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ITEM 7:* PROGRAMME MATTERS, INCLUDING THE IMPLEMENTATION OF THE PLAN OF ACTION TO COMBAT DESERTIFICATION

PROPOSALS FOR AN UPDATE OF THE LIST OF SELECTED ENVIRONMENTALLY HARMFUL CHEMICAL SUBSTANCES, PROCESSES AND PHENOMENA OF GLOBAL SIGNIFICANCE

Report of the Executive Director

Summary

The present report is submitted in compliance with Governing Council decision 16/31, in which the Executive Director was requested to refer the updated report on the list of selected environmentally harmful chemical substances, processes and phenomena of global significance to Governments, international organizations, industry and non-governmental organizations for further study and action, as appropriate; to obtain their comments on the report and, in particular, on the recommendations contained therein; to review the use made of the list and to submit the results to the Council in 1993 together with proposals for a possible update of the list in light of the outcome of the review. After describing the role chemicals play in the development of human societies, the present report provides a brief history of how the UNEP list came into being. It reviews the use made of the list, based on replies received to a questionnaire sent out by UNEP in February 1992. Amongst other issues, the replies indicated the need for more detailed information on the hazards and risks involved with chemicals during their entire life cycle and the need to study the holistic approach to assessing chemical pollution problems at all ecological, geographical and socio-economic levels. Recommendations for future updates and revisions are made.

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* Refers to the number of the item on the Provisional Agenda (UNEP/GC.17/1).

Suggested action by the Governing Council

The Governing Council may wish to:

- *Note* the report of the Executive Director in particular the recommendations made on proposals to update the List.

- *Request* the Executive Director to follow-up on these recommendations by:

  (a) Replacing the list by an assessment, every four years, of chemical issues that are critical at the global level;

  (b) Initiating work on preparation of the different documents as indicated;

  (c) Incorporating a summary of major issues related to chemicals emanating from the above assessment work into the newly proposed Executive Director's Statement on the Environment, as appropriate.

PROPOSALS FOR AN UPDATE OF THE LIST OF SELECTED ENVIRONMENTALLY HARMFUL CHEMICAL SUBSTANCES, PROCESSES AND PHENOMENA OF GLOBAL SIGNIFICANCE

Introduction

1. Chemical substances have played a major role in the development of human societies throughout history. Whether in agriculture, food preparation, housing, health, industry or transport, man has used and released a variety of chemical substances, both organic and inorganic. However, the synthesis of chemicals, mainly organic, which started in the last century and has continued to grow up to the present time, has gradually drawn attention to the negative aspects of the proliferation of chemical substances, particularly those with a durable nature and high toxicity. The production and use of such chemicals, that undoubtedly contribute considerably to well-being and higher living standards, has now reached unprecedented levels and has spread globally to cover both developed and developing countries.

2. Unfortunately, it has not proved possible to match this proliferation with a detailed knowledge of the hazards and risks involved in the production, handling and use of chemicals and their ultimate disposal as wastes. This is not only because the necessary facilities and financial resources are not available on a scale that matches the continuous stream of new chemicals put on the market every year, but also because experience has amply demonstrated that it may well take decades before the adverse environmental impacts of widely used materials are revealed and feasible approaches for mitigating their dangers are formulated and implemented. Managing chemicals, regardless

of where they are produced or used, has indeed become an issue with a global dimension. The regional nature of some of the problems gives the hazards and risks a distinctive character, relating to particular environmental conditions.

3. It is obvious that in-depth knowledge of the properties of chemicals and their impacts on the environment and living organisms is a basic need. Efforts to strengthen the science base should continue in order to expand its scope and increase its depth. The information thus obtained should be widely circulated and presented in forms that help Governments and industry to maximize the benefits accruing from using chemicals and minimize or prevent altogether their adverse effects. Chemical and non-chemical solutions to problems must now be adopted, solutions that lead to environmental and social sustainability.

4. Concern for the adverse impacts of chemicals on the global scale has led to some important developments in current thinking on chemical safety issues. Briefly stated, the first of these entails a greater appreciation of the interdependence of the issues involved. It has often been the case that, in attempting to correct one problem, another problem has been created. This is not only on the scientific-technical level, the new problems may also be on the socio-economic level. Thus, the call now is for holistic approaches in assessing chemical pollution problems on all ecological, geographical and socio-economic levels and cutting across all environmental media.

5. Second, more emphasis is now being placed on the quantification of cost-benefit analyses. This is still a new field of research in environmental economics and needs to address both the cost and the benefit of remedial actions, as well as the reverse side of the coin, savings and the damage resulting from inaction. Such quantitative data, if provided on a reliable basis, would be of great value in clarifying the issues involved and reaching optimum decisions, in both the short and the long term.

6. Third, as science and technology develop there will be new solutions, as well as new problems. There will always be a need to monitor carefully such developments and identify at an early stage the new potential of recent scientific advances in promoting a healthy environment, as well as the potential risks associated with such advances. Recent progress in genetic engineering may bring new chemical pollution problems, but may also open up new approaches to mitigating the impacts of chemical pollution.

Background

7. At its ninth session in 1981, the Governing Council of UNEP recognized that a list of selected environmentally dangerous chemical substances that are harmful at the global level should be prepared. The Council also specified that special attention should be paid to promoting public awareness of the possible environmental hazards of such chemicals, in order that measures could be adopted to prevent serious impacts. Such a list was prepared by UNEP and has been continuously updated with the assistance of expert groups and circulated among Governments, international organizations, industry and non-governmental organizations for action and comments. As the list evolved, certain harmful processes and phenomena involving chemicals were also included.

8. At its fourteenth session in 1987, the Governing Council requested the Executive Director to submit an updated report for consideration at its sixteenth session in 1991. An Expert Consultation, held in February 1990, recommended that specific chapters be compiled in relation to different themes

related to chemical pollution. This was duly done and a report containing short executive summaries on the detailed chapters including recommendations for action was submitted to the Governing Council by the Executive Director in 1991.[1]

9. By its decision 16/31 of 31 May 1991, the Governing Council requested the Executive Director to again refer the report on the list to Governments, relevant international organizations, industry and non-governmental organizations for further study and action, as appropriate, and to obtain their comments. The decision also requested the Executive Director to review the use made of the list and to submit the results to the Council in 1993, and to submit to the Council proposals for a possible update of the list in the light of the outcome of that review.

10. The longer, more detailed chapters on the themes of pollution due to industrial chemicals, air pollution, acidification, pollution due to agricultural activities, eutrophication, oil pollution and solid wastes disposal were published in July 1992 in a single monograph, *Chemical Pollution: A Global Overview*,[2] oriented more towards enhancing public awareness (see paragraph 16 below).

11. In accordance with decision 16/31, in February 1992 UNEP sent the report on the list with a questionnaire to Governments, international organizations, industry and non-governmental organizations with a view to obtaining their comments. Replies were received from 25 countries and 16 international organizations. The questionnaire included the following:

- Was the report on the list found to be interesting;
- Did a specific topic in the report raise awareness of a given problem related to chemical pollution;
- Was it circulated nationally (or to outposted offices of organizations);
- Did a specific topic in the report stimulate any scientific research;
- Did a specific topic lead to promulgation of any national legislation or establishment or enforcement of control measures;
- Should UNEP continue the updating procedure of the list;
- Were there any specific suggestions for improving the content and presentation of the list.

Review of the use made of the list

12. The International Register of Potentially Toxic Chemicals (IRPTC) convened an Expert Consultation from 18 to 22 January 1993 to review the use made of the list and to make recommendations for possible further work in light of that review. The experts considered in detail the comments made by the respondents, based on the above questions. The experts noted that, in general, respondents found the report on the list to be interesting and about one-half of the replies received contained specific comments. The overwhelming majority of replies indicated a wish to see UNEP continue this activity. However, the experts at the Consultation were concerned that there had not been a greater number of replies, and the opinion was expressed that this should be brought to the attention of the Governing Council.

13. The experts noted that several respondents had suggested that more factual detail be added to the document, e.g. measures taken by countries to implement the recommendations of previous editions of the list; percentages and projected levels of environmental pollution and deterioration by country and region; the cost factor of pollution; the need to have cost-benefit analyses for different countries. While there was a request to address the issue of technology transfer, it was also suggested that the question of polluting industries being established in developing countries be examined, as well as the transport of chemicals through transit countries. The importance of providing positive examples of successful implementation and problem solving, as well as promotion of education programmes on the issues of concern was also underlined. A particular point was made of the necessity to take into account the entire life cycle of a chemical when analysing problems and searching for solutions, including reuse/recycling and waste management. Furthermore, measures for risk reduction and phasing out of chemicals should be considered. In addition, there was a need to address the interconnection of the issues raised; life cycle, integrated pollution prevention and control approaches should be studied together to avoid limiting the scope of problems and recommendations.

14. The experts at the Consultation also studied other ongoing international activities and developments of relevance for the updating of the list. These included the implementation of pertinent parts of Agenda 21, in particular Programme Area D of Chapter 19 on risk reduction (see also paragraphs 17 and 18 below); the Risk Reduction programme of the Organisation for Economic Cooperation and Development (OECD), whereby member countries are undertaking concerted activities to reduce the risks of selected chemicals, taking into account their entire life cycles; the Chemical Time Bombs Project, a concrete issue with a European dimension to address the problems associated with accumulations of toxic materials in soils, ground waters and sediments; and environmental indicators, used to measure the status of and trends in the major components of the physical and biological environment at the national, regional and global levels in terms of impact on human well-being and natural systems.

15. The experts considered that the work of UNEP in general and of IRPTC in particular, in close cooperation with other United Nations and intergovernmental organizations, as well as Governments and NGO's, has contributed over the years to encouraging developments leading to improved chemical safety. In the meantime, the concept of the UNEP list of selected environmentally harmful chemical substances, processes and phenomena of global significance has been changing, almost imperceptibly. From being originally a "list" of dangerous chemicals, it moved on to consider the "processes" involved in the production, use and disposal of chemicals. It moved further, by the very logic of its purpose, to consider the phenomena involved throughout those processes, in recognition of the need for an integrated approach in dealing with impacts and remedies.

16. The last revision of the UNEP list (see UNEP/GC.16/20) contained executive summaries of the chapters on seven major processes and phenomena concerning chemical pollution. The complete results were then combined into the monograph *Chemical Pollution: A Global Overview*, giving the scientific background for each issue. This monograph reflects the need for a holistic approach to the problem, rather than the original idea of listing hazardous chemicals and their properties and impacts, and gives a clear assessment of the risks that chemicals present at the global level, as presently understood by the scientific community.

17. The implementation of Agenda 21, in particular Chapter 19 on the "Environmentally Sound Management of Toxic Chemicals including Prevention of Illegal International Traffic in Toxic and Dangerous Products" and the references to aspects of chemical pollution in its other Chapters, also requires a broader approach to the assessment of chemical risks than that embodied in the original UNEP list. Moreover, hazardous chemicals, including hazardous wastes, are among the concentration areas set down by the Governing Council in its decision 15/1, section IV of 25 May 1989.

18. At the expert Consultation, it was concluded that it would seem appropriate to build on the experience accumulated in the preparation of the UNEP list and to broaden its mandate, in response to Agenda 21, to become the mechanism for the preparation of assessments of chemicals, including hazardous chemicals, the global risks they represent to humans and the environment, and the possible means of managing those risks, including early warning, where possible, of problems which may be caused by those chemicals. Any assessments should also support the community's right to know and include the improvement of databases for holding scientific data, including emission inventories.

Recommendations

19. Based on the Governing Council's initial specification that in preparing the UNEP list, special attention should be paid to the promotion of public awareness of the possible environmental hazards of chemicals, in order that measures could be adopted to prevent serious impacts, the current approach for its preparation should be further expanded. The list should henceforth be replaced by an assessment of chemical issues that are critical at the global level.

20. The monograph *Chemical Pollution: A Global Overview* should be reviewed and updated every four years by appropriate expert groups and should be widely disseminated by UNEP. In addition, due consideration should be given to the production of simplified publications along the lines of the UNEP/Global Environment Monitoring System (GEMS), Environment Library series, addressed to the general public and media.

21. Over intervening two-year periods, UNEP could prepare and publish short reports on emerging concepts and approaches for the further improvement of chemical safety, for example, on life cycle management of chemicals; risk reduction for specific chemicals, including the use of currently available clean technology; and methods to prevent accidental discharges of hazardous chemicals. The reports could also include new issues and themes for future assessment, such as biogeochemical cycles of pollutants, interdependence of pollution problems at the global level, environmental advantages and disadvantages of biotechnology, and biological and environmental indicators of chemical pollution.

22. A summary of major issues related to chemicals emanating from the above assessment work could be incorporated into the newly proposed Executive Director's Statement on the Environment (UNEP/GC.17/Inf.11), as appropriate.

23. Each of the above documents and reports should include action-oriented elements addressed to decision makers at the national level, as well as guidelines suitable for the participation of industry, NGOs and the general public.

24. Continuing work should be integrated within the Earthwatch process and could be carried out under the responsibility of IRPTC, in cooperation with the appropriate parts of the United Nations system, Governments and research organizations. The results obtained should then be combined with development information for use in formulating strategies for sustainable development.

Notes

[1] UNEP/GC.16/20.

[2] Chemical Pollution: A Global Overview. A joint publication of the International Register of Potentially Toxic Chemicals and the GEMS Monitoring and Assessment Research Centre, produced within the Framework of the Earthwatch process of the United Nations system UNEP, Geneva 1992.