



UNITED
NATIONS



Framework Convention
on Climate Change

Distr.
GENERAL

FCCC/SBSTA/2003/INF.9
27 October 2003

ENGLISH ONLY

SUBSIDIARY BODY FOR SCIENTIFIC AND TECHNOLOGICAL ADVICE

Nineteenth session

Milan, 1–9 December 2003

Item 4 (a) of the provisional agenda

METHODOLOGICAL ISSUES

**REVIEW OF METHODOLOGICAL WORK UNDER THE CONVENTION AND
THE KYOTO PROTOCOL**

**Report on the availability, accessibility and comparability of existing sources of emission data
and relevant socio-economic data, including options for the development, hosting and
management of a data interface**

Note by the secretariat

Summary

This document presents information on sources of emissions and socio-economic data and on tools for accessing and analysing such data. Four options for improving the access of Parties to greenhouse gas emissions data and socio-economic data relevant to climate change are presented: to improve internet links to external data sources on the UNFCCC web site; to develop software to search external data sources; to improve the data availability on the UNFCCC web site and develop software tools to analyse the data; and to authorize an external organization to provide data and analytical tools on an external web site, with a link from the UNFCCC web site. Parties may wish to consider the relative advantages and costs of these options and provide additional guidance to the secretariat on one or more of them.

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I. INTRODUCTION

A. Mandate

1. The UNFCCC secretariat maintains a database containing estimates of greenhouse gas (GHG) emissions of all Parties that have submitted national inventories under the Convention. Although this database is not comprehensive, it is the authoritative source of GHG emissions data for those Parties that have submitted a national inventory. In addition, the secretariat collects and uses some socio-economic data to support the Annex I Party GHG inventory review process. These data include energy consumption statistics from the International Energy Agency (IEA), animal population statistics from the Food and Agriculture Organization of the United Nations (FAO), and production data for certain industrial processes from the United Nations Statistics Division. Currently, external data are used in the preparation of the annual synthesis and assessment report, but are not published separately or made available on the web site.

2. Because emissions and socio-economic data maintained by the secretariat are not comprehensive, it has been suggested that efforts be made to strengthen the information base of the Convention. In particular, a proposal has been made for the development of a 'data interface' to facilitate access by Parties to existing data relevant to their considerations of climate change (FCCC/SBSTA/2003/MISC.3/Add.1). According to the proposal, such a data interface should not require creation or collection of new data, but would allow Parties to access and retrieve environmental and economic data for all countries through existing international databases. As an initial step, it was proposed that the interface focus on emissions data, building on the secretariat's GHG information system, and on such socio-economic indicators as population, gross domestic product (GDP) and corresponding growth rates.

3. The SBSTA, at its eighteenth session, considered this proposal, and requested the secretariat to prepare a paper taking stock of the availability, accessibility and comparability of existing sources of emissions data and relevant socio-economic data. It also requested the secretariat to develop options for the development, hosting and management of a data interface, including cost implications, for consideration by the SBSTA at its nineteenth session.

B. Scope of the note

4. Chapter II provides an overview of data available from the UNFCCC secretariat and from external sources. Because many external sources of emissions and socio-economic data simply compile or reproduce data from so-called 'primary' sources (i.e. the original source of data), the discussion of data sources in chapter II focuses on primary sources. It does not consider sources which reproduce data, or sources which provide only national data (such as national climate change web sites), nor sources of estimates of corporate emissions data. A few secondary sources which are noteworthy for compiling and presenting large quantities of data, have also been added. Descriptions and references for several external data sources¹ are provided in the annex. Chapter III presents options for improving the access of Parties to emissions and socio-economic data, including through the development of a 'data interface'.

¹ For purposes of this document, the term 'external data' is used to refer to data that are not directly reported by Parties to the Conference of the Parties, and the term 'external data sources' to any source outside the UNFCCC secretariat. Thus, other United Nations organizations are also considered external sources.

C. Possible action by the SBSTA

5. The SBSTA may wish to consider the options described in chapter III, and provide further guidance to the secretariat relating to one or more of the options. In considering the options, Parties may wish to reflect on some basic questions:

- (a) What kind of data are needed?
- (b) How important is it that the data be comparable and authoritative?
- (c) What type of analytical tools are needed?
- (d) Are the data to be used to facilitate analysis by Parties for national purposes or by the subsidiary bodies of the Convention?

II. DATA SOURCES

A. Sources of emission data

6. The sole sources of GHG emissions data recognized under the Convention are national GHG inventories reported by Parties. The secretariat compiles and synthesises GHG emission and removal estimates reported by Parties in their official submissions (GHG inventories or national communications) to the UNFCCC and maintains this information in the UNFCCC GHG information system. These data are provided, and can be searched, through the UNFCCC web site. As of 2003, the information system contains data for 139 Parties – 40 Annex I Parties and 99 non-Annex I Parties. For most Annex I Parties, the data cover the time series from 1990 (or another approved base year) up to the most recent inventory year (currently 2001). For non-Annex I Parties, emissions data usually cover only one year – either 1990 or 1994.

7. UNFCCC emissions data are generally considered more accurate than emissions data from other sources because the data are reported directly by governments using national statistics, using Intergovernmental Panel on Climate Change (IPCC) methodologies, and according to agreed reporting guidelines. In addition, national inventories of Annex I Parties are subject to expert review, which also contributes to Parties' collective confidence in the quality of these emission estimates. Because of the detailed inventory reporting requirements for Annex I Parties, the UNFCCC data cover more GHGs,² and at a higher level of sectoral disaggregation, than do external sources.

8. The UNFCCC emissions data are, however, limited in geographic and temporal coverage. Data for Annex I Parties only include the period covered by the Convention, and do not yet include a full time series for all Parties. For non-Annex I Parties, the data set is even more limited: only a single year estimate is available for most reporting Parties, and for several countries no data are available yet.

9. Beyond the UNFCCC, several external sources provide data on GHG emissions. The most widely known sources are the IEA, the Carbon Dioxide Information Analysis Center (CDIAC) and the Emission Database for Global Atmospheric Research (EDGAR).

10. The IEA provides annual estimates of carbon dioxide (CO₂) emissions from fuel consumption for 30 Organisation for Economic Co-operation and Development (OECD) countries and more than 100 non-OECD countries. These estimates are calculated, using the IPCC default methodologies, based on IEA energy production and consumption statistics which are reported by national governments direct to IEA through annual reports and surveys. As of 2003, IEA's data set covers the years 1960–2001 for

² UNFCCC inventory reporting guidelines require Annex I Parties to report estimates of the six direct greenhouse gases – carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆).

most OECD countries, and the years 1971–2000 for non-OECD countries. Outside the UNFCCC, IEA is generally considered to be the most consistent and complete source of emissions data due to the quality of its energy statistics and the use of IPCC methodologies, but its estimates cover only CO₂ from fuel combustion.

11. CDIAC is a research institution affiliated with the United States Department of Energy. Its database contains annual estimates of CO₂ emissions from fossil fuel combustion and cement for more than 200 countries or areas. The entire data set covers the period 1751–1999, but coverage varies by indicator and by country. CDIAC also provides estimates of global methane emissions and regional estimates of fluxes from land-use change. The emissions are estimated using activity data (e.g. fuel consumption) from the United Nations Statistics Division, the United States Geological Survey and the United States Department of Energy. The CDIAC data have the broadest geographic and temporal coverage of the sources discussed here.

12. The EDGAR database, a joint project of the Netherlands National Institute of Public Health and the Environment (RIVM) and the Netherlands Organisation for Applied Scientific Research (TNO), is another well-established source of emissions data. The current version of the database, EDGAR 3.0, contains country-level estimates of the six direct greenhouse gases for the years 1990 and 1995. A time series of regional estimates of CO₂, CH₄ and N₂O is available for the years 1970–1995.

13. The Methane Branch of the United States Environmental Protection Agency (EPA) has also developed draft estimates and projections of non-CO₂ GHGs for 85 countries. The gases included are CH₄, N₂O, and the high global warming potential gases. Historical estimates are reported for 1990, 1995, and 2000, and projections of emissions in the absence of climate measures (“Business As Usual”) are provided for the years 2005–2020. The emission estimates presented are derived from publicly available country reports, where available, or have been calculated using a tier 1 IPCC methodology.

14. Because of the difference in data quality and coverage, data from these and other external sources are not directly comparable to the GHG data maintained by the UNFCCC secretariat. However, for global and long-term trend analyses of emissions, the UNFCCC GHG information system is limited by its relatively narrow geographic and temporal coverage. Whereas external data sets may not be as accurate as UNFCCC data in accounting for emissions of a particular country, they may be useful for cross-country comparisons and long-term data analyses, and as a starting point for projecting future global emissions.

B. Sources of socio-economic data

15. The primary sources of global socio-economic data are United Nations organizations, including the World Bank, and other major international organizations, such as the OECD.

16. Within the United Nations, the principal collector and collator of economic, demographic and social data is the United Nations Statistics Division. The Statistics Division maintains these data, together with other United Nations data series, in the United Nations Common Database, which contains nearly 1,000 individual data series from more than 30 separate organizations, mainly United Nations organizations and agencies (e.g. FAO, the United Nations Population Division, the United Nations Conference on Trade and Development (UNCTAD), the United Nations Environment Programme (UNEP), the World Bank and OECD). All data compiled in the United Nations Common Database are provided originally by governments to the relevant international organizations, either through official reports or in response to surveys. The geographic and temporal coverage of the data varies by series; for instance, GDP values are available for the years 1975–2000, whereas national population estimates are available back to 1948. Other data collections maintained by the United Nations Statistical Division include the Millennium Indicators database, which covers 48 variables for countries for the years 1985–2000.

17. The World Bank Development Indicators (WDI) database is also a widely used and cited source of socio-economic data. It contains 578 social, economic and environmental data series, covering the years 1960–2000, for 208 countries and areas. Data on living standards are collected through the World Bank's own surveys and other economic and environmental data are obtained from other recognized international sources (e.g. the United Nations, OECD).

18. Many national, non-governmental and academic organizations also provide socio-economic data. For the most part, data used and provided by these organizations are sourced from the recognized international organizations cited here and, therefore, are not considered independent data sources.

C. Data interfaces

19. In addition to these 'primary' data sources, a few secondary sources are noteworthy for compiling large quantities of socio-economic and environmental data and making these data available through online web sites. These 'data interfaces' are interactive and user-friendly, and allow users to process and present information in multiple ways beyond simple data queries.

20. UNEP provides a comprehensive interface for accessing data from organizations that participate in the Global Environmental Outlook (GEO) project. The GEO Data Portal covers data from the various United Nations organizations, including the UNFCCC, other international organizations, national data centres and environmental organizations. The data can be queried and displayed in tabular or graphic format. Descriptions of metadata and links to original data sources are provided.

21. The World Resources Institute (WRI), a United States-based environmental non-governmental organization, maintains "EarthTrends: the Environmental Information Portal." The EarthTrends portal provides access to information on a wide range of environmental issues in 10 topic areas, including water, energy, biodiversity, population, environmental governance and climate change. Like the GEO portal, EarthTrends allows information to be retrieved and presented in a number of ways: tables, graphs, maps and individual country profiles. For the most part, the data available in EarthTrends come from the same sources as those used by UNEP.

22. In addition, WRI is developing the Climate Analysis Indicators Tool,³ an Excel-based platform that enables users to access and analyse data relevant to assessing climate change response options. The data are clustered into three categories – emissions, socio-economic and natural factors – which are intended as indicators of, respectively, the 'responsibility' of countries to respond to climate change, the 'capability' of countries to respond to climate change and 'specific national circumstances' that could affect the country's ability to respond to climate change. The tool allows users to compare specified indicators across all countries, to compare individual countries and to calculate trends in indicators. It also provides a 'weighted index' feature, which enables the user to assign a relative weight to selected indicators and rank countries according to these weighted indicators.

23. The tool includes the following data for 185 countries: emissions (historic, current, cumulative and projected), contributions to atmospheric GHG concentrations and temperature increase,⁴ socio-economic factors (income, education, health, electrification, carbon intensity) and natural factors (climate, natural resources, geography and population). Most data used in the Climate Analysis Indicators Tool are obtained directly, or derived, from international statistical sources. Socio-economic data come primarily from the World Bank Development Indicators database, whereas the IEA is the primary source of emissions data. However, in order to increase the geographic and temporal coverage of the emission data set, WRI has combined data from several separate databases using its own analyses and methodologies.

³ WRI intends to publicly release the tool in December 2003.

⁴ Approaches for assessing contributions to climate change are also addressed by activities to assess the Brazilian Proposal. For detailed information see the UNFCCC web site (<http://unfccc.int/issues/ccc.html>).

D. Data accessibility

24. All of the external data sources discussed in this document make some portion of their data publicly available. Typically, however, only a limited portion of the data is available free of charge online; or specific information must be retrieved through individual data queries. To obtain complete data sets, users must either purchase the entire data set or pay a subscription fee for full online access. Purchase and subscription fees vary widely between organizations. A year-long subscription to the United Nations Common Database (full accessibility) ranges from US\$ 100 for individuals to US\$ 350 for commercial users. In comparison, IEA charges between 500 and 1000 euros for its CO₂ estimates depending on the type of user; and FAO charges US\$ 1,200 for annual access to its full database. Users from developing countries are normally eligible for reduced rates. Only WRI provides its complete data set free of charge for non-commercial use.

III. OPTIONS FOR IMPROVING ACCESS TO DATA BY PARTIES

25. The remainder of this document presents options for improving access by Parties to emissions and socio-economic data, including through the development of a data interface. The costs of implementing these options vary depending on the requirements for software and data maintenance. **Parties should note that none of the options discussed here is reflected in the secretariat's proposed programme budget for 2004 and 2005.** Also, the options are not independent, but could be pursued in parallel.

A. Option 1: Improve internet links to external data sources

26. The simplest and least-cost option would be for the secretariat to maintain a list of external sources of emissions and socio-economic data and to provide links to these sources on the UNFCCC web site. At a minimum, these links would cover recognized international organizations, but could also cover national and non-governmental organizations and other sources. The secretariat would seek approval from organizations to provide the link. Parties would need to consider what criteria should determine whether to include a source on the web site, such as a requirement that the source is a recognized intergovernmental organization or uses data self-reported by Parties.

27. The only resource requirements for this option would staff time to maintain general information on the contents of the data sources and ensure that links are up to date. As the number of data sources is anticipated to be quite small, the amount of staff time required would not be large. Costs are estimated at about US\$ 10,000–15,000 per year.

28. This option may improve Parties' awareness of data and data sources, but it would not necessarily improve access to these data. Because the data would not actually be maintained and provided on the UNFCCC web site, access would be determined by any restrictions and fees imposed by the data source. Parties would not be able to directly search for specific data through the UNFCCC web site, but would have to search the web sites directly.

B. Option 2: Develop software to search external data sources

29. A more user-friendly option would be for the secretariat to develop and host a software program to search for specific emissions and socio-economic data on pre-specified sites. The secretariat's Technology Information Clearing House (TT:Clear) functions in this way. The user specifies desired information according to pre-established criteria and the software finds and retrieves the information, if it is available. As under option 1, the ability of such a 'search-engine' to retrieve specific data would be limited by restrictions in place at the host site.

30. The costs for this option are much higher than those for option 1. To work effectively, the search software would have to be specifically tailored to interact with each individual data site, because each site uses different search parameters. When changes are made to external data sites, for example, when

the web link changes, data series are added or discontinued, or search parameters are revised, the search software would also need to be modified to function properly. If other organizations cooperate actively to enable these search capabilities, costs would be reduced. Under such an arrangement, the cost for software development is estimated as US\$ 100,000, and costs for staff time to maintain the search engine are tentatively estimated to be US\$ 25,000 per year.

C. Option 3: Improve data and analyses on UNFCCC web site

31. A third option would be to expand the amount of data available on the UNFCCC web site and provide a tool to analyse the data.

32. As indicated above, the secretariat already collects and uses some external data to support the Annex I Party GHG inventory review process. Most of the data used in the reviews are retrieved by the secretariat from public data sites, such as those of the World Bank and FAO. In some cases, notably the Energy Statistics Division of IEA and the United Nations Statistics Division, data are provided directly to the secretariat through informal data-sharing arrangements. Discussions to formalize data cooperation with several organizations, in particular IEA, OECD and FAO, are under way. Efforts to date have focused solely on data sharing, but the secretariat could also explore options for reproducing data on the UNFCCC web site. Additional software features could be developed to enable the user to analyse and present these data in different ways.

33. For socio-economic data which are collected and distributed within the United Nations system, it would be possible to reproduce these data on the UNFCCC web site, provided the data are used in a manner relevant to the Convention. As socio-economic data maintained by the United Nations are self-reported by governments, they are likely to be viewed by Parties as credible and non-controversial. Because of extensive analyses and processing by the relevant collecting organization, these data sets are comprehensive, comparable across countries and consistent across time.

34. For emissions data, the situation is more complicated. Because external emission data are not comparable to UNFCCC data, external emissions estimates would have to be kept completely separated from reported emissions data. Consideration would also need to be given to the appropriateness of providing non-UNFCCC data on the UNFCCC web site, as this could raise concerns regarding the credibility and status of emissions estimates that have not been reported by Parties themselves.

35. Finally, there could be administrative and legal hurdles involved in negotiating cooperative data arrangements with organizations outside the United Nations system. As discussed above, although most organizations will provide data on a subscription basis, use and further publication may be restricted by copyright and licensing agreements. The secretariat may require the explicit consent of the source organization in order to reproduce data on the UNFCCC web site.

36. Some work to expand the quantity of data and analytic features available through the UNFCCC GHG information system is planned (for which supplementary funding is sought), but additional resources would be needed to implement this option. The level of resources required would depend on the quantity of additional data requested, the extent of data processing and the type of analyses to be conducted.

37. Assuming that formal cooperative data-sharing arrangements could be established with external data sources so that minimal data processing is required by the secretariat, about US\$ 25,000 per year would be required for staff time to maintain the additional data sets. Similarly, if only simple data analyses, such as presentation of data on emissions intensity or side-by-side country comparisons, are required, the incremental costs for the development of the GHG information system would be minimal. However, if large quantities of data are added, extensive data processing is required, and more complicated analyses are desired, additional resources will be required for software development and

maintenance, and data management. A high-end cost estimate would be US\$ 150,000 for software development and US\$ 50,000 annually for database management.

D. Option 4: Data and analytical tools on an external web site

38. The fourth option would be for Parties to select and authorize an external organization(s) to make existing data and an analytical tool available through a link with the UNFCCC web site. Responsibility for the type, quality and format of the data would rest with the external organization. The design, development and maintenance of any analytical tools, and all administrative, legal and financial arrangements, would also be the responsibility of the external organization. The web site and analytical tools would be the property of the external organization, and the secretariat would exert no control over the content. Given that several external sources already provide fairly comprehensive data interfaces, selecting one or more of these organizations would avoid the need for data collection and/or new software development, and thus may be relatively low cost in the short term. However, the implications of such an arrangement for the long term would require careful consideration.

E. Summary

39. The main features of the four options are summarized in table 1.

Table 1. Summary of options

Options	Features
1. Improve internet links to external data sources	Parties go directly to various web sites, pay for the data and do their own analyses.
2. Develop software to search external data sources	Parties go to UNFCCC web site, specify and search for data, and do their own analyses.
3. Improve data and analyses on UNFCCC web site	Expanded/improved data directly on UNFCCC web site; simple tool provided to analyse data.
4. Data and analytical tools on an external web site	External source authorized to collect and maintain data and provide tools to analyse data.

Annex**EXTERNAL SOURCES OF GREENHOUSE GAS EMISSIONS AND SOCIO-ECONOMIC DATA****International organizations**

United Nations Statistics Division

Description

The Statistics Division compiles statistics from many international sources and produces global updates, including the *Statistical Yearbook*, *World Statistics Pocketbook* and yearbooks in specialized fields of statistics. It also provides, to countries, specifications of the best methods of compiling information so that data from different sources can be readily compared.

The *Millennium Indicators Database* presents 48 social and economic indicators and related series by country and year since 1985. The *United Nations Common Database*, the *Monthly Bulletin of Statistics*, the *Population and Vital Statistics Report* and the *Commodity Trade Statistics Database* provide a vast selection of the latest data on economic and social statistics and international trade.

Original data sources

FAO, OECD, UNICEF, UNFCCC (carbon dioxide), World Bank and others

Scope	Time horizon	Access
Global By country	1989–2000	Several databases, available at http://unstats.un.org/unsd/ Access with subscription: <i>United Nations Common Database</i> , <i>Monthly Bulletin of Statistics</i> , <i>Population and Vital Statistics Report</i> and <i>Commodity Trade Statistics Database</i> Free access: <i>Millennium Indicators Database</i> , <i>Social Indicators data set</i>

Food and Agriculture Organization of the United Nations (FAO)

Description

FAO, as part of its mandate, compiles information and data on various aspects of food and agriculture from all countries in FAOSTAT. The user interface to the database provides data under 18 domains. The data can be broadly classified into three groups: country-level data referring to items such as agricultural production and trade, producer prices, land use, and means of production; derived data such as agricultural production and trade indices and food supply; and data referring to items such as population and labour force that are derived by, or in collaboration with, other international agencies. FAOSTAT includes data on production, trade, food balance sheets, fertilizer and pesticides, land use and irrigation, forest products, fishery products, population, agricultural machinery and food aid shipments.

Data sources

Country-level data are collected through tailored questionnaires sent annually to member countries; magnetic tapes, diskettes, FTP transfers and accessing web sites of the countries; national/international publications; country visits made by the FAO statisticians; and reports of FAO representatives in member countries.

Scope	Time horizon	Access
Global By country	1961–2002	http://apps.fao.org/default.htm Publications, CD-ROMs, diskettes and the Internet (free access)

UNEP

United Nations Environment Programme (UNEP) Global Environment Outlook (GEO) Data Portal

Description

Data are from sets used by UNEP and partners in the *Global Environment Outlook Project* – mainly United Nations and other international organizations and national data centres.

The online database holds more than 400 different variables, as national, subregional, regional and global statistics or as geospatial data sets (maps), covering themes such as freshwater, population, forests, emissions (CO₂, N₂O, CH₄, aggregated HFCs, PFCs, SF₆) climate, disasters, health and GDP. Data can be displayed in tabular or graphic format.

Data sources

Emission data are provided by UNFCCC, OECD/IEA, CDIAC, RIVM

Scope	Time horizon	Access
Global	1960–2001	http://geodata.grid.unep.ch/
By country		http://climatechange.unep.net/

United Nations Environment Programme/Global Resource Information Database (UNEP/GRID) Arendal

Description

Graphical representation of greenhouse gas emissions produced in preparation for the Conference of the Parties at its seventh session. The graphs feature actual (1990–1999) and projected (2000, 2010) emissions of the six greenhouse gases: CO₂, CH₄, N₂O, HFCs, PFCs and SF₆. The emissions are aggregated and represented as CO₂ equivalents.

Data sources

Data are taken from several UNFCCC documents compiling data from submissions by Annex I Parties, including first and second national communications, and annual national inventory data. Additional sources include updated reports from individual countries.

Scope	Time horizon	Access
Annex I Parties	1990–2010	http://www.grida.no/
By country		http://climatechange.unep.net/

The World Bank – World Development Indicators (WDI) Online Database

Description

WDI Online contains statistical data for more than 550 development indicators and time series data from 1960–2000 for more than 200 countries and areas and 18 country groups. Data cover social, economic, financial, natural resources, and environmental indicators. Results can be scaled, indexed against a particular year, viewed by percentage change, and charted. Data export options include standard formats such as Excel.

Data sources

Environmental data and most socio-economic data are taken from other sources such as CDIAC, IEA for data on CO₂, UNEP

Scope	Time horizon	Access
Global By country	1960–2000	http://www.worldbank.org/data/ http://www.worldbank.org/data/onlinebases/onlinebases.html Free access to a five-year, 54-indicator segment of the database. Paid subscription for full access

Regional and national organizations

Carbon Dioxide Information Analysis Center (CDIAC)

Description

CDIAC's data holdings include records of the concentrations of CO₂, CH₄, SF₆, and HFC-23 in the atmosphere; emissions of CO₂ from fuel combustion; emissions of CH₄; and long-term climate trends.

The compendium *Trends Online: A Compendium of Data on Global Change* (released in 2003) provides synopses of frequently used time series of global-change data, including:

- Estimates of global, regional and national CO₂ emissions from the combustion of fossil fuels, gas flaring, and the production of cement
- Historical and modern records (from ice cores and current monitoring stations) of atmospheric concentrations of CO₂
- Atmospheric concentrations of CH₄
- Global emissions estimates for CH₄
- Carbon flux from land-cover change
- Long-term temperature records, whose spatial coverage ranges from individual sites to the entire globe and from the Earth's surface to the lower stratosphere

Data sources

Calculations by CDIAC

Scope	Time horizon	Access
Global CO ₂ emissions: by country	1751–2000 (CO ₂) 1860–1994 (CH ₄)	http://cdiac.esd.ornl.gov/trends/trends.htm Data are free of charge.

International Energy Agency (IEA)

Description

IEA provides data and information on energy consumption, products, prices and taxes. Energy-related statistical data include coal, electricity and heat statistics, energy balances, prices and emissions, oil and gas statistics and non-member country energy statistics. IEA calculates and publishes CO₂ emissions from fuel combustion from its energy data.

Data sources

The data are originally collected by official bodies (often national statistical offices) in OECD member countries from firms, government agencies and industry organizations. For non-OECD-member countries they are collected directly from government and industry contacts and from national publications. CO₂ emissions are calculated by IEA.

Scope	Time horizon	Access
Global By country	1971–2001	http://www.iea.org/statist/division.htm Data need to be purchased. They are available as reports, printed or on CD-Rom, or from the IEA online data service

Organisation for Economic Co-operation and Development (OECD)

Description

OECD publishes socio-economic, environmental and emissions data for OECD member countries. Energy statistics and energy-related CO₂ emissions data are those of IEA.

Data sources

OECD collects statistics needed for the analysis of economic and social developments by its in-house analysts, committees, working parties, and member country governments from statistical agencies and other institutions of its member countries.

Scope	Time horizon	Access
Global By country	1971–2002	www.oecd.org www.sourceoecd.org Data are not free of charge. Data are provided as outlooks, country surveys and statistics in books and periodicals.

Statistical Office of the European Communities (EUROSTAT)

Description

EUROSTAT provides the European Union (EU) with statistics at European level that enable comparisons between countries and regions. As part of the European Statistical System (ESS), it focuses on EU policy areas, but, with the extension of EU policies, harmonization has been extended to nearly all statistical fields. The ESS also coordinates its work with international organizations such as OECD, the United Nations, the International Monetary Fund and the World Bank.

Data sources

Data collected by Member States

Scope	Time horizon	Access
EU Member States, Iceland, Norway and Liechtenstein By country	Differs strongly by issue, partly 1990–2000	http://europa.eu.int/comm/eurostat/Public/datashop/print-catalogue/EN?catalogue=Eurostat Some data are free of charge Data are provided in reports, studies, yearly and monthly statistics, and databases as electronic files or on CD-ROM

United States Environmental Protection Agency (USEPA)

Description

USEPA has published emissions and projections of non-CO₂ greenhouse gases from developing countries (CH₄ and N₂O) and from developed countries (CH₄, N₂O, HFCs, PFCS and SF₆).

Data sources

USEPA's calculations

Scope	Time horizon	Access
Global	1990–2020	http://www.epa.gov/ghginfo/reports/index.htm
By country		Reports can be downloaded free of charge

Sectoral institutions¹

International Iron and Steel Institute (IISI)

Description

IISI collects statistical data on amounts of steel produced for several production technologies and steel products per country and year, and production data on crude steel and iron on a monthly basis.

Data sources

Data are reported by countries directly to the IISI.

Scope	Time horizon	Access
Global (63 countries)	1999–2003	http://www.worldsteel.org/
By country		Data are partly free of charge, e.g. statistical yearbook

International Aluminium Institute (IAI)

Description

IAI collects statistical data on worldwide aluminium production, production capacities, energy used in production, etc., from 1972 to 2003, grouped for seven country areas. It also has data on surveys of PFC emissions from the international aluminium industry over the period 1990–2000.

Data sources

Data are provided directly by aluminium producing companies.

Scope	Time horizon	Access
Six country areas: Africa, North America, Latin America, West Europe, East/Central Europe, Oceania	1972–2003	http://www.world-aluminium.org/ Data are free of charge

¹ Other industry associations also provide data.

International Rice Research Institute (IRRI)

Description

The crop, soils and water sciences (CSWS) Database on Methane Emissions from Rice Fields provides records of methane emissions collected from eight experimental stations in five countries in Asia (China, India, Indonesia, Philippines and Thailand). The records can be sorted by country, experimental station, year, cropping season, treatment, and replication.

Data sources

Data are calculated by IRRI.

Scope	Time horizon	Access
Five countries By country	No information available about time frame of measurements	http://ricelib.irri.cgiar.org/screens/knowledge.html Data are not free of charge.

Non-governmental organizations

World Resources Institute (WRI)

Description

EarthTrends, an initiative of the WRI, is an online collection of information providing statistical, graphic, and analytical data on environmental (gases: CO₂), social and economic trends. To facilitate the comparison of data from different sources, EarthTrends supplements its content with detailed metadata that report on research methodologies and evaluate the reliability of information.

Data sources

Emission data come from IEA, CDIAC sources and WRI's own analyses (e.g. calculation of cumulative emissions, carbon intensity of economy) and from EDGAR for non-CO₂ gases.

Scope	Time horizon	Access
Global By country	1992–1999	http://earthtrends.wri.org/ Data are free of charge

World Resources Institute (WRI) Climate Indicators Analysis Tool

Description

The Climate Indicators Analysis Tool provides quantitative indicators by country relating to climate change to improve decision-making under the UNFCCC and Kyoto Protocol. Data can be viewed and analysed. Included are emissions (cumulative and current and projected), contributions to concentration and temperature increase, socio-economic factors (income, education, health, carbon intensity) and natural factors (climate, natural resources, geography and population).

Data sources

UNFCCC, United Nations statistics, IEA, World Bank, FAO, CDIAC, RIVM and others

Scope	Time horizon	Access
Global By country	1800–2000 2000–2025	A final version will be released in December 2003 free of charge

RIVM (Netherlands National Institute of Public Health and the Environment)

Description

RIVM provides the following databases:

- International core data sets; such as for Integrated Environment Assessment and the Global Environmental Outlook
- HYDE: History Database on the Global Environment. The database consists of statistical as well as geo-referenced historical data sets (e.g. population, land use, GDP, livestock, value added, energy consumption, emission of greenhouse gases) on global, regional and national levels for the period 1700–1990.
- GEIA: Global Emissions Inventory Activity; data sets at RIVM.
- GEAS: Global Environment Statistics. Regional aggregates for indicators on driving forces in society (population, economy, land use, energy) and concomitant environmental pressures (emissions).
- EDGAR: Emission Database for Global Atmospheric Research. This database stores global inventories of direct and indirect greenhouse gas emissions including halocarbons both on a per country basis and on a 1° x 1° grid. Includes CO₂, CH₄, N₂O, HFCs, PFCs and SF₆ and precursor gases CO, NO_x, NMVOC and SO₂, by source category, for 1990 and 1995.
- NH₃ emission inventory: New global inventory of ammonia emissions from application of fertilizers and animal manure to agricultural fields based on a Residual Maximum Likelihood model.
- N₂O / NO emission inventory: New global inventory of N₂O / NO emissions from agricultural fields based on a Residual Maximum Likelihood model.

Data sources

Statistical offices at the country level and own calculations

Scope	Time horizon	Access
Global By country or geo-referenced	1700–2000	http://www.rivm.nl/en/milieu/internationaal/ Free of charge; some data are not provided on web site yet
