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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. 2-4) and the development of environmental accounting (paras. 5-7). Outcomes of the meeting of the Intergovernmental Working Group on the Advancement of Environment Statistics are described (paras. 8, 9), including requests regarding technical co-operation (para. 19). The main issues stemming from the Third Consultation on the Co-ordination of International Environmental Data Collection are elaborated upon (paras. 10-12). Section III (paras. 13-18) describes current activities in the compilation and dissemination of international environment statistics. Technical co-operation activities are described in paragraphs 19-21. Section V (paras. 22-24) sets out proposals for expanded work in environment statistics for the 1992-1993 biennium. Points for discussion are presented in section VI (paras. 25).

* E/CN.3/1991/1.

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INTRODUCTION

At its twenty-fifth session, the Statistical Commission confirmed the 1. continuing high priority of the environment statistics programme and requested that the Secretary-General prepare a report on progress made in the development of environment statistics and future plans for consideration at its twenty-sixth session. 1/ In line with the decision of the Statistical Commission's Working Group on International Statistical Programmes and Co-ordination at its thirteenth session, the present report also describes the work of the Statistical Office of the United Nations Secretariat, other international organizations and selected non-governmental organizations. 2/ In addition, following the request of the Statistical Commission that a report on methods of environment statistics developed under the work programme of the Conference of European Statisticians, be submitted to the Commission at its twenty-sixth session, that report (document E/CN.3/1991/22) is also before the Commission. 3/ The Working Group considered that this second report would help the Statistical Commission assess the relevance of the work of the Economic Commission for Europe (ECE) as a basis for developing classifications and other aspects of methodology at the global level in this field. 4/

I. METHODOLOGICAL WORK

A. Technical reports on environment statistics

- 2. The Statistical Office has focused its methodological work on the preparation of a Framework for the Development of Environment Statistics 5/ (FDES) and technical reports on statistics of the environmental aspects of human settlements and of the natural environment. Concepts and Methods of Environment Statistics: Human Settlements Statistics A Technical Report 6/ was published in 1988. The second report on statistics of the natural environment has been prepared by a consultant with the support of Statistics Canada. The draft report was widely circulated for comments to national and international organizations and a number of individual experts. It is currently being revised to take into account comments received and is expected to be submitted for publication before the end of 1990.
- 3. The report on statistics of the natural environment proposes concepts, definitions and classifications for a wide range of variables that describe high-priority concerns in many countries. It provides a broad list of statistical variables from which those statistics that meet particular data needs, socio-economic and environmental conditions and statistical capabilities can be selected for the purposes of establishing a national statistical system and programme of data collection and dissemination. As its companion report on human settlements statistics, the present report has been based on FDES, which will permit the assessment of relationships of environmental concerns with social, demographic and economic processes and activities. The common framework also facilitates cross-references between the two reports so as to indicate the interrelationship between "man-made" and "natural" components of the environment.

4. Annexes I and II present the statistical topics addressed in both reports in the FDES format, describing their scope and coverage. 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. It is intended to promote the application of the methodologies proposed in the reports at the regional level in co-operation with the regional commissions of the United Nations and other interested international organizations. The experience gained from applying the reports in countries is expected to lead to further modification, revision, extension and more detailed practical guidelines in selected high-priority areas.

B. Environmental accounting

- 5. At its twenty-fifth session, the Statistical Commission stressed the need to further extend the dialogue between statisticians, national accountants, resource economists and environmentalists in the field of environmental and natural resource accounting. National accounts experts and environmental economists met in a Joint United Nations Environment Programme (UNEP)-World Bank Expert Meeting on "Environmental Accounting and the System of National Accounts (SNA)" (Paris, 21-22 November 1988) to discuss a draft framework for a set of environmental satellite accounts. The meeting recommended, inter alia, that:
- (a) A classification of intermediate consumption by function and government expenditure by function should be developed where "environmental goods and services" are identified;
- (b) Accounting for stocks of natural resources should be done in physical terms, not in monetary terms; monetary estimations, however, should be attempted for changes in the stock of resources within the period under consideration;
- (c) The revised version of the "blue book" (the volume describing the core accounts of the SNA), to be issued in 1993, should have a section in which satellite accounts for the environment are outlined.
- 6. The Statistical Office submitted a revised version of an "SNA Framework for Integrated Environmental and Economic Accounting" to the twenty-first session of the International Association for Research in Income and Wealth (IARIW) (Lahnstein, Federal Republic of Germany, 20-25 August 1989). The meeting welcomed the proposed framework and decided to hold a special session on natural resource and environmental accounting in May 1991 in Baden (Austria).
- 7. The framework has also served as the basis for the preparation of a "Handbook of Environmental Accounting". A draft of the Handbook is being prepared by a consultant in collaboration with the World Bank and UNEP and with the financial support of the Jessie Smith Noyes and Ford Foundations. Various components of the draft Handbook are being tested in a World Bank pilot project in Mexico. A similar

project is planned for a developing country in Asia. Efforts are also under way to encourage some other countries, both developed and developing, to undertake such tests. A first draft of the Handbook will be circulated widely for comments in the fourth quarter of 1990. A revised version of the draft will be discussed at the IARIW meeting in 1991. A workshop held in conjunction with this session is expected to discuss future work on the Handbook, based on national experiences. It is planned to submit the Handbook for publication in the SNA Handbook Series by the end of 1991.

C. <u>Intergovernmental Working Group on the Advancement of</u> <u>Environment Statistics</u>

- 8. The first meeting of the Working Group on the Advancement of Environment Statistics took place in Oslo from 2 to 4 May 1990. It was attended by eight developed 7/ and seven developing countries, 8/ representatives from the Statistical Office of the United Nations Secretariat, observers from various United Nations specialized agencies and an intergovernmental organization. The seven developing countries that did participate were funded by the national statistical offices of Norway, Sweden and Canada and the World Health Organization. Several other developing countries wished to participate but could not do so due to financial constraints.
- Regarding the methodological development of environment statistics, the meeting decided that for each of a number of important topics a technical report would be developed. The initial draft would be prepared jointly by a developing and developed country, and the draft would then be discussed at the next meeting of the Working Group with a view to expanding these methodologies for application at the international level. This would take into account the view expressed by the Statistical Commission at its twenty-fifth session that some outputs of the work on methods of environment statistics of the Conference of European Statisticians might contribute to work at the global level. The objective is to expand existing ECE classifications in the field of environment statistics by adapting them to global applications and linking them to conventional social, demographic and economic statistics. The draft technical reports would then be circulated for comments to Governments, international organizations and experts in the field. Eventually, these methodologies could be published in the technical report series on environment statistics of the Statistical Office. Subject to consultation with the authorities in the respective countries, the initial work of the Working Group will focus on environment-related agricultural statistics, statistics of water use and water quality, statistics of air pollution and energy use, and a glossary of terms applied in environment statistics.

II. CO-ORDINATION

10. The third Consultation on the Co-ordination of International Environmental Data Collection was convened in Geneva on 19 March 1990 by the ECE secretariat. The discussion focused on the following issues: (a) a planned inventory of existing environmental data bases for use by the participants in the Consultation; (b) the tentative identification of further lead data bases; and (c) the

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organization of the co-ordination of international environmental data work in the future.

- 11. The Statistical Office conveyed to the meeting its agreement that a more formal approach to organizing future sessions of this working group would underline the increasing importance of co-ordination in the field of environment statistics. It also invited the meeting to discuss the need for further updating the "Review of International Environmental Data Bases and Data Collections", as requested by the Administrative Committee on Co-ordination (ACC) Sub-Committee at its twenty-third session. In view of a similar survey to be carried out by the Statistical Office of the European Communities (EUROSTAT) on behalf of the Consultation on Co-ordination, and considering the limited resources available, it is not intended for the time being to update the Review, which was also presented to the Statistical Commission at its twenty-fifth session.
- 12. Following a recommendation of the Consultation on Co-ordination to establish an Intersecretariat Working Group on Environmental Data, the Statistical Office intends to convene a first meeting of this Intersecretariat Working Group in early 1991. The ACC Sub-Committee, at its twenty-fourth session (Vienna, 18-22 June 1990), endorsed the establishment of the Working Group and noted interest on the part of many members of the Sub-Committee to participate in it. The report of the meeting will be submitted to the ACC Sub-Committee at its twenty-fifth session for approval and follow-up. The objectives of the Intersecretariat Working Group as identified by the Consultation on Co-ordination are: (a) maintenance of mutual information and contact between those responsible for the conceptual, technical and organizational development of relevant data bases; (b) development of improved co-operation between international data base managers in their daily work; and (c) exchange of information on all conceptual and methodological work done in the different forums of international co-operation over environmental data.

III. COMPILATION AND DISSEMINATION OF ENVIRONMENT STATISTICS

- 13. ECE will publish a second edition of its regional compendium, entitled "Environment Statistics in Europe and North America" in 1991. The Meeting on Compendia of ECE Environment Statistics, held in Geneva from 20 to 23 March 1990, agreed to follow the practice that was successfully established during the compilation of the experimental compendium in 1987.
- 14. The Economic Commission for Africa (ECA) is in the process of compiling an "African Compendium on Environment Statistics" which is expected to be published later this year. This experimental issue will contain major areas where environmental data for Africa are currently available. Monographs on selected environmental issues will also be included in the issue.
- 15. With respect to the other regional commissions, no comprehensive programme of international data compilation is envisaged for the time being. The Economic and Social Commission for Asia and the Pacific (ESCAP) does not yet have an environment

statistics programme but is very supportive of country initiatives and to the promotion of data collection in member countries. The Economic Commission for Latin America and the Caribbean (ECLAC) has recently proposed the establishment of a statistical environmental data base for the Caribbean region. ECLAC also intends to prepare an initial document on environment statistics of the Caribbean by October 1990. It views the issuance of this first edition as an initial step towards a programme aimed at the enhancement of the capability of the region to collect, store, analyse and disseminate environmental data as it relates to the overall development process.

- 16. The Global Environment Monitoring System's (GEMS) Monitoring and Assessment Research Centre (London), in co-operation with the World Resources Institute (WRI) (Washington, D.C.) and the United Kingdom Department of the Environment (London), recently prepared the second edition of the Environmental Data Report (1989/90) 9/ for the United Nations Environment Programme (UNEP). This report compiles global environmental data from various national and international sources. The second edition has built on the information base established in the first edition with updated information on key issues and the inclusion of new topics and additional data.
- 17. As described above, WRI co-operated with other organizations in the preparation of the second edition of the UNEP Environmental Data Report. WRI, in collaboration with UNEP and the United Nations Development Programme (UNDP), has recently published World Resources 1990-91, 10/ and its 1992-93 edition will focus on environment and development. It also published a Guide to Key Environmental Statistics In The U.S. Government 11/ in April 1990. Finally, it is undertaking a review of global environmental indicators.
- 18. Comprehensive data compilation and dissemination at the international level is not envisaged by the Statistical Office until an adequate number of regional and national programmes of environment statistics have been established. However, it is intended to intensify the co-ordination of regional activities and to embark upon data compilation in selected areas in the proposed work programme for 1992-1993 biennium subject to the availability of resources (see sect. V below).

IV. TECHNICAL CO-OPERATION

19. Regarding technical co-operation, the Intergovernmental Working Group on the Advancement of Environment Statistics recommended that such co-operation in the field of environment statistics needed to be expanded. Major requests of the Working Group in this context included the following: (a) development of an inventory of training facilities on environment statistics available at the international level; (b) organization of country or regional workshops and country projects; (c) arrangement for experts for short-term consultancies to diagnose the conditions for establishing an environment statistics programme in individual countries; (d) technical assistance in training statisticians in the field of environment statistics; (e) technical assistance in improving household surveys and related methodologies for purposes of environmental analysis; and (f) identification of a network of environmental statisticians and creation of a bulletin or newsletter as a communication medium.

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- 20. The Statistical Institute for Asia and the Pacific, under the aegis of ESCAP, will be holding a workshop entitled "Managing National Statistical Offices" (Tokyo, 30 October-3 November 1990). The Statistical Office of the United Nations Secretariat has accepted an invitation to lead the discussion on environment statistics at this workshop.
- 21. Co-operation and information exchange has been maintained with the International Statistical Institute (ISI) and WRI. ISI is collaborating with ECA in the development of environment statistics in the ECA region. ISI has proposed a project to produce a three-unit, video-based course on environment statistics for African countries during a 2 1/2 year period, from 1 July 1990 to 31 December 1992. The three units will cover the following topics: advocacy and motivation for the development of a minimum programme of environment statistics for Africa; concepts and methods of environment statistics; and environmental accounting for sustainable development. The Statistical Office has organized a meeting on "The Role of Statistical Offices in Environmental Statistics" as part of the Second Independent Conference of the International Association for Official Statistics of ISI, to be held in Beijing from 16 to 19 October 1990.

V. PROPOSED PROGRAMME OF WORK

- 22. Environmental issues have come to the forefront of the national and international political agenda. The forthcoming United Nations Conference on Environment and Development (UNCED) will provide a forum for reaching international consensus on national and international approaches to environmental problems and issues. Already in both developed and developing countries, increased concerns with environmental issues have created demands for a broad range of environment statistics and indicators, including integrated economic and environmental accounting. For example, the Preparatory Committee of UNCED, at its first substantive session in Nairobi (6-31 August 1990), requested the Secretary-General of the Conference to take up specific studies on the relationship between economic and environment policy, and also on economic and environmental indicators 12/drawing on studies undertaken by relevant international organizations. The proposed programme of work is to assist the international community in the assessment of the interrelations between environment and development through the development and compilation of environmental and related socio-economic data.
- 23. Despite these developments, work on environment statistics in the Statistical Office of the United Nations Secretariat has been hampered by lack of these developments, work on environment statistics in the Statistical Office of the United Nations Secretariat has been hampered by lack of resources. The United Nations Statistical Commission has repeatedly stressed the importance of strengthening international work in this area, in particular the development of concepts, methods and classifications, and the promotion, co-ordination and support of regional and national programmes. Accordingly, as a step in mobilizing necessary resources for expanded activities by the Statistical Office in the field of environment statistics and drawing on the recommendations of the Intergovernmental Working Group on the Advancement of Environment Statistics, the following activities are proposed for implementation in 1992-1993, subject to the availability of resources:

(a) <u>Development of concepts, methods and classifications for use by Member States:</u>

- (i) Environment statistics and indicators:
 - a. Revision and modification of existing methodologies (in technical reports and handbooks);
 - b. Development of further in-depth methodologies and classifications in selected areas of high priority (such as technical reports, guidelines or recommendations);
 - c. Provision of further technical materials on such topics as the organization of national statistical activities in the field of environment statistics, methods for selecting environmental indicators and ways of enhancing the dissemination, use and analysis of environment statistics (in technical reports and handbooks);
 - d. Preparation of a glossary of terms applied in environment statistics, in consultation with UNEP, ECE and selected Member States;
- (ii) Integrated environmental-economic accounting:
 - a. Review of international efforts;
 - b. Provision of revised and updated general guidelines;
 - c. In-depth technical reports in selected areas of environmental and natural resource accounting;
 - d. Analytical studies of the results and use of integrated accounts;

(b) Data collection, dissemination and analysis:

- (i) Co-ordination of a global programme of collection and dissemination of environment statistics;
- (ii) Compilation of international series of environment statistics and indicators, including environmentally adjusted accounting aggregates (to be issued in appropriate publications of the Statistical Office of the United Nations Secretariat);
- (iii) Provision of environment statistics and indicators, including related accounting aggregates, to international and national users in machine-readable form;

- (iv) Development of appropriate methods for evaluating data quality and estimating missing data;
 - (v) Enhancing the utilization of environment statistics and indicators through the development of prototype analytical studies of socio-economic and environmental interrelations and through collaborative studies with other organizations;

(c) Support for technical co-operation:

- (i) Substantive support to regional commissions for the implementation of regional and national programmes of environment statistics and indicators;
- (ii) Substantive backstopping of technical co-operation by promoting environment statistics and accounting methods in developing countries through country projects;
- (iii) Development of an inventory of training facilities on environment statistics;
- (iv) Organization of training seminars and workshops on various aspects of environment statistics and indicators at national and regional levels;

(d) <u>Promotion of co-ordination of international work on environment statistics:</u>

- (i) Co-ordination of a global programme of environment statistics, including regional activities (see (b) (i) above);
- (ii) Co-ordination of the development and use of international environmental data bases with the assistance of the proposed Intersecretariat Working Group on Environmental Data and the ACC Sub-Committee on Statistical Activities, focusing on:
 - Development of data base inventories;
 - Identification of lead agencies in particular areas of environmental data collection and information systems;
 - c. Identification of a network of environmental statisticians and creation of a bulletin or newsletter as a communication medium.
- 24. The Statistical Commission, at its twenty-fifth session, stressed the need for securing extrabudgetary resources or otherwise mobilizing external support for the rapid implementation of the environment statistics programme of the Statistical Office and the regional commissions. 13/ The Intergovernmental Working Group on the Advancement of Environment Statistics noted with appreciation the above proposal for an expanded work programme for 1992-1993 and agreed that any such

expanded work programme could not be met through the reallocation of existing resources but would require the provision of additional resources. 14/

V. POINTS FOR DISCUSSION

- 25. The Statistical Commission may wish to comment on:
- (a) Progress made in the preparation of the technical report entitled "Concepts and Methods of Environment Statistics: Statistics of the Natural Environment";
- (b) Progress made on the development of a "Handbook of Environmental Accounting";
- (c) The work of the Intergovernmental Working Group on the Advancement of Environment Statistics;
- (d) The establishment and objectives of an Intersecretariat Working Group on Environmental Data:
- (e) The proposals for expanded work by the Statistical Office of the United Nations Secretariat in environment statistics for the biennium 1992-1993 and recommended priorities among the activities proposed;
- (f) Approaches for securing the necessary resources for these proposed expanded activities, taking into account the need to obtain substantial additional resources for their implementation.

Notes

- 1/ Official Records of the Economic and Social Council, 1989, Supplement No. 3 (E/1989/21), para. 153.
- $\underline{2}$ / "Report of the Working Group on International Statistical Programmes and Co-ordination on its thirteenth session" (E/CN.3/1991/2), para. 46.
- 3/ Official Records of the Economic and Social Council, 1989, Supplement No. 3 (E/1989/21).
- 4/ "Report of the Working Group on International Statistical Programmes and Co-ordination on its thirteenth session" (E/CN.3/1991/2).
 - 5/ United Nations publication, Sales No. E.84.XVII.12.
 - 6/ United Nations publication, Sales No. E.88.XVII.14.
- $\underline{7}$ / Canada, Federal Republic of Germany, Finland, France, Netherlands, Norway, Sweden and Switzerland.

Notes (continued)

- 8/ Brazil, India, Indonesia, Lesotho, Mexico, United Republic of Tanzania, Zimbabwe.
- 9/ United Nations Environment Programme, Environmental Data Report, 2nd edition, 1989/90 (Oxford, United Kingdom, B. Blackwell).
- 10/ World Resources Institute, World Resources 1990-91 (Oxford, Oxford University Press, 1990).
- 11/ World Resources Institute, <u>Guide to Key Environmental Statistics in the United States Government</u> (Washington, D.C., World Resources Institute, 1990).
- 12/ Report of the Preparatory Committee for the United Nations Conference on Environment and Development (A/45/46), annex I, decision 1/28. (The report will be issued subsequently as Official Records of the General Assembly, Forty-fifth Session, Supplement No. 46 (A/45/46)).
- 13/ Official Records of the Economic and Social Council, 1989, Supplement No. 3 (E/1989/21).
- 14/ "Intergovernmental Working Group on the Advancement of Environment Statistics, report of the first meeting" (ESA/STAT/AC.37).

ANNEX I

Framework for the Development of Environment Statistics - Human Settlements

• <u></u>	Social and economic activities, natural events A		Environmental impacts of activities/events B		Responses to environmental impacts		Stocks, inventories and background conditions D	
1.	Settlements growth and change 1.1 Population growth and change 1.2 Construction of shelter and infrastructure	1.	Conditions of shelter, infrastructure and services 1.1 Housing 1.2 Access to infrastructure and services	1. 2.	Human settlements policies and programmes Pollution monitoring and control 2.1 Environmental	1.	Stocks of shelter and infrastructure 1.1 Housing stock 1.2 Non-residential buildings and other physical infrastructure	
	1.3 Utilities (energy and water supply) 1.4 Transport 1.5 Land use in human	2.	1.3 Human settlements sprawl and dispersion		standards 2.2 Monitoring 2.3 Treatment, disposal and reuse of discharge	2.	Environmental inventories 2.1 Emissions 2.2 Hazardous work	
2.	settlements Other activities	۷.	Conditions of life-supporting resources 2.1 Ambient concentration of pollutants and		2.4 Expenditure for pollution control		environment and industries (not developed)	
	2.1 Emissions and waste discharge 2.2 Hazardous activities at work-place (not		wastes 2.2 Biological and ecological impacts (not developed)	3.	Prevention and hazard mitigation of natural disasters		2.3 Human settlements vulnerable to natural disasters	
3.	developed) Natural events		2.3 Microclimates (not developed)			3.	Background conditions 3.1 Land use 3.2 Demographic and	
		3.	Health and welfare conditions in human settlements 3.1 Exposure and health effects 3.2 Settlements-related damage and accidents 3.3 Perception of the quality of life in human				social conditions 3.3 Economic situation 3.4 Weather/climate conditions	

ANNEX II

Framework for the Development of Environment Statistics - Natural Environment

	Social and economic activities, natural events A		Environmental impacts of activities/events B		Responses to environmental impacts C		Stocks and inventories D	
١.	Use of natural resources and related activities 1.1 Agriculture 1.2 Forestry 1.3 Hunting and trapping 1.4 Fisheries	1.	Resource depletion and increase 1.1 Biological resources 1.2 Cyclical and non-renewable resources	1.	Resource management Pollution monitoring and control	1.	Biological resources 1.1 Agricultural stocks 1.2 Forest stocks 1.3 Fish stocks 1.4 Fauna and flora inventories	
	 1.5 Minerals, mining and quarrying 1.6 Energy production and consumption 1.7 Water use for human activities 1.8 Land use and 	 3. 	Environmental quality 2.1 Atmospheric pollution 2.2 Water quality 2.3 Soil and land quality Quality of biota and ecosystems 2.1 Outlier of biota	3 . 4 .	Prevention and hazard mitigation of natural disasters Non-government (individual) responses	2.	Cyclical and non-renewable resources 2.1 Hydrological systems 2.2 Climate 2.3 Land/soil 2.4 Mineral resources	
2.	environmental restructuring Emissions, waste loadings and application of biochemicals	3.1 Quality of biota 3.2 State of ecosystems Human health and environmental disasters 4.1 Human health and		3.	Energy stocks 3.1 Non-renewable energy sources 3.2 Renewable energy sources			
	2.1 Emissions and waste loadings in environmental media 2.2 Application of biochemicals		contamination 4.2 Impact of environmental disasters			4.	<u>Ecosystems</u>	
3.	Natural events							