OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.

DISCLAIMER

FAIR USE POLICY

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

17555

Distr.
LIMITED

I0.30(SPEC.)
12 May 1989

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

ORIGINAL: ENGLISH

ACHIEVING SUSTAINABLE DEVELOPMENT: UNIDO PROGRAMME ON THE ENVIRONMENT*

Prepared by

Section for Integrated Industrial Projects
Department of Industrial Operations

* Based on a paper prepared by the UNIDO Secretariat for submission to the General Assembly of the United Nations at its forty-fourth session.

V.89-55855

1/13

CONTENTS

Introduction

1. The General Assembly of the United Nations at its forty-second session studied the report of the World Commission on Environment and Development (A/42/427, annex), devoting particular attention to the problems of the environment and sustainable development. The Assembly adopted resolutions 42/186 and 42/187 calling for action in this regard by organizations in the United Nations system.

2. The General Conference of the United Nations Industrial Development Organization (UNIDO) also, at its second session in November 1987, by its decision GC.2/Dec.11, welcomed the report of the World Commission, and called attention to its conclusions and recommendations as they related to the work of UNIDO. The General Conference requested the Director-General to report to the Industrial Development Board on those aspects of the policies, programmes, budget and activities of UNIDO aimed at contributing to sustainable development.

3. Pursuant to resolutions 42/186 and 42/187 and decision GC.2/Dec.11, the Director-General of UNIDO submitted to the Industrial Development Board at its fourth session a report on UNIDO contributions to environmental and industrial development. Subsequently, the Board adopted decision IDB.4/Dec.19 in which, *inter alia*, it requested the Director-General, in accordance with Assembly resolutions 42/186 and 42/187, to prepare a report to be submitted to the Assembly at its forty-fourth session.

4. One of the criteria for sustainable development is that the needs of the present generation should be met without compromising the ability of future generations to meet theirs. Other criteria involve protection of human health and survival of species. The focal points of sustainable development in this paper are the wise use of resources, prudent management of the environment and rehabilitation of degraded environments. Within the context of the work of UNIDO, technical co-operation activities take into consideration the need for an integrated approach to ensure that industrial development is sustainable. This approach not only integrates the selection and application of appropriate technology and training of both managerial and technical personnel, but also takes into consideration the impact of social, environmental, energy and safety measures on development.

A. Historical background within UNIDO

5. Although a paper on the environment was published by UNIDO in 1969, the first real work towards achieving sustainable development began with the publication of a report on "Industrial development and the environment" (UNIDO/ITD.81) prepared for the Conference on the Human Environment, held at Stockholm in 1972. Following the establishment of the United Nations Environment Programme (UNEP), a number of co-operative studies were carried out with UNEP in the field in 1973 and 1974, of which the reports were published. This early work was carried out with limited financial and personal resources. In the Mar del Plata Action Plan, 1/ UNIDO was requested to extend its activities into the field of industrial water use and treatment practices, which resulted in a discussion by the Industrial Development Board in 1981, during which suggestions were made regarding water management for industrial use. The heightened awareness of Governments of the importance of this and other environmental work, as well as their willingness to increase resources to carry out such work, is reflected in the action by the Assembly and the Board. The recent attention by the Assembly and the Board gives focus to the work of UNIDO towards achieving sustainable development, and will allow it to continue in a more systematic and co-ordinated way.

6. UNIDO has co-operated with UNEP since its founding. At the policy level, UNIDO has participated in the preparation of each of the United Nations system-wide medium-term environment programmes that have been prepared by UNEP. In the programme for 1990-1995, in the sections dealing with the working environment and industry, UNIDO is called upon several times to carry out implementation of the strategy of sustainable development in industry by specific activities. At the working level, UNIDO has co-operated with the Industry and Environment Office of UNEP in numerous joint activities.

7. Recently, both UNEP and UNIDO renewed their commitment to developing environmental projects. The parameters of a new programme of joint activities were agreed upon in January 1989, and priority will be given to the following areas:

(a) Integration of environmental consideration into industrial planning and development in developing countries;

(b) Hazardous waste management;

(c) Low-cost and environmentally sound technology for recycling and treatment of industrial effluents (solid and liquid) with particular attention to small and medium-sized industries;

(d) Application of emerging biotechnologies.

8. Besides co-operating with UNEP, UNIDO has also participated in the work towards achieving sustainable development carried out by other United Nations bodies. For example, that of the Intersecretariat Group for Water of the Administrative Committee on Co-ordination, which co-ordinates activities dealing with water and publicizes work carried out on water and water resources by the field offices of the United Nations system. With the encouragement of this Group, UNIDO produced *Industrial Water Use and Treatment Practices.* 2/ In the equally important field of hazardous waste disposal, another book, *Hazardous Waste Management,* 3/ has been published jointly by UNIDO and the International Association for Clean Technology. The book includes selected papers presented at an international expert workshop convened by UNIDO in 1987. UNIDO has also co-operated in system-wide environmental matters by active participation in meetings of the Designated Officials on Environmental Matters and, within UNIDO itself, by the establishment of the Task Force on Industrial Safety and Environmental Matters, which, as part of its work, oversees integration of an environmental element into all its projects.

9. Environmental studies issued recently by UNIDO include the "Environmental assessment and management of the fish-processing industry", Sectoral Studies Series No. 28 (PPD.15), and the "Environmental assessment and management in the production of six non-ferrous metals", Sectoral Studies Series No. 30 (PPD.26), both of which have contributed to the work of the UNIDO System of Consultations. Work that was begun many years ago on the pharmaceutical industry continued with the study on "The solvent recovery and disposal of unremovable solvents used in the pharmaceutical industry" (UNIDO/IS.646). In the area of industrial emergency contingency planning two studies were published: the first was entitled "The industrial emergency game" (PPD.78(SPEC.)), which game was played for the first time in a developing country in the second half of 1988. A more technical study was on "Major accident prevention or mitigation in the chemical industry" (IO.22(SPEC.)).

10. UNIDO is now being called upon to systematically integrate environmental components into technical co-operation projects. To prepare for an analysis of possible adverse environmental effects by industrial development, a study entitled "First guide for UNIDO officers in evaluating the environmental impact of industrial projects" (PPD.76(SPEC.)) has been prepared.

B. Type of projects for sustainable development

11. Virtually every UNIDO project could contribute to environmental protection, thereby facilitating a shift to a policy of sustainable development. Examples of such projects include training workshops dealing with all aspects of effluent treatment; environmental sampling and good industrial environmental practice; technical co-operation dealing with recycling, waste treatment and cleaner technology; waste utilization; process modification in existing plants to reduce pollution; and reduction of the volume of wastes, utilization of by-products and reduction of toxicity of effluents, including effluent treatment as part of the design process of new plants. High on the list of priorities for UNIDO is the development of an environmental data base containing environmental technologies and exhaustive means of integrating computerized environmental planning. This would systematize the application of guidelines that screen UNIDO technical co-operation projects for possible adverse environmental effects. At present, in the absence of such a data base, new projects in the pipeline nevertheless include emission standards, pollution control in industries, resource recovery, recycling, and the management of hazardous processes and waste.

12. In the energy field, environmental awareness has two main themes: conservation of energy and utilization of renewable energy. The latter category can be subdivided into wind energy; utilization of solar energy by either direct or indirect means; utilization of hand- or foot-powered pumps; and the use of hydro-electric power, either on a medium scale or by the construction of mini-hydro plants.

C. UNIDO technical co-operation projects

1. Environmental projects in 1988

13. In 1988, UNIDO had 51 approved or operational technical co-operation projects totalling approximately $US 12.5 million that dealt entirely or in part with the environment and industrial development. Those projects encompassed air- and water-pollution control, solid-waste reduction and utilization and reduction of industrial hazards. The projects varied widely, including forest products and other agro-industries, metallurgical industries, engineering industries, chemical industries, feasibility studies, economic co-operation among developing countries and meetings within the System of Consultations.

14. Of the above-mentioned projects, approximately half were concerned exclusively with environmental protection; of the other half, environmental protection was an important component. Of the 51 projects, one-third were large-scale projects, that is, with a total allotment each of approximately $US 150,000. Three of these had a total minimum allotment each of $US 1 million of technical co-operation.

2. Conservation and renewable energy projects in 1988

15. During 1988, UNIDO carried out 59 energy projects, totalling nearly $US 19 million, that were related to sustainable development. Those projects dealt with such areas as the conservation of energy in industry and the use of renewable resources of energy such as wind energy, solar energy and various hydro-electric projects. Twenty-one of those projects were large-scale; of these, 7 were in excess of $US 1 million.

3. Environmental projects in the pipeline

16. In order to view environmental trends in technical co-operation, information on projects in the pipeline has been analysed. By early 1989, 84 projects totalling almost $US 44 million had in some way to do with environmental protection in industry. These covered air-pollution control, water-pollution control, solid-waste control, waste utilization, hazardous-waste management, and various aspects of industrial safety and emergency contingency planning. The analysis of the pipeline projects shows that the base of environmental projects within UNIDO is expanding. The trend is also towards more large-scale projects. Of the 84 projects in the pipeline, 39 are large-scale; of these, 13 are in excess of $US 1 million.

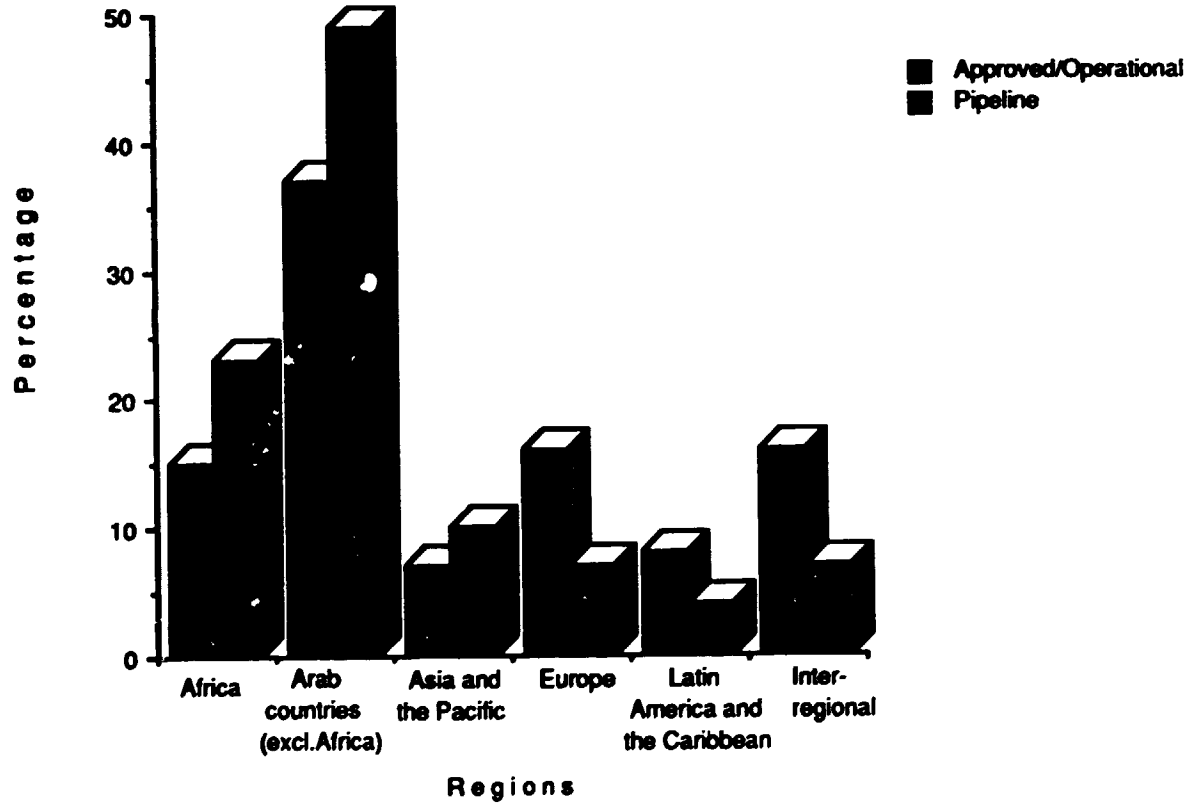
4. Conservation and renewable energy projects in the pipeline

17. By early 1989, UNIDO had in the pipeline 60 sustainable development projects in the field of energy, totalling approximately $US 27 million. These ranged from the development of small-scale hydro-power units, to the development of geothermal sources of energy, to improving efficiency in the use of energy in industry. Of the 60 projects, 24 are large-scale; of these, 6 are in excess of $US 1 million .

5. Geographical distribution of projects

18. A breakdown of the energy and the environmental projects, both operational and in the pipeline, is given in the figure below.

Breakdown of sustainable development projects by region at 19 January 1989



19. As shown in the figure, Asia and the Pacific Region has by far the largest share of operational projects and pipeline projects. Africa, although lagging behind in operational projects, has a greater percentage of projects in the pipeline than any region other than Asia. The most notable decrease from operational to pipeline projects occurs in Europe. The region with the most countries, Latin America and the Caribbean, is also the region with the lowest percentage of operational projects. This position improves somewhat in the case of pipeline projects.

20. Eight per cent of all on-going technical co-operation projects were found to be directly aimed at sustainable development. On the basis of the total amount of technical assistance, the figure is approximately $US 31.5 million.* When projects in the pipeline were considered, the percentage of projects rose to approximately 13. On the basis of total dollars in the pipeline, the figure is approximately $US 71 million. UNIDO believes that the increase in projects directly involved in sustainable development represents a trend that will continue.

D. Future strategies for UNIDO

21. The UNIDO programme has hitherto focused on technology applications for pollution-control activities, transfer of clean and low-cost technologies, plant and environment safety, and research and development. Now, an expanded programme is being planned. The initiative with UNEP is only the first part of a larger environmental programme, in which UNIDO will co-operate with other organizations in the United Nations system, as well as with governmental and non-governmental organizations and research institutes.

22. UNIDO is being called upon to ensure that the capacity of developing countries to design and implement industrial operations on environmentally sound lines will be strengthened. To this end, a number of strategies are in the process of implementation including development of more effective information networks on the environmental and health implications of industrial processes, products and wastes; promotion of risk management technologies; planning and environmental impact assessment operations; and development of a specialized data base to facilitate the eventual application of environmental criteria uniformly to all UNIDO activities. Also included are the areas mentioned in paragraph 7 above, pertaining to co-operation with UNEP.

23. In short, a broad range of environmental activities are to be integrated into UNIDO operations at all levels; many of these are catalogued in document IDB.4/16, August 1988, of the Industrial Development Board. By these means, UNIDO will assist the developing countries to establish their own capacity to assess the environmental and social impact of their industrial development programmes. At the global level, these activities should enable UNIDO to take action, together with other bodies of the United Nations system, in promoting international co-operation in such areas as environmental impact assessment, development of clean technologies and the environmentally safe production of energy.

24. Once the comprehensive programme on the environment is formulated incorporating the above focal areas, steps will be taken to ensure that all UNIDO staff are trained to weigh the technological alternatives and options for policy- and decision-making in order to create a greater environmental awareness and to incorporate environmental factors into future technical co-operation activities. Eventually, it is envisaged that a modified version of the programme will be transferred through specialized training activities to the Governments and institutions around the world who would most benefit from them, especially in developing countries.

Notes

1/ *Report of the United Nations Water Conference, Mar del Plata, 14-25 March 1977* (United Nations publication, Sales No. E.77.II.A.12), chap. I.

2/ Jack B. Carmichael and Kenneth M. Strzepek, *Industrial Water Use and Treatment Practices*, Water Resources Development Series, vol. 8 (Philadelphia, Pa, Cassell Tycooly, 1987).

3/ Natural Resources and the Environment Series, vol. 23, Sonia P. Maltezou, Asit K. Biswas and Hans Sutter, eds. (London, Tycooly, 1989).

---

*Since a technical assistance project is frequently operational for more than one calendar year, this figure is not calculable as a percentage of the total technical assistance delivered by UNIDO in 1988.