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DEMOGRAPHIC, SOCIAL AND ENVIRONMENT STATISTICS: ENVIRONMENT STATISTICS

Report of the Secretary-General

SUMMARY

The present report describes progress made in the preparation of technical reports on concepts and methods of environment statistics (paras. 2-6) and the development of environmental and natural resources accounting (paras. 7, 8). Following the suggestions of a consultative meeting of international organizations (paras. 9, 10), international environmental data bases and data collections are reviewed in the annex. Further collaboration and co-ordination through the Sub-Committee on Statistical Activities of the Administrative Committee on Co-ordination (ACC) and directly with the United Nations Environment Programme (UNEP) and the International Statistical Institute are outlined in section II (paras. 9-11). Section III (paras. 12-19) describes current regional approaches to environmental data collection. The proposed programme of work (sect. IV) suggests, in particular, to continue the methodological work of the Statistical Office of the United Nations Secretariat (paras. 21-23) and to extend regional activities to other regions for the implementation of a global programme of environment statistics (paras. 24-25). Points for discussion are presented in section V (para. 26).

* E/CN.3/1989/1.

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INTRODUCTION

1. At its twenty-fourth session, the Statistical Commission reconfirmed the importance and high priority of work in environment statistics. The Commission requested that in the immediate future the environment statistics work programme of the Statistical Office of the United Nations Secretariat should focus its efforts on completing the planned methodological work, assisting developing countries in their environment statistics programmes and co-ordinating international statistical activities in the field of environment. It also requested that the Executive Director of the United Nations Environment Programme (UNEP) and the President of its Governing Council be approached to open high-level discussions on the development and implementation of a global programme on environment statistics. 1/

I. ONGOING METHODOLOGICAL WORK

A. Technical reports of environment statistics

2. The Statistical Office has focused its methodological work on the preparation of A Framework for the Development of Environment Statistics 2/ and technical reports on statistics of the environmental aspects of human settlements and of the natural environment (formally entitled "Manual of Environment Statistics"). 3/ Concepts and Methods of Environment Statistics: Human Settlements Statistics - A Technical Report 4/ is being published after extensive review by international organizations and experts in the field. The second report on statistics of the natural environment is currently being prepared with the generous assistance of Statistics Canada. The draft report will be circulated widely to national and international organizations and experts by the end of 1988. Both reports are based on the structure and principles of the framework for the development of environment statistics (FDES). By applying FDES in this manner, the environmental aspects of natural resources and human settlements statistics were determined and those social, demographic and economic statistics that should be included in statistical reporting and assessments in the field of environment were identified.

3. The major purpose of the technical report series is to propose concepts, definitions and classifications for statistical variables that describe high-priority environmental issues in most countries and that can be compiled by national statistical services. Extensive use of national and international compendia of environment statistics has been made in order to identify those concepts, definitions, classifications and data sources which are most widely applied. The statistical variables identified in this manner are thus likely to reflect typical data needs of planners, policy makers and administrators in environmental and related socio-economic fields.

4. The report on human settlements statistics proposes concepts, definitions and classifications for statistical variables that describe environmental and related socio-economic aspects of human settlements. In addition, these statistics should provide technical managers and administrators of human settlements with supportive base line data to complement specialized research information. In order to

determine the scope and coverage of the environmental aspects of human settlements statistics, international concerns 5/ and, more specifically, those identified for statistical purposes in regional workshops and pilot country studies organized or sponsored by the Statistical Office, were analysed and integrated into FDES. In this manner, general environmental concerns in the area of human settlements were translated into more operational "statistical topics".

5. For each topic, the report describes statistical variables that were selected primarily with the data needs of general environmental planners, policy makers and administrators in mind. More specifically, variables were presented on the basis of (a) their relevance to environmental and human settlements issues, (b) data availability and access, (c) the degree of sensitivity to change in environmental and human settlements conditions and (d) international comparability.

6. It is intended to promote the application of the methodologies proposed in this report and its companion, the forthcoming report on statistics of the natural environment, at the regional level in co-operation with the regional commissions of the United Nations and other interested international organizations as part of the global programme of environment statistics (see paras. 18, 24 and 25 below).

B. Environmental accounting

7. The recent report of the World Commission on Environment and Development 6/ has prompted a world-wide review of the sustainability and environmental soundness of socio-economic development. The need to develop more operational concepts of sustainable development and corresponding indicators has been generally stressed in this context. The Statistical Office has, therefore, continued its collaboration with UNEP and the World Bank in the area of environmental and resource accounting. It is intended to publish the results of joint World Bank/UNEP workshops on environmental accounting in a World Bank compendium and to test the methodologies in a number of pilot studies in least developed countries.

8. The Statistical Office has explored the relationships of environmental and resource accounting with the standard system of national accounting and has submitted a first tentative analysis to the Expert Group on Production Accounts and Input-Output Tables, which met in Vienna from 21 to 30 March 1988. The Expert Group concluded that there was an important need to develop statistics on the relationship between economic activity and the environment within a framework of satellite accounts rather than the central framework of the SNA. Priority should be given to further developing the present Classification of Functions of Government (COFOG) and designing a similar classification of enterprise functions, with the specific aim of identifying environmental functions. As the two types of classifications are recommended for use in the System of National Accounts (SNA) to classify expenditures, separate categories for environmental functions would serve to identify environmental cost items in the central SNA framework. The Expert Group also recommended that joint meetings be held between national accountants and environmentalists to develop satellite accounts and identify environment-related flows and stocks among the transaction categories in the central SNA framework.

II. CO-OPERATION AND CO-ORDINATION

9. A consultative meeting of international organizations was convened in Geneva on 10 January 1988 within the framework of the Conference of European Statisticians to improve the co-ordination of environment statistics. The meeting explored possibilities of co-operation to avoid unnecessary duplication of environmental data collection at national and international levels. It discussed existing environmental data bases and requested the Statistical Office to present a more detailed review of these data bases and related data collection activities to the twenty-second session of the Sub-Committee on Statistical Activities of the Administrative Committee on Co-ordination (ACC).

10. In response to that request, 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 data bases. The responses to the request are summarized in the annex to this report. At its twenty-second session, held at Geneva from 6 to 10 June 1988, the ACC Sub-Committee on Statistical Activities requested the Statistical Office to obtain further comments on its review of environmental data bases and data collections from the perspective of both the users and holders of data bases.

11. Following a proposal of the consultative meeting, the ACC Sub-Committee also discussed the idea of developing a framework of co-operation in terms of "lead agencies" or "lead data bases". Such data bases would be used when compiling data in particular environmental fields, or for particular regions or groups of countries. The Sub-Committee endorsed the concept of lead data bases and recognized the importance of (a) the views of users and holders of data bases for the selection of lead data bases, (b) the mechanisms for informing users of the existence of such lead data bases and for feedback from users to holders of the lead data base and (c) setting criteria for selecting lead data bases. It was noted that any designation of lead data bases would be a reflection of the current situation and was subject to change over time.

III. COMPILATION AND DISSEMINATION OF ENVIRONMENT STATISTICS

12. The Economic Commission for Europe (ECE) has published an experimental compendium entitled Environment Statistics in Europe and North America. 7/ The ECE Meeting on Frameworks for Environment Statistics, held at Geneva from 11 to 15 January 1988, considered the preparation of an ECE compendium a very useful exercise that should be repeated. A more rigid application of common definitions and classifications should help to improve data comparability in future editions. The Baltic Sea study was generally seen as a good example of how scientific data could be translated into statistics.

13. At its twenty-fourth session, the Statistical Commission noted with satisfaction the progress made by ECE in preparing the experimental compendium and

stressed the need to extend such activities to other regions for a more balanced global environment statistics programme. Similarly, the Working Group on International Statistical Programmes and Co-ordination, at its twelfth session held in October 1987, requested that ECE be asked to suggest how its experience might be helpful to the Statistical Office of the United Nations Secretariat and the other regional commissions in advancing their work programme. The ECE Meeting on Frameworks for Environment Statistics provided an opportunity to convey the requests of the Statistical Commission and its Working Group to representatives of ECE Governments and to solicit their support for the global programme of environment statistics.

14. The results of regional workshops and pilot country studies undertaken by the Statistical Office together with the experience gained in data compilation in the ECE region suggest that the global programme on environment statistics would best be carried out at the regional level by the regional commissions in co-operation with international organizations and donor agencies. Such a programme would aim at establishing or fostering national environment statistics, supported by technical assistance and training. In addition, available data from national and international sources could be compiled for the preparation of regional compendia of environment statistics.

15. The Statistical Office would assist in the implementation and co-ordination of these programmes to the extent its limited resources permitted. It is expected that its methodological work on concepts, definitions and classifications of environment statistics will provide a common ground for the establishment of national and regional environment statistics, thus enhancing the comparability of such statistics. The methodological work of ECE has been integrated as far as possible into the technical reports prepared by the Statistical Office. In this manner, much of the expertise in the ECE region could be transferred to the other regions as requested by the Statistical Commission (see para. 13 above).

16. The Working Group on International Statistical Programmes and Co-ordination suggested in this context that the present document should cover the work and plans of the regional commissions and should present proposals for future collaboration based on consultations with them whereby the special expertise and experience of all the organizations could be combined to help carry out the global programme and regional programmes in the most effective way. In response to this request and a similar request by the above-described consultative meeting of ECE, the Statistical Office reviewed past and planned activities of the regional commissions and other international organizations and asked the ACC Sub-Committee on Statistical Activities to support and co-operate in the global programme of environment statistics (see paras. 9-11 and the annex).

17. The Economic Commission for Africa (ECA) submitted a project proposal on a regional programme of environment statistics to the Joint Conference of African Planners, Statisticians and Demographers at its fifth session. Apart from the high-priority need for compiling 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 receives the attention suggested by the scope of current ecological concerns in Africa.

18. With respect to other regional commissions, however, there are no plans currently under way. 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 and agencies. However, if resources become available, ESCAP would be prepared to undertake activities in the area of environment statistics. 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 accounts programmes. Basic conceptual studies have been carried out based on the information received from several countries and on material developed in the joint UNEP/World Bank workshop on environmental accounting. The Economic and Social Commission for Western Asia (ESCWA) has not planned any activities on environment statistics for the biennium 1988/1989. However, ESCWA undertook an assessment of the state of environment statistics in three countries during the biennium 1986/1987. It was concluded that there was a need to develop a co-ordinated programme of environment statistics in the region.

19. No comprehensive data collection is envisaged at the global level by the Statistical Office until a sufficient number of regional and national programmes of environment statistics have been established.

IV. PROPOSED PROGRAMME OF WORK

20. At its twenty-fourth session, the Statistical Commission expressed concern about the slow progress made in the environment statistics programme, recognizing the effects of resource constraints. In response to the request by the Statistical Commission to open high-level discussions on the development and implementation of a global programme on environment statistics, UNEP participation in and support of the global programme was included in a list of collaborative activities between UNEP and the Department of International Economic and Social Affairs. The Statistical Commission also endorsed the proposal that the United Nations invite the International Statistical Institute (ISI) to assist the Statistical Office in further work in the field of environment statistics, with any such joint programme being subject to review by the Commission. ISI expressed interest in collaborating with the Statistical Office, the regional commissions and other interested agencies in the organization of regional seminars and country projects in selected high-priority areas of environment statistics, such as energy and environment, population and environment, land use, wildlife and desertification. Possibilities of collaboration between ISI and ECA and other international organizations in the African programme of environment statistics are currently being explored. The Commission and its Working Group on International Statistical Programmes and Co-ordination provided guidance on how to maintain the momentum of the programme to

which the Commission continued to attach high priority. The Commission advised completion of the ongoing methodological work, continuation of the co-ordination of international statistical activities and the launching of a global programme on environment statistics, seeking the support of UNEP, associating non-governmental organizations with this work and extending the experience gained in the ECE programme to other regions and countries.

21. The Statistical Office will thus concentrate its efforts on the completion of the technical report on statistics of the natural environment. In the current financial situation it is not possible to obtain technical expertise on a broad scale by convening an expert group. Rather, it is hoped that such expertise will be obtained from governmental experts and sister agencies and organizations when a draft report is circulated widely for comments and contributions. Considering the complex nature of this rapidly developing field of statistics, the technical reports will undoubtedly be tentative and experimental in nature. Further revisions, resulting from feedback from country applications, especially in the envisaged global programme of environment statistics, are therefore expected. Such feedback is considered essential for the further refinement and standardization of statistical concepts and methods.

22. Resources permitting, the technical report series on environment statistics of the Statistical Office could include other important issues in the development of national environment statistics programmes. For example, these reports could deal with environmental issues that cut across the FDES structure, such as energy, industry and environment, pollution or particular ecological systems.

23. The revitalization of the discussion of sustainability and environmental soundness of socio-economic development and growth, brought about by the report of the World Commission on Environment and Development (see para. 7), will undoubtedly have an impact on data demands from national and international policy makers and administrators. Both the environment statistics work of the Statistical Office and its joint efforts with UNEP and the World Bank in the field of environmental and natural resources accounting aim at supporting these new approaches to sustainable development by means of appropriate statistical data and monetary and non-monetary indicators. The technical report on statistics of the natural environment will thus include an analysis of how basic environmental and related socio-economic statistics can be used in preparing environmental and resource accounts. The Statistical Office will also participate in the planning and implementation of country studies to test the methodologies developed in this area. It is intended to use the experience gained in these studies for generalizing and standardizing the new accounting approaches in a "framework of satellite accounts" of the SNA. Close collaboration on this matter will be maintained with the World Bank, UNEP and appropriate non-governmental organizations.

24. Most of the other elements of environment statistics are covered by the global programme of environment statistics. The programme aims to assist developing countries in establishing environment statistics programmes and data bases by applying the methodologies developed and through technical co-operation projects and training workshops. For this purpose, the co-operation and support of

national, international and non-governmental organizations, including UNEP, the World Bank and ISI, will be solicited. It is hoped that the example of the African region, where a comprehensive programme has been initiated with quite limited resources, will induce other regions to follow. To the extent that comparable data become available, international statistical series might also be compiled for publication in regional compendia of environment statistics.

25. The Statistical Office will support these activities within the limits of available resources and will monitor and promote the co-ordination of the regional programmes to ensure compatibility as far as possible. In this manner, it is hoped that internationally comparable statistics will become available in the long run without duplication of effort. As in other fields of statistics, the Statistical Office could also assist the Department of Technical Co-operation for Development of the United Nations Secretariat by providing substantive support and ad hoc advisory services to technical co-operation projects in interested developing countries. There is no question that substantial efforts will be required by countries that intend to establish new programmes or expand existing ones and that these efforts need to be generously supported by national and international donors.

V. POINTS FOR DISCUSSION

26. The Statistical Commission may wish to:

(a) Comment on the progress made in the preparation of the technical reports of environment statistics;

(b) Suggest further topics to be dealt with, resources permitting, in the technical report series on environment statistics;

(c) Comment on proposals for the development of a framework of environmental satellite accounts, linked to the System of National Accounts (SNA);

(d) Comment on arrangements for the co-ordination of work on international environmental data bases and data collection activities;

(e) Comment on the proposed orientation and structure of the planned global programme of environment statistics, including (i) how co-ordination among regional programmes can be best achieved and (ii) how the global programme can provide special assistance to countries and regions that have not yet established environment statistics programmes.

Notes

1/ Official Records of the Economic and Social Council, 1987, Supplement No. 6 (E/1987/19), paras. 105 and 108.

2/ United Nations publication, Sales No. E.84.XVII.12.

Notes (continued)

3/ At its twenty-third session, the Statistical Commission of the United Nations requested that a technical manual for the compilation of selected high-priority statistics in the areas of human settlements and natural resources be prepared by the Statistical Office of the United Nations Secretariat. However, as environment statistics are still at a relatively experimental stage of development, it has been deemed more appropriate to present concepts and methods of such statistics as a series of "technical reports" rather than a "manual".

4/ ST/ESA/STAT/SER.F/51.

5/ In particular those specified by the Habitat Conference (Report of Habitat: United Nations Conference on Human Settlements, Vancouver, 31 May-11 June 1976, United Nations publication, Sales No. E.76.IV.7, p. 37) and by the Environmental Perspective to the Year 2000 and Beyond (Official Records of the General Assembly, Forty-second Session, Supplement No. 25, A/42/25 and Corr.1, annex II).

6/ The World Commission on Environment and Development, Our Common Future (Oxford and New York, Oxford University Press, 1987). The General Assembly, in resolution 42/187, welcomed the report and called upon Governments and the United Nations system, inter alia, to pursue sustainable development in their policies and programmes.

7/ United Nations publication, Sales No. E.87.II.E.28.

Annex

REVIEW OF INTERNATIONAL ENVIRONMENTAL DATA BASES AND DATA COLLECTIONS

The following provides a summary of responses to a request by the Statistical Office of the United Nations Secretariat (as of 9 February 1988) for information on (a) past and planned activities in the area of environment statistics and related data collection and monitoring, and (b) environmental data bases and the modalities of access and international uses.

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.

4. 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.

3. Other regional commissions

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 synthesizes 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. SPECIALIZED AGENCIES

1. Food and Agriculture Organization of the United Nations (FAO)

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

11. 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.

12. 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 1970s; 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.

13. 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

14. 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.

15. FAO co-ordinates, provides the Secretariat for and 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.

16. 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

17. 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

18. The system collects information from Governments on a regular basis (every two 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 water 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

19. 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)

20. 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 1989, monitoring data for the period 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

21. 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

22. 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

23. The UNEP/International Labour Organisation (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.

24. 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 identify the circumstances and types of poisonings as well as the clinical signs and symptoms and the patient management.

25. A bibliography data base on studies of health effects of environmental hazards (including chemicals) in developing countries has 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)

26. 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.

27. 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).

28. 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 1978-1980; 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 CO₂ 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 Dufferin Street, Downsview, Canada. The Centre publishes a catalogue of stations and bi-monthly listings of data, available at no 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.

29. 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

30. The Office of Statistics of the United Nations Educational, 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.

31. 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.

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

D. OTHER INTERGOVERNMENTAL ORGANIZATIONS

1. World Bank

33. The Operations and Strategy Division of the World Bank's Environment Department (ENVOS) is taking a two-pronged approach to collecting environmental data. The first is to link up with data that has been collected and is being maintained by other groups; the second is to develop a data base to keep track of the Bank's environmental activities. In addition, ENVOS supports the application of geographic information technology to the Bank's project work.

34. To improve access to external data bases, the World Bank has proposed the creation and co-ordination of an International Environmental Information Forum, as described above (see sect. II, para. 11). ENVOS is also currently in the process of developing an information system to better monitor environmental components of World Bank projects. The system is designed to track project design elements, potential environmental impacts, concerns identified during the project preparation stage and reviews and comments during appraisal, implementation, supervision and evaluation. The system is maintained on a mainframe computer to provide access and information sharing to a large group of Bank users. Several additional modules are foreseen, such as internal data bases on the Bank's economic and sector work and, more importantly, imported data bases on biological diversity, protected areas, wetlands, tropical forests and other critical environmental parameters.

35. The Bank has also co-sponsored and actively collaborated with UNEP in workshops on environmental and resource accounting. It is intended to test the methods developed in country case studies in least developed countries. The further standardization of concepts and methods will be undertaken through link-up with the System of National Accounts (SNA) by means of a satellite system of environmental and resource accounts (see also sect. I).

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

36. 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 Office of the European Communities (EUROSTAT)

37. 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 Directorate 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.

38. 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.

39. 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 Telecommunications, Information Industries and Innovation.

4. Council for Mutual Economic Assistance (CMEA)

40. 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 statistical data on environment was conducted. This exercise revealed differences in the capability of member States to provide reliable data on environment.

E. SELECTED NON-GOVERNMENTAL ORGANIZATIONS

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

41. The objective of Conservation Monitoring Centre (CMC) 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.

42. 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.

43. 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 quantity of shipments of endangered taxa and their products imported and exported under CITES.

44. 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)

45. 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.

Notes

- a/ United Nations publication, Sales No. E.87.II.E.28.
- b/ United Nations, Report of the United Nations Conference on the Human Environment, Stockholm, 5-16 June 1972 (United Nations publication, Sales No. E.73.II.A.14).
- c/ A detailed description of the results of the pilot phase is given in UNEP, "GRID Pilot Phase 1985-87: Final Report", GRID Information Series No. 14, Nairobi, January 1988.
- d/ UNEP Environmental Data Report (Oxford and New York, Basil Blackwell: 1984).
- e/ Organisation for Economic Co-operation and Development, OECD Environmental Data (Paris, OECD, 1985 and 1987).
- f/ United Nations, A Framework for the Development of Environment Statistics (United Nations publication, Sales No. E.84.XVII.12), J. Rapport and A. Friend, Towards a Comprehensive Framework for Environmental Statistics: A Stress-Response Approach (Ottawa, Statistics Canada, 1979).
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