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Economic Commission for Latin America

REPORT OF THE LATIN AMERICAN WORKSHOP ON ENVIRONMENT STATISTICS
AND ENVIRONMENTAL MANAGEMENT *

* This Workshop, which was sponsored by the Economic Commission for Latin America and the United Nations Statistical Office, was held in Santiago, Chile from 7 to 11 April 1980.

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Introduction

1. The present report contains an account of the discussions and conclusions of the Latin American Workshop on Environment Statistics and Environmental Management, sponsored by the Economic Commission for Latin America (CEPAL) and the United Nations Statistical Office (UNSO) and supported by the United Nations Environment Programme (UNEP). The Workshop, which was held in Santiago, Chile from 7 to 11 April 1980, forms part of a joint complementary programme drawn up in mid-1979 in response to instructions given to the United Nations Statistical Office and CEPAL in the fields of environment statistics and environmental assessment, respectively, in projects jointly organized with support from UNEP.

I. ORGANIZATION OF WORK

A. Attendance

2. Participants from the following countries attended the Workshop in a personal capacity: Argentina, Brazil, Canada, Colombia, Chile, Ecuador, Honduras, Mexico, Panama, Paraguay, Peru and Venezuela.

3. Also present were representatives of the following United Nations organizations: the Centro Panamericano de Ingeniería Sanitaria y Ciencias del Ambiente of the Pan-American Health Organization (PAHO) and the regional offices of the Food and Agriculture Organization of the United Nations (FAO), the World Health Organization/Pan-American Health Organization (WHO/PAHO), the United Nations Educational, Scientific and Cultural Organization (UNESCO) and UNEP.

B. Officers

4. The Workshop elected the following officers:

Chairman:	Osvaldo Sunkel (CEPAL)
Alternate Chairman:	Oscar Altimir (CEPAL)
Vice-Chairman:	Ricardo Katz (Chile)
Rapporteur:	Juan Sourrouille (UNEP)
Secretary:	Carlos Plaza (CEPAL)
Technical secretary:	Giovanni Carissimo (United Nations Statistical Office)

/C. Agenda

C. Agenda

5. The meeting was guided by the following agenda:
 1. Opening
 2. Organization of the meeting
 3. General introduction of the basic documents
 4. Environment statistics and studies of the environment in the region (contributions by participants)
 5. Guidelines on environment statistics
 - (i) Natural resources
 - (ii) Human settlements
 - (iii) Energy
 - (iv) Land
 - (v) Pollution
 6. Future activities by CEPAL and the United Nations Statistical Office in environment statistics and studies
 7. Adoption of the report.

D. Opening session

6. At the opening session the participants were welcomed by the CEPAL Deputy Executive Secretary for Economic and Social Development, Mr. Norberto González, and the Secretary of the Workshop outlined the background and purposes of the meeting and the relevant administrative arrangements. Messrs. Giovanni Carissimo, Carlos Collantes and Juan Sourrouille respectively then introduced the basic documents, "Informes técnicos sobre estadísticas ambientales" (E/CEPAL/R.211), "Propuesta de estudios sobre la gestión del medio ambiente en América Latina" (E/CEPAL/R.212) and "Notas sobre balances de recursos naturales" (E/CEPAL/R.221).

II. SUMMARY OF DISCUSSIONS

A. Contributions by the participants

7. Once the documents had been introduced, the Chairman invited the participants to contribute their personal views of the situation in their respective countries as regards environmental management and the corresponding statistical requirements. He suggested that their contributions should be made in accordance with the request made when the meeting was convened, and should relate to the documents distributed in the Workshop.

8. In order of speaking contributions were made by the participants from Venezuela, Argentina, Chile, Honduras, Peru, Ecuador, Mexico, Colombia, Brazil, Paraguay and Canada, followed by the representatives of INFOTERRA, the Centro Panamericano de Ingeniería Sanitaria y Ciencias del Ambiente (CEPIS), and UNESCO.

9. The participants placed emphasis on the contribution which could be made by a broad approach to the relations between environment and development in differentiating situations at the international and national level.

10. It was stressed that the potential for and constraints on the exploitation and preservation of the environmental conditions in the developing countries, and in Latin America in particular, differed from those of the developed countries principally because of the position the different economies occupied in the international economic order, the levels and forms of income distribution and their specific cultural and ecological features.

11. At the national level, similarly, attention was drawn to the different situations and challenges for environmental management posed by different regions and different categories of human settlements, as well as the differences which could be observed even within the same locality, as could be seen when analysing the environmental circumstances of marginal sectors. It was stressed that those disparities did not mean that two sets of factors were at work, but arose from the very model of development in each country, especially as regards the contrast between metropolitan regions, which were industrialized, promoted an extreme level of concentration and exerted great

/pressure on

pressure on space and resources, and relatively less developed regions which had underused resources and in some cases were suffering a process of depopulation.

12. Lastly, it was pointed out that there were also considerable differences between the various ecosystems in the region as regards challenges and opportunities for environmental management, when their present conditions and alternative possibilities were considered in the light of the short-term and long-term needs and interest of its population, and not only on the basis of effective short-term demand.

13. Among the most immediate problems of environmental management noted by the participants, most frequent mention was made of the following:

- the fact that situations where resources were unused, poorly used or over-used were more frequent than situations where they were properly used;
- mistaken views of the basic environmental problems and characteristics of some countries and their requirements and potentialities as regards use (for example, regarding a humid or subhumid ecosystem as most typical in a country which was largely arid or semi-arid; or placing emphasis on agriculture in a country ideally suited for forestry; or attaching greater importance to pollution in a country which had assigned priority to the proper use of domestic resources to meet energy and nutritional requirements);
- serious distortions arising in the management of resources such as petroleum, and in the effects on the economic, social, cultural and spatial structure caused by excessive attention to their exploitation, especially when such resources were of strategic importance, highly priced and formed a base concentrated on a single export;
- a limited capacity to organize and control urban growth, especially in the major metropolises of the region;
- great difficulty in managing rural settlements and rural migrations, especially in areas suffering decline and depopulation, and in areas of new settlement;

- a series of specific problems arising from poor knowledge of ecosystems, improper use of technologies, unsuitable criteria for location and patterns of use, especially as regards deforestation and forest fires, salinization, erosion, modification of the water balance, elimination of species of terrestrial or marine flora and fauna, chemical and biological pollution in the countryside and industrial pollution.

14. In the face of the problems, challenges and opportunities for environmental management, the participants considered that:

- management of the environment was not in itself an objective of development, but a tool for use in pursuit of the economic and social development priorities established by each country, in keeping with the way in which that development was undertaken;
- sound management of the environment involved, in particular, planned management of scientific and technological development and the patterns of consumption and forms of social and labour organization which played a role in such management;
- management of the environment, in so far as it represented one more dimension of the management of economic and social development activities, must be directly linked to the decision-making and administrative structure of each country. In this regard, although the pre-eminent role of the State was recognized, mention was also made of the need to identify the role of enterprises and the public in general in generating the above-mentioned problems, and ways in which they could participate in recognizing and solving them;
- efforts in the field of education and information, and specifically statistical information, both nationally and internationally, were of great importance for sound environmental management. At the international level the Workshop recognized the contribution being made in those fields by UNESCO, INFOTERRA, PAHO/WHO and the United Nations Statistical Office respectively.

15. Note was also taken of the difficulties which arose in clearly defining and delimiting environmental management, and the shortcomings in programmes and in concrete achievements, despite the interest shown in some countries.

16. In that context mention was made of the need to collect together and publicize cases of regional interest where such difficulties and shortcomings had been overcome; it was suggested that, in order to deal with theoretical and conceptual limitations in the subject, a gradual and pragmatic approach should be adopted which would make it possible to identify the critical decision-making centres where management of the environmental dimension was most relevant.

17. In that regard, mention was made of some examples of the useful incorporation of the environmental dimension in, for example, the design of processes of regionalization, plans and programmes for regional and microregional development, the formulation, assessment and implementation of major infrastructure projects, energy policy, urban and rural health and sanitation programmes and projects to generate new appropriate technologies for human settlements. In the last three areas, stress was laid on the importance of regional activities, such as those being carried out by the Latin American Energy Organization (OLADE), CEPIS and the CEPAL project on human settlements technology respectively.

18. Concerning the institutional arrangements adopted in the countries to incorporate the environmental dimension in management of the various economic and social development activities, the following principal considerations were set forward:

- rather than seeking agreement on which institutional arrangements were most suitable for incorporating that new dimension, what was needed - both nationally and internationally - was to propose an effective procedure whereby that dimension could properly be incorporated into the decision-making, administrative and institutional structures existing in each case;
- that task involved not only the different situations and contexts mentioned above, but also the changes which could occur within a given country in terms of socio-political orientation, administrative organization and the relative roles of the State, enterprises and the population as a whole in decisions affecting the environment;

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- in every case serious difficulties arose as a result of fragmented treatment and management of the environment in terms of sectors, even though it constituted a physical reality which was interdependent both from the economic and social viewpoint and in terms of natural processes. Moreover, in some cases where the environment was dealt with as a whole, a new type of sectoralization was emerging in which the aim was proper management of each of its components (water, air, soil, forests, subsoil and infrastructure);
- those difficulties in organization, which had not yet been solved, taken together with the theoretical and conceptual limitations and the large number of problems which it was wished to tackle, accounted for the wide range of institutional patterns and also the caution and flexibility which could be observed in most countries in this field.

19. Among the institutional alternatives which had been adopted by the countries of the region, three principal forms could be distinguished. Firstly, there were arrangements which treated the environment as a sector and whose principal role was to monitor the quality of certain components of the environment (air, water, scenic resources and flora and fauna), to grant authorizations and propose criteria for the location of activities on the basis of their potential impact on the environment, to manage certain renewable natural resources, such as water, forests, and water-based resources and to conduct corresponding activities in the fields of information, education and international co-operation. In some cases there was also the general function of the spatial planning of development.

20. The second alternative, which seemed to be followed by most of the countries, was to incorporate important environmental considerations in the existing institutional structure as it stood, both at the national (global and sectoral) level and at the regional and local levels. Under that approach it was most important to establish organic links between different sectors and between those sectors and the agencies traditionally engaged in managing natural resources, energy, infrastructure and housing and urban development. In that context, committees or councils for

/interagency co-ordination

interagency co-ordination were gaining in importance, and it was necessary to link them with machinery for participation by the people and by business and industry. Mention was also made of cases of interdisciplinary co-ordination and of participation in the development of major investment projects.

21. The third alternative, which fell between the previous two, generally took the form of efforts to strengthen the institutions traditionally linked with the management of natural resources and human settlements, which were assigned principal responsibility in environmental management and in supervising the agencies for intersectoral co-ordination.

22. The observations made by the participants concerning the generation and use of, and requirements for, statistics for environmental management were closely correlated with the above considerations, especially in the following respects:

- it was an essential prerequisite to provide statistical backing for the task of incorporating the environmental dimension in the various agencies for development management;
- the statistical requirements were as different as the situations, problems and potentialities of environmental management at the international level and within each country;
- for the environmental management operations which were assumed to have priority (in the light of development priorities), the basic statistical information available was generally adequate; but it would be necessary to structure those data, correlate them in the form of indicators, organize them into environmentally appropriate and significant units, gather dispersed information and link it to the principal technological, social and economic factors which prompted or arose from environmental management;
- that was a complex undertaking which called for criteria of gradualness, flexibility and pragmatism similar to those proposed for environmental management. However, first and foremost, the statistics must be adapted as efficiently as possible to the decision-making structure. In that regard, in the countries which had opted for an environmental "sector", it might perhaps be most relevant to describe the statistics

/which served

which served as a basis for decisions in that sector as environment statistics. However, in the countries which were endeavouring to incorporate the environmental dimension in all the sectors into which the decision-making and administrative structure was organized, that description might perhaps be inappropriate, and it might be enough to speak of environmental considerations in the statistics applying to each of the sectors, programmes or projects which it was wished to support.

23. The remaining specific considerations in the statistical field have been incorporated in the next section of this report.

B. Guidelines on environment statistics

24. The Workshop considered that the document prepared by UNSO should be reshaped, particularly as regards the special treatment necessitated by the conditions and problems of the developing countries, and specifically those of Latin America.

General considerations

25. In that regard, the following general considerations were set out:

(a) the document, which dealt predominantly with physical aspects, should be directed rather towards the relations between those phenomena and the economic and social aspects of development, making it possible to relate environmental problems and their processes of change to the decision-making process;

(b) it should be based on more efficient use of the existing basic statistics, both those relating to general aspects of environment and development and those found in agencies dealing with sectoral and specific aspects;

(c) it should also aim at providing further detail by covering aspects that were not recorded in the basic statistics which were currently available but were included in specific research on new phenomena not covered through the usual channels of published statistics;

(d) in recognition of the fact that the basic statistics could themselves constitute an input for environmental interpretation, it was also necessary to contemplate the preparation of environmental indicators relating more

/directly to

directly to the processes which it was wished to analyse and monitor. Those indicators should in turn help to define the necessary basic statistics;

(e) it should introduce criteria of selectivity, which might be based on the following points, inter alia:

(i) responding to the development priorities laid down by the countries and compiled in the paper entitled "Propuesta de estudio sobre la gestión del medio ambiente en América Latina" presented to the Workshop by CEPAL;

(ii) permitting disaggregation into environmental units (ecosystems, basins, microregions and so on);

(iii) avoiding excessive detail which might make impossible demands on the countries;

(f) the guidelines on environment statistics should promote standardization of the terms used, a high degree of generality for the treatment of different ends and the possibility of carrying out integrated studies. In that regard, consideration might be given to reorganizing the sets of statistics around two basic themes, natural resources and human settlements. Additionally, themes such as land, energy and pollution might serve to provide further detail for those major themes and encourage cross-disciplinary approaches. That would make it easier to carry out studies and devise policies with an intersectoral and inter-disciplinary approach;

(g) in view of the fact that the United Nations Statistical Office was working on conceptual frameworks for the development and organization of environment statistics, it would be desirable that in future those engaged in discussion of the guidelines should be able to take account of the results of such work, which should be compared with theoretical approaches covering the relations between environment and development in Latin America.

(h) the growing pressure of environmental problems was prompting concern in many Latin American countries about their stock of environment statistics. The following observations were relevant in that regard:

(i) the environment linked the physical system with the social system;

/(ii) in

- (ii) in general the countries possessed basic statistics relating to those systems, as well as information sources of regional scope, such as that organized by INFOTERRA;
- (iii) consequently, it was advisable to avoid duplication which might lead to the treatment of the environment as merely one more planning sector;
- (iv) that prompted the recommendation that information systems for environmental diagnosis and management should be established, to take into account the already existing statistics, produce the required indicators and urge on the appropriate agencies the need to gather new statistics.

Natural resources

26. The discussion highlighted the following points:

(a) Natural resources were of fundamental importance in the development of Latin America, basically because they constituted a rich heritage which played a role in the region's international economic relations;

(b) the environmental aspects of natural resource management had in the past carried a conservationist emphasis. However, the participants noted the need for an all-round approach to the management of natural resources, stressing the need to ascertain and develop their potential;

(c) the approach adopted by the United Nations Statistical Office in categorizing some resources in terms of availability, exploitation and environmental impact was a good one and should be extended. In order to articulate the three categories in integrated resource inventories it was necessary to bear in mind, in particular, the work being carried out in the UNEP Regional Office on the natural heritage, the work by Statistics Canada on the study of processes and the work being carried out in Brazil on input-output/pollution matrixes;

(d) UNSO should encourage greater standardization of the definitions used in statistics on natural resources;

(e) excessively detailed or frequent studies on natural resources with broad coverage were expensive, and it was therefore necessary to link them to the actual needs and potentialities of the countries. For reasons of economy and the systematic interrelations between resources, integrated studies of priority regions were useful;

/(f) changes

(f) changes in the environment caused by the use of resources made it necessary to generate statistics which were comparable over time, and accordingly the standardization of methodologies, categories and reference periods was recommended;

(g) since the valuation of resources varied first and foremost with technological changes, and since as a result the validity of the available information was limited in time, it would be desirable to incorporate data on costs. In that regard interest was expressed in the previously mentioned work in Canada on a process encyclopaedia, which should serve as a model for similar studies granting recognition to alternative technologies of greater applicability to Latin America, especially those relating to the recovery of endogenous technologies;

(h) the workshop noted that, in view of the widespread of institutions involved in generating and handling natural resources statistics in Latin America, it was necessary to create co-ordination machinery appropriate to existing administrative arrangements. In that regard mention was made of the wealth of information in unpublished sources in the institutions;

(i) finally, priorities in those activities should be dictated by the strategic aspects of development, and by factors with decisive influence on resource management, such as the ownership and distribution of resources, marketing channels and access to technology.

Human settlements

27. The Workshop was of the view that, in order to adapt the guidelines prepared by the United Nations Statistical Office to Latin American realities, it would be necessary:

(a) to highlight as far as possible the relations between the natural and socio-cultural environments through relevant statistics and indicators;

(b) to achieve greater balance in dealing with the various types of settlement, since it could be seen that greater attention was placed on the problems of the major urban centres while insufficient regard was paid to rural centres and intermediate towns, in which a large proportion of the population of Latin America lived;

(c) to take account of the psycho-social aspects of the problems of settlements;

/(d) to

(d) to adapt the format of the statistics to the broader concept of settlements set out at the beginning of this section, without however burdening the basic statistics with detail which was expensive to gather;

(e) to improve the treatment of the subject by including aspects relating to land use, pollution and energy, without prejudice to individual treatment in other sections. This would facilitate thorough understanding of human settlements and their evaluation.

28. In addition to those observations on the document prepared by the United Nations Statistical Office, the following remarks were made:

(a) there was no doubt that the present problems of human settlements, especially in urban areas, arose from the present style of development, on which exogenous forces had a predominant influence, and that that was generating serious social tensions. Consequently, it was necessary to draw up development objectives which corresponded to alternative styles;

(b) human settlements planning should take seriously into consideration the circumstances of the natural environment in which it fell, which frequently offered insufficiently exploited potentialities as well as imposing serious restrictions on the sustained growth of the population, because of the increasing cost of basic services;

(c) the wide range of institutions and professional groups involved in human settlements policy often led to a lack of co-ordination and gaps in information, which should be remedied by means of administrative structures that provided in particular for participation by those affected;

(d) one problem regarded as significant in many countries was that of migrations and their effect on the proliferation of marginal settlements, with particularly serious features in the case of international migrations;

(e) with regard to conditions in human settlements relating to health, attention was drawn to the importance of improving statistics relating to drinking water and sanitation in terms of the quality, coverage and cost of the services, so as to permit more efficient planning in that sector;

(f) the Workshop emphasized the need to improve the traditional approaches to the analysis of human settlements by bearing in mind the environmental context in which they fell, their interchanges of material

/and energy

and energy with the environment and, consequently, the degree of stability of each settlement in terms of its maintenance in opposition to natural forces;

(g) the participants warned against the errors which could arise from generalizations from data because of the great differences which existed between countries, within countries and even within towns. Accordingly, it was recommended that the metropolises should be dealt with as cases apart.

Energy

29. After reviewing the document submitted by the United Nations Statistical Office, the Workshop made the following general comments:

(a) the sections on pollution were fairly comprehensive and exhaustive, except perhaps as regards the practical problems of measurement and statistical trustworthiness;

(b) the basic weakness of the document lay in the fact that it viewed energy almost exclusively from the supply side, ignoring demand or use.

That led to the following serious errors:

(i) energy was considered to be a sector of the economy producing petroleum, electricity, gas, and so on;

(ii) the important aspects of the environmental impact of energy were held to be the ways in which degradation of the environment was caused by its production phase, principally pollution;

(iii) environment statistics relating to energy should be focused on the measurement of those effects of environmental degradation.

(c) a few references to other elements in the interaction between energy, the environment and development dealt with this subject in very little depth. Some of those components were:

(i) the resource base; here the economic interpretation was limited, and no distinction was made between renewable and non-renewable resources;

(ii) energy sources known as "non-commercial" sources;

(iii) the problems of final use (there was only an extremely brief reference);

/(iv) exogenous

(iv) exogenous forces in the relationship between energy and styles of development.

(d) it was vital to devise a conceptual framework that linked energy with environment statistics through the decision-making process, for which statistics were an instrument of fundamental importance. Some suggested components of such a conceptual framework are indicated below;

(e) energy was not a sector, but a system within society taken as a whole. It was one of the systems which linked together almost all components of society, in the same way as the monetary system, the transport system or the system of communications;

(f) the operation of the energy system impinged on society in various ways. There was now clear awareness of its political and economic impact, and its cultural impact was beginning to be appreciated. As far as the environmental dimension was concerned, the principal effects on society included the following:

- (i) the effects on the base of non-renewable resources, particularly relating to the likelihood of their exhaustion;
- (ii) the effects on the base of renewable resources, particularly relating to their conservation and proper use;
- (iii) the effects on patterns of consumption in the society attributable to the availability of the different forms of final use of energy;
- (iv) the effects on the various renewable resources which directly sustained human life and economic activity, such as the soil, air and water, and in particular, pollution of such resources.

One of the fundamental reasons why proper consideration was not given to the environmental dimension was the lack of statistics which reflected that dimension and made it possible to estimate environmental effects such as those mentioned above;

(g) the term "consumption" of energy should be replaced by "use". The former was incorrect from both an economic and a physical point of view.

30. As a corollary of the above, and in the light of realities in the region, the following points were highlighted:

/(a) as

(a) as regards the base of non-renewable resources, statistics on reserves and resources should always indicate the costs and types of technology assumed in the estimate. "Reserves" was an economic concept which was a function of costs and technology, and not a technical concept;

(b) renewable resources should be included in the energy base. In order to furnish better information on the energy base, quantifications were needed for resources currently not quantified, such as biomass, land with potential for growing energy-producing plants, small-scale water resources and others. It was also necessary to measure the present flow of energy extracted from the energy base, and the maximum potential for extraction compatible with the renewal of the resource;

(c) the particular case of firewood was an extremely serious one. It was not covered by energy policy because of the lack of comprehensive, detailed and reliable statistics. Because of the high prices of petroleum products (the only substitutes in many cases), demand for firewood was increasing sharply, leading to an acceleration in processes of deforestation and erosion, the magnitude of which had to date hardly been quantified in any country;

(d) the classification of firewood as a "non-commercial" fuel led to error, since the high prices of petroleum had provided a strong incentive for marketing it, especially in the towns;

(e) for the stages of energy extraction, processing, transport and use it was essential to possess statistics relating not only to volume but also to efficiency in the use of the energy. In each case it was necessary to measure useful energy in the process, in addition to the total input of energy, as a basis for determining the impact of each stage on the resource base;

(f) it was vital to attach as much importance to demand as to supply. Many environmental effects were actually appreciated only on the demand side (such as effects on the resource base, on the meeting of needs, on patterns of consumption, and so on). Only in the case of pollution was supply probably more important;

(g) statistics should be prepared on the use of non-traditional or new sources, many of which had been in use for a long time;

/(h) it

(h) it was essential to possess economic statistics on energy, and not only technical statistics (for example, statistics on prices and investment);

(i) it was essential to resist the temptation to make forecasts on the basis of energy statistics, since forecasts depended on policy decisions.
Land

31. With regard to the document prepared by the United Nations Statistical Office:

(a) the Workshop recognized the usefulness of the proposed treatment of land, which offered a comprehensive spatial view of natural resources and human settlements, permitting the consideration of important interactions between those elements and thus providing valuable support for regional planning;

(b) however, note was taken of weakness in the treatment of competing land uses between, for example, towns and agriculture, tourism, industry and agriculture and forestry, agriculture and livestock raising;

(c) similarly, it was pointed out that insufficient reference was made in the document to the potentialities offered in many cases by complementary use of land for various purposes;

(d) the broad treatment of the problems of soil degradation should be dealt with in the chapter on natural resources;

(e) the Workshop noted the absence of criteria for analysis which were appropriate for environmental review and appraisal.

32. The following suggestions were also made:

(a) the criteria for analysis should be drawn up in the light of the major development objectives and desirable styles of development. Furthermore, from the environmental viewpoint, they should take account of ecological aspects;

(b) regarding the basic information required for comprehensive approaches in land use planning, the Workshop warned against complexities which placed heavy burdens on the departments responsible for research on resources and human settlements. It was advisable to achieve relative homogeneity in the scales and degrees of detail used in the basic work;

/(c) particular

(c) particular importance was attached to the aspects related to land ownership and tenure;

(d) it was pointed out that the all-embracing view offered by the treatment of land should furnish a set of tools in the form of basic information and methodologies for analysis which was sufficiently rich and flexible to permit partial and sectoral studies and aggregations which reflected the variety of circumstances occurring in the region.

Pollution

33. The following observations were made on the document:

(a) while it was recognized that the separate treatment of pollution helped to place emphasis on its most critical aspects, mention was made of the desirability of including the subject also under the chapters on natural resources and human settlements, since as it would be possible to suggest through them a more comprehensive treatment of the relations between environment and development;

(b) the document placed greater stress on chemical and industrial pollution, which was more characteristic of the developed countries; than on the biological pollution which prevailed in Latin American countries;

(c) insufficient attention was paid to pollution of foodstuffs and of working environments.

34. The following suggestions were made:

(a) various participants referred to the need to plan to tackle critical situations involving pollution in their countries, including: atmospheric pollution in the capital cities, pollution of inland waters and sea coasts, noise problems in areas close to airports, the burning off of land for agricultural purposes (particularly in Central America), the effects of tailings from mining operations, dust in the atmosphere and biological pollution which is widespread in marginal settlements;

(b) the customary health statistics should be supplemented by information reflecting the corresponding health and epidemiological quality levels.

Examples:

(i) the coverage of drinking water services required indices of the bacteriological and chemical quality of the water;

(ii) the coverage of services for the disposal of excreta, required knowledge of how much of it was being treated before being emptied into watercourses;

/(iii) the

(iii) the indices of medical resources per capita required an analysis of the distribution of such resources;

(iv) the coverage of rubbish collection, required knowledge of the extent to which the rubbish was disposed of in a sanitary manner;

(c) it was of great importance to ensure that reference standards in the field of environmental health were appropriate to actual conditions in each country;

(d) the Workshop warned against the precipitate adoption of standards, emphasizing that such problems could only be dealt with properly through the use of cost-benefit criteria which took account of specific circumstances;

(e) regarding information systems, there were cases of interest, such as the systems being developed in Brazil and Mexico and those of various international agencies. The Workshop stressed the desirability of better co-ordination of the latter;

(f) the identification and analysis of situations involving pollution could be facilitated through the inclusion of socio-economic parameters and data on technological processes;

(g) it was important to anticipate situations involving pollution by making use of the potentialities offered by project planning and evaluation systems. However, the substantial political element involved in the subject might prevent the achievement of those purposes;

(h) action to deal with the pollution problems which were most evident to the public, though they might not be of greatest importance in the economic and social context, had the advantage of highlighting the penetration of undesirable exogenous styles.

C. Future activities by CEPAL and the United Nations Statistical Office in the field of environment statistics and studies

35. The representative of the United Nations Statistical Office described its current activities and future plans in the field of environment statistics. The purpose of the current programme was to lay down foundations for assisting countries in developing environment statistics, and for the compilation and international publication of comparable data. The main lines followed were:

/(i) preparation

- (i) preparation of guidelines for environment statistics;
- (ii) exploration of the scope for developing a conceptual outline and overall structure for the organization of environment statistics;
- (iii) a study on national practices and plans in that field.

36. As part of the implementation of the programme the United Nations Statistical Office was organizing a series of regional workshops, the Latin American workshop being the second. The first, covering the Caribbean region, had been held in Port of Spain, Trinidad and Tobago, from 7 to 11 January 1980. The United Nations Statistical Office also planned to carry out initial studies in some countries to test the viability of the guidelines for environment statistics and, where necessary, adjust them for regional and international use.

37. The representative of the Statistical Office sought the views of the participants concerning which Latin American country or region would be most suitable for the first of the studies. The participants were also informed of the complementary programme on environment statistics and environmental management which was being organized jointly by this Office and CEPAL. The main component of the programme was the co-ordinated development of environment statistics for Latin America as a part of the global project of the United Nations Statistical Office, and also a series of studies on environmental management in the region as part of the work of the CEPAL Environmental Co-ordination Unit.

38. Commenting on the work of the United Nations Statistical Office as described by its representative, the participants noted that it would be very useful if, in the two workshops to be organized by the Office in other regions, the conceptual framework and structure for the organization of environment statistics could be discussed together with the technical reports on the guidelines for environment statistics; that had not been possible at the present Workshop, as the document concerning the conceptual framework had not been completed.

39. The following criteria were laid down for selection of the country in which the initial study would be carried out:

/(i) there

- (i) there should exist a properly organized national statistical office, or a comparable system for data collection;
- (ii) the subject of the study should be of regional interest and should be in keeping with development priorities.

40. Colombia, Ecuador and Peru were suggested as countries in which the study could be conducted, while other participants said that they would send UNSO written proposals after consulting their statistical offices. Appropriate subjects were also mentioned, including energy and health.

41. The CEPAL representative said that the Commission was engaged in efforts to incorporate the environmental dimension in all its activities related to Latin American development. To that end, study of the environment, viewed as an operation in co-ordination, had been fostered by the Environmental Co-ordination Unit and through the Project on Styles of Development and the Environment in Latin America.

42. The Unit, which had until recently formed part of the CEPAL Division of Natural Resources and Environment, had carried out a study entitled "El medio ambiente en América Latina" (E/CEPAL/1018), which provided an overall view of the situation in the region. The Unit was also responsible in co-operation with the UNEP Regional Office for Latin America, for developing and updating evaluations on the state of the environment in the region, and for reviewing programmes and projects within the CEPAL system in order to incorporate the environmental approach within them. A further function was to develop methodologies designed to incorporate environmental variables in planning and to permit the analysis of environmental impact. Finally the Unit helped to train staff in the region in the field of the environment, in co-operation and co-ordination with the UNEP Regional Office for Latin America, the Centro Internacional de Formación en Ciencias Ambientales (CIFCA) and the Latin American Institute for Economic and Social Planning (ILPES).

43. The Project on Styles of Development and the Environment in Latin America had helped to clarify the relationship between the two concepts. It had studied the most important and characteristic processes involved in styles of development, such as urbanization, the expansion of the area devoted to agriculture, industrial redeployment and modernization of the

/countryside in

countryside in terms of the various dimensions of development (political, social and economic), placing emphasis on the environmental dimension.

44. Since the project was due to end in June 1980, CEPAL and UNEP had agreed to a second phase under the title "Horizontal co-operation between Latin American countries in the field of styles of development and the environment". The project, which was scheduled to begin in July 1980, involved the study of a selection of significant processes for the purpose of drawing up recommendations for viable environmental policies compatible with overall development.

45. The author of the "Propuesta de estudios sobre la gestión del medio ambiente en América Latina" then provided further details of the proposal, which was to be carried out in CEPAL with co-ordination by the Development and Environment Unit. He noted that, in the discussions leading up to the proposal, alternatives similar to those discussed in the Workshop had often been compared, and cited the following examples:

- (a) considering the environment as one more dimension in all the activities or sectors of development, or considering it as a specific sector or activity;

- (b) taking as a subject of study the relations between social processes and physical processes or phenomena or focusing solely on the physical environment;

- (c) considering the positive and negative aspects of such relations, their potentialities for and constraints on development, or considering principally the negative impact of society on the environment;

- (d) attaching greater importance to the innovations which emerge from comprehensive, ecological consideration of the relations between society and the environment, or returning to the traditional analyses relating to the management of natural resources and human settlements, and to physical planning;

- (e) selecting subjects in keeping with development priorities and with the importance of the environmental dimension among them, or endeavouring to ensure exhaustiveness in analysing all the relations between society and the environment which arise in a given country or region;

- /(f) endeavouring

(f) endeavouring to gather together practical experience of general interest for the purpose of dissemination, or for carrying out theoretical studies in greater depth;

(g) adopting a long-term perspective which corresponds to the need to define and specify strategic development objectives of regional scope, or giving special attention to the urgent environmental problems which arise in the short term, even at the local level;

(h) placing greater emphasis on the search for viable alternative solutions to the problems foreseen in the future, or on improving diagnoses of existing problems;

(i) giving greater emphasis to environmental management, or to evaluation of the state of the environment; and

(j) tackling management problems of an intersectoral nature, or supporting and strengthening sectoral studies being carried out by various specialized bodies at the regional and national level.

46. For all these items the final choice had fallen on the first of the alternatives. Accordingly, it would be necessary to carry out selective intersectoral studies of broad scope and regional interest collecting together experience in environmental management in priority development areas.

47. He also pointed out that, when the specific subjects for the studies were identified, a special criterion for selection would be their connexion with the treatment of the major issues which had been focuses of concern in the so-called CEPAL thinking, such as processes of industrialization, regional and subregional integration and social development, and the role of the State. An example of the application of those criteria was to be found in the topics to be studied in the research project on "Horizontal co-operation in Latin America in the field of styles of development and the environment", as well as those indicated in the "Propuesta", derived from a tentative analysis of the most important environmental considerations related to the regional objectives for the new international development strategy.

/48. Finally,

48. Finally, he invited the participants to express their views on the options adopted in the study referred to, and on criteria or examples which would help in the selection of cases for the studies.

49. The participants noted that the preliminary guidelines and proposals for the work of the CEPAL Environmental Co-ordination Unit coincided with the topics analysed in the Workshop, and pointed out that, although CEPAL tended more towards subjects of regional scope, any steps it took in that regard would be of great interest to the countries or to specific agencies.

50. In that context, a number of observations were made with particular reference to the method and approach to be used in the studies, with special emphasis being placed on the need to conduct a prior survey of experience at the national and regional level already on record, as well as cases which, although they were important and in keeping with the approaches discussed in the workshop, were not usually granted official recognition.

51. Mention was also made of the need to adopt a flexible approach in the units of analysis to be considered for each study, both as regards the criteria for evaluating the cases and as regards the statistical indicators which would be chosen for that purpose.

52. It was suggested that particular account should be taken in the studies of the various dimensions (economic, social, political and cultural) of each problem involved in the relations between society and the environment, as well as the way they evolved over time (especially with reference to population movements); and that attempts should be made in one way or another to analyse the specific involvement and even seek such involvement in evaluating each case.

53. Various national cases were cited which might be of regional interest, especially in the area of programmes for environmental management of settlements, regional and microregional studies, the search for alternative solutions for all-round management of resources in rural areas, and environmental sanitation.

54. The UNEP advisor said that the UNEP Regional Office had been emphasizing the need to draw up a system for registering natural resources so that they could be taken into consideration together with other development indicators. The proposal was based on the need to draw up

accounts covering the natural heritage which would make it possible to quantify the natural resources of the countries and value them in economic terms as a means of acquiring better knowledge of their productive potential, as well as their use over time. It was hoped that that type of information, which would make it possible to highlight the proper exploitation of such resources and evaluate their waste or deterioration, would play a basic role in appraising development, together with the systems of national accounts and social statistics.

55. The thoughts outlined by the UNEP adviser were set out in a paper presented to the Workshop. It also contained a discussion of whether the systems of national accounts as currently designed were appropriate for reflecting critical aspects of environmental problems, and to what extent efforts to complement the traditional recording of flows in short periods of time with information on the national heritage could help to remedy certain deficiencies. Accordingly, what was involved was the improvement of the classical view of the measurement of the gross product by adding recording systems which made it possible to compare changes in the product with changes in the stock of resources.

56. He said that at present in the system of national accounts, the use of natural resources appeared only under direct production costs, since the assets whose cost was imputed in the process of production by means of amortization payments were only reproducible tangible assets, or durable goods such as buildings, machinery, dwellings and livestock. Nothing has been said so far of what happened with land, mineral deposits, ecosystems, fishery resources, and so on. The new system of accounts under consideration (where discoveries were added to initial reserves, subtracting volumes extracted) directed the attention of experts towards efforts to reconcile records of flows with those reflecting the resource position at the beginning and end of the accounting period. Lastly, the UNEP adviser said that the study the authors of the paper had pointed out that natural resources inventories in Latin America should feature a wider variety of time horizons.

Annex 1

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Annex 2

LIST OF DOCUMENTS

Documents for discussion

E/CEPAL/R.210	Temario provisional anotado
E/CEPAL/R.211	Informes técnicos sobre estadísticas ambientales
E/CEPAL/R.212	Propuesta de estudios sobre la gestión del medio ambiente en América Latina
E/CEPAL/R.221	Notas sobre balances de recursos naturales (PNUMA, 1980)

Documents for information

E/CEPAL/PROY.2/R.50	Estilos de desarrollo y medio ambiente en América Latina: Una interpretación global (October 1979)
E/CEPAL/PROY.2/G.1	Informe del seminario sobre Estilos de Desarrollo y Medio Ambiente en América Latina (January 1980)
E/CEPAL/CDCC/56	Informe del Taller sobre Estadísticas del Medio Ambiente del Caribe (January 1980)
	Proyecto de Plan de Acción Ambiental para la Región del Gran Caribe (April 1980)

