

The Environment: IAEA Co-operation with UNEP

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In recent years the International Atomic Energy Agency has intensified its programme relating to the protection of man and the environment. These activities are increasingly being carried out in co-operation with the United Nations Environment Programme (UNEP).

The two organizations share important common characteristics; each has a broad mandate crossing many lines of organized activity; and each has a predominant interest in matters of environmental protection. From the outset, it has been clear that the two bodies also share important areas of mutual interest, and both the Agency's statute and the UN Resolution creating UNEP provide the basis for close collaboration.

The General Assembly of the United Nations at its Plenary Session on 15 December 1972, in recognizing that the "relevant international scientific and other professional communities can make an important contribution to international co-operation in the field of the environment", decided that UNEP, among other functions and responsibilities, would be responsible "to provide general policy guidance for the direction and co-ordination of environmental programmes within the United Nations system". In order to carry out this mandate the Environment Fund was created to be used for financing a variety of programmes of general interest including regional and global monitoring, assessment and data collection systems and environmental research.

The Agency's statute makes provision for it to establish or adopt standards of safety for protection of health and minimization of danger to life and property and to provide for the application of these standards to its own operations or to operations at its request or under its control or supervision.

Above and beyond a strict interpretation of the statute, however, the Agency is concerned as well with any potentially harmful effects to the environment which might arise from any of the peaceful applications of nuclear energy including the development of nuclear power, research activities and the application of nuclear and isotope technology.

Before the formal UN Resolution which created UNEP, the Agency also took part in the well-publicized Stockholm Conference held in June 1972, and the Agency's role as then foreseen in relation to environmental matters was reflected in certain resolutions in the report of the Conference. These statements provided further guidance for the selection of specific areas of co-operation.

The areas of greatest common interest which have developed between the two organizations now include studies of the impact of energy production on the environment, of radioactive (and other) pollution of the seas, estimates of population dose which would be received under various conditions, and questions of long-term waste management and of

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fuel reprocessing. There is frequent contact between officials of both Secretariats, and each organization is kept fully apprised of the programme plans of the other in areas of mutual interest. Direct funding of selected Agency activities is provided by UNEP in a certain number of cases, the amount provided being generally supplementary in nature to augment the resources already committed by the Agency.

ASSISTANCE TO IAEA ACTIVITIES

Collaboration between UNEP and the Agency was initiated during 1974, at which time a continuing programme was organized with the Agency's Laboratory for Marine Radioactivity Studies in Monaco. UNEP funding was provided for a laboratory intercalibration programme and in 1975 studies were added on chlorinated hydrocarbons and laboratory determinations of selected radionuclides, trace elements and hydrocarbons present in samples of sea water taken from the Mediterranean. The work on intercalibration activities is scheduled to continue up to the end of 1977 and it is possible that there will be further collaboration in relation to open ocean measurements involving biogeochemical studies of selected pollutants.

The intercalibration project is part of a world-wide programme for the measurement of trace metals and halogenated hydrocarbons in marine samples, in which specific assistance is given to Mediterranean laboratories participating in the pilot projects on baseline studies and monitoring of heavy metals within the UNEP Mediterranean Action Plan. Activities in relation to open ocean measurements would have as objectives the development of new analytical techniques involving isotopes for the measurement of pollutants, the use of these techniques in the measurement of open-ocean concentration of inorganic and organo-mercurial compounds, low-molecular-weight halogenated hydrocarbons and the study of processes governing the transport of these entities, as well as polychlorinated biphenyls and DDT, to and within the Mediterranean Sea, as well as the study of the dynamics of selected trace metal and chlorinated hydrocarbons in marine organisms. Because of its established areas of competence, therefore, the Monaco Laboratory serves as one of the key components in UNEP's comprehensive Action Plan to identify actual or potential harmful environmental effects in the Mediterranean Basin and to stimulate remedial action where this is warranted.

Beginning in 1974 as well, UNEP assisted in the funding of certain of the Agency's activities in relation to studies on the effects of ionizing radiation on aquatic organisms and ecosystems. This collaboration has continued in 1975 and further activities are scheduled in 1977 in relation to the evaluation of releases into aquatic environments. The objective of these activities is to evaluate the radiological effects of the release of radionuclides into the aquatic environment. Another objective is to review and promote the development of techniques for the control of these effects and to make use wherever possible of any which may be of potential benefit. Finally, it is also intended to encourage studies of the ecological impact of nuclear facilities in order to develop estimates of the environmental capacity.

With UNEP funding, the IAEA's Laboratory for Marine Radioactivity Studies in Monaco has started studies on chlorinated hydrocarbons and laboratory determinations of selected radionuclides, trace elements and hydrocarbons present in samples of sea water taken from the Mediterranean. Photo: WHO



Collaboration was similarly initiated in 1974 on studies of potential radiation doses to the population resulting from the peaceful uses of nuclear energy, including the nuclear industry. Further co-operation through UNEP funding of IAEA activities in this area is under consideration. The two Secretariats have also collaborated to a limited extent on related studies of environmental surveillance programmes at the national, local and global level. The objectives of the planned studies on population dose, in which active collaboration with WHO is envisaged, are multifold. A review is planned of radiation doses to the population from natural radiation, as well as from peaceful uses of nuclear energy, including medical applications of radiation and radioisotopes. Also to be reviewed are current guidelines for the safety assessment of radioactive releases into the environment and for monitoring radiation exposure, as well as current practices and the use of exposure models. Current concepts of dose limits and population dose commitment will be reviewed as well in order to provide a basis for a comprehensive set of statements in relation to policies and practices now followed in protecting workers and the public against harmful effects of ionizing radiation. In carrying out such studies close contact is envisaged with UNSCEAR and other international organizations as appropriate in order to avoid duplication of effort.

Collaboration continues as well in relation to Agency studies being carried out on the long-term management of high-level and alpha-bearing wastes. UNEP participates in the funding of certain of these activities and is kept fully informed on progress. Current arrangements have been made to the end of 1976. The major objectives of these activities are to expand international co-operation in the long-term management of high-level and alpha-bearing wastes, including processing, transportation, interim and long-term storage and disposal. This implies the evaluation of alternative policies, technologies and procedures and the study and evaluation of new and innovative concepts.

A significant area of co-operation has been in relation to a UNEP review of the impact of production and use of energy in the environment, for which the Agency has collaborated in the preparation of the chapter on nuclear energy, and which was presented to the Fourth Session of UNEP's Governing Council in April 1976. This chapter covered the entire nuclear fuel cycle, through the stages of mining and milling, enrichment and fuel fabrication, reactor operation, fuel reprocessing, waste management, and transport, as well as the concept of nuclear safeguards and environmental protection. It thus forms part of an important condensed review of the present state of knowledge of the impact of alternative energy technologies on the environment, pointing up areas where further efforts would be desirable.

Mention should also be made of a study proposed by the International Institute for Applied Systems Analysis (IIASA) in collaboration with the IAEA and WHO which UNEP has been asked to fund and the general objective of which is to develop a methodology for the comparison of energy options. In brief, the study would provide a means of comparing the impact of alternative energy technologies on the environment.

The most recent area in which UNEP and the Agency are co-operating is in relation to an Agency study of the desirability of the development of regional centres for the nuclear fuel cycle, for which UNEP has agreed to share a portion of the cost. The primary objectives of this project are to evaluate the soundness of the concept of regional fuel centres on the basis of nuclear power growth projections, taking into consideration the complex of technological, economic, institutional, and environmental problems involved.

A STRONG BASIS FOR CONTINUING COLLABORATION

Future collaboration between the two organizations will doubtless continue to build upon the lines already established, though new possibilities continue to be explored. One of these possibilities might be the development of a project involving collaboration between UNEP, WMO, UNESCO and the Agency — through its International Centre for Theoretical Physics in Trieste — in a series of courses involving both meteorologists and oceanographers on the physics of the oceans and atmosphere. In order to further our present limited knowledge of the interaction between the ocean and the atmosphere, and of the ramifications of this interaction in relation to the environment in which we live, it is evident that greater attention must be given to furthering our understanding of the underlying physical processes.

Whatever the modalities or the specific content, however, there seems little question but that the mandates of the two organizations will continue to provide a strong basis for continuing collaboration on a variety of matters of environmental concern.

PROJECTS INVOLVING IAEA – UNEP COLLABORATION

- (1) Studies of the measures to be taken in international co-operation in the long-term management of high-level and alpha-bearing radioactive wastes

Commencement Date: July 1973

Planned Completion Date: December 1976

- (2) The Mediterranean programme activity: Intercalibration measurements for pilot projects under the co-ordinated pollution monitoring and research programme — Med IV

Commencement Date: January 1976

Planned Completion Date: December 1977

- (3) Regional Centres for Nuclear Fuel Cycle

Commencement Date: January 1976

Planned Completion Date: January 1978

- (4) Evaluation of releases of radionuclides into aquatic environments

Commencement Date: June 1975

Planned Completion Date: October 1977