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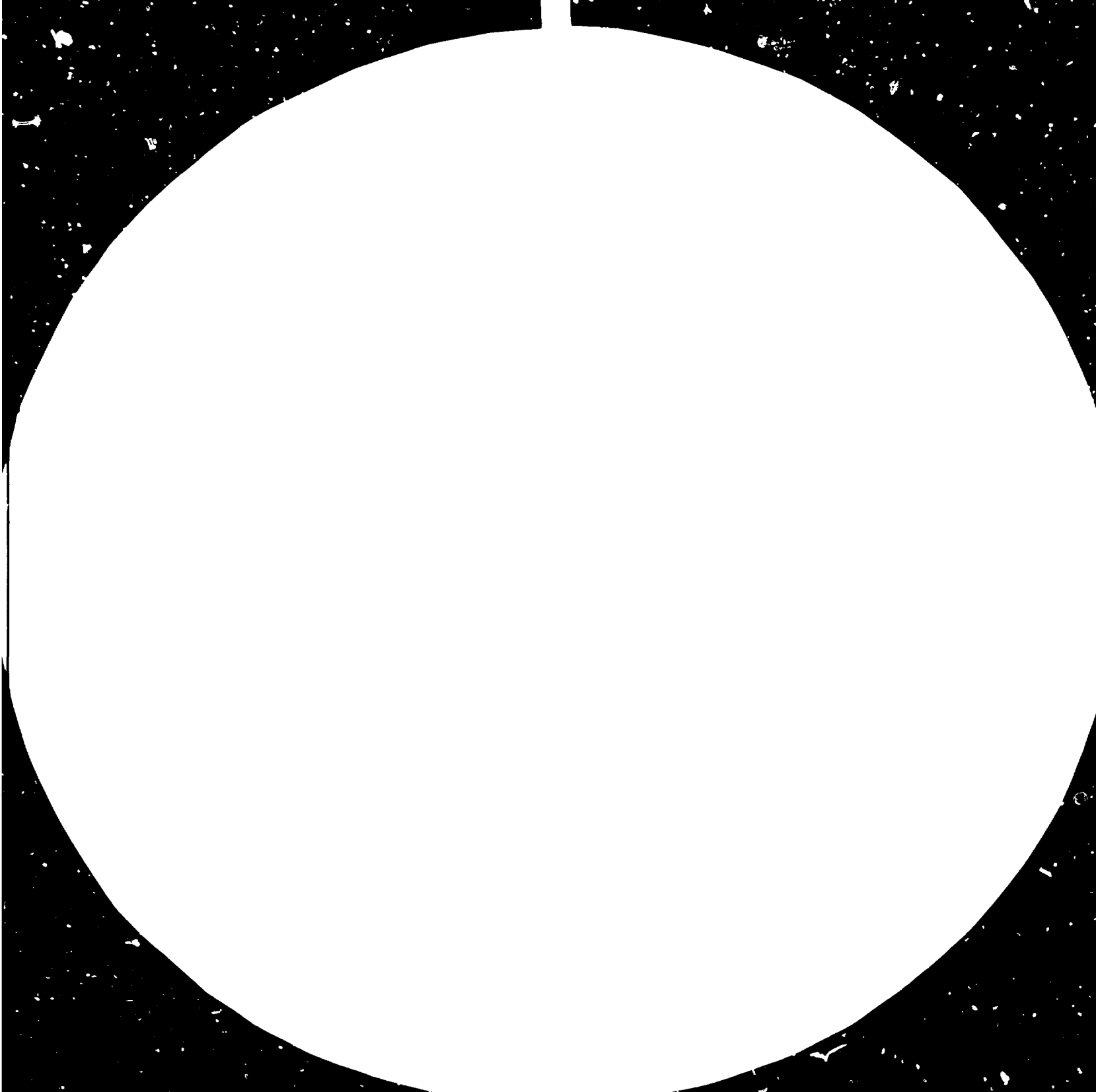
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INDUSTRY AND ENVIRONMENT*

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INTRODUCTION

1. It has been generally recognized that certain industrial branches cause pollution adversely affecting the air, the water, the land, and/or the natural resource base. UNIDO and UNEP seek to enhance industrialization but without destroying the environment. To ensure a healthy and sustainable industrial development, environmental factors, both physical and social, need to be integrated into industrialization strategies and plans.

Problems which must be addressed

2. Industrialized countries have gained considerable experience in environmental measures and have practically the monopoly on newest technologies to reduce pollution for environmental control, recycling and for improvement of the environment. For example, new low and non-waste technologies are being developed which result in reduced negative environmental impacts, resource conservation and a better working environment. These technologies, however often require an enhanced level of operational skills.

3. Low and non-waste technologies are employed mostly in newer plants. Even if sometimes they are costly, efforts must continue at existing facilities with conventional processes to install cost-effective pollution control technologies. Well-designed lagoons can often satisfactorily treat non-toxic wastes, for example. Economic incentives may be necessary where environmental objectives require retrofitting and upgrading of existing industrial installations. The most urgent and cost-effective actions should be taken first. Environmental protection measures applicable to the smaller industrial activities require further development.

4. Industrial process design, proper operation and maintenance of production processes and pollution control equipment, and monitoring of environmental parameters, are necessary to ensure the effectiveness of environmental protection. However, plants and equipment as well as products causing environmental damage continue to be exported to the third world. The developing countries need to consider policies for resolving these problems. This calls for increased information to industrial managers and decision-makers in Governments, as well as specialized environmental training of technical and management personnel. Education of the public concerning product use may also be required.

5. Most countries are facing serious difficulties of capital formation in their industrial development, both for meeting requirements of shares, intermediate products as well as for new industry and in modernization of old industry. Methods to assess the economic and social costs and benefits of various technology options, such as low and non-waste technologies, should be made available to governments and industry.

6. The conversion of raw materials and resources into industrial products is never total and residues are formed, such as the large quantities of phosphogypsum produced concomitantly with phosphoric acid during fertilizer manufacture. If the residues are not utilized they will be wastes, and, if discharged into the biosphere, will be pollutants. Management should seek to improve the efficiency of industrial processes while minimizing their environmental effects. Processes have been found, for example, which improve the quality of the phosphogypsum enabling its utilization as a high quality building material and an additive to cement. Investors are advised to "shop around", to find solutions which are both technologically and environmentally sound.

7. Industrial managers should analyze environmental safety and energy aspects of all major industrial activities. The results should be translated all the way to the shop floor. Energy savings, improvements in safety and reduction of material wastes are criteria for judging the effectiveness of environmental management at the enterprise level.

8. A considerable amount of information is already available on the development of criteria for incorporating environmental factors into relevant activities; however, it mostly relates to the temperate zones of the world. There is a need to develop information systems relevant to the other zones, for example, the wet and arid tropics regions, and to include data that are currently lacking on the socio-economic costs and benefits of environmental protection. This lack of data hinders the development of better policies by Governments and industry.

9. In summary, practical environmental protection measures for industrial planning, siting and operations, are needed. These measures must consider energy and resources, technological developments and impacts on public and private expenditure. An improved environmental data base related to industry activities will help assess local environmental problems and aid the implementation of effective solutions. Training and education can improve awareness at governmental and industrial levels of environmental issues related to industry and environment and management. These are also politically effective measures, which are favourably received by populations that are more and more sensitive to environmental concerns.

Legislative authority

10. The legislative authority in matters of industry and environment derives from Stockholm Action Plan recommendations 4(C) (VII), 20(B) (IV), 22, 24, 48, 4 (B), 56, 71, 76(C), 85(C) (D), 86(A) (B) (C), 92 and 106. UNEP Governing Council decision 1(I), section III; 8 A(II); 57(IV); 87(V); 7/3, 8/6, section IV and 9/10 A have provided guidance for the development of the current programme on industry and environment. Legislative authority for UNIDO activities derives from the Lima Declaration and Plan of Action, in particular paragraph 39, which was endorsed by the General Assembly in resolution 3362 (S-VII); and the New Delhi Declaration and Plan of Action, in particular paragraphs 53, 137, 140, 187 and 245.

Objectives

11. As mentioned earlier, a general objective shared by UNIDO and UNEP is to provide guidance to Governments and international organizations on environmental aspects of industrial goods and practices so as to help minimize adverse environmental impacts and improve conservation of natural resources.

12. Specific objectives within the present medium-term planning are:

(a) Compilation, analysis and dissemination of relevant information on environmental implications of industrial practices and processes and the supply and use of industrial goods and services;

(b) Guidance on environmental management of industrial activities;

(c) Promotion of technical assistance to Governments on the incorporation of environmental factors into industrial practices and development;

(d) Promotion of environmental training of selected groups of industrial and Government personnel;

(e) Promotion of better understanding and co-operation concerning industry and the environment among Governments, industry, labour and where appropriate, academia and local Government, so as to further environmentally sound industrial development.

The situation in 1984

13. UNEP established an on-going consultative process among Governments, industry and international institutions, including workers' and employers' organizations. The initial review of the environmental and resource aspects of the industrial sectors originally selected by the UNEP Governing Council has been completed, and the principal environmental issues identified. Environmental management guidelines and technical manuals, summarizing current experience and generally accepted good environmental management practices and principles are available for a number of industrial sectors including agricultural and agro-industrial residue utilization and post-harvest food losses, the pulp and paper, aluminium, iron and steel, petroleum and chemical industries, sugar industries, and the motor vehicle and its use.

14. The UNEP computerized industrial environmental information system, working in close contact with UNIDO's INTIB, is operational. Topic files have been developed in relation to industrial activities reviewed (including motor vehicle use) with regard to pollution abatement and control technologies. Some discharge standards, ambient quality standards, and environmental technology costs are available.

15. Fifteen regional training and awareness workshops have been held in relation to the UNEP Guidelines for Assessing Industrial Environmental Impact and Environmental Criteria for the Siting of Industry, Pulp and Paper Manual, Guidelines on Agricultural and Agro-Industrial Residue Utilization, and Environmental Guidelines for the Motor Vehicle and its Use. Twenty-eight issues of the quarterly newsletter Industry and Environment have been published, with a global mailing list of twelve thousand persons closely involved in industry and environment activities.

16. UNIDO's environmental work has included studies within the following sectors: agro-industries, cement industry*, dyeing and finishing industry, edible oil industry, fertilizer industry, iron and steel industry*, metallurgical industry, non-metallic minerals, organic and inorganic chemical plants, petrochemical industry, pharmaceutical industry, pulp and paper industry, rubber industry*, stone industry, sugar industry*, tanning industry*, and several UNIDO training programmes have also included environmental elements*. Additionally, UNIDO environmental technical assistance has been carried out in Bolivia, Brazil, Cyprus, Democratic Yemen, Ghana, India, Indonesia, Iran, Israel, Kuwait, Morocco, Sierra Leone, Thailand, Turkey, Yugoslavia. Assessments of coastal industrial pollution have been carried out in more than 30 countries on the east and west coasts of Africa, and the Mediterranean sea under the aegis of the UNEP Regional Seas Programme. An overview of energy and the environment was carried out for more than 30 countries in the wider Caribbean areas*. UNIDO studies which have included environmental aspects have been on aridification, biogas production, compost production, environmental impact assessment of coastal area development*, environmental management in industry, fuel and fertilizer from organic wastes, information systems, integrated industrial complexes*, social cost-benefit analysis, methodologies for feasibility studies and industrial emergency contingency planning*.

Medium term strategy

17. During the planning period 1984-1989, UNEP will concentrate on the following activities:

(a) Preparation of environmental management guidelines, as well as supporting manuals, technical reviews and overviews, for specific industrial sectors including agro-industries, chemicals, metallurgy, building materials, construction, textiles and clothing, mining and mineral extraction (co-operation with DTCD, regional commissions, UNCHS, UNIDO, ILO, FAO, WHO as appropriate);

(b) Maintenance of the consultative process involving Governments, industry, employers and workers, and where appropriate, broadening it to include academia and local Government (agencies, industrial non-governmental organizations, International Workers' Federation);

* In the sectors marked by an asterisk, certain studies have been carried out in co-operation with UNEP.

(c) Expansion and establishment of networks of environmental practitioners and managers for specific sectors, including pulp and paper, industrial environmental impact assessment and agro-industry;

(d) Promotion of environmental training and assistance in relation to industrial developments in co-operation with other agencies (for example, ILO, WHO, UNIDO and FAO).

(e) Expansion of the industry and environment information system to cover the sectors listed above, updating of information in relation to existing sectors and support for training and assistance activities (with expected co-operation of UNESCO, UNIDO, WHO, ILO, FAO, among others).

18. UNIDO plans to continue to introduce environmental aspects into studies of industrial sectors, and to carry out specific environmental studies and studies on industrial water use and treatment practices. UNIDO will continue to co-operate with the UNEP Regional Seas Programme in areas such as regional industrial pollution assessment and industrial emergency contingency planning. UNIDO will assist countries through environmental technical assistance such as development of national industrial pollution control centres and maintenance of pollution control equipment. It will continue to work on industrialization of residue utilization in production of biogas, alcohol and compost.

Management

World Industry Conference on Environmental Management

19. A World Industry Conference on Environmental Management will be convened at Versailles, France, from 14 to 16 November 1984. The Conference is sponsored by industry and UNEP in co-operation with the International Chamber of Commerce (ICC). The Conference budget is being met by contributions from industry, with UNEP providing seed money. The French Government will be hosting the Conference.

20. The Conference will:

(a) Promote dialogue among industry, governments, international organizations and other concerned groups on the concerns and needs of the development process with special emphasis on environmental and natural resource aspects;

(b) Provide a forum for sharing information on the state of the art problems and priorities in industrial pollution control and recycling of residues;

(c) Examine different incentives, regulatory systems and standards as applied to industry;

(d) Provide a problem-solving forum where industry and government can discuss more effective environmental strategies;

(e) Consider mechanisms for industry-government co-operation in support of sustainable development, including institutional, financial and technical procedures, and information systems.

21. The Conference agenda will focus on the past experiences of industry, explore opportunities and constraints and assess the possibilities for more effective environmental management in the future. Three hundred leaders are being invited to exchange ideas in the first global meeting of this character bringing together representatives from Governments, industry, academia, labour, intergovernmental and non-governmental organizations.

Conclusion

22. The International Development Strategy contains environmental goals and objectives which remain adequate and valid for the Third United Nations Development Decade. Funding at an adequate level to match the evolving environmental needs of the international community is necessary to realize the potential of international action to promote environmentally sound industrial development. UNIDO and UNEP have mutual interests, and a practical determination to work together to promote economically viable methods of industrial development which can maintain and improve the global environment.

