ACC SUB-COMMITTEE ON STATISTICAL ACTIVITIES
Twenty-third session
Geneva, 19-23 June 1989
Item 16(f) of the provisional agenda

SA/1989/17/Add 1
27 April 1989

CO-ORDINATION OF ON-GOING STATISTICAL PROGRAMMES

16(f) ENVIRONMENT STATISTICS

Progress Report

Report compiled by the United Nations Statistical Office including inputs from members of the Sub-Committee

1. The Statistical Commission, at its twenty-fifth session, re-affirmed the high priority it had attached to the environment statistics programme in previous sessions. It also emphasized the need to strengthen the co-ordinating role of the Statistical Office in this rapidly developing field of statistics.

2 As part of its methodological work, the Statistical Office has published a technical report on Concepts and Methods of Environment Statistics: Human Settlements Statistics. A first draft of the companion report on "Statistics of the Natural Environment" is being revised and will be widely circulated to international organizations and experts in the field. In the area of environmental accounting, the Statistical Office has continued its collaboration with the World Bank and UNEP and has drafted a "SNA framework for Environmental Satellite Accounting". A revised version of the framework will serve as the methodological basis for preparing a handbook on environmental accounting to be published in the handbook series of the SNA. This work has also been strongly endorsed by the Statistical Commission at its recent session.

3. At its twenty-second session, the Sub-Committee endorsed the concept of lead databases, proposed by the First Consultative Meeting of International Organizations on the Co-ordination of Environmental Data Collection (Geneva, 10 January 1988). Unfortunately, the Statistical Office could not be represented at the second meeting which took place on 19 March 1989 in Geneva. According to the report of the meeting, "the participants in the co-ordination noted with satisfaction that the idea of designating lead data bases had been favourably received not only by the ACC Sub-Committee on Statistical Activities but also by the United Nations Statistical Commission. The group welcomed the initiatives by the United Nations Statistical Office to monitor these developments at the level of the ACC Sub-Committee. This enables the group to concentrate on the practical matters of data co-ordination involved."

4. The Sub-Committee also requested the Statistical Office to circulate the results of a survey of international environmental data bases and data collections to members of the Sub-Committee, ask comments from them from the perspective of both the users and holders of data bases and recirculate a summary and analysis of the responses. However, reponse to a circular letter of the Statistical Office of 16 March 1989 was low and generally limited to an update of selected data bases. An updated version of the "Review of International Data Bases and Data Collections" is presented in the Annex to this report.

5. As far as the further development of the methodological work in the field of environment statistics is concerned, the Statistical Commission noted the necessity of establishing a set of high-priority programmes and of appropriate organizations for submission to its twenty-sixth session. The Commission also requested that this set should be reviewed by the ACC Sub-Committee. The following is a first tentative list of such programmes, indicating potential participants in brackets:

(1) Technical report on environmental aspects of energy statistics (Oakridge Laboratories, UNEP, OECD, DIESA)

(2) Other areas of statistical research and development, e.g.:

- industry and environment (UNIDO, UNEP)
- women and environment (UNFPA, INSTRAW)
- pollution of environmental media, i.e. air, water, land, in particular the relationships between monitoring data and socio-economic statistics (UNEP/GEMS and relevant specialized agencies)
- statistics of selected ecosystems or ecoregions (ECE, Center for Statistical Ecology and Environmental Statistics)
- the role of environmental data in geographical information systems (UNEP/GRID)

(3) Development of environmental classifications (ECE, UNEP, relevant specialized agencies)

(4) Environmental accounting (World Bank, UNEP, UNDP).

6. The Sub-Committee may wish to take the following action:

- comment on the tentative list of high-priority methodological programmes and suggest possible participants in these programmes

- prepare ways and means to "monitor" the development of lead data bases, as proposed by the second Meeting on Co-ordination of International Environmental Data Collection.

Annex

REVIEW OF INTERNATIONAL ENVIRONMENTAL DATA BASES AND DATA COLLECTIONS

In response to a request by the Consultative Meeting of International Organizations on the Co-ordination of International Environmental Data Collection (Geneva, 10 January 1988), the Statistical Office asked the regional commissions, specialized agencies and other organs of the United Nations system, as well as other intergovernmental organizations and selected international non-governmental organizations to provide information on their past and planned activities in the area of environmental data collection and on the nature and use of their environmental databases. A summary review of this survey was presented to the twenty-second session of the ACC Sub-Committee on Statistical Activities which in turn asked for further comments on this review from its members. The following represents thus an update of the original review, reflecting contributions obtained by the date of the present document.

A. REGIONAL COMMISSIONS

1. Economic Commission for Europe (ECE)

1. As part of the work programme of the Conference of European Statisticians, ECE has established a computerized data base for the preparation of an experimental compendium of Environment Statistics in Europe and North America, a/ issued in August 1987. The data base comprises part 1 of the compendium, covering the topics of environmental (natural) resources, generation and treatment of waste residuals, concentration of pollutants in environmental media, climate and selected background information, as well as a number of topical issues (forest damage, urban air pollution, noise, migratory species and a case study of Lake Baikal). Part 2 of the compendium is a statistical monograph of the Baltic Sea that was founded on the data bases of the Baltic Sea Marine Environment Protection Commission.

2. The ECE data base of environment statistics will be updated on a continuous basis and will be made available for use by national statistical offices, ECE and its subsidiary organs and other international organizations. It will also serve as a guide for the publication of future compendia of ECE environment statistics.

2. Economic Commission for Africa (ECA)

3. As part of the global programme on environment statistics, which is to be implemented at the regional level (see sect. I above), ECA submitted a project proposal on a regional programme of environment statistics to the fifth session of the Joint Conference of African Planners, statisticians and Demographers. Apart

from the need for compiling crucial indicators on drought and desertification, the programme stresses the importance of systematically developing natural resources and environment statistics within national statistical services. The Conference regarded work in this new field as very useful to Member States and endorsed the proposed activities for implementation by ECA. A range of measures aimed at providing technical assistance through, inter alia, guidelines, conceptual and methodological training and ad hoc technical advisory services has been proposed. External funding will be needed to ensure that this field of statistics finally receives the attention suggested by the scope of current ecological concerns in the region.

4. Recent activities to implement the regional programme include a mission for assessing the feasibility of environment statistics in Botswana in October 1988. Two sets of computer-printouts were sent to countries in December 1988 for verification and updating. The data contained therein were taken mainly from FAO publications (Forestry, Fishery, Production Yearbook) and the Energy Statistics Yearbook. New computer-printouts containing agroclimatological profiles for all African countries will be finalized by the end of April 1989 and sent to the countries for comments. In the context of the UNDP/World Bank project "Data for monitoring development programmes and aid flows", in which ECA is an associate executing agency responsible for, inter alia, environment data related to drought and desertification, a set of table templates have been developed.

5. No regional programmes of environment statistics are envisaged, for the time being, in the other regional commissions. The Economic and Social Commission for Asia and the Pacific (ESCAP) had to drop environment statistics from its work programme due to resource constraints and difficulties in soliciting support for national projects from donor countries or agencies. However, if resources become available, ESCAP would be prepared to undertake activities in the area of environment statistics.

6. The Joint Economic Commission for Latin America and the Caribbean (ECLAC)/UNEP Development and Environment Unit has been exploring the possibility of promoting natural and cultural heritage inventory and account programmes. Basic conceptual studies were carried out based on the information received from several countries and on material developed in a joint UNEP/World Bank Workshop on Environmental Accounting (see below).

7. The Economic and Social Commission for Western Asia (ESCWA) prepared a report on the status of environment statistics and the feasibility of applying the United Nations Framework for the Development of Environment Statistics in three countries of the region. The report analysed data availability and presented detailed recommendations for the application of FDES and the development of a regional environment statistics programme.

B. UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)

8. The Action Plan for the Human Environment b/ vested responsibility for the co-ordination of its monitoring and assessment component in the UNEP Programme

Activities Centre of the Global Environmental Monitoring System (GEMS). In order to rationalize the huge quantity of information acquired from environmental monitoring, a pilot phase of a Global Resource Information Database (GRID) c/ was established in 1985. The intention was to give scientists and planners access to integrated environmental data sets and data management technology by means of a geographic information system. GRID uses images, maps and tables derived from data acquired by satellite, aerial and ground surveillance. A number of global and regional data sets have been established within GRID during the pilot phase, focusing on the African region. The data sets include parameters on soils, vegetation, cultivation intensity, watersheds, climate, population density, wildlife and protected areas. The long-term aim of GRID is to establish a world-wide environmental data network that synthetizes national, regional and global data sets and that is easily accessible from any country in the world.

9. A first issue of an Environmental Data Report d/ has been published by UNEP. The report was prepared by the Monitoring and Assessment Research Centre (MARC) (London), in co-operation with the Department of the Environment (London), the World Resources Institute (Washington, D.C.) and the International Institute for Environment and Development (London). MARC is now maintaining a computerized data base of environmental information based on this report. It will be revised and updated as new information becomes available.

10. The Environmental Data Report presents environmental data that have been collected by international and national monitoring networks. It also includes other essential background information needed for environmental assessments and state-of-the-environment reporting. The object of the report is to collect reliable scientific information and to publish it in a uniform fashion, highlighting emerging trends where they occur and indicating the most important sources of information. Areas covered in the report include environmental pollution, climate, natural resources, population/settlements, human health, energy, transport/tourism, wastes, natural disasters/accidents/military, and international co-operation (treaties, agreements, and programmes).

C. UNITED NATIONS CENTRE FOR HUMAN SETTLEMENTS (HABITAT)

(a) Past and planned activities in the area of environmental statistics and related data collection and monitoring

11. The Global Strategy for Shelter to the Year 2000 has been adopted by the General Assembly in its resolution 43/181 on 20 December 1988. Monitoring and evaluation constitute an integral part of the Strategy. In that context, the Centre will be compiling human settlements statistics also relevant to environmental concerns. The Centre is in the process of producing a technical publication, bearing the title "Basic Human Settlements Statistics" and containing statistics on the following topics: Population Size and Distribution, Housing and its Characteristics, Community Facilities and Land Use. These statistics can be applied to environmental analysis. Until the above-mentioned publication is forthcoming, users interested in these statistics are referred to the Statistical Annex of the Global Report on Human Settlements 1986 which is, to date, the most comprehensive compilation of human settlements statistics.

(b) Environmental data bases and modalities of access and international use

12. In order to enhance the Centre's performance in the monitoring and assessing of human settlements conditions and to provide comprehensive and up-to-date statistical information on human settlements to member Governments, a Human Settlements Statistical Data Base (HSDB.stat) has been developed. HSDB.stat is a computerized database system designed to store and retrieve statistical data on human settlements. At present, HSDB.stat contains about 40 tables, describing popopulation trends, land use, employment, water supply, sanitation, transport, housing supply, housing costs, building materials and so forth. Many of the elements are relevant to environmental analysis. As the tables are stored in wide-spread dBASE III file format, they can easily interface with commercial statistical analysis and graphic software. The HSDB.stat software and data tables will be ready for dissemination by summer 1989. At present, the Centre is exploring the possibility of switching its Human Settlements Statistical Data Base (HSDB.stat) to DBASE IV code, to move towards a relational data base management system (DBMS). The Centre is also carrying out preliminary research of the development of a comprehensive Human Settlement Information System (HSIS) which will consist of a statistical, human settlements policy, graphic and mapping subsystem. In that context, the Centre is reviewing the capabilities and SQL-features of DBASE IV, and in particular, the PC-version of ORACLE.

D. SPECIALIZED AGENCIES

(a) Past and planned activities in the area of environment statistics and related data collection and monitoring

13. FAO has participated in various forums regarding the development of environment statistics and has prepared regional reports on the state of natural resources in Africa, Asia and Latin America, which contain data organized in a manner to reveal conditions and trends. Although there is no formal programme on environment statistics at the present time, there has been discussion on considering such activities in the biennium 1988-1989. At the regional or national level, existing FAO data could be organized and analysed for its environment implications. Below the national level, there is a growing quantity of geographically referenced data in FAO that may have implications for the development of environment data and statistics.

14. FAO is engaged in a number of activities related to environment statistics in the overall field of food and agricultural production. Assessments of fishery resources deal with both the natural environment (current, circulation, upwelling, water chemistry, sediments) and pollution conditions. Both marine and freshwater resources are included in these assessments. FAO maintains a global data base of fish catch statistics. While no environment statistics are included, the various time series may be of interest for correlation analysis with environment time series. A data base on aquatic organisms introduced inland is also available. In the late 1979s; FAO established a data base on levels of contaminants in aquatic

organisms in the Mediterranean. This was later transferred to the UNEP Co-ordinating Unit of the Mediterranean Action Plan in Athens. FAO is now collecting similar data for West and Central Africa through a joint FAO/UNEP project.

15. Other activities of FAO that relate to environment statistics are in the field of statistics on forests in land use and forest production. In the future the work of the global forest resources assessment will include assessments of changes in forest cover and assessment of functions served by the forest including, for example, soil and water conservation and recreation. These statistics will also include estimates of the biomass and growth of tree biomass. Statistics have been published by FAO on the production and trade in forest products, which are important in relation to the environment in providing an indication of the annual production of the renewable forest resources and of the conversion of carbonaceous material in production. In particular, these statistics provide information on wood as fuel.

(b) Environmental data bases

16. FAO has substantial amounts of data which are collected for purposes related to food and agriculture, including fisheries and forestry. The data can reveal environmental conditions and trends but are not often analysed for that purpose and do not presently fit into an environment statistics framework. A brief review of published and unpublished FAO data would reveal that data related to pesticide and fertilizer use, stocking rates in rangelands, forest cover, depletion of fish stocks, soil erosion and certain natural disasters, such as drought and water quality, could contribute to the development of environment data bases related to agriculture, fisheries and forestry. ECE has relied on many of these data for its compendium Environment Statistics in Europe and North America.

17. FAO co-ordinates, provides the Secretariat for an actively participates in the Aquatic Sciences and Fisheries Information System. The United Nations Office of Ocean Affairs and the Law of the Sea, the United Nations Educational, Scientific and Cultural Organization (UNESCO), Intergovernmental Oceanographic Commission (IOC) and UNEP are co-sponsors with FAO. The major product, Aquatic Sciences and Fisheries Abstracts (ASFA), is available as a monthly publication and as a computer data base. ASFA provides bibliographic coverage of the world's published information on the aquatic environment and resources, including many references to environment data publications. The computerized data base is available through internationally accessible on-line host systems in the Federal Republic of Germany and the United States, through the European Space Agency and national host systems in Canada, France and Mexico. The publication and a microcomputer-based compact disk (CD-ROM) version of the data base are available from Cambridge Scientific Abstracts, U.S.A.

18. Forest resources statistics are available in published form and in machine readable form for the 1981 assessments. Forest products statistics are also available in published form for the period 1947-1986 and in machine readable form for the period 1961-1986.

2. World Health Organization (WHO)

(a) Past and Planned activities

(i) Global Strategy for Health for All by the Year 2000

19. In the context of the monitoring and evaluation of the Global Strategy for Health for All by the Year 2000, countries provide periodic reports to WHO. A set of 12 indicators used by countries includes one relating to the availability of safe water supply and of adequate sanitary facilities (i.e. two sub-indicators).

(ii) National and Global Water Supply and Sanitation Monitoring System

20. The system collects information from Governments on a regular basis (every tw(or three years) on levels and quality of water supply and sanitation services. The information is stored under eight basic categories (Lotus 1-2-3 system) and to date covers approximately 120 member States. These categories are:

(a) General: geographic, demographic, economic and health;

(b) Water supply and sanitation programming and planning;

(c) Sector status, level of service coverage (percentage of population served); urban and rural waste supply and sanitation;

(d) Institutional framework for service administration;

(e) Financial and economic sector allocation;

(f) Human resources, allocated or planned, for the sector;

(g) Constraints affecting sector developments;

(h) Application of PHC-related approaches within the sector.

(iii) International Drinking Water Supply and Sanitation Decade

21. This system, developed with support from the German Agency for Technical Development (GTZ) and the United Nations Development Programme (UNDP), collects information on the activities of the external support agencies (bilateral and multilateral) in the area of water supply and sanitation. It is operated using the DBase III system and is designed to provide detailed reports by external support agency, by country or by any desired groupings of the two.

(iv) UNEP/FAO/WHO Food Contamination Monitoring Programme (GEMS/Food)

22. Since 1976 data on levels of chemical contaminants in food and diet have been collected from institutions participating in GEMS/Food. Summary reports of data received are periodically issued and cover the periods 1971-1979 (past data were collected at the initiation of GEMS/Food); 1980-1983; and 1984-1985 (at press). At

the beginning of the 1989, monitoring data for the period of 1986-1988 will be collected from institutions participating in GEMS/Food. Contaminants and foods for which data will be collected are the same as those for the previous periods. Assessment of these data for state of contamination, trends and causes of those trends has been carried out in 1982, 1986 and 1988 (at press).

(b) Environmental data bases

(i) Global indicators data base

23. A data base has been created for the 12 global indicators used in the monitoring and evaluation of the Global Strategy for Health for All, containing the indicator data reported periodically by countries. The data base is located at WHO Headquarters in Geneva. Analysis of these data, including cross-sectional and trend analysis and correlation studies, is done periodically, and the results are disseminated in WHO statistical and ad hoc publications.

(ii) Water supply and sanitation

See section (a) above

(iii) GEMS/Food

24. The global storage/retrieval centre for data collected from national institutions participating in GEMS/Food is located at WHO Headquarters in Geneva. To accommodate the various users' needs, data on levels of chemical contaminants in food are listed alternately by country, food group and contaminants. The data summary reports are available on request; however, access to the raw data is restricted, based on the wishes of the institutions participating in GEMS/Food. Food has significant economic importance, and the participating countries requested that their raw data be handled by WHO only.

(iv) Other data bases

25. The UNEP/International Labour Organization (ILO)/WHO International Programme on Chemical Safety (IPCS), and the UNEP International Register of Potentially Toxic Chemicals (IRPTC), are jointly operating a computerized data base for chemicals currently being tested for toxic effects other than carcinogenicity (CCTTE). In its present stage of development the data base contains information on 416 research projects on the toxicological or ecotoxicological properties of more than 300 chemicals.

26. IPCS is establishing a computerized information package on poisonings, with the financial assistance of the Canadian International Development Research Centre. Part of this package consists of a format for collecting clinical case data on poisonings, which will help identity the circumstances and types of poisonings as well as the clinical signs and symptoms and the patient management.

27. A bibliography data base on studies of health effects of environmental hazards (including chemicals) in developing countries have been established. Inventories

of training materials (textbooks and audio-visual materials) in epidemiology, environmental health and occupational health are available which use the same software as for the above bibliography data base.

3. World Meteorological Organization (WMO)

28. In addition to the various meteorological and geophysical data bases established in each WMO member State, the World Meteorological Centres (Moscow and Washington, D.C.), and World Geophysical Data Centres (National Oceanic and Atmospheric Administration) Boulder, Colorado; Moscow; Melbourne) collect, archive and distribute on request various meteorological data of direct relevance to environmental studies.

29. Of particular environmental interest are the data from the WMO Background Air Pollution Monitoring Network (BAPMoN), atmospheric ozone data and radiation data which consist of:

(a) BAPMoN data (monthly precipitation chemistry, continuous atmospheric carbon dioxide, suspended particulate matter, selected trace gases, atmospheric aerosol optical depth);

(b) Ozone data (daily values of total ozone, its vertical distribution and surface ozone concentrations in non-urban areas);

(c) Radiation data (monthly and annual means of global solar radiation, radiation balance and sunshine duration).

30. BAPMoN, ozone and radiation data are available as follows:

(a) BAPMoN: at cost, upon request, from the WMO secretariat in Geneva, in one volume for monthly and annual mean values of each parameter, for the years 1978-1990; in two volumes for the data of the subsequent years: vol. I: atmospheric aerosol optical depth (for the years 1981-1984, with 1985 under preparation); vol. II: the other parameters (for the years 1981-1982, with 1983 under preparation). In addition, provisional CO_2 data have been published up to the year 1985, with those for the year 1986 under preparation. A catalogue of stations is available free of charge;

(b) Ozone: on magnetic tape (at cost of the tape) upon request from the World Ozone Data Centre, Atmospheric Environment Service, 4905 Duffering Street, Downsview, Canada. The Centre publishes a catalogue of stations and bi-monthly listings of data, available at not cost;

(c) Radiation: upon request from the World Radiation Centre, USSR State Committee for Hydrometeorology and Control of Natural Environment, Voeikov Main Geophysical Laboratory, Karbysheva Street 9, Leningrad, USSR. The Centre also publishes a catalogue of stations and available data.

31. A Climate Data Information Referral Service (INFOCLIMA) is currently being developed in the WMO secretariat under the World Climate Programme (WCP), in collaboration with Member countries and existing data centres.

4. Other agencies

32. The Office of Statistics of the United Nations Education, Scientific and Cultural Organization (UNESCO) is exploring the possibility of establishing a system of continuous international data collection on environment by field and country. It is planned to set up a scientific methodological approach to show how scientific information on environment could be translated into statistical data. Indicators would be designed to measure the input and output of activities related to environment. Methodological and conceptual guides would be prepared for member States, proposing concepts and definitions to achieve international comparability.

33. To date, the United Nations Industrial Development Organization (UNIDO) has no statistical operations in the field of environment. However, a recently established task force on the safety of industrial plants intends to create a data base on environmental matters.

34. The International Labour Organization (ILO) does not consider its labour statistics or any other data bases as environmental in nature.

35. The World Tourism Organization (WTO) has not up to now undertaken the collection of data dealing with the impact of tourism on the environment or any assessment of such effects. However, WTO collects regularly data on international tourist arrivals in most countries of the world together with data on hotel construction and capacity. Although these data are not directly concerned with the environment they are to some extent related to it. Tourist arrivals in each country can express indirect probable effects to the environment. WTO would be prepared to supply these data for possible integration in a global database on environment.

36. The Advisory Committee for the Co-ordination of Information Systems (ACCIS) does not maintain any databases on environmental topics except for (1) the ACCIS guide to United Nations information sources on the environment and (2) specific entries in the Register of Development Activities of the United Nations system.

2. Organisation for Economic Co-operation and Development (OECD)

37. OECD pioneered the presentation of environmental data at the international level in its 1985 compendium of OECD Environmental Data which was followed by an updated and revised version in 1987. e/ The compendium consists of data collected by the OECD Group on the State of the Environment by means of a questionnaire, supplemented by data from international sources. The compendium is based on frameworks for the development of environment statistics developed by the Statistical Office of the United Nations Secretariat and Statistics Canada, f/ describing human activities (energy, transport, industry, agriculture) that exert "pressures" on environmental media, the state of these media (air, water, land), the biota therein and "responses" of economic and environmental agents.

3. Statistical Offie of the European Communities (EUROSTAT)

38. Within the context of the European Year of the Environment (1987/88), the development of statistics in the area of environment is treated as a priority in the draft statistical programme of the European Community for the period 1989-1992. A significant amount of statistical information on matters relating to the environment already exists at EUROSTAT, within the services of its member States, within other departments of the Commission and at the various international organizations with different environmental concerns. The CORINE (Co-ordination - Information - Environment) programme established by Council decision 85/338/EEC and managed by the diretorate General for Environment, Consumer Protection and Nuclear Safety of the commission of the European Communities aims at: (a) gathering information on the state of the environment under a number of priority themes of Community-wide scope; (b) co-ordinating activities in member States or at the international level on the collection of data or the organizing of information; and (c) ensuring the consistency of information and improving data comparability.

39. A first publication of data relating to the environment based on material available at EUROSTAT has been prepared. In developing data collection, a distinction has been made between data relating to physical aspects of the environment and those relating to economic and employment aspects. Proposals for a first set of "physical" data were agreed with member States at a Working Party meeting in November 1987. In drawing up its proposals EUROSTAT made full use of the questionnaires already used by OECD for data collection. However, the frequency and geographic resolution of material to be supplied to EUROSTAT will be higher than that requested by OECD. Full use is also made of the draft classifications which have been developed by ECE. Such an approach is designed to minimize the response burden on member States.

40. The following environmental data bases have been or are being established.

(a) CORINE: a geographically oriented base of environmental information which will include geo-coded data on all aspects of the environment. Output will be in the form of maps, text or statistics. The final structure and mode of access of the database has not yet been determined;

(b) ENDOC: a permanent inventory of environmental information and document centres;

(c) ENREP: a permanent inventory of environmental research projects. ENREP and ENDOC are text data bases managed by the Directorate General for Telecommuniations, Information Industries and Innovation.

4. Council for Mutual Economic Assistance (CMEA)

41. In 1975, the CMEA Statistical Commission adopted a first system of indicators of environment statistics that included statistical indicators of the use and quality of land and water resources. In 1980 a system of statistical indicators of investments in environmental protection and rational use of natural resources was adopted and recommended to the member States. According to guidelines on the

future co-operation between CMEA countries in developing environmental statistics, which were adopted in 1982, a comprehensive system of statistical indicators was developed. The experiences of national statistical offices and ECE in the field of environment statistics were taken into account in this system. The system covers statistical indicators of land, water and air quality, main pollutants and emissions, and measures and investments for environmental protection. The system was adopted by the CMEA Statistical Commission and recommended to the member States in 1984-1985. In 1987, the first collection of statistics data on environment was conducted. The exercise revealed differences in the capability of members States to provide reliable data on environment.

E. SELECTED NON-GOVERNMENTAL ORGANIZATIONS

1. International Union for Conservation of Nature and Natural Resources (IUCN)

42. The objective of Conservation Monitoring Centre (CNMC) of IUCN is to collate, analyse, evaluate and disseminate information relating to the conservation of biological diversity and the sustainable development of natural resources. The Centre maintains global data bases in the following sectors:

(a) Plant and animal species, particularly threatened species;

(b) Critical sites for the maintenance of biological diversity;

(c) Habitats of conservation concern, particularly tropical forests, wetlands, coastal and marine, and coral reefs;

(d) Wildlife utilization;

(e) Wildlife trade, particularly in support of The Convention on International Trade in Endangered Species (CITES).

Outputs from these data bases are periodically published in Red Data Books, Protected Areas Directories, specialist reports and scientific papers. The CMC provides a professional information service to the conservation and development communities to promote the enlightened management of biological resources.

43. To support national conservation programmes in developing countries, CMC plans to establish a network of national conservation data centres. The focus of this programme is to improve the collation and dissemination of reliable data at the national and local levels so that decisions affecting the conservation of natural resources are based upon the best available information. CMC will be actively seeking co-operation with other data base agencies both to develop systems for the exchange of data and to collaborate in the establishment of national data centres, including the preparation of standard protocols and methodologies.

44. The main data held in computer data bases are as follows:

(a) Geographic skeleton of world political and biogeographical areas;

(b) Taxonomic skeleton for flora and fauna, including synonyms;

(c) species: taxonomic data, distribution and conservation status, including occurrence and status of taxa in collections (i.e. botanical and zoological gardens);

(d) Critical habitats: inventory of critical tropical forest sites;

(e) Protected areas: size, location, level of protection, biogeographical province, and other summary data;

(f) Wildlife trade: type and quality of shipments of endangered taxa and their products imported and exported under CITES.

45. There are approximately 9,500 word processing files on species data, critical habitats, protected areas, national summaries, wildlife utilization and wildlife trade.

2. World Resources Institute (WRI)

46. As already mentioned, WRI has collaborated with MARC in preparing UNEP's first Environmental Data Report. At the same time, the Institute has developed its own data base and report series, the annual World Resources (1986 and 1987 editions published to date). The reports are designed to complement the established annual reports that survey the economic and political landscape by providing an objective, current, global assessment of the natural resource base that supports the world economy.