 | 1,679 | 1,683 | 1,694 | 1,699 | 1,711 | 1,734 | 1,737 |
| meat | 125 | 124 | 123 | 122 | 122 | 123 | 125 | 128 | 131 | 134 | 136 | 137 | 137 | 137 | 135 | 134 | 133 | 132 | 130 |
| vegetable | 1,475 | 1,478 | 1,485 | 1,490 | 1,495 | 1,507 | 1,514 | 1,514 | 1,521 | 1,530 | 1,539 | 1,545 | 1,542 | 1,547 | 1,559 | 1,565 | 1,578 | 1,602 | 1,608 |
| **OECD Europe** | | | | | | | | | | | | | | | | | | | |
| maize | 24 | 25 | 25 | 26 | 26 | 26 | 26 | 25 | 24 | 25 | 26 | 29 | 32 | 35 | 38 | 40 | 40 | 40 | 39 |
| meat, bovine | 121 | 122 | 122 | 122 | 123 | 124 | 125 | 125 | 126 | 126 | 125 | 124 | 124 | 123 | 122 | 123 | 124 | 123 | 123 |
| meat sheep/goats | 21 | 21 | 21 | 21 | 20 | 20 | 20 | 20 | 20 | 20 | 21 | 21 | 21 | 21 | 22 | 22 | 22 | 22 | 22 |
| milk (excl butter) | 283 | 284 | 285 | 286 | 287 | 289 | 292 | 295 | 298 | 301 | 304 | 306 | 307 | 310 | 312 | 313 | 314 | 316 | 314 |
| oil crops | 179 | 179 | 181 | 181 | 185 | 189 | 194 | 201 | 208 | 215 | 222 | 227 | 230 | 235 | 238 | 244 | 251 | 256 | 259 |
| pigmeat | 205 | 210 | 217 | 222 | 225 | 228 | 234 | 240 | 249 | 258 | 263 | 266 | 267 | 268 | 268 | 272 | 278 | 283 | 288 |
| poultry meat | 84 | 87 | 90 | 91 | 93 | 95 | 96 | 98 | 100 | 102 | 103 | 104 | 104 | 105 | 106 | 106 | 108 | 109 | 109 |
| pulses | 31 | 31 | 30 | 29 | 28 | 27 | 26 | 26 | 26 | 26 | 25 | 25 | 25 | 25 | 26 | 27 | 29 | 29 | 30 |
| rice | 29 | 30 | 30 | 31 | 32 | 33 | 33 | 34 | 34 | 35 | 35 | 36 | 37 | 38 | 39 | 40 | 40 | 41 | 41 |
| roots & tubers | 171 | 168 | 167 | 164 | 159 | 158 | 157 | 155 | 155 | 155 | 154 | 152 | 151 | 151 | 153 | 153 | 154 | 154 | 153 |
| temp cereals | 788 | 782 | 776 | 772 | 771 | 770 | 769 | 771 | 770 | 767 | 759 | 752 | 748 | 746 | 745 | 749 | 754 | 753 | 751 |
| trop cereals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| total | 1,936 | 1,939 | 1,944 | 1,944 | 1,949 | 1,957 | 1,970 | 1,990 | 2,011 | 2,027 | 2,038 | 2,041 | 2,046 | 2,056 | 2,069 | 2,088 | 2,113 | 2,124 | 2,131 |
| meat | 714 | 724 | 735 | 742 | 748 | 755 | 766 | 779 | 794 | 806 | 816 | 821 | 824 | 827 | 830 | 836 | 845 | 852 | 857 |
| vegetable | 1,222 | 1,215 | 1,209 | 1,202 | 1,201 | 1,203 | 1,204 | 1,211 | 1,218 | 1,221 | 1,222 | 1,220 | 1,223 | 1,229 | 1,238 | 1,253 | 1,267 | 1,272 | 1,274 |
| **Eastern Europe** | | | | | | | | | | | | | | | | | | | |
| maize | 146 | 144 | 142 | 139 | 140 | 137 | 134 | 131 | 128 | 125 | 125 | 128 | 132 | 134 | 136 | 135 | 130 | 122 | 116 |
| meat, bovine | 69 | 70 | 71 | 73 | 79 | 85 | 89 | 92 | 94 | 92 | 89 | 89 | 88 | 86 | 87 | 87 | 87 | 88 | 89 |
| meat sheep/goats | 14 | 14 | 14 | 14 | 13 | 13 | 13 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 13 | 13 | 13 | 13 | 13 |
| milk (excl butter) | 255 | 257 | 260 | 264 | 269 | 273 | 277 | 280 | 279 | 278 | 273 | 272 | 270 | 271 | 270 | 271 | 269 | 268 | 265 |
| oil crops | 164 | 170 | 176 | 179 | 184 | 191 | 196 | 202 | 205 | 209 | 210 | 211 | 212 | 217 | 222 | 230 | 240 | 245 | 247 |
| pigmeat | 148 | 154 | 164 | 176 | 181 | 184 | 189 | 193 | 195 | 198 | 199 | 198 | 196 | 193 | 195 | 198 | 201 | 205 | 209 |
| poultry meat | 58 | 61 | 65 | 68 | 71 | 75 | 79 | 83 | 87 | 90 | 91 | 91 | 91 | 91 | 91 | 93 | 93 | 93 | 93 |
| pulses | 38 | 36 | 35 | 34 | 32 | 31 | 31 | 31 | 31 | 32 | 32 | 33 | 34 | 34 | 35 | 34 | 34 | 34 | 34 |
| rice | 29 | 30 | 30 | 30 | 31 | 31 | 31 | 31 | 32 | 32 | 31 | 31 | 30 | 29 | 29 | 29 | 29 | 29 | 29 |
| roots & tubers | 173 | 171 | 169 | 169 | 168 | 166 | 162 | 158 | 153 | 149 | 145 | 143 | 142 | 141 | 140 | 138 | 135 | 134 | 134 |
| temp cereals | 1,268 | 1,255 | 1,245 | 1,231 | 1,225 | 1,216 | 1,208 | 1,198 | 1,200 | 1,191 | 1,185 | 1,179 | 1,174 | 1,155 | 1,145 | 1,141 | 1,136 | 1,136 | 1,135 |
| trop cereals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| total | 2,362 | 2,363 | 2,371 | 2,378 | 2,394 | 2,403 | 2,409 | 2,411 | 2,416 | 2,407 | 2,392 | 2,387 | 2,381 | 2,364 | 2,362 | 2,369 | 2,368 | 2,367 | 2,364 |
| meat | 543 | 557 | 574 | 595 | 614 | 631 | 647 | 660 | 667 | 670 | 664 | 662 | 658 | 654 | 656 | 662 | 664 | 666 | 669 |
| vegetable | 1,819 | 1,806 | 1,797 | 1,783 | 1,780 | 1,772 | 1,762 | 1,751 | 1,749 | 1,738 | 1,728 | 1,725 | 1,724 | 1,710 | 1,706 | 1,707 | 1,703 | 1,701 | 1,694 |
| **CIS** | | | | | | | | | | | | | | | | | | | |
| maize | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 |
| meat, bovine | 150 | 152 | 157 | 163 | 167 | 174 | 179 | 179 | 178 | 178 | 175 | 175 | 176 | 178 | 182 | 187 | 192 | 197 | 201 |
| meat sheep/goats | 16 | 16 | 15 | 15 | 15 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 15 |
| milk (excl butter) | 298 | 289 | 286 | 283 | 279 | 273 | 275 | 267 | 257 | 248 | 241 | 233 | 229 | 227 | 228 | 230 | 233 | 236 | 239 |
| oil crops | 140 | 141 | 142 | 142 | 146 | 154 | 157 | 161 | 168 | 170 | 174 | 178 | 181 | 184 | 187 | 191 | 195 | 200 | 206 |
| pigmeat | 71 | 75 | 78 | 82 | 85 | 82 | 81 | 81 | 80 | 78 | 79 | 81 | 82 | 83 | 84 | 85 | 85 | 86 | 87 |
| poultry meat | 50 | 54 | 58 | 62 | 63 | 66 | 69 | 72 | 75 | 79 | 82 | 85 | 88 | 90 | 93 | 95 | 97 | 99 | 100 |
| pulses | 38 | 38 | 37 | 37 | 37 | 36 | 35 | 34 | 32 | 30 | 28 | 27 | 26 | 26 | 23 | 21 | 20 | 18 | 17 |
| rice | 42 | 44 | 45 | 48 | 50 | 54 | 58 | 63 | 68 | 73 | 76 | 79 | 78 | 76 | 74 | 73 | 73 | 73 | 70 |
| roots & tubers | 236 | 232 | 229 | 225 | 222 | 222 | 220 | 217 | 213 | 208 | 204 | 202 | 200 | 198 | 199 | 197 | 193 | 188 | 186 |
| temp cereals | 1,302 | 1,291 | 1,278 | 1,261 | 1,248 | 1,233 | 1,226 | 1,219 | 1,213 | 1,205 | 1,203 | 1,193 | 1,184 | 1,178 | 1,174 | 1,169 | 1,166 | 1,160 | 1,162 |
| trop cereals | 30 | 30 | 30 | 30 | 29 | 28 | 27 | 25 | 23 | 21 | 19 | 17 | 16 | 16 | 14 | 13 | 12 | 12 | 11 |
| total | 2,377 | 2,364 | 2,358 | 2,350 | 2,344 | 2,340 | 2,344 | 2,335 | 2,323 | 2,306 | 2,298 | 2,285 | 2,276 | 2,272 | 2,274 | 2,277 | 2,282 | 2,285 | 2,295 |
| meat | 585 | 586 | 594 | 605 | 609 | 610 | 618 | 613 | 603 | 597 | 592 | 588 | 589 | 592 | 600 | 610 | 622 | 632 | 642 |
| vegetable | 1,791 | 1,778 | 1,764 | 1,745 | 1,735 | 1,730 | 1,726 | 1,722 | 1,719 | 1,709 | 1,706 | 1,697 | 1,687 | 1,679 | 1,674 | 1,667 | 1,661 | 1,653 | 1,653 |

A 25. Daily caloric intake per region, (with regional conversion factors) in kcal/cap, continued.

| | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Middle East** | | | | | | | | | | | | | | | | | | | |
| maize | 70 | 69 | 69 | 69 | 69 | 68 | 67 | 68 | 69 | 66 | 65 | 64 | 61 | 59 | 61 | 62 | 62 | 64 | 65 |
| meat, bovine | 24 | 24 | 24 | 24 | 24 | 25 | 26 | 27 | 28 | 29 | 29 | 31 | 31 | 32 | 32 | 32 | 31 | 31 | 31 |
| meat sheep/goats | 47 | 47 | 46 | 46 | 46 | 47 | 48 | 49 | 49 | 50 | 50 | 50 | 51 | 51 | 50 | 49 | 48 | 47 | 45 |
| milk (excl butter) | 99 | 98 | 98 | 99 | 102 | 104 | 106 | 109 | 112 | 114 | 115 | 117 | 115 | 113 | 109 | 105 | 101 | 98 | 95 |
| oil crops | 80 | 88 | 92 | 97 | 102 | 105 | 111 | 118 | 123 | 124 | 132 | 138 | 145 | 153 | 161 | 167 | 172 | 172 | 172 |
| pigmeat | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| poultry meat | 21 | 22 | 23 | 25 | 28 | 30 | 34 | 37 | 39 | 42 | 45 | 47 | 49 | 51 | 51 | 51 | 51 | 51 | 50 |
| pulses | 59 | 58 | 58 | 59 | 60 | 61 | 62 | 62 | 60 | 59 | 57 | 57 | 58 | 60 | 63 | 66 | 68 | 69 | 71 |
| rice | 136 | 141 | 145 | 150 | 156 | 163 | 169 | 178 | 183 | 189 | 193 | 195 | 196 | 198 | 197 | 198 | 198 | 197 | 195 |
| roots & tubers | 37 | 37 | 38 | 39 | 41 | 43 | 46 | 49 | 52 | 54 | 57 | 59 | 60 | 62 | 64 | 65 | 65 | 66 | 66 |
| temp cereals | 1,170 | 1,186 | 1,202 | 1,217 | 1,229 | 1,236 | 1,243 | 1,246 | 1,246 | 1,250 | 1,255 | 1,258 | 1,263 | 1,270 | 1,272 | 1,277 | 1,286 | 1,297 | 1,304 |
| trop cereals | 64 | 62 | 61 | 60 | 58 | 56 | 53 | 50 | 47 | 43 | 39 | 36 | 33 | 29 | 27 | 26 | 24 | 23 | 23 |
| total | 1,807 | 1,832 | 1,855 | 1,885 | 1,915 | 1,940 | 1,967 | 1,993 | 2,008 | 2,020 | 2,038 | 2,051 | 2,062 | 2,077 | 2,087 | 2,097 | 2,105 | 2,115 | 2,118 |
| meat | 191 | 191 | 191 | 195 | 200 | 207 | 215 | 222 | 228 | 236 | 241 | 245 | 247 | 247 | 242 | 237 | 231 | 227 | 222 |
| vegetable | 1,616 | 1,641 | 1,664 | 1,691 | 1,715 | 1,732 | 1,753 | 1,771 | 1,779 | 1,784 | 1,797 | 1,806 | 1,815 | 1,830 | 1,845 | 1,860 | 1,874 | 1,888 | 1,896 |
| **India region** | | | | | | | | | | | | | | | | | | | |
| maize | 66 | 65 | 64 | 65 | 66 | 65 | 62 | 60 | 59 | 57 | 56 | 58 | 60 | 58 | 58 | 56 | 56 | 55 | 57 |
| meat, bovine | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| meat sheep/goats | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 |
| milk (excl butter) | 64 | 65 | 65 | 66 | 66 | 66 | 67 | 67 | 68 | 69 | 71 | 74 | 79 | 84 | 88 | 91 | 93 | 94 | 95 |
| oil crops | 78 | 79 | 80 | 81 | 83 | 85 | 86 | 87 | 88 | 90 | 92 | 95 | 97 | 99 | 100 | 101 | 103 | 105 | 109 |
| pigmeat | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 |
| poultry meat | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 |
| pulses | 134 | 129 | 125 | 119 | 120 | 121 | 121 | 123 | 118 | 111 | 107 | 105 | 105 | 108 | 110 | 111 | 108 | 107 | 107 |
| rice | 744 | 729 | 726 | 714 | 718 | 709 | 735 | 751 | 758 | 758 | 766 | 748 | 736 | 741 | 749 | 755 | 762 | 763 | 768 |
| roots & tubers | 35 | 35 | 35 | 35 | 37 | 37 | 37 | 38 | 37 | 37 | 37 | 36 | 36 | 37 | 36 | 35 | 36 | 35 | 34 |
| temp cereals | 341 | 362 | 371 | 378 | 383 | 387 | 385 | 380 | 399 | 407 | 417 | 426 | 444 | 441 | 452 | 459 | 464 | 471 | 474 |
| trop cereals | 205 | 197 | 199 | 193 | 188 | 189 | 193 | 189 | 188 | 185 | 181 | 176 | 170 | 167 | 160 | 157 | 153 | 152 | 151 |
| total | 1,688 | 1,681 | 1,685 | 1,671 | 1,680 | 1,679 | 1,707 | 1,715 | 1,738 | 1,735 | 1,749 | 1,741 | 1,750 | 1,758 | 1,777 | 1,789 | 1,797 | 1,806 | 1,819 |
| meat | 84 | 85 | 85 | 86 | 86 | 87 | 88 | 88 | 90 | 91 | 94 | 97 | 102 | 107 | 112 | 115 | 116 | 118 | 118 |
| vegetable | 1,604 | 1,596 | 1,600 | 1,586 | 1,593 | 1,592 | 1,619 | 1,627 | 1,648 | 1,644 | 1,655 | 1,643 | 1,648 | 1,651 | 1,665 | 1,674 | 1,681 | 1,688 | 1,701 |
| **China region** | | | | | | | | | | | | | | | | | | | |
| maize | 155 | 156 | 158 | 160 | 161 | 166 | 173 | 181 | 188 | 193 | 196 | 196 | 193 | 189 | 186 | 184 | 183 | 182 | 186 |
| meat, bovine | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 5 |
| meat sheep/goats | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 5 |
| milk (excl butter) | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 8 | 8 | 9 | 10 | 10 | 11 |
| oil crops | 78 | 77 | 77 | 76 | 73 | 72 | 73 | 74 | 79 | 85 | 93 | 99 | 106 | 112 | 119 | 124 | 127 | 129 | 131 |
| pigmeat | 74 | 75 | 77 | 79 | 79 | 78 | 78 | 83 | 89 | 97 | 106 | 114 | 121 | 129 | 138 | 147 | 157 | 167 | 175 |
| poultry meat | 15 | 15 | 15 | 16 | 16 | 16 | 17 | 17 | 18 | 19 | 19 | 20 | 22 | 24 | 26 | 28 | 31 | 33 | 34 |
| pulses | 52 | 51 | 50 | 49 | 48 | 46 | 45 | 45 | 45 | 44 | 44 | 42 | 41 | 39 | 36 | 34 | 33 | 30 | 30 |
| nce | 811 | 827 | 846 | 848 | 845 | 849 | 855 | 868 | 875 | 889 | 919 | 944 | 968 | 996 | 1,017 | 1,019 | 1,014 | 1,008 | 1,005 |
| roots & tubers | 269 | 272 | 272 | 269 | 267 | 267 | 264 | 260 | 254 | 245 | 233 | 223 | 210 | 197 | 184 | 174 | 162 | 154 | 151 |
| temp cereals | 264 | 271 | 285 | 299 | 313 | 329 | 351 | 371 | 394 | 421 | 452 | 477 | 503 | 524 | 539 | 550 | 556 | 561 | 566 |
| trop cereals | 121 | 115 | 110 | 102 | 94 | 89 | 83 | 78 | 73 | 70 | 67 | 67 | 66 | 64 | 62 | 57 | 51 | 46 | 43 |
| total | 1,847 | 1,867 | 1,898 | 1,906 | 1,905 | 1,922 | 1,950 | 1,986 | 2,026 | 2,074 | 2,141 | 2,195 | 2,243 | 2,287 | 2,322 | 2,332 | 2,331 | 2,327 | 2,341 |
| meat | 97 | 99 | 101 | 104 | 105 | 104 | 105 | 110 | 118 | 127 | 137 | 147 | 156 | 167 | 179 | 191 | 205 | 218 | 230 |
| vegetable | 1,750 | 1,768 | 1,797 | 1,802 | 1,801 | 1,818 | 1,845 | 1,876 | 1,908 | 1,947 | 2,004 | 2,048 | 2,087 | 2,121 | 2,143 | 2,142 | 2,127 | 2,109 | 2,111 |
| **East Asia** | | | | | | | | | | | | | | | | | | | |
| maize | 85 | 86 | 91 | 92 | 93 | 94 | 95 | 95 | 98 | 103 | 101 | 105 | 107 | 105 | 106 | 111 | 106 | 107 | 113 |
| meat, bovine | 9 | 10 | 10 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 12 | 12 | 13 | 13 | 13 |
| meat sheep/goats | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| milk (excl butter) | 12 | 12 | 11 | 11 | 11 | 12 | 13 | 14 | 15 | 15 | 16 | 16 | 16 | 16 | 16 | 17 | 17 | 17 | 18 |
| oil crops | 56 | 56 | 58 | 60 | 62 | 65 | 69 | 71 | 74 | 76 | 79 | 79 | 83 | 85 | 89 | 93 | 101 | 105 | 110 |
| pigmeat | 34 | 34 | 33 | 32 | 31 | 31 | 31 | 32 | 35 | 37 | 39 | 40 | 42 | 44 | 44 | 45 | 47 | 47 | 48 |
| poultry meat | 16 | 16 | 17 | 18 | 19 | 19 | 20 | 21 | 23 | 24 | 25 | 26 | 27 | 28 | 28 | 29 | 30 | 31 | 32 |
| pulses | 17 | 17 | 17 | 17 | 16 | 15 | 15 | 14 | 14 | 15 | 15 | 17 | 19 | 20 | 22 | 23 | 23 | 23 | 22 |
| nce | 1,104 | 1,130 | 1,145 | 1,155 | 1,165 | 1,181 | 1,195 | 1,210 | 1,230 | 1,250 | 1,272 | 1,290 | 1,306 | 1,310 | 1,314 | 1,315 | 1,308 | 1,302 | 1,292 |
| roots & tubers | 145 | 140 | 139 | 141 | 145 | 149 | 150 | 147 | 144 | 139 | 132 | 127 | 124 | 121 | 118 | 116 | 115 | 113 | 110 |
| temp cereals | 142 | 145 | 142 | 146 | 148 | 141 | 134 | 132 | 129 | 125 | 126 | 127 | 125 | 122 | 123 | 122 | 125 | 130 | 135 |
| trop cereals | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| total | 1,621 | 1,646 | 1,665 | 1,684 | 1,703 | 1,722 | 1,736 | 1,750 | 1,774 | 1,797 | 1,819 | 1,840 | 1,862 | 1,864 | 1,875 | 1,886 | 1,887 | 1,890 | 1,897 |
| meat | 72 | 73 | 73 | 74 | 74 | 75 | 77 | 81 | 85 | 88 | 92 | 95 | 98 | 100 | 102 | 105 | 108 | 110 | 114 |
| vegetable | 1,549 | 1,573 | 1,592 | 1,611 | 1,629 | 1,647 | 1,659 | 1,670 | 1,689 | 1,709 | 1,727 | 1,745 | 1,764 | 1,764 | 1,773 | 1,781 | 1,779 | 1,780 | 1,784 |
| **Oceania** | | | | | | | | | | | | | | | | | | | |
| maize | 15 | 15 | 16 | 16 | 16 | 16 | 16 | 16 | 14 | 14 | 13 | 13 | 12 | 11 | 11 | 10 | 10 | 10 | 11 |
| meat, bovine | 249 | 252 | 246 | 271 | 301 | 332 | 362 | 380 | 362 | 336 | 313 | 281 | 265 | 259 | 253 | 243 | 238 | 236 | 235 |
| meat sheep/goats | 265 | 262 | 244 | 232 | 211 | 180 | 160 | 152 | 143 | 139 | 139 | 141 | 145 | 147 | 153 | 158 | 160 | 161 | 160 |
| milk (excl butter) | 327 | 330 | 330 | 330 | 323 | 316 | 310 | 312 | 312 | 314 | 321 | 322 | 321 | 320 | 314 | 307 | 303 | 305 | 307 |
| oil crops | 77 | 86 | 95 | 102 | 103 | 107 | 113 | 126 | 129 | 137 | 141 | 149 | 157 | 168 | 170 | 173 | 170 | 166 | 162 |
| pigmeat | 112 | 117 | 120 | 118 | 114 | 111 | 108 | 105 | 107 | 111 | 114 | 117 | 121 | 124 | 128 | 131 | 134 | 137 | 139 |
| poultry meat | 88 | 90 | 94 | 98 | 99 | 101 | 105 | 107 | 112 | 116 | 118 | 120 | 119 | 120 | 120 | 122 | 123 | 126 | 127 |
| pulses | 15 | 15 | 14 | 15 | 14 | 12 | 13 | 14 | 14 | 14 | 16 | 16 | 17 | 19 | 20 | 21 | 21 | 21 | 19 |
| rice | 51 | 54 | 59 | 64 | 70 | 67 | 63 | 60 | 58 | 63 | 68 | 80 | 89 | 109 | 128 | 143 | 151 | 159 | 171 |
| roots & tubers | 98 | 95 | 88 | 84 | 79 | 76 | 76 | 77 | 78 | 80 | 82 | 83 | 87 | 90 | 92 | 93 | 96 | 94 | 97 |
| temp cereals | 741 | 722 | 710 | 695 | 688 | 673 | 659 | 645 | 637 | 628 | 625 | 629 | 633 | 633 | 631 | 631 | 634 | 630 | 629 |
| trop cereals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| total | 2,037 | 2,037 | 2,015 | 2,022 | 2,018 | 1,991 | 1,983 | 1,993 | 1,967 | 1,951 | 1,949 | 1,949 | 1,966 | 2,001 | 2,018 | 2,032 | 2,041 | 2,045 | 2,056 |
| meat | 1,041 | 1,050 | 1,034 | 1,048 | 1,048 | 1,039 | 1,043 | 1,056 | 1,036 | 1,015 | 1,005 | 980 | 971 | 970 | 967 | 961 | 960 | 965 | 968 |
| vegetable | 996 | 987 | 981 | 974 | 970 | 952 | 940 | 937 | 931 | 935 | 944 | 969 | 995 | 1,031 | 1,051 | 1,071 | 1,081 | 1,079 | 1,088 |
| **Japan** | | | | | | | | | | | | | | | | | | | |
| maize | 42 | 47 | 49 | 49 | 52 | 54 | 57 | 61 | 71 | 78 | 85 | 93 | 101 | 106 | 110 | 116 | 120 | 122 | 125 |
| meat, bovine | 16 | 17 | 18 | 19 | 19 | 20 | 22 | 23 | 25 | 26 | 27 | 29 | 30 | 31 | 33 | 34 | 36 | 38 | 41 |
| meat sheep/goats | 8 | 8 | 7 | 8 | 8 | 8 | 8 | 8 | 8 | 7 | 7 | 6 | 5 | 5 | 5 | 4 | 4 | 4 | 4 |
| milk (excl butter) | 75 | 78 | 79 | 80 | 82 | 83 | 85 | 87 | 90 | 92 | 94 | 95 | 96 | 97 | 97 | 98 | 100 | 102 | 104 |
| oil crops | 234 | 244 | 255 | 260 | 268 | 272 | 275 | 275 | 280 | 288 | 295 | 303 | 312 | 319 | 326 | 333 | 336 | 340 | 345 |
| pigmeat | 31 | 35 | 39 | 41 | 44 | 46 | 48 | 51 | 54 | 56 | 57 | 59 | 59 | 59 | 61 | 63 | 65 | 68 | 69 |
| poultry meat | 78 | 82 | 84 | 84 | 85 | 86 | 89 | 92 | 95 | 97 | 99 | 100 | 102 | 103 | 106 | 109 | 112 | 116 | 118 |
| pulses | 31 | 29 | 27 | 27 | 25 | 24 | 23 | 22 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 22 | 22 | 22 | 23 |
| rice | 937 | 920 | 907 | 895 | 883 | 867 | 849 | 829 | 811 | 794 | 780 | 768 | 759 | 751 | 742 | 733 | 724 | 713 | 706 |
| roots & tubers | 75 | 68 | 63 | 63 | 61 | 61 | 61 | 62 | 61 | 61 | 62 | 63 | 63 | 64 | 66 | 66 | 67 | 67 | 68 |
| temp cereals | 339 | 340 | 339 | 344 | 347 | 349 | 347 | 348 | 345 | 341 | 340 | 340 | 337 | 336 | 336 | 333 | 333 | 331 | 330 |
| trop cereals | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| total | 1,867 | 1,869 | 1,870 | 1,871 | 1,875 | 1,873 | 1,865 | 1,860 | 1,861 | 1,862 | 1,869 | 1,876 | 1,886 | 1,894 | 1,902 | 1,912 | 1,919 | 1,925 | 1,932 |
| meat | 208 | 220 | 227 | 232 | 238 | 243 | 250 | 260 | 270 | 277 | 283 | 288 | 291 | 295 | 301 | 309 | 318 | 328 | 335 |
| vegetable | 1,659 | 1,649 | 1,643 | 1,639 | 1,638 | 1,630 | 1,614 | 1,600 | 1,591 | 1,585 | 1,585 | 1,589 | 1,596 | 1,599 | 1,602 | 1,603 | 1,601 | 1,597 | 1,597 |

Source: FAO (1990)

**A 26. Areas of main agricultural crops per region, smoothed over 5 year period (in 1000 ha).**

| Year | Canada Wheat | Barley | Oats | Rye | Mixed grain | Potatoes | Sugar beet | Total | USA Wheat | Barley | Oats | Rye | Maize | Buckwheat |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1890 | 908 | 285 | 900 | 0 | 67 | 0 | 0 | 2,160 | 16,326 | 1,459 | 11,576 | 879 | 31,602 | 332 |
| 1891 | 922 | 256 | 950 | 0 | 69 | 0 | 0 | 2,197 | 16,513 | 1,535 | 11,789 | 902 | 32,873 | 330 |
| 1892 | 904 | 248 | 994 | 0 | 70 | 0 | 0 | 2,216 | 16,492 | 1,579 | 11,990 | 936 | 33,700 | 332 |
| 1893 | 892 | 244 | 1,052 | 0 | 71 | 0 | 0 | 2,259 | 16,527 | 1,600 | 12,044 | 943 | 34,756 | 331 |
| 1894 | 897 | 244 | 1,109 | 0 | 74 | 0 | 0 | 2,324 | 17,314 | 1,634 | 12,049 | 946 | 35,400 | 330 |
| 1895 | 977 | 247 | 1,179 | 0 | 80 | 0 | 0 | 2,483 | 18,299 | 1,702 | 12,024 | 938 | 36,575 | 330 |
| 1896 | 1,095 | 254 | 1,219 | 0 | 65 | 18 | 0 | 2,652 | 19,125 | 1,743 | 12,036 | 916 | 36,929 | 329 |
| 1897 | 1,166 | 274 | 1,422 | 9 | 71 | 54 | 0 | 2,996 | 19,936 | 1,811 | 12,088 | 900 | 37,362 | 326 |
| 1898 | 1,302 | 295 | 1,470 | 9 | 56 | 73 | 0 | 3,206 | 20,165 | 1,920 | 12,293 | 910 | 37,945 | 324 |
| 1899 | 1,398 | 330 | 1,536 | 9 | 41 | 92 | 0 | 3,405 | 19,999 | 2,092 | 12,524 | 915 | 38,412 | 327 |
| 1900 | 1,475 | 378 | 1,611 | 9 | 22 | 110 | 0 | 3,605 | 19,255 | 2,262 | 12,807 | 926 | 38,464 | 329 |
| 1901 | 1,537 | 421 | 1,696 | 9 | 22 | 107 | 0 | 3,792 | 19,021 | 2,420 | 12,999 | 940 | 38,536 | 332 |
| 1902 | 1,691 | 456 | 1,632 | 0 | 0 | 87 | 0 | 3,865 | 18,647 | 2,564 | 13,226 | 920 | 38,634 | 333 |
| 1903 | 1,870 | 497 | 1,760 | 0 | 0 | 83 | 0 | 4,210 | 18,477 | 2,676 | 13,475 | 890 | 38,546 | 334 |
| 1904 | 2,057 | 549 | 2,046 | 0 | 0 | 105 | 0 | 4,757 | 18,205 | 2,771 | 13,647 | 879 | 38,686 | 336 |
| 1905 | 2,247 | 592 | 2,353 | 8 | 47 | 87 | 0 | 5,335 | 18,295 | 2,862 | 13,834 | 880 | 39,089 | 339 |
| 1906 | 2,532 | 644 | 2,758 | 15 | 94 | 108 | 0 | 6,152 | 18,253 | 2,934 | 14,111 | 877 | 39,617 | 340 |
| 1907 | 2,854 | 642 | 3,088 | 25 | 129 | 135 | 2 | 6,874 | 18,476 | 3,004 | 14,391 | 901 | 40,083 | 339 |
| 1908 | 3,264 | 655 | 3,460 | 35 | 172 | 161 | 3 | 7,750 | 18,822 | 3,060 | 14,618 | 953 | 40,517 | 335 |
| 1909 | 3,664 | 647 | 3,681 | 46 | 212 | 163 | 5 | 8,417 | 19,382 | 3,081 | 14,856 | 1,031 | 40,915 | 329 |
| 1910 | 4,024 | 637 | 3,885 | 47 | 203 | 206 | 6 | 9,008 | 20,300 | 3,078 | 15,030 | 1,106 | 40,721 | 320 |
| 1911 | 4,230 | 607 | 3,946 | 49 | 193 | 214 | 7 | 9,247 | 21,475 | 3,056 | 15,188 | 1,200 | 40,588 | 313 |
| 1912 | 4,736 | 642 | 4,181 | 49 | 196 | 211 | 7 | 10,022 | 21,841 | 3,057 | 15,346 | 1,287 | 40,520 | 311 |
| 1913 | 5,082 | 665 | 4,291 | 51 | 187 | 222 | 6 | 10,503 | 21,710 | 3,131 | 15,699 | 1,476 | 41,285 | 323 |
| 1914 | 5,386 | 730 | 4,562 | 58 | 187 | 239 | 6 | 11,168 | 22,442 | 3,254 | 16,121 | 1,769 | 41,446 | 343 |
| 1915 | 5,899 | 855 | 4,914 | 93 | 223 | 262 | 7 | 12,254 | 23,906 | 3,167 | 16,315 | 2,097 | 41,474 | 341 |
| 1916 | 6,614 | 948 | 5,310 | 145 | 259 | 281 | 9 | 13,565 | 24,072 | 3,180 | 16,633 | 2,212 | 41,533 | 339 |
| 1917 | 6,867 | 1,016 | 5,658 | 188 | 287 | 299 | 10 | 14,324 | 24,967 | 3,136 | 17,154 | 2,320 | 41,743 | 328 |
| 1918 | 7,505 | 1,096 | 6,139 | 325 | 323 | 301 | 10 | 15,700 | 26,150 | 2,986 | 17,050 | 2,458 | 40,889 | 312 |
| 1919 | 8,126 | 1,113 | 6,239 | 478 | 346 | 287 | 10 | 16,598 | 25,814 | 2,820 | 16,871 | 2,316 | 40,803 | 285 |
| 1920 | 8,492 | 1,083 | 6,206 | 550 | 340 | 266 | 10 | 16,949 | 24,095 | 2,857 | 17,053 | 2,053 | 40,987 | 285 |
| 1921 | 8,730 | 1,145 | 6,169 | 561 | 336 | 247 | 10 | 17,198 | 23,293 | 2,918 | 17,175 | 1,970 | 40,984 | 286 |
| 1922 | 8,937 | 1,223 | 5,902 | 561 | 339 | 233 | 10 | 17,206 | 22,650 | 2,986 | 16,958 | 1,853 | 40,685 | 289 |
| 1923 | 8,907 | 1,292 | 5,562 | 473 | 347 | 224 | 11 | 16,816 | 22,506 | 3,218 | 16,960 | 1,586 | 40,524 | 292 |
| 1924 | 8,910 | 1,365 | 5,456 | 363 | 365 | 227 | 13 | 16,699 | 22,693 | 3,670 | 16,950 | 1,454 | 40,460 | 291 |
| 1925 | 9,091 | 1,535 | 5,355 | 313 | 386 | 225 | 13 | 16,919 | 23,578 | 4,198 | 16,651 | 1,389 | 40,249 | 283 |
| 1926 | 9,342 | 1,739 | 5,192 | 321 | 408 | 227 | 13 | 17,243 | 24,403 | 4,558 | 16,295 | 1,376 | 40,259 | 269 |
| 1927 | 9,674 | 1,904 | 5,249 | 387 | 436 | 232 | 14 | 17,896 | 24,491 | 4,822 | 16,080 | 1,354 | 40,859 | 255 |
| 1928 | 9,954 | 1,915 | 5,257 | 390 | 455 | 228 | 16 | 18,216 | 24,347 | 5,125 | 16,189 | 1,345 | 41,848 | 230 |
| 1929 | 10,337 | 1,936 | 5,250 | 393 | 470 | 222 | 17 | 18,623 | 23,553 | 4,874 | 15,898 | 1,270 | 42,300 | 212 |
| 1930 | 10,488 | 1,837 | 5,281 | 372 | 475 | 224 | 17 | 18,694 | 21,931 | 4,309 | 15,194 | 1,172 | 41,846 | 200 |
| 1931 | 10,393 | 1,649 | 5,383 | 347 | 478 | 219 | 18 | 18,487 | 21,014 | 4,293 | 15,215 | 1,206 | 41,402 | 194 |
| 1932 | 10,330 | 1,514 | 5,450 | 288 | 474 | 213 | 19 | 18,287 | 20,259 | 4,062 | 14,686 | 1,168 | 40,292 | 184 |
| 1933 | 10,269 | 1,566 | 5,487 | 274 | 472 | 213 | 19 | 18,300 | 20,771 | 3,800 | 14,187 | 1,207 | 38,944 | 181 |
| 1934 | 10,139 | 1,613 | 5,479 | 284 | 467 | 213 | 19 | 18,213 | 22,371 | 3,879 | 14,148 | 1,343 | 37,831 | 180 |
| 1935 | 10,134 | 1,677 | 5,437 | 297 | 467 | 209 | 21 | 18,240 | 23,125 | 4,377 | 14,472 | 1,497 | 37,514 | 172 |
| 1936 | 10,358 | 1,737 | 5,360 | 330 | 472 | 212 | 23 | 18,492 | 23,285 | 4,465 | 14,093 | 1,427 | 36,742 | 162 |
| 1937 | 10,731 | 1,773 | 5,215 | 356 | 477 | 212 | 25 | 18,790 | 23,896 | 4,947 | 14,458 | 1,498 | 36,111 | 159 |
| 1938 | 10,435 | 1,844 | 5,133 | 381 | 499 | 210 | 26 | 18,529 | 22,731 | 5,512 | 14,673 | 1,496 | 35,579 | 155 |
| 1939 | 10,111 | 2,050 | 5,173 | 414 | 527 | 211 | 27 | 18,513 | 21,287 | 5,860 | 14,906 | 1,380 | 35,571 | 160 |
| 1940 | 9,366 | 2,349 | 5,312 | 396 | 535 | 213 | 26 | 18,197 | 21,860 | 5,824 | 15,414 | 1,243 | 36,035 | 171 |
| 1941 | 9,036 | 2,564 | 5,363 | 359 | 539 | 209 | 25 | 18,095 | 22,823 | 5,576 | 15,925 | 1,133 | 36,136 | 172 |
| 1942 | 8,589 | 2,775 | 5,436 | 315 | 538 | 211 | 24 | 17,888 | 23,727 | 5,261 | 16,301 | 973 | 36,316 | 176 |
| 1943 | 8,785 | 2,845 | 5,396 | 297 | 516 | 210 | 24 | 18,074 | 25,730 | 4,778 | 16,276 | 827 | 35,954 | 186 |
| 1944 | 8,993 | 2,887 | 5,170 | 289 | 476 | 208 | 24 | 18,046 | 27,434 | 4,536 | 16,305 | 779 | 35,365 | 172 |
| 1945 | 9,557 | 2,746 | 4,855 | 438 | 482 | 206 | 27 | 18,311 | 28,742 | 4,339 | 16,348 | 733 | 34,683 | 153 |
| 1946 | 9,938 | 2,658 | 4,659 | 483 | 496 | 206 | 30 | 18,470 | 28,454 | 4,396 | 16,351 | 725 | 34,209 | 141 |
| 1947 | 10,271 | 2,623 | 4,495 | 535 | 513 | 187 | 32 | 18,656 | 28,231 | 4,318 | 15,738 | 775 | 33,694 | 126 |
| 1948 | 10,342 | 2,757 | 4,505 | 569 | 542 | 171 | 35 | 18,921 | 27,956 | 4,095 | 15,667 | 726 | 33,537 | 98 |
| 1949 | 10,507 | 2,845 | 4,531 | 571 | 590 | 157 | 37 | 19,238 | 27,586 | 3,834 | 15,526 | 696 | 33,211 | 86 |
| 1950 | 10,724 | 3,048 | 4,452 | 503 | 608 | 140 | 37 | 19,512 | 25,841 | 4,317 | 15,549 | 715 | 32,773 | 80 |
| 1951 | 10,574 | 3,204 | 4,376 | 469 | 626 | 125 | 36 | 19,410 | 24,683 | 4,590 | 15,362 | 739 | 32,575 | 69 |
| 1952 | 10,193 | 3,477 | 4,358 | 437 | 649 | 128 | 34 | 19,276 | 23,503 | 4,867 | 15,208 | 731 | 32,091 | 60 |
| 1953 | 9,993 | 3,521 | 4,242 | 390 | 652 | 130 | 34 | 18,961 | 21,287 | 5,404 | 14,970 | 798 | 31,357 | 55 |
| 1954 | 9,620 | 3,596 | 4,062 | 334 | 641 | 128 | 35 | 18,416 | 20,090 | 5,899 | 14,461 | 807 | 30,666 | 48 |
| 1955 | 9,278 | 3,627 | 4,010 | 254 | 629 | 127 | 35 | 17,959 | 19,876 | 6,220 | 13,426 | 780 | 30,805 | 37 |
| 1956 | 9,194 | 3,630 | 3,932 | 233 | 612 | 125 | 36 | 17,762 | 20,248 | 6,206 | 12,387 | 750 | 30,911 | 32 |
| 1957 | 9,413 | 3,278 | 3,736 | 218 | 602 | 124 | 36 | 17,407 | 20,394 | 6,203 | 11,623 | 744 | 30,519 | 28 |
| 1958 | 9,740 | 3,026 | 3,744 | 226 | 599 | 121 | 36 | 17,493 | 20,388 | 5,988 | 10,679 | 725 | 30,321 | 23 |
| 1959 | 10,226 | 2,765 | 3,786 | 239 | 601 | 119 | 36 | 17,772 | 19,778 | 5,700 | 9,874 | 708 | 30,004 | 19 |
| 1960 | 10,837 | 2,458 | 3,684 | 253 | 612 | 118 | 37 | 18,000 | 19,620 | 5,009 | 9,227 | 728 | 28,672 | 19 |
| 1961 | 11,145 | 2,315 | 3,626 | 275 | 625 | 119 | 36 | 18,141 | 19,432 | 4,588 | 8,567 | 711 | 27,368 | 15 |
| 1962 | 11,499 | 2,472 | 3,576 | 288 | 642 | 120 | 36 | 18,632 | 19,274 | 4,377 | 8,079 | 649 | 27,398 | 11 |
| 1963 | 11,766 | 2,701 | 3,322 | 292 | 653 | 121 | 36 | 18,892 | 20,460 | 4,131 | 7,962 | 575 | 27,458 | 8 |
| 1964 | 11,917 | 2,916 | 3,178 | 290 | 670 | 123 | 35 | 19,128 | 21,210 | 4,007 | 7,656 | 527 | 27,557 | 4 |
| 1965 | 11,534 | 3,243 | 3,151 | 309 | 686 | 125 | 33 | 19,081 | 20,998 | 3,866 | 7,510 | 494 | 27,589 | 0 |
| 1966 | 10,254 | 3,560 | 3,053 | 326 | 711 | 127 | 32 | 18,063 | 20,512 | 3,905 | 7,523 | 490 | 27,723 | 0 |
| 1967 | 9,421 | 4,088 | 2,964 | 345 | 734 | 123 | 32 | 17,708 | 20,356 | 3,901 | 7,354 | 528 | 27,179 | 0 |
| 1968 | 8,711 | 4,444 | 2,857 | 341 | 766 | 118 | 31 | 17,268 | 19,460 | 3,944 | 6,752 | 530 | 26,148 | 0 |
| 1969 | 8,245 | 4,696 | 2,787 | 337 | 793 | 114 | 30 | 17,004 | 19,388 | 4,004 | 6,471 | 533 | 25,529 | 0 |
| 1970 | 8,011 | 4,880 | 2,662 | 330 | 799 | 112 | 29 | 16,823 | 20,882 | 3,894 | 6,087 | 501 | 25,490 | 0 |

Source: Mitchell (1975, 1982, 1983)

| Year | Rice | Sorghum | Potatoes | SP | Sugar beet | Sugar Cane | Latin America Total | Wheat | Barley | Oats | Maize | Millet | Rice | Sorghum |
|------|------|---------|----------|-----|-----------|-----------|-------|-------|--------|------|-------|--------|------|---------|
| 1890 | 0 | 0 | 1,068 | 219 | 0 | 0 | 63,461 | 1,602 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1891 | 24 | 0 | 1,111 | 220 | 0 | 0 | 65,296 | 1,814 | 0 | 0 | 249 | 0 | 0 | 0 |
| 1892 | 45 | 0 | 1,138 | 222 | 0 | 0 | 66,434 | 2,050 | 0 | 0 | 249 | 0 | 0 | 0 |
| 1893 | 69 | 0 | 1,161 | 221 | 0 | 0 | 67,653 | 2,250 | 0 | 4 | 249 | 0 | 0 | 0 |
| 1894 | 94 | 0 | 1,183 | 221 | 0 | 0 | 69,171 | 2,522 | 0 | 9 | 419 | 0 | 0 | 0 |
| 1895 | 122 | 0 | 1,188 | 219 | 0 | 0 | 71,397 | 2,762 | 10 | 13 | 621 | 0 | 0 | 0 |
| 1896 | 127 | 0 | 1,181 | 219 | 0 | 0 | 72,605 | 3,041 | 20 | 20 | 623 | 0 | 0 | 0 |
| 1897 | 140 | 0 | 1,179 | 219 | 0 | 0 | 73,960 | 3,259 | 31 | 26 | 904 | 0 | 0 | 0 |
| 1898 | 160 | 0 | 1,201 | 221 | 0 | 0 | 75,140 | 3,641 | 42 | 35 | 1,268 | 0 | 0 | 0 |
| 1899 | 179 | 0 | 1,217 | 223 | 0 | 0 | 75,888 | 3,919 | 58 | 40 | 1,523 | 0 | 0 | 0 |
| 1900 | 198 | 0 | 1,239 | 226 | 0 | 0 | 75,707 | 4,386 | 74 | 46 | 1,784 | 0 | 0 | 0 |
| 1901 | 206 | 0 | 1,261 | 229 | 0 | 0 | 75,944 | 4,925 | 94 | 54 | 2,083 | 0 | 0 | 0 |
| 1902 | 213 | 0 | 1,285 | 231 | 0 | 0 | 76,052 | 5,470 | 110 | 78 | 2,376 | 0 | 0 | 0 |
| 1903 | 214 | 0 | 1,306 | 234 | 0 | 0 | 76,152 | 5,861 | 130 | 142 | 2,561 | 0 | 0 | 0 |
| 1904 | 218 | 0 | 1,333 | 238 | 0 | 0 | 76,315 | 6,300 | 140 | 260 | 2,736 | 0 | 0 | 0 |
| 1905 | 225 | 0 | 1,371 | 244 | 34 | 24 | 77,197 | 6,455 | 150 | 372 | 2,890 | 0 | 12 | 0 |
| 1906 | 242 | 0 | 1,402 | 249 | 66 | 49 | 78,140 | 6,793 | 262 | 524 | 3,003 | 0 | 25 | 0 |
| 1907 | 253 | 0 | 1,425 | 250 | 105 | 74 | 79,302 | 7,202 | 373 | 713 | 3,117 | 0 | 26 | 0 |
| 1908 | 259 | 0 | 1,438 | 250 | 150 | 91 | 80,493 | 7,447 | 375 | 885 | 3,833 | 0 | 26 | 0 |
| 1909 | 269 | 0 | 1,443 | 248 | 197 | 112 | 81,862 | 7,681 | 518 | 1,025 | 4,068 | 0 | 27 | 0 |
| 1910 | 268 | 0 | 1,422 | 242 | 202 | 106 | 82,794 | 7,812 | 531 | 1,155 | 4,729 | 0 | 18 | 0 |
| 1911 | 274 | 0 | 1,405 | 241 | 219 | 95 | 84,054 | 7,714 | 436 | 1,217 | 4,973 | 0 | 14 | 0 |
| 1912 | 291 | 0 | 2,584 | 246 | 234 | 88 | 85,806 | 7,510 | 341 | 1,224 | 5,133 | 0 | 21 | 0 |
| 1913 | 316 | 0 | 2,608 | 257 | 243 | 91 | 87,139 | 7,621 | 373 | 1,253 | 4,664 | 0 | 29 | 0 |
| 1914 | 347 | 0 | 2,618 | 269 | 244 | 90 | 88,943 | 7,781 | 649 | 1,237 | 4,893 | 0 | 42 | 0 |
| 1915 | 382 | 293 | 2,609 | 286 | 261 | 87 | 91,218 | 7,957 | 665 | 1,184 | 4,374 | 0 | 49 | 0 |
| 1916 | 427 | 619 | 2,598 | 298 | 282 | 87 | 92,281 | 7,860 | 679 | 1,138 | 4,223 | 0 | 121 | 0 |
| 1917 | 439 | 918 | 1,424 | 311 | 294 | 88 | 93,122 | 7,924 | 757 | 1,099 | 4,598 | 0 | 235 | 0 |
| 1918 | 447 | 1,191 | 1,432 | 318 | 283 | 87 | 93,605 | 8,021 | 809 | 1,046 | 5,064 | 0 | 283 | 0 |
| 1919 | 429 | 1,531 | 1,415 | 313 | 289 | 86 | 92,971 | 8,163 | 515 | 984 | 5,427 | 0 | 353 | 0 |
| 1920 | 409 | 1,524 | 1,399 | 295 | 299 | 84 | 91,341 | 8,233 | 590 | 947 | 6,092 | 0 | 470 | 0 |
| 1921 | 373 | 1,515 | 1,359 | 284 | 280 | 84 | 90,522 | 8,592 | 675 | 968 | 6,793 | 0 | 405 | 0 |
| 1922 | 375 | 1,556 | 1,296 | 270 | 269 | 76 | 89.263 | 8,957 | 707 | 981 | 7,131 | 0 | 378 | 0 |
| 1923 | 373 | 1,628 | 1,237 | 262 | 285 | 63 | 88,935 | 9,228 | 702 | 923 | 7,339 | 0 | 332 | 0 |
| 1924 | 381 | 1,621 | 1,247 | 259 | 284 | 56 | 89,367 | 9,547 | 720 | 939 | 7,471 | 0 | 484 | 0 |
| 1925 | 383 | 1,621 | 1,241 | 266 | 273 | 58 | 90,188 | 9,558 | 715 | 994 | 7,641 | 0 | 368 | 0 |
| 1926 | 392 | 1,585 | 1,268 | 269 | 284 | 58 | 91,015 | 9,712 | 696 | 994 | 7,914 | 0 | 369 | 0 |
| 1927 | 388 | 1,604 | 1,322 | 286 | 287 | 62 | 91,810 | 9,568 | 686 | 986 | 7,984 | 0 | 436 | 0 |
| 1928 | 375 | 1,615 | 1,354 | 313 | 290 | 74 | 93,105 | 9,354 | 723 | 1,024 | 8,165 | 0 | 621 | 0 |
| 1929 | 361 | 1,635 | 1,347 | 335 | 318 | 81 | 92,185 | 9,044 | 741 | 990 | 8,191 | 0 | 580 | 0 |
| 1930 | 358 | 1,541 | 1,393 | 360 | 324 | 84 | 88,712 | 9,218 | 779 | 977 | 8,759 | 0 | 755 | 0 |
| 1931 | 346 | 1,632 | 1,420 | 382 | 323 | 89 | 87,516 | 8,671 | 819 | 937 | 8,779 | 0 | 945 | 0 |
| 1932 | 347 | 1,498 | 1,377 | 375 | 328 | 94 | 84,672 | 8,775 | 829 | 939 | 8,740 | 0 | 977 | 0 |
| 1933 | 365 | 1,540 | 1,336 | 352 | 328 | 99 | 83,110 | 8,823 | 825 | 920 | 8,561 | 0 | 991 | 0 |
| 1934 | 387 | 1,568 | 1,291 | 343 | 323 | 106 | 83,769 | 8,950 | 787 | 939 | 8,456 | 0 | 1,009 | 1 |
| 1935 | 406 | 1,756 | 1,227 | 324 | 335 | 108 | 85,314 | 8,582 | 790 | 955 | 8,340 | 0 | 1,080 | 1 |
| 1936 | 427 | 1,920 | 1,296 | 304 | 351 | 107 | 84,579 | 8,970 | 788 | 944 | 8,452 | 13 | 1,075 | 1 |
| 1937 | 445 | 2,181 | 1,275 | 301 | 350 | 108 | 85,728 | 8,736 | 750 | 878 | 8,570 | 27 | 1,129 | 1 |
| 1938 | 474 | 2,268 | 1,244 | 295 | 366 | 108 | 84,901 | 8,294 | 714 | 857 | 8,432 | 34 | 1,182 | 1 |
| 1939 | 507 | 2,445 | 1,274 | 300 | 336 | 107 | 84,131 | 7,874 | 726 | 939 | 8,514 | 44 | 1,255 | 1 |
| 1940 | 542 | 2,838 | 1,271 | 300 | 307 | 109 | 85,914 | 7,662 | 680 | 968 | 7,746 | 56 | 1,342 | 1 |
| 1941 | 577 | 2,836 | 1,137 | 301 | 287 | 231 | 87,133 | 7,106 | 703 | 996 | 7,331 | 71 | 1,507 | 1 |
| 1942 | 606 | 2,929 | 1,124 | 293 | 290 | 233 | 88,230 | 7,012 | 849 | 1,060 | 7,188 | 117 | 1,673 | 1 |
| 1943 | 627 | 2,888 | 1,070 | 281 | 284 | 234 | 89,134 | 7,056 | 993 | 1,066 | 7,570 | 180 | 1,831 | 16 |
| 1944 | 653 | 2,923 | 968 | 249 | 296 | 236 | 89,916 | 6,900 | 1,062 | 963 | 7,780 | 203 | 1,996 | 39 |
| 1945 | 686 | 2,661 | 885 | 228 | 306 | 248 | 90,012 | 7,148 | 1,146 | 873 | 8,125 | 222 | 2,116 | 40 |
| 1946 | 697 | 2,965 | 806 | 210 | 323 | 141 | 89,418 | 7,576 | 1,194 | 863 | 8,104 | 210 | 2,263 | 56 |
| 1947 | 731 | 3,077 | 711 | 184 | 314 | 150 | 88,048 | 7,233 | 1,132 | 807 | 9,467 | 182 | 2,371 | 56 |
| 1948 | 754 | 3,064 | 662 | 166 | 296 | 161 | 87,183 | 7,522 | 1,181 | 878 | 9,478 | 167 | 2,453 | 75 |
| 1949 | 783 | 2,982 | 626 | 157 | 300 | 171 | 85,956 | 7,733 | 1,201 | 902 | 9,542 | 199 | 2,572 | 90 |
| 1950 | 837 | 3,385 | 598 | 145 | 316 | 168 | 84,725 | 8,299 | 1,293 | 928 | 10,058 | 195 | 2,749 | 128 |
| 1951 | 852 | 3,591 | 575 | 133 | 301 | 164 | 83,633 | 8,275 | 1,358 | 932 | 10,850 | 207 | 2,897 | 156 |
| 1952 | 818 | 3,644 | 577 | 131 | 309 | 158 | 82,097 | 8,871 | 1,501 | 1,040 | 10,059 | 214 | 3,050 | 193 |
| 1953 | 764 | 4,810 | 574 | 127 | 326 | 154 | 80,625 | 8,799 | 1,489 | 1,038 | 10,362 | 192 | 3,214 | 188 |
| 1954 | 724 | 5,638 | 565 | 120 | 338 | 146 | 79,502 | 9,047 | 1,582 | 1,063 | 10,989 | 158 | 3,304 | 205 |
| 1955 | 646 | 5,902 | 558 | 114 | 340 | 147 | 78,851 | 8,603 | 1,623 | 1,088 | 11,270 | 174 | 3,379 | 222 |
| 1956 | 628 | 6,121 | 557 | 102 | 358 | 150 | 78,449 | 8,449 | 1,602 | 1,118 | 11,277 | 186 | 3,499 | 348 |
| 1957 | 629 | 6,265 | 565 | 94 | 381 | 159 | 77,603 | 8,280 | 1,555 | 1,051 | 11,686 | 187 | 3,665 | 518 |
| 1958 | 664 | 5,601 | 564 | 88 | 399 | 168 | 75,608 | 7,994 | 1,489 | 956 | 12,227 | 186 | 3,909 | 711 |
| 1959 | 673 | 5,342 | 556 | 81 | 427 | 184 | 73,347 | 7,863 | 1,446 | 926 | 12,411 | 184 | 4,197 | 887 |
| 1960 | 689 | 5,087 | 563 | 73 | 467 | 204 | 70,357 | 8,127 | 1,374 | 880 | 12,891 | 176 | 4,549 | 1,111 |
| 1961 | 706 | 4,879 | 563 | 75 | 490 | 219 | 67,611 | 8,280 | 1,327 | 815 | 13,656 | 158 | 4,936 | 1,203 |
| 1962 | 736 | 5,027 | 562 | 73 | 497 | 231 | 66,913 | 8,318 | 1,271 | 768 | 14,234 | 150 | 5,139 | 1,370 |
| 1963 | 752 | 5,307 | 571 | 67 | 499 | 240 | 68,030 | 8,686 | 1,306 | 764 | 14,727 | 156 | 5,323 | 1,525 |
| 1964 | 799 | 5,353 | 575 | 65 | 513 | 243 | 68,509 | 8,761 | 1,274 | 711 | 15,141 | 169 | 5,512 | 1,752 |
| 1965 | 827 | 4,429 | 574 | 63 | 525 | 233 | 67,108 | 8,664 | 1,246 | 653 | 15,201 | 175 | 5,632 | 1,980 |
| 1966 | 828 | 4,674 | 577 | 56 | 539 | 233 | 67,060 | 8,645 | 1,249 | 615 | 15,372 | 178 | 5,708 | 2,384 |
| 1967 | 816 | 4,976 | 571 | 53 | 553 | 238 | 66,525 | 8,728 | 1,273 | 593 | 15,495 | 176 | 5,864 | 2,705 |
| 1968 | 804 | 5,057 | 555 | 51 | 570 | 247 | 64,117 | 8,827 | 1,322 | 570 | 15,368 | 161 | 5,903 | 2,917 |
| 1969 | 789 | 5,216 | 549 | 49 | 554 | 260 | 63,342 | 8,503 | 1,322 | 553 | 15,459 | 159 | 5,976 | 3,232 |
| 1970 | 822 | 6,339 | 547 | 48 | 528 | 276 | 65,415 | 8,494 | 1,298 | 548 | 15,376 | 161 | 5,947 | 3,494 |

| Year | Potatoes | Sugar Cane | Cassava | Total | Africa Wheat | Barley | Oats | Maize | Cassava | Millet | Sorghum | Rice | Sugar cane | Sweet pot. |
|------|----------|-----------|---------|-------|-------|--------|------|-------|---------|--------|---------|------|-----------|------------|
| 1890 | 0 | 10 | 0 | 1,613 | 1,478 | 1,435 | 49 | 100 | 0 | 0 | 0 | 0 | 47 | 0 |
| 1891 | 4 | 23 | 0 | 2,090 | 1,551 | 1,437 | 55 | 99 | 0 | 0 | 0 | 0 | 50 | 0 |
| 1892 | 4 | 22 | 0 | 2,325 | 1,514 | 1,428 | 62 | 99 | 0 | 0 | 0 | 0 | 36 | 0 |
| 1893 | 4 | 22 | 0 | 2,530 | 1,483 | 1,408 | 69 | 90 | 0 | 0 | 0 | 0 | 37 | 0 |
| 1894 | 4 | 22 | 0 | 2,976 | 1,545 | 1,362 | 74 | 68 | 0 | 0 | 0 | 0 | 39 | 0 |
| 1895 | 11 | 21 | 0 | 3,438 | 1,623 | 1,360 | 80 | 72 | 0 | 0 | 0 | 0 | 38 | 0 |
| 1896 | 6 | 25 | 0 | 3,736 | 1,742 | 1,411 | 86 | 222 | 0 | 0 | 0 | 10 | 45 | 0 |
| 1897 | 13 | 40 | 0 | 4,274 | 1,881 | 1,461 | 92 | 376 | 0 | 0 | 0 | 20 | 57 | 0 |
| 1898 | 32 | 68 | 0 | 5,087 | 2,038 | 1,526 | 103 | 540 | 0 | 0 | 0 | 34 | 65 | 0 |
| 1899 | 49 | 85 | 0 | 5,674 | 2,194 | 1,607 | 120 | 718 | 0 | 0 | 0 | 44 | 70 | 0 |
| 1900 | 57 | 106 | 0 | 6,453 | 2,340 | 1,621 | 130 | 875 | 0 | 0 | 0 | 63 | 76 | 0 |
| 1901 | 65 | 110 | 0 | 7,332 | 2,337 | 1,578 | 141 | 888 | 0 | 0 | 0 | 75 | 75 | 0 |
| 1902 | 73 | 120 | 0 | 8,226 | 2,341 | 1,555 | 151 | 884 | 0 | 0 | 0 | 84 | 75 | 0 |
| 1903 | 64 | 111 | 0 | 8,869 | 2,326 | 1,518 | 158 | 866 | 0 | 0 | 0 | 90 | 74 | 0 |
| 1904 | 56 | 117 | 0 | 9,610 | 2,354 | 1,503 | 195 | 858 | 0 | 0 | 6 | 101 | 71 | 0 |
| 1905 | 57 | 133 | 0 | 10,068 | 2,335 | 1,523 | 211 | 836 | 0 | 0 | 6 | 105 | 71 | 0 |
| 1906 | 65 | 159 | 0 | 10,831 | 2,443 | 1,529 | 289 | 1,011 | 0 | 0 | 6 | 179 | 77 | 0 |
| 1907 | 77 | 167 | 0 | 11,676 | 2,544 | 1,534 | 307 | 1,160 | 0 | 19 | 6 | 259 | 78 | 0 |
| 1908 | 97 | 301 | 0 | 12,965 | 2,602 | 1,545 | 325 | 1,146 | 0 | 37 | 6 | 339 | 79 | 0 |
| 1909 | 117 | 415 | 0 | 13,852 | 2,619 | 1,535 | 310 | 1,142 | 0 | 58 | 0 | 418 | 85 | 0 |
| 1910 | 133 | 433 | 0 | 14,812 | 2,637 | 1,524 | 317 | 1,372 | 0 | 80 | 0 | 496 | 98 | 0 |
| 1911 | 154 | 469 | 0 | 14,976 | 2,769 | 1,652 | 294 | 1,504 | 0 | 100 | 0 | 522 | 108 | 0 |
| 1912 | 160 | 486 | 0 | 14,873 | 2,899 | 1,784 | 321 | 1,648 | 0 | 103 | 0 | 436 | 123 | 0 |
| 1913 | 172 | 398 | 0 | 14,509 | 3,048 | 1,902 | 390 | 2,053 | 0 | 110 | 0 | 358 | 142 | 0 |
| 1914 | 174 | 317 | 0 | 15,093 | 3,241 | 2,028 | 449 | 2,419 | 0 | 111 | 0 | 288 | 130 | 0 |
| 1915 | 180 | 314 | 0 | 14,723 | 3,455 | 2,160 | 506 | 2,553 | 0 | 110 | 0 | 200 | 135 | 0 |
| 1916 | 182 | 283 | 0 | 14,486 | 3,458 | 2,296 | 529 | 2,591 | 0 | 111 | 0 | 91 | 140 | 0 |
| 1917 | 194 | 394 | 0 | 15,201 | 3,488 | 2,308 | 566 | 2,755 | 0 | 110 | 0 | 206 | 127 | 0 |
| 1918 | 196 | 389 | 0 | 15,809 | 3,583 | 2,354 | 556 | 2,724 | 0 | 105 | 0 | 188 | 130 | 0 |
| 1919 | 254 | 455 | 0 | 16,151 | 3,618 | 2,415 | 554 | 2,718 | 0 | 102 | 0 | 282 | 161 | 0 |
| 1920 | 312 | 487 | 0 | 17,131 | 3,684 | 2,514 | 556 | 2,855 | 0 | 101 | 0 | 395 | 168 | 0 |
| 1921 | 367 | 605 | 0 | 18,407 | 3,818 | 2,524 | 558 | 2,961 | 0 | 211 | 0 | 504 | 171 | 0 |
| 1922 | 431 | 611 | 0 | 19,195 | 3,959 | 2,642 | 550 | 3,064 | 0 | 284 | 0 | 396 | 192 | 0 |
| 1923 | 450 | 701 | 0 | 19,674 | 3,975 | 2,672 | 533 | 3,234 | 0 | 389 | 0 | 555 | 193 | 0 |
| 1924 | 524 | 761 | 0 | 20,447 | 4,094 | 2,720 | 530 | 3,468 | 0 | 528 | 0 | 590 | 187 | 0 |
| 1925 | 515 | 1,004 | 0 | 20,795 | 4,245 | 2,770 | 537 | 3,613 | 0 | 663 | 0 | 634 | 179 | 0 |
| 1926 | 518 | 926 | 0 | 21,128 | 4,364 | 2,779 | 533 | 3,754 | 0 | 661 | 0 | 689 | 169 | 0 |
| 1927 | 514 | 923 | 0 | 21,098 | 4,444 | 2,753 | 526 | 3,870 | 0 | 695 | 0 | 828 | 161 | 0 |
| 1928 | 510 | 1,048 | 0 | 21,444 | 4,662 | 2,819 | 474 | 4,010 | 0 | 723 | 0 | 870 | 156 | 0 |
| 1929 | 393 | 1,156 | 0 | 21,096 | 4,727 | 2,896 | 439 | 4,170 | 115 | 719 | 0 | 917 | 161 | 0 |
| 1930 | 362 | 1,120 | 0 | 21,971 | 4,816 | 2,902 | 405 | 4,274 | 224 | 590 | 0 | 943 | 165 | 0 |
| 1931 | 310 | 1,217 | 0 | 21,679 | 4,984 | 2,939 | 383 | 4,322 | 265 | 489 | 0 | 987 | 166 | 0 |
| 1932 | 242 | 1,243 | 0 | 21,746 | 5,038 | 3,004 | 377 | 4,411 | 332 | 388 | 0 | 1,041 | 171 | 0 |
| 1933 | 244 | 1,334 | 78 | 21,775 | 5,053 | 3,097 | 416 | 4,398 | 362 | 262 | 0 | 984 | 168 | 0 |
| 1934 | 249 | 1,351 | 172 | 21,914 | 5,134 | 3,072 | 434 | 4,417 | 279 | 153 | 0 | 920 | 163 | 0 |
| 1935 | 265 | 1,415 | 282 | 21,710 | 5,203 | 3,134 | 398 | 4,294 | 170 | 177 | 0 | 889 | 159 | 0 |
| 1936 | 287 | 1,605 | 399 | 22,535 | 5,180 | 3,192 | 356 | 4,454 | 130 | 196 | 0 | 855 | 148 | 0 |
| 1937 | 324 | 1,818 | 516 | 22,749 | 5,314 | 3,264 | 312 | 4,476 | 149 | 221 | 0 | 820 | 130 | 0 |
| 1938 | 333 | 1,823 | 560 | 22,231 | 5,441 | 3,274 | 285 | 4,740 | 221 | 275 | 0 | 883 | 118 | 0 |
| 1939 | 371 | 1,959 | 598 | 22,281 | 5,600 | 3,365 | 245 | 4,884 | 297 | 302 | 0 | 939 | 106 | 0 |
| 1940 | 373 | 2,065 | 650 | 21,541 | 5,522 | 3,286 | 250 | 5,216 | 412 | 327 | 0 | 980 | 108 | 0 |
| 1941 | 408 | 2,166 | 713 | 21,001 | 5,281 | 3,085 | 286 | 5,483 | 555 | 352 | 0 | 994 | 124 | 0 |
| 1942 | 478 | 2,314 | 777 | 21,471 | 5,078 | 2,776 | 301 | 5,042 | 577 | 732 | 259 | 1,056 | 134 | 39 |
| 1943 | 567 | 2,478 | 842 | 22,599 | 4,915 | 2,606 | 353 | 5,067 | 664 | 891 | 504 | 1,178 | 147 | 74 |
| 1944 | 625 | 2,621 | 910 | 23,099 | 4,744 | 2,450 | 344 | 5,009 | 768 | 1,105 | 1,044 | 1,340 | 169 | 115 |
| 1945 | 716 | 2,794 | 988 | 24,167 | 4,705 | 2,487 | 360 | 4,892 | 879 | 1,303 | 1,570 | 1,413 | 178 | 154 |
| 1946 | 767 | 2,931 | 1,021 | 24,985 | 4,923 | 2,631 | 359 | 4,912 | 1,261 | 2,056 | 2,414 | 1,631 | 187 | 459 |
| 1947 | 785 | 3,039 | 1,039 | 26,112 | 5,156 | 2,884 | 364 | 5,488 | 1,536 | 2,108 | 2,522 | 1,752 | 203 | 469 |
| 1948 | 799 | 3,104 | 1,088 | 26,745 | 5,419 | 3,075 | 327 | 5,624 | 1,761 | 2,433 | 2,825 | 1,766 | 217 | 484 |
| 1949 | 816 | 3,144 | 1,143 | 27,342 | 5,605 | 3,214 | 355 | 5,950 | 1,953 | 2,614 | 2,736 | 1,766 | 226 | 502 |
| 1950 | 854 | 3,247 | 1,137 | 28,888 | 5,974 | 3,298 | 351 | 6,187 | 2,063 | 2,982 | 2,626 | 1,855 | 232 | 515 |
| 1951 | 879 | 3,172 | 1,181 | 29,906 | 6,153 | 3,344 | 307 | 6,128 | 1,839 | 2,611 | 2,106 | 1,766 | 239 | 264 |
| 1952 | 884 | 3,024 | 1,243 | 30,079 | 6,287 | 3,380 | 302 | 6,186 | 1,701 | 2,448 | 2,050 | 1,739 | 258 | 268 |
| 1953 | 867 | 2,902 | 1,262 | 30,313 | 6,374 | 3,231 | 254 | 6,218 | 1,636 | 2,219 | 2,074 | 1,786 | 291 | 270 |
| 1954 | 863 | 2,979 | 1,273 | 31,463 | 6,505 | 3,207 | 201 | 6,039 | 1,495 | 2,281 | 2,267 | 1,728 | 323 | 267 |
| 1955 | 832 | 3,006 | 1,319 | 31,515 | 6,486 | 3,094 | 151 | 5,979 | 1,465 | 2,182 | 2,197 | 1,748 | 357 | 284 |
| 1956 | 822 | 3,252 | 1,367 | 31,918 | 6,526 | 3,042 | 134 | 6,005 | 1,386 | 2,278 | 2,537 | 1,816 | 389 | 278 |
| 1957 | 844 | 3,577 | 1,415 | 32,779 | 6,413 | 2,898 | 128 | 6,516 | 1,539 | 3,514 | 3,790 | 1,895 | 380 | 635 |
| 1958 | 884 | 3,942 | 1,515 | 33,811 | 6,273 | 2,796 | 154 | 7,056 | 1,807 | 4,783 | 4,832 | 1,971 | 356 | 905 |
| 1959 | 921 | 4,104 | 1,633 | 34,573 | 6,237 | 2,742 | 204 | 7,931 | 2,109 | 5,825 | 5,857 | 2,140 | 340 | 1,233 |
| 1960 | 958 | 4,242 | 1,763 | 36,072 | 6,251 | 2,637 | 265 | 8,690 | 2,380 | 6,852 | 7,283 | 2,228 | 324 | 1,571 |
| 1961 | 997 | 4,393 | 1,877 | 37,641 | 6,315 | 2,531 | 303 | 9,476 | 2,770 | 8,096 | 8,451 | 2,302 | 312 | 1,941 |
| 1962 | 1,004 | 4,501 | 1,991 | 38,746 | 6,276 | 2,459 | 295 | 9,769 | 3,090 | 7,972 | 8,516 | 2,380 | 339 | 1,910 |
| 1963 | 1,014 | 4,594 | 2,089 | 40,186 | 6,354 | 2,504 | 312 | 10,330 | 3,249 | 7,964 | 8,713 | 2,472 | 366 | 1,975 |
| 1964 | 1,024 | 4,656 | 2,177 | 41,176 | 6,456 | 2,498 | 313 | 10,555 | 3,444 | 8,093 | 8,639 | 2,550 | 385 | 1,930 |
| 1965 | 1,033 | 4,775 | 2,252 | 41,611 | 6,499 | 2,586 | 306 | 10,954 | 3,461 | 8,238 | 8,779 | 2,638 | 401 | 1,901 |
| 1966 | 1,037 | 4,883 | 2,316 | 42,387 | 6,586 | 2,631 | 322 | 11,258 | 3,547 | 8,142 | 8,885 | 2,767 | 413 | 1,850 |
| 1967 | 1,052 | 4,948 | 2,381 | 43,216 | 6,817 | 2,726 | 342 | 11,615 | 3,368 | 8,529 | 9,158 | 2,883 | 419 | 1,855 |
| 1968 | 1,046 | 5,076 | 2,423 | 43,614 | 7,049 | 2,797 | 341 | 11,573 | 3,222 | 8,662 | 9,189 | 2,939 | 424 | 1,778 |
| 1969 | 1,037 | 5,274 | 2,444 | 43,958 | 6,888 | 2,787 | 296 | 11,166 | 2,960 | 8,658 | 9,432 | 2,984 | 431 | 1,782 |
| 1970 | 1,017 | 5,400 | 2,433 | 44,169 | 6,276 | 2,756 | 231 | 10,703 | 2,672 | 7,732 | 9,348 | 3,058 | 439 | 1,468 |

A 26. Areas of main agricultural crops per region, smoothed over 5 year period (in 1000 ha), continued.

| | | OECD Europe | | | | | | | | | | | Eastern Eur | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Potatoes | Total | Wheat | Rye | Barley | Oats | Maize | Buckwheat | Potatoes | Sugar beet | Mixed corn | Rice | Total | Wheat |
| 1890 | 7 | 3,116 | 15,803 | 10,346 | 5,546 | 13,339 | 2,830 | 640 | 6,584 | 1,005 | 1,239 | 183 | 57,514 | 3,929 |
| 1891 | 8 | 3,200 | 15,746 | 10,364 | 5,555 | 13,493 | 2,842 | 634 | 6,645 | 999 | 1,236 | 177 | 57,689 | 3,975 |
| 1892 | 9 | 3,149 | 15,927 | 10,426 | 5,379 | 13,321 | 2,851 | 619 | 6,656 | 1,013 | 1,247 | 138 | 57,577 | 4,022 |
| 1893 | 11 | 3,096 | 15,642 | 10,357 | 5,248 | 13,192 | 2,470 | 607 | 6,658 | 1,016 | 1,212 | 98 | 56,500 | 4,050 |
| 1894 | 11 | 3,098 | 15,459 | 10,227 | 5,115 | 13,102 | 2,081 | 603 | 6,639 | 1,013 | 1,179 | 66 | 55,483 | 4,173 |
| 1895 | 12 | 3,185 | 15,270 | 10,074 | 4,990 | 12,989 | 1,699 | 596 | 6,637 | 1,012 | 1,139 | 33 | 54,439 | 4,434 |
| 1896 | 12 | 3,528 | 15,146 | 9,840 | 4,850 | 12,875 | 1,296 | 599 | 6,637 | 1,052 | 1,081 | 0 | 53,375 | 4,675 |
| 1897 | 12 | 3,900 | 15,871 | 9,989 | 5,151 | 13,058 | 1,339 | 607 | 6,696 | 1,075 | 1,041 | 0 | 54,825 | 4,943 |
| 1898 | 12 | 4,317 | 16,801 | 10,212 | 5,415 | 13,177 | 1,754 | 608 | 6,720 | 1,080 | 1,027 | 0 | 56,795 | 5,202 |
| 1899 | 12 | 4,766 | 17,675 | 10,393 | 5,699 | 13,301 | 2,152 | 604 | 6,732 | 1,092 | 1,033 | 0 | 58,682 | 5,282 |
| 1900 | 13 | 5,119 | 18,633 | 10,618 | 5,945 | 13,337 | 2,615 | 597 | 6,778 | 1,081 | 1,044 | 0 | 60,648 | 5,325 |
| 1901 | 13 | 5,108 | 19,554 | 10,952 | 6,156 | 13,236 | 3,095 | 579 | 6,811 | 1,088 | 1,062 | 0 | 62,533 | 5,422 |
| 1902 | 13 | 5,102 | 19,677 | 10,984 | 6,046 | 13,120 | 3,105 | 559 | 6,834 | 1,074 | 1,058 | 0 | 62,457 | 5,519 |
| 1903 | 14 | 5,048 | 19,765 | 11,027 | 6,094 | 13,302 | 3,129 | 545 | 6,928 | 1,092 | 1,119 | 0 | 63,000 | 5,547 |
| 1904 | 15 | 5,103 | 19,820 | 11,123 | 6,048 | 13,310 | 3,169 | 533 | 7,030 | 1,116 | 1,118 | 0 | 63,268 | 5,626 |
| 1905 | 15 | 5,101 | 19,765 | 11,240 | 6,109 | 13,579 | 3,114 | 527 | 7,113 | 1,150 | 1,122 | 36 | 63,755 | 5,629 |
| 1906 | 21 | 5,554 | 19,732 | 11,350 | 6,162 | 13,911 | 3,032 | 520 | 7,235 | 1,170 | 1,120 | 73 | 64,306 | 5,652 |
| 1907 | 22 | 5,928 | 19,875 | 11,431 | 6,216 | 14,161 | 2,985 | 509 | 7,311 | 1,204 | 1,112 | 109 | 64,913 | 5,560 |
| 1908 | 22 | 6,102 | 19,885 | 11,492 | 6,174 | 14,185 | 2,931 | 500 | 7,380 | 1,245 | 1,062 | 146 | 64,999 | 5,587 |
| 1909 | 23 | 6,190 | 19,873 | 11,573 | 6,290 | 14,425 | 2,864 | 488 | 7,445 | 1,276 | 1,072 | 183 | 65,490 | 5,447 |
| 1910 | 23 | 6,547 | 19,873 | 11,351 | 6,202 | 14,189 | 2,901 | 477 | 7,409 | 1,276 | 957 | 184 | 64,818 | 5,376 |
| 1911 | 30 | 6,979 | 19,864 | 11,192 | 6,186 | 14,063 | 2,928 | 462 | 7,367 | 1,209 | 877 | 186 | 64,334 | 5,274 |
| 1912 | 41 | 7,355 | 19,508 | 10,947 | 6,148 | 13,717 | 2,934 | 449 | 7,184 | 1,152 | 802 | 187 | 63,026 | 5,173 |
| 1913 | 61 | 8,065 | 18,783 | 10,268 | 6,025 | 13,213 | 2,877 | 432 | 6,775 | 1,040 | 717 | 188 | 60,317 | 4,879 |
| 1914 | 61 | 8,727 | 18,209 | 9,660 | 5,818 | 12,592 | 2,855 | 403 | 6,373 | 927 | 741 | 191 | 57,769 | 4,837 |
| 1915 | 81 | 9,198 | 17,725 | 9,172 | 5,716 | 12,294 | 2,790 | 378 | 5,959 | 762 | 901 | 193 | 55,889 | 4,212 |
| 1916 | 88 | 9,305 | 17,331 | 8,583 | 5,610 | 11,959 | 2,757 | 362 | 5,600 | 660 | 1,017 | 188 | 54,067 | 4,404 |
| 1917 | 85 | 9,644 | 17,243 | 8,090 | 5,469 | 11,793 | 2,735 | 350 | 5,495 | 628 | 1,119 | 183 | 53,105 | 4,761 |
| 1918 | 72 | 9,710 | 17,607 | 8,004 | 5,434 | 11,888 | 2,805 | 344 | 5,623 | 638 | 1,234 | 180 | 53,756 | 5,393 |
| 1919 | 90 | 9,940 | 17,901 | 7,884 | 5,492 | 12,041 | 2,847 | 350 | 5,732 | 664 | 1,224 | 175 | 54,311 | 5,877 |
| 1920 | 89 | 10,362 | 18,090 | 7,855 | 5,605 | 12,236 | 2,865 | 356 | 5,948 | 814 | 1,211 | 175 | 55,155 | 7,001 |
| 1921 | 76 | 10,822 | 18,273 | 7,965 | 5,673 | 12,289 | 2,886 | 355 | 6,008 | 928 | 1,192 | 182 | 55,752 | 7,292 |
| 1922 | 76 | 11,162 | 18,328 | 8,056 | 5,781 | 12,404 | 2,895 | 356 | 6,053 | 954 | 1,192 | 190 | 56,210 | 7,517 |
| 1923 | 77 | 11,628 | 18,525 | 8,136 | 5,879 | 12,447 | 2,899 | 357 | 6,078 | 1,005 | 1,193 | 197 | 56,716 | 7,726 |
| 1924 | 66 | 12,184 | 18,609 | 8,098 | 5,929 | 12,467 | 2,890 | 357 | 6,120 | 1,059 | 1,196 | 202 | 56,925 | 7,962 |
| 1925 | 55 | 12,696 | 18,706 | 8,100 | 5,956 | 12,423 | 2,889 | 344 | 6,141 | 1,078 | 1,188 | 202 | 57,027 | 8,231 |
| 1926 | 56 | 13,006 | 18,805 | 7,994 | 5,984 | 12,365 | 2,889 | 337 | 6,177 | 1,132 | 1,208 | 204 | 57,096 | 8,598 |
| 1927 | 57 | 13,333 | 18,956 | 7,815 | 6,026 | 12,247 | 2,886 | 333 | 6,174 | 1,171 | 1,224 | 203 | 57,034 | 8,962 |
| 1928 | 49 | 13,761 | 19,165 | 7,685 | 6,072 | 12,120 | 2,890 | 325 | 6,183 | 1,168 | 1,231 | 201 | 57,039 | 9,129 |
| 1929 | 48 | 14,194 | 19,515 | 7,629 | 6,063 | 11,926 | 2,917 | 319 | 6,165 | 1,165 | 1,241 | 201 | 57,142 | 9,299 |
| 1930 | 47 | 14,365 | 19,913 | 7,563 | 6,070 | 11,689 | 2,942 | 320 | 6,153 | 1,181 | 1,255 | 202 | 57,287 | 9,349 |
| 1931 | 45 | 14,581 | 20,194 | 7,492 | 6,045 | 11,481 | 2,943 | 313 | 6,178 | 1,182 | 1,283 | 202 | 57,314 | 9,320 |
| 1932 | 44 | 14,805 | 19,478 | 7,383 | 5,648 | 11,167 | 2,887 | 305 | 6,116 | 1,206 | 1,309 | 194 | 55,694 | 9,271 |
| 1933 | 51 | 14,790 | 18,609 | 7,187 | 5,284 | 10,832 | 2,805 | 293 | 6,050 | 1,259 | 1,339 | 188 | 53,845 | 9,247 |
| 1934 | 44 | 14,617 | 17,623 | 6,986 | 4,953 | 10,709 | 2,730 | 283 | 6,005 | 1,307 | 1,370 | 182 | 52,147 | 9,197 |
| 1935 | 39 | 14,464 | 17,301 | 6,857 | 4,871 | 10,643 | 2,719 | 273 | 5,996 | 1,345 | 1,275 | 185 | 51,466 | 9,135 |
| 1936 | 32 | 14,542 | 16,657 | 6,833 | 4,827 | 10,531 | 2,669 | 260 | 5,938 | 1,391 | 1,167 | 191 | 50,464 | 8,745 |
| 1937 | 25 | 14,711 | 17,064 | 6,777 | 5,131 | 10,503 | 2,651 | 241 | 5,951 | 1,441 | 1,100 | 206 | 51,065 | 7,923 |
| 1938 | 17 | 15,253 | 17,503 | 6,666 | 5,435 | 10,593 | 2,636 | 225 | 5,974 | 1,498 | 1,049 | 220 | 51,800 | 7,171 |
| 1939 | 16 | 15,756 | 18,068 | 6,684 | 5,717 | 10,437 | 2,610 | 207 | 5,978 | 1,538 | 988 | 232 | 52,458 | 6,438 |
| 1940 | 15 | 16,117 | 17,844 | 6,599 | 5,707 | 10,238 | 2,490 | 187 | 5,929 | 1,563 | 1,041 | 228 | 51,826 | 5,738 |
| 1941 | 27 | 16,186 | 17,419 | 5,551 | 5,480 | 9,639 | 2,365 | 171 | 5,356 | 1,441 | 1,082 | 209 | 48,713 | 5,084 |
| 1942 | 40 | 16,034 | 17,038 | 4,722 | 5,281 | 9,124 | 2,296 | 155 | 4,809 | 1,349 | 1,086 | 195 | 46,054 | 4,970 |
| 1943 | 54 | 16,454 | 16,451 | 3,975 | 5,064 | 8,551 | 2,181 | 141 | 4,255 | 1,237 | 1,074 | 185 | 43,114 | 4,923 |
| 1944 | 66 | 17,153 | 16,014 | 3,152 | 4,870 | 8,037 | 2,123 | 132 | 3,747 | 1,137 | 1,076 | 178 | 40,467 | 5,323 |
| 1945 | 78 | 18,018 | 15,835 | 2,440 | 4,754 | 7,624 | 2,183 | 121 | 3,226 | 1,052 | 1,093 | 180 | 38,508 | 5,317 |
| 1946 | 78 | 20,911 | 16,554 | 3,087 | 5,030 | 7,947 | 2,307 | 114 | 3,659 | 1,206 | 1,200 | 197 | 41,301 | 5,977 |
| 1947 | 78 | 22,560 | 17,082 | 3,641 | 5,328 | 8,229 | 2,422 | 111 | 4,052 | 1,338 | 1,304 | 213 | 43,719 | 6,255 |
| 1948 | 78 | 24,008 | 17,865 | 4,268 | 5,728 | 8,513 | 2,599 | 106 | 4,403 | 1,485 | 1,415 | 231 | 46,613 | 6,735 |
| 1949 | 77 | 24,998 | 18,414 | 4,793 | 6,205 | 8,810 | 2,729 | 99 | 4,734 | 1,616 | 1,530 | 248 | 49,177 | 6,440 |
| 1950 | 76 | 26,160 | 18,971 | 5,285 | 6,573 | 8,942 | 2,767 | 94 | 5,093 | 1,744 | 1,633 | 263 | 51,366 | 6,828 |
| 1951 | 65 | 24,822 | 19,124 | 5,198 | 6,820 | 8,827 | 2,788 | 89 | 5,044 | 1,767 | 1,640 | 272 | 51,569 | 6,787 |
| 1952 | 65 | 24,684 | 18,974 | 5,167 | 7,259 | 8,730 | 2,854 | 84 | 5,016 | 1,773 | 1,651 | 271 | 51,779 | 6,955 |
| 1953 | 63 | 24,415 | 19,212 | 5,091 | 7,518 | 8,452 | 2,884 | 78 | 4,985 | 1,761 | 1,624 | 262 | 51,868 | 6,906 |
| 1954 | 64 | 24,378 | 19,423 | 5,034 | 7,757 | 8,119 | 2,905 | 72 | 4,918 | 1,797 | 1,582 | 253 | 51,860 | 7,136 |
| 1955 | 65 | 24,007 | 19,443 | 4,904 | 8,117 | 7,835 | 2,946 | 65 | 4,816 | 1,818 | 1,533 | 244 | 51,720 | 7,080 |
| 1956 | 73 | 24,465 | 19,469 | 4,817 | 8,468 | 7,517 | 3,021 | 59 | 4,768 | 1,857 | 1,486 | 236 | 51,697 | 6,976 |
| 1957 | 72 | 27,780 | 19,584 | 4,616 | 8,728 | 7,163 | 3,083 | 53 | 4,676 | 1,868 | 1,437 | 232 | 51,441 | 6,906 |
| 1958 | 72 | 31,005 | 19,580 | 4,419 | 9,105 | 6,958 | 3,127 | 48 | 4,602 | 1,887 | 1,423 | 229 | 51,379 | 6,835 |
| 1959 | 72 | 34,691 | 19,315 | 4,201 | 9,587 | 6,755 | 3,198 | 45 | 4,548 | 1,862 | 1,395 | 225 | 51,133 | 6,776 |
| 1960 | 71 | 38,553 | 19,306 | 4,021 | 9,981 | 6,524 | 3,226 | 43 | 4,506 | 1,864 | 1,367 | 222 | 51,059 | 6,781 |
| 1961 | 70 | 42,566 | 19,368 | 3,851 | 10,428 | 6,261 | 3,202 | 40 | 4,349 | 1,848 | 1,321 | 220 | 50,886 | 6,785 |
| 1962 | 68 | 43,075 | 19,428 | 3,693 | 10,918 | 6,022 | 3,151 | 36 | 4,200 | 1,841 | 1,266 | 220 | 50,776 | 6,853 |
| 1963 | 68 | 44,309 | 19,170 | 3,544 | 11,462 | 5,831 | 3,151 | 33 | 4,049 | 1,849 | 1,197 | 224 | 50,509 | 6,904 |
| 1964 | 69 | 44,931 | 19,234 | 3,412 | 11,929 | 5,666 | 3,130 | 27 | 3,871 | 1,878 | 1,154 | 231 | 50,531 | 7,055 |
| 1965 | 73 | 45,836 | 18,989 | 3,233 | 12,524 | 5,553 | 3,152 | 24 | 3,003 | 1,873 | 1,115 | 241 | 49,706 | 7,174 |
| 1966 | 78 | 46,478 | | | | | | | | | | | | |
| 1967 | 83 | 47,795 | | | | | | | | | | | | |
| 1968 | 85 | 48,060 | | | | | | | | | | | | |
| 1969 | 88 | 47,472 | | | | | | | | | | | | |
| 1970 | 92 | 44,775 | | | | | | | | | | | | |

| Year | ope Rye | Barley | Oats | Maize | Potatoes | Sugar beet | Total | CIS Wheat | Rye | Barley | Oats | Maize | Potatoes | Sugar beet |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1890 | 1,579 | 1,676 | 1,329 | 4,142 | 506 | 77 | 13,238 | 13,520 | 26,660 | 6,620 | 14,140 | 860 | 2,620 | 332 |
| 1891 | 1,564 | 1,683 | 1,339 | 4,321 | 516 | 79 | 13,476 | 13,860 | 26,640 | 6,840 | 14,520 | 860 | 2,840 | 354 |
| 1892 | 1,576 | 1,694 | 1,344 | 4,388 | 519 | 80 | 13,623 | 14,240 | 27,020 | 7,060 | 14,940 | 880 | 3,060 | 376 |
| 1893 | 1,587 | 1,713 | 1,355 | 4,465 | 518 | 80 | 13,768 | 14,780 | 27,420 | 7,280 | 15,400 | 920 | 3,300 | 404 |
| 1894 | 1,534 | 1,713 | 1,388 | 4,655 | 523 | 78 | 14,064 | 15,440 | 27,720 | 7,440 | 15,680 | 980 | 3,400 | 440 |
| 1895 | 1,559 | 1,806 | 1,442 | 4,925 | 524 | 75 | 14,765 | 16,020 | 27,880 | 7,560 | 15,900 | 1,020 | 3,520 | 478 |
| 1896 | 1,593 | 1,841 | 1,488 | 5,160 | 533 | 78 | 15,366 | 16,600 | 28,160 | 7,640 | 16,000 | 1,080 | 3,620 | 514 |
| 1897 | 1,592 | 1,857 | 1,507 | 5,327 | 549 | 81 | 15,855 | 17,220 | 28,520 | 7,800 | 16,180 | 1,100 | 3,720 | 534 |
| 1898 | 1,569 | 1,841 | 1,532 | 5,448 | 565 | 85 | 16,241 | 17,840 | 28,720 | 8,020 | 16,340 | 1,140 | 3,820 | 534 |
| 1899 | 1,596 | 1,875 | 1,578 | 5,454 | 580 | 89 | 16,454 | 18,500 | 28,640 | 8,240 | 16,440 | 1,160 | 3,860 | 536 |
| 1900 | 1,579 | 1,835 | 1,619 | 5,448 | 598 | 94 | 16,498 | 19,080 | 28,720 | 8,380 | 16,460 | 1,140 | 3,880 | 544 |
| 1901 | 1,573 | 1,870 | 1,663 | 5,446 | 608 | 98 | 16,679 | 19,320 | 28,720 | 8,580 | 16,520 | 1,140 | 3,920 | 552 |
| 1902 | 1,602 | 1,920 | 1,745 | 5,573 | 624 | 104 | 17,086 | 19,560 | 28,440 | 8,800 | 16,520 | 1,160 | 3,960 | 556 |
| 1903 | 1,615 | 1,985 | 1,806 | 5,687 | 639 | 109 | 17,387 | 19,700 | 28,300 | 8,940 | 16,520 | 1,160 | 4,000 | 572 |
| 1904 | 1,603 | 2,014 | 1,837 | 5,720 | 651 | 112 | 17,563 | 21,980 | 28,460 | 9,660 | 17,080 | 1,340 | 4,140 | 598 |
| 1905 | 1,594 | 2,048 | 1,871 | 5,859 | 669 | 129 | 17,800 | 24,380 | 28,620 | 10,460 | 17,680 | 1,540 | 4,280 | 640 |
| 1906 | 1,603 | 2,069 | 1,901 | 5,956 | 684 | 135 | 18,001 | 26,900 | 28,880 | 11,200 | 18,180 | 1,720 | 4,420 | 668 |
| 1907 | 1,578 | 2,051 | 1,889 | 5,894 | 695 | 142 | 17,810 | 29,720 | 29,500 | 12,040 | 18,840 | 1,900 | 4,580 | 700 |
| 1908 | 1,580 | 2,022 | 1,857 | 5,847 | 706 | 158 | 17,757 | 32,070 | 29,728 | 12,702 | 19,260 | 2,054 | 4,650 | 718 |
| 1909 | 1,547 | 2,006 | 1,861 | 5,828 | 718 | 176 | 17,583 | 31,672 | 29,405 | 12,567 | 18,820 | 2,002 | 4,592 | 700 |
| 1910 | 1,532 | 1,974 | 1,815 | 5,704 | 719 | 179 | 17,300 | 30,666 | 28,571 | 12,195 | 18,120 | 1,944 | 4,446 | 643 |
| 1911 | 1,485 | 1,960 | 1,788 | 5,643 | 724 | 180 | 17,053 | 29,411 | 27,385 | 11,626 | 17,300 | 1,841 | 4,211 | 578 |
| 1912 | 1,444 | 1,959 | 1,787 | 5,596 | 713 | 172 | 16,844 | 27,368 | 25,728 | 10,640 | 16,100 | 1,712 | 3,868 | 506 |
| 1913 | 1,372 | 1,828 | 1,684 | 5,032 | 691 | 157 | 15,642 | 25,326 | 24,071 | 9,655 | 14,900 | 1,584 | 3,526 | 434 |
| 1914 | 1,374 | 1,829 | 1,593 | 4,894 | 647 | 144 | 15,318 | 23,284 | 22,414 | 8,670 | 13,700 | 1,456 | 3,184 | 350 |
| 1915 | 1,705 | 1,739 | 1,540 | 4,447 | 748 | 122 | 14,512 | 20,910 | 21,148 | 7,822 | 12,440 | 1,374 | 2,690 | 273 |
| 1916 | 2,444 | 2,135 | 2,326 | 4,313 | 1,126 | 159 | 16,906 | 17,945 | 20,634 | 6,651 | 10,920 | 1,497 | 2,485 | 222 |
| 1917 | 3,312 | 2,605 | 3,242 | 4,303 | 1,601 | 210 | 20,034 | 15,928 | 21,211 | 6,177 | 10,520 | 1,546 | 2,608 | 202 |
| 1918 | 4,424 | 3,284 | 4,398 | 4,817 | 2,133 | 264 | 24,713 | 15,940 | 22,620 | 6,100 | 10,580 | 1,760 | 2,980 | 220 |
| 1919 | 5,498 | 3,837 | 5,486 | 4,850 | 2,706 | 330 | 28,584 | 16,940 | 24,480 | 6,040 | 10,860 | 2,200 | 3,480 | 294 |
| 1920 | 6,121 | 4,481 | 6,603 | 5,307 | 3,155 | 433 | 33,101 | 19,580 | 26,440 | 6,240 | 11,940 | 2,540 | 4,240 | 378 |
| 1921 | 6,513 | 4,606 | 6,881 | 5,506 | 3,327 | 494 | 34,619 | 23,620 | 27,780 | 6,900 | 13,960 | 2,680 | 4,840 | 474 |
| 1922 | 6,957 | 4,628 | 6,874 | 5,678 | 3,424 | 541 | 35,620 | 26,520 | 27,640 | 7,020 | 15,060 | 3,220 | 5,220 | 576 |
| 1923 | 7,189 | 4,631 | 6,766 | 5,880 | 3,491 | 594 | 36,277 | 28,200 | 27,060 | 7,180 | 16,280 | 3,440 | 5,420 | 654 |
| 1924 | 7,370 | 4,604 | 6,652 | 6,126 | 3,568 | 624 | 36,906 | 30,120 | 27,160 | 7,380 | 17,320 | 3,500 | 5,560 | 756 |
| 1925 | 7,782 | 4,694 | 6,650 | 6,435 | 3,667 | 630 | 38,090 | 31,760 | 26,840 | 7,280 | 17,780 | 3,700 | 5,760 | 926 |
| 1926 | 8,060 | 4,785 | 6,603 | 6,543 | 3,734 | 624 | 38,947 | 32,520 | 26,440 | 7,220 | 17,380 | 3,860 | 5,880 | 1,102 |
| 1927 | 8,129 | 4,920 | 6,663 | 6,705 | 3,817 | 589 | 39,784 | 33,420 | 26,600 | 7,300 | 17,280 | 3,780 | 5,860 | 1,190 |
| 1928 | 8,170 | 4,959 | 6,724 | 6,855 | 3,887 | 524 | 40,247 | 34,520 | 26,420 | 7,380 | 17,100 | 3,820 | 5,940 | 1,272 |
| 1929 | 8,298 | 4,982 | 6,786 | 6,970 | 3,928 | 469 | 40,732 | 35,180 | 25,340 | 7,720 | 17,180 | 3,720 | 6,280 | 1,310 |
| 1930 | 8,250 | 4,889 | 6,733 | 7,188 | 3,937 | 417 | 40,763 | 35,600 | 24,200 | 8,180 | 17,300 | 3,540 | 6,560 | 1,284 |
| 1931 | 8,197 | 4,789 | 6,674 | 7,369 | 3,986 | 368 | 40,703 | 36,980 | 23,580 | 8,660 | 17,740 | 3,360 | 6,720 | 1,214 |
| 1932 | 8,215 | 4,687 | 6,724 | 7,487 | 4,032 | 354 | 40,769 | 38,840 | 22,820 | 9,040 | 17,980 | 2,980 | 7,080 | 1,208 |
| 1933 | 8,231 | 4,628 | 6,769 | 7,568 | 4,094 | 370 | 40,905 | 39,980 | 21,580 | 9,200 | 18,060 | 2,740 | 7,370 | 1,210 |
| 1934 | 8,258 | 4,516 | 6,790 | 7,631 | 4,164 | 379 | 40,934 | 40,620 | 21,540 | 9,480 | 18,440 | 2,840 | 7,430 | 1,210 |
| 1935 | 8,341 | 4,375 | 6,759 | 7,433 | 4,234 | 394 | 40,670 | 40,264 | 21,708 | 9,704 | 18,628 | 2,980 | 7,474 | 1,188 |
| 1936 | 8,022 | 4,116 | 6,684 | 7,094 | 4,211 | 441 | 39,313 | 38,812 | 21,524 | 9,892 | 18,684 | 3,200 | 7,682 | 1,164 |
| 1937 | 7,646 | 3,763 | 5,968 | 6,650 | 4,190 | 497 | 36,636 | 36,724 | 21,528 | 10,044 | 18,448 | 3,580 | 7,814 | 1,126 |
| 1938 | 7,204 | 3,448 | 5,265 | 6,124 | 4,102 | 541 | 33,855 | 34,140 | 22,180 | 10,140 | 17,880 | 3,900 | 7,940 | 1,070 |
| 1939 | 6,790 | 3,161 | 4,577 | 5,617 | 4,002 | 600 | 31,186 | 31,060 | 21,620 | 9,960 | 16,720 | 4,000 | 8,060 | 990 |
| 1940 | 6,335 | 2,899 | 3,928 | 5,197 | 3,916 | 646 | 28,659 | 29,140 | 21,300 | 9,760 | 15,864 | 4,104 | 8,168 | 945 |
| 1941 | 6,011 | 2,748 | 3,260 | 4,988 | 3,728 | 614 | 26,433 | 28,380 | 21,220 | 9,540 | 15,312 | 4,212 | 8,264 | 936 |
| 1942 | 5,642 | 2,701 | 3,140 | 5,000 | 3,475 | 573 | 25,501 | 28,780 | 21,380 | 9,300 | 15,064 | 4,324 | 8,348 | 961 |
| 1943 | 5,671 | 2,619 | 3,068 | 5,331 | 3,396 | 558 | 25,566 | 30,340 | 21,780 | 9,040 | 15,120 | 4,440 | 8,420 | 1,022 |
| 1944 | 5,798 | 2,642 | 3,536 | 5,581 | 3,345 | 546 | 26,771 | 33,060 | 22,420 | 8,760 | 15,480 | 4,560 | 8,480 | 1,118 |
| 1945 | 5,911 | 2,538 | 3,825 | 4,850 | 3,292 | 544 | 26,277 | 35,889 | 22,705 | 8,603 | 15,708 | 4,569 | 8,508 | 1,212 |
| 1946 | 6,309 | 2,640 | 4,335 | 4,908 | 3,471 | 601 | 28,242 | 38,828 | 22,636 | 8,568 | 15,804 | 4,468 | 8,504 | 1,305 |
| 1947 | 6,717 | 2,699 | 4,837 | 4,714 | 3,678 | 675 | 29,575 | 41,876 | 22,212 | 8,656 | 15,768 | 4,256 | 8,468 | 1,395 |
| 1948 | 6,844 | 2,784 | 5,286 | 4,385 | 3,766 | 730 | 30,530 | 44,580 | 21,700 | 9,020 | 15,780 | 4,180 | 8,500 | 1,472 |
| 1949 | 6,685 | 2,767 | 5,195 | 4,045 | 3,796 | 773 | 29,703 | 48,980 | 20,780 | 9,240 | 15,500 | 4,460 | 8,600 | 1,562 |
| 1950 | 6,616 | 2,911 | 5,291 | 4,874 | 3,842 | 811 | 31,174 | 53,026 | 19,967 | 9,913 | 15,340 | 5,447 | 8,740 | 1,685 |
| 1951 | 6,529 | 2,881 | 5,271 | 5,012 | 3,842 | 848 | 31,171 | 57,840 | 19,300 | 9,980 | 15,020 | 5,820 | 9,020 | 1,810 |
| 1952 | 6,496 | 2,867 | 5,298 | 5,329 | 3,862 | 866 | 31,674 | 61,500 | 18,840 | 9,860 | 14,920 | 6,000 | 9,260 | 1,996 |
| 1953 | 6,454 | 2,852 | 5,352 | 5,610 | 3,891 | 868 | 31,934 | 64,240 | 18,160 | 9,460 | 14,600 | 5,840 | 9,420 | 2,226 |
| 1954 | 6,523 | 2,868 | 5,348 | 5,942 | 3,944 | 882 | 32,644 | 64,220 | 17,580 | 9,800 | 14,200 | 5,620 | 9,420 | 2,482 |
| 1955 | 6,532 | 2,843 | 5,369 | 6,041 | 3,969 | 912 | 32,745 | 64,420 | 17,240 | 9,760 | 13,480 | 5,200 | 9,360 | 2,704 |
| 1956 | 6,468 | 2,837 | 5,370 | 6,115 | 4,009 | 938 | 32,713 | 64,080 | 17,000 | 10,780 | 12,060 | 5,440 | 9,140 | 2,916 |
| 1957 | 6,361 | 2,856 | 5,331 | 6,099 | 4,029 | 967 | 32,549 | 63,680 | 16,400 | 12,740 | 10,240 | 5,960 | 8,940 | 3,166 |
| 1958 | 6,189 | 2,839 | 5,209 | 5,960 | 4,040 | 1,006 | 32,078 | 64,660 | 16,340 | 15,140 | 8,520 | 6,280 | 8,740 | 3,438 |
| 1959 | 5,934 | 2,830 | 5,138 | 5,912 | 4,046 | 1,024 | 31,659 | 66,620 | 16,300 | 16,600 | 7,280 | 5,900 | 8,640 | 3,606 |
| 1960 | 5,714 | 2,849 | 4,998 | 5,825 | 4,041 | 1,043 | 31,251 | 68,020 | 15,660 | 18,140 | 6,420 | 5,100 | 8,540 | 3,742 |
| 1961 | 5,554 | 2,853 | 4,860 | 5,718 | 3,976 | 1,049 | 30,796 | 67,940 | 14,760 | 19,100 | 6,780 | 4,400 | 8,460 | 3,868 |
| 1962 | 5,408 | 2,865 | 4,765 | 5,656 | 3,914 | 1,047 | 30,508 | 68,460 | 14,220 | 19,300 | 7,440 | 3,680 | 8,420 | 3,830 |
| 1963 | 5,281 | 2,863 | 4,721 | 5,640 | 3,838 | 1,036 | 30,283 | 68,160 | 12,700 | 19,740 | 8,160 | 3,500 | 8,340 | 3,686 |
| 1964 | 5,225 | 2,842 | 4,657 | 5,593 | 3,758 | 1,028 | 30,158 | | | | | | | |
| 1965 | 5,114 | 2,854 | 4,602 | 5,571 | 3,671 | 995 | 29,981 | | | | | | | |
| 1966 | | | | | | | | | | | | | | |
| 1967 | | | | | | | | | | | | | | |
| 1968 | | | | | | | | | | | | | | |
| 1969 | | | | | | | | | | | | | | |
| 1970 | | | | | | | | | | | | | | |

| Year | Middle East | | | | | | | | India region | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Wheat | Barley | Maize | Rice | Oats | Potatoes | Sugar beet | Total | Wheat | Barley | Maize | Millet | Sorghum |
| 1890 | 64,752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,740 | 1,427 | 1,276 | 3,636 | 5,009 |
| 1891 | 65,914 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,040 | 1,898 | 1,709 | 4,790 | 6,673 |
| 1892 | 67,576 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11,000 | 2,431 | 2,177 | 5,903 | 8,275 |
| 1893 | 69,504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10,480 | 2,712 | 2,256 | 5,934 | 8,472 |
| 1894 | 71,100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10,221 | 2,810 | 2,326 | 6,041 | 8,643 |
| 1895 | 72,378 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,961 | 2,764 | 2,338 | 5,767 | 8,703 |
| 1896 | 73,614 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,181 | 2,908 | 2,378 | 6,125 | 8,820 |
| 1897 | 75,074 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,152 | 3,027 | 2,412 | 6,385 | 8,985 |
| 1898 | 76,414 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,390 | 2,912 | 2,405 | 6,436 | 8,930 |
| 1899 | 77,376 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,303 | 2,904 | 2,405 | 6,644 | 8,872 |
| 1900 | 78,204 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,542 | 3,012 | 2,466 | 6,813 | 8,992 |
| 1901 | 78,752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10,327 | 3,047 | 2,462 | 6,510 | 8,888 |
| 1902 | 78,996 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10,528 | 3,021 | 2,460 | 6,644 | 8,803 |
| 1903 | 79,192 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10,995 | 3,148 | 2,457 | 6,834 | 8,709 |
| 1904 | 83,258 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10,956 | 3,267 | 2,509 | 7,074 | 9,011 |
| 1905 | 87,600 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10,645 | 3,329 | 2,639 | 7,650 | 8,907 |
| 1906 | 91,968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10,464 | 3,397 | 2,776 | 8,046 | 8,943 |
| 1907 | 97,280 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10,606 | 3,468 | 2,809 | 7,947 | 8,751 |
| 1908 | 101,183 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10,715 | 3,595 | 2,896 | 8,034 | 8,670 |
| 1909 | 99,758 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11,295 | 3,592 | 2,932 | 7,976 | 8,385 |
| 1910 | 96,585 | 486 | 248 | 0 | 0 | 24 | 0 | 0 | 757 | 11,612 | 3,538 | 2,907 | 7,931 | 8,338 |
| 1911 | 92,352 | 486 | 248 | 0 | 0 | 24 | 0 | 0 | 757 | 12,117 | 3,536 | 2,937 | 7,838 | 8,489 |
| 1912 | 85,922 | 500 | 260 | 0 | 0 | 24 | 0 | 0 | 784 | 12,296 | 3,558 | 3,033 | 7,993 | 8,773 |
| 1913 | 79,496 | 500 | 260 | 0 | 0 | 24 | 0 | 0 | 784 | 12,489 | 3,492 | 3,850 | 7,688 | 8,785 |
| 1914 | 73,058 | 512 | 269 | 0 | 0 | 24 | 0 | 0 | 805 | 12,927 | 3,609 | 3,849 | 7,320 | 8,724 |
| 1915 | 66,658 | 39 | 30 | 0 | 0 | 0 | 0 | 0 | 69 | 12,547 | 3,541 | 3,951 | 7,110 | 8,827 |
| 1916 | 60,355 | 50 | 39 | 0 | 0 | 0 | 0 | 0 | 89 | 12,343 | 3,522 | 3,971 | 6,912 | 8,798 |
| 1917 | 58,193 | 52 | 37 | 0 | 0 | 0 | 0 | 0 | 89 | 11,975 | 3,579 | 4,040 | 6,978 | 8,986 |
| 1918 | 60,200 | 148 | 96 | 0 | 0 | 0 | 0 | 0 | 244 | 11,592 | 3,531 | 3,287 | 7,077 | 9,125 |
| 1919 | 64,294 | 277 | 178 | 0 | 0 | 0 | 0 | 0 | 455 | 11,217 | 3,421 | 3,339 | 7,295 | 9,175 |
| 1920 | 71,358 | 732 | 443 | 54 | 0 | 15 | 0 | 0 | 1,245 | 11,814 | 3,524 | 3,080 | 7,153 | 9,174 |
| 1921 | 80,254 | 1,210 | 705 | 98 | 0 | 33 | 0 | 0 | 2,046 | 11,962 | 3,475 | 2,864 | 7,146 | 9,006 |
| 1922 | 85,256 | 1,313 | 753 | 136 | 0 | 52 | 0 | 0 | 2,253 | 12,342 | 3,308 | 2,614 | 6,947 | 8,756 |
| 1923 | 88,234 | 1,896 | 1,131 | 168 | 0 | 71 | 2 | 0 | 3,268 | 12,592 | 3,216 | 2,497 | 6,925 | 8,627 |
| 1924 | 91,796 | 2,579 | 1,629 | 236 | 0 | 98 | 7 | 0 | 4,550 | 12,701 | 3,165 | 2,399 | 6,841 | 8,578 |
| 1925 | 94,046 | 2,928 | 1,897 | 275 | 0 | 118 | 18 | 0 | 5,236 | 12,765 | 3,218 | 2,569 | 6,950 | 8,641 |
| 1926 | 94,402 | 3,282 | 2,204 | 307 | 0 | 133 | 24 | 0 | 5,950 | 12,755 | 3,229 | 2,649 | 7,073 | 8,776 |
| 1927 | 95,430 | 3,909 | 2,518 | 353 | 0 | 153 | 32 | 0 | 6,965 | 12,894 | 3,236 | 2,760 | 7,086 | 8,815 |
| 1928 | 96,452 | 3,902 | 2,424 | 394 | 0 | 161 | 36 | 0 | 6,918 | 13,096 | 3,240 | 2,796 | 7,079 | 8,832 |
| 1929 | 96,730 | 4,083 | 2,403 | 415 | 0 | 171 | 39 | 0 | 7,111 | 13,160 | 3,188 | 2,932 | 7,080 | 8,890 |
| 1930 | 96,664 | 4,421 | 2,483 | 408 | 0 | 172 | 40 | 0 | 7,525 | 13,492 | 3,057 | 2,994 | 7,044 | 8,778 |
| 1931 | 98,254 | 4,884 | 2,544 | 414 | 0 | 185 | 44 | 0 | 8,071 | 13,721 | 2,993 | 3,141 | 6,957 | 8,673 |
| 1932 | 99,948 | 5,500 | 2,892 | 415 | 0 | 199 | 47 | 0 | 9,053 | 13,839 | 2,936 | 2,663 | 6,733 | 8,825 |
| 1933 | 100,140 | 6,147 | 3,248 | 437 | 0 | 216 | 51 | 0 | 10,099 | 13,791 | 2,936 | 2,554 | 6,582 | 8,764 |
| 1934 | 101,560 | 6,229 | 3,358 | 445 | 0 | 229 | 55 | 0 | 10,315 | 14,007 | 2,856 | 2,629 | 6,533 | 8,730 |
| 1935 | 101,946 | 6,182 | 3,389 | 453 | 0 | 259 | 55 | 7 | 10,344 | 13,955 | 2,743 | 2,501 | 6,528 | 8,715 |
| 1936 | 100,958 | 6,314 | 3,427 | 473 | 0 | 292 | 59 | 16 | 10,580 | 13,916 | 2,638 | 2,358 | 7,233 | 10,017 |
| 1937 | 99,264 | 6,425 | 3,363 | 488 | 0 | 312 | 63 | 24 | 10,675 | 14,014 | 2,583 | 2,799 | 8,209 | 11,116 |
| 1938 | 97,250 | 6,618 | 3,204 | 521 | 0 | 337 | 71 | 31 | 10,782 | 14,081 | 2,523 | 2,897 | 9,439 | 12,441 |
| 1939 | 92,410 | 6,554 | 3,037 | 548 | 0 | 345 | 72 | 41 | 10,597 | 13,982 | 2,570 | 2,721 | 10,326 | 13,849 |
| 1940 | 89,281 | 6,548 | 2,945 | 570 | 0 | 331 | 71 | 44 | 10,509 | 13,862 | 2,617 | 2,903 | 11,376 | 15,381 |
| 1941 | 87,864 | 6,236 | 2,982 | 570 | 0 | 305 | 68 | 46 | 10,206 | 14,933 | 2,721 | 3,188 | 11,616 | 15,498 |
| 1942 | 88,157 | 6,000 | 3,049 | 583 | 0 | 286 | 64 | 45 | 10,027 | 15,839 | 2,807 | 3,395 | 11,587 | 15,569 |
| 1943 | 90,162 | 6,127 | 3,321 | 563 | 44 | 270 | 58 | 48 | 10,431 | 16,677 | 2,938 | 3,624 | 11,327 | 15,589 |
| 1944 | 93,878 | 6,733 | 3,570 | 545 | 94 | 268 | 58 | 48 | 11,315 | 16,454 | 3,041 | 3,798 | 12,469 | 15,571 |
| 1945 | 97,194 | 7,253 | 3,582 | 549 | 138 | 274 | 61 | 47 | 11,904 | 16,373 | 3,172 | 3,816 | 13,630 | 15,498 |
| 1946 | 100,112 | 7,984 | 3,727 | 566 | 191 | 283 | 65 | 47 | 12,863 | 15,369 | 3,247 | 3,727 | 14,701 | 15,597 |
| 1947 | 102,630 | 8,183 | 3,818 | 577 | 251 | 290 | 71 | 49 | 13,239 | 14,468 | 3,324 | 3,729 | 15,995 | 15,806 |
| 1948 | 105,231 | 8,668 | 3,894 | 599 | 267 | 307 | 79 | 50 | 13,863 | 13,598 | 3,340 | 3,731 | 17,523 | 16,400 |
| 1949 | 109,121 | 9,364 | 3,939 | 616 | 267 | 316 | 87 | 51 | 14,640 | 13,772 | 3,381 | 3,842 | 18,428 | 16,998 |
| 1950 | 114,118 | 10,525 | 4,262 | 690 | 273 | 327 | 95 | 55 | 16,226 | 14,508 | 3,513 | 4,011 | 18,896 | 17,367 |
| 1951 | 118,790 | 11,330 | 4,306 | 712 | 269 | 340 | 102 | 64 | 17,124 | 14,801 | 3,570 | 4,129 | 19,510 | 17,731 |
| 1952 | 122,376 | 12,039 | 4,585 | 732 | 265 | 353 | 107 | 78 | 18,159 | 15,361 | 3,629 | 4,239 | 19,938 | 17,810 |
| 1953 | 123,946 | 12,034 | 4,606 | 745 | 255 | 359 | 110 | 97 | 18,205 | 16,291 | 3,700 | 4,331 | 19,988 | 17,829 |
| 1954 | 123,322 | 12,517 | 4,737 | 759 | 249 | 372 | 117 | 114 | 18,866 | 16,822 | 3,669 | 4,423 | 19,625 | 17,836 |
| 1955 | 122,164 | 12,807 | 5,037 | 705 | 259 | 385 | 125 | 133 | 19,451 | 17,359 | 3,639 | 4,493 | 19,422 | 17,885 |
| 1956 | 121,416 | 13,430 | 5,323 | 773 | 271 | 397 | 135 | 154 | 20,483 | 18,356 | 3,710 | 4,708 | 19,385 | 18,083 |
| 1957 | 121,126 | 14,586 | 5,351 | 770 | 275 | 405 | 142 | 156 | 21,685 | 18,968 | 3,661 | 4,876 | 19,414 | 18,490 |
| 1958 | 123,118 | 15,195 | 5,399 | 761 | 285 | 410 | 146 | 153 | 22,349 | 19,521 | 3,615 | 5,030 | 19,406 | 18,635 |
| 1959 | 124,946 | 15,153 | 5,452 | 757 | 300 | 412 | 146 | 152 | 22,374 | 20,481 | 3,593 | 5,142 | 19,325 | 18,723 |
| 1960 | 125,622 | 15,582 | 5,393 | 854 | 300 | 412 | 146 | 156 | 22,843 | 20,752 | 3,408 | 5,314 | 19,472 | 18,819 |
| 1961 | 125,308 | 15,827 | 5,329 | 875 | 296 | 406 | 143 | 147 | 23,024 | 20,896 | 3,185 | 5,456 | 19,376 | 18,736 |
| 1962 | 125,350 | 16,069 | 5,285 | 966 | 292 | 404 | 143 | 152 | 23,311 | 20,964 | 3,064 | 5,691 | 19,476 | 18,694 |
| 1963 | 124,286 | 16,109 | 5,540 | 977 | 284 | 400 | 146 | 157 | 23,613 | 20,905 | 3,025 | 5,925 | 19,839 | 18,715 |
| 1964 | | 17,030 | 5,696 | 1,064 | 288 | 393 | 148 | 155 | 24,773 | 21,391 | 3,155 | 6,250 | 20,008 | 18,788 |
| 1965 | | 17,111 | 5,706 | 1,050 | 300 | 381 | 150 | 138 | 24,837 | 22,077 | 3,211 | 6,527 | 20,215 | 18,879 |
| 1966 | | 17,468 | 5,813 | 1,040 | 299 | 365 | 152 | 131 | 25,268 | 22,893 | 3,285 | 6,741 | 20,581 | 18,770 |
| 1967 | | 17,696 | 5,786 | 1,027 | 321 | 347 | 156 | 133 | 25,465 | 24,212 | 3,330 | 6,869 | 20,475 | 18,505 |
| 1968 | | 18,999 | 5,693 | 1,099 | 347 | 326 | 161 | 132 | 26,757 | 25,717 | 3,255 | 6,999 | 20,148 | 17,906 |
| 1969 | | 19,145 | 5,615 | 1,096 | 357 | 309 | 168 | 138 | 26,828 | 26,617 | 3,069 | 7,470 | 20,517 | 17,526 |
| 1970 | | 19,496 | 5,568 | 1,093 | 360 | 294 | 174 | 154 | 27,138 | 27,197 | 3,062 | 7,475 | 20,107 | 17,034 |

# A 26. Areas of main agricultural crops per region, smoothed over 5 year period (in 1000 ha), continued.

| | | | China region | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Rice | Sugar Cane | Total | Wheat | Barley | Oats | Maize | Millet | Rice | Potatoes | SP | Sugar Beet | Sugar Cane | Soya Beans |
| 1890 | 18,130 | 1,168 | 37,386 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1891 | 24,322 | 1,173 | 49,605 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1892 | 30,270 | 1,137 | 61,191 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1893 | 30,771 | 1,124 | 61,749 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1894 | 31,395 | 1,113 | 62,550 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1895 | 31,815 | 1,107 | 62,455 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1896 | 31,956 | 1,074 | 62,443 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1897 | 32,402 | 1,060 | 63,424 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1898 | 32,600 | 1,037 | 63,710 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1899 | 32,324 | 998 | 63,449 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1900 | 32,495 | 975 | 64,296 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1901 | 32,910 | 953 | 65,096 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1902 | 33,264 | 951 | 65,671 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1903 | 33,659 | 979 | 66,780 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1904 | 33,949 | 977 | 67,742 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1905 | 32,983 | 956 | 67,110 | 0 | 0 | 0 | 0 | 0 | 96 | 0 | 0 | 0 | 12 | 0 |
| 1906 | 32,038 | 950 | 66,614 | 0 | 0 | 0 | 0 | 0 | 187 | 0 | 0 | 0 | 30 | 0 |
| 1907 | 33,417 | 944 | 67,941 | 0 | 0 | 0 | 0 | 0 | 283 | 0 | 0 | 0 | 45 | 0 |
| 1908 | 33,162 | 929 | 68,002 | 0 | 0 | 0 | 0 | 0 | 989 | 0 | 0 | 0 | 58 | 0 |
| 1909 | 33,470 | 952 | 68,602 | 0 | 0 | 0 | 0 | 0 | 1,762 | 0 | 0 | 0 | 73 | 0 |
| 1910 | 34,827 | 965 | 70,118 | 0 | 0 | 0 | 0 | 0 | 2,486 | 0 | 0 | 0 | 77 | 0 |
| 1911 | 36,208 | 983 | 72,109 | 0 | 0 | 0 | 0 | 0 | 3,286 | 0 | 0 | 0 | 83 | 0 |
| 1912 | 35,550 | 986 | 72,189 | 0 | 0 | 0 | 0 | 0 | 4,107 | 0 | 0 | 0 | 93 | 0 |
| 1913 | 36,334 | 1,009 | 73,647 | 0 | 0 | 0 | 0 | 0 | 4,318 | 0 | 0 | 0 | 104 | 0 |
| 1914 | 36,473 | 1,035 | 73,937 | 0 | 0 | 0 | 0 | 0 | 4,465 | 0 | 0 | 0 | 112 | 0 |
| 1915 | 36,658 | 1,065 | 73,699 | 0 | 0 | 0 | 0 | 0 | 4,707 | 0 | 0 | 0 | 116 | 0 |
| 1916 | 36,759 | 1,079 | 73,383 | 0 | 0 | 0 | 0 | 0 | 4,867 | 0 | 0 | 0 | 117 | 0 |
| 1917 | 36,832 | 1,078 | 73,468 | 0 | 0 | 0 | 0 | 0 | 5,020 | 0 | 0 | 0 | 119 | 0 |
| 1918 | 36,959 | 1,072 | 72,644 | 0 | 0 | 0 | 0 | 0 | 5,206 | 0 | 0 | 0 | 117 | 0 |
| 1919 | 37,156 | 1,077 | 72,681 | 0 | 0 | 0 | 0 | 0 | 5,310 | 0 | 0 | 0 | 117 | 0 |
| 1920 | 37,404 | 1,065 | 73,214 | 0 | 0 | 0 | 0 | 0 | 5,307 | 0 | 0 | 0 | 120 | 0 |
| 1921 | 37,786 | 1,074 | 73,313 | 0 | 0 | 0 | 0 | 0 | 5,378 | 0 | 0 | 0 | 121 | 0 |
| 1922 | 37,717 | 1,117 | 72,800 | 0 | 0 | 0 | 0 | 0 | 5,447 | 0 | 0 | 0 | 110 | 0 |
| 1923 | 37,465 | 1,134 | 72,457 | 0 | 0 | 0 | 0 | 0 | 5,550 | 0 | 0 | 0 | 107 | 0 |
| 1924 | 37,871 | 1,106 | 72,661 | 0 | 0 | 0 | 0 | 0 | 5,741 | 0 | 0 | 0 | 105 | 0 |
| 1925 | 36,826 | 1,104 | 72,073 | 0 | 0 | 0 | 0 | 0 | 5,933 | 0 | 0 | 0 | 100 | 0 |
| 1926 | 35,874 | 1,114 | 71,469 | 0 | 0 | 0 | 0 | 0 | 6,098 | 0 | 0 | 0 | 93 | 0 |
| 1927 | 35,246 | 1,117 | 71,154 | 3,944 | 1,379 | 0 | 925 | 0 | 9,573 | 0 | 0 | 0 | 96 | 1,053 |
| 1928 | 34,604 | 1,147 | 70,795 | 8,087 | 2,739 | 0 | 1,884 | 0 | 13,058 | 0 | 0 | 0 | 92 | 2,126 |
| 1929 | 33,586 | 1,207 | 70,043 | 11,992 | 4,005 | 184 | 2,744 | 0 | 16,773 | 0 | 0 | 0 | 85 | 3,186 |
| 1930 | 33,733 | 1,285 | 70,384 | 15,898 | 5,278 | 388 | 3,584 | 0 | 20,403 | 0 | 0 | 0 | 87 | 4,229 |
| 1931 | 33,792 | 1,384 | 70,662 | 20,060 | 6,608 | 606 | 4,526 | 0 | 24,063 | 67 | 0 | 0 | 95 | 5,260 |
| 1932 | 33,852 | 1,503 | 70,352 | 20,190 | 6,537 | 819 | 4,533 | 0 | 24,345 | 138 | 0 | 0 | 96 | 5,192 |
| 1933 | 34,077 | 1,548 | 70,252 | 19,496 | 6,369 | 1,015 | 4,512 | 0 | 24,101 | 138 | 0 | 0 | 106 | 4,118 |
| 1934 | 34,282 | 1,532 | 70,568 | 17,069 | 5,784 | 862 | 4,090 | 0 | 23,480 | 138 | 27 | 0 | 112 | 3,059 |
| 1935 | 34,616 | 1,545 | 70,602 | 14,689 | 5,261 | 689 | 3,690 | 0 | 22,873 | 138 | 52 | 0 | 120 | 2,016 |
| 1936 | 35,054 | 1,591 | 72,808 | 12,108 | 4,599 | 502 | 3,199 | 0 | 22,019 | 71 | 79 | 0 | 121 | 984 |
| 1937 | 35,381 | 1,516 | 75,619 | 9,699 | 3,977 | 321 | 2,736 | 0 | 21,223 | 0 | 107 | 0 | 126 | 0 |
| 1938 | 35,553 | 1,503 | 78,436 | 8,025 | 3,501 | 156 | 2,275 | 0 | 20,921 | 0 | 137 | 0 | 127 | 0 |
| 1939 | 35,806 | 1,551 | 80,806 | 8,423 | 3,551 | 158 | 2,330 | 0 | 20,689 | 0 | 143 | 0 | 129 | 974 |
| 1940 | 36,269 | 1,557 | 83,965 | 8,848 | 3,543 | 157 | 2,372 | 0 | 20,506 | 0 | 151 | 0 | 117 | 1,956 |
| 1941 | 38,085 | 1,551 | 87,591 | 9,238 | 3,601 | 156 | 2,396 | 0 | 20,081 | 0 | 151 | 0 | 99 | 2,920 |
| 1942 | 40,028 | 1,652 | 90,878 | 11,886 | 4,217 | 307 | 2,973 | 78 | 20,621 | 22 | 158 | 0 | 73 | 3,859 |
| 1943 | 42,359 | 1,763 | 94,276 | 14,405 | 4,782 | 464 | 3,490 | 1,372 | 21,143 | 22 | 170 | 0 | 66 | 4,801 |
| 1944 | 43,603 | 1,822 | 96,758 | 16,804 | 5,306 | 619 | 3,992 | 2,662 | 21,751 | 86 | 183 | 0 | 67 | 4,742 |
| 1945 | 44,821 | 1,874 | 99,184 | 19,118 | 5,805 | 776 | 4,497 | 3,976 | 21,890 | 158 | 197 | 0 | 75 | 4,712 |
| 1946 | 44,589 | 1,911 | 99,142 | 21,455 | 6,318 | 936 | 5,019 | 5,304 | 22,463 | 158 | 216 | 0 | 84 | 3,748 |
| 1947 | 44,049 | 1,969 | 99,339 | 21,432 | 6,269 | 953 | 4,953 | 6,530 | 22,552 | 135 | 227 | 0 | 104 | 2,810 |
| 1948 | 43,335 | 1,961 | 99,887 | 21,478 | 6,268 | 985 | 4,945 | 5,236 | 22,659 | 135 | 232 | 0 | 109 | 1,867 |
| 1949 | 43,978 | 1,955 | 102,354 | 22,063 | 6,292 | 1,041 | 5,030 | 3,947 | 22,322 | 71 | 234 | 0 | 101 | 952 |
| 1950 | 44,228 | 2,006 | 104,529 | 23,190 | 6,450 | 1,119 | 5,211 | 2,633 | 24,735 | 0 | 237 | 15 | 136 | 0 |
| 1951 | 44,404 | 2,055 | 106,200 | 24,231 | 6,726 | 1,217 | 5,472 | 1,305 | 27,212 | 0 | 239 | 38 | 179 | 2,288 |
| 1952 | 44,901 | 2,098 | 107,976 | 25,461 | 7,109 | 1,328 | 5,844 | 0 | 30,159 | 0 | 239 | 70 | 179 | 4,708 |
| 1953 | 45,313 | 2,192 | 109,644 | 26,633 | 7,585 | 1,439 | 6,296 | 0 | 32,909 | 0 | 238 | 70 | 176 | 7,208 |
| 1954 | 45,497 | 2,326 | 110,198 | 27,101 | 8,180 | 1,550 | 6,748 | 0 | 36,103 | 0 | 236 | 70 | 178 | 9,074 |
| 1955 | 46,097 | 2,451 | 111,347 | 26,523 | 8,775 | 1,661 | 7,200 | 0 | 36,443 | 0 | 232 | 56 | 138 | 11,674 |
| 1956 | 46,780 | 2,570 | 113,591 | 26,476 | 9,370 | 1,772 | 7,652 | 0 | 37,137 | 0 | 230 | 33 | 159 | 11,996 |
| 1957 | 47,715 | 2,674 | 115,798 | 25,934 | 9,934 | 1,862 | 8,105 | 5,561 | 36,808 | 0 | 231 | 25 | 218 | 12,202 |
| 1958 | 48,937 | 2,739 | 117,883 | 25,370 | 10,479 | 1,950 | 8,449 | 11,082 | 36,531 | 610 | 2,109 | 54 | 293 | 12,276 |
| 1959 | 50,163 | 2,832 | 120,260 | 24,955 | 10,905 | 2,015 | 8,722 | 16,623 | 36,263 | 1,250 | 4,076 | 86 | 368 | 13,031 |
| 1960 | 51,352 | 2,940 | 122,057 | 25,313 | 11,272 | 2,059 | 8,946 | 22,184 | 36,778 | 1,911 | 6,109 | 124 | 451 | 13,173 |
| 1961 | 52,179 | 3,055 | 122,882 | 25,538 | 11,664 | 2,116 | 9,342 | 28,075 | 37,152 | 2,641 | 8,262 | 164 | 472 | 13,338 |
| 1962 | 52,493 | 3,074 | 123,457 | 26,031 | 11,965 | 2,156 | 9,484 | 28,316 | 37,403 | 3,335 | 10,409 | 182 | 495 | 13,392 |
| 1963 | 52,947 | 3,086 | 124,442 | 26,635 | 12,165 | 2,196 | 9,645 | 28,596 | 37,925 | 3,429 | 10,680 | 196 | 506 | 13,520 |
| 1964 | 53,372 | 3,145 | 126,109 | 27,273 | 12,405 | 2,236 | 9,785 | 28,856 | 38,442 | 3,494 | 10,864 | 208 | 518 | 13,579 |
| 1965 | 53,854 | 3,200 | 127,962 | 27,650 | 12,645 | 2,276 | 9,965 | 29,096 | 38,817 | 3,550 | 11,039 | 216 | 525 | 13,576 |
| 1966 | 54,493 | 3,202 | 129,965 | 27,866 | 12,781 | 2,340 | 9,962 | 29,065 | 39,146 | 3,594 | 11,250 | 222 | 536 | 13,670 |
| 1967 | 55,143 | 3,275 | 131,808 | 28,161 | 12,981 | 2,440 | 10,142 | 29,225 | 39,684 | 3,680 | 11,506 | 227 | 564 | 13,858 |
| 1968 | 55,115 | 3,319 | 132,459 | 28,413 | 13,091 | 2,500 | 10,302 | 29,225 | 39,793 | 3,726 | 11,695 | 236 | 594 | 14,013 |
| 1969 | 55,439 | 3,301 | 133,939 | 28,664 | 13,242 | 2,580 | 10,484 | 29,385 | 39,953 | 3,772 | 11,900 | 244 | 623 | 14,200 |
| 1970 | 55,438 | 3,319 | 133,631 | 28,974 | 13,335 | 2,671 | 10,628 | 29,545 | 40,092 | 3,814 | 12,058 | 252 | 650 | 14,330 |

# A 26. Areas of main agricultural crops per region, smoothed over 5 year period (in 1000 ha), continued.

| Year | East Asia | | | | | | | | | | Oceania | | | |
|------|-------|-------|-------|--------|---------|----------------------|-----------|--------|------------|----------|--------|-------|------|---------|
| | Total | Wheat | Maize | Rice | Cassava | зet Potatoes | Soya bean | Millet | Sugar cane | Potatoes | Total | Maize | Rice | Sorghum |
| 1890 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 0 | 0 |
| 1891 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 121 | 0 | 0 |
| 1892 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 125 | 0 | 0 |
| 1893 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 0 | 0 |
| 1894 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 0 | 0 |
| 1895 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 132 | 0 | 0 |
| 1896 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 134 | 0 | 0 |
| 1897 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 130 | 0 | 0 |
| 1898 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 129 | 0 | 0 |
| 1899 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 134 | 0 | 0 |
| 1900 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 133 | 0 | 0 |
| 1901 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 131 | 0 | 0 |
| 1902 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 133 | 0 | 0 |
| 1903 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 132 | 0 | 0 |
| 1904 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 128 | 0 | 0 |
| 1905 | 108 | 22 | 151 | 482 | 0 | 0 | 0 | 0 | 0 | 0 | 654 | 132 | 1 | 0 |
| 1906 | 217 | 48 | 444 | 1,185 | 0 | 0 | 0 | 0 | 17 | 0 | 1,694 | 140 | 1 | 0 |
| 1907 | 328 | 78 | 783 | 1,871 | 0 | 0 | 0 | 0 | 41 | 0 | 2,773 | 141 | 2 | 0 |
| 1908 | 1,047 | 112 | 1,131 | 2,875 | 0 | 0 | 0 | 0 | 76 | 4 | 4,198 | 142 | 3 | 0 |
| 1909 | 1,835 | 149 | 1,504 | 4,009 | 0 | 0 | 0 | 0 | 110 | 11 | 5,783 | 143 | 4 | 0 |
| 1910 | 2,563 | 166 | 1,745 | 4,722 | 0 | 0 | 0 | 0 | 144 | 18 | 6,794 | 141 | 5 | 0 |
| 1911 | 3,369 | 180 | 1,854 | 5,183 | 0 | 0 | 0 | 0 | 160 | 27 | 7,404 | 134 | 5 | 0 |
| 1912 | 4,200 | 192 | 2,238 | 5,711 | 91 | 33 | 33 | 0 | 173 | 37 | 8,506 | 135 | 5 | 0 |
| 1913 | 4,422 | 204 | 2,601 | 6,045 | 192 | 77 | 68 | 0 | 179 | 44 | 9,410 | 137 | 6 | 0 |
| 1914 | 4,577 | 215 | 2,944 | 6,327 | 342 | 139 | 99 | 0 | 185 | 50 | 10,302 | 133 | 7 | 0 |
| 1915 | 4,823 | 245 | 3,332 | 6,557 | 487 | 197 | 131 | 0 | 190 | 57 | 11,196 | 127 | 7 | 0 |
| 1916 | 4,984 | 275 | 3,759 | 6,932 | 649 | 251 | 163 | 0 | 206 | 63 | 12,298 | 124 | 7 | 0 |
| 1917 | 5,139 | 304 | 3,767 | 7,216 | 716 | 257 | 163 | 0 | 217 | 68 | 12,708 | 119 | 6 | 0 |
| 1918 | 5,323 | 330 | 3,809 | 7,427 | 758 | 246 | 161 | 0 | 221 | 72 | 13,024 | 118 | 6 | 0 |
| 1919 | 5,427 | 353 | 3,884 | 7,613 | 758 | 220 | 162 | 0 | 227 | 75 | 13,291 | 120 | 5 | 0 |
| 1920 | 5,426 | 357 | 3,864 | 7,772 | 762 | 198 | 164 | 0 | 235 | 75 | 13.428 | 131 | 4 | 0 |
| 1921 | 5,498 | 359 | 3,871 | 7,775 | 748 | 174 | 169 | 0 | 233 | 75 | 13,404 | 132 | 5 | 0 |
| 1922 | 5,557 | 360 | 3,970 | 7,926 | 728 | 169 | 171 | 0 | 232 | 75 | 13.632 | 130 | 4 | 0 |
| 1923 | 5,657 | 361 | 4,047 | 8,006 | 750 | 174 | 176 | 0 | 234 | 76 | 13,824 | 137 | 4 | 0 |
| 1924 | 5,846 | 363 | 3,933 | 8,017 | 749 | 168 | 184 | 0 | 241 | 76 | 13,731 | 137 | 6 | 0 |
| 1925 | 6,033 | 360 | 4,021 | 8,023 | 743 | 176 | 187 | 0 | 245 | 80 | 13,836 | 129 | 8 | 0 |
| 1926 | 6,191 | 357 | 4,027 | 8,217 | 726 | 195 | 192 | 0 | 249 | 83 | 14,046 | 129 | 9 | 0 |
| 1927 | 16,969 | 351 | 4,057 | 8,255 | 728 | 204 | 197 | 0 | 253 | 86 | 14,131 | 128 | 11 | 0 |
| 1928 | 27,985 | 342 | 4,133 | 8,406 | 706 | 210 | 205 | 0 | 259 | 90 | 14,350 | 114 | 12 | 0 |
| 1929 | 38,968 | 334 | 4,312 | 8,615 | 697 | 227 | 220 | 0 | 268 | 94 | 14,767 | 113 | 12 | 0 |
| 1930 | 49,868 | 328 | 4,352 | 8,839 | 707 | 231 | 237 | 0 | 259 | 95 | 15,048 | 112 | 12 | 0 |
| 1931 | 61,286 | 324 | 4,430 | 8,941 | 734 | 237 | 257 | 0 | 258 | 99 | 15,280 | 113 | 12 | 0 |
| 1932 | 61,849 | 324 | 4,466 | 8,944 | 768 | 250 | 287 | 0 | 259 | 103 | 15,401 | 117 | 13 | 0 |
| 1933 | 59,855 | 327 | 4,448 | 8,985 | 815 | 257 | 311 | 0 | 251 | 108 | 15,501 | 124 | 13 | 0 |
| 1934 | 54,621 | 332 | 4,497 | 9,049 | 864 | 263 | 331 | 0 | 227 | 89 | 15,650 | 126 | 13 | 0 |
| 1935 | 49,527 | 337 | 4,424 | 9,177 | 910 | 278 | 360 | 0 | 232 | 69 | 15,786 | 127 | 13 | 0 |
| 1936 | 43,683 | 341 | 4,458 | 9,361 | 941 | 280 | 381 | 0 | 223 | 47 | 16,032 | 133 | 14 | 0 |
| 1937 | 38,189 | 338 | 4,527 | 9,719 | 945 | 275 | 396 | 0 | 208 | 24 | 16,432 | 131 | 14 | 0 |
| 1938 | 35,142 | 270 | 4,445 | 9,318 | 923 | 269 | 409 | 0 | 195 | 0 | 15,829 | 128 | 17 | 0 |
| 1939 | 36,396 | 202 | 4,123 | 9,087 | 890 | 255 | 417 | 0 | 187 | 0 | 15,160 | 125 | 20 | 0 |
| 1940 | 37,650 | 132 | 3,872 | 8,982 | 838 | 224 | 418 | 0 | 164 | 30 | 14,660 | 120 | 21 | 0 |
| 1941 | 38,642 | 77 | 3,455 | 8,603 | 785 | 193 | 415 | 1 | 143 | 30 | 13,703 | 110 | 22 | 0 |
| 1942 | 44,194 | 31 | 3,127 | 8,432 | 732 | 162 | 407 | 1 | 136 | 30 | 13,059 | 107 | 23 | 10 |
| 1943 | 50,716 | 49 | 3,006 | 9,107 | 719 | 131 | 404 | 34 | 143 | 30 | 13,624 | 102 | 22 | 21 |
| 1944 | 56,213 | 81 | 3,240 | 9,672 | 747 | 153 | 419 | 68 | 183 | 40 | 14,604 | 94 | 21 | 25 |
| 1945 | 61,204 | 81 | 3,547 | 10,130 | 807 | 179 | 445 | 99 | 228 | 20 | 15,535 | 89 | 23 | 34 |
| 1946 | 65,701 | 66 | 3,820 | 10,862 | 844 | 226 | 462 | 127 | 290 | 29 | 16,727 | 83 | 25 | 48 |
| 1947 | 65,965 | 69 | 3,945 | 11,977 | 919 | 279 | 489 | 168 | 349 | 37 | 18,233 | 76 | 27 | 52 |
| 1948 | 63,914 | 71 | 4,154 | 12,688 | 950 | 339 | 516 | 197 | 374 | 37 | 19,325 | 72 | 27 | 56 |
| 1949 | 62,053 | 60 | 4,181 | 13,528 | 973 | 387 | 537 | 189 | 374 | 36 | 20,265 | 72 | 29 | 64 |
| 1950 | 63,725 | 84 | 4,107 | 14,062 | 981 | 432 | 564 | 187 | 377 | 35 | 20,830 | 70 | 29 | 73 |
| 1951 | 68,907 | 108 | 4,274 | 14,690 | 1,023 | 459 | 599 | 189 | 369 | 35 | 21,747 | 70 | 29 | 73 |
| 1952 | 75,098 | 113 | 4,556 | 14,816 | 1,048 | 510 | 629 | 179 | 352 | 37 | 22,239 | 70 | 29 | 72 |
| 1953 | 82,555 | 122 | 4,658 | 14,961 | 1,107 | 564 | 657 | 147 | 360 | 47 | 22,623 | 71 | 31 | 73 |
| 1954 | 89,241 | 126 | 5,026 | 15,059 | 1,167 | 592 | 687 | 152 | 363 | 48 | 23,221 | 71 | 32 | 82 |
| 1955 | 92,702 | 128 | 5,325 | 15,457 | 1,244 | 614 | 698 | 153 | 369 | 49 | 24,036 | 73 | 32 | 87 |
| 1956 | 94,825 | 129 | 5,571 | 15,686 | 1,312 | 633 | 722 | 151 | 372 | 49 | 24,623 | 74 | 33 | 93 |
| 1957 | 100,881 | 129 | 5,712 | 15,863 | 1,383 | 622 | 748 | 149 | 372 | 49 | 25,027 | 76 | 33 | 110 |
| 1958 | 109,204 | 127 | 6,039 | 16,386 | 1,428 | 649 | 762 | 148 | 368 | 48 | 25,956 | 79 | 33 | 126 |
| 1959 | 118,295 | 129 | 6,033 | 16,619 | 1,480 | 658 | 752 | 146 | 381 | 47 | 26,244 | 81 | 33 | 135 |
| 1960 | 128,319 | 133 | 6,406 | 16,767 | 1,504 | 674 | 750 | 144 | 401 | 47 | 26,826 | 84 | 33 | 141 |
| 1961 | 138,765 | 138 | 6,474 | 16,959 | 1,572 | 695 | 745 | 140 | 411 | 50 | 27,184 | 85 | 33 | 156 |
| 1962 | 143,168 | 144 | 6,848 | 17,268 | 1,579 | 719 | 741 | 130 | 421 | 52 | 27,902 | 84 | 34 | 167 |
| 1963 | 145,492 | 148 | 6,877 | 17,227 | 1,594 | 690 | 749 | 119 | 436 | 54 | 27,893 | 83 | 35 | 171 |
| 1964 | 147,659 | 152 | 7,143 | 17,501 | 1,575 | 676 | 794 | 114 | 443 | 57 | 28,455 | 80 | 36 | 188 |
| 1965 | 149,354 | 153 | 7,020 | 17,838 | 1,552 | 663 | 804 | 101 | 445 | 59 | 28,636 | 76 | 38 | 202 |
| 1966 | 150,430 | 155 | 7,196 | 18,115 | 1,481 | 644 | 837 | 87 | 470 | 58 | 29,043 | 76 | 42 | 239 |
| 1967 | 152,467 | 152 | 7,085 | 18,329 | 1,455 | 627 | 862 | 76 | 516 | 56 | 29,159 | 77 | 44 | 309 |
| 1968 | 153,587 | 142 | 7,076 | 18,619 | 1,434 | 614 | 886 | 66 | 551 | 53 | 29,441 | 76 | 46 | 399 |
| 1969 | 155,046 | 125 | 7,297 | 18,985 | 1,423 | 566 | 901 | 50 | 581 | 49 | 29,976 | 74 | 49 | 531 |
| 1970 | 156,350 | 108 | 7,539 | 19,270 | 1,432 | 522 | 952 | 41 | 621 | 47 | 30,532 | 70 | 56 | 597 |

## A 26. Areas of main agricultural crops per region, smoothed over 5 year period (in 1000 ha), continued.

| Year | Potatoes | Sugar Cane | Total | Japan Wheat | Barley | Rye | Rice | Potatoes | SP Sugar Cane | Sugar Beet | Soya Beans | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1890 | 44 | 34 | 197 | 436 | 646 | 635 | 2,734 | 9 | 96 | 0 | 0 | 4,555 |
| 1891 | 43 | 37 | 201 | 434 | 647 | 650 | 2,741 | 14 | 143 | 0 | 86 | 4,715 |
| 1892 | 42 | 40 | 208 | 436 | 647 | 657 | 2,747 | 19 | 194 | 0 | 173 | 4,873 |
| 1893 | 44 | 44 | 218 | 441 | 645 | 657 | 2,752 | 20 | 199 | 0 | 259 | 4,974 |
| 1894 | 44 | 48 | 222 | 447 | 646 | 662 | 2,761 | 27 | 252 | 0 | 355 | 5,150 |
| 1895 | 45 | 50 | 227 | 452 | 647 | 668 | 2,781 | 30 | 258 | 0 | 445 | 5,281 |
| 1896 | 49 | 55 | 238 | 456 | 646 | 672 | 2,790 | 33 | 264 | 0 | 451 | 5,311 |
| 1897 | 51 | 61 | 243 | 465 | 645 | 673 | 2,801 | 36 | 267 | 0 | 457 | 5,344 |
| 1898 | 55 | 62 | 245 | 470 | 646 | 678 | 2,813 | 39 | 268 | 0 | 463 | 5,377 |
| 1899 | 58 | 66 | 258 | 471 | 646 | 676 | 2,822 | 40 | 272 | 3 | 460 | 5,389 |
| 1900 | 59 | 70 | 261 | 470 | 644 | 676 | 2,830 | 42 | 274 | 7 | 458 | 5,401 |
| 1901 | 59 | 71 | 261 | 467 | 649 | 677 | 2,841 | 45 | 269 | 10 | 458 | 5,415 |
| 1902 | 62 | 72 | 267 | 458 | 653 | 681 | 2,851 | 48 | 273 | 14 | 456 | 5,433 |
| 1903 | 64 | 76 | 272 | 450 | 656 | 685 | 2,862 | 51 | 276 | 17 | 457 | 5,454 |
| 1904 | 64 | 76 | 269 | 446 | 653 | 688 | 2,874 | 54 | 280 | 17 | 463 | 5,476 |
| 1905 | 66 | 79 | 278 | 445 | 649 | 688 | 2,885 | 57 | 283 | 18 | 470 | 5,495 |
| 1906 | 69 | 80 | 290 | 449 | 639 | 684 | 2,899 | 60 | 292 | 19 | 473 | 5,516 |
| 1907 | 69 | 82 | 295 | 460 | 625 | 678 | 2,913 | 62 | 294 | 19 | 479 | 5,531 |
| 1908 | 68 | 83 | 296 | 471 | 613 | 675 | 2,933 | 64 | 295 | 20 | 480 | 5,550 |
| 1909 | 71 | 85 | 303 | 477 | 609 | 681 | 2,954 | 67 | 295 | 21 | 476 | 5,581 |
| 1910 | 72 | 86 | 303 | 483 | 606 | 688 | 2,973 | 72 | 297 | 22 | 473 | 5,614 |
| 1911 | 69 | 88 | 295 | 488 | 602 | 696 | 2,994 | 77 | 300 | 23 | 471 | 5,651 |
| 1912 | 68 | 89 | 298 | 494 | 596 | 700 | 3,014 | 84 | 303 | 25 | 467 | 5,682 |
| 1913 | 70 | 94 | 307 | 509 | 584 | 692 | 3,030 | 95 | 305 | 26 | 458 | 5,698 |
| 1914 | 65 | 96 | 301 | 525 | 565 | 676 | 3,042 | 106 | 307 | 27 | 450 | 5,698 |
| 1915 | 62 | 96 | 292 | 539 | 549 | 660 | 3,056 | 120 | 310 | 28 | 443 | 5,705 |
| 1916 | 64 | 99 | 293 | 545 | 538 | 652 | 3,070 | 129 | 312 | 29 | 440 | 5,716 |
| 1917 | 63 | 100 | 289 | 541 | 530 | 648 | 3,083 | 129 | 311 | 29 | 442 | 5,713 |
| 1918 | 61 | 95 | 280 | 528 | 524 | 643 | 3,094 | 125 | 307 | 29 | 444 | 5,693 |
| 1919 | 63 | 91 | 279 | 512 | 513 | 628 | 3,105 | 118 | 303 | 29 | 442 | 5,651 |
| 1920 | 65 | 88 | 288 | 497 | 498 | 608 | 3,113 | 105 | 297 | 29 | 438 | 5,585 |
| 1921 | 65 | 84 | 286 | 484 | 482 | 583 | 3,118 | 98 | 290 | 29 | 426 | 5,510 |
| 1922 | 64 | 84 | 283 | 475 | 465 | 559 | 3,123 | 97 | 285 | 29 | 410 | 5,442 |
| 1923 | 67 | 91 | 299 | 470 | 450 | 542 | 3,129 | 96 | 281 | 28 | 398 | 5,394 |
| 1924 | 67 | 96 | 307 | 470 | 435 | 532 | 3,138 | 96 | 276 | 27 | 387 | 5,361 |
| 1925 | 66 | 101 | 304 | 475 | 422 | 517 | 3,151 | 97 | 269 | 27 | 375 | 5,334 |
| 1926 | 67 | 105 | 310 | 480 | 407 | 504 | 3,168 | 98 | 264 | 27 | 366 | 5,313 |
| 1927 | 67 | 108 | 314 | 486 | 393 | 490 | 3,186 | 100 | 262 | 26 | 358 | 5,302 |
| 1928 | 66 | 107 | 300 | 493 | 384 | 480 | 3,203 | 103 | 261 | 26 | 351 | 5,301 |
| 1929 | 67 | 109 | 301 | 518 | 373 | 465 | 3,199 | 109 | 261 | 27 | 341 | 5,294 |
| 1930 | 69 | 110 | 304 | 549 | 361 | 456 | 3,192 | 116 | 265 | 26 | 340 | 5,304 |
| 1931 | 68 | 111 | 304 | 583 | 353 | 448 | 3,185 | 124 | 268 | 26 | 337 | 5,323 |
| 1932 | 66 | 113 | 309 | 620 | 345 | 441 | 3,176 | 133 | 272 | 25 | 332 | 5,345 |
| 1933 | 63 | 117 | 317 | 663 | 335 | 431 | 3,168 | 145 | 276 | 24 | 330 | 5,372 |
| 1934 | 59 | 119 | 317 | 684 | 338 | 426 | 3,178 | 151 | 278 | 24 | 330 | 5,409 |
| 1935 | 55 | 123 | 318 | 703 | 342 | 423 | 3,182 | 157 | 280 | 23 | 328 | 5,438 |
| 1936 | 54 | 125 | 326 | 739 | 342 | 416 | 3,176 | 163 | 280 | 23 | 326 | 5,465 |
| 1937 | 51 | 125 | 322 | 766 | 345 | 422 | 3,172 | 168 | 285 | 22 | 322 | 5,503 |
| 1938 | 53 | 124 | 323 | 793 | 358 | 438 | 3,161 | 173 | 292 | 22 | 319 | 5,556 |
| 1939 | 62 | 120 | 327 | 810 | 363 | 452 | 3.139 | 181 | 301 | 21 | 316 | 5,584 |
| 1940 | 73 | 116 | 331 | 829 | 378 | 472 | 3,097 | 189 | 307 | 16 | 310 | 5,598 |
| 1941 | 79 | 112 | 323 | 807 | 390 | 487 | 3,041 | 199 | 332 | | 301 | 5,578 |
| 1942 | 84 | 106 | 329 | 769 | 393 | 482 | 3,029 | 201 | 345 | | 280 | 5,526 |
| 1943 | 84 | 104 | 333 | 714 | 383 | 465 | 3,026 | 204 | 357 | | 253 | 5,432 |
| 1944 | 80 | 108 | 329 | 685 | 396 | 496 | 2,997 | 209 | 377 | | 235 | 5,432 |
| 1945 | 70 | 113 | 328 | 670 | 399 | 508 | 3,000 | 215 | 404 | 47 | 220 | 5,463 |
| 1946 | 67 | 117 | 340 | 678 | 405 | 531 | 3,025 | 210 | 404 | 47 | 254 | 5,554 |
| 1947 | 64 | 125 | 343 | 698 | 415 | 553 | 3,006 | 211 | 404 | 49 | 308 | 5,645 |
| 1948 | 60 | 130 | 346 | 727 | 429 | 575 | 2,982 | 209 | 404 | 50 | 376 | 5,751 |
| 1949 | 59 | 138 | 361 | 732 | 420 | 551 | 2,991 | 204 | 391 | 51 | 418 | 5,757 |
| 1950 | 60 | 146 | 378 | 714 | 422 | 551 | 3,004 | 200 | 374 | 55 | 449 | 5,769 |
| 1951 | 57 | 156 | 384 | 694 | 423 | 545 | 3,050 | 204 | 369 | 64 | 461 | 5,811 |
| 1952 | 54 | 165 | 391 | 681 | 424 | 545 | 3,094 | 206 | 371 | 78 | 458 | 5,856 |
| 1953 | 56 | 174 | 405 | 660 | 425 | 544 | 3,140 | 208 | 369 | 97 | 445 | 5,888 |
| 1954 | 55 | 177 | 417 | 662 | 428 | 540 | 3,192 | 209 | 368 | 114 | 438 | 5,950 |
| 1955 | 53 | 175 | 419 | 648 | 423 | 520 | 3,242 | 206 | 370 | 133 | 448 | 5,991 |
| 1956 | 53 | 174 | 427 | 636 | 416 | 495 | 3,259 | 205 | 361 | 154 | 430 | 5,958 |
| 1957 | 53 | 177 | 449 | 633 | 403 | 451 | 3,277 | 207 | 349 | 156 | 416 | 5,892 |
| 1958 | 52 | 181 | 471 | 638 | 387 | 403 | 3,287 | 208 | 341 | 153 | 392 | 5,809 |
| 1959 | 52 | 186 | 488 | 616 | 367 | 353 | 3,293 | 209 | 333 | 152 | 377 | 5,700 |
| 1960 | 52 | 200 | 511 | 597 | 337 | 300 | 3,287 | 213 | 320 | 156 | 340 | 5,551 |
| 1961 | 52 | 215 | 540 | 572 | 306 | 249 | 3,277 | 215 | 306 | 147 | 302 | 5,374 |
| 1962 | 52 | 230 | 567 | 526 | 279 | 214 | 3,265 | 211 | 290 | 152 | 265 | 5,203 |
| 1963 | 53 | 244 | 586 | 471 | 253 | 188 | 3,261 | 204 | 269 | 157 | 236 | 5,039 |
| 1964 | 53 | 259 | 616 | 419 | 228 | 164 | 3,262 | 196 | 244 | 155 | 206 | 4,873 |
| 1965 | 54 | 264 | 635 | 375 | 208 | 144 | 3,265 | 187 | 215 | 138 | 185 | 4,718 |
| 1966 | 55 | 269 | 680 | 325 | 188 | 125 | 3,199 | 177 | 190 | 131 | 164 | 4,499 |
| 1967 | 55 | 271 | 756 | 274 | 166 | 102 | 3,087 | 169 | 162 | 133 | 149 | 4,242 |
| 1968 | 54 | 274 | 850 | 224 | 142 | 80 | 2,963 | 161 | 138 | 132 | 136 | 3,975 |
| 1969 | 52 | 274 | 980 | 174 | 117 | 58 | 2,831 | 157 | 115 | 138 | 126 | 3,715 |
| 1970 | 48 | 284 | 1,055 | 134 | 94 | 40 | 2,721 | 149 | 99 | 154 | 125 | 3,516 |

# A 27. Output of main agricultural crops per region, smoothed over 5 year period (in 1000 metric tons).

| Year | Canada Wheat | Barley | Oats | Rye | Maize | Potatoes | Sugar beet | Total | USA Wheat | Barley | Oats | Rye | Maize | Buckwheat |
|------|------|------|------|-----|-------|----------|-----------|-------|-----------|--------|------|-----|-------|-----------|
| 1890 | 230 | 75 | 257 | 7 | 0 | 291 | 0 | 860 | 15,170 | 1,821 | 10,523 | 742 | 47,744 | 254 |
| 1891 | 230 | 75 | 257 | 7 | 0 | 291 | 0 | 860 | 15,676 | 1,969 | 11,441 | 758 | 52,238 | 256 |
| 1892 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14,832 | 1,982 | 11,261 | 770 | 53,900 | 260 |
| 1893 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14,800 | 2,017 | 11,574 | 782 | 57,886 | 270 |
| 1894 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16,226 | 2,073 | 11,966 | 794 | 60,177 | 278 |
| 1895 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16,841 | 2,264 | 12,509 | 750 | 65,415 | 278 |
| 1896 | 302 | 97 | 467 | 0 | 0 | 301 | 0 | 1,168 | 17,151 | 2,234 | 12,567 | 739 | 66,062 | 275 |
| 1897 | 783 | 202 | 840 | 0 | 0 | 448 | 0 | 2,274 | 18,457 | 2,352 | 12,640 | 733 | 61,250 | 281 |
| 1898 | 1,312 | 353 | 1,324 | 0 | 0 | 560 | 0 | 3,549 | 18,498 | 2,539 | 13,357 | 747 | 61,719 | 278 |
| 1899 | 1,757 | 505 | 1,827 | 0 | 0 | 702 | 0 | 4,792 | 17,927 | 2,761 | 13,422 | 747 | 62,761 | 287 |
| 1900 | 2,148 | 671 | 2,321 | 0 | 0 | 837 | 0 | 5,976 | 17,388 | 2,970 | 13,640 | 759 | 62,761 | 306 |
| 1901 | 2,429 | 753 | 2,425 | 0 | 0 | 659 | 0 | 6,265 | 17,970 | 3,296 | 14,101 | 778 | 64,244 | 324 |
| 1902 | 2,686 | 849 | 2,674 | 0 | 0 | 645 | 0 | 6,854 | 17,851 | 3,536 | 14,689 | 772 | 70,935 | 323 |
| 1903 | 2,664 | 875 | 2,695 | 0 | 0 | 698 | 0 | 6,933 | 17,935 | 3,558 | 13,888 | 744 | 70,122 | 326 |
| 1904 | 2,831 | 926 | 2,965 | 0 | 0 | 1,006 | 0 | 7,727 | 17,826 | 3,654 | 13,785 | 743 | 70,386 | 328 |
| 1905 | 3,347 | 1,002 | 3,561 | 9 | 116 | 1,476 | 20 | 9,531 | 18,522 | 3,684 | 13,790 | 751 | 70,000 | 325 |
| 1906 | 3,672 | 1,064 | 4,080 | 17 | 214 | 1,892 | 35 | 10,975 | 18,081 | 3,554 | 14,196 | 740 | 69,487 | 318 |
| 1907 | 3,673 | 1,028 | 4,209 | 25 | 287 | 2,060 | 70 | 11,352 | 17,432 | 3,406 | 13,862 | 749 | 66,652 | 314 |
| 1908 | 4,425 | 1,045 | 4,831 | 38 | 384 | 2,284 | 101 | 13,109 | 17,982 | 3,606 | 15,465 | 798 | 68,351 | 318 |
| 1909 | 5,033 | 1,057 | 5,267 | 51 | 470 | 2,296 | 138 | 14,312 | 18,570 | 3,553 | 16,274 | 858 | 66,857 | 298 |
| 1910 | 5,787 | 1,026 | 5,425 | 54 | 440 | 2,120 | 145 | 14,996 | 19,729 | 3,575 | 16,425 | 919 | 66,415 | 290 |
| 1911 | 5,757 | 942 | 5,301 | 55 | 413 | 2,047 | 149 | 14,663 | 21,819 | 3,858 | 16,980 | 1,009 | 66,293 | 281 |
| 1912 | 7,160 | 1,012 | 5,984 | 60 | 413 | 2,133 | 140 | 16,903 | 21,892 | 3,919 | 17,711 | 1,068 | 66,039 | 266 |
| 1913 | 7,332 | 1,004 | 6,121 | 62 | 347 | 2,089 | 121 | 17,077 | 21,293 | 3,854 | 17,972 | 1,183 | 65,838 | 259 |
| 1914 | 7,384 | 1,029 | 6,156 | 69 | 301 | 2,062 | 106 | 17,107 | 22,126 | 4,141 | 18,904 | 1,402 | 66,692 | 278 |
| 1915 | 6,752 | 1,155 | 6,223 | 100 | 287 | 2,202 | 112 | 16,832 | 22,425 | 3,937 | 19,023 | 1,589 | 71,479 | 277 |
| 1916 | 7,126 | 1,243 | 6,474 | 142 | 303 | 2,420 | 136 | 17,843 | 21,522 | 3,780 | 19,050 | 1,667 | 72,708 | 275 |
| 1917 | 6,416 | 1,284 | 6,677 | 187 | 302 | 2,759 | 185 | 17,810 | 22,523 | 3,667 | 18,781 | 1,759 | 75,264 | 282 |
| 1918 | 6,624 | 1,358 | 6,726 | 281 | 346 | 2,999 | 221 | 18,554 | 23,759 | 3,540 | 17,968 | 1,966 | 78,239 | 274 |
| 1919 | 7,527 | 1,431 | 6,998 | 426 | 377 | 3,070 | 234 | 20,063 | 22,969 | 3,253 | 17,382 | 1,826 | 80,444 | 261 |
| 1920 | 9,079 | 1,429 | 7,423 | 501 | 374 | 3,005 | 241 | 22,052 | 22,371 | 3,401 | 18,279 | 1,722 | 74,127 | 260 |
| 1921 | 9,254 | 1,571 | 7,459 | 519 | 349 | 2,836 | 258 | 22,244 | 21,424 | 3,492 | 18,158 | 1,622 | 72,740 | 262 |
| 1922 | 9,974 | 1,674 | 7,063 | 508 | 330 | 2,472 | 266 | 22,286 | 21,494 | 3,636 | 18,464 | 1,489 | 70,805 | 258 |
| 1923 | 10,552 | 1,850 | 6,931 | 461 | 294 | 2,314 | 310 | 22,710 | 21,647 | 4,010 | 18,261 | 1,235 | 66,342 | 263 |
| 1924 | 10,987 | 1,959 | 6,772 | 375 | 245 | 2,229 | 342 | 22,910 | 22,491 | 4,746 | 18,507 | 1,143 | 65,280 | 257 |
| 1925 | 11,491 | 2,218 | 6,426 | 332 | 203 | 2,181 | 379 | 23,229 | 22,393 | 5,251 | 17,625 | 1,026 | 66,769 | 240 |
| 1926 | 11,709 | 2,277 | 6,047 | 329 | 168 | 2,030 | 385 | 22,943 | 23,579 | 5,730 | 17,253 | 1,041 | 63,121 | 218 |
| 1927 | 11,846 | 2,486 | 6,111 | 394 | 144 | 2,102 | 386 | 23,469 | 24,178 | 5,878 | 17,171 | 1,030 | 63,269 | 209 |
| 1928 | 11,379 | 2,344 | 5,941 | 359 | 132 | 2,151 | 373 | 22,679 | 23,514 | 6,140 | 17,639 | 969 | 64,864 | 182 |
| 1929 | 11,180 | 2,273 | 5,793 | 323 | 136 | 2,087 | 398 | 22,190 | 21,544 | 5,378 | 16,007 | 880 | 63,503 | 172 |
| 1930 | 9,630 | 1,955 | 5,346 | 270 | 135 | 2,020 | 402 | 19,758 | 19,922 | 4,663 | 14,358 | 783 | 58,082 | 174 |
| 1931 | 9,486 | 1,787 | 5,464 | 227 | 143 | 2,094 | 411 | 19,613 | 18,512 | 4,607 | 14,172 | 842 | 61,195 | 178 |
| 1932 | 8,731 | 1,564 | 5,376 | 164 | 153 | 2,007 | 409 | 18,404 | 16,813 | 4,380 | 13,211 | 798 | 55,759 | 167 |
| 1933 | 8,181 | 1,585 | 5,201 | 159 | 156 | 1,892 | 431 | 17,605 | 17,472 | 4,045 | 12,983 | 848 | 54,301 | 168 |
| 1934 | 6,750 | 1,595 | 4,821 | 145 | 158 | 1,920 | 416 | 15,806 | 19,475 | 4,498 | 13,968 | 1,028 | 55,068 | 163 |
| 1935 | 7,176 | 1,764 | 5,018 | 180 | 172 | 1,859 | 426 | 16,594 | 20,645 | 5,199 | 15,170 | 1,141 | 60,819 | 149 |
| 1936 | 8,508 | 1,935 | 5,214 | 234 | 178 | 1,752 | 457 | 18,279 | 21,663 | 5,295 | 15,274 | 1,054 | 59,621 | 140 |
| 1937 | 9,914 | 2,024 | 5,175 | 256 | 174 | 1,785 | 524 | 19,851 | 23,361 | 6,231 | 16,407 | 1,159 | 65,443 | 138 |
| 1938 | 10,427 | 2,191 | 5,281 | 291 | 213 | 1,758 | 553 | 20,713 | 23,878 | 7,132 | 16,893 | 1,180 | 67,607 | 138 |
| 1939 | 12,473 | 2,944 | 6,431 | 384 | 260 | 1,732 | 606 | 24,830 | 23,465 | 7,420 | 17,041 | 1,041 | 69,726 | 147 |
| 1940 | 12,051 | 3,406 | 6,709 | 361 | 261 | 1,769 | 602 | 25,158 | 25,161 | 7,811 | 17,595 | 960 | 72,301 | 161 |
| 1941 | 11,475 | 3,773 | 6,986 | 326 | 281 | 1,839 | 598 | 25,277 | 26,756 | 7,619 | 18,402 | 878 | 74,394 | 161 |
| 1942 | 10,256 | 3,967 | 6,892 | 285 | 299 | 1,745 | 561 | 24,004 | 27,899 | 7,193 | 19,259 | 743 | 77,265 | 164 |
| 1943 | 10,784 | 4,125 | 7,061 | 272 | 286 | 1,791 | 553 | 24,872 | 30,022 | 6,553 | 18,774 | 604 | 73,637 | 166 |
| 1944 | 9,600 | 3,620 | 5,916 | 219 | 246 | 1,776 | 533 | 21,909 | 32,476 | 6,522 | 19,674 | 590 | 76,884 | 154 |
| 1945 | 10,139 | 3,376 | 5,557 | 326 | 270 | 1,816 | 561 | 22,045 | 32,723 | 5,953 | 19,880 | 572 | 77,646 | 137 |
| 1946 | 9,873 | 3,074 | 5,034 | 335 | 281 | 1,801 | 614 | 21,011 | 32,239 | 6,514 | 19,430 | 560 | 78,692 | 128 |
| 1947 | 10,690 | 3,155 | 5,190 | 371 | 298 | 1,905 | 704 | 22,314 | 31,346 | 6,479 | 18,849 | 575 | 77,214 | 113 |
| 1948 | 11,463 | 3,585 | 5,600 | 416 | 323 | 1,798 | 757 | 23,943 | 31,058 | 6,244 | 18,948 | 528 | 83,974 | 96 |
| 1949 | 13,442 | 4,245 | 6,225 | 469 | 396 | 1,829 | 833 | 27,438 | 30,394 | 5,943 | 18,086 | 492 | 81,967 | 83 |
| 1950 | 14,817 | 4,723 | 6,432 | 476 | 448 | 1,805 | 882 | 29,584 | 29,773 | 6,562 | 18,638 | 528 | 81,053 | 73 |
| 1951 | 14,632 | 4,972 | 6,438 | 489 | 504 | 1,712 | 908 | 29,654 | 29,316 | 6,593 | 19,007 | 567 | 81,787 | 62 |
| 1952 | 14,918 | 5,336 | 6,435 | 493 | 613 | 1,683 | 884 | 30,362 | 29,409 | 7,115 | 18,638 | 566 | 84,444 | 56 |
| 1953 | 15,024 | 5,439 | 6,353 | 447 | 673 | 1,795 | 871 | 30,602 | 27,504 | 8,092 | 18,870 | 629 | 83,393 | 49 |
| 1954 | 13,340 | 5,110 | 5,873 | 367 | 716 | 1,792 | 879 | 28,077 | 29,049 | 9,093 | 19,589 | 701 | 86,009 | 42 |
| 1955 | 12,056 | 5,004 | 5,667 | 260 | 750 | 1,773 | 956 | 26,465 | 29,779 | 9,271 | 18,544 | 707 | 91,795 | 34 |
| 1956 | 13,071 | 5,180 | 5,783 | 238 | 780 | 1,804 | 998 | 27,855 | 32,065 | 9,385 | 17,549 | 727 | 97,355 | 30 |
| 1957 | 11,788 | 4,577 | 5,423 | 201 | 748 | 1,842 | 1,020 | 25,598 | 33,300 | 9,451 | 17,140 | 758 | 98,111 | 26 |
| 1958 | 11,747 | 4,168 | 5,501 | 220 | 776 | 1,883 | 1,058 | 25,354 | 34,040 | 9,345 | 16,374 | 820 | 98,759 | 22 |
| 1959 | 13,548 | 4,191 | 5,898 | 247 | 810 | 1,930 | 1,066 | 27,690 | 32,352 | 8,978 | 15,110 | 799 | 100,254 | 20 |
| 1960 | 14,651 | 3,877 | 5,902 | 271 | 927 | 2,002 | 1,063 | 28,693 | 33,253 | 8,831 | 14,536 | 827 | 96,654 | 20 |
| 1961 | 15,364 | 3,888 | 6,075 | 319 | 1,072 | 2,096 | 1,074 | 29,888 | 33,038 | 8,675 | 13,887 | 828 | 95,581 | 16 |
| 1962 | 18,325 | 4,709 | 6,354 | 373 | 1,261 | 2,190 | 1,081 | 34,294 | 33,435 | 8,675 | 13,287 | 830 | 98,480 | 12 |
| 1963 | 18,473 | 5,030 | 5,773 | 372 | 1,484 | 2,191 | 1,092 | 34,415 | 35,698 | 8,440 | 12,613 | 745 | 104,851 | 9 |
| 1964 | 18,072 | 5,477 | 5,516 | 368 | 1,712 | 2,253 | 1,090 | 34,489 | 37,929 | 8,585 | 12,530 | 734 | 107,037 | 4 |
| 1965 | 18,527 | 6,403 | 5,591 | 389 | 1,781 | 2,294 | 1,026 | 36,012 | 38,796 | 8,763 | 12,859 | 722 | 113,127 | 0 |
| 1966 | 16,797 | 7,263 | 5,492 | 412 | 1,992 | 2,378 | 987 | 35,321 | 38,986 | 8,867 | 12,823 | 740 | 113,376 | 0 |
| 1967 | 15,176 | 8,571 | 5,458 | 436 | 2,244 | 2,296 | 1,000 | 35,181 | 40,689 | 9,178 | 13,050 | 849 | 120,858 | 0 |
| 1968 | 14,852 | 9,745 | 5,446 | 444 | 2,357 | 2,244 | 983 | 36,070 | 40,892 | 9,395 | 12,754 | 876 | 124,480 | 0 |
| 1969 | 14,546 | 10,379 | 5,336 | 451 | 2,505 | 2,174 | 965 | 36,355 | 41,701 | 9,371 | 12,010 | 873 | 130,562 | 0 |
| 1970 | 13,481 | 10,492 | 4,976 | 463 | 2,684 | 2,203 | 941 | 35,239 | 43,625 | 8,836 | 10,988 | 815 | 130,447 | 0 |

Source: Mitchell (1975, 1982, 1983).

Note: SP = Sweet Potatoes

| | | | | | | | Latin America | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Rice | Sorghum | Potatoes | SP | Sugar beet | Sugar Cane | Total | Wheat | Barley | Oats | Maize | Millet | Rice | Sorghum |
| 1890 | 0 | 0 | 5,584 | 1,160 | 0 | 268 | 83,265 | 999 | 54 | 307 | 435 | 0 | 0 | 0 |
| 1891 | 30 | 0 | 6,302 | 1,159 | 0 | 273 | 90,102 | 956 | 50 | 452 | 1,238 | 0 | 0 | 0 |
| 1892 | 52 | 0 | 6,297 | 1,140 | 0 | 301 | 90,794 | 934 | 51 | 468 | 1,237 | 0 | 0 | 0 |
| 1893 | 80 | 0 | 6,341 | 1,116 | 0 | 322 | 95,186 | 899 | 50 | 470 | 1,237 | 0 | 0 | 0 |
| 1894 | 114 | 0 | 6,537 | 1,142 | 0 | 318 | 99,624 | 967 | 56 | 492 | 1,577 | 0 | 0 | 0 |
| 1895 | 150 | 0 | 6,945 | 1,105 | 0 | 278 | 106,535 | 1,060 | 59 | 518 | 1,507 | 0 | 0 | 0 |
| 1896 | 160 | 0 | 6,714 | 1,109 | 0 | 287 | 107,297 | 1,222 | 62 | 429 | 1,208 | 0 | 0 | 0 |
| 1897 | 190 | 0 | 6,413 | 1,140 | 0 | 296 | 103,752 | 1,280 | 64 | 443 | 2,098 | 0 | 0 | 0 |
| 1898 | 222 | 0 | 6,949 | 1,177 | 0 | 300 | 105,785 | 1,200 | 66 | 488 | 3,246 | 0 | 0 | 0 |
| 1899 | 266 | 0 | 7,144 | 1,187 | 0 | 295 | 106,588 | 1,350 | 69 | 518 | 4,283 | 0 | 0 | 0 |
| 1900 | 308 | 0 | 7,563 | 1,253 | 0 | 326 | 107,273 | 1,432 | 66 | 515 | 5,098 | 0 | 0 | 0 |
| 1901 | 333 | 0 | 7,780 | 1,318 | 0 | 340 | 110,485 | 1,547 | 67 | 487 | 6,021 | 0 | 0 | 0 |
| 1902 | 354 | 0 | 8,510 | 1,366 | 0 | 319 | 118,653 | 1,728 | 72 | 486 | 6,046 | 0 | 0 | 0 |
| 1903 | 379 | 0 | 8,709 | 1,407 | 0 | 321 | 117,389 | 1,893 | 76 | 473 | 5,906 | 0 | 0 | 0 |
| 1904 | 393 | 0 | 8,867 | 1,454 | 0 | 350 | 117,784 | 1,835 | 84 | 481 | 5,991 | 0 | 0 | 0 |
| 1905 | 410 | 0 | 9,088 | 1,472 | 769 | 352 | 119,164 | 2,032 | 87 | 500 | 5,746 | 0 | 30 | 0 |
| 1906 | 446 | 0 | 9,319 | 1,480 | 1,520 | 341 | 119,483 | 2,181 | 94 | 508 | 6,184 | 0 | 54 | 0 |
| 1907 | 466 | 0 | 9,108 | 1,468 | 2,438 | 356 | 116,252 | 2,198 | 94 | 522 | 7,127 | 0 | 64 | 0 |
| 1908 | 478 | 0 | 9,506 | 1,465 | 3,463 | 309 | 121,739 | 2,453 | 104 | 534 | 7,609 | 0 | 76 | 0 |
| 1909 | 485 | 0 | 9,654 | 1,433 | 4,531 | 284 | 122,798 | 2,656 | 102 | 512 | 8,168 | 0 | 87 | 0 |
| 1910 | 485 | 0 | 9,534 | 1,409 | 4,775 | 264 | 123,821 | 2,284 | 94 | 462 | 9,411 | 0 | 84 | 0 |
| 1911 | 490 | 0 | 9,506 | 1,444 | 5,206 | 224 | 127,111 | 2,735 | 94 | 457 | 9,042 | 0 | 138 | 0 |
| 1912 | 559 | 0 | 9,330 | 1,475 | 5,418 | 215 | 127,892 | 3,162 | 99 | 423 | 8,202 | 0 | 217 | 0 |
| 1913 | 604 | 0 | 9,289 | 1,555 | 5,478 | 230 | 127,555 | 3,295 | 94 | 373 | 7,697 | 0 | 315 | 0 |
| 1914 | 669 | 0 | 9,363 | 1,618 | 5,489 | 227 | 130,909 | 3,152 | 96 | 330 | 7,335 | 0 | 393 | 0 |
| 1915 | 748 | 366 | 8,977 | 1,740 | 5,641 | 204 | 136,406 | 3,255 | 110 | 344 | 7,178 | 0 | 565 | 0 |
| 1916 | 852 | 813 | 9,152 | 1,789 | 6,009 | 211 | 137,827 | 3,073 | 133 | 343 | 7,597 | 0 | 690 | 0 |
| 1917 | 851 | 1,173 | 9,451 | 1,849 | 6,291 | 214 | 142,104 | 2,978 | 146 | 341 | 7,973 | 0 | 780 | 0 |
| 1918 | 880 | 1,427 | 9,542 | 1,877 | 6,146 | 223 | 145,841 | 2,958 | 158 | 361 | 8,356 | 0 | 877 | 0 |
| 1919 | 852 | 1,742 | 9,652 | 1,854 | 6,338 | 201 | 146,774 | 3,213 | 158 | 369 | 8,837 | 0 | 950 | 0 |
| 1920 | 798 | 1,676 | 10,125 | 1,685 | 6,535 | 195 | 141,175 | 3,864 | 161 | 389 | 8,551 | 0 | 922 | 0 |
| 1921 | 722 | 1,519 | 9,731 | 1,551 | 6,325 | 188 | 137,734 | 3,681 | 151 | 362 | 8,875 | 0 | 902 | 0 |
| 1922 | 734 | 1,519 | 9,710 | 1,500 | 6,224 | 136 | 135,969 | 3,837 | 155 | 359 | 9,740 | 0 | 943 | 0 |
| 1923 | 725 | 1,676 | 9,461 | 1,462 | 6,690 | 94 | 131,867 | 3,889 | 149 | 348 | 10,500 | 0 | 974 | 0 |
| 1924 | 768 | 1,753 | 9,793 | 1,439 | 6,707 | 89 | 132,973 | 4,103 | 157 | 340 | 10,358 | 0 | 1,051 | 0 |
| 1925 | 808 | 1,707 | 9,516 | 1,539 | 6,672 | 112 | 133,659 | 3,907 | 168 | 310 | 10,702 | 0 | 1,112 | 0 |
| 1926 | 857 | 1,610 | 9,774 | 1,562 | 7,002 | 125 | 131,872 | 4,462 | 169 | 324 | 11,259 | 0 | 1,196 | 0 |
| 1927 | 867 | 1,615 | 10,115 | 1,582 | 7,125 | 150 | 133,190 | 4,618 | 163 | 324 | 11,299 | 0 | 1,281 | 0 |
| 1928 | 876 | 1,539 | 10,143 | 1,660 | 7,364 | 185 | 135,074 | 5,149 | 176 | 338 | 11,230 | 0 | 1,340 | 0 |
| 1929 | 851 | 1,422 | 9,685 | 1,737 | 8,077 | 205 | 129,461 | 5,247 | 182 | 349 | 11,121 | 0 | 1,400 | 0 |
| 1930 | 849 | 1,265 | 10,083 | 1,800 | 8,114 | 213 | 120,306 | 5,319 | 183 | 356 | 12,017 | 0 | 1,508 | 0 |
| 1931 | 826 | 1,367 | 10,274 | 1,933 | 7,880 | 244 | 122,029 | 4,949 | 196 | 364 | 11,780 | 0 | 1,574 | 0 |
| 1932 | 848 | 1,153 | 9,946 | 1,896 | 8,082 | 290 | 113,343 | 4,738 | 200 | 372 | 11,740 | 0 | 1,585 | 0 |
| 1933 | 896 | 1,174 | 9,955 | 1,804 | 8,025 | 325 | 111,995 | 4,570 | 221 | 366 | 11,225 | 11 | 1,683 | 0 |
| 1934 | 956 | 1,240 | 10,024 | 1,773 | 8,110 | 386 | 116,689 | 4,431 | 236 | 359 | 10,943 | 29 | 1,782 | 0 |
| 1935 | 1,017 | 1,407 | 9,675 | 1,694 | 8,702 | 430 | 126,048 | 4,818 | 272 | 390 | 10,740 | 47 | 1,818 | 0 |
| 1936 | 1,080 | 1,549 | 9,667 | 1,546 | 9,480 | 421 | 126,790 | 4,477 | 262 | 359 | 10,871 | 55 | 1,943 | 0 |
| 1937 | 1,086 | 1,976 | 9,839 | 1,560 | 9,720 | 417 | 137,338 | 4,569 | 315 | 379 | 11,198 | 63 | 2,153 | 0 |
| 1938 | 1,132 | 2,179 | 9,798 | 1,547 | 10,251 | 416 | 142,152 | 4,412 | 296 | 396 | 10,889 | 59 | 2,303 | 0 |
| 1939 | 1,183 | 2,398 | 10,359 | 1,560 | 9,353 | 403 | 144,093 | 4,173 | 280 | 401 | 11,552 | 47 | 2,511 | 0 |
| 1940 | 1,244 | 3,038 | 10,585 | 1,592 | 8,615 | 390 | 149,453 | 3,305 | 234 | 349 | 10,152 | 38 | 2,733 | 0 |
| 1941 | 1,298 | 3,089 | 10,814 | 1,640 | 7,966 | 416 | 153,434 | 3,617 | 257 | 403 | 8,971 | 43 | 3,018 | 0 |
| 1942 | 1,383 | 3,048 | 11,535 | 1,631 | 8,010 | 418 | 158,547 | 3,330 | 229 | 376 | 8,604 | 35 | 3,228 | 0 |
| 1943 | 1,439 | 2,962 | 11,645 | 1,552 | 8,158 | 403 | 155,915 | 3,658 | 290 | 444 | 10,185 | 28 | 3,470 | 24 |
| 1944 | 1,521 | 3,068 | 11,596 | 1,412 | 8,680 | 398 | 162,975 | 4,085 | 342 | 469 | 9,819 | 33 | 3,654 | 69 |
| 1945 | 1,570 | 2,880 | 11,692 | 1,296 | 9,311 | 413 | 164,072 | 4,987 | 412 | 538 | 9,784 | 37 | 3,932 | 81 |
| 1946 | 1,644 | 3,581 | 11,759 | 1,238 | 10,204 | 429 | 166,418 | 5,212 | 466 | 536 | 9,926 | 51 | 4,057 | 127 |
| 1947 | 1,767 | 3,871 | 10,879 | 1,080 | 10,185 | 428 | 162,785 | 5,448 | 507 | 582 | 9,432 | 93 | 4,156 | 137 |
| 1948 | 1,885 | 3,861 | 10,676 | 978 | 9,761 | 469 | 168,478 | 5,304 | 564 | 593 | 8,711 | 151 | 4,295 | 145 |
| 1949 | 2,017 | 3,785 | 10,329 | 940 | 10,244 | 497 | 164,778 | 5,143 | 670 | 624 | 9,204 | 160 | 4,519 | 138 |
| 1950 | 2,270 | 4,206 | 10,137 | 873 | 10,949 | 513 | 165,575 | 4,863 | 701 | 630 | 10,076 | 172 | 4,711 | 165 |
| 1951 | 2,425 | 4,252 | 9,852 | 821 | 10,713 | 515 | 165,909 | 4,920 | 704 | 740 | 10,842 | 191 | 4,874 | 156 |
| 1952 | 2,455 | 4,465 | 10,306 | 834 | 11,169 | 541 | 169,997 | 4,742 | 837 | 743 | 11,296 | 181 | 5,218 | 182 |
| 1953 | 2,407 | 6,889 | 10,591 | 852 | 12,138 | 528 | 171,939 | 4,185 | 872 | 700 | 11,815 | 155 | 5,395 | 182 |
| 1954 | 2,334 | 9,253 | 10,910 | 835 | 12,694 | 518 | 181.028 | 4,494 | 978 | 895 | 12,317 | 178 | 5,584 | 382 |
| 1955 | 2,238 | 10,696 | 11,142 | 848 | 13,227 | 519 | 188,800 | 4,662 | 1,020 | 947 | 12,886 | 202 | 5,882 | 561 |
| 1956 | 2,226 | 12,611 | 11,453 | 787 | 13,987 | 530 | 198,702 | 5,113 | 1,224 | 1,019 | 13,424 | 209 | 6,369 | 877 |
| 1957 | 2,270 | 14,008 | 11,882 | 742 | 14,841 | 583 | 203,114 | 5,582 | 1,195 | 1,112 | 14,499 | 220 | 6,735 | 1,239 |
| 1958 | 2,480 | 13,696 | 12,086 | 734 | 15,339 | 642 | 204,336 | 6,769 | 1,193 | 1,244 | 15,017 | 219 | 7,259 | 1,523 |
| 1959 | 2,712 | 13,674 | 12,126 | 705 | 16,823 | 752 | 204,304 | 7,392 | 1,107 | 1,175 | 15,591 | 213 | 7,756 | 1,687 |
| 1960 | 2,889 | 13,445 | 12,089 | 671 | 17,979 | 848 | 202,041 | 8,343 | 1,186 | 1,259 | 16,661 | 187 | 8,409 | 1,820 |
| 1961 | 3,090 | 13,715 | 12,355 | 677 | 18,795 | 934 | 201,590 | 8,265 | 1,074 | 1,206 | 18,034 | 172 | 8,533 | 2,132 |
| 1962 | 3,368 | 14,909 | 12,483 | 688 | 19,274 | 999 | 206,439 | 9,646 | 1,173 | 1,394 | 19,568 | 173 | 8,821 | 2,377 |
| 1963 | 3,579 | 16,173 | 12,854 | 655 | 19,445 | 1,108 | 216,169 | 9,511 | 1,173 | 1,287 | 20,671 | 188 | 9,034 | 2,833 |
| 1964 | 3,887 | 16,958 | 13,074 | 646 | 19,814 | 1,113 | 222,310 | 10,726 | 1,370 | 1,387 | 21,598 | 190 | 9,166 | 3,431 |
| 1965 | 4,057 | 18,314 | 13,720 | 639 | 20,603 | 1,100 | 232,700 | 10,864 | 1,486 | 1,387 | 22,509 | 192 | 9,242 | 4,441 |
| 1966 | 4,121 | 18,368 | 14,034 | 600 | 21,594 | 1,127 | 234,636 | 11,040 | 1,780 | 1,471 | 23,189 | 191 | 9,524 | 5,315 |
| 1967 | 4,126 | 19,185 | 14,134 | 582 | 22,839 | 1,126 | 246,616 | 9,631 | 2,141 | 1,339 | 22,821 | 168 | 9,677 | 5,728 |
| 1968 | 4,090 | 19,478 | 14,033 | 577 | 24,511 | 1,154 | 252,239 | 9,216 | 2,360 | 1,348 | 23,589 | 167 | 9,871 | 6,564 |
| 1969 | 3,987 | 20,485 | 14,069 | 569 | 24,354 | 1,192 | 259,172 | 8,627 | 2,417 | 1,228 | 24,131 | 174 | 10,031 | 7,571 |
| 1970 | 4,172 | 19,973 | 14,338 | 565 | 23,336 | 1,264 | 258,359 | 8,663 | 2,653 | 1,155 | 23,732 | 189 | 10,258 | 7,973 |

| Year | Potatoes | Sugar Cane | Cassava | Total | Africa Wheat | Barley | Oats | Maize | Cassava | Millet | Sorghum | Rice | Sugar cane | Sweet pot. |
|------|----------|-----------|---------|--------|-------|--------|------|-------|---------|--------|---------|------|-----------|-----------|
| 1890 | 0 | 1,432 | 0 | 3,227 | 860 | 933 | 120 | 662 | 0 | 0 | 0 | 0 | 196 | 0 |
| 1891 | 0 | 1,590 | 0 | 4,286 | 839 | 900 | 123 | 608 | 0 | 0 | 0 | 0 | 198 | 0 |
| 1892 | 0 | 1,758 | 0 | 4,448 | 851 | 857 | 139 | 597 | 0 | 0 | 0 | 0 | 205 | 0 |
| 1893 | 0 | 1,777 | 0 | 4,434 | 823 | 802 | 141 | 555 | 0 | 0 | 0 | 0 | 224 | 0 |
| 1894 | 0 | 1,895 | 0 | 4,987 | 844 | 839 | 154 | 499 | 0 | 0 | 0 | 0 | 239 | 0 |
| 1895 | 0 | 2,037 | 0 | 5,181 | 762 | 764 | 141 | 366 | 0 | 0 | 0 | 0 | 244 | 0 |
| 1896 | 0 | 2,166 | 0 | 5,087 | 800 | 852 | 126 | 391 | 0 | 0 | 0 | 0 | 252 | 0 |
| 1897 | 0 | 2,273 | 0 | 6,158 | 846 | 938 | 122 | 371 | 0 | 0 | 0 | 0 | 257 | 0 |
| 1898 | 82 | 2,597 | 0 | 7,679 | 918 | 1,043 | 119 | 362 | 0 | 0 | 0 | 0 | 247 | 0 |
| 1899 | 138 | 2,868 | 0 | 9,225 | 967 | 1,071 | 104 | 340 | 0 | 0 | 0 | 0 | 261 | 0 |
| 1900 | 172 | 3,080 | 0 | 10,363 | 1,056 | 1,136 | 138 | 545 | 0 | 0 | 0 | 0 | 277 | 0 |
| 1901 | 207 | 3,376 | 0 | 11,704 | 1,007 | 1,007 | 139 | 563 | 0 | 0 | 0 | 0 | 279 | 0 |
| 1902 | 224 | 3,654 | 0 | 12,211 | 1,021 | 1,023 | 144 | 459 | 0 | 0 | 0 | 0 | 279 | 0 |
| 1903 | 146 | 3,904 | 0 | 12,398 | 1,045 | 1,028 | 179 | 453 | 0 | 0 | 0 | 0 | 251 | 0 |
| 1904 | 133 | 4,216 | 0 | 12,740 | 1,035 | 1,021 | 229 | 524 | 0 | 0 | 0 | 0 | 252 | 0 |
| 1905 | 195 | 4,497 | 0 | 13,087 | 1,273 | 1,122 | 248 | 832 | 0 | 0 | 0 | 96 | 272 | 0 |
| 1906 | 263 | 4,719 | 0 | 14,004 | 1,539 | 1,269 | 289 | 1,234 | 0 | 0 | 0 | 193 | 298 | 0 |
| 1907 | 431 | 4,966 | 0 | 15,401 | 1,820 | 1,347 | 301 | 1,707 | 0 | 0 | 0 | 375 | 310 | 0 |
| 1908 | 619 | 5,040 | 0 | 16,437 | 1,950 | 1,326 | 276 | 2,111 | 0 | 0 | 0 | 572 | 372 | 0 |
| 1909 | 773 | 5,111 | 0 | 17,409 | 2,224 | 1,441 | 252 | 2,472 | 0 | 43 | 0 | 769 | 402 | 0 |
| 1910 | 906 | 5,460 | 0 | 18,701 | 2,187 | 1,363 | 228 | 2,539 | 0 | 107 | 0 | 863 | 416 | 0 |
| 1911 | 1,048 | 5,753 | 0 | 19,268 | 2,322 | 1,491 | 229 | 2,646 | 0 | 171 | 0 | 871 | 433 | 0 |
| 1912 | 1,129 | 5,917 | 0 | 19,149 | 2,340 | 1,552 | 250 | 2,778 | 0 | 226 | 0 | 898 | 455 | 0 |
| 1913 | 1,119 | 6,160 | 0 | 19,053 | 2,479 | 1,723 | 300 | 2,953 | 0 | 288 | 0 | 772 | 462 | 0 |
| 1914 | 1,173 | 6,503 | 0 | 18,982 | 2,664 | 1,915 | 340 | 3,133 | 0 | 317 | 0 | 805 | 473 | 0 |
| 1915 | 1,226 | 6,438 | 580 | 19,695 | 2,688 | 1,991 | 350 | 3,135 | 0 | 313 | 0 | 811 | 474 | 0 |
| 1916 | 1,407 | 6,204 | 580 | 20,028 | 2,511 | 1,845 | 320 | 3,195 | 0 | 308 | 0 | 784 | 480 | 0 |
| 1917 | 1,437 | 5,932 | 580 | 20,167 | 2,619 | 1,878 | 318 | 3,241 | 0 | 311 | 0 | 830 | 483 | 0 |
| 1918 | 1,545 | 5,544 | 580 | 20,378 | 2,541 | 1,772 | 272 | 3,331 | 0 | 302 | 0 | 818 | 496 | 0 |
| 1919 | 1,650 | 5,039 | 580 | 20,796 | 2,472 | 1,712 | 258 | 3,326 | 0 | 281 | 0 | 890 | 496 | 0 |
| 1920 | 1,708 | 4,786 | 0 | 20,381 | 2,543 | 1,782 | 253 | 3,626 | 0 | 274 | 0 | 1,009 | 497 | 0 |
| 1921 | 1,623 | 4,757 | 0 | 20,351 | 2,776 | 1,970 | 283 | 3,643 | 0 | 360 | 0 | 1,221 | 519 | 0 |
| 1922 | 1,752 | 5,002 | 0 | 21,789 | 2,737 | 1,900 | 268 | 3,855 | 0 | 419 | 0 | 1,200 | 532 | 0 |
| 1923 | 1,788 | 5,384 | 0 | 23,032 | 2,939 | 2,027 | 277 | 3,946 | 0 | 484 | 0 | 1,515 | 550 | 0 |
| 1924 | 1,837 | 5,661 | 0 | 23,507 | 2,950 | 2,064 | 266 | 4,168 | 0 | 551 | 0 | 1,497 | 583 | 0 |
| 1925 | 1,901 | 5,868 | 0 | 23,970 | 3,172 | 2,182 | 288 | 4,249 | 0 | 611 | 0 | 1,463 | 610 | 0 |
| 1926 | 2,058 | 5,951 | 1,042 | 26,461 | 3,169 | 2,136 | 291 | 4,400 | 0 | 582 | 0 | 1,481 | 638 | 0 |
| 1927 | 2,096 | 6,115 | 1,971 | 27,867 | 3,291 | 2,244 | 272 | 4,481 | 0 | 580 | 0 | 1,476 | 660 | 0 |
| 1928 | 2,145 | 6,172 | 2,964 | 29,514 | 3,417 | 2,305 | 249 | 4,361 | 0 | 682 | 0 | 1,433 | 698 | 0 |
| 1929 | 2,125 | 6,542 | 4,022 | 30,989 | 3,462 | 2,266 | 229 | 4,343 | 0 | 767 | 0 | 1,469 | 730 | 0 |
| 1930 | 2,105 | 6,718 | 4,991 | 33,197 | 3,555 | 2,342 | 212 | 4,178 | 0 | 784 | 0 | 1,485 | 746 | 0 |
| 1931 | 1,862 | 7,066 | 4,938 | 32,729 | 3,684 | 2,354 | 193 | 4,099 | 0 | 805 | 0 | 1,506 | 769 | 0 |
| 1932 | 1,638 | 7,291 | 5,011 | 32,575 | 3,587 | 2,402 | 225 | 4,200 | 0 | 857 | 0 | 1,603 | 824 | 0 |
| 1933 | 1,683 | 7,983 | 5,623 | 33,366 | 3,526 | 2,317 | 245 | 4,301 | 0 | 828 | 0 | 1,543 | 870 | 0 |
| 1934 | 1,674 | 8,407 | 5,989 | 33,850 | 3,600 | 2,274 | 254 | 4,361 | 0 | 720 | 0 | 1,491 | 913 | 0 |
| 1935 | 1,700 | 8,907 | 6,487 | 35,179 | 3,685 | 2,452 | 259 | 4,307 | 0 | 697 | 0 | 1,564 | 970 | 0 |
| 1936 | 1,852 | 9,493 | 7,050 | 36,363 | 3,616 | 2,376 | 248 | 4,424 | 0 | 650 | 0 | 1,567 | 1,023 | 0 |
| 1937 | 2,207 | 10,061 | 7,836 | 38,779 | 3,818 | 2,375 | 255 | 4,047 | 0 | 576 | 0 | 1,549 | 1,033 | 0 |
| 1938 | 2,353 | 10,533 | 8,222 | 39,463 | 3,829 | 2,367 | 252 | 4,054 | 0 | 579 | 0 | 1,649 | 1,035 | 0 |
| 1939 | 2,397 | 10,490 | 8,865 | 40,715 | 3,767 | 2,391 | 257 | 3,864 | 0 | 640 | 0 | 1,697 | 1,055 | 0 |
| 1940 | 2,583 | 10,547 | 9,681 | 39,623 | 3,361 | 1,920 | 257 | 3,862 | 0 | 685 | 0 | 1,669 | 1,042 | 0 |
| 1941 | 2,881 | 10,238 | 10,440 | 39,868 | 3,103 | 1,723 | 247 | 3,726 | 120 | 864 | 0 | 1,739 | 986 | 0 |
| 1942 | 3,036 | 10,142 | 11,258 | 40,237 | 3,004 | 1,568 | 226 | 4,025 | 1,492 | 1,236 | 0 | 1,824 | 988 | 0 |
| 1943 | 3,381 | 10,019 | 11,824 | 43,324 | 2,892 | 1,559 | 222 | 4,306 | 2,905 | 1,370 | 27 | 1,941 | 1,021 | 183 |
| 1944 | 3,820 | 10,474 | 12,567 | 45,332 | 2,899 | 1,621 | 203 | 4,563 | 4,453 | 1,547 | 55 | 2,158 | 1,037 | 373 |
| 1945 | 4,077 | 10,993 | 13,045 | 47,886 | 3,146 | 1,909 | 187 | 4,890 | 6,205 | 1,728 | 85 | 2,274 | 1,090 | 595 |
| 1946 | 4,303 | 12,019 | 13,303 | 50,002 | 3,370 | 2,200 | 191 | 4,529 | 6,860 | 1,942 | 489 | 2,350 | 1,073 | 801 |
| 1947 | 4,447 | 12,943 | 13,535 | 51,281 | 3,311 | 2,320 | 174 | 4,002 | 6,239 | 1,818 | 518 | 2,351 | 1,035 | 1,078 |
| 1948 | 4,508 | 13,241 | 13,982 | 51,494 | 3,474 | 2,505 | 166 | 3,354 | 5,566 | 1,850 | 519 | 2,276 | 967 | 1,193 |
| 1949 | 4,732 | 13,409 | 14,129 | 52,729 | 3,663 | 2,574 | 149 | 2,910 | 4,782 | 1,880 | 521 | 2,177 | 915 | 1,291 |
| 1950 | 4,916 | 13,671 | 14,707 | 54,610 | 3,911 | 2,597 | 128 | 2,364 | 3,796 | 1,937 | 532 | 2,239 | 873 | 1,462 |
| 1951 | 5,100 | 13,897 | 15,323 | 56,746 | 4,093 | 2,593 | 118 | 2,482 | 3,784 | 1,707 | 167 | 2,294 | 925 | 1,603 |
| 1952 | 5,161 | 13,651 | 15,779 | 57,789 | 4,369 | 2,716 | 111 | 2,517 | 3,827 | 1,577 | 180 | 2,469 | 978 | 1,657 |
| 1953 | 5,166 | 14,344 | 15,957 | 58,772 | 4,417 | 2,489 | 98 | 2,560 | 3,748 | 1,619 | 192 | 2,734 | 1,022 | 1,622 |
| 1954 | 5,190 | 15,092 | 16,974 | 62,083 | 4,421 | 2,484 | 85 | 2,636 | 3,871 | 1,437 | 207 | 2,803 | 1,035 | 1,566 |
| 1955 | 5,369 | 15,569 | 17,657 | 64,755 | 4,238 | 2,319 | 69 | 2,713 | 3,807 | 1,455 | 209 | 2,913 | 1,060 | 1,397 |
| 1956 | 5,643 | 16,714 | 18,369 | 68,960 | 4,302 | 2,390 | 60 | 3,075 | 3,670 | 1,599 | 209 | 3,067 | 1,019 | 1,268 |
| 1957 | 5,963 | 17,628 | 19,026 | 73,199 | 3,998 | 1,995 | 45 | 3,345 | 3,662 | 2,412 | 1,066 | 3,165 | 1,033 | 1,131 |
| 1958 | 6,389 | 17,754 | 20,311 | 77,678 | 4,201 | 2,176 | 36 | 3,801 | 5,375 | 3,064 | 2,054 | 3,403 | 1,032 | 1,131 |
| 1959 | 6,643 | 18,181 | 21,304 | 81,050 | 4,366 | 2,186 | 33 | 4,111 | 6,932 | 3,897 | 2,946 | 3,836 | 1,087 | 1,089 |
| 1960 | 7,084 | 18,919 | 22,744 | 86,612 | 4,469 | 2,149 | 34 | 4,458 | 8,733 | 4,447 | 3,881 | 4,144 | 1,088 | 1,048 |
| 1961 | 7,148 | 18,987 | 24,458 | 90,008 | 4,530 | 2,073 | 28 | 4,620 | 10,681 | 5,176 | 4,812 | 4,340 | 1,180 | 1,013 |
| 1962 | 7,375 | 18,049 | 26,065 | 94,641 | 4,640 | 2,181 | 25 | 4,915 | 12,493 | 5,070 | 4,676 | 4,567 | 1,183 | 1,019 |
| 1963 | 7,589 | 17,356 | 27,677 | 97,319 | 4,484 | 2,097 | 24 | 4,974 | 12,907 | 5,168 | 4,450 | 4,746 | 1,218 | 978 |
| 1964 | 7,924 | 16,349 | 29,177 | 101,318 | 4,705 | 2,387 | 26 | 5,178 | 13,300 | 5,138 | 4,194 | 4,958 | 1,211 | 1,013 |
| 1965 | 8,088 | 15,174 | 30,381 | 103,764 | 4,724 | 2,571 | 28 | 5,403 | 13,668 | 5,402 | 4,151 | 5,164 | 1,270 | 1,070 |
| 1966 | 8,457 | 13,901 | 31,232 | 106,102 | 4,837 | 2,699 | 32 | 5,535 | 14,152 | 5,435 | 4,130 | 5,432 | 1,277 | 1,185 |
| 1967 | 8,770 | 14,372 | 32,503 | 107,149 | 5,297 | 3,025 | 38 | 5,603 | 14,486 | 5,621 | 4,136 | 5,705 | 1,311 | 1,305 |
| 1968 | 8,829 | 15,004 | 33,324 | 110,272 | 5,807 | 3,318 | 44 | 5,759 | 15,477 | 5,578 | 4,188 | 5,719 | 1,355 | 1,346 |
| 1969 | 9,132 | 15,772 | 32,605 | 111,688 | 5,627 | 2,848 | 46 | 5,703 | 16,120 | 5,558 | 4,287 | 5,652 | 1,425 | 1,446 |
| 1970 | 9,086 | 17,072 | 31,522 | 112,302 | 5,880 | 2,881 | 47 | 5,862 | 16,238 | 5,461 | 4,252 | 5,636 | 1,449 | 1,569 |

| | | OECD Europe | | | | | | | | | | | | Eastern Eu |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Potatoes | Total | Wheat | Rye | Barley | Oats | Maize | Buckwheat | Potatoes | Sugar beet | Mixed corn | Rice | Total | Wheat |
| 1890 | 110 | 2,882 | 18,812 | 13,199 | 8,583 | 18,608 | 2,972 | 1,144 | 54,601 | 18,541 | 883 | 312 | 137,654 | 6,108 |
| 1891 | 98 | 2,765 | 18,602 | 13,406 | 8,581 | 18,846 | 2,962 | 1,157 | 58,408 | 19,153 | 899 | 309 | 142,322 | 6,354 |
| 1892 | 125 | 2,773 | 19,367 | 14,075 | 8,387 | 18,357 | 3,005 | 1,108 | 62,537 | 21,699 | 911 | 281 | 149,727 | 6,525 |
| 1893 | 129 | 2,673 | 18,662 | 13,859 | 8,130 | 17,926 | 2,962 | 1,115 | 64,327 | 23,712 | 858 | 282 | 151,835 | 5,993 |
| 1894 | 137 | 2,711 | 19,343 | 13,849 | 8,339 | 18,841 | 2,931 | 1,086 | 65,158 | 25,209 | 898 | 307 | 155,960 | 5,783 |
| 1895 | 114 | 2,390 | 19,677 | 13,870 | 8,302 | 18,615 | 3,066 | 1,043 | 68,416 | 26,617 | 901 | 333 | 160,841 | 5,791 |
| 1896 | 92 | 2,514 | 19,975 | 13,939 | 8,247 | 18,482 | 3,137 | 981 | 71,360 | 29,245 | 922 | 392 | 166,680 | 5,751 |
| 1897 | 65 | 2,598 | 20,584 | 14,046 | 8,699 | 18,849 | 3,383 | 971 | 75,956 | 30,439 | 949 | 497 | 174,373 | 5,612 |
| 1898 | 34 | 2,724 | 22,413 | 14,648 | 9,324 | 19,791 | 3,530 | 957 | 79,767 | 30,573 | 1,034 | 563 | 182,600 | 6,354 |
| 1899 | 0 | 2,743 | 23,324 | 15,048 | 9,722 | 20,335 | 3,701 | 988 | 82,033 | 31,976 | 1,069 | 628 | 188,822 | 6,845 |
| 1900 | 54 | 3,206 | 23,621 | 15,482 | 9,868 | 20,472 | 3,805 | 941 | 83,144 | 31,161 | 1,101 | 701 | 190,296 | 7,102 |
| 1901 | 54 | 3,048 | 24,411 | 16,045 | 10,053 | 20,481 | 4,034 | 940 | 85,610 | 32,041 | 1,103 | 734 | 195,453 | 7,543 |
| 1902 | 54 | 2,980 | 25,034 | 16,445 | 10,062 | 21,111 | 3,900 | 887 | 86,136 | 31,788 | 1,144 | 742 | 197,248 | 8,424 |
| 1903 | 74 | 3,030 | 25,307 | 16,593 | 9,992 | 21,735 | 3,999 | 833 | 88,209 | 32,829 | 1,178 | 776 | 201,452 | 8,053 |
| 1904 | 90 | 3,152 | 24,991 | 16,927 | 9,903 | 21,727 | 4,046 | 778 | 91,028 | 32,989 | 1,202 | 796 | 204,387 | 7,888 |
| 1905 | 53 | 3,896 | 25,801 | 17,455 | 10,240 | 22,772 | 4,171 | 803 | 92,648 | 34,810 | 1,242 | 787 | 210,729 | 7,743 |
| 1906 | 70 | 4,892 | 25,515 | 17,627 | 10,351 | 23,292 | 4,168 | 793 | 90,978 | 34,724 | 1,278 | 776 | 209,502 | 7,847 |
| 1907 | 96 | 5,955 | 25,740 | 17,897 | 10,384 | 23,280 | 4,233 | 734 | 87,384 | 33,028 | 1,289 | 772 | 204,741 | 7,667 |
| 1908 | 110 | 6,716 | 25,664 | 18,354 | 10,394 | 22,046 | 4,257 | 710 | 86,720 | 34,649 | 1,305 | 745 | 204,845 | 8,270 |
| 1909 | 111 | 7,713 | 26,118 | 18,607 | 10,638 | 22,692 | 4,317 | 690 | 85,698 | 36,045 | 1,341 | 753 | 206,899 | 8,394 |
| 1910 | 125 | 7,828 | 25,407 | 17,952 | 10,391 | 22,055 | 4,370 | 662 | 83,304 | 36,044 | 1,188 | 777 | 202,151 | 8,151 |
| 1911 | 109 | 8,273 | 25,390 | 17,252 | 10,093 | 21,139 | 4,490 | 598 | 83,287 | 32,617 | 1,080 | 812 | 196,759 | 7,802 |
| 1912 | 139 | 8,638 | 24,119 | 16,358 | 9,766 | 20,512 | 4,437 | 603 | 79,475 | 31,759 | 970 | 831 | 188,829 | 7,145 |
| 1913 | 126 | 9,102 | 22,361 | 14,591 | 9,091 | 19,678 | 4,367 | 564 | 72,332 | 26,878 | 819 | 852 | 171,533 | 6,239 |
| 1914 | 129 | 9,776 | 21,224 | 12,745 | 8,351 | 17,626 | 4,157 | 476 | 63,344 | 22,074 | 675 | 849 | 151,523 | 5,393 |
| 1915 | 115 | 9,878 | 20,265 | 11,563 | 7,780 | 16,299 | 3,963 | 411 | 55,849 | 17,762 | 753 | 852 | 135,496 | 4,983 |
| 1916 | 135 | 9,557 | 19,635 | 10,573 | 7,639 | 16,074 | 3,763 | 391 | 50,146 | 17,030 | 788 | 839 | 126,879 | 4,646 |
| 1917 | 119 | 9,798 | 20,448 | 10,197 | 7,387 | 15,473 | 3,773 | 376 | 49,522 | 16,427 | 837 | 830 | 125,270 | 5,042 |
| 1918 | 117 | 9,650 | 21,055 | 10,144 | 7,433 | 15,822 | 3,713 | 372 | 52,948 | 17,161 | 907 | 825 | 130,378 | 5,845 |
| 1919 | 131 | 9,566 | 21,720 | 10,353 | 7,716 | 16,611 | 3,836 | 386 | 55,763 | 18,066 | 968 | 830 | 136,248 | 7,006 |
| 1920 | 175 | 10,159 | 22,269 | 10,594 | 8,102 | 17,401 | 3,982 | 405 | 63,651 | 20,613 | 1,100 | 851 | 148,969 | 7,862 |
| 1921 | 203 | 10,975 | 23,727 | 11,647 | 8,465 | 17,992 | 4,089 | 401 | 68,907 | 22,083 | 1,262 | 893 | 159,464 | 8,834 |
| 1922 | 222 | 11,134 | 23,155 | 11,632 | 8,717 | 19,009 | 4,158 | 420 | 71,816 | 22,959 | 1,389 | 953 | 164,208 | 9,264 |
| 1923 | 262 | 12,000 | 23,999 | 12,118 | 9,119 | 19,952 | 4,252 | 416 | 73,623 | 23,976 | 1,533 | 1,012 | 170,000 | 9,661 |
| 1924 | 264 | 12,343 | 24,124 | 12,571 | 9,374 | 20,431 | 4,057 | 408 | 77,673 | 25,214 | 1,730 | 1,047 | 176,629 | 10,340 |
| 1925 | 254 | 12,829 | 25,241 | 13,015 | 9,706 | 21,133 | 3,995 | 387 | 79,724 | 25,437 | 1,823 | 1,062 | 181,521 | 11,177 |
| 1926 | 242 | 12,939 | 24,500 | 12,625 | 9,738 | 20,924 | 4,043 | 373 | 81,188 | 27,488 | 1,871 | 1,063 | 183,813 | 11,643 |
| 1927 | 226 | 13,230 | 25,067 | 12,542 | 9,804 | 20,437 | 3,954 | 370 | 85,625 | 28,119 | 1,939 | 1,041 | 188,899 | 12,266 |
| 1928 | 203 | 13,350 | 26,370 | 12,843 | 10,100 | 20,466 | 4,079 | 358 | 86,306 | 28,125 | 2,030 | 1,005 | 191,681 | 12,008 |
| 1929 | 200 | 13,466 | 27,858 | 12,963 | 10,102 | 20,397 | 4,311 | 355 | 87,917 | 28,369 | 2,052 | 1,013 | 195,338 | 12,242 |
| 1930 | 194 | 13,496 | 28,638 | 12,885 | 10,119 | 19,546 | 4,478 | 352 | 88,742 | 29,293 | 2,070 | 1,010 | 197,133 | 11,988 |
| 1931 | 198 | 13,607 | 30,069 | 12,861 | 10,194 | 19,547 | 4,356 | 336 | 87,744 | 28,068 | 2,181 | 1,021 | 196,377 | 11,728 |
| 1932 | 194 | 13,892 | 29,549 | 12,889 | 9,855 | 19,294 | 4,400 | 330 | 87,834 | 28,616 | 2,239 | 982 | 195,989 | 11,849 |
| 1933 | 200 | 13,831 | 28,403 | 12,373 | 9,348 | 18,881 | 4,388 | 301 | 90,651 | 29,938 | 2,335 | 971 | 197,589 | 12,716 |
| 1934 | 201 | 13,813 | 27,906 | 12,170 | 9,269 | 18,805 | 3,804 | 288 | 91,914 | 30,640 | 2,487 | 937 | 198,221 | 13,213 |
| 1935 | 198 | 14,132 | 27,418 | 12,023 | 9,126 | 19,102 | 3,738 | 279 | 92,149 | 31,915 | 2,596 | 931 | 199,277 | 14,319 |
| 1936 | 203 | 14,108 | 25,791 | 11,386 | 8,902 | 18,829 | 3,930 | 266 | 92,984 | 32,019 | 2,608 | 970 | 197,683 | 13,800 |
| 1937 | 206 | 13,859 | 26,264 | 11,178 | 9,153 | 18,482 | 3,964 | 233 | 91,085 | 32,461 | 2,642 | 1,043 | 196,504 | 12,601 |
| 1938 | 213 | 13,977 | 26,241 | 10,774 | 9,642 | 18,413 | 3,799 | 203 | 88,855 | 32,374 | 2,848 | 1,084 | 194,234 | 11,189 |
| 1939 | 216 | 13,886 | 25,633 | 10,437 | 9,665 | 17,598 | 4,118 | 174 | 84,413 | 32,181 | 2,830 | 1,092 | 188,141 | 9,699 |
| 1940 | 221 | 13,018 | 25,217 | 10,025 | 9,556 | 16,571 | 3,923 | 133 | 79,842 | 29,851 | 2,793 | 1,033 | 178,943 | 8,505 |
| 1941 | 241 | 12,748 | 23,887 | 8,559 | 8,990 | 15,056 | 3,411 | 106 | 67,298 | 25,793 | 2,435 | 898 | 156,433 | 7,569 |
| 1942 | 324 | 14,688 | 23,528 | 7,318 | 8,983 | 14,388 | 3,266 | 84 | 58,464 | 23,513 | 2,168 | 818 | 142,528 | 7,190 |
| 1943 | 354 | 16,780 | 21,674 | 6,265 | 8,346 | 12,868 | 3,210 | 79 | 47,752 | 20,605 | 1,648 | 794 | 123,242 | 7,002 |
| 1944 | 391 | 19,300 | 21,009 | 4,976 | 8,116 | 11,903 | 3,445 | 78 | 42,116 | 19,812 | 1,298 | 798 | 113,551 | 7,408 |
| 1945 | 422 | 22,530 | 21,264 | 4,739 | 8,278 | 11,916 | 3,402 | 74 | 39,394 | 20,477 | 1,131 | 844 | 111,519 | 6,988 |
| 1946 | 397 | 24,201 | 23,952 | 6,068 | 9,105 | 12,849 | 3,655 | 72 | 47,831 | 26,997 | 1,290 | 939 | 132,756 | 8,295 |
| 1947 | 317 | 23,163 | 25,067 | 7,026 | 9,695 | 13,437 | 4,013 | 75 | 53,853 | 31,494 | 1,438 | 1,022 | 147,121 | 9,756 |
| 1948 | 282 | 22,152 | 28,244 | 8,065 | 10,782 | 14,361 | 4,231 | 81 | 59,549 | 36,301 | 1,627 | 1,109 | 164,352 | 11,134 |
| 1949 | 257 | 21,120 | 30,036 | 8,747 | 11,781 | 15,102 | 4,565 | 83 | 64,058 | 40,250 | 1,839 | 1,214 | 177,674 | 11,793 |
| 1950 | 211 | 20,050 | 31,100 | 8,846 | 12,519 | 15,032 | 5,015 | 85 | 67,177 | 43,496 | 1,975 | 1,308 | 186,551 | 12,267 |
| 1951 | 211 | 19,978 | 32,409 | 8,853 | 13,434 | 15,183 | 5,429 | 81 | 66,353 | 44,438 | 2,114 | 1,383 | 189,677 | 12,681 |
| 1952 | 185 | 20,586 | 32,739 | 8,859 | 14,830 | 15,156 | 5,756 | 78 | 68,269 | 44,520 | 2,243 | 1,386 | 193,836 | 12,257 |
| 1953 | 177 | 20,678 | 34,002 | 8,838 | 15,651 | 14,657 | 6,146 | 72 | 69,449 | 45,618 | 2,425 | 1,344 | 198,202 | 12,871 |
| 1954 | 164 | 20,709 | 34,924 | 8,941 | 16,408 | 14,096 | 6,421 | 65 | 69,161 | 47,294 | 2,491 | 1,303 | 201,104 | 12,552 |
| 1955 | 167 | 20,346 | 36,070 | 8,806 | 17,658 | 13,660 | 6,803 | 60 | 67,583 | 47,290 | 2,460 | 1,279 | 201,670 | 13,884 |
| 1956 | 168 | 20,827 | 36,230 | 8,754 | 19,082 | 13,183 | 7,342 | 58 | 69,345 | 50,528 | 2,541 | 1,216 | 208,278 | 14,247 |
| 1957 | 158 | 22,010 | 37,051 | 8,275 | 19,677 | 12,483 | 7,675 | 55 | 67,845 | 51,825 | 2,553 | 1,231 | 208,671 | 15,111 |
| 1958 | 168 | 26,441 | 38,405 | 7,980 | 21,412 | 12,366 | 7,794 | 52 | 67,250 | 51,650 | 2,574 | 1,240 | 210,722 | 15,307 |
| 1959 | 180 | 30,663 | 38,524 | 7,651 | 23,476 | 12,153 | 8,329 | 49 | 68,540 | 51,692 | 2,626 | 1,217 | 214,256 | 15,980 |
| 1960 | 185 | 34,636 | 39,399 | 7,471 | 25,254 | 11,851 | 8,489 | 45 | 68,171 | 54,675 | 2,753 | 1,197 | 219,304 | 15,993 |
| 1961 | 190 | 38,643 | 41,312 | 7,186 | 26,946 | 11,433 | 8,544 | 43 | 64,908 | 53,543 | 2,690 | 1,169 | 217,774 | 17,043 |
| 1962 | 228 | 40,999 | 42,574 | 7,126 | 28,961 | 11,157 | 8,878 | 38 | 63,401 | 55,602 | 2,635 | 1,145 | 221,518 | 18,148 |
| 1963 | 243 | 41,290 | 43,280 | 7,077 | 31,357 | 11,089 | 9,583 | 34 | 62,682 | 59,533 | 2,512 | 1,151 | 228,298 | 19,633 |
| 1964 | 250 | 42,360 | 45,436 | 7,056 | 33,342 | 11,025 | 10,118 | 29 | 60,355 | 62,543 | 2,455 | 1,151 | 233,512 | 20,994 |
| 1965 | 264 | 43,715 | 46,027 | 6,743 | 35,450 | 11,156 | 11,201 | 27 | 58,797 | 63,725 | 2,346 | 1,202 | 236,672 | 22,350 |
| 1966 | 283 | 44,996 | | | | | | | | | | | | |
| 1967 | 306 | 46,833 | | | | | | | | | | | | |
| 1968 | 333 | 48,925 | | | | | | | | | | | | |
| 1969 | 376 | 49,090 | | | | | | | | | | | | |
| 1970 | 413 | 49,690 | | | | | | | | | | | | |

| | ope | | | | | | | CIS | | | | | | |
|------|------|--------|-------|-------|----------|------------|---------|--------|--------|--------|--------|-------|----------|------------|
| Year | Rye | Barley | Oats | Maize | Potatoes | Sugar Beet | Total | Wheat | Rye | Barley | Oats | Maize | Potatoes | Sugar beet |
| 1890 | 1,719 | 2,138 | 1,368 | 5,161 | 2,866 | 1,336 | 20,697 | 5,953 | 15,484 | 4,210 | 8,119 | 1,400 | 17,174 | 4,800 |
| 1891 | 1,768 | 2,175 | 1,396 | 5,224 | 3,118 | 1,390 | 21,425 | 6,619 | 17,300 | 4,524 | 8,455 | 1,345 | 18,775 | 5,000 |
| 1892 | 1,840 | 2,256 | 1,444 | 5,171 | 3,432 | 1,430 | 22,098 | 7,683 | 18,559 | 4,933 | 9,343 | 1,116 | 21,115 | 5,400 |
| 1893 | 1,751 | 2,218 | 1,420 | 5,202 | 3,611 | 1,447 | 21,642 | 8,030 | 18,573 | 5,229 | 9,800 | 1,085 | 21,903 | 5,800 |
| 1894 | 1,646 | 2,145 | 1,454 | 5,370 | 3,709 | 1,436 | 21,541 | 8,400 | 18,600 | 5,200 | 9,600 | 880 | 22,000 | 5,800 |
| 1895 | 1,601 | 2,110 | 1,488 | 5,837 | 3,863 | 1,469 | 22,158 | 8,600 | 19,000 | 5,000 | 10,200 | 880 | 22,600 | 6,200 |
| 1896 | 1,592 | 2,111 | 1,505 | 6,002 | 4,126 | 1,615 | 22,702 | 8,800 | 19,600 | 5,000 | 10,600 | 880 | 23,400 | 6,200 |
| 1897 | 1,535 | 2,022 | 1,502 | 6,339 | 4,328 | 1,699 | 23,037 | 8,800 | 19,600 | 5,000 | 10,200 | 1,800 | 23,400 | 6,600 |
| 1898 | 1,628 | 2,138 | 1,662 | 6,212 | 4,397 | 1,806 | 24,196 | 10,000 | 20,800 | 5,200 | 11,000 | 1,800 | 24,600 | 7,200 |
| 1899 | 1,684 | 2,223 | 1,781 | 6,226 | 4,596 | 1,929 | 25,283 | 10,600 | 21,600 | 5,400 | 11,200 | 1,800 | 24,800 | 7,400 |
| 1900 | 1,671 | 2,243 | 1,764 | 5,761 | 4,495 | 1,956 | 24,992 | 11,000 | 22,200 | 6,000 | 11,600 | 1,800 | 24,800 | 7,200 |
| 1901 | 1,737 | 2,372 | 1,846 | 5,472 | 4,529 | 1,991 | 25,489 | 11,800 | 21,200 | 6,200 | 11,600 | 1,800 | 25,400 | 7,600 |
| 1902 | 1,825 | 2,585 | 1,986 | 5,904 | 4,634 | 2,185 | 27,544 | 12,000 | 20,600 | 6,400 | 11,800 | 1,200 | 25,800 | 8,000 |
| 1903 | 1,748 | 2,578 | 1,935 | 6,191 | 4,921 | 2,296 | 27,722 | 11,400 | 20,200 | 6,600 | 11,600 | 1,200 | 25,800 | 8,000 |
| 1904 | 1,685 | 2,413 | 1,805 | 6,227 | 4,809 | 2,329 | 27,156 | 11,000 | 19,600 | 6,600 | 12,000 | 1,200 | 26,600 | 8,200 |
| 1905 | 1,686 | 2,516 | 1,916 | 7,252 | 5,254 | 2,561 | 28,928 | 12,200 | 19,000 | 7,000 | 12,000 | 1,200 | 28,200 | 8,400 |
| 1906 | 1,677 | 2,432 | 1,895 | 8,134 | 5,398 | 2,792 | 30,175 | 14,200 | 19,800 | 8,000 | 12,800 | 1,600 | 30,000 | 9,400 |
| 1907 | 1,637 | 2,328 | 1,855 | 8,001 | 5,373 | 2,892 | 29,752 | 15,200 | 20,600 | 8,800 | 13,600 | 1,600 | 31,400 | 10,200 |
| 1908 | 1,718 | 2,320 | 1,817 | 8,406 | 5,461 | 3,457 | 31,449 | 17,600 | 22,000 | 9,600 | 14,400 | 1,800 | 33,400 | 10,600 |
| 1909 | 1,920 | 2,442 | 1,924 | 8,810 | 5,670 | 4,046 | 33,207 | 21,000 | 23,400 | 10,800 | 15,600 | 2,000 | 35,000 | 11,400 |
| 1910 | 1,875 | 2,403 | 1,879 | 8,941 | 5,743 | 4,379 | 33,371 | 17,600 | 19,000 | 9,000 | 12,600 | 1,800 | 28,600 | 10,000 |
| 1911 | 1,795 | 2,394 | 1,891 | 8,513 | 5,848 | 4,284 | 32,528 | 13,000 | 14,600 | 6,800 | 9,400 | 1,200 | 21,200 | 7,400 |
| 1912 | 1,661 | 2,284 | 1,857 | 7,436 | 5,722 | 4,036 | 30,141 | 10,000 | 10,600 | 4,800 | 6,800 | 800 | 14,800 | 4,600 |
| 1913 | 1,541 | 2,029 | 1,710 | 6,325 | 5,100 | 3,311 | 26,255 | 5,600 | 5,200 | 2,600 | 3,600 | 400 | 7,200 | 2,400 |
| 1914 | 1,221 | 1,725 | 2,628 | 5,021 | 4,629 | 2,718 | 23,335 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1915 | 1,554 | 1,562 | 2,568 | 4,146 | 3,745 | 1,841 | 20,398 | 2 | 25 | 20 | 0 | 0 | 104 | 0 |
| 1916 | 2,014 | 1,938 | 3,102 | 4,484 | 4,526 | 2,431 | 23,140 | 1,808 | 1,882 | 1,059 | 1,423 | 200 | 4,516 | 200 |
| 1917 | 3,135 | 2,566 | 3,716 | 5,078 | 5,363 | 3,052 | 27,953 | 3,030 | 4,075 | 1,741 | 2,557 | 400 | 9,285 | 280 |
| 1918 | 4,397 | 3,421 | 4,661 | 5,909 | 7,775 | 4,057 | 36,065 | 5,258 | 7,863 | 2,646 | 4,323 | 1,000 | 14,332 | 680 |
| 1919 | 5,938 | 4,257 | 4,621 | 7,012 | 9,793 | 5,217 | 43,843 | 7,687 | 12,072 | 3,925 | 6,058 | 1,600 | 21,910 | 1,280 |
| 1920 | 6,483 | 4,701 | 5,286 | 8,267 | 12,284 | 7,572 | 52,456 | 10,314 | 16,008 | 4,803 | 7,994 | 2,000 | 29,608 | 1,880 |
| 1921 | 7,653 | 4,839 | 5,383 | 8,648 | 13,535 | 8,834 | 57,726 | 12,753 | 18,983 | 5,071 | 9,115 | 2,800 | 33,592 | 3,480 |
| 1922 | 7,865 | 4,845 | 5,460 | 9,850 | 14,486 | 9,808 | 61,578 | 16,369 | 21,714 | 5,503 | 11,127 | 3,400 | 38,145 | 4,600 |
| 1923 | 8,027 | 4,772 | 5,339 | 10,038 | 15,060 | 10,805 | 63,702 | 18,591 | 22,920 | 5,680 | 12,064 | 3,400 | 41,842 | 6,200 |
| 1924 | 8,172 | 4,877 | 5,169 | 9,712 | 15,984 | 11,158 | 65,413 | 20,615 | 22,677 | 5,664 | 13,831 | 3,400 | 43,819 | 7,600 |
| 1925 | 9,097 | 5,573 | 5,542 | 10,321 | 17,583 | 10,775 | 70,068 | 21,856 | 22,905 | 6,287 | 15,281 | 3,600 | 45,954 | 8,200 |
| 1926 | 9,256 | 5,916 | 5,640 | 10,171 | 18,028 | 10,329 | 70,982 | 23,091 | 23,125 | 6,482 | 16,321 | 3,200 | 48,103 | 9,202 |
| 1927 | 9,384 | 5,909 | 5,531 | 10,121 | 18,671 | 9,784 | 71,667 | 22,527 | 22,741 | 6,481 | 15,558 | 3,400 | 48,586 | 10,423 |
| 1928 | 9,676 | 6,079 | 5,606 | 11,372 | 18,287 | 8,645 | 71,673 | 22,169 | 22,358 | 6,505 | 15,217 | 3,400 | 49,223 | 9,884 |
| 1929 | 9,999 | 6,177 | 5,636 | 12,280 | 17,633 | 7,748 | 71,715 | 23,410 | 23,418 | 6,944 | 14,870 | 3,800 | 50,303 | 9,732 |
| 1930 | 9,755 | 5,657 | 5,280 | 12,211 | 16,799 | 6,996 | 68,687 | 25,658 | 23,491 | 6,941 | 15,468 | 4,000 | 51,532 | 10,819 |
| 1931 | 9,603 | 5,292 | 5,154 | 12,352 | 16,018 | 6,158 | 66,305 | 26,480 | 22,874 | 7,148 | 15,669 | 4,000 | 55,812 | 11,303 |
| 1932 | 9,784 | 5,344 | 5,287 | 12,894 | 16,477 | 6,075 | 67,709 | 28,493 | 22,131 | 7,932 | 16,027 | 3,800 | 57,361 | 12,364 |
| 1933 | 9,563 | 5,121 | 5,203 | 12,834 | 17,591 | 6,490 | 69,519 | 33,895 | 23,548 | 9,140 | 18,252 | 4,000 | 62,235 | 15,393 |
| 1934 | 9,532 | 4,868 | 5,066 | 13,309 | 17,908 | 6,675 | 70,570 | 36,506 | 22,961 | 9,157 | 18,705 | 3,600 | 60,973 | 17,020 |
| 1935 | 9,899 | 4,954 | 5,164 | 13,390 | 17,442 | 7,011 | 72,179 | 30,499 | 18,965 | 7,754 | 14,930 | 2,800 | 50,780 | 19,011 |
| 1936 | 9,540 | 4,882 | 5,189 | 13,486 | 18,696 | 7,411 | 73,003 | 30,611 | 18,768 | 8,460 | 14,575 | 3,200 | 51,364 | 19,325 |
| 1937 | 9,278 | 4,504 | 4,922 | 11,816 | 18,487 | 7,326 | 68,933 | 24,326 | 14,972 | 6,563 | 11,833 | 2,400 | 45,412 | 16,242 |
| 1938 | 8,977 | 4,329 | 4,829 | 9,862 | 17,954 | 6,810 | 63,950 | 14,832 | 8,943 | 4,249 | 7,247 | 1,600 | 35,956 | 12,153 |
| 1939 | 8,624 | 4,119 | 4,732 | 8,137 | 17,957 | 6,717 | 59,986 | 6,526 | 4,505 | 2,530 | 3,638 | 1,000 | 33,783 | 8,878 |
| 1940 | 8,062 | 3,780 | 4,453 | 6,876 | 18,497 | 6,232 | 56,406 | 6,415 | 4,238 | 2,417 | 3,429 | 1,000 | 43,809 | 5,400 |
| 1941 | 7,524 | 3,406 | 4,009 | 5,239 | 16,863 | 5,444 | 50,055 | 2,600 | 0 | 0 | 0 | 0 | 40,000 | 3,000 |
| 1942 | 6,823 | 3,154 | 3,678 | 4,584 | 16,052 | 5,216 | 46,697 | 2,600 | 0 | 0 | 0 | 0 | 45,800 | 3,400 |
| 1943 | 6,565 | 2,914 | 3,327 | 5,308 | 14,451 | 4,978 | 44,545 | 2,600 | 0 | 0 | 0 | 0 | 56,000 | 5,800 |
| 1944 | 6,505 | 2,812 | 3,295 | 6,377 | 14,155 | 5,563 | 46,114 | 2,600 | 0 | 0 | 0 | 0 | 67,800 | 8,200 |
| 1945 | 6,686 | 2,789 | 3,292 | 5,704 | 13,669 | 5,774 | 44,881 | 2,600 | 0 | 0 | 0 | 0 | 74,800 | 10,600 |
| 1946 | 7,467 | 3,034 | 3,515 | 6,059 | 14,538 | 6,895 | 49,804 | 6,200 | 3,600 | 1,200 | 2,600 | 1,400 | 81,000 | 13,600 |
| 1947 | 8,316 | 3,430 | 3,833 | 7,771 | 15,536 | 8,000 | 56,641 | 6,200 | 3,600 | 1,200 | 2,600 | 1,400 | 81,600 | 17,600 |
| 1948 | 8,819 | 3,730 | 4,137 | 7,410 | 17,136 | 8,716 | 61,082 | 15,000 | 3,600 | 1,200 | 2,600 | 1,400 | 80,400 | 19,200 |
| 1949 | 8,500 | 3,975 | 4,076 | 7,612 | 18,835 | 9,222 | 64,013 | 23,200 | 6,600 | 2,800 | 4,600 | 2,200 | 76,000 | 21,200 |
| 1950 | 8,207 | 4,107 | 4,046 | 9,219 | 20,060 | 10,058 | 67,963 | 31,600 | 9,800 | 4,400 | 6,800 | 3,000 | 73,000 | 22,000 |
| 1951 | 8,226 | 4,302 | 4,132 | 11,097 | 21,173 | 10,662 | 72,272 | 34,800 | 9,600 | 5,200 | 6,600 | 4,000 | 69,600 | 24,000 |
| 1952 | 8,190 | 4,284 | 4,181 | 10,944 | 22,015 | 10,493 | 72,363 | 48,200 | 12,400 | 7,800 | 9,200 | 6,000 | 77,000 | 25,800 |
| 1953 | 8,409 | 4,477 | 4,293 | 13,143 | 23,383 | 11,741 | 78,317 | 51,000 | 15,400 | 9,600 | 11,800 | 7,000 | 80,800 | 29,400 |
| 1954 | 8,792 | 4,405 | 4,317 | 13,260 | 23,384 | 12,109 | 78,819 | 58,200 | 15,600 | 10,600 | 12,400 | 8,200 | 83,600 | 35,600 |
| 1955 | 9,273 | 4,689 | 4,472 | 14,447 | 23,175 | 12,937 | 82,877 | 63,800 | 15,800 | 11,000 | 13,000 | 8,600 | 86,000 | 40,400 |
| 1956 | 9,349 | 4,881 | 4,598 | 14,996 | 23,618 | 14,279 | 85,967 | 67,200 | 15,600 | 12,200 | 13,000 | 8,200 | 88,400 | 45,800 |
| 1957 | 9,637 | 5,159 | 4,742 | 15,818 | 23,924 | 15,324 | 89,716 | 67,200 | 16,200 | 12,200 | 12,200 | 9,600 | 86,000 | 49,400 |
| 1958 | 9,377 | 5,290 | 4,658 | 15,484 | 23,334 | 15,219 | 88,669 | 69,800 | 16,600 | 14,400 | 10,800 | 11,800 | 82,400 | 50,800 |
| 1959 | 9,260 | 5,511 | 4,689 | 16,583 | 23,802 | 16,110 | 91,934 | 64,400 | 15,800 | 15,800 | 9,000 | 12,000 | 79,400 | 48,800 |
| 1960 | 8,942 | 5,505 | 4,456 | 16,944 | 25,278 | 17,047 | 94,166 | 65,200 | 15,200 | 19,600 | 7,400 | 13,600 | 80,800 | 56,200 |
| 1961 | 8,980 | 5,571 | 4,241 | 16,891 | 24,778 | 16,512 | 94,017 | 64,400 | 15,200 | 20,400 | 6,200 | 13,200 | 81,800 | 59,000 |
| 1962 | 8,790 | 5,699 | 4,088 | 18,439 | 25,708 | 17,892 | 98,766 | 71,200 | 14,400 | 23,400 | 6,200 | 11,400 | 82,600 | 63,600 |
| 1963 | 8,941 | 5,840 | 4,132 | 19,346 | 27,084 | 19,292 | 104,267 | 72,400 | 13,600 | 24,400 | 7,400 | 10,000 | 87,800 | 71,600 |
| 1964 | 9,185 | 6,018 | 4,088 | 19,877 | 27,948 | 19,756 | 107,866 | 81,000 | 14,000 | 26,200 | 9,000 | 9,600 | 93,800 | 81,600 |
| 1965 | 9,357 | 6,439 | 4,320 | 20,564 | 27,216 | 19,471 | 109,718 | 82,200 | 13,400 | 27,000 | 10,400 | 9,200 | 93,400 | 79,600 |
| 1966 | | | | | | | | | | | | | | |
| 1967 | | | | | | | | | | | | | | |
| 1968 | | | | | | | | | | | | | | |
| 1969 | | | | | | | | | | | | | | |
| 1970 | | | | | | | | | | | | | | |

| Year | Middle East | | | | | | | | India region | | | | | |
|------|-------|-------|--------|-------|------|------|----------|-----------|-------|--------|--------|--------|--------|---------|
|      | Total | Wheat | Barley | Maize | Rice | Oats | Potatoes | Sugar beet | Total | Wheat | Barley | Maize | Millet | Sorghum |
| 1890 | 57,139 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,637 | 0 | 1,249 | 0 | 0 |
| 1891 | 62,018 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,548 | 0 | 1,182 | 0 | 0 |
| 1892 | 68,149 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,460 | 0 | 1,204 | 0 | 0 |
| 1893 | 70,419 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,126 | 0 | 1,222 | 0 | 0 |
| 1894 | 70,480 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,475 | 0 | 1,222 | 0 | 0 |
| 1895 | 72,480 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,622 | 0 | 1,227 | 0 | 0 |
| 1896 | 74,480 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,777 | 0 | 1,299 | 0 | 0 |
| 1897 | 75,400 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7,347 | 0 | 1,328 | 0 | 0 |
| 1898 | 80,600 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7,799 | 0 | 1,390 | 0 | 0 |
| 1899 | 82,800 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8,099 | 0 | 1,442 | 0 | 0 |
| 1900 | 84,600 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8,587 | 0 | 1,470 | 0 | 0 |
| 1901 | 85,600 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8,212 | 0 | 1,509 | 0 | 0 |
| 1902 | 85,800 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7,805 | 0 | 1,547 | 0 | 0 |
| 1903 | 84,800 | 12 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 7,817 | 0 | 1,654 | 0 | 0 |
| 1904 | 85,200 | 23 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 8,033 | 0 | 1,675 | 0 | 0 |
| 1905 | 88,000 | 35 | 30 | 0 | 0 | 0 | 0 | 0 | 23 | 8,352 | 0 | 1,747 | 0 | 0 |
| 1906 | 95,800 | 47 | 38 | 0 | 0 | 0 | 0 | 0 | 44 | 9,124 | 0 | 1,734 | 0 | 0 |
| 1907 | 101,400 | 62 | 48 | 0 | 0 | 0 | 0 | 0 | 65 | 9,576 | 0 | 1,716 | 0 | 0 |
| 1908 | 109,400 | 60 | 46 | 0 | 0 | 0 | 0 | 0 | 85 | 9,723 | 546 | 1,668 | 0 | 0 |
| 1909 | 119,200 | 59 | 45 | 0 | 0 | 0 | 0 | 0 | 110 | 9,818 | 1,168 | 1,772 | 0 | 0 |
| 1910 | 98,600 | 55 | 44 | 0 | 0 | 0 | 0 | 0 | 106 | 9,532 | 1,812 | 1,712 | 0 | 0 |
| 1911 | 73,600 | 53 | 47 | 0 | 0 | 0 | 0 | 0 | 103 | 9,595 | 2,490 | 1,768 | 0 | 0 |
| 1912 | 52,400 | 54 | 51 | 0 | 0 | 0 | 0 | 0 | 99 | 9,607 | 3,168 | 1,847 | 0 | 0 |
| 1913 | 27,000 | 53 | 52 | 0 | 0 | 0 | 0 | 0 | 100 | 9,432 | 3,188 | 1,868 | 0 | 0 |
| 1914 | 0 | 105 | 86 | 0 | 0 | 0 | 0 | 0 | 105 | 9,437 | 3,218 | 1,794 | 0 | 0 |
| 1915 | 151 | 154 | 114 | 0 | 0 | 0 | 0 | 0 | 105 | 9,041 | 3,084 | 1,819 | 0 | 0 |
| 1916 | 11,087 | 203 | 147 | 0 | 0 | 0 | 0 | 0 | 191 | 8,959 | 3,042 | 1,849 | 0 | 0 |
| 1917 | 21,368 | 316 | 189 | 0 | 36 | 0 | 0 | 0 | 268 | 8,970 | 2,997 | 1,935 | 0 | 0 |
| 1918 | 36,102 | 406 | 212 | 0 | 54 | 0 | 0 | 0 | 351 | 9,407 | 3,031 | 2,113 | 578 | 980 |
| 1919 | 54,532 | 676 | 458 | 105 | 72 | 33 | 0 | 0 | 542 | 9,152 | 2,942 | 2,379 | 981 | 1,834 |
| 1920 | 72,607 | 778 | 476 | 105 | 99 | 33 | 0 | 0 | 673 | 9,556 | 2,957 | 2,670 | 1,479 | 2,711 |
| 1921 | 85,795 | 1,103 | 633 | 131 | 99 | 45 | 4 | 1 | 1,344 | 9,382 | 2,840 | 2,996 | 1,970 | 3,718 |
| 1922 | 100,857 | 1,359 | 827 | 214 | 63 | 60 | 14 | 2 | 1,491 | 8,938 | 2,632 | 3,302 | 2,404 | 4,684 |
| 1923 | 110,696 | 1,935 | 1,248 | 325 | 45 | 90 | 41 | 4 | 2,017 | 8,721 | 2,545 | 3,390 | 2,232 | 4,741 |
| 1924 | 117,606 | 2,262 | 1,371 | 315 | 27 | 86 | 64 | 7 | 2,540 | 9,047 | 2,447 | 3,294 | 2,308 | 4,917 |
| 1925 | 124,083 | 2,785 | 1,716 | 426 | 70 | 109 | 86 | 11 | 3,688 | 9,171 | 2,408 | 3,236 | 2,263 | 4,960 |
| 1926 | 129,525 | 2,854 | 1,790 | 469 | 70 | 123 | 96 | 15 | 4,131 | 9,181 | 2,375 | 3,230 | 2,230 | 4,906 |
| 1927 | 129,716 | 3,545 | 2,119 | 496 | 148 | 149 | 107 | 27 | 5,203 | 9,519 | 2,427 | 2,980 | 2,221 | 4,876 |
| 1928 | 128,756 | 4,005 | 2,295 | 482 | 253 | 151 | 123 | 37 | 5,417 | 9,678 | 2,405 | 2,951 | 2,326 | 4,791 |
| 1929 | 132,476 | 4,476 | 2,449 | 479 | 330 | 169 | 121 | 45 | 6,591 | 9,527 | 2,449 | 3,173 | 2,293 | 4,666 |
| 1930 | 137,908 | 5,231 | 2,837 | 505 | 340 | 188 | 137 | 54 | 7,346 | 9,553 | 2,436 | 3,279 | 2,227 | 4,691 |
| 1931 | 143,286 | 6,174 | 3,316 | 548 | 416 | 210 | 157 | 59 | 8,070 | 9,701 | 2,420 | 3,326 | 2,136 | 4,581 |
| 1932 | 148,108 | 6,240 | 3,527 | 557 | 339 | 223 | 172 | 55 | 9,291 | 9,967 | 2,366 | 2,786 | 2,121 | 4,562 |
| 1933 | 166,463 | 6,208 | 3,616 | 587 | 233 | 248 | 181 | 60 | 10,879 | 10,088 | 2,253 | 3,031 | 2,114 | 4,950 |
| 1934 | 168,922 | 6,426 | 3,761 | 647 | 156 | 267 | 224 | 65 | 11,113 | 10,299 | 2,146 | 2,951 | 2,293 | 5,486 |
| 1935 | 144,739 | 6,115 | 3,562 | 640 | 140 | 277 | 242 | 68 | 11,133 | 10,419 | 2,134 | 3,085 | 2,530 | 5,834 |
| 1936 | 146,304 | 5,807 | 3,431 | 699 | 64 | 295 | 295 | 68 | 11,546 | 10,477 | 2,069 | 3,236 | 2,979 | 6,353 |
| 1937 | 121,747 | 5,929 | 3,163 | 754 | 64 | 292 | 317 | 77 | 11,043 | 10,532 | 2,095 | 4,253 | 3,334 | 6,896 |
| 1938 | 84,980 | 6,035 | 3,112 | 728 | 141 | 273 | 303 | 76 | 10,658 | 10,486 | 2,136 | 4,214 | 3,520 | 6,956 |
| 1939 | 60,860 | 5,737 | 3,026 | 636 | 226 | 232 | 273 | 80 | 10,596 | 10,459 | 2,204 | 4,339 | 3,476 | 6,639 |
| 1940 | 66,709 | 5,998 | 3,132 | 625 | 246 | 225 | 271 | 88 | 10,668 | 10,287 | 2,174 | 4,427 | 3,402 | 6,422 |
| 1941 | 45,600 | 6,077 | 3,112 | 561 | 316 | 200 | 248 | 101 | 10,208 | 10,492 | 1,770 | 4,656 | 3,514 | 6,315 |
| 1942 | 51,800 | 6,663 | 3,327 | 525 | 406 | 211 | 281 | 110 | 10,584 | 10,414 | 1,854 | 4,887 | 3,567 | 5,925 |
| 1943 | 64,400 | 6,653 | 3,315 | 568 | 425 | 221 | 324 | 123 | 10,614 | 10,416 | 1,921 | 5,323 | 4,285 | 5,754 |
| 1944 | 78,600 | 7,123 | 3,454 | 635 | 430 | 260 | 411 | 134 | 11,522 | 10,338 | 1,957 | 5,843 | 4,930 | 5,777 |
| 1945 | 88,000 | 7,450 | 3,650 | 686 | 418 | 284 | 493 | 152 | 11,630 | 10,568 | 2,035 | 6,324 | 5,546 | 5,958 |
| 1946 | 109,600 | 8,304 | 4,097 | 747 | 432 | 326 | 603 | 164 | 12,447 | 10,183 | 2,536 | 6,763 | 5,964 | 6,220 |
| 1947 | 114,200 | 8,874 | 4,582 | 760 | 442 | 345 | 712 | 177 | 13,134 | 10,005 | 2,609 | 7,478 | 7,019 | 6,825 |
| 1948 | 123,400 | 9,968 | 5,016 | 798 | 451 | 362 | 831 | 186 | 14,673 | 10,799 | 2,803 | 8,028 | 7,216 | 7,482 |
| 1949 | 136,600 | 10,513 | 5,215 | 843 | 426 | 370 | 933 | 210 | 15,891 | 11,168 | 2,917 | 8,739 | 7,529 | 7,729 |
| 1950 | 150,600 | 11,036 | 5,478 | 969 | 442 | 377 | 1,018 | 229 | 17,611 | 11,503 | 3,066 | 9,786 | 7,754 | 7,990 |
| 1951 | 153,800 | 11,786 | 6,040 | 1,077 | 454 | 391 | 1,083 | 263 | 18,510 | 12,258 | 3,231 | 10,634 | 7,894 | 8,237 |
| 1952 | 186,400 | 11,932 | 6,050 | 1,234 | 441 | 404 | 1,178 | 301 | 19,549 | 12,592 | 3,187 | 10,609 | 7,683 | 8,412 |
| 1953 | 205,000 | 12,570 | 6,095 | 1,392 | 445 | 434 | 1,278 | 371 | 21,093 | 13,041 | 3,156 | 10,629 | 7,645 | 8,289 |
| 1954 | 224,200 | 13,445 | 6,287 | 1,579 | 501 | 469 | 1,334 | 456 | 21,540 | 13,898 | 3,184 | 10,981 | 7,574 | 8,900 |
| 1955 | 238,600 | 13,552 | 6,141 | 1,486 | 533 | 480 | 1,395 | 489 | 22,585 | 14,470 | 3,118 | 10,966 | 7,822 | 9,038 |
| 1956 | 250,400 | 13,564 | 5,785 | 1,370 | 607 | 475 | 1,453 | 504 | 24,070 | 15,111 | 3,105 | 10,829 | 8,016 | 9,274 |
| 1957 | 252,800 | 14,267 | 5,966 | 1,402 | 692 | 479 | 1,479 | 530 | 24,077 | 16,206 | 3,126 | 11,437 | 8,034 | 9,312 |
| 1958 | 256,600 | 14,416 | 5,956 | 1,406 | 767 | 493 | 1,519 | 581 | 23,758 | 16,268 | 2,984 | 11,886 | 8,278 | 9,544 |
| 1959 | 245,200 | 14,847 | 6,053 | 1,381 | 851 | 495 | 1,575 | 554 | 24,815 | 16,823 | 2,938 | 12,047 | 8,235 | 9,109 |
| 1960 | 258,000 | 16,035 | 6,312 | 1,522 | 941 | 510 | 1,644 | 600 | 25,137 | 17,132 | 2,914 | 12,374 | 8,210 | 9,353 |
| 1961 | 260,200 | 17,100 | 6,401 | 1,725 | 988 | 522 | 1,698 | 674 | 25,756 | 17,522 | 2,820 | 12,851 | 8,432 | 9,421 |
| 1962 | 272,800 | 17,469 | 6,275 | 1,739 | 1,050 | 512 | 1,739 | 712 | 27,564 | 19,219 | 3,030 | 10,597 | 8,290 | 9,535 |
| 1963 | 287,200 | 18,324 | 6,538 | 1,752 | 1,077 | 496 | 1,786 | 663 | 29,108 | 21,540 | 3,101 | 8,613 | 8,398 | 9,541 |
| 1964 | 244,600 | 18,645 | 6,423 | 1,761 | 1,143 | 471 | 1,833 | 678 | 29,497 | 23,645 | 3,135 | 6,390 | 9,505 | 9,657 |
| 1965 | 182,200 | 19,309 | 6,373 | 1,778 | 1,108 | 460 | 1,903 | 720 | 30,636 | 26,839 | 3,214 | 3,944 | 9,826 | 9,363 |
| 1966 |  | 20,270 | 6,400 | 1,764 | 1,131 | 437 | 1,991 | 724 | 30,953 | 30,409 | 3,262 | 1,484 | 9,495 | 8,750 |
| 1967 |  | 20,476 | 6,062 | 1,781 | 1,164 | 423 | 2,070 | 730 | 31,650 | 32,363 | 3,037 | 1,513 | 10,366 | 8,643 |
| 1968 |  | 20,869 | 5,851 | 1,818 | 1,215 | 405 | 2,138 | 787 | 32,717 | 33,220 | 3,038 | 1,529 | 9,933 | 8,779 |
| 1969 |  | 20,476 | 6,062 | 1,781 | 1,164 | 423 | 2,070 | 730 | 32,706 | 32,363 | 3,037 | 1,513 | 10,366 | 8,643 |
| 1970 |  | 20,869 | 5,851 | 1,818 | 1,215 | 405 | 2,138 | 787 | 33,084 | 33,220 | 3,038 | 1,529 | 9,933 | 8,779 |

| Year | Rice | Sugar Cane | China region Total | Wheat | Barley | Oats | Maize | Millet | Rice | Potatoes | SP | Sugar Beet | Sugar Cane | Soya Beans |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1890 | 0 | 0 | 8,326 | 0 | 0 | 0 | 0 | 0 | 94 | 0 | 0 | 0 | 521 | 0 |
| 1891 | 0 | 0 | 7,997 | 0 | 0 | 0 | 0 | 0 | 94 | 0 | 0 | 0 | 555 | 0 |
| 1892 | 0 | 253 | 7,886 | 0 | 0 | 0 | 0 | 0 | 94 | 0 | 0 | 0 | 610 | 0 |
| 1893 | 0 | 480 | 7,730 | 0 | 0 | 0 | 0 | 0 | 220 | 0 | 0 | 0 | 661 | 0 |
| 1894 | 0 | 757 | 7,917 | 0 | 0 | 0 | 0 | 0 | 374 | 0 | 0 | 0 | 701 | 0 |
| 1895 | 0 | 1,004 | 7,828 | 0 | 0 | 0 | 0 | 0 | 390 | 0 | 0 | 0 | 766 | 0 |
| 1896 | 0 | 1,236 | 8,454 | 0 | 0 | 0 | 0 | 0 | 490 | 0 | 0 | 0 | 827 | 0 |
| 1897 | 0 | 1,212 | 8,854 | 0 | 0 | 0 | 0 | 0 | 622 | 0 | 0 | 0 | 870 | 0 |
| 1898 | 0 | 1,249 | 9,312 | 0 | 0 | 0 | 0 | 0 | 644 | 0 | 0 | 0 | 933 | 0 |
| 1899 | 0 | 1.182 | 9,887 | 0 | 0 | 0 | 0 | 0 | 646 | 0 | 0 | 0 | 1,000 | 0 |
| 1900 | 0 | 1,204 | 10,439 | 0 | 0 | 0 | 0 | 0 | 678 | 0 | 0 | 0 | 1,055 | 0 |
| 1901 | 0 | 1,222 | 10,724 | 0 | 0 | 0 | 0 | 0 | 1,754 | 0 | 0 | 0 | 1,124 | 0 |
| 1902 | 0 | 1,222 | 11,262 | 0 | 0 | 0 | 0 | 0 | 1,789 | 0 | 0 | 0 | 1,198 | 0 |
| 1903 | 0 | 1,227 | 10,943 | 0 | 0 | 0 | 0 | 0 | 1,806 | 0 | 0 | 0 | 1,265 | 0 |
| 1904 | 0 | 1,299 | 10,574 | 0 | 0 | 0 | 0 | 0 | 1,802 | 0 | 0 | 0 | 1,349 | 0 |
| 1905 | 0 | 1,328 | 10,699 | 0 | 0 | 0 | 0 | 0 | 1,823 | 0 | 0 | 0 | 1,453 | 0 |
| 1906 | 0 | 1,390 | 11,006 | 0 | 0 | 0 | 0 | 0 | 1,764 | 0 | 0 | 0 | 1,478 | 0 |
| 1907 | 0 | 1,442 | 11,427 | 0 | 0 | 0 | 0 | 0 | 2,966 | 0 | 0 | 0 | 1,522 | 0 |
| 1908 | 0 | 1,470 | 12,248 | 3,214 | 740 | 0 | 528 | 0 | 4,367 | 0 | 0 | 0 | 1,549 | 0 |
| 1909 | 0 | 1,509 | 12,734 | 3,214 | 740 | 0 | 528 | 0 | 5,552 | 0 | 0 | 0 | 1,575 | 0 |
| 1910 | 0 | 1,547 | 13,407 | 3,214 | 740 | 0 | 528 | 0 | 6,548 | 0 | 0 | 0 | 1,660 | 0 |
| 1911 | 0 | 1,654 | 14,268 | 3,214 | 740 | 0 | 528 | 0 | 6,532 | 0 | 0 | 0 | 1,821 | 0 |
| 1912 | 0 | 1,675 | 14,604 | 3,214 | 740 | 0 | 528 | 0 | 6,257 | 0 | 0 | 0 | 1,924 | 0 |
| 1913 | 0 | 1,747 | 15,507 | 0 | 0 | 0 | 0 | 0 | 5,829 | 0 | 0 | 0 | 2,719 | 0 |
| 1914 | 0 | 1,734 | 16,297 | 0 | 0 | 0 | 0 | 0 | 5,591 | 0 | 0 | 0 | 2,743 | 0 |
| 1915 | 0 | 1,716 | 16,236 | 0 | 0 | 0 | 0 | 0 | 5,779 | 0 | 0 | 0 | 2,744 | 0 |
| 1916 | 0 | 1,668 | 16,183 | 0 | 0 | 0 | 0 | 0 | 5,994 | 0 | 0 | 0 | 2,734 | 0 |
| 1917 | 0 | 1,772 | 15,660 | 0 | 0 | 0 | 0 | 0 | 6,135 | 0 | 0 | 0 | 2,765 | 0 |
| 1918 | 0 | 1,712 | 15,518 | 0 | 0 | 0 | 0 | 0 | 6,364 | 0 | 0 | 0 | 2,151 | 0 |
| 1919 | 0 | 1,768 | 15,674 | 0 | 0 | 0 | 0 | 0 | 6,667 | 0 | 0 | 0 | 2,354 | 0 |
| 1920 | 0 | 1,847 | 17,821 | 0 | 0 | 0 | 0 | 0 | 6,759 | 0 | 0 | 0 | 2,414 | 0 |
| 1921 | 0 | 1,868 | 19,055 | 0 | 0 | 0 | 0 | 0 | 6,991 | 0 | 0 | 0 | 2,679 | 0 |
| 1922 | 0 | 1,794 | 21.221 | 0 | 0 | 0 | 0 | 0 | 7,151 | 0 | 0 | 0 | 2,962 | 0 |
| 1923 | 0 | 1,819 | 22,775 | 0 | 0 | 0 | 0 | 0 | 7,207 | 0 | 0 | 0 | 3,212 | 0 |
| 1924 | 0 | 1,849 | 23.754 | 0 | 0 | 0 | 0 | 0 | 7,268 | 0 | 0 | 0 | 3,365 | 0 |
| 1925 | 0 | 1,935 | 23,448 | 4,324 | 1,586 | 0 | 1,277 | 0 | 15,840 | 0 | 0 | 0 | 3,598 | 1,143 |
| 1926 | 0 | 2,113 | 23,863 | 8,869 | 3,202 | 0 | 2,672 | 0 | 25,657 | 0 | 0 | 0 | 3,302 | 2,453 |
| 1927 | 0 | 2,379 | 23,973 | 13,375 | 4,685 | 159 | 3,822 | 0 | 35,398 | 0 | 0 | 0 | 2,827 | 3,906 |
| 1928 | 0 | 2,670 | 24,035 | 17,867 | 6,291 | 348 | 4,934 | 0 | 43,244 | 0 | 0 | 0 | 2,377 | 5,035 |
| 1929 | 0 | 2,996 | 24,403 | 22,128 | 7,872 | 522 | 6,303 | 0 | 52,937 | 412 | 0 | 0 | 1,958 | 6,038 |
| 1930 | 0 | 3,302 | 24,820 | 22,420 | 7,914 | 702 | 6,251 | 0 | 54,149 | 884 | 0 | 0 | 1,726 | 6,077 |
| 1931 | 0 | 3,390 | 25,105 | 21,358 | 7,572 | 873 | 6,415 | 0 | 54,846 | 884 | 0 | 0 | 1,798 | 5,928 |
| 1932 | 0 | 3,294 | 25,489 | 18,882 | 6,992 | 745 | 5,969 | 0 | 56,320 | 884 | 0 | 0 | 2,159 | 5,607 |
| 1933 | 0 | 3,236 | 25,554 | 16,371 | 6,301 | 590 | 5,570 | 0 | 57,407 | 884 | 0 | 0 | 2,423 | 5,588 |
| 1934 | 0 | 3,223 | 25,096 | 14,122 | 5,579 | 446 | 4,871 | 0 | 55,737 | 472 | 0 | 0 | 2,632 | 5,763 |
| 1935 | 0 | 2,966 | 25,672 | 11,157 | 4,689 | 295 | 4,311 | 0 | 55,667 | 0 | 0 | 0 | 2,637 | 4,928 |
| 1936 | 0 | 2,927 | 26,398 | 9,771 | 4,309 | 155 | 3,337 | 0 | 52,070 | 0 | 0 | 0 | 2,509 | 4,061 |
| 1937 | 0 | 3,140 | 26,968 | 9,734 | 4,216 | 153 | 3,283 | 0 | 47,518 | 0 | 0 | 0 | 2,168 | 3,263 |
| 1938 | 0 | 3,240 | 28.042 | 10,234 | 4,224 | 148 | 3,243 | 0 | 45,717 | 0 | 0 | 0 | 1,726 | 2,483 |
| 1939 | 0 | 3,285 | 30,250 | 10,418 | 4,175 | 141 | 3,297 | 0 | 46,119 | 0 | 0 | 0 | 1,244 | 1,645 |
| 1940 | 0 | 2,752 | 30,552 | 13,314 | 4,840 | 251 | 4,021 | 1,833 | 45,246 | 399 | 5,082 | 67 | 783 | 2,368 |
| 1941 | 0 | 4,105 | 30,402 | 15,946 | 5,461 | 361 | 4,781 | 3,249 | 47,209 | 743 | 9,567 | 145 | 493 | 3,169 |
| 1942 | 0 | 6,081 | 29,465 | 18,752 | 6,136 | 479 | 5,626 | 4,912 | 49,912 | 1,134 | 14,561 | 223 | 350 | 3,984 |
| 1943 | 0 | 8,485 | 30,851 | 20,397 | 6,532 | 596 | 6,249 | 6,469 | 51,525 | 1,482 | 19,113 | 295 | 404 | 4,630 |
| 1944 | 0 | 10,370 | 32,728 | 22,402 | 7,074 | 720 | 6,841 | 8,048 | 52,160 | 1,482 | 19,113 | 377 | 508 | 4,290 |
| 1945 | 0 | 13,139 | 36,183 | 22,146 | 7,014 | 739 | 6,719 | 7,750 | 52,863 | 1,083 | 19,856 | 373 | 723 | 4,269 |
| 1946 | 0 | 14,151 | 39,215 | 21,771 | 6,894 | 762 | 6,694 | 7,857 | 53,304 | 738 | 21,743 | 380 | 983 | 4,274 |
| 1947 | 0 | 14,765 | 43,570 | 21,313 | 5,408 | 614 | 5,246 | 6,247 | 53,933 | 430 | 16,749 | 404 | 1,168 | 5,112 |
| 1948 | 0 | 15,159 | 45,817 | 21,852 | 4,088 | 468 | 4,011 | 4,745 | 59,268 | 3,482 | 12,197 | 332 | 1,342 | 5,952 |
| 1949 | 0 | 15,965 | 48,701 | 22,246 | 2,738 | 321 | 5,527 | 3,210 | 65,868 | 7,262 | 12,197 | 628 | 1,608 | 7,776 |
| 1950 | 0 | 16,965 | 51,487 | 22,915 | 1,394 | 163 | 7,180 | 1,698 | 73,206 | 11,832 | 6,372 | 894 | 1,751 | 8,773 |
| 1951 | 0 | 18,218 | 54,048 | 23,290 | 0 | 0 | 10,374 | 188 | 81,464 | 16,212 | 0 | 1,225 | 1,817 | 9,723 |
| 1952 | 0 | 19,386 | 57,063 | 24,740 | 0 | 0 | 10,330 | 134 | 89,658 | 25,210 | 0 | 1,461 | 1,874 | 9,837 |
| 1953 | 0 | 20,129 | 60,472 | 26,458 | 0 | 0 | 10,268 | 79 | 92,313 | 21,810 | 0 | 1,822 | 1,888 | 10,317 |
| 1954 | 0 | 21,257 | 61,868 | 21,865 | 0 | 0 | 7,626 | 35 | 94,373 | 22,901 | 14,696 | 1,689 | 1,848 | 10.525 |
| 1955 | 0 | 23,030 | 62,889 | 20,250 | 2,400 | 270 | 8,991 | 3,103 | 94,763 | 23,401 | 30,091 | 1,706 | 1,774 | 10,593 |
| 1956 | 0 | 25,104 | 65,795 | 19,826 | 5,300 | 600 | 9,265 | 6,463 | 94,948 | 24,311 | 46,057 | 1,658 | 1,690 | 10,628 |
| 1957 | 0 | 26,730 | 68,445 | 18,458 | 8,300 | 950 | 14,152 | 9,973 | 94,913 | 20,821 | 62,740 | 1,796 | 1,628 | 10,646 |
| 1958 | 0 | 29,547 | 71,439 | 17,244 | 11,400 | 1,310 | 19,240 | 13,605 | 97,179 | 26,614 | 80,259 | 1,977 | 1,646 | 10,636 |
| 1959 | 0 | 32,913 | 74,844 | 22,524 | 14,700 | 1,690 | 24,486 | 17,472 | 99,108 | 27,937 | 84,249 | 2,309 | 1,687 | 10,851 |
| 1960 | 0 | 35,010 | 78,508 | 24,370 | 15,601 | 1,800 | 25,629 | 18,248 | 101,249 | 28,982 | 87,436 | 2,581 | 1,705 | 10,984 |
| 1961 | 0 | 35,666 | 82,065 | 25,727 | 16,101 | 1,870 | 26,355 | 18,802 | 103,629 | 29,963 | 90,344 | 2,858 | 1,761 | 11,179 |
| 1962 | 0 | 37,441 | 84,993 | 26,764 | 16,101 | 1,860 | 26,998 | 19,218 | 105,681 | 30,643 | 92,480 | 3,066 | 1,753 | 11,258 |
| 1963 | 0 | 39,471 | 86,712 | 27,336 | 16,101 | 1,840 | 27,719 | 19,699 | 107,686 | 31,295 | 94,472 | 3,270 | 1,695 | 11,219 |
| 1964 | 0 | 39,855 | 88,113 | 28,325 | 16,141 | 1,820 | 28,454 | 20,303 | 110,849 | 32,266 | 97,169 | 3,468 | 1,662 | 11,352 |
| 1965 | 0 | 40,038 | 90,664 | 29,719 | 16,181 | 1,800 | 29,225 | 21,111 | 114,636 | 33,557 | 100,921 | 3,656 | 1,742 | 11,504 |
| 1966 | 0 | 40,244 | 92,186 | 31,016 | 15,821 | 1,760 | 29,894 | 21,763 | 117,007 | 33,900 | 102,690 | 3,969 | 1,815 | 11,525 |
| 1967 | 0 | 40,483 | 93,225 | 32,851 | 16,121 | 1,780 | 30,749 | 22,516 | 120,806 | 35,045 | 106,172 | 4,260 | 1,910 | 11,740 |
| 1968 | 0 | 39,428 | 93,643 | 34,586 | 16,101 | 1,820 | 31,561 | 23,188 | 124,354 | 36,425 | 109,283 | 4,550 | 2,078 | 11,923 |
| 1969 | 0 | 40,483 | 96,406 | 32,851 | 16,121 | 1,780 | 30,749 | 22,516 | 120,806 | 35,045 | 106,172 | 4,260 | 1,910 | 11,740 |
| 1970 | 0 | 39,428 | 95,926 | 34,586 | 16,101 | 1,820 | 31,561 | 23,188 | 124,354 | 36,425 | 109,283 | 4,550 | 2,078 | 11,923 |

A 27. Output of main agricultural crops per region, smoothed over 5 year period (in 1000 metric tons). continued.

| Year | East Asia | | | | | | | | | | Oceania | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Wheat | Maize | Rice | Cassava | Sweet Potatoes | Soya bean | Millet | Sugar cane | Potatoes | Total | Maize | Rice | Sorghum |
| 1890 | 385 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 521 | 0 | 469 | 220 | 386 | 94 |
| 1891 | 501 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 547 | 0 | 501 | 219 | 369 | 98 |
| 1892 | 614 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 592 | 0 | 521 | 220 | 362 | 109 |
| 1893 | 649 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 638 | 0 | 547 | 231 | 345 | 117 |
| 1894 | 703 | 0 | 0 | 966 | 0 | 0 | 0 | 0 | 670 | 0 | 592 | 231 | 347 | 137 |
| 1895 | 881 | 0 | 0 | 1,800 | 0 | 0 | 0 | 0 | 724 | 0 | 638 | 231 | 348 | 141 |
| 1896 | 1,074 | 0 | 19 | 2,689 | 0 | 0 | 0 | 0 | 786 | 0 | 1,636 | 235 | 359 | 142 |
| 1897 | 1,155 | 0 | 19 | 3,604 | 0 | 13 | 0 | 0 | 830 | 0 | 2,525 | 224 | 356 | 144 |
| 1898 | 1,317 | 0 | 19 | 4,549 | 0 | 13 | 0 | 0 | 889 | 0 | 3,494 | 197 | 398 | 139 |
| 1899 | 1,492 | 0 | 19 | 4,505 | 0 | 13 | 0 | 0 | 948 | 0 | 4,466 | 201 | 422 | 122 |
| 1900 | 1,577 | 0 | 19 | 4,644 | 0 | 13 | 0 | 0 | 1,001 | 0 | 5,470 | 198 | 406 | 125 |
| 1901 | 1,646 | 0 | 0 | 4,716 | 0 | 13 | 0 | 0 | 1,063 | 0 | 5,485 | 193 | 398 | 138 |
| 1902 | 1,733 | 0 | 0 | 4,815 | 0 | 0 | 0 | 0 | 1,123 | 0 | 5,677 | 209 | 498 | 151 |
| 1903 | 2,878 | 20 | 278 | 4,909 | 0 | 0 | 0 | 0 | 1,159 | 0 | 5,793 | 226 | 499 | 175 |
| 1904 | 2,988 | 37 | 696 | 5,192 | 0 | 0 | 0 | 0 | 1,204 | 0 | 5,938 | 220 | 488 | 190 |
| 1905 | 3,071 | 63 | 1,158 | 5,516 | 0 | 0 | 0 | 0 | 1,285 | 0 | 6,365 | 234 | 506 | 189 |
| 1906 | 3,151 | 91 | 1,597 | 5,713 | 0 | 0 | 0 | 0 | 1,310 | 28 | 7,130 | 258 | 537 | 201 |
| 1907 | 3,276 | 125 | 2,100 | 6,080 | 0 | 0 | 0 | 0 | 1,348 | 76 | 8,021 | 252 | 441 | 198 |
| 1908 | 3,242 | 135 | 2,409 | 6,387 | 0 | 0 | 0 | 0 | 1,373 | 124 | 8,739 | 253 | 450 | 180 |
| 1909 | 4,488 | 149 | 2,542 | 6,506 | 0 | 0 | 0 | 0 | 1,389 | 183 | 9,727 | 255 | 468 | 194 |
| 1910 | 34,990 | 156 | 2,673 | 6,550 | 0 | 0 | 0 | 0 | 1,418 | 246 | 10,429 | 244 | 473 | 214 |
| 1911 | 36,202 | 161 | 2,833 | 6,509 | 0 | 0 | 0 | 0 | 1,525 | 291 | 10,769 | 212 | 465 | 203 |
| 1912 | 37,283 | 164 | 2,962 | 6,352 | 0 | 63 | 0 | 0 | 1,599 | 329 | 11,044 | 210 | 485 | 204 |
| 1913 | 37,428 | 178 | 2,910 | 6,227 | 0 | 63 | 0 | 0 | 1,594 | 363 | 11,319 | 213 | 476 | 244 |
| 1914 | 37,256 | 203 | 3,307 | 7,224 | 300 | 1,230 | 19 | 0 | 1,634 | 405 | 11,470 | 202 | 432 | 234 |
| 1915 | 8,548 | 227 | 3,632 | 8,092 | 515 | 2,335 | 39 | 0 | 1,656 | 441 | 11,335 | 193 | 407 | 219 |
| 1916 | 8,334 | 247 | 3,904 | 9,111 | 704 | 3,351 | 59 | 0 | 1,644 | 466 | 14,321 | 195 | 411 | 221 |
| 1917 | 8,522 | 255 | 4,175 | 10,218 | 931 | 4,469 | 79 | 0 | 1,642 | 463 | 16,936 | 190 | 410 | 242 |
| 1918 | 8,728 | 268 | 4,565 | 11,461 | 1,161 | 5,615 | 100 | 0 | 1,774 | 457 | 19,485 | 182 | 395 | 238 |
| 1919 | 8,900 | 268 | 4,587 | 11,493 | 1,050 | 5,596 | 103 | 0 | 1,926 | 438 | 22,232 | 188 | 430 | 253 |
| 1920 | 8,514 | 267 | 4,733 | 11,812 | 1,061 | 5,591 | 103 | 0 | 1,974 | 427 | 25,400 | 217 | 440 | 304 |
| 1921 | 9,020 | 262 | 5,007 | 12,156 | 1,124 | 5,960 | 104 | 0 | 2,195 | 417 | 25,459 | 218 | 433 | 371 |
| 1922 | 9,173 | 265 | 5,082 | 12,187 | 1,098 | 6,015 | 107 | 0 | 2,410 | 420 | 25,969 | 215 | 429 | 395 |
| 1923 | 9,670 | 254 | 5,055 | 12,051 | 1,054 | 5,936 | 108 | 0 | 2,593 | 452 | 27,225 | 236 | 468 | 436 |
| 1924 | 10,113 | 248 | 5,290 | 12,280 | 1,084 | 5,870 | 112 | 0 | 2,688 | 482 | 27,584 | 237 | 446 | 489 |
| 1925 | 10,419 | 240 | 5,281 | 12,125 | 1,052 | 5,991 | 118 | 0 | 2,805 | 482 | 27,504 | 214 | 453 | 512 |
| 1926 | 10,634 | 239 | 5,225 | 12,299 | 992 | 5,895 | 126 | 0 | 2,498 | 531 | 28,053 | 217 | 462 | 515 |
| 1927 | 27,768 | 241 | 5,449 | 12,640 | 1,019 | 5,866 | 139 | 0 | 2,051 | 559 | 28,093 | 217 | 468 | 546 |
| 1928 | 46,156 | 246 | 5,598 | 12,802 | 1,047 | 6,004 | 153 | 0 | 1,570 | 536 | 27,806 | 185 | 455 | 545 |
| 1929 | 64,171 | 248 | 5,535 | 12,794 | 1,099 | 6,232 | 168 | 0 | 1,131 | 545 | 27,965 | 179 | 466 | 563 |
| 1930 | 80,095 | 245 | 5,746 | 12,872 | 1,169 | 6,547 | 191 | 0 | 895 | 602 | 27,957 | 179 | 460 | 576 |
| 1931 | 98,170 | 252 | 6,182 | 12,864 | 1,214 | 6,826 | 215 | 0 | 895 | 625 | 27,751 | 176 | 461 | 590 |
| 1932 | 100,124 | 261 | 6,383 | 12,909 | 1,227 | 7,287 | 236 | 0 | 1,081 | 512 | 28,268 | 178 | 485 | 625 |
| 1933 | 99,673 | 279 | 6,373 | 13,183 | 1,267 | 7,786 | 265 | 0 | 1,296 | 427 | 29,073 | 186 | 481 | 678 |
| 1934 | 97,558 | 281 | 6,526 | 13,455 | 995 | 6,477 | 288 | 0 | 1,522 | 307 | 29,896 | 186 | 472 | 708 |
| 1935 | 95,135 | 293 | 6,776 | 13,938 | 731 | 4,941 | 309 | 0 | 1,509 | 160 | 30,876 | 179 | 478 | 763 |
| 1936 | 89,622 | 236 | 6,387 | 13,908 | 495 | 3,374 | 310 | 0 | 1,370 | 0 | 29,851 | 187 | 500 | 793 |
| 1937 | 83,684 | 180 | 6,002 | 13,951 | 254 | 1,704 | 275 | 0 | 1,157 | 0 | 28,657 | 188 | 465 | 788 |
| 1938 | 76,211 | 164 | 5,827 | 13,311 | 0 | 0 | 211 | 0 | 856 | 178 | 26,081 | 189 | 493 | 757 |
| 1939 | 70,334 | 117 | 5,261 | 12,476 | 0 | 53 | 161 | 10 | 520 | 229 | 23,522 | 191 | 547 | 700 |
| 1940 | 67,775 | 73 | 4,442 | 11,829 | 198 | 342 | 116 | 26 | 263 | 272 | 20,547 | 190 | 650 | 645 |
| 1941 | 67,037 | 85 | 4,222 | 12,015 | 448 | 515 | 98 | 47 | 128 | 317 | 18,826 | 173 | 679 | 600 |
| 1942 | 78,202 | 101 | 4,263 | 12,386 | 676 | 865 | 127 | 70 | 44 | 362 | 17,562 | 164 | 723 | 591 |
| 1943 | 91,124 | 71 | 4,655 | 14,234 | 995 | 1,144 | 180 | 70 | 82 | 226 | 17,876 | 161 | 722 | 579 |
| 1944 | 106,069 | 82 | 5,122 | 16,000 | 1,318 | 1,429 | 241 | 60 | 143 | 216 | 18,894 | 149 | 711 | 602 |
| 1945 | 117,692 | 80 | 5,578 | 17,687 | 1,455 | 1,475 | 293 | 66 | 255 | 214 | 21,658 | 147 | 644 | 611 |
| 1946 | 123,013 | 85 | 5,718 | 18,970 | 1,522 | 1,952 | 337 | 78 | 397 | 219 | 24,610 | 142 | 607 | 692 |
| 1947 | 123,537 | 87 | 5,894 | 20,416 | 1,729 | 2,044 | 376 | 73 | 566 | 251 | 27,104 | 133 | 599 | 744 |
| 1948 | 125,399 | 91 | 5,941 | 20,709 | 1,832 | 2,206 | 435 | 90 | 719 | 255 | 29,279 | 126 | 586 | 784 |
| 1949 | 116,625 | 96 | 5,947 | 21,442 | 1,889 | 2,329 | 459 | 109 | 900 | 286 | 31,436 | 126 | 602 | 853 |
| 1950 | 117,737 | 112 | 5,891 | 22,231 | 2,081 | 2,457 | 484 | 103 | 1,009 | 299 | 32,277 | 121 | 612 | 976 |
| 1951 | 129,383 | 122 | 6,026 | 22,371 | 2,295 | 2,284 | 501 | 86 | 1,075 | 319 | 33,456 | 121 | 612 | 1,056 |
| 1952 | 136,179 | 124 | 6,211 | 22,446 | 2,481 | 2,359 | 526 | 82 | 1,099 | 305 | 34,666 | 129 | 628 | 1,107 |
| 1953 | 144,293 | 130 | 6,479 | 23,005 | 2,634 | 2,455 | 527 | 76 | 1,128 | 316 | 35,078 | 132 | 663 | 1,201 |
| 1954 | 163,243 | 137 | 6,948 | 23,621 | 2,788 | 2,514 | 543 | 67 | 1,094 | 309 | 35,632 | 140 | 681 | 1,271 |
| 1955 | 164,956 | 167 | 7,618 | 23,871 | 2,753 | 2,591 | 559 | 64 | 1,080 | 324 | 36,750 | 149 | 706 | 1,303 |
| 1956 | 175,557 | 194 | 8,282 | 25,481 | 2,958 | 2,683 | 571 | 62 | 1,061 | 336 | 38,020 | 156 | 747 | 1,295 |
| 1957 | 197,342 | 219 | 8,782 | 26,522 | 2,951 | 2,922 | 558 | 63 | 1,066 | 351 | 39,026 | 165 | 745 | 1,338 |
| 1958 | 220,744 | 249 | 9,493 | 27,463 | 3,168 | 3,377 | 556 | 68 | 1,084 | 407 | 41,627 | 175 | 745 | 1,373 |
| 1959 | 244,378 | 277 | 9,758 | 28,193 | 3,164 | 3,947 | 558 | 71 | 1,140 | 460 | 43,436 | 175 | 753 | 1,487 |
| 1960 | 281,110 | 284 | 10,352 | 29,633 | 3,166 | 4,385 | 555 | 69 | 1,168 | 528 | 45,863 | 176 | 759 | 1,550 |
| 1961 | 307,015 | 292 | 10,557 | 29,802 | 2,860 | 4,590 | 568 | 63 | 1,224 | 559 | 47,568 | 169 | 782 | 1,681 |
| 1962 | 318,584 | 316 | 10,842 | 30,664 | 2,719 | 4,685 | 600 | 64 | 1,265 | 604 | 50,141 | 170 | 879 | 1,797 |
| 1963 | 328,588 | 327 | 10,914 | 32,009 | 2,379 | 4,558 | 612 | 61 | 1,324 | 610 | 50,516 | 168 | 909 | 1,992 |
| 1964 | 335,823 | 339 | 11,444 | 34,004 | 2,284 | 4,306 | 642 | 57 | 1,366 | 615 | 51,758 | 169 | 966 | 2,090 |
| 1965 | 342,330 | 340 | 11,592 | 35,358 | 2,219 | 4,114 | 674 | 52 | 1,499 | 595 | 52,794 | 164 | 1,033 | 2,291 |
| 1966 | 351,808 | 326 | 11,723 | 36,738 | 2,204 | 4,129 | 699 | 50 | 1,672 | 574 | 55,056 | 177 | 1,082 | 2,402 |
| 1967 | 364,053 | 290 | 12,356 | 38,895 | 2,208 | 4,051 | 721 | 41 | 1,809 | 544 | 56,444 | 182 | 1,077 | 2,563 |
| 1968 | 371,159 | 244 | 12,924 | 40,505 | 2,250 | 3,944 | 771 | 35 | 2,021 | 518 | 58,114 | 188 | 1,139 | 2,674 |
| 1969 | 383,952 | 290 | 12,356 | 38,895 | 2,208 | 4,051 | 721 | 41 | 1,809 | 544 | 60,915 | 181 | 1,105 | 2,705 |
| 1970 | 395,870 | 244 | 12,924 | 40,505 | 2,250 | 3,944 | 771 | 35 | 2,021 | 518 | 63,211 | 173 | 1,047 | 2,738 |

| Year | Potatoes | Sugar Cane | Total | Japan Wheat | Barley | Rye | Rice | Potatoes | SP | Sugar Cane | Soya Beans | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1890 | 510 | 115 | 1,325 | 448 | 785 | 799 | 6,055 | 68 | 798 | 0 | 153 | 9,105 |
| 1891 | 497 | 120 | 1,303 | 489 | 853 | 915 | 5,961 | 101 | 1,332 | 0 | 234 | 9,885 |
| 1892 | 488 | 133 | 1,311 | 490 | 847 | 901 | 5,903 | 134 | 1,876 | 0 | 311 | 10,462 |
| 1893 | 484 | 143 | 1,320 | 510 | 873 | 904 | 5,651 | 148 | 1,947 | 0 | 313 | 10,346 |
| 1894 | 519 | 164 | 1,398 | 534 | 911 | 938 | 5,955 | 173 | 2,485 | 11 | 393 | 11,399 |
| 1895 | 536 | 169 | 1,425 | 539 | 910 | 918 | 5,890 | 184 | 2,609 | 24 | 405 | 11,478 |
| 1896 | 538 | 172 | 1,445 | 546 | 913 | 929 | 5,935 | 205 | 2,643 | 37 | 415 | 11,623 |
| 1897 | 544 | 175 | 1,443 | 569 | 938 | 967 | 6,255 | 227 | 2,632 | 47 | 443 | 12,078 |
| 1898 | 587 | 171 | 1,492 | 572 | 940 | 971 | 6,372 | 223 | 2,670 | 58 | 444 | 12,251 |
| 1899 | 589 | 158 | 1,492 | 509 | 909 | 884 | 6,345 | 251 | 2,695 | 57 | 458 | 12,108 |
| 1900 | 549 | 167 | 1,445 | 502 | 918 | 891 | 6,697 | 264 | 2,695 | 54 | 465 | 12,485 |
| 1901 | 529 | 182 | 1,440 | 484 | 915 | 868 | 6,598 | 299 | 2,616 | 41 | 458 | 12,277 |
| 1902 | 619 | 198 | 1,674 | 472 | 925 | 859 | 6,579 | 345 | 2,681 | 41 | 443 | 12,346 |
| 1903 | 604 | 228 | 1,732 | 486 | 968 | 892 | 6,943 | 416 | 2,841 | 40 | 457 | 13,043 |
| 1904 | 586 | 247 | 1,732 | 555 | 1,011 | 986 | 7,107 | 477 | 3,001 | 40 | 463 | 13,641 |
| 1905 | 614 | 248 | 1,792 | 573 | 1,019 | 1,011 | 7,137 | 536 | 3,186 | 43 | 465 | 13,968 |
| 1906 | 645 | 265 | 1,906 | 600 | 1,035 | 1,014 | 7,391 | 582 | 3,322 | 56 | 468 | 14,468 |
| 1907 | 537 | 268 | 1,697 | 629 | 1,034 | 1,030 | 7,553 | 617 | 3,477 | 60 | 473 | 14,872 |
| 1908 | 547 | 250 | 1,681 | 649 | 1,026 | 1,040 | 7,588 | 646 | 3,518 | 62 | 469 | 14,998 |
| 1909 | 555 | 271 | 1,744 | 671 | 1,052 | 1,084 | 7,538 | 673 | 3,573 | 64 | 446 | 15,102 |
| 1910 | 542 | 296 | 1,770 | 671 | 1,058 | 1,069 | 7,675 | 729 | 3,628 | 69 | 443 | 15,342 |
| 1911 | 526 | 291 | 1,698 | 688 | 1,079 | 1,112 | 7,954 | 786 | 3,795 | 71 | 453 | 15,939 |
| 1912 | 534 | 301 | 1,734 | 712 | 1,082 | 1,124 | 8,156 | 859 | 3,860 | 76 | 455 | 16,324 |
| 1913 | 510 | 347 | 1,790 | 756 | 1,069 | 1,132 | 8,286 | 978 | 3,875 | 90 | 457 | 16,644 |
| 1914 | 459 | 330 | 1,656 | 789 | 1,019 | 1,093 | 8,420 | 1,079 | 3,921 | 96 | 469 | 16,886 |
| 1915 | 443 | 309 | 1,571 | 841 | 1,026 | 1,105 | 8,534 | 1,269 | 4,078 | 98 | 476 | 17,426 |
| 1916 | 450 | 306 | 1,583 | 859 | 983 | 1,105 | 8,752 | 1,336 | 4,174 | 98 | 488 | 17,794 |
| 1917 | 454 | 318 | 1,613 | 850 | 972 | 1,081 | 8,654 | 1,341 | 4,143 | 100 | 501 | 17,641 |
| 1918 | 453 | 303 | 1,572 | 821 | 964 | 1,051 | 8,838 | 1,264 | 4,166 | 89 | 502 | 17,695 |
| 1919 | 493 | 312 | 1,675 | 787 | 947 | 998 | 8,860 | 1,193 | 4,107 | 85 | 501 | 17,479 |
| 1920 | 498 | 363 | 1,822 | 757 | 908 | 946 | 8,751 | 1,002 | 3,931 | 88 | 484 | 16,866 |
| 1921 | 490 | 437 | 1,949 | 764 | 920 | 931 | 8,646 | 939 | 3,790 | 91 | 467 | 16,547 |
| 1922 | 488 | 459 | 1,986 | 772 | 910 | 942 | 8,658 | 896 | 3,666 | 91 | 434 | 16,369 |
| 1923 | 517 | 510 | 2,167 | 781 | 884 | 947 | 8,701 | 900 | 3,552 | 93 | 425 | 16,283 |
| 1924 | 488 | 575 | 2,236 | 814 | 884 | 982 | 8,846 | 914 | 3,470 | 96 | 413 | 16,419 |
| 1925 | 492 | 603 | 2,273 | 843 | 863 | 1,026 | 8,918 | 926 | 3,354 | 90 | 398 | 16,418 |
| 1926 | 504 | 604 | 2,303 | 843 | 825 | 979 | 9,133 | 938 | 3,288 | 87 | 383 | 16,477 |
| 1927 | 509 | 637 | 2,377 | 857 | 799 | 954 | 9,122 | 951 | 3,300 | 90 | 371 | 16,443 |
| 1928 | 493 | 639 | 2,316 | 869 | 800 | 933 | 9,070 | 964 | 3,335 | 87 | 349 | 16,407 |
| 1929 | 503 | 659 | 2,369 | 913 | 785 | 883 | 9,386 | 1,055 | 3,392 | 83 | 345 | 16,842 |
| 1930 | 487 | 678 | 2,380 | 999 | 778 | 851 | 9,154 | 1,121 | 3,398 | 89 | 333 | 16,723 |
| 1931 | 472 | 703 | 2,403 | 1,096 | 782 | 866 | 8,872 | 1,164 | 3,435 | 92 | 313 | 16,619 |
| 1932 | 487 | 748 | 2,522 | 1,166 | 760 | 847 | 9,236 | 1,315 | 3,508 | 91 | 317 | 17,239 |
| 1933 | 483 | 804 | 2,632 | 1,262 | 745 | 830 | 9,414 | 1,527 | 3,586 | 96 | 328 | 17,788 |
| 1934 | 463 | 837 | 2,665 | 1,288 | 732 | 824 | 9,265 | 1,622 | 3,603 | 112 | 325 | 17,770 |
| 1935 | 477 | 890 | 2,787 | 1,361 | 753 | 840 | 9,779 | 1,745 | 3,695 | 119 | 339 | 18,630 |
| 1936 | 499 | 914 | 2,894 | 1,455 | 758 | 830 | 9,881 | 1,824 | 3,685 | 130 | 344 | 18,906 |
| 1937 | 466 | 901 | 2,808 | 1,501 | 761 | 856 | 9,513 | 1,882 | 3,739 | 130 | 323 | 18,705 |
| 1938 | 492 | 870 | 2,801 | 1,504 | 758 | 874 | 9,527 | 1,862 | 3,721 | 109 | 310 | 18,665 |
| 1939 | 572 | 800 | 2,809 | 1,478 | 735 | 879 | 9,438 | 1,905 | 3,872 | 80 | 303 | 18,689 |
| 1940 | 682 | 735 | 2,902 | 1,423 | 723 | 874 | 9,125 | 1,929 | 3,963 | 52 | 288 | 18,377 |
| 1941 | 729 | 681 | 2,862 | 1,253 | 666 | 844 | 8,474 | 1,954 | 4,035 | 22 | 261 | 17,509 |
| 1942 | 778 | 673 | 2,928 | 1,084 | 608 | 747 | 8,663 | 1,913 | 4,335 | 2 | 256 | 17,607 |
| 1943 | 784 | 657 | 2,902 | 961 | 564 | 692 | 8,419 | 1,907 | 4,464 | 4 | 232 | 17,242 |
| 1944 | 747 | 698 | 2,907 | 983 | 619 | 740 | 8,526 | 1,929 | 4,841 | 7 | 213 | 17,858 |
| 1945 | 666 | 723 | 2,791 | 967 | 653 | 765 | 8,645 | 2,040 | 5,233 | 10 | 202 | 18,516 |
| 1946 | 613 | 816 | 2,870 | 1,046 | 726 | 834 | 9,401 | 2,174 | 5,712 | 14 | 256 | 20,163 |
| 1947 | 599 | 867 | 2,942 | 1,221 | 854 | 966 | 9,368 | 2,335 | 5,716 | 20 | 308 | 20,788 |
| 1948 | 575 | 907 | 2,977 | 1,375 | 966 | 1,054 | 9,593 | 2,451 | 6,074 | 27 | 376 | 21,916 |
| 1949 | 610 | 974 | 3,165 | 1,409 | 1,017 | 1,058 | 9,248 | 2,499 | 5,866 | 36 | 418 | 21,550 |
| 1950 | 613 | 1,108 | 3,430 | 1,451 | 1,079 | 1,114 | 9,194 | 2,537 | 5,729 | 47 | 449 | 21,599 |
| 1951 | 609 | 1,190 | 3,588 | 1,477 | 1,129 | 1,153 | 9,740 | 2,630 | 5,907 | 61 | 461 | 22,558 |
| 1952 | 635 | 1,255 | 3,754 | 1,454 | 1,144 | 1,172 | 10,112 | 2,666 | 6,215 | 70 | 458 | 23,291 |
| 1953 | 682 | 1,354 | 4,032 | 1,413 | 1,154 | 1,163 | 10,420 | 2,837 | 6,220 | 83 | 445 | 23,734 |
| 1954 | 678 | 1,437 | 4,208 | 1,394 | 1,160 | 1,151 | 11,171 | 3,033 | 6,415 | 103 | 438 | 24,865 |
| 1955 | 709 | 1,471 | 4,337 | 1,374 | 1,156 | 1,100 | 11,848 | 3,135 | 6,766 | 125 | 448 | 25,954 |
| 1956 | 744 | 1,493 | 4,435 | 1,387 | 1,168 | 1,067 | 11,943 | 3,272 | 6,586 | 144 | 430 | 25,996 |
| 1957 | 753 | 1,532 | 4,533 | 1,468 | 1,167 | 995 | 12,247 | 3,492 | 6,438 | 162 | 416 | 26,386 |
| 1958 | 758 | 1,570 | 4,621 | 1,528 | 1,146 | 930 | 12,556 | 3,555 | 6,436 | 184 | 392 | 26,726 |
| 1959 | 773 | 1,694 | 4,881 | 1,415 | 1,049 | 765 | 12,720 | 3,558 | 6,508 | 204 | 377 | 26,597 |
| 1960 | 783 | 1,778 | 5,045 | 1,381 | 963 | 630 | 12,736 | 3,693 | 6,299 | 223 | 340 | 26,265 |
| 1961 | 819 | 1,913 | 5,363 | 1,333 | 866 | 514 | 12,647 | 3,786 | 6,049 | 264 | 302 | 25,759 |
| 1962 | 886 | 2,062 | 5,793 | 1,181 | 783 | 423 | 12,712 | 3,693 | 5,766 | 297 | 265 | 25,120 |
| 1963 | 898 | 2,290 | 6,257 | 1,054 | 713 | 354 | 13,001 | 3,685 | 5,349 | 332 | 236 | 24,723 |
| 1964 | 961 | 2,397 | 6,582 | 1,114 | 711 | 407 | 13,328 | 3,814 | 4,746 | 365 | 206 | 24,691 |
| 1965 | 994 | 2,617 | 7,099 | 1,016 | 657 | 384 | 13,612 | 3,745 | 4,152 | 392 | 185 | 24,143 |
| 1966 | 1,034 | 2,738 | 7,433 | 854 | 596 | 313 | 13,668 | 3,656 | 3,684 | 411 | 164 | 23,345 |
| 1967 | 1,026 | 2,901 | 7,750 | 737 | 527 | 262 | 13,296 | 3,635 | 3,131 | 480 | 149 | 22,215 |
| 1968 | 1,084 | 3,011 | 8,096 | 594 | 442 | 205 | 12,783 | 3,613 | 2,725 | 532 | 136 | 21,030 |
| 1969 | 1,031 | 3,043 | 8,066 | 432 | 348 | 137 | 12,322 | 3,485 | 2,305 | 581 | 126 | 19,737 |
| 1970 | 989 | 3,050 | 7,998 | 327 | 277 | 93 | 11,980 | 3,359 | 2,031 | 597 | 125 | 18,789 |

**A 28. Livestock numbers (in thousands).**

| | | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Canada** | | | | | | | | | | |
| | Cattle | 5,396 | 6,116 | 6,768 | 7,600 | 8,350 | 9,124 | 9,923 | 10,671 | 10,837 |
| | Horses | 794 | 1,508 | 2,446 | 3,764 | 5,457 | 7,696 | 10,673 | 14,572 | 18,840 |
| | Pigs | 2,574 | 2,943 | 3,289 | 3,735 | 4,159 | 4,617 | 5,118 | 5,633 | 5,889 |
| | Poultry | 30,225 | 34,918 | 39,486 | 45,451 | 51,380 | 58,033 | 65,625 | 73,945 | 79,500 |
| | Sheep | 1,847 | 2,122 | 2,385 | 2,727 | 3,058 | 3,424 | 3,833 | 4,268 | 4,525 |
| **USA** | | | | | | | | | | |
| | Cattle | 60,014 | 59,739 | 59,993 | 70,400 | 61,003 | 68,309 | 77,963 | 96,236 | 112,303 |
| | Horses | 15,732 | 17,856 | 18,972 | 20,091 | 13,742 | 10,444 | 5,548 | 3,089 | 4,184 |
| | Mules | 2,322 | 3,139 | 4,239 | 5,651 | 5,382 | 4,034 | 2,233 | 1,000 | 24 |
| | Pigs | 48,130 | 51,055 | 49,072 | 60,159 | 55,705 | 61,166 | 58,937 | 59,026 | 57,046 |
| | Poultry | 300,000 | 320,000 | 356,000 | 381,000 | 468,000 | 436,000 | 457,000 | 389,000 | 432,000 |
| | Sheep | 42,693 | 45,085 | 46,939 | 37,328 | 45,677 | 45,266 | 26,182 | 28,849 | 17,411 |
| **Latin America** | | | | | | | | | | |
| | Asses | 25 | 58 | 164 | 689 | 1,374 | 1,800 | 2,639 | 5,919 | 8,735 |
| | Cattle | 626 | 7,850 | 35,911 | 40,565 | 33,740 | 50,617 | 68,181 | 188,594 | 227,721 |
| | Goats | 2,000 | 3,000 | 4,002 | 6,434 | 5,332 | 6,669 | 11,603 | 30,807 | 42,167 |
| | Horses | 129 | 738 | 9,330 | 7,939 | 5,992 | 8,019 | 9,993 | 20,367 | 23,783 |
| | Mules | 69 | 129 | 1,065 | 948 | 1,570 | 2,693 | 3,293 | 6,482 | 9,043 |
| | Pigs | 3,000 | 4,000 | 5,522 | 6,679 | 8,345 | 17,257 | 27,858 | 68,905 | 80,870 |
| | Poultry | 1,000 | 2,000 | 3,615 | 8,000 | 15,633 | 24,186 | 79,001 | 349,990 | 596,350 |
| | Sheep | 10,000 | 18,899 | 20,000 | 23,000 | 26,702 | 29,060 | 57,945 | 114,015 | 126,167 |
| **Africa** | | | | | | | | | | |
| | Asses | 700 | 1,000 | 1,500 | 2,376 | 2,800 | 3,200 | 4,291 | 6,953 | 8,718 |
| | Buffaloes | 1,700 | 1,475 | 1,200 | 1,000 | 900 | 1,000 | 1,200 | 1,626 | 2,038 |
| | Camels | 200 | 334 | 600 | 805 | 1,053 | 1,200 | 1,581 | 3,498 | 5,442 |
| | Cattle | 5,000 | 7,000 | 9,157 | 28,359 | 42,628 | 40,000 | 71,928 | 96,462 | 133,608 |
| | Goats | 8,000 | 10,000 | 13,562 | 23,627 | 37,318 | 23,553 | 48,392 | 72,093 | 100,321 |
| | Horses | 701 | 800 | 1,000 | 1,475 | 1,183 | 707 | 1,506 | 2,417 | 3,190 |
| | Mules | 150 | 190 | 221 | 317 | 342 | 397 | 881 | 1,495 | 2,045 |
| | Pigs | 700 | 800 | 1,000 | 1,494 | 1,798 | 1,114 | 1,957 | 3,043 | 5,253 |
| | Sheep | 30,000 | 33,000 | 37,471 | 53,924 | 86,167 | 48,805 | 87,124 | 94,845 | 132,518 |
| **OECD Europe** | | | | | | | | | | |
| | Asses | 995 | 1,062 | 3,051 | 1,720 | 1,868 | 3,460 | 3,631 | 3,253 | 3,000 |
| | Cattle | 35,423 | 67,973 | 51,989 | 57,151 | 66,315 | 77,234 | 74,082 | 85,679 | 93,698 |
| | Goats | 3,305 | 8,127 | 5,361 | 12,952 | 10,786 | 12,988 | 15,111 | 11,929 | 10,000 |
| | Horses | 6,757 | 13,190 | 10,161 | 10,971 | 11,498 | 10,680 | 9,738 | 5,837 | 5,000 |
| | Pigs | 13,511 | 36,918 | 25,929 | 29,172 | 47,326 | 50,688 | 46,547 | 68,268 | 92,444 |
| | Poultry | 15,665 | 115,010 | 69,864 | 80,904 | 211,692 | 261,853 | 259,808 | 333,350 | 825,000 |
| | Reindeer | 43 | 47 | 50 | 53 | 64 | 77 | 87 | 181 | 200 |
| | Sheep | 64,171 | 74,945 | 81,141 | 59,340 | 62,162 | 83,386 | 70,290 | 86,787 | 94,647 |
| **Eastern Europe** | | | | | | | | | | |
| | Cattle | 4,765 | 2,589 | 2,563 | 10,984 | 23,289 | 10,951 | 23,282 | 26,094 | 28,558 |
| | Goats | 510 | 550 | 631 | 1,700 | 2,812 | 1,114 | 800 | 662 | 650 |
| | Horses | 1,102 | 864 | 631 | 2,474 | 7,933 | 3,099 | 6,185 | 6,479 | 6,500 |
| | Pigs | 2,297 | 1,709 | 1,393 | 5,657 | 16,432 | 10,339 | 25,230 | 36,709 | 38,052 |
| | Poultry | 8,000 | 8,000 | 8,689 | 7,294 | 103,089 | 53,415 | 102,160 | 189,024 | 200,000 |
| | Sheep | 14,834 | 5,655 | 12,488 | 18,599 | 24,438 | 19,475 | 31,544 | 38,307 | 42,834 |
| **CIS** | | | | | | | | | | |
| | Buffaloes | 350 | 350 | 350 | 350 | 350 | 350 | 360 | 389 | 461 |
| | Camels | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 284 | 244 |
| | Cattle | 25,500 | 31,900 | 31,000 | 46,021 | 50,869 | 47,917 | 58,100 | 74,200 | 95,162 |
| | Goats | 9,000 | 9,000 | 10,000 | 14,000 | 15,000 | 9,000 | 8,500 | 7,290 | 5,148 |
| | Horses | 19,800 | 20,200 | 21,800 | 30,343 | 31,113 | 17,756 | 12,700 | 11,000 | 7,522 |
| | Pigs | 9,600 | 12,100 | 12,700 | 16,374 | 14,402 | 22,616 | 22,200 | 53,400 | 56,055 |
| | Poultry | 350,000 | 350,000 | 350,000 | 350,000 | 350,000 | 360,000 | 400,000 | 448,000 | 572,000 |
| | Sheep | 46,100 | 38,800 | 40,200 | 77,451 | 85,694 | 66,726 | 77,600 | 136,100 | 138,655 |
| **Middle East** | | | | | | | | | | |
| | Asses | 830 | 850 | 900 | 1,000 | 1,200 | 1,413 | 1,633 | 1,892 | 1,938 |
| | Buffaloes | 945 | 945 | 945 | 945 | 945 | 947 | 948 | 1,140 | 1,178 |
| | Cattle | 0 | 0 | 0 | 106 | 6,701 | 10,384 | 14,093 | 19,394 | 19,629 |
| | Goats | 10,000 | 10,000 | 11,000 | 12,000 | 13,493 | 14,263 | 19,709 | 26,055 | 21,174 |
| | Horses | 400 | 400 | 450 | 500 | 700 | 898 | 1,505 | 1,782 | 1,510 |
| | Mules | 40 | 40 | 45 | 50 | 60 | 70 | 109 | 170 | 291 |
| | Sheep | 20,000 | 21,000 | 23,000 | 25,000 | 28,774 | 37,220 | 44,050 | 68,148 | 75,658 |
| **India region** | | | | | | | | | | |
| | Asses | 1,100 | 1,200 | 1,337 | 1,703 | 1,882 | 1,500 | 1,239 | 1,096 | 1,000 |
| | Buffaloes | 45,000 | 45,000 | 45,000 | 45,000 | 45,000 | 46,000 | 48,000 | 51,208 | 56,118 |
| | Cattle | 161,000 | 163,000 | 165,000 | 167,000 | 169,000 | 171,000 | 173,000 | 175,600 | 177,442 |
| | Goats | 15,000 | 19,641 | 30,604 | 31,611 | 49,964 | 48,000 | 47,670 | 74,720 | 80,000 |
| | Horses | 1,200 | 1,339 | 1,694 | 2,149 | 2,378 | 1,800 | 1,527 | 1,831 | 1,500 |
| | Pigs | 2,000 | 2,200 | 2,300 | 2,400 | 2,500 | 2,839 | 4,494 | 5,904 | 6,000 |
| | Sheep | 10,000 | 17,945 | 30,365 | 34,142 | 44,685 | 45,000 | 45,405 | 50,609 | 55,000 |

**A 28. Livestock numbers (in thousands). continued.**

| | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 |
|---|---|---|---|---|---|---|---|---|---|
| **China region** | | | | | | | | | |
| Asses | 2,500 | 3,000 | 3,500 | 5,000 | 8,000 | 10,000 | 11,000 | 11,500 | 12,000 |
| Buffaloes | 6,000 | 8,000 | 10,000 | 12,000 | 14,000 | 17,000 | 22,000 | 30,902 | 34,172 |
| Cattle | 7,000 | 9,000 | 12,000 | 17,000 | 22,000 | 30,000 | 40,000 | 59,000 | 68,351 |
| Goats | 4,000 | 5,000 | 7,000 | 10,000 | 15,000 | 20,000 | 30,000 | 51,000 | 63,168 |
| Horses | 1,000 | 1,200 | 1,500 | 2,000 | 2,500 | 4,000 | 6,100 | 7,825 | 7,026 |
| Mules | 400 | 500 | 700 | 1,000 | 1,200 | 1,400 | 1,500 | 1,600 | 2,250 |
| Pigs | 5,000 | 7,000 | 10,000 | 20,000 | 30,000 | 50,000 | 100,000 | 170,000 | 264,903 |
| Sheep | 5,000 | 7,000 | 10,000 | 15,000 | 20,000 | 30,000 | 40,000 | 59,000 | 78,000 |
| **East Asia** | | | | | | | | | |
| Buffaloes | 1,500 | 2,436 | 4,500 | 6,929 | 9,898 | 12,082 | 10,524 | 13,062 | 13,428 |
| Cattle | 2,500 | 2,655 | 3,500 | 8,546 | 11,968 | 11,960 | 12,000 | 12,271 | 13,841 |
| Goats | 1,000 | 1,200 | 1,500 | 2,570 | 3,500 | 5,950 | 5,567 | 5,853 | 7,108 |
| Horses | 400 | 450 | 800 | 1,118 | 1,574 | 1,455 | 1,200 | 1,053 | 1,176 |
| Pigs | 2,000 | 2,245 | 2,203 | 6,272 | 4,162 | 5,714 | 5,431 | 14,714 | 15,770 |
| Sheep | 900 | 1,000 | 1,200 | 1,500 | 1,800 | 2,000 | 2,100 | 2,436 | 3,382 |
| **Oceania** | | | | | | | | | |
| Cattle | 10,379 | 8,815 | 12,107 | 16,657 | 15,578 | 17,711 | 19,473 | 23,020 | 31,521 |
| Horses | 1,523 | 1,553 | 2,314 | 2,809 | 2,121 | 1,961 | 1,253 | 745 | 535 |
| Pigs | 887 | 846 | 1,007 | 1,163 | 1,562 | 2,120 | 1,707 | 2,145 | 3,088 |
| Poultry | 694 | 700 | 738 | 798 | 3,000 | 6,562 | 8,000 | 9,726 | 29,552 |
| Sheep | 110,478 | 80,562 | 112,996 | 105,372 | 137,505 | 121,067 | 144,885 | 201,414 | 232,416 |
| **Japan** | | | | | | | | | |
| Cattle | 1,200 | 1,261 | 1,384 | 1,376 | 1,498 | 2,064 | 2,460 | 3,211 | 3,619 |
| Horses | 1,600 | 1,542 | 1,565 | 1,468 | 1,490 | 1,190 | 1,112 | 547 | 145 |
| Pigs | 150 | 181 | 279 | 528 | 742 | 600 | 461 | 2,640 | 8,563 |
| **World** | | | | | | | | | |
| Asses | 6,150 | 7,170 | 10,452 | 12,488 | 17,124 | 21,373 | 24,432 | 30,614 | 35,391 |
| Buffaloes | 55,495 | 58,206 | 61,995 | 66,224 | 71,093 | 77,379 | 83,032 | 98,327 | 107,395 |
| Camels | 500 | 634 | 900 | 1,105 | 1,353 | 1,500 | 1,881 | 3,782 | 5,686 |
| Cattle | 318,804 | 367,897 | 391,372 | 471,766 | 512,939 | 547,271 | 644,484 | 870,432 | 1,016,290 |
| Goats | 52,815 | 66,518 | 83,660 | 114,894 | 153,206 | 141,536 | 187,352 | 280,409 | 329,736 |
| Horses | 51,138 | 61,640 | 72,663 | 87,100 | 87,680 | 69,704 | 69,039 | 77,544 | 80,911 |
| Mules | 2,981 | 3,998 | 6,270 | 7,966 | 8,554 | 8,594 | 8,017 | 10,747 | 13,653 |
| Pigs | 89,849 | 121,997 | 114,694 | 153,634 | 187,132 | 229,070 | 299,940 | 490,386 | 633,932 |
| Poultry | 705,584 | 830,628 | 828,392 | 873,447 | 1,202,794 | 1,200,049 | 1,371,594 | 1,793,035 | 2,734,402 |
| Reindeer | 43 | 47 | 50 | 53 | 64 | 77 | 87 | 181 | 200 |
| Sheep | 356,023 | 346,013 | 418,185 | 453,383 | 566,662 | 531,430 | 630,958 | 884,778 | 1,001,213 |

Source: Mitchell (1975, 1982, 1983).

Note: bold numbers are own estimates

**A 29. Consumption of fertilizer (Gg product/yr).**

| Region | 1961 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 |
|---|---|---|---|---|---|---|---|
| **Nitrogen (N)** | | | | | | | |
| Canada | 98 | 218 | 292 | 563 | 938 | 1,225 | 1,158 |
| USA | 3,057 | 4,832 | 7,363 | 9,445 | 10,817 | 9,457 | 10,141 |
| Latin America | 420 | 719 | 1,311 | 1,871 | 2,849 | 3,413 | 3,524 |
| Africa | 341 | 546 | 824 | 1,213 | 1,745 | 1,941 | 2,049 |
| OECD Europe | 3,635 | 5,060 | 6,953 | 8,384 | 10,184 | 11,061 | 10,372 |
| Eastern Europe | 756 | 1,391 | 2,694 | 3,860 | 4,138 | 4,295 | 3,205 |
| CIS | 859 | 2,282 | 4,605 | 7,339 | 8,262 | 10,950 | 8,738 |
| Middle East | 113 | 154 | 431 | 838 | 1,397 | 1,968 | 2,508 |
| India + SA | 353 | 736 | 1,898 | 3,430 | 4,965 | 7,423 | 10,299 |
| China + CPA | 642 | 1,960 | 3,749 | 5,498 | 12,767 | 14,581 | 20,536 |
| East Asia | 375 | 401 | 786 | 1,114 | 1,798 | 2,420 | 3,372 |
| Oceania | 41 | 82 | 136 | 183 | 270 | 380 | 498 |
| Japan | 633 | 691 | 688 | 653 | 614 | 680 | 612 |
| **Phosphate (P2O5)** | | | | | | | |
| Canada | 197 | 333 | 326 | 503 | 635 | 703 | 578 |
| USA | 2,530 | 3,522 | 4,346 | 4,742 | 4,930 | 3,790 | 3,765 |
| Latin America | 354 | 451 | 934 | 1,684 | 2,768 | 2,316 | 2,212 |
| Africa | 261 | 352 | 544 | 806 | 1,088 | 1,248 | 1,060 |
| OECD Europe | 3,927 | 4,714 | 5,920 | 5,381 | 5,797 | 5,208 | 4,484 |
| Eastern Europe | 678 | 1,131 | 1,843 | 2,642 | 2,767 | 2,791 | 1,503 |
| CIS | 1,148 | 2,121 | 3,133 | 4,728 | 5,590 | 7,615 | 7,815 |
| Middle East | 55 | 120 | 272 | 605 | 1,061 | 1,253 | 1,644 |
| India + SA | 84 | 164 | 634 | 654 | 1,640 | 2,619 | 3,898 |
| China + CPA | 252 | 849 | 1,138 | 1,833 | 2,902 | 2,964 | 6,151 |
| East Asia | 188 | 182 | 275 | 513 | 679 | 969 | 1,404 |
| Oceania | 793 | 1,296 | 1,079 | 879 | 1,138 | 988 | 803 |
| Japan | 454 | 548 | 656 | 623 | 690 | 741 | 690 |
| **Potassium (K)** | | | | | | | |
| Canada | 106 | 142 | 184 | 242 | 366 | 396 | 338 |
| USA | 2,060 | 2,922 | 3,826 | 4,726 | 5,733 | 4,584 | 4,522 |
| Latin America | 183 | 275 | 626 | 920 | 1,852 | 1,682 | 1,928 |
| Africa | 88 | 147 | 213 | 301 | 377 | 455 | 469 |
| OECD Europe | 3,988 | 4,516 | 5,410 | 5,185 | 5,615 | 5,669 | 4,288 |
| Eastern Europe | 731 | 1,124 | 2,063 | 3,030 | 2,694 | 2,723 | 1,497 |
| CIS | 703 | 1,891 | 2,574 | 5,176 | 4,904 | 6,822 | 5,081 |
| Middle East | 11 | 19 | 35 | 49 | 74 | 118 | 159 |
| India + SA | 57 | 117 | 283 | 319 | 712 | 947 | 1,505 |
| China + CPA | 36 | 47 | 146 | 288 | 570 | 557 | 1,791 |
| East Asia | 53 | 93 | 219 | 389 | 567 | 728 | 1,304 |
| Oceania | 130 | 171 | 211 | 188 | 236 | 228 | 250 |
| Japan | 497 | 613 | 611 | 525 | 512 | 613 | 537 |

Source: FAO (1990).

Figure A1. Global population density 1890 (inhabitants/km2).
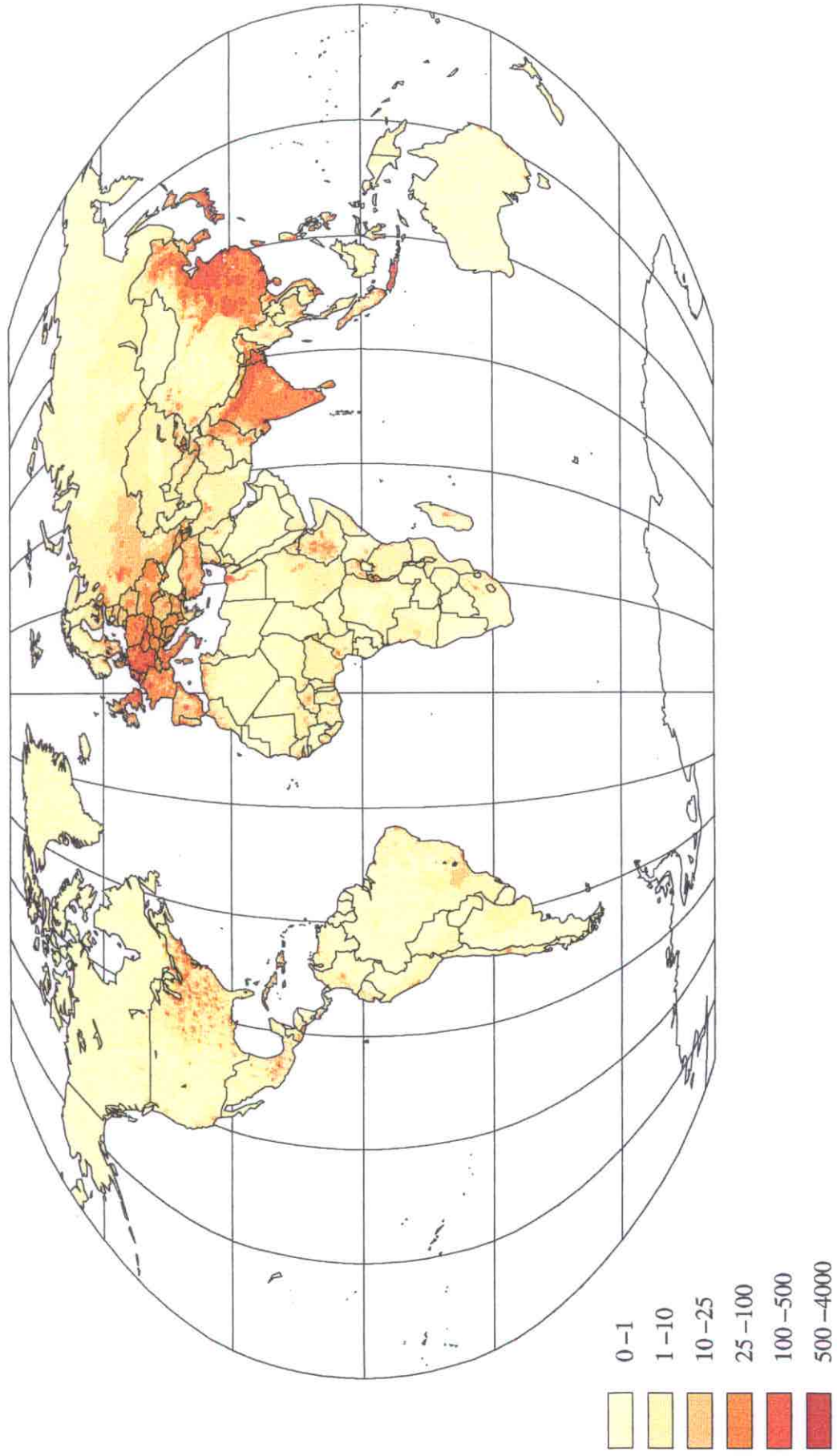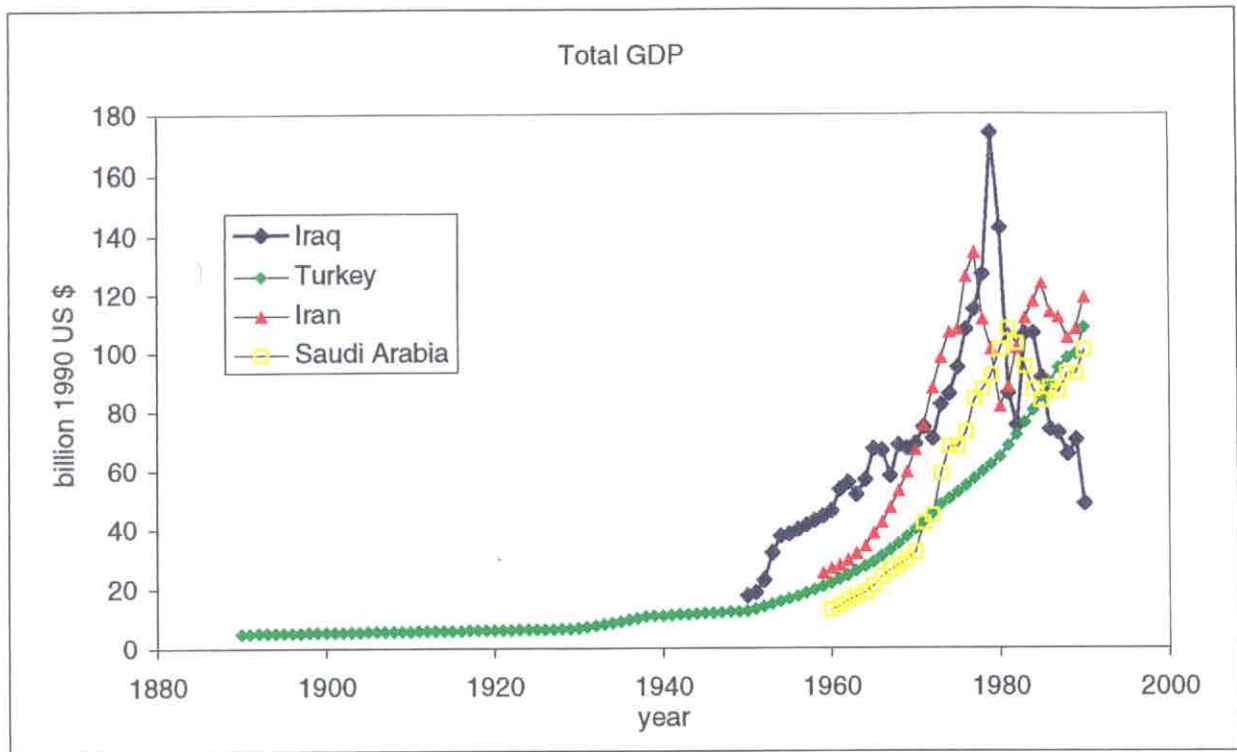
Figure A2-1. Total GDP in billion 1990 US$ of Iraq, Turkey, Iran and Saudi Arabia.
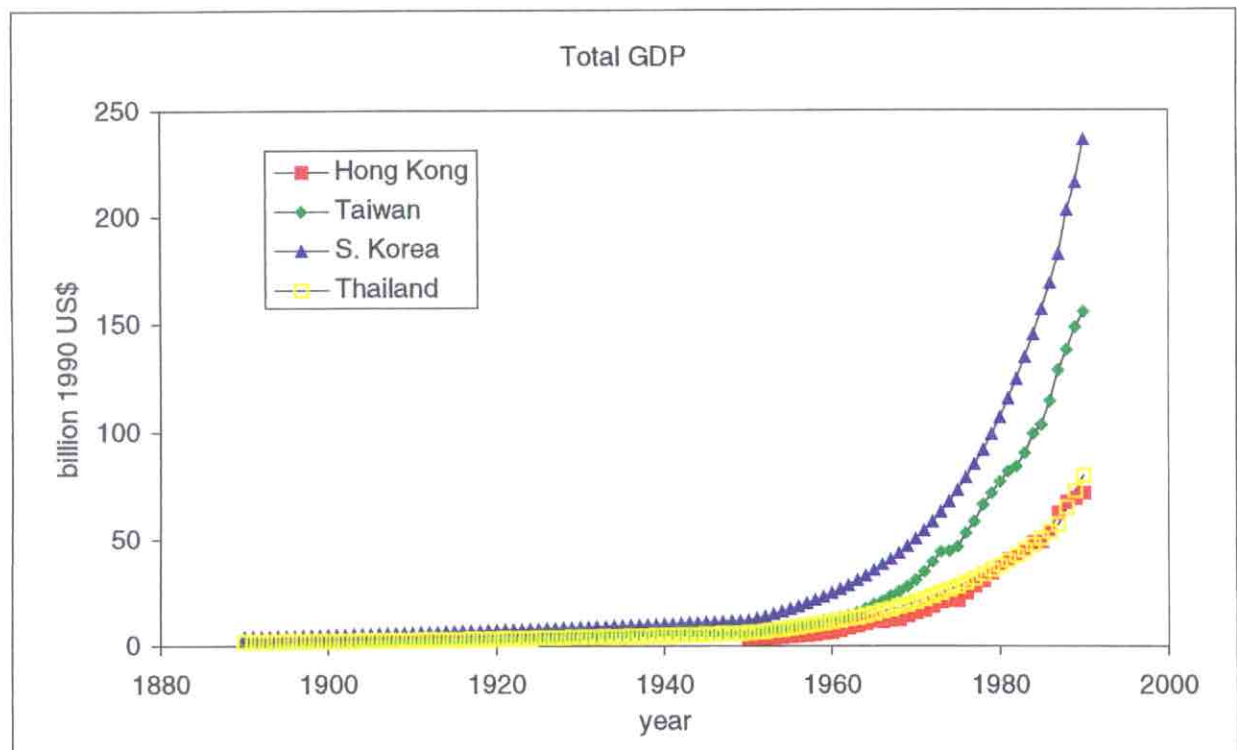


Figure A2-2. Total GDP in billion 1990 US$ of Hong Kong, Taiwan, South Korea and Thailand.
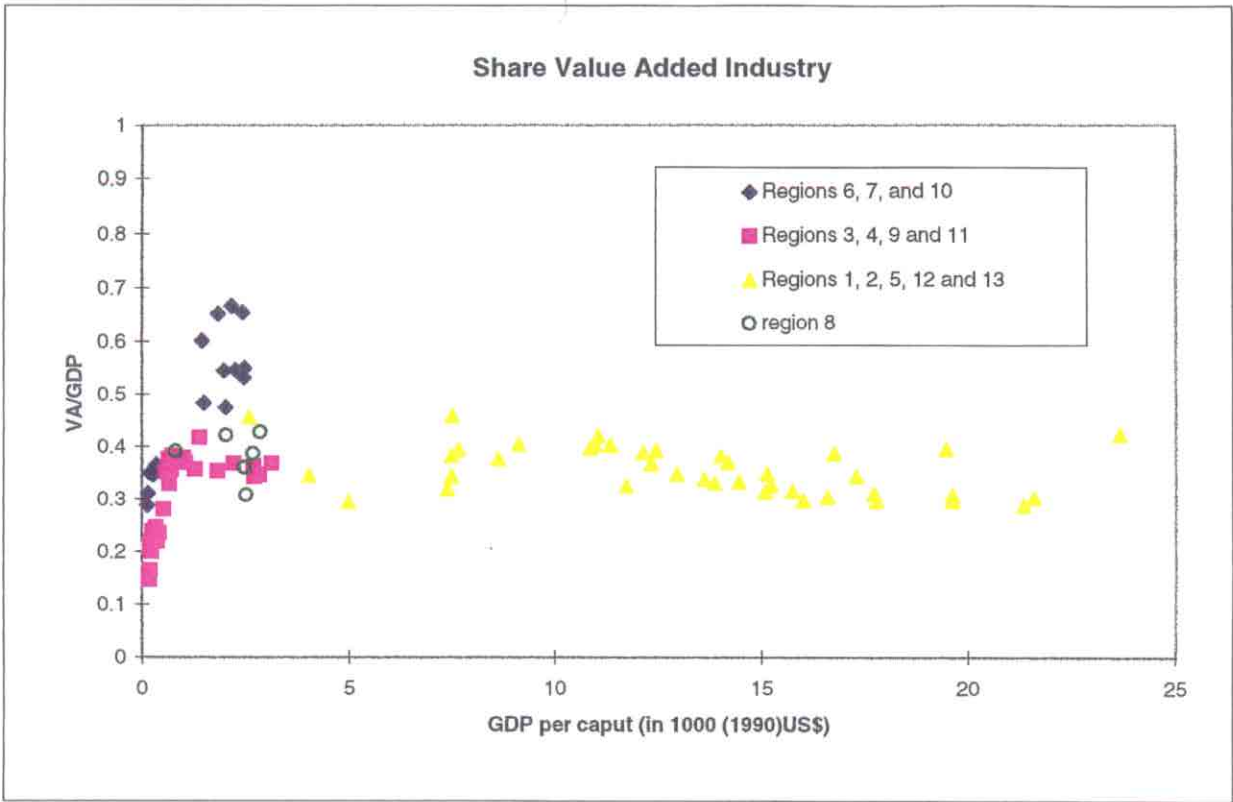
Figure A3-1. Share of Value Added Industry in GDP/cap, grouped by regions.
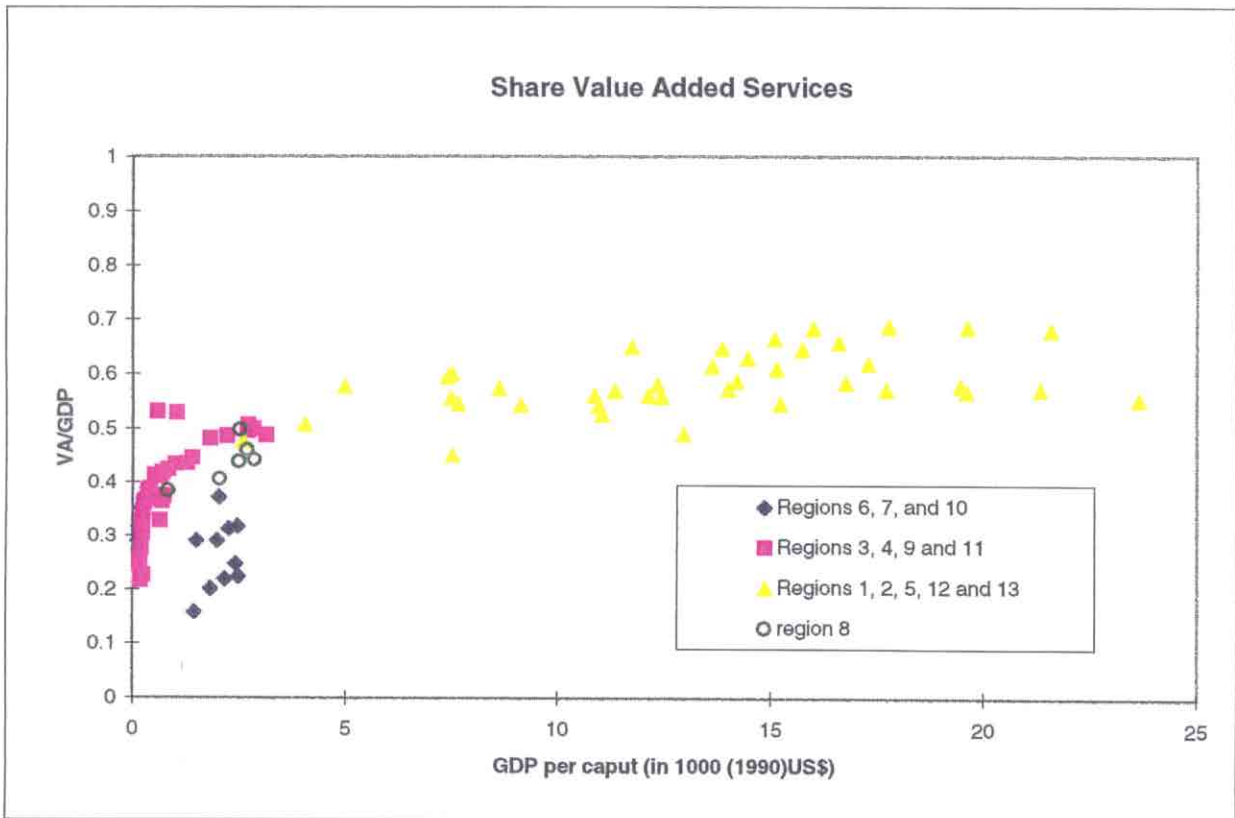


Figure A3-2. Share of Value Added Services in GDP/cap, grouped by regions.
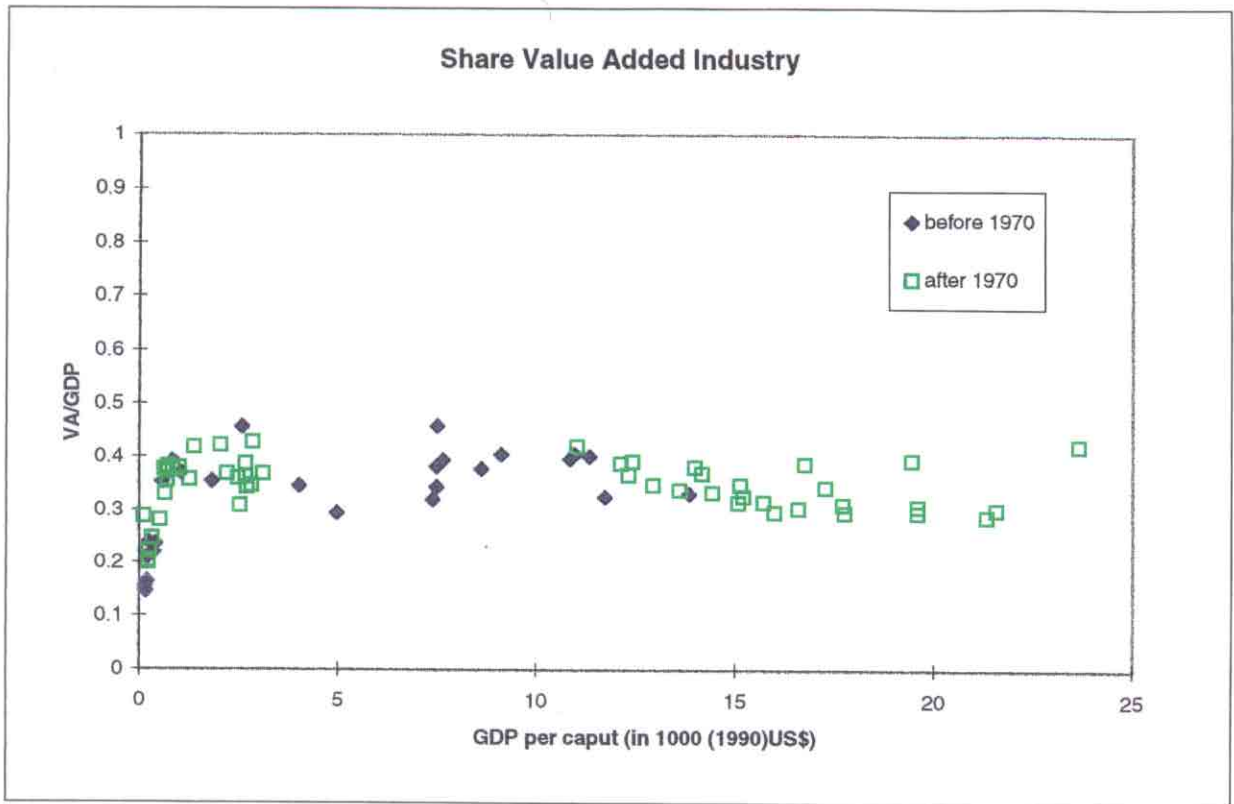
Figure A4-1. Share of Value Added Industry in GDP/cap, before and after 1970.
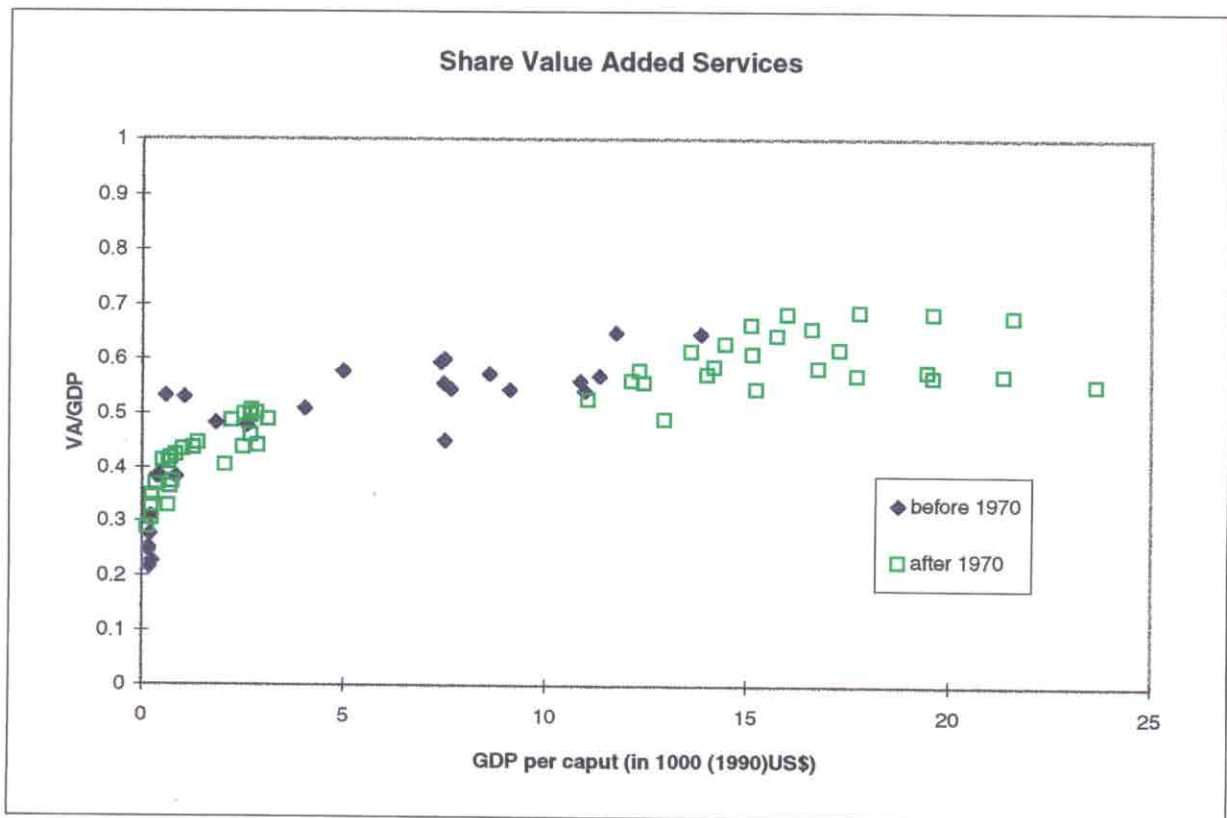


Figure A4-2. Share of Value Added Services in GDP/cap, before and after 1970.
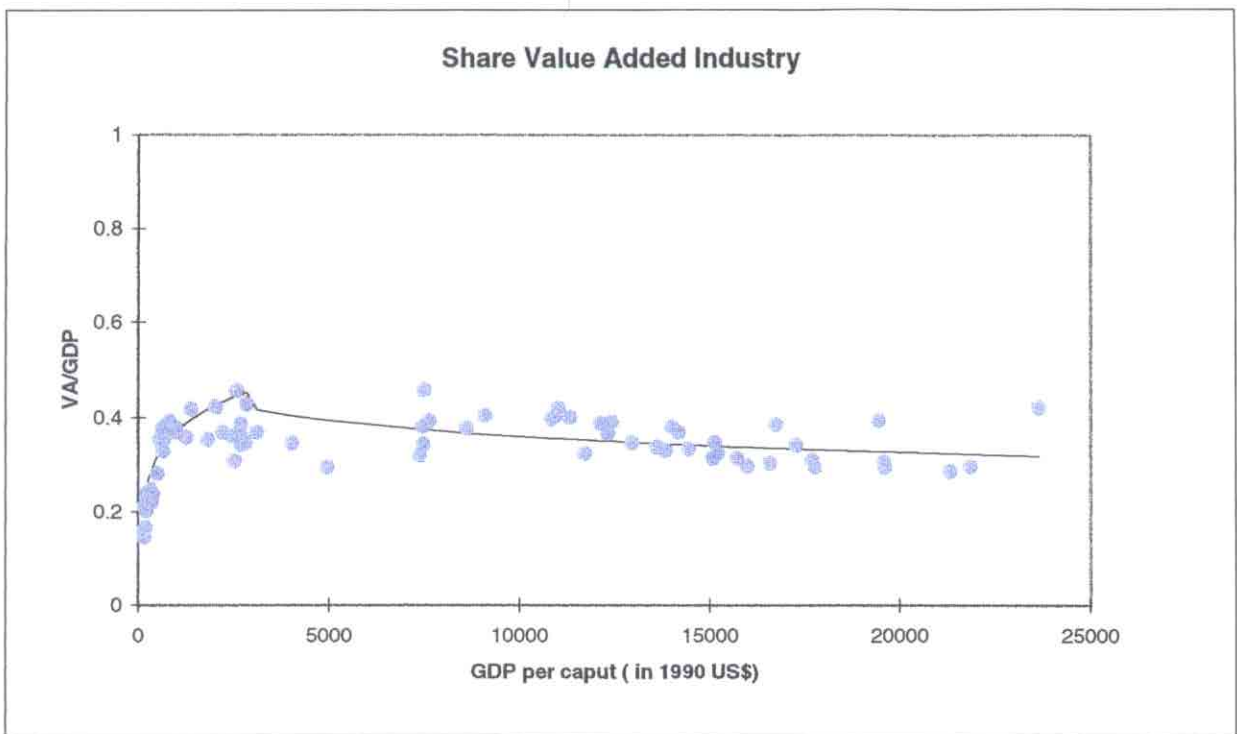
Figure A5-1. Results of fitting the relation between Value Added Industry and GDP/cap, for all regions except 6,7 and 10.
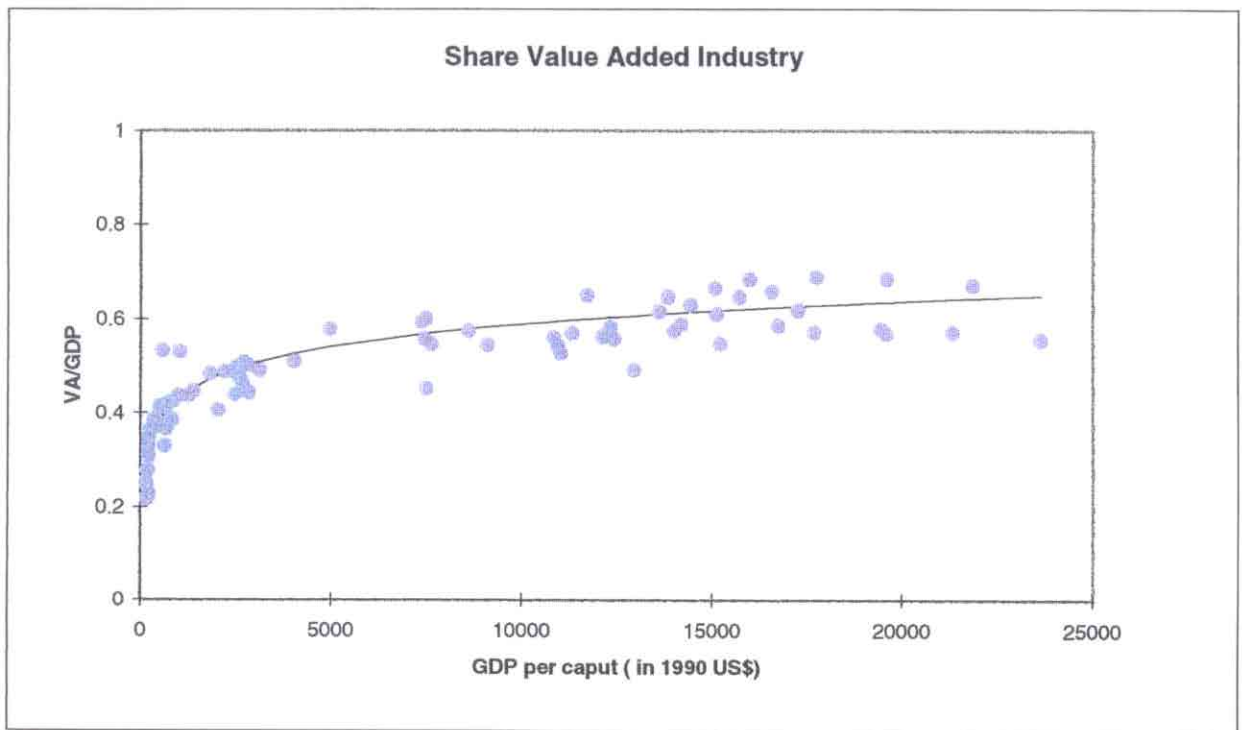


Figure A5-2. Results of fitting the relation between Value Added Services and GDP/cap, for all regions except 6,7 and 10.
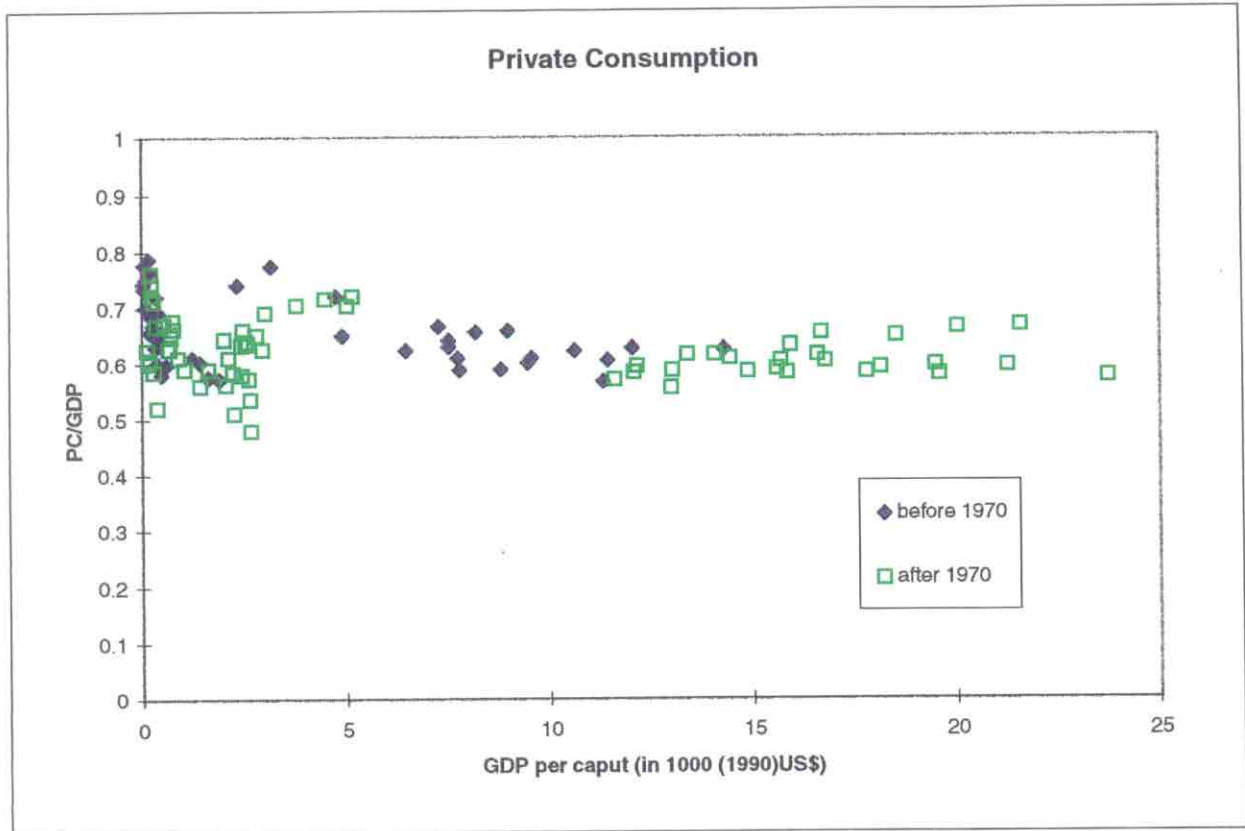
Figure A7-1. Ratio between Private Consumption and GDP/cap, before and after 1970.
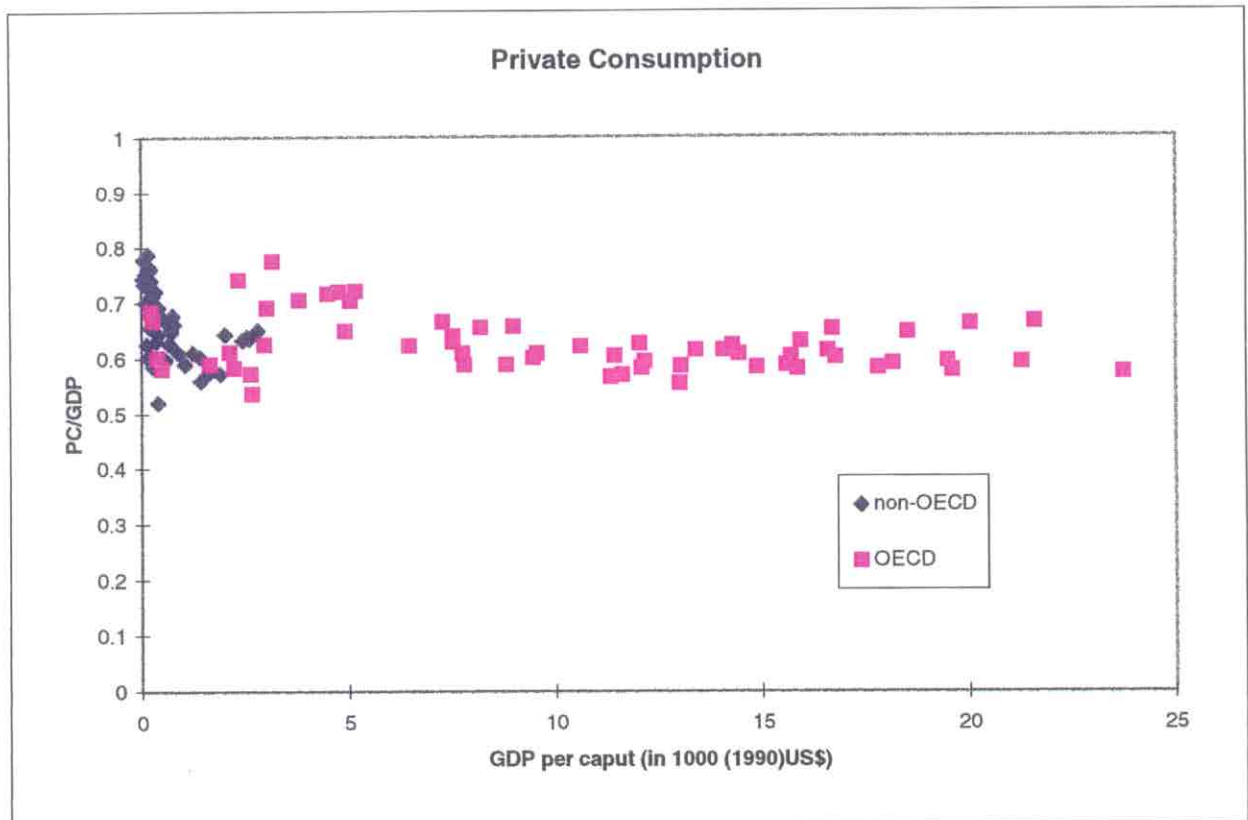


Figure A7-2. Ratio between Private Consumption and GDP/cap, for OECD and non-OECD regions.
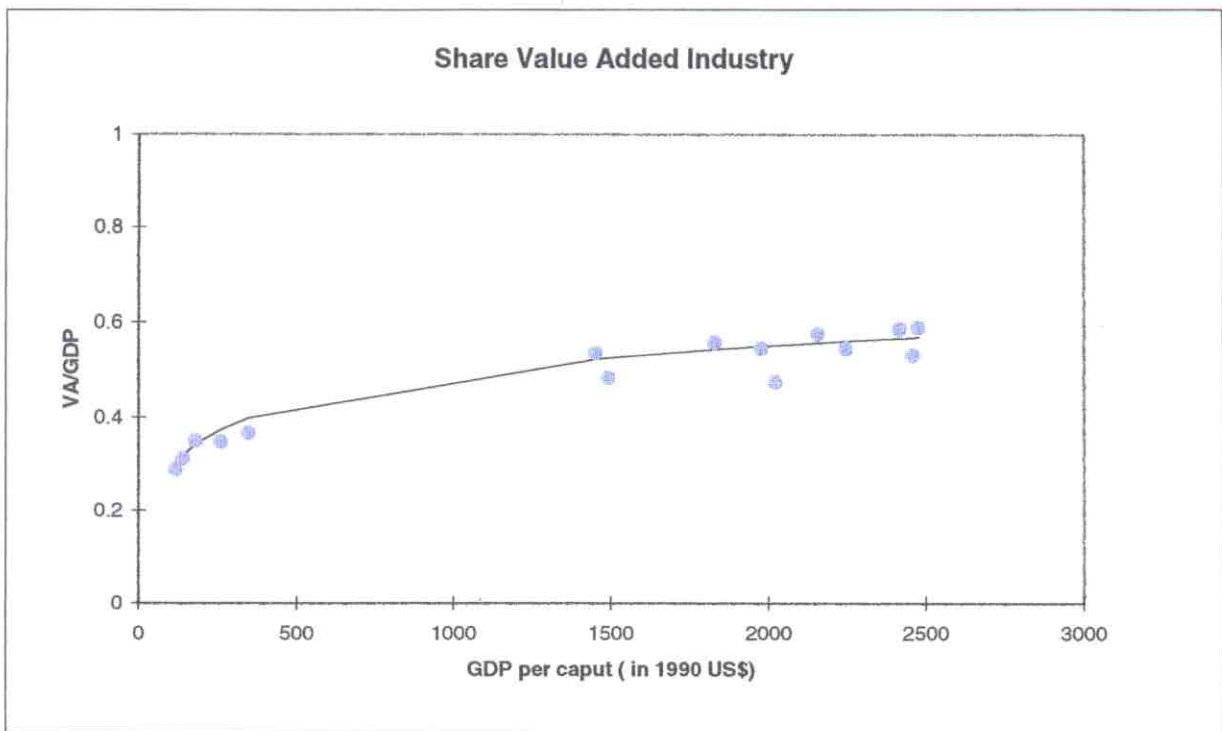
Figure A6-1. Result of fitting the relation between VA Industry and GDP/cap, regions 6,7 and 10.
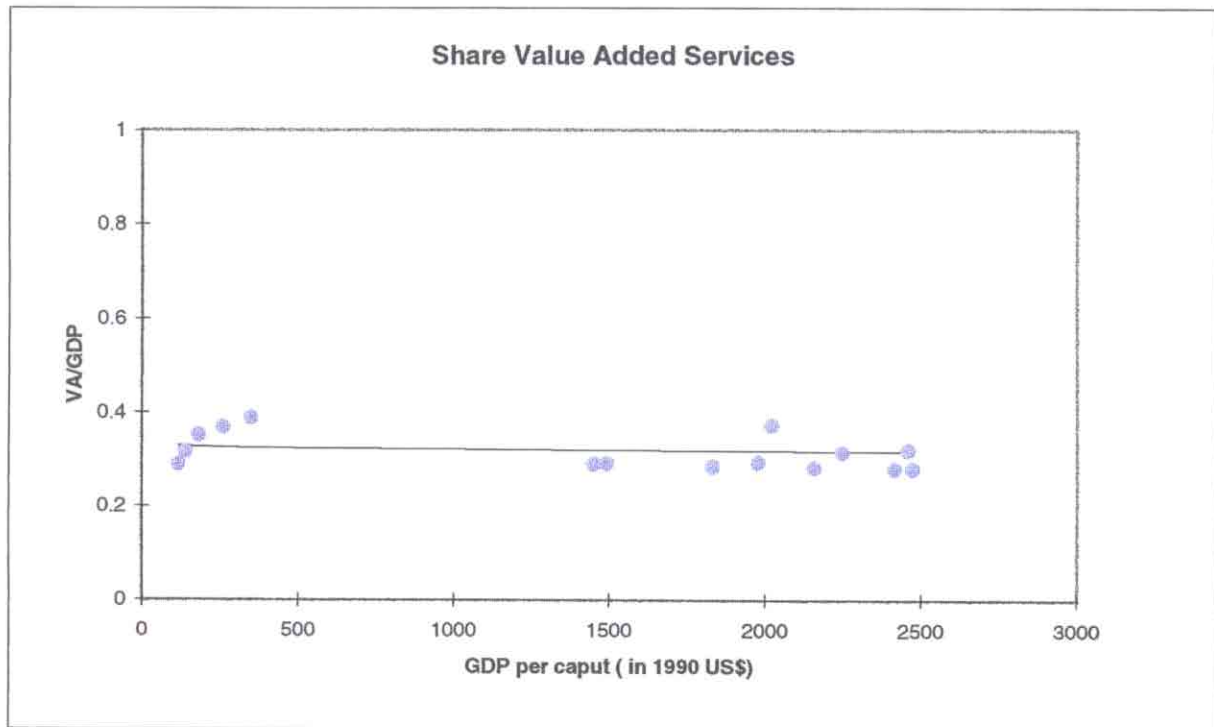


Figure A6-2. Result of fitting the relation between VA Services and GDP/cap, regions 6,7 and 10.

Figure A8. Land cover for year 1890
Calculated with Appendix 2 from Houghton et al (1983)

Cropland
Fallow forest
Ice
Tundra

Wooded tundra
Boreal forest
Cool conifer forest
Temp. mixed forest

Temp. deciduous forest
Grassland/Steppe
Hot desert
Srcubland

Savanna
Tropical woodland
Tropical rain forest
Pasture
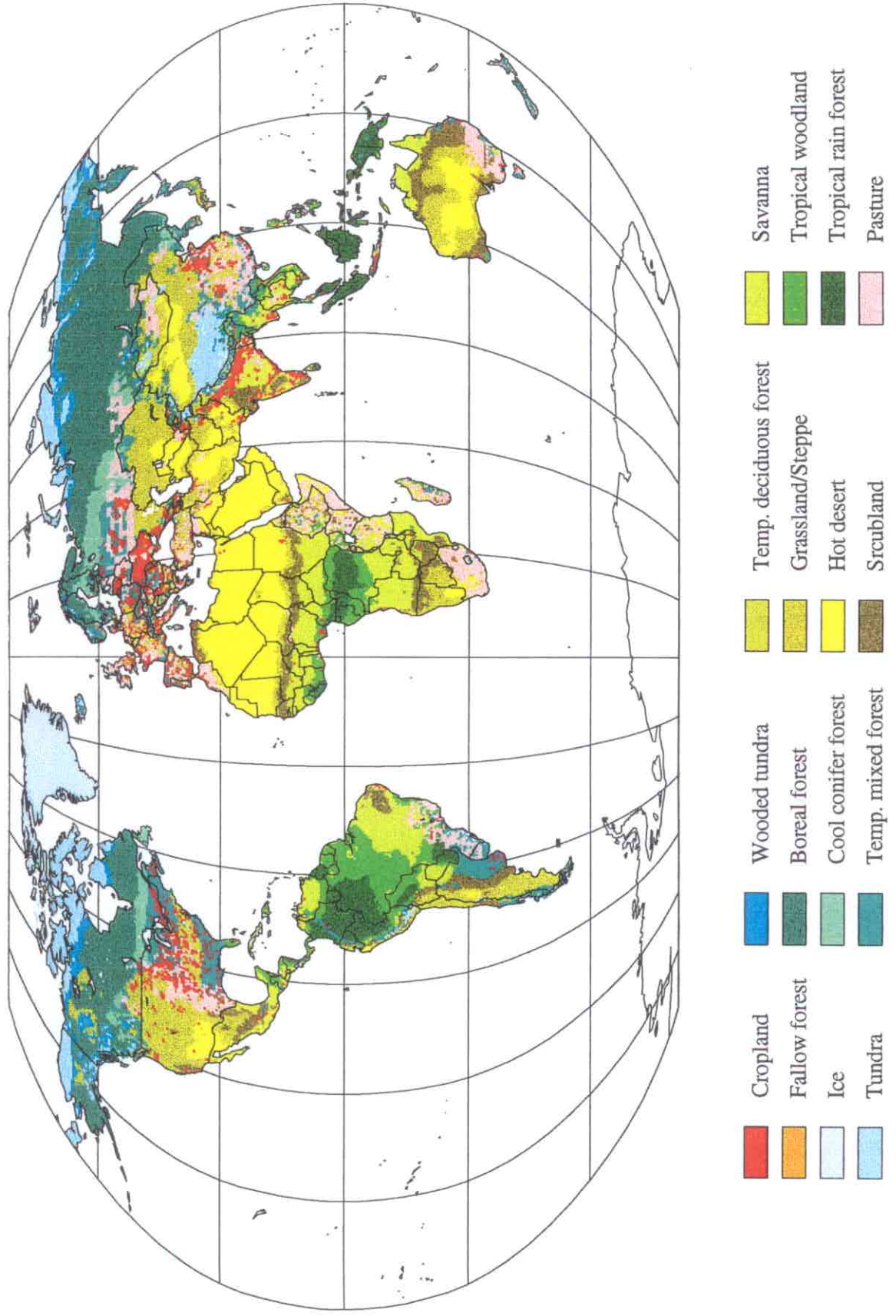
Figure A9. Land cover for year 1890
Calculated with Appendix 3 from Houghton et al (1983)

Cropland
Fallow forest
Ice
Tundra

Wooded tundra
Boreal forest
Cool conifer forest
Temp. mixed forest

Temp. deciduous forest
Grassland/Steppe
Hot desert
Srcubland

Savanna
Tropical woodland
Tropical rain forest
Pasture
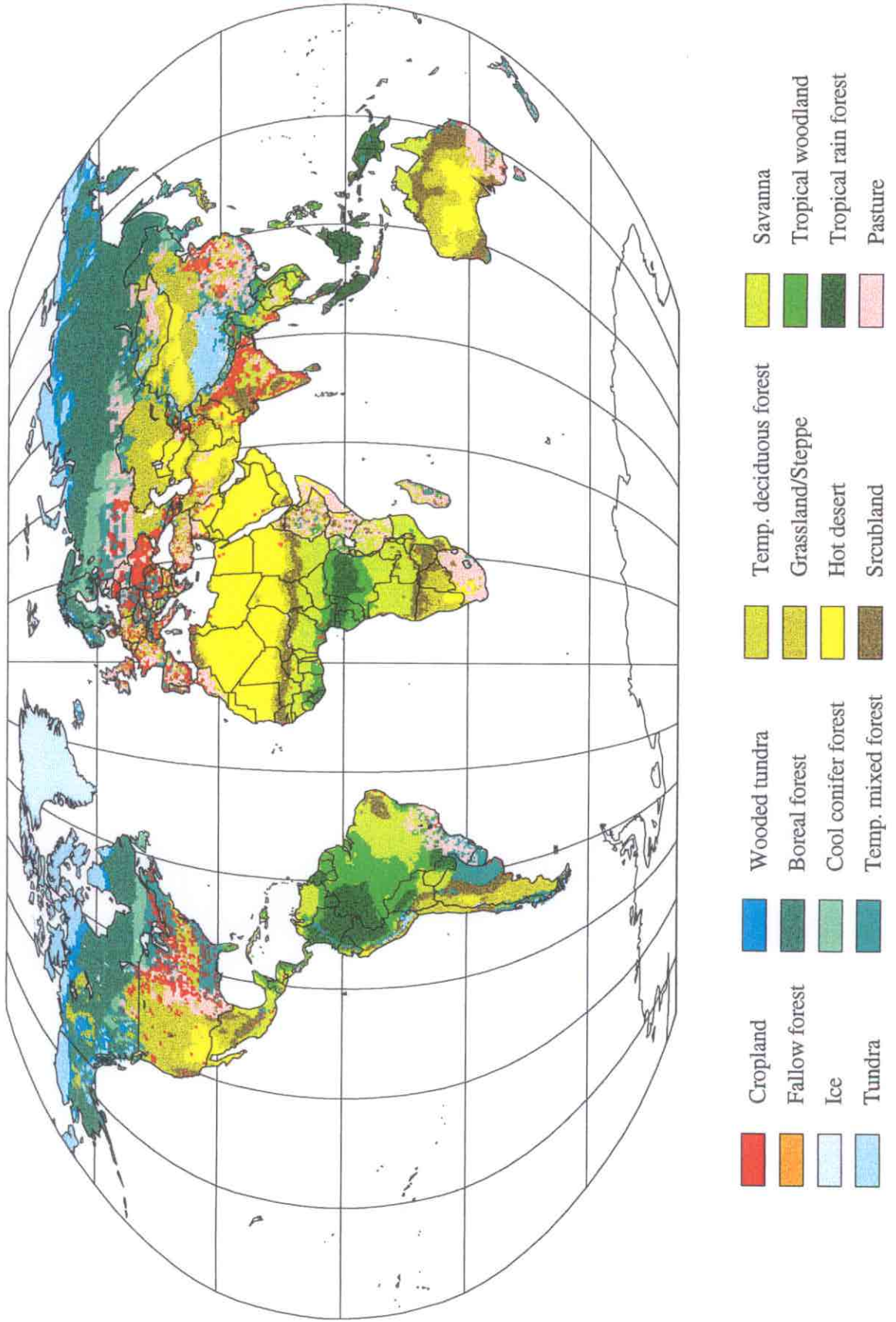
Figure A10. Land cover for year 1890
Calculated with Appendix 5 from Houghton et al (1983)

Cropland
Fallow forest
Ice
Tundra

Wooded tundra
Boreal forest
Cool conifer forest
Temp. mixed forest

Temp. deciduous forest
Grassland/Steppe
Hot desert
Srcubland

Savanna
Tropical woodland
Tropical rain forest
Pasture
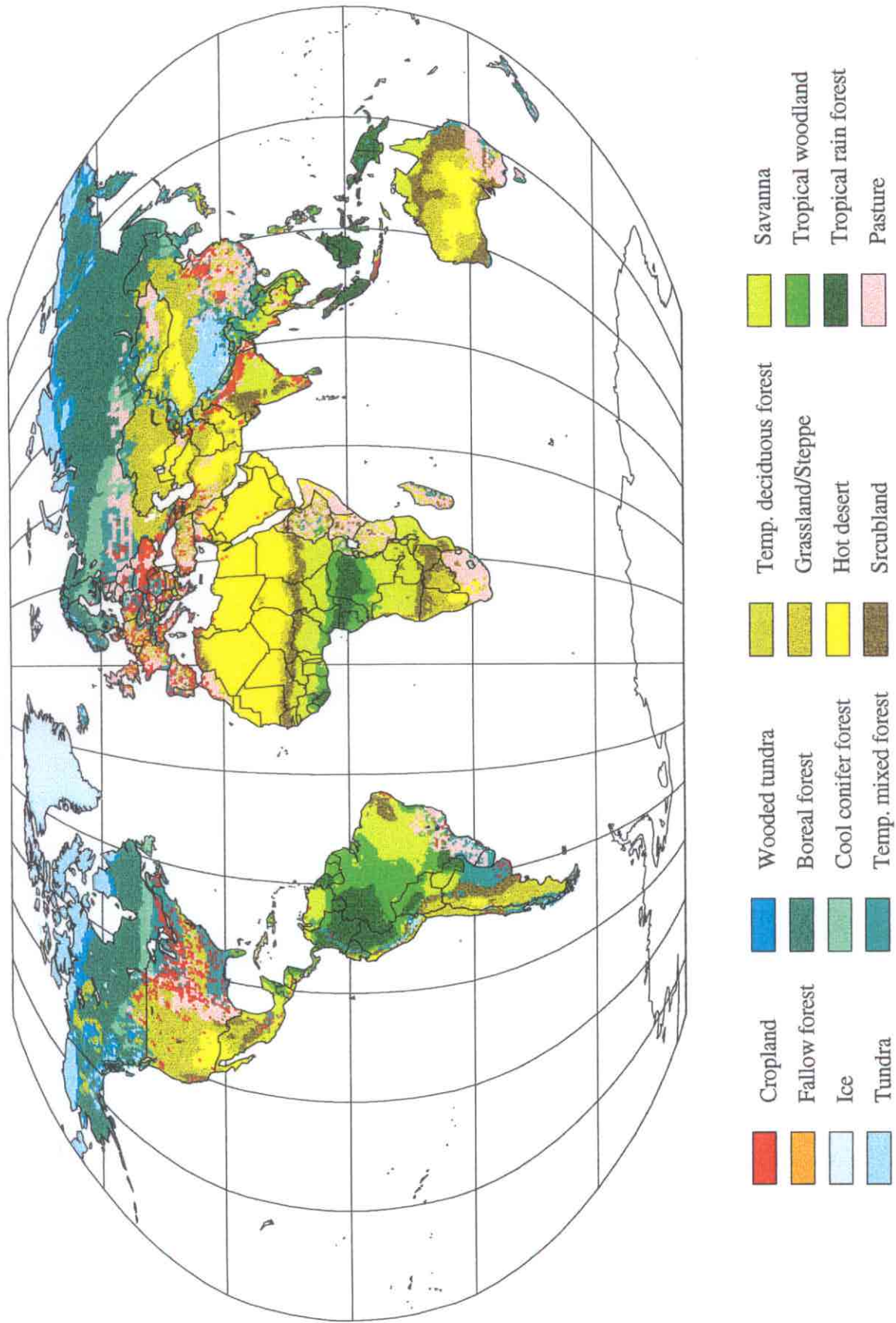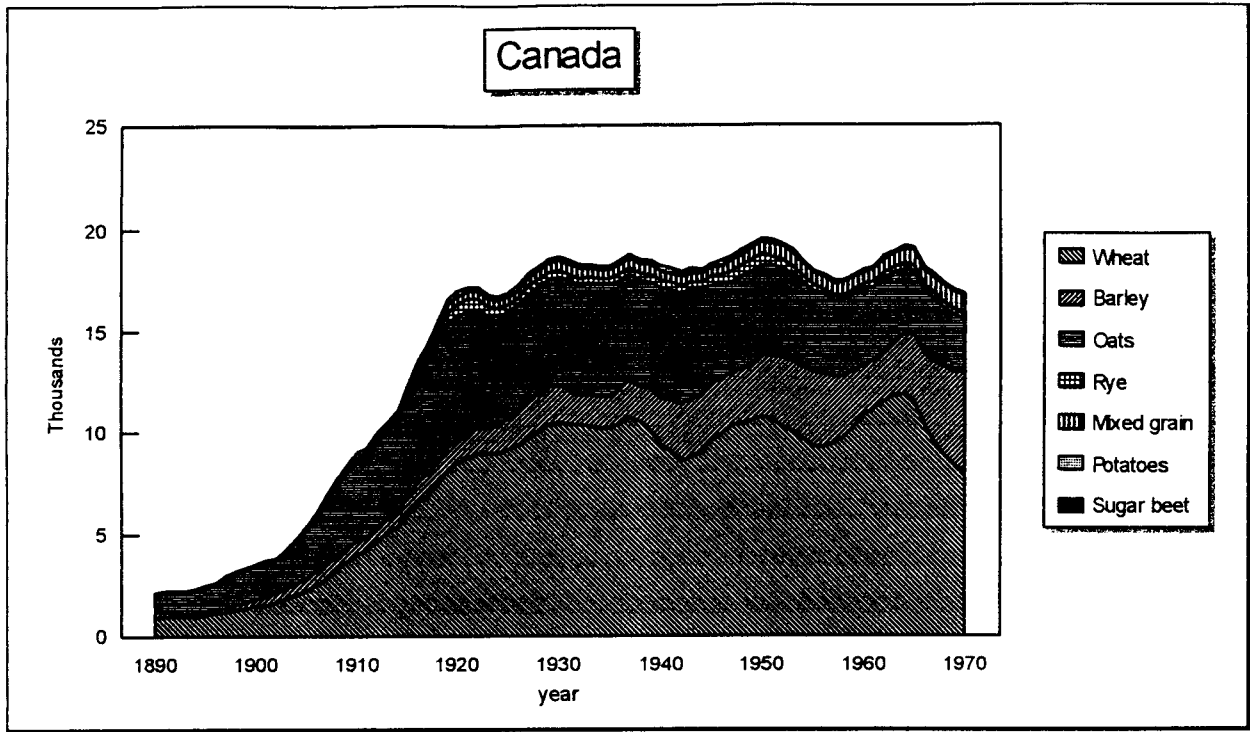
Figure A11-1. Area of main agricultural crops for Canada (in 1000 ha).
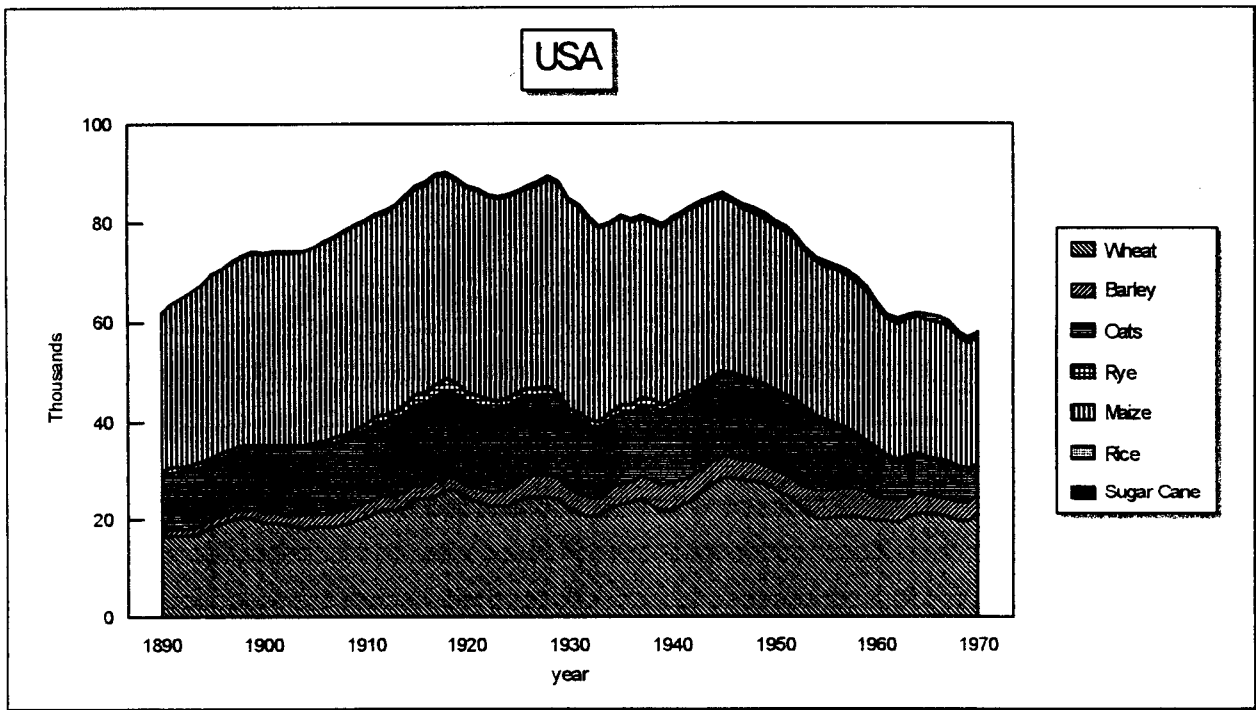


Figure A11-2. Area of main agricultural crops for USA (in 1000 ha).
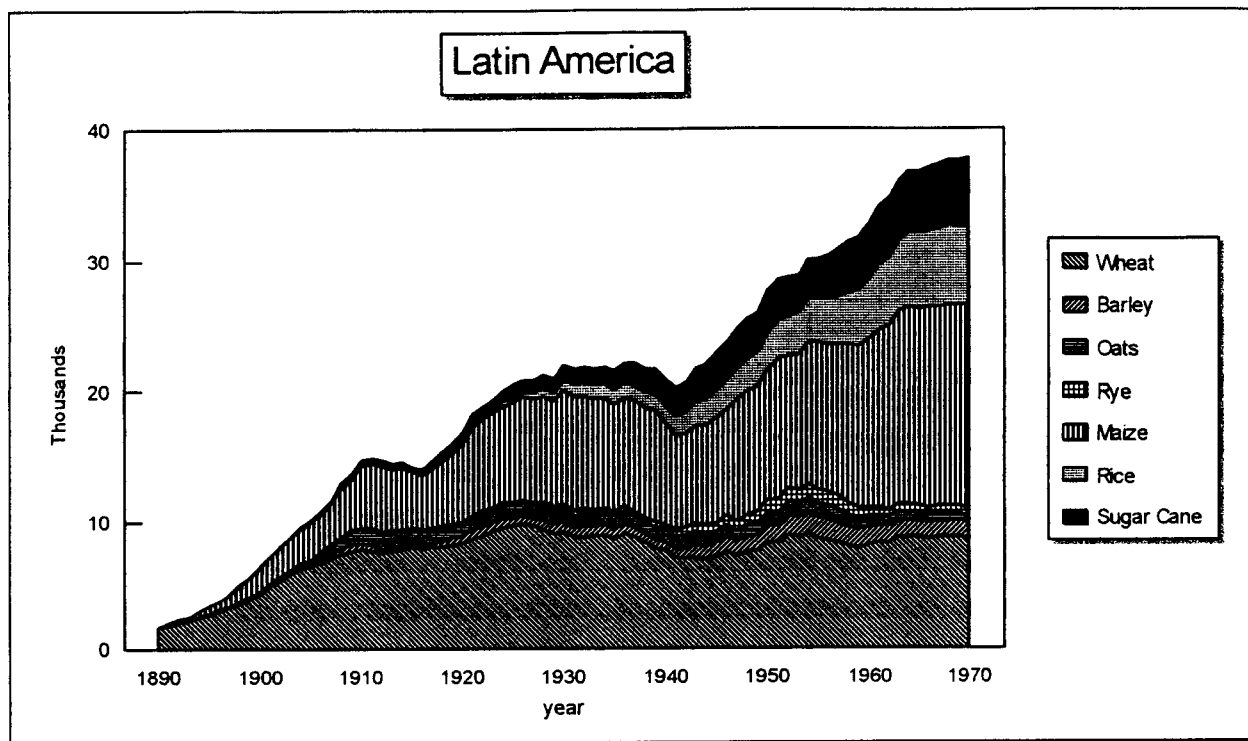
Figure A11-3. Area of main agricultural crops for Latin America (in 1000 ha).
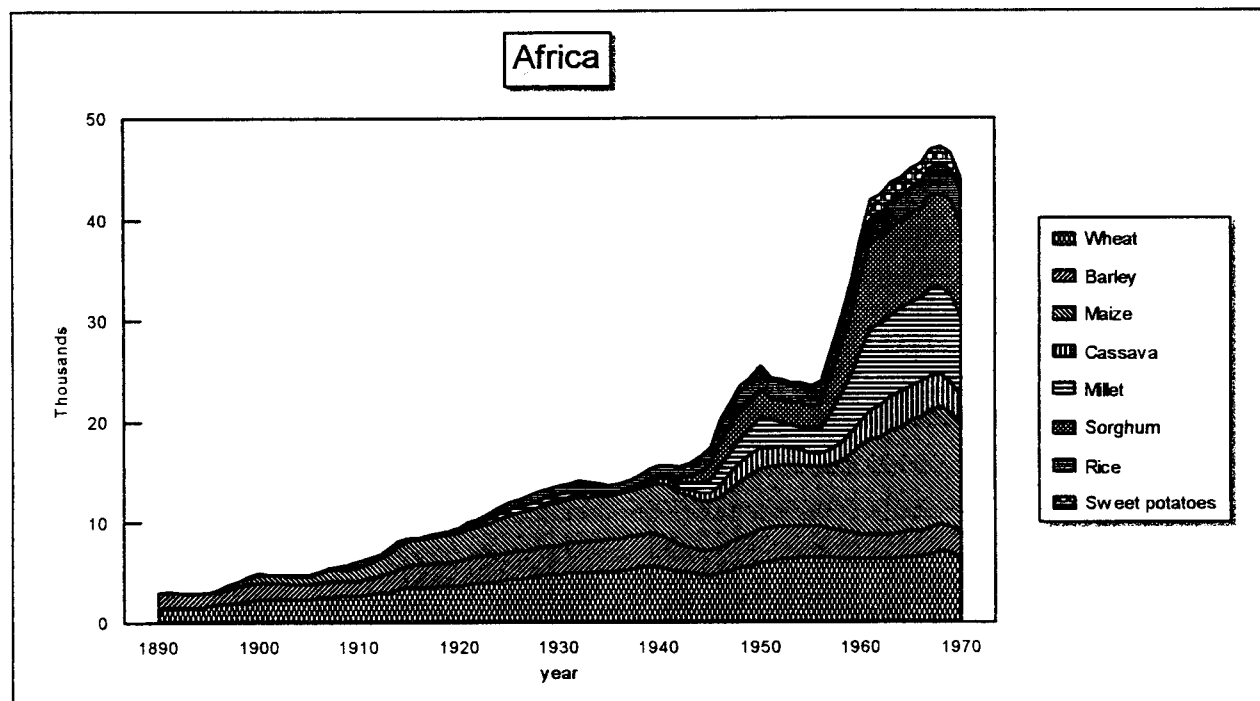


Figure A11-4. Area of main agricultural crops for Africa (in 1000 ha).
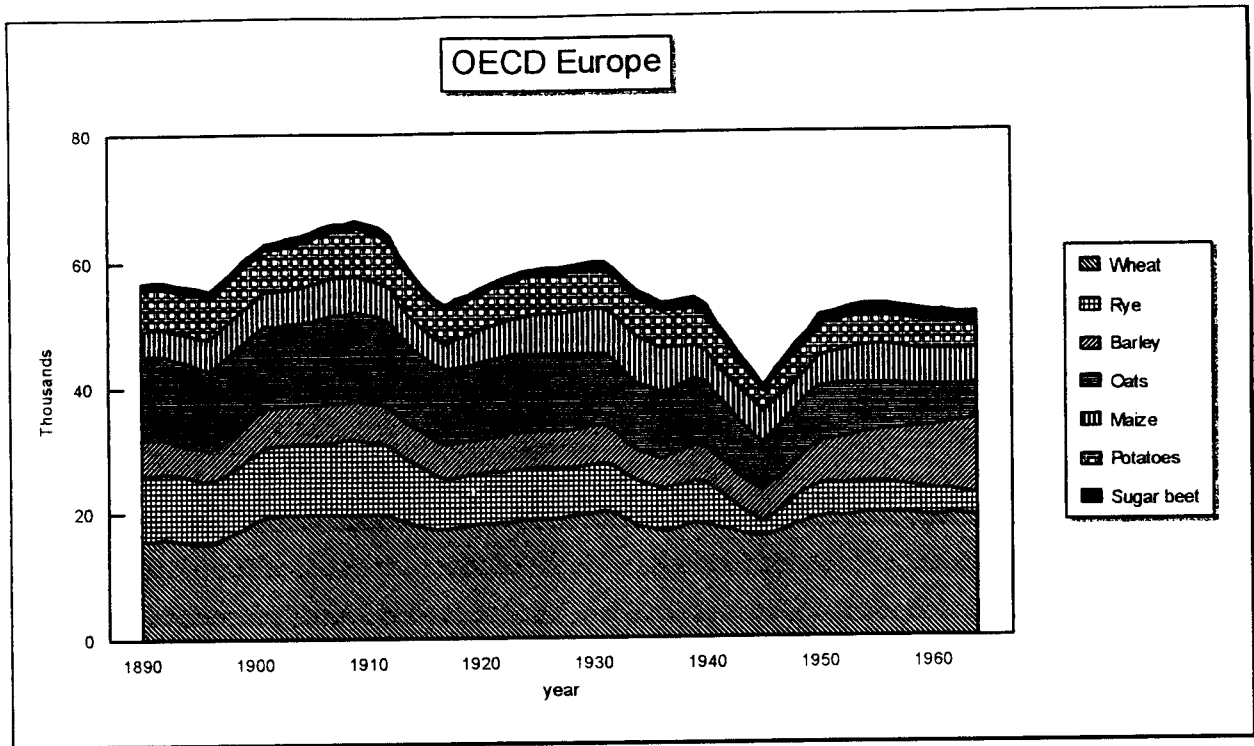
Figure A11-7. Area of main agricultural crops for OECD Europe (in 1000 ha).
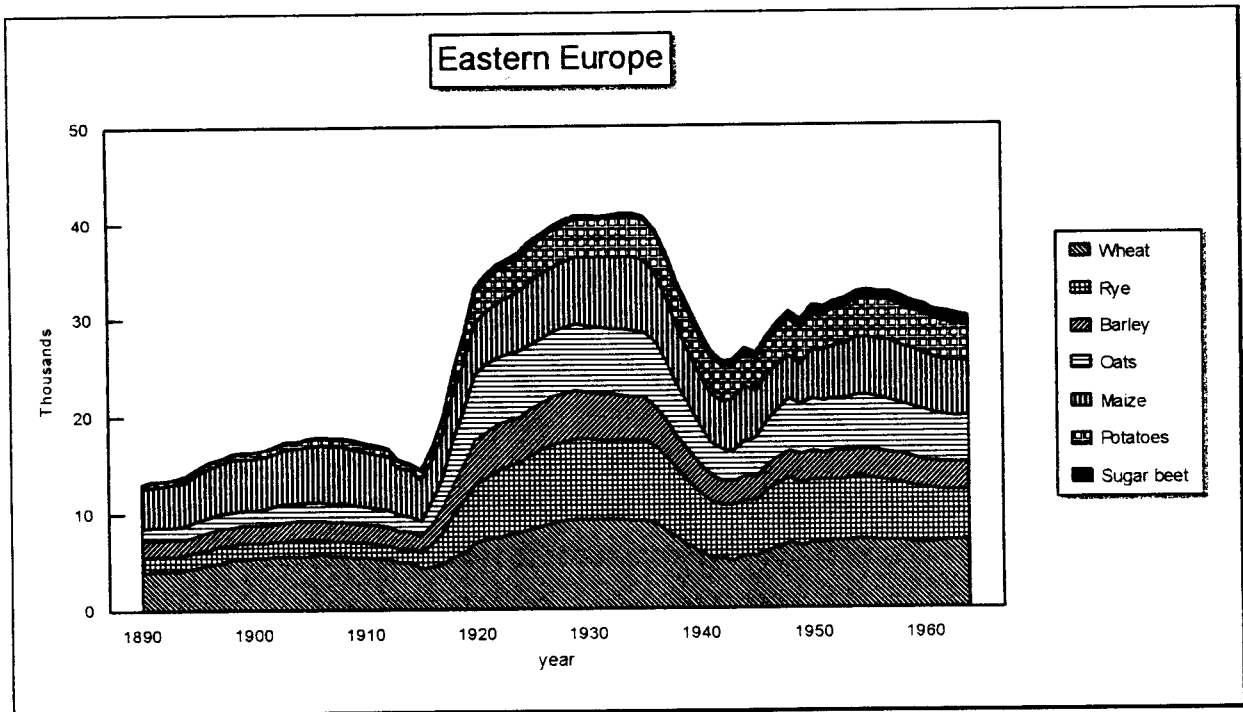


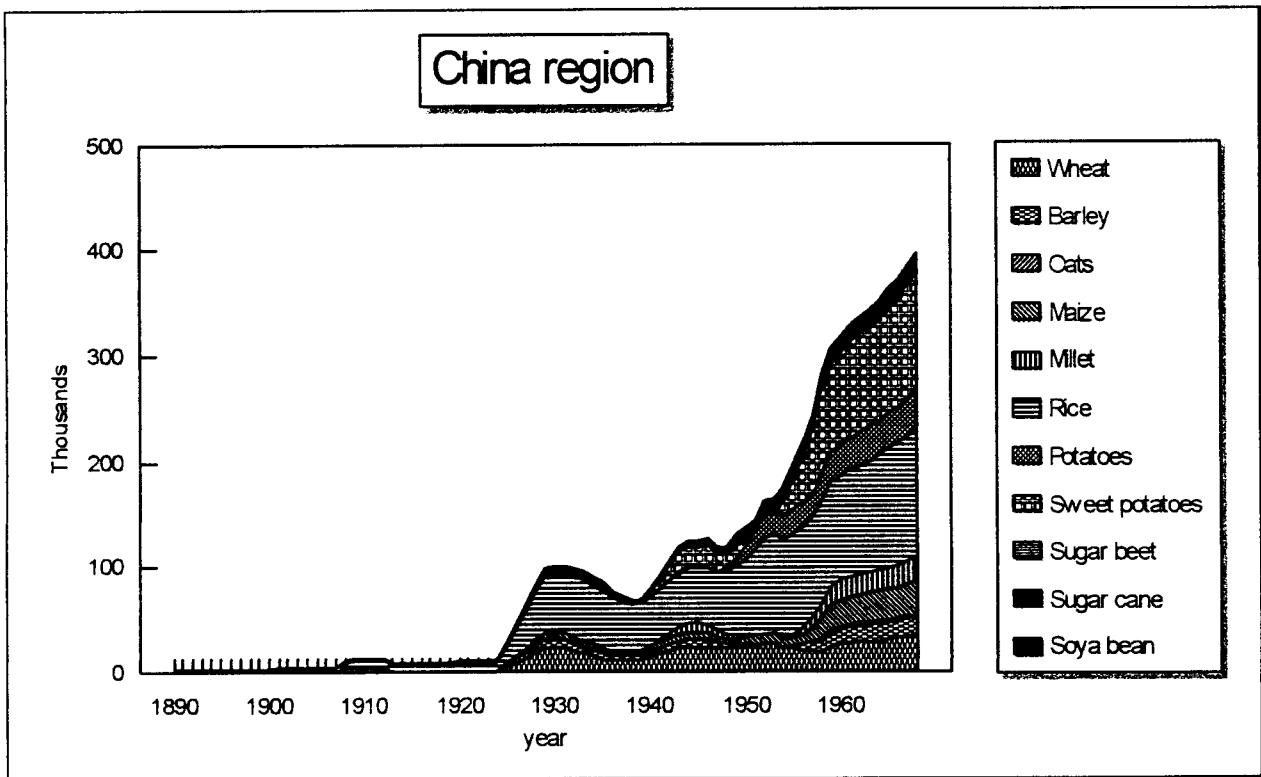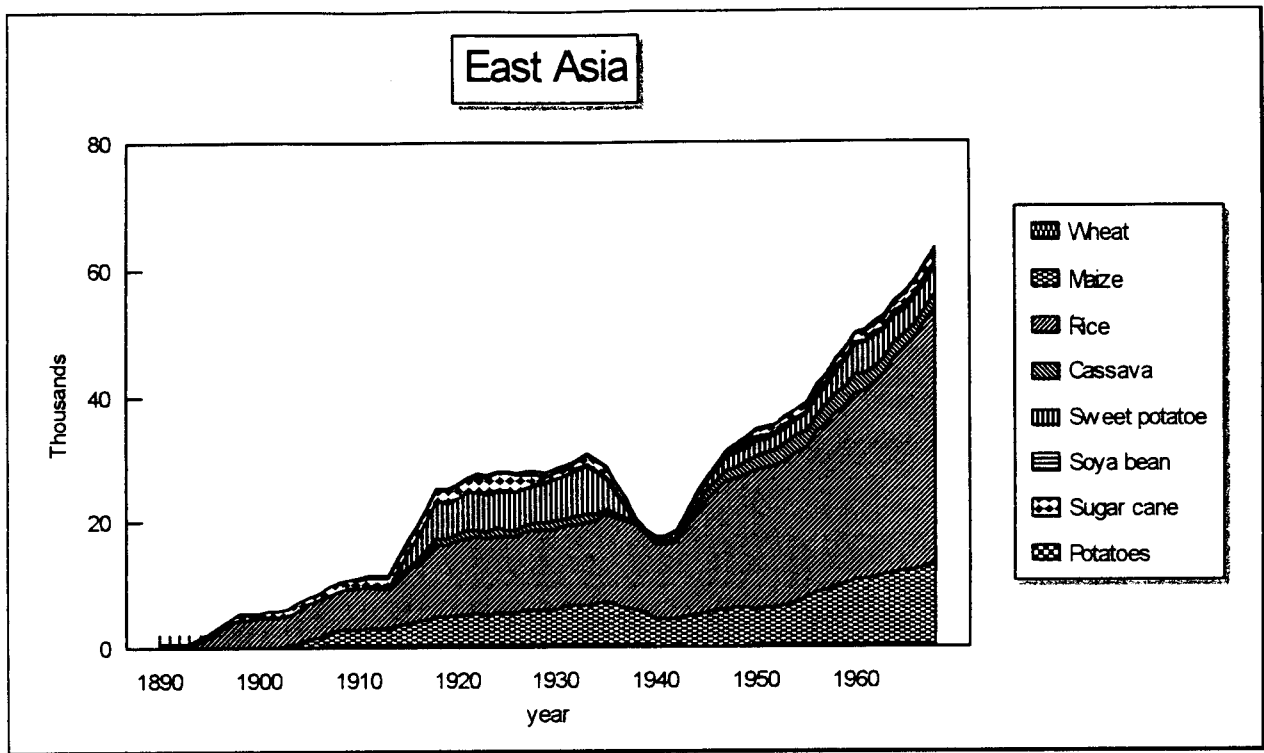Figure A11-7. Area of main agricultural crops for Eastern Europe (in 1000 ha).
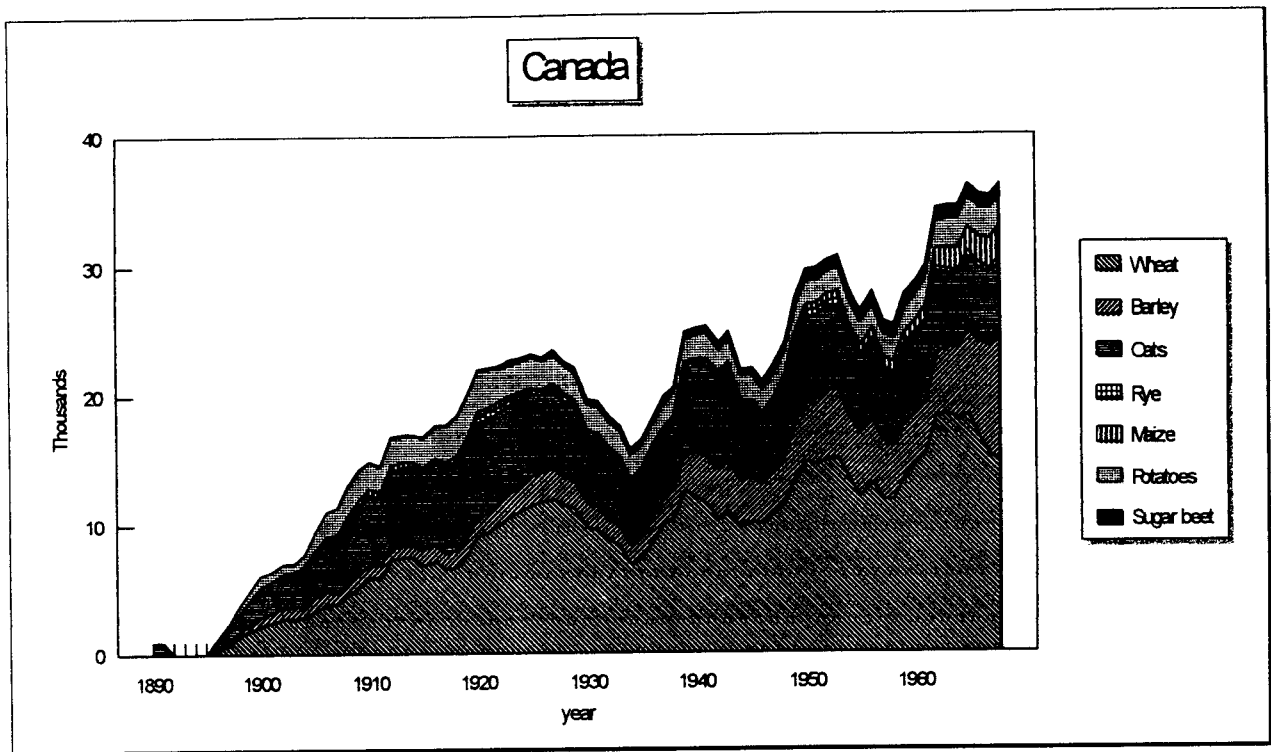
Figure A12-1. Production of main agricultural crops of Canada (in 1000 metric tons).
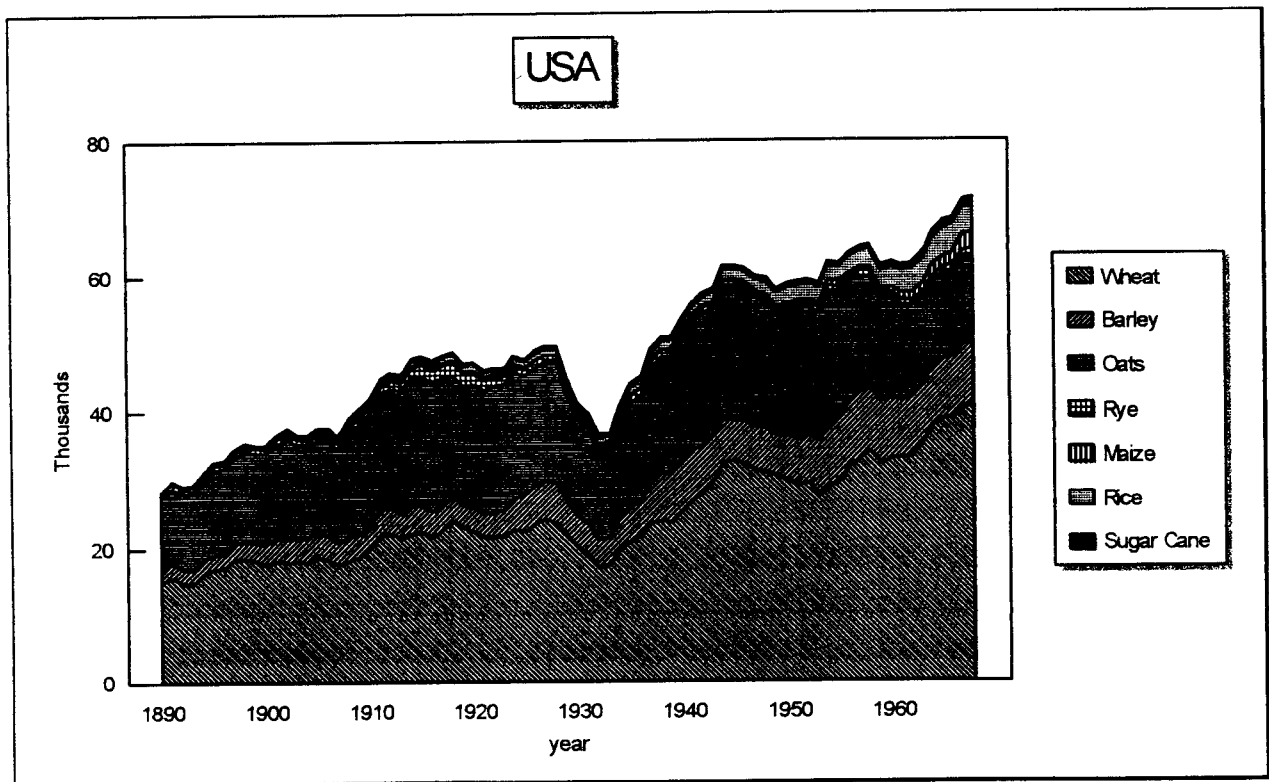


Figure A12-2. Production of main agricultural crops of USA (in 1000 metric tons).

## Latin America

Thousands

80

60

40

20

0

1890  1900  1910  1920  1930  1940  1950  1960  1970

year

Legend:
- Wheat
- Barley
- Oats
- Rye
- Maize
- Rice
- Sugar Cane
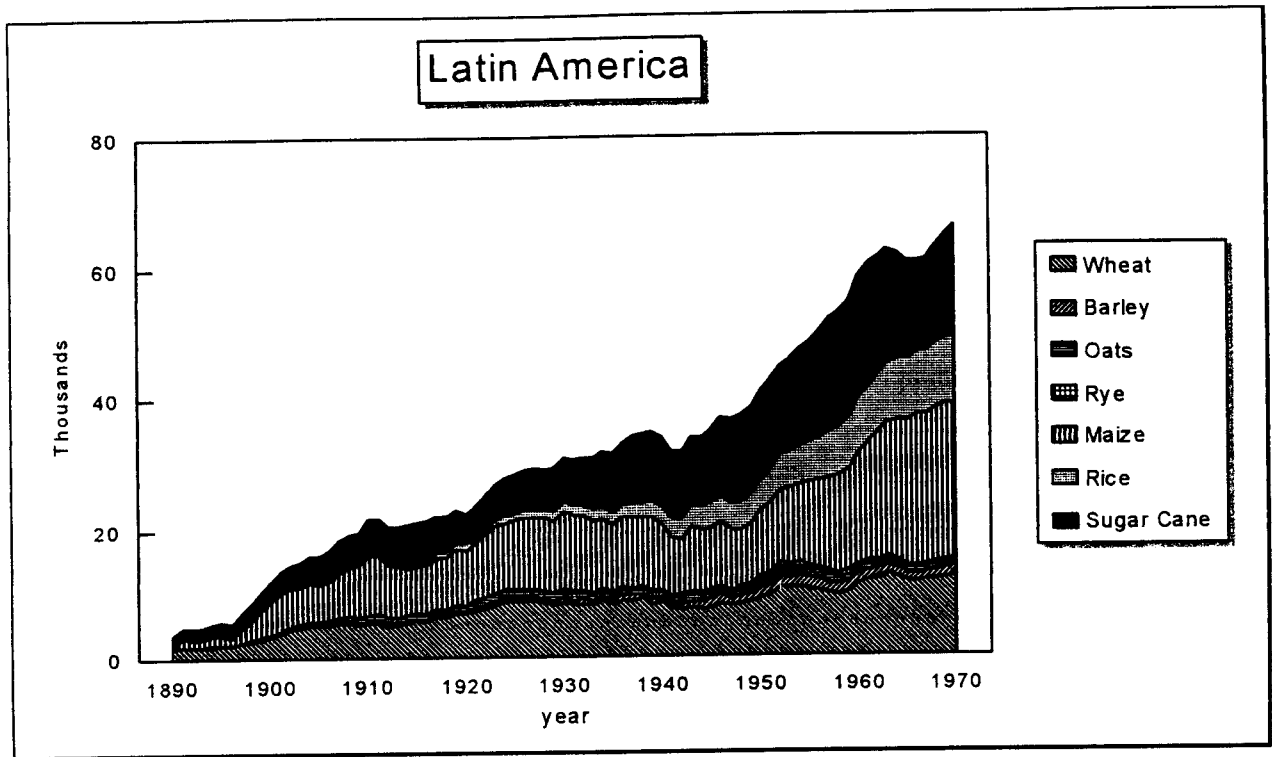
Figure A12-3. Production of main agricultural crops of Latin America (in 1000 metric tons).

## Africa

Thousands

80

60

40

20

0

1890  1900  1910  1920  1930  1940  1950  1960

year

Legend:
- Wheat
- Barley
- Maize
- Cassava
- Millet
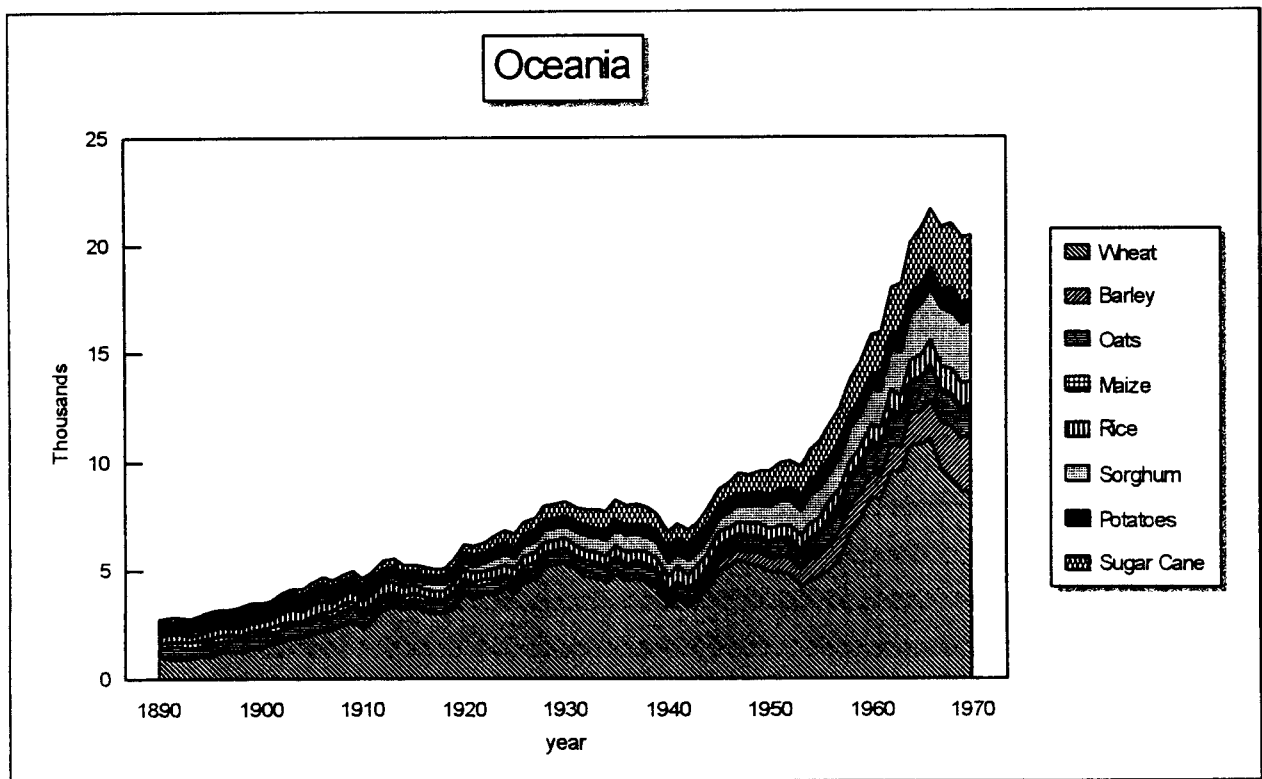- Sorghum
- Rice
- Sugar cane
- Sweet potatoes
- Potatoes
- Yams
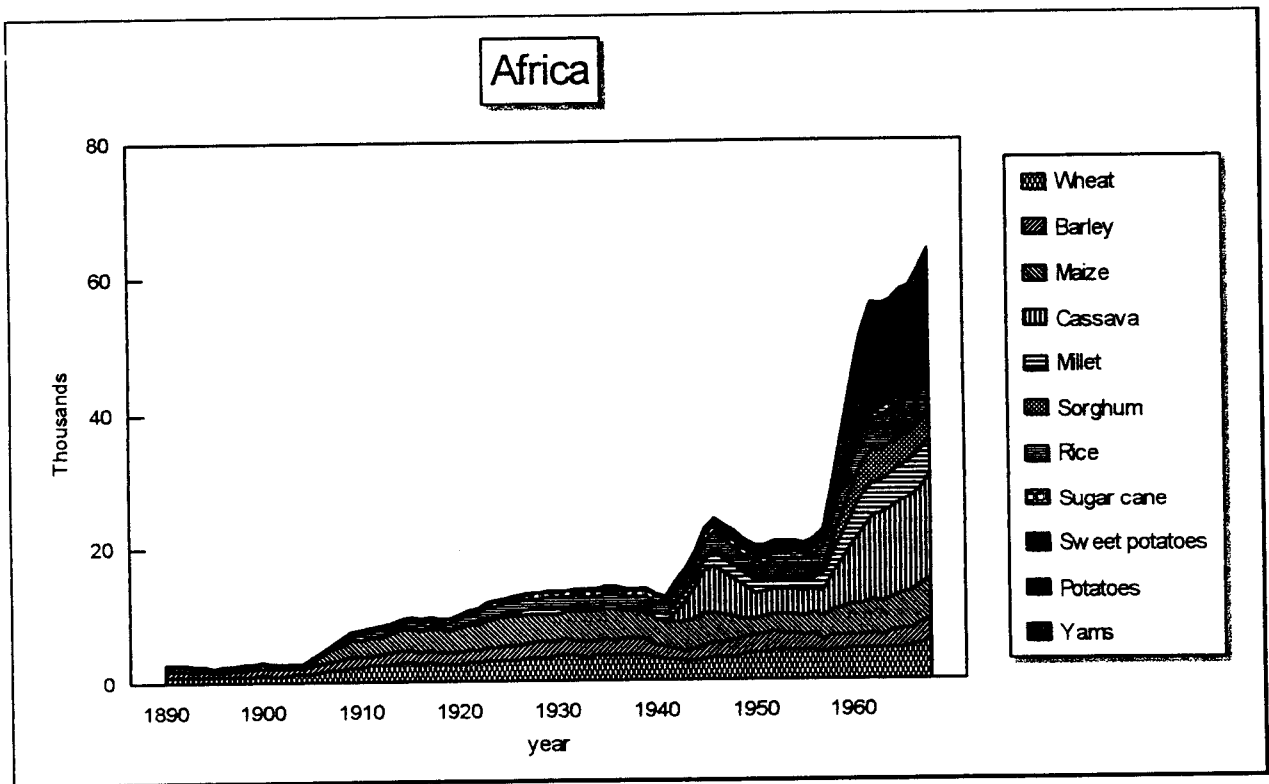
Figure A12-4. Production of main agricultural crops of Africa (in 1000 metric tons).
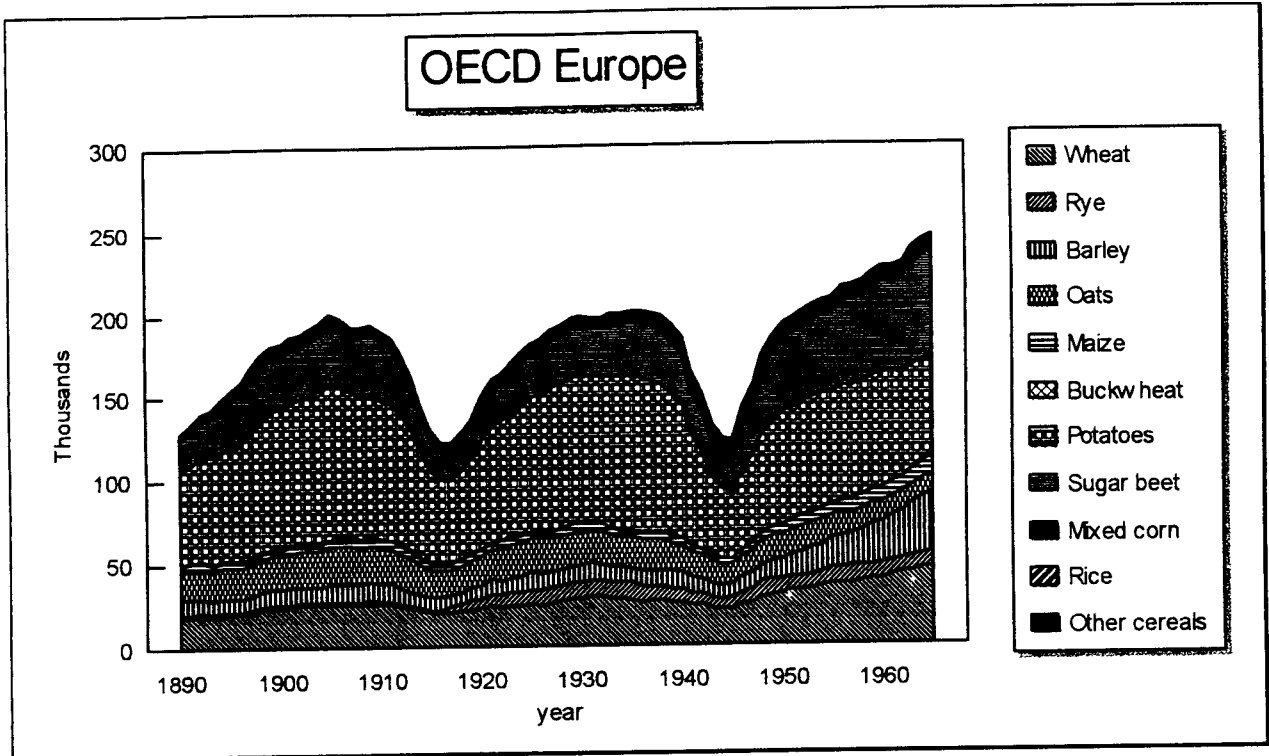
Figure A12-5. Production of main agricultural crops of OECD Europe (in 1000 metric tons).
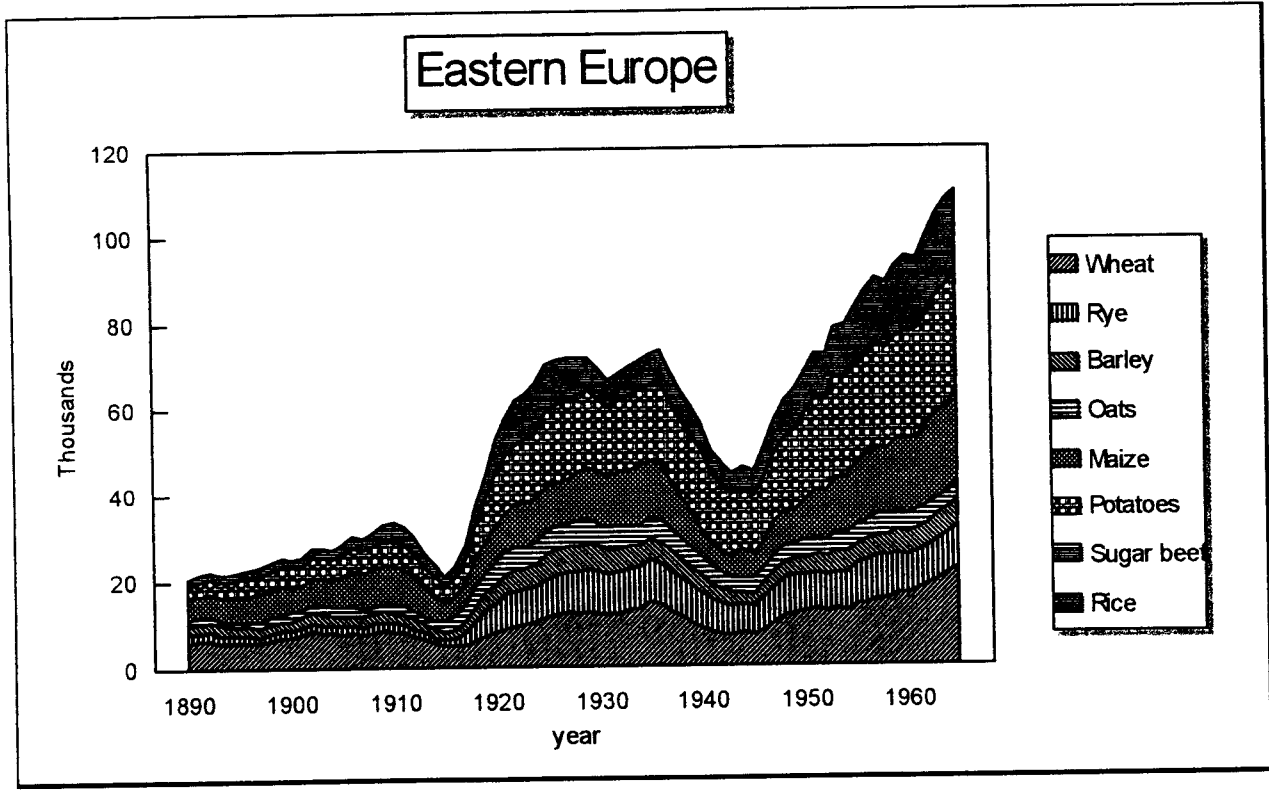


Figure A12-6. Production of main agricultural crops of Eastern Europe (in 1000 metric tons).
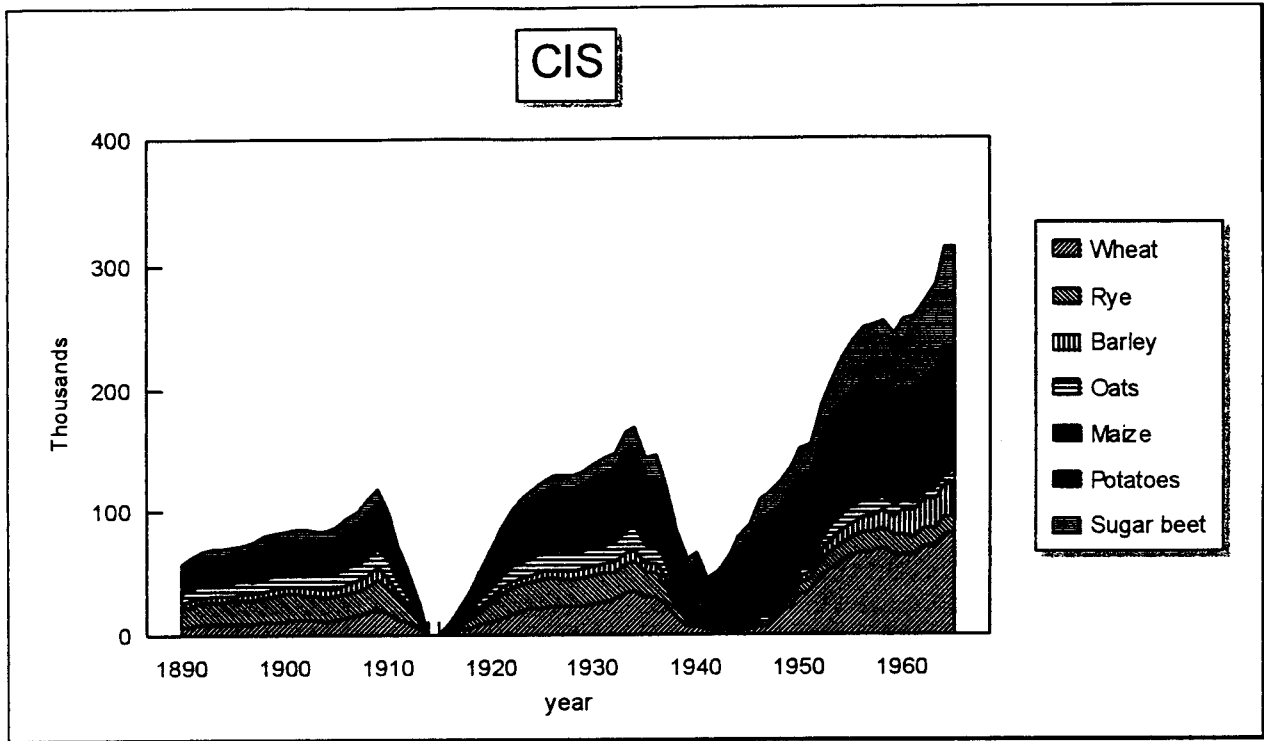
Figure A12-7. Production of main agricultural crops of CIS (in 1000 metric tons).
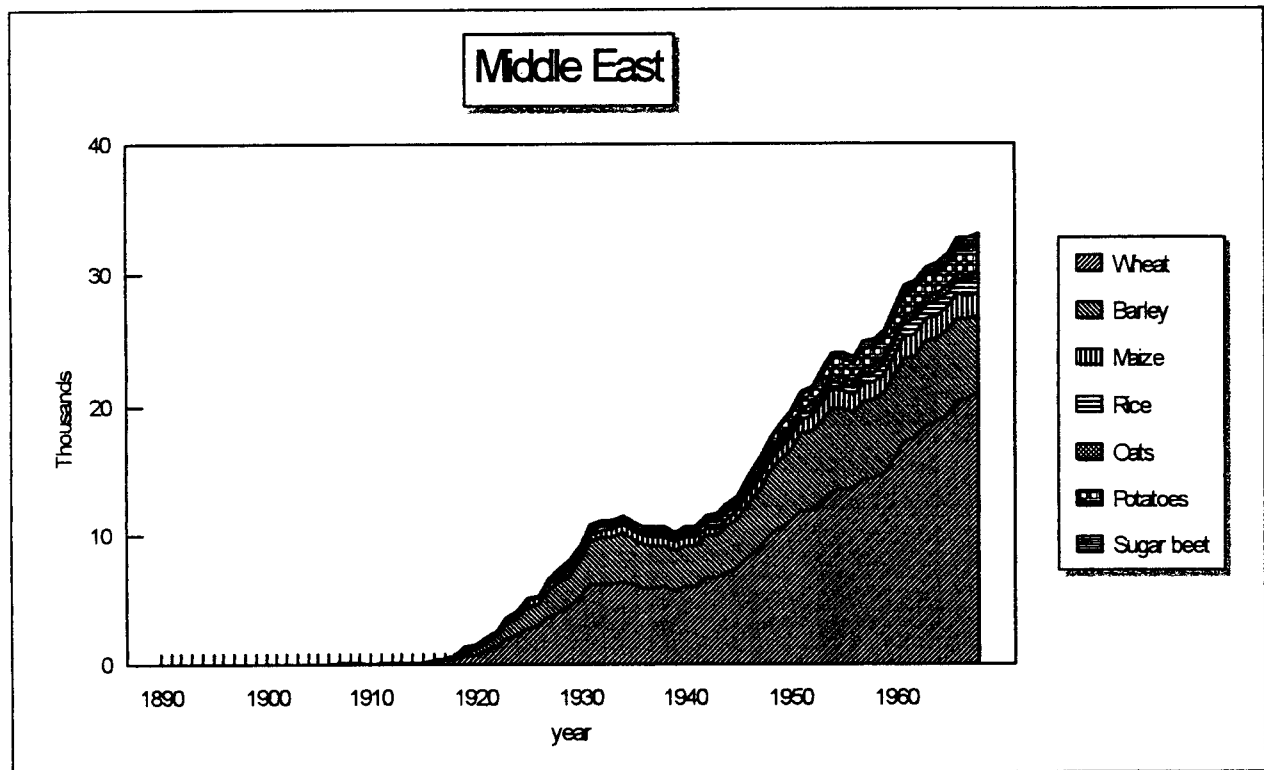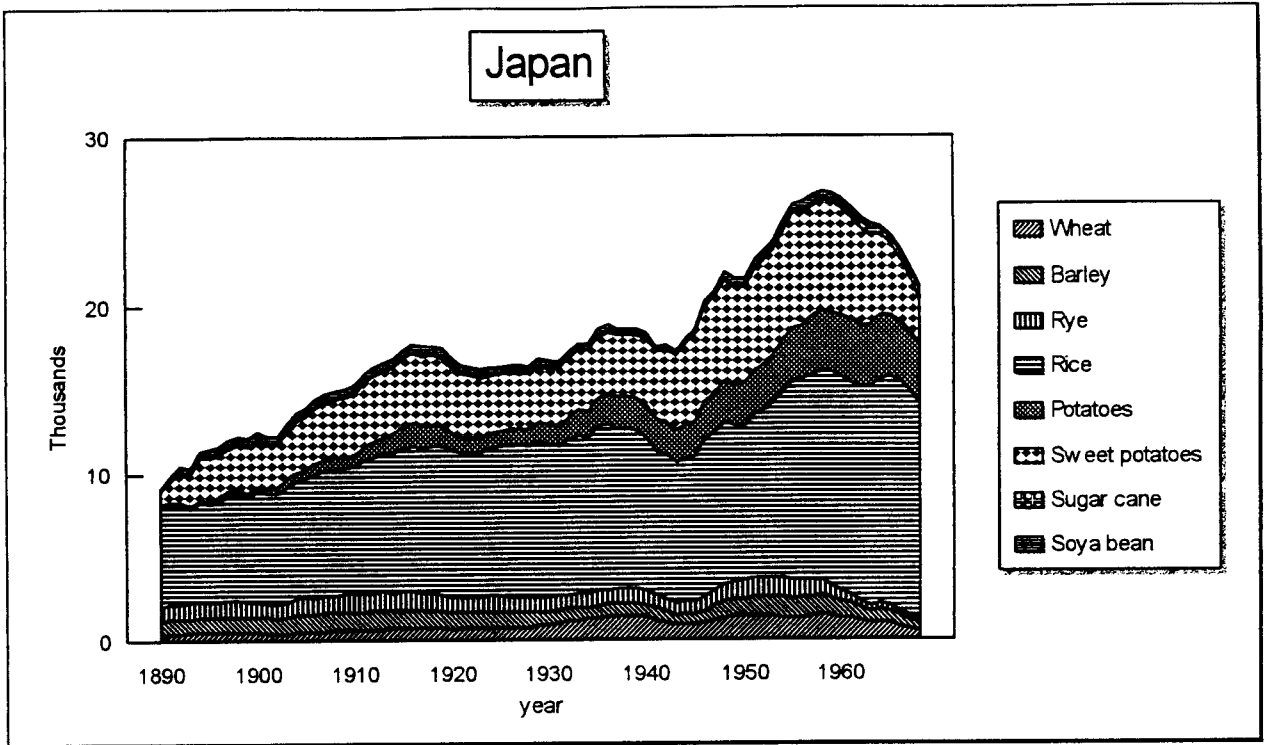


Figure A12-8. Production of main agricultural crops of Middle East (in 1000 metric tons).
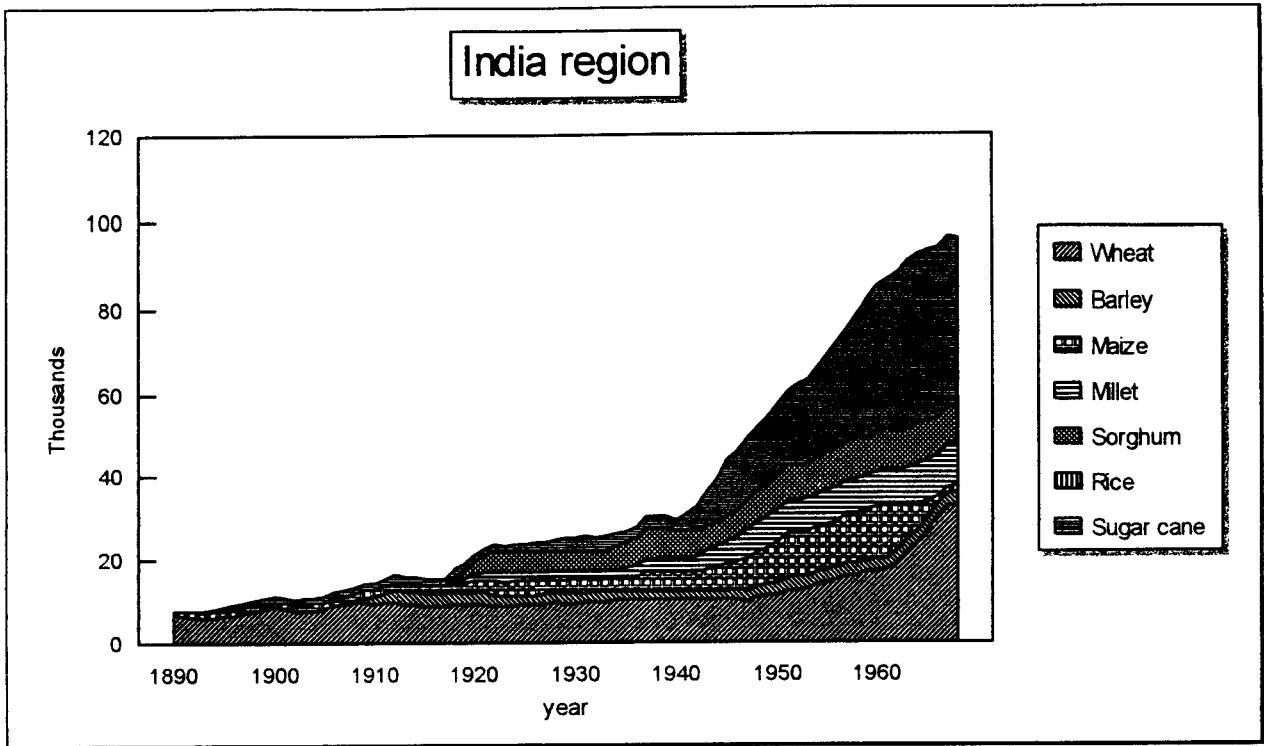
Figure A12-9. Production of main agricultural crops of India region (in 1000 metric tons).



Figure A12-10. Production of main agricultural crops of China region (in 1000 metric tons).

Figure A12-11. Production of main agricultural crops of East Asia (in 1000 metric tons).



Figure A12-12. Production of main agricultural crops of Oceania (in 1000 metric tons).

Figure A12-13. Production of main agricultural crops of Japan (in 1000 metric tons).

# Figure A14. Productivity of cattle, hogs and sheep in Canada and USA.
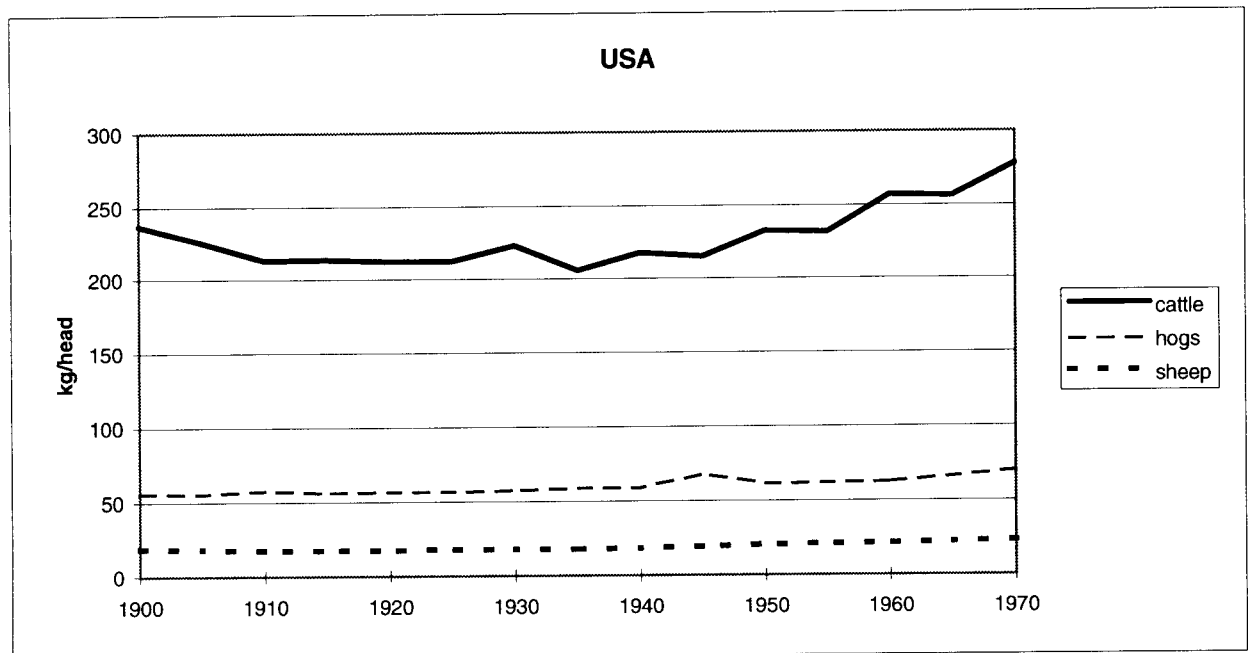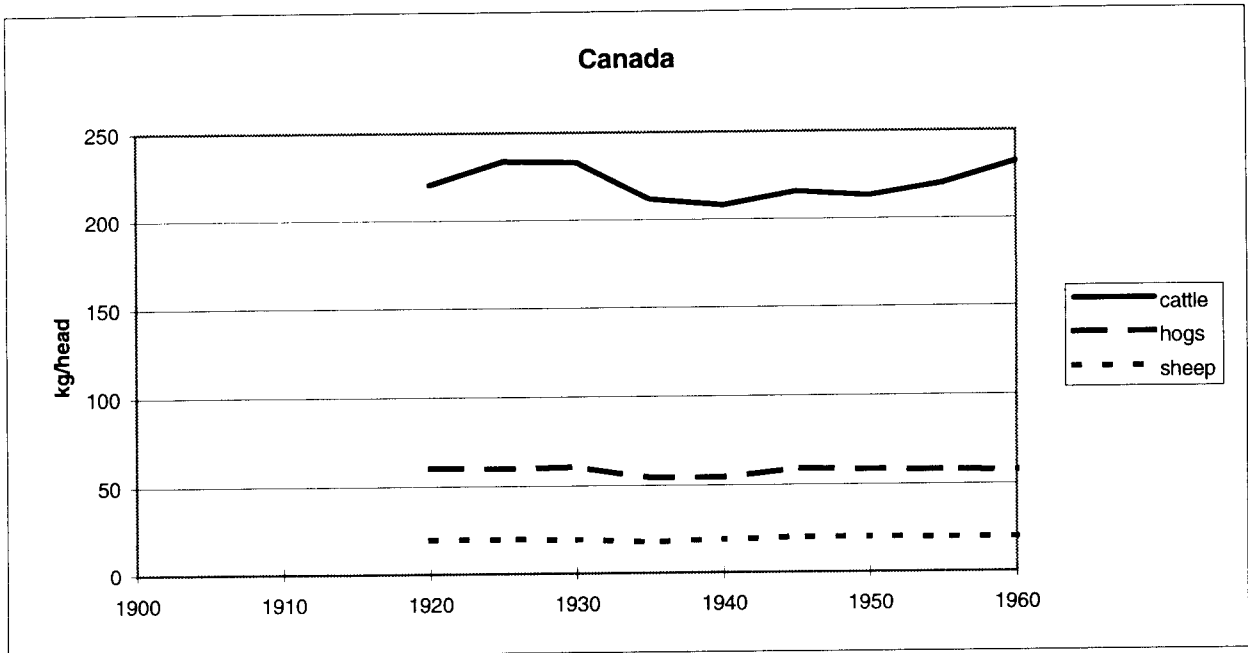


Canada



USA

**Figure A15. Ratio slaughtered animals/total livestock Canada and USA.**



Canada



USA