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WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT

THIRD MEETING
Oslo, 21-28 June 1985

WCED/85/16

Item 6.1 of the Provisional Agenda

ACID RAIN

Note by the Secretary General

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1. The Commission will commence its consideration of the energy-related environment and development issues in Oslo, beginning with the critical question of acid rain. To that end, Commissioners have received a background paper on acid rain prepared by Dr Ian Torrens. The paper focusses naturally on the situation in Europe and North America: that is where the issue has evolved, where the evidence is, where it has climbed to the top of the political agenda. Balanced, the paper includes a brief review of the findings of all of the major recent reports on the key scientific and policy questions. Comprehensive, it sets out much of what we know about acid rain sources and effects, policy concerns, technologies, economics, control and prevention strategies.

2. But evidence underlying the urgent need for action on the sources of acid rain is mounting with a rapidity that exceeds the capacity of scientists and governments to assess it. Some recent evidence is particularly disquieting. It concerns forest die-back stemming from direct conifer-needle damage and soil acidification which accumulates over time and, beyond a certain point, causes the insoluble aluminium present in the soil to pass into solution. In this form it is highly toxic to plants and may render the soil incapable of supporting tree growth.

3. If this is true, we may be witnessing in Europe an immense, regional acid-base chemical titration with potentially disastrous results being signalled by widespread tree damage and death, in effect, a kind of "environmental litmus paper", indicating a change to irreversible acidification whose remedial costs are beyond economic reach. Comparatively speaking, forest death on a regional scale would be socially and economically trivial compared to such consequences as erosion, siltation, flooding of farmlands and towns and local climatic change.

4. There was little evidence of tree damage in Europe in 1970. In 1983, FRG reported clearly visible damage to 34 percent of its trees; in 1984, to 50 percent. Have European soils reached a trip-over point? What is the evidence?

5. Professor Gordon Goodman, our Special Adviser on Energy, has been following this from his special vantage point at the Beijer Institute. I have asked him to prepare a paper on this evidence and its possible consequences, and to be present in Oslo, along with Ian Torrens, to discuss the entire issue with you. 1).

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1) The Commission will also be receiving paper(s) on acid rain during the Public Hearing in Oslo.

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6. Acid rain is becoming a serious concern in other regions, but in the absence of monitoring and assessment programmes, very little hard evidence is available. We have requested papers on China, Japan and tropical countries, and the results will be available to the Commission in due course, probably via the Energy Panel.

7. The Commission will wish to consider acid rain from the perspective of the year 2000 and beyond, focussing on strategic options now available to Europe and North America to reduce or adjust to the high-cost scenario now evolving and the options available to other regions to prevent a repeat of this scenario. It will also want to consider acid rain in the context of other fossil-fuel related issues, especially air pollution and climatic change induced by rising levels of CO_2.[2] Strategies for the one re-inforce strategies for the other.

8. Moreover, during the course of its work, the Commission will want to examine all of these issues, beginning with acid rain, from a source rather than an effects perspective. Here the papers by Goodman and Torrens provide an excellent point of departure, with a number of options set out clearly. For purpose of easy reference, I would set out the options contained in their papers as follows:

1) Reduce Future Emissions

- strengthen energy efficiency measures;
- use lower sulphur fuels and fuel cleaning;
- promote renewable energy sources;
- extend post-combustion cleaning of exhaust gases.

2) Strengthen Institutional Links and Co-operation

- develop maps of areas environmentally sensitive to acid deposition;
- establish national acidification units including representatives of all agencies concerned;
- include representatives of energy agencies/industries in environmental planning, assessment, implementation and monitoring bodies; and vice versa;

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2) We have requested papers to bring together the evidence on air pollution in South East Asia, India, Latin America, FRG, Japan and USA. We have also requested a major paper on Climatic Change: the Strategic Options to follow this autumn's meeting of the International Co-ordinating Committee on CO_2. In the meantime, the Commission will receive at least one major brief on Climatic Change at the Public Hearing in Oslo.

  - ditto for boards responsible for policy concerning energy, R & D and investment projects;
- joint initiatives to promote energy efficiency.

3) Strengthen Economic Incentives and Dis-incentives

- integrate environmental costs in energy prices; and consider
- incentives (tax credits, grants, etc) for environmentally favourable energy investments;
- emission goals, licences and flexible trading in licences;
- deposits by potential polluters, (refundable upon proof of acceptable behaviour);
- effluent charges;
- inflation-proof fines for non-compliance.

4) Improve Regulatory Measures

- new source standards; e.g.
  - ambient quality standards;
  - Europe-wide emission standards;
  - fuel efficient product design and input standards;

- old source standards;
- zoning and licensing of polluting activities, including provision for emission goals, abatement deposits, flexible trading, etc.

5) Improve the Information Base for Management

- strengthen emission-transport-deposition monitoring in Europe and North America;
- extend such monitoring urgently to newly industrializing countries and tropical regions;
- identify soil/forest/water sensitive areas, especially in the newly industrializing countries and tropical regions;
- increase economic evaluation of present and future damage costs.

6) Strengthen International Co-operation

- strengthen institutional linkages on regional basis (see above);
- establish preventive co-operation programmes in critical newly industrializing and tropical regions;
- undertake urgent programmes to increase the information base (see above), with the support of multilateral and bilateral assistance agencies;
- provide advisory services on preventive policies.

NOTE TO WCED/85/16

For 'Acidification of the Environment, A Policy Ideas Paper' by Prof. Gordon Goodman, see WCED Collection, Volume 2, Paper no. 17