Appendix 9

United Nations Activities in Science and Technology Under the Vienna Programme of Action

9.1 The Vienna Programme of Action, adopted by the United Nations in 1979, has three major objectives:

—to harmonise the extensive, and often overlapping, activities of all UN agencies in eight areas of science and technology;[1]

—to strengthen developing countries' indigenous scientific and technological capabilities; and

—to restructure the existing pattern of international scientific and technological relations.

While underlining the need for developing countries to implement their own national plans, the Programme recognises the importance of collective action by these countries, and of supportive measures by developed countries to create a suitable environment for their efforts. It also recognises the role that can be played in this area by the international community through the multilateral organs of the UN system. Some examples of activities in these organs in the eight areas of the Vienna Programme are annexed (pages 98–105).

9.2 There have been continuing problems in coordinating and financing the work of the United Nations in science and technology (S & T) under the Vienna Programme. Despite the efforts of the Intergovernmental Committee on Science and Technology for Development (ICSTD) which was established to oversee the Programme, a review of UN activities in 1982 and 1983[2] found that there was still a need to improve coordination of agencies' activities in S & T. It therefore recommended the compilation of a directory of major UN S & T information services, as well as a data base on all other UN activities

in this field. In addition it identified several other areas where work was needed.

9.3 Funding has been a major constraint. The latest information shows that the extent of different UN bodies' financial involvement in S & T has varied considerably but that, in total, under a tenth of all UN expenditure was directed to S & T. Some two-thirds of this was spent on training and the application of new technologies; other equally important activities, such as making more efficient use of existing skilled manpower or assistance with policy-making, industrial research and technology, natural resources and basic sciences, received much smaller proportions. Under the Vienna Programme a special fund—the UN Financing System for Science and Technology for Development (UNFSSTD)—was launched to boost resources for UN activities in this area. The developing countries wanted a fund equivalent to between one and two per cent of annual global expenditure on S & T (estimated at $100 billion as far back as 1979), but lack of support from the developed countries restricted it to a much lower amount, to be raised by voluntary contributions. Pledges to date have been well below the $300 million target for 1983–85 established in 1979 by the Vienna Conference; in 1983 (the latest data available) the overall amount was barely $45 million. The fund has only been able to finance 100 projects, out of more than 900 requested. UNFSSTD's long-term viability remains uncertain, and a considerable increase in pledges is needed if the UNFSSTD secretariat is to be financed beyond 1985.

NOTES

1. Viz. development and assessment of science and technology policies; indigenous infrastructure; choice and transfer of technology; human resources; information; research and development; international cooperation; and finance. Some examples of UN work in these eight areas are annexed below.
2. United Nations, *Biennial review and appraisal of the activities of the United Nations system in the field of science and technology for development*, New York: March 1984 (A/CN 11/45).

ANNEX

Some UN Activities in the Eight Areas of the Vienna Programme

I. S & T Policies and Plans

UNCTAD	Technology policies; legal and institutional

	framework relating to transfer of technology; industrial property rights; advisory service—technical assistance with policy-making, training, exchange of information.
UNIDO	Seminars on industrial technology policies and planning; advice on institutional arrangements for acquiring foreign industrial technology and services.
UNEP	Advice on managing environmental impact of technological applications.
ESCAP	Studies on bilateral technology agreements.
UNFSSTD	International conference on S & T policy and research management.
UNESCO	Assistance with identifying priorities in science education, training, research; creation of regional networks of research on social factors affecting scientific development.
ILO	Studies on role of technology choice in development; assessment of technology policy.
FAO	Technology policies designed to achieve food security.
World Bank	Assistance with formulation of science policies and strategies for industrial technology development.
WHO	Formulation of national drug policies.
WIPO	Model law on inventions for developing countries; assistance with handling patent applications and preparing patent legislation.
UNCSTD, UNIDO, UNCTC, ILO, FAO/IFAD, FAO/IAEA	Advising policy-makers on likely impact of new technologies on various sectors.

II. Creation and Strengthening of S & T Infrastructure

DIESA	Infrastructure aspects of marine resource development.
DTCD	Programmes for energy development, cartography, remote-sensing and statistics.
UNIDO	Single and multipurpose industrial institutes.
UNCTAD	Strengthening institutes dealing with transfer, use or

	development of technology.
UNEP/UNESCO	Microbiology resource centre; network of various training institutions in environment issues in Latin America and the Caribbean.
UNFPA	Assistance to strengthen local institutions' capability in demographic research, training, data analysis.
ESCAP	Advisory services for development of infrastructure and training in various fields.
ECLA, ECA	Seminars on various aspects of technological infrastructure.
UNFSSTD	Projects for the development of technological infrastructure and skills.
UNESCO	Strengthening research and training institutions.
ILO	Assistance with development of rural technology centres; services of its International Centre for Advanced Technical and Vocational Training and three regional training centres.
FAO/IFAD	Development of facilities for agricultural research, both internationally and nationally.
WHO	Development of capability for health research and training.
WIPO	Seminars on setting up patent offices.

III. Choice, Acquisition and Transfer of Technology

DIESA	Studies on choice in marine technology, technologies for coastal erosion control, energy technologies.
DTCD	Technological options in new and renewable sources of energy, application of remote-sensing, non-conventional uses of water.
UNEP	Environmental implications of technological practices in various sectors.
UNICEF	Technological choice in food processing.
UNIDO	Technology transfer in mineral processing, microelectronics and other industrial branches, biotechnology and genetic engineering; operates system for countries to share information on technology agreements; assistance to technology regulation agencies; technical assistance with technology selection and contract negotiation.

UNCTAD	Sectoral studies on technology choice (food processing, capital goods, energy); legal framework and transfer of technology.
UNCTC	Technology transfer in selected capital goods branches; technology choice and activities of TNCs in automobiles, agricultural machinery, and semiconductor industries.
ESCAP	Advice on legal aspects of technology transfer and strengthening national negotiating capabilities.
ARCT, RCTT, ECLA	Regional meetings on technology choice and experience.
FAO	Field trials of appropriate agricultural technologies, both production and processing, including (with IAEA) isotope and radiation techniques.
World Bank/ UNDP	Studies on choice of energy technologies
UNESCO	Studies on water technologies.
ILO	Developmental relevance of technological choice in small-scale industries, rural road construction, rural energy, etc.
WHO	Technology packages for vaccine production; list of essential drugs.
WIPO	Studies on contractual aspects of technology transfer.
ITU	Sets standards for international telecommunications.

IV. Development of Human Resources for S & T

DIESA	Assistance with formulating training programmes for assessment of marine technologies and management of coastal areas.
UNFPA	Training programmes in demographic research; worldwide network for population information.
UNIDO	Training in technology transfer, trends and developments, especially new technologies in various industries.
UNEP	Postgraduate training courses in toxicology, management of the environment; network of training institutions on environmental issues.
UNFSSTD	Various training projects.

UNESCO	Improvement of curricula for engineers; specialist courses in various fields (ecology, oceanography etc.); proposal for an international institute for training and research on S & T policy and planning.
FAO	Training of agricultural research and extension personnel; assessment of needs and facilities for trained manpower in Africa.
ILO	Vocational training programmes; studies on technological development and women.
WHO	Health fellowships—including health research management.
WIPO	Training workshops on processing patent information.
IAEA	Training in use of radiation, safety in nuclear energy.
IMO	Set up World Maritime University; assistance with regional maritime training institutions.
UNCTAD	Training in contractual conditions in technology agreements; study on measuring 'brain-drain'.
ITU	Introduction of international training standards and exchange of information on telecommunications training.
World Bank	Training on S & T aspects of development at its Economic Development Institute.

V. Financing of S & T

UNESCO	Analysis of expenditure on R & D in S & T.
UNDP	Finances S & T activities of various UN bodies.
UNFSSTD	Provides limited funds for projects.
World Bank	Supports the Consultative Group on International Agricultural Research (CGIAR) and technical assistance programmes for agricultural and rural development.

VI. S & T Information

UNCSTD	Studying feasibility of developing a global information network linking national systems containing bibliographical material and data on technological alternatives and their implications.

UNDP	Information Referral System (INRES).
UNIDO	On-line data base of bibliographic material and scientific research activities in different fields; technology information exchange network for development financing institutions; Industrial and Technological Information Bank (INTIB); Industrial Inquiry Service; Technology International Exchange System (TIES) for information on commercial technology contracts.
UNEP	International Register for Potentially Toxic Chemicals (IRPTC); an International Referral System for Sources of Environmental Information (INFOTERRA).
UNCHS	Bibliographical information on building technologies.
UNFSSTD	Financed establishment of technological information system for subregion of Latin America.
RCTT	Disseminates regular information on new products and processes.
UNESCO	Promotes exchange of information on science policies; has computerised information system on S & T literature, known as SPINES—the Science and Technology Policies Information Exchange System—and has set up a World Information System for Science and Technology (UNISIST); has compiled statistical information on scientific manpower, R & D expenditure; helped to develop information networks in specific fields, for example energy and water sciences, and to set up documentation centres—has a Data Retrieval System for Documentation in the Social and Human Sciences (DARE); training in information handling and application of new information technologies.
FAO	Several information networks; e.g. Interlinked Computerized Processing and Storage System of Food and Agricultural Data (ICS); International Information System for Agriculture Sciences and Technology (AGRIS); Current Agricultural Research Information System (CARIS); Aquatic Sciences and Fisheries Information System (IFIS), as well as various year-books on production and trade.
WHO	Bibliographical and research information on health

	issues, health statistics, in its World Health Information Service (WHIS).
WIPO	Information on patents and industrial property rights; assistance with computerisation of patent documentation.
IAEA	Nuclear information and data in its International Nuclear Information System (INIS).
ILO	Aspects of employment and occupational hazards, embodied in its Integrated Scientific Information System (ISIS) and its International Labour Information System (ILIS).
UNCTC	Role of TNCs in transborder data flows.

VII. Strengthening R & D in and for Developing Countries

DIESA	Research on ocean energy sources.
UNEP	Using remote-sensing to monitor desertification.
UNIDO, UNCTAD	Field research by industrial research and service institutes on technological developments.
UNESCO	Research programme on geology for development in Africa; research on marine science, water resource management; studies on natural hazards.
WHO	Research on tropical diseases.
WMO	Research on tropical meteorology.
FAO	Agricultural research and training carried out by 13 research centres of CGIAR, helping to upgrade research programmes in developing countries; national institutes used to carry out pilot projects and demonstrate improved practices; international research networks set up, for example on inland fisheries, buffalo.
UNDP	Supports research, training, extension activities of International Centre for Insect Physiology and Ecology (ICIPE) and International Fertilizer Development Centre (IFDC).

VIII. Strengthening of Cooperation in S & T Among Developing Countries and Between Developed and Developing Countries

UNDP, UNIDO, UNCTAD	Studies of joint industrial ventures and technology licensing between developing countries.

UNCTAD	Report on institutional and policy issues of cooperative exchange of skills among developing countries.
UNCTC	Study of technology transfer and joint ventures among Latin American countries.
UNIDO	Promotion of cooperation in the development of small-scale industries and cooperation in the transfer of technology between enterprises in developed and developing countries.
ECLA, RCTT, ARCT	Promotion of technological cooperation on a regional basis.
WIPO	Assisting regional cooperation in industrial property administration.
FAO	Support given to several regional and subregional bodies, for example the West African Rice Development Association.

Abbreviations used

ARCT	African Regional Centre for Technology
DIESA	Department of International Economic and Social Affairs
DTCD	Department of Technical Co-operation for Development
ECA	Economic Commission for Africa
ECLA	Economic Commission for Latin America
ESCAP	Economic and Social Commission for Asia and the Pacific
FAO	Food and Agriculture Organization of the United Nations
IAEA	International Atomic Energy Agency
IFAD	International Fund for Agricultural Development
ILO	International Labour Organization
ITU	International Telecommunications Union
RCTT	Regional Centre for Technology Transfer
UNCHS	United Nations Centre for Human Settlements (Habitat)

UNCSTD	United Nations Centre for Science and Technology for Development
UNCTAD	United Nations Conference on Trade and Development
UNCTC	United Nations Centre on Transnational Corporations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
WHO	World Health Organization
WIPO	World Intellectual Property Organization
WMO	World Meteorological Organization