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on Thursday, 26 October 1989, at 3 p.m.

<u>President:</u>	Mr. PAWLAK (Vice-President)	(Poland)
later:	Mr. ABDOUN (Vice-President)	(Sudan)
later:	Mr. PAWLAK (Vice-President)	(Poland)

- Development and international economic co-operation [82]

(i) Science and technology for development

(a) Report of the Intergovernmental Committee on Science and
Technology for Development

(b) Draft resolutions

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In the absence of the President, Mr Pawlak (Poland), Vice-President, took the chair.

The meeting was called to order at 3.15 p.m.

AGENDA ITEM 82 (continued)

DEVELOPMENT AND INTERNATIONAL ECONOMIC CO-OPERATION:

(i) SCIENCE AND TECHNOLOGY FOR DEVELOPMENT

- (a) REPORT OF THE INTERGOVERNMENTAL COMMITTEE ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (A/44/37)
- (b) DRAFT RESOLUTIONS (A/44/37, para. 3, 1 (X))

The PRESIDENT: I request the Rapporteur of the Intergovernmental Committee on Science and Technology for Development, Mr. James Mugume of Uganda, to introduce the report of the Committee.

Mr. MUGUME (Uganda) (Rapporteur, Intergovernmental Committee on Science and Technology for Development): I have the honour, on behalf of the Intergovernmental Committee on Science and Technology for Development, to present the report (A/44/37) on its tenth session, held from 21 August to 1 September 1989. In accordance with the procedures adopted by the Committee, the tenth session had the benefit of early consultations on the part of the members-elect of the Bureau.

May I, in this connection report to the Assembly that in compliance with the Committee's request, the representative of the East European Regional Group, which had agreed to provide the chairmanship of the eleventh session of the Intergovernmental Committee, has just informed us that Mr. Baruch of Czechoslovakia, Vice Chairman of the Czechoslovak Academy of Science, has been nominated to serve as Chairman of the eleventh session of the Committee. It is our hope that this early identification of the Chairman-designate of the Intergovernmental Committee will make it possible for other members-designate of

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the Bureau to have early consultations on the preparations for the eleventh session of the Committee, scheduled to be held in 1991. The system of early identification of the members-elect of the Bureau has proved to be very effective not only in preparing sessions but also in ensuring continuity of the Committee's work.

On the report itself, it will be noted that the substantive theme taken up by the Committee for this year relates to the end-of-decade review of the implementation of the Vienna Programme of Action. As we during the commemorative meeting this morning, the Intergovernmental Committee was called upon to review the problems encountered in the implementation of the Programme as well as the progress achieved in integrating science and technology for development. It was a session that was characterized by substantive discussion and by a sense of seriousness and dedication on the part of all member States represented on the Committee.

The Committee had as a basis for its discussion very important documentation, including the report of the Secretary-General on the end-of-decade review of the implementation of the Vienna Programme of Action as well as documents on matters related to the end-of-decade review. The latter included the reports on the evaluation of the Advance Technology Alert System (ATAS), the report of the Advisory Committee on Science and Technology for Development on its eighth session, and the background paper on the state of science and technology for development in the world entitled "Options for the Future". The Committee was fully informed of regional and interregional meetings of experts held in four different regions of the developing countries, as well as an interregional meeting held in the Federal Republic of Germany, in preparation for the review by the Committee. The report of the Secretary-General summarizes the findings of these meetings as well

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as other input relating to the implementation of the Vienna Programme of Action, including the main thrust of the contributions of the United Nations system to the implementation of the Programme.

After years of search for an effective and appropriate approach, the Committee has decided to orient its future work to the mainstream of issues dealt with by the General Assembly, utilizing technology assessment as its method of analysis.

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In this connection it has chosen as a substantive theme for its next session "ways and means of ensuring the participation of developing countries in international co-operation for research on and development of environmentally sound technologies, and the rapid and effective transfer of such technologies to those countries".

This and other aspects referred in the end-of-decade review of the implementation of the Vienna Programme of Action are reflected in the draft resolution on pages 2 to 8 of the report of the Committee.

After a series of laborious consultations by those concerned, including the various groups represented on the Committee, the Committee adopted the text by consensus. The Committee therefore strongly recommends the text to the Assembly for adoption.

The PRESIDENT: I should like to propose that the list of speakers in the debate on this item be closed today at 4 p.m. Therefore, I request those representatives who wish to participate in the debate to put their names on the list as soon as possible.

It was so decided.

Mr. MUSA HITAM (Malaysia): On behalf of the Group of 77, I wish first to thank Mr. James Mugume, Rapporteur of the tenth session of the Intergovernmental Committee on Science and Technology for Development, for presenting the report.

Ten years after the Vienna Conference the world is still faced with a profound paradox. Owing to the advances in new technologies, such as microelectronics, information technologies and biotechnology, millions of people living in industrialized societies enjoy unprecedented levels of material well-being. At the same time, billions of people inhabiting the developing regions are engaged in an

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epic struggle for survival and sustenance. While some countries are moving towards knowledge and information-based societies, most remain pre-industrial economies. As we enter the tenth year since the adoption of the Vienna Programme of Action on Science and Technology for Development, developing countries still find themselves continually left behind in the advancement of technological innovations, thus widening the scientific and technological gap between the developed and the developing countries.

It is now generally accepted that the high expectations of the Vienna Programme of Action on Science and Technology for Development have not materialized. While saying this, however, it would be a grievous mistake not to differentiate between the Programme and its implementation, or to belittle its enormous accomplishments. It was the Vienna Programme of Action that brought the subject of science and technology into the international limelight and raised the level of consciousness of Member States on this important issue. Until then, it was the prevailing view that science and technology were best subsumed in sectors such as agriculture, industry and health. There was no recognition of its potentiality for singular application as an explicit instrumentality. Furthermore, it was also widely believed that the generation of science-based technologies was best left to the industrialized countries and that developing countries should be content with technological importation and adaptation only.

It was the Vienna Conference that put out the clear message that science and technology were too important to be subsumed as implicit components of subject-oriented sectors and that they were also too crucial and strategically important to be developed exclusively in the industrialized countries. No amount of technological access to and transfer from the developed countries could be a substitute for the process of creating and strengthening the endogenous scientific

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and technological capacities of developing countries. The message of Vienna is perhaps more important, valid and critical now than in 1979. More than ever before, modern technologies constitute powerful tools which, if properly controlled and channelled, could provide an important stimulus to accelerated growth and development.

The Group of 77 is clearly mindful of the tremendous global changes that have taken place during the last decade. It is equally cognizant of the host of different and more complex problems that such changes have engendered in their wake. The solution to the problems requires fresh thinking, with bold and imaginative ideas. Many developing countries are confronted with crippling debt problems which are undermining the very viability of their societies. While recent plans and proposals to reduce the debt burden are welcomed and need to be further refined and extended, the contribution that modern technology can make to improving the economic and industrial competitiveness of indebted developing countries so as to enhance their export potential and enable them to reduce their overall external debt needs to be further studied.

The impact of technological change on international trade, the shift in the competitive positions of countries in manufacturing and trade and the rising importance of technology as a determinant of the relative positions of countries in the world economy are issues to be considered within the broader context of the role of science and technology in the development process. New technologies pose a challenge as well as provide an opportunity to the international community.

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There is now a broad international consensus on the importance of safeguarding the environment. While the organic link between the abject poverty of many developing countries and the safeguarding of the environment will be discussed in the context of the convening of the conference on environment and development in 1992, it is appropriate that the issue of the participation of developing countries in international co-operation on research and on the development of environmentally sound technologies, and the rapid and effective transfer of such technologies on fair and favourable terms, be highlighted. The Group of 77 wishes to point out that there should be no barriers to the transfer of technology to the developing countries and that there should be preferential access to technology. Patent rights, copyrights and intellectual property rights should not stand in the way of development at this time, when there is a dire need for the developing countries to revitalize their economic growth and development.

The Group of 77 has said repeatedly that the safeguarding of environment and development should not become additional conditionality. There can be no doubt of the need to safeguard the fragile ecosystem of planet Earth and there is no dispute either on the need to develop energy-efficient and environmentally sound technologies. But it is equally manifest that the cost of developing such technologies should be borne where they belong, namely by the industrialized countries, whose policies and actions have largely contributed to the present condition. At a time when many developing countries are unable to meet their survival needs it would be unfair to expect them to meet the commercial cost of developing and obtaining access to those technologies. It is fitting that the Intergovernmental Committee on Science and Technology for Development has chosen this subject as its substantive theme for its eleventh session and we do hope that

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the Centre for Science and Technology for Development, in consultation with the relevant bodies of the United Nations system, will prepare a comprehensive and analytical report that can serve as a basis for consideration by the Intergovernmental Committee.

I should now like to refer to another creation of the Vienna Conference which we consider to be extremely important: that is, the establishment of the financial arrangements for the various programmes on science and technology for development. It is also necessary on this occasion to highlight the fact that it was largely the failure to establish the long-term financing system in the financing arrangements that contributed to the widespread feeling of disappointment with the implementation of the Vienna Programme of Action. The agreement to establish the financing system was the centrepiece of the Vienna consensus. That financing has now dwindled to a small fund within the United Nations Development Programme (UNDP), and its very existence is now being threatened. The Group of 77 strongly believes that the United Nations Fund for Science and Technology for Development should be maintained as an identifiable entity. The Fund and the Centre should establish a close and organic working relationship so as mutually to reinforce each other's competence and responsibilities. Particular attention should also be paid to the needs of the least developed countries, whose science and technology remain at a rudimentary level and which continue to be left behind the mainstream of the world community in all efforts.

In commemorating the tenth anniversary of the adoption of the Vienna Programme of Action the time has come for the international community to acknowledge the process of endogenous scientific and technological development in developing countries as one of the major developmental objectives of the 1990s. While the

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primary responsibility rests with the developing countries themselves, it is equally manifest that this process requires strong and sustained international support, not only in terms of resources but also in access to advanced technologies and their assimilation. Endogenous capacity-building by no means presupposes technological self-sufficiency. An essential component of endogenous capacity-building is technology assessment, which would enable developing countries to make an objective assessment of the full impact of emerging technologies so as to adopt appropriate policies to maximize their benefits and minimize their risks.

The role of the United Nations system in this challenging endeavour is pivotal, not only in terms of the quantum of resources that it channels into developing countries in this area but also, more strategically, in terms of the catalytic effect and credibility. The United Nations needs to be in the vanguard of the efforts required to build and sustain the endogenous capacities of developing countries and to ensure that the scientific and technological potentials in the world are channelled to the benefit of the developing world. The formulation of the international development strategy for the fourth development decade and the forthcoming special session of the General Assembly on revitalizing economic growth provide a particularly suitable opportunity to integrate the dimensions of technological change into the mainstream of macro-economic management.

The Group of 77 is pleased by the adoption by consensus, at the last session of the Intergovernmental Committee, from 21 August to 1 September 1989, of the draft resolution on implementation of the Vienna Programme of Action on Science and Technology for Development. The Intergovernmental Committee on Science and Technology for Development recommended that the said draft resolution be considered for adoption at this session of the General Assembly. The Group of 77 looks forward to its adoption.

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In conclusion, the Group of 77 wishes to reaffirm the continued validity of the Vienna Programme of Action and the importance of its basic goals, which are: to strengthen the endogenous scientific and technological capacity of developing countries; to restructure international science and technology relations; to strengthen the role of the United Nations system in the field of science and technology; and to provide increased financial resources.

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The Group of 77 fully supports the activities of the United Nations Centre for Science and Technology for Development, the Advisory Committee, and the United Nations Fund for Science and Technology. They have indeed made important contributions to the development of developing countries. The Group of 77 would wish to see them continue their good work.

Last but not least, the Group of 77 would like to express its appreciation to the present and former members of the Advisory Committee on Science and Technology for Development for the important declaration entitled "The imperative of social innovation" issued in conjunction with the tenth anniversary of the Vienna Programme of Action.

Mr. PEJIC (Yugoslavia): The representative of Malaysia has just outlined the general views of the Group of 77 on science and technology and on the implementation of the Vienna Programme of Action; my delegation fully shares those views.

I should like also to thank our Rapporteur for his introduction of the Committee's report.

The observance of the tenth anniversary of the United Nations Conference on Science and Technology for Development is an exceptional opportunity not only to review the implementation of the Vienna Programme of Action but also to consider the impact of science and technology on development at large and on the relative positions of the developed and the developing countries in international economic relations.

The unprecedented advances in science and technology in the last 10 years have widened instead of reducing the great gap between the technological capacity of the highly industrialized world and that of the developing countries. It is therefore

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reasonable to argue that these 10 years have fallen short - far short - of the expectations aroused by the Vienna Conference. Nor have the United Nations, the Intergovernmental Committee and the Centre for Science and Technology been able, in spite of their efforts, and for a variety of reasons - not least the lack of adequate financial resources - to fulfil their respective roles.

The level of technological progress achieved in the developed world is beyond the reach of developing countries, particularly in respect of new and emerging technologies. It is obvious that the existing pattern of scientific and technological co-operation has to be changed. Patent rights, copyrights and intellectual property rights have to be viewed in the light of the world's diminishing resources and the fact that the environment can no longer sustain traditional ways of development. Developing nations are aware that the application of new technologies to productive purposes is imperative if sound environment and sustainable development are to be pursued.

Experience with the implementation of the Vienna Programme and the scientific and technological gap between the developed and the developing countries in a world of growing interdependence and integration call for renewed efforts to secure the Programme's implementation.

The Ninth Conference of Heads of State or Government of Non-Aligned Countries devoted exceptional attention, in a separate document, to science and technology as a propulsive factor of development and change. The document pointed out that no significant progress had been made in the creation of conditions for the rapid development of scientific and technological potentials in developing countries. It also expressed concern that the transfer of science and technology to developing countries was slow and inadequate. Developing countries, particularly the least

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developed, need extensive international support for their national efforts to establish, strengthen and develop their scientific and technological basis as well as for their broad integration in international co-operation in this field.

It therefore seems to us that all countries should act together to ensure that achievements in science and technology find speedier application in developing countries. It is difficult to speak of economic, social and ecological problems and at the same time not recognize the imperative need for the universal transfer of technology. For let me recall that immediately after the discovery of the polio vaccine President Eisenhower solemnly announced that the formula for its production and information on the way it should be administered was to be made available to all countries, thus facilitating the universal application of a universal drug. Could this noble example not serve as a fitting model for the dispersion of scientific and technological achievements in the field of health, food, agriculture or environment, for instance, to those who are in need of them - just as children across the world were in need of the polio vaccine?

Mr. DING Yuanhong (China) (interpretation from Chinese): First, I wish to congratulate Ambassador Garba on his election as President of the current session of the General Assembly. It is the hope of the Chinese delegation that under his outstanding guidance the session will be crowned with complete success.

To mark the tenth anniversary of the Vienna Programme of Action, the General Assembly held a symposium during that session that was attended by some eminent personages and scientists. The Secretary-General and Mr. Abdus Salam also honoured the symposium with their presence and with important statements. It was very meaningful for the United Nations to hold that kind of function.

Now I wish to take this opportunity to make some observations on the report of the tenth session of the Intergovernmental Committee on Science and Technology.

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The Vienna Programme of Action came into being 10 years ago, at a critical historical juncture in world developments. That was because, with the rapid development of such new scientific fields as micro-electronic technology, information technology and bio-technology, the environment on which the human existence depended had begun to undergo profound changes in the 1970s. The economic and social structures of the world have also changed. So have the ways of life and thinking of the people. Along with new opportunities, mankind is faced with great challenges. The United Nations Conference on Science and Technology for Development, held 10 years ago in Vienna, formulated the Vienna Programme of Action and coined the important concept of science and technology for development.

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In retrospect, it was undoubtedly a move that showed vision. It led to the establishment within the United Nations system of scientific and technological bodies, such as the Intergovernmental Committee, which have organized a large number of activities on science and technology at both the international and the regional level. More than 100 technology-aid projects have been offered to the developing countries. These, to varying degrees, have helped to improve the indigenous scientific and technological capabilities of these countries and provided new opportunities for scientific and technological exchanges and co-operation between North and South. All this helps people to understand better that in the present-day world economic progress must be based on scientific and technological advancement, which, in turn, should be geared to the promotion of economic development. Only in this way can sustained and co-ordinated development of the economy, society and science and technology be promoted.

Of course, we should recognize that the implementation of the Programme of Action is not entirely satisfactory. This is a matter about which the delegates of many countries expressed concern at the tenth session of the Intergovernmental Committee. Although the developing countries have made tremendous efforts over the past decade to promote science and technology for development, the result has fallen far short of their expectations. There are many reasons for this, but the major reason is the failure of some developed countries to fulfil their commitments, which failure led to insufficient funding for the science and technology projects under the Programme of Action.

In the report of its tenth session the Intergovernmental Committee made a realistic assessment of its own performance, as well as that of the Committee on Science and Technology for Development and the Fund for Science and Technology for Development, and set some new work requirements. Over the years the Intergovernmental Committee and the Centre have done a lot of useful work in

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assisting Member States to implement the Programme of Action. They have co-ordinated the scientific and technological activities within the United Nations system, and, especially, provided policy guidance, academic evaluations and technical forecasting for the developing countries. We are of the view that, as an important forum for United Nations discussion of issues relating to science and technology and to development in our times, not only should the Intergovernmental Committee continue to exist as an independent body, but its role should be strengthened. We propose that the Committee should carry out technical evaluation, in a selective manner, of such global issues related to science and technology as rational utilization of resources and protection of the environment; help the developing countries to improve their ability to forecast, and adapt to, global developments in the field of science and technology; make contributions to the international development strategy for the fourth United Nations development decade and to the special session of the General Assembly devoted to international economic co-operation; and endeavour to promote the incorporation of science and technology in the macro-economic policies of, and management by national Governments and the inclusion of an item entitled "Science and technology for development" in the agenda of the General Assembly.

In recent years, the Fund for Science and Technology for Development has had some impressive success in helping the developing countries to narrow the North-South gap in the field of science and technology by overcoming the shortage of funds. In this way it has won the appreciation of many developing countries. It should be pointed out in particular that the work of the Fund has a distinctive character: it is different from the technical activities of the United Nations Development Programme (UNDP). This is because the Fund, guided by the policies of the Intergovernmental Committee, focuses on activities designed to enhance the endogenous capacity of developing countries in the field of science and

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technology. Its goal is the creation of better science and technology infrastructures that will provide long-term economic benefits, while, in contrast, the emphasis of UNDP projects is on immediate benefits.

We appreciate the decision made by the Intergovernmental Committee at its tenth session to retain the Fund as an entity, and we support the proposal to include in the agenda for the next Committee session an item entitled "Financing science and technology for development". Many developing countries, including China, have maintained good co-operation with the Fund. The Chinese Government will continue to give the Fund as much financial support as it can.

Two substantive draft resolutions were adopted by consensus at the tenth session of the Intergovernmental Committee and we believe it to be essential that these draft resolutions be implemented effectively. High-tech and new-tech development in recent years has widened even further the scientific and technological gap between the developed and the developing countries. In particular, the adverse external economic environment has seriously hampered the ability of developing countries to promote science and technology for development. Today, with increasing world economic interdependence, science and technology for development should be understood as an integrated, multifaceted concept for the common development of all mankind. It is the task of developing countries and the obligation of developed countries to value appropriately and support science and technology for development.

Reviewing the past and looking to the future, we believe that science and technology for development should be based primarily on the self-reliance of every country, and that Member States must make their own choices in the light of their ability and need and in keeping with the rapidly changing situation in the development of the world economy and the advancement of science and technology. At

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the same time, scientific and technological co-operation and exchanges between States are indispensable, as is external assistance. Patent rights, copyrights and intellectual-property rights should not become obstacles to the efforts of the developing countries to promote scientific, technological and economic progress.

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For historical reasons, the developed countries possess over 95 per cent of the world's scientific and technological capability. They should fulfil their unshirkable responsibilities and obligations towards the world's common development and the solution of global problems. That not only is in the interest of the developing countries but will also serve the long-term interests of the developed countries.

In recent years the United Nations has won acclaim for its efforts in settling regional conflicts and promoting dialogue and a relaxation of tensions. Now it is working extensively to improve the world economic situation. The Chinese delegation hopes that the United Nations will also play a greater role in the activities of science and technology for development.

Mr. SCHLEGEL (German Democratic Republic): There is a general awareness today that the use of science and technology is a decisive prerequisite for economic development and social progress. That is true of all social sectors as well as of all countries. National and international efforts should be combined in order to muster the intellectual, material and financial potential needed to carry out the rapidly growing tasks. Scientific and technological co-operation between East, West and South at a high level and with a broad scope is one of the great challenges of our time.

The Programme of Action on Science and Technology for Development, which was adopted in Vienna in 1979, takes account of that maxim. It has given useful impetus to co-operation in this field. Its major guidelines for national scientific policies and international strategies have not lost their relevance. That is true, first of all, of such long-term targets as the strengthening of the scientific and technological capacities of developing countries; the restructuring of the existing pattern of international relations in science and technology; the

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strengthening of the United Nations role in science and technology; the training and qualification of nationals from developing countries; and the further development and use of information systems for science and technology.

It has become obvious that some progress has been made in that field. The Intergovernmental Committee and the Centre for Science and Technology have proved to be important forums of scientific and technological co-operation. They have launched useful and realistic initiatives designed to improve the co-ordination of scientific and technological activities in the United Nations system and to make co-operation in implementing the Vienna Programme more effective. The recent panel meeting of eminent persons on peace, development and the role of science and technology is only one example of those activities.

However, it must also be noted that since the Vienna Programme was adopted nothing has really changed the disadvantaged position of developing countries with regard to the application and use of science and technology. The unequal status of those countries has deteriorated in many cases, owing not least to the acute crisis of their external indebtedness. The considerable net transfer of resources from developing countries, which has been going on for five years now, has had a serious impact on their national, economic and social development. A decline in export income has reduced the developing countries' room for action with regard to their access to science and technology; that is often accompanied by a downward trend in investment activities. It restricts or even bars the introduction of scientific and technological innovations in developing countries.

At its recent tenth session the Intergovernmental Committee formulated further tasks for scientific and technological co-operation in the 1990s within the framework of the United Nations system. We favour the intensification of

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international co-operation in this field, as was also reaffirmed by the non-aligned countries at their recent summit conference in Belgrade. We also support the demand that the international code of conduct on technology transfer be adopted without delay. What is indeed urgent is that international scientific and technological relations should become more stable, more predictable and more reliable. All States must have equal access to the new achievements of science and technology, free from any discrimination. The improvement of international relations similarly creates conditions for fresh potentials that can be fully used for the further development of scientific and technological co-operation in the 1990s. That includes the removal of obstacles that arise from such out-moded political motives as the COCOM mechanism.

The present development of the world economy is marked by an unprecedented globalization of economic problems. They can be solved only if the latest scientific and technological achievements are used effectively and purposefully. In our view, the growing mutual dependence of all States on international economic as well as scientific and technological relations should be reflected more clearly in the guidelines for scientific and technological co-operation within the United Nations in the 1990s. World-wide co-operation in this field has to take heed of the interests and problems of all parties involved.

We feel that it is of particular importance to give due attention to the use and application of new and emerging fields of science and technology. That potential has to be mobilized, in particular for the social and economic progress of developing countries, taking account of their specific needs and peculiarities. We therefore advocate that the Advance Technology Alert System be further improved and that technology assessment be made an effective instrument to advance

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development processes. In that context, there should be greater focus on the social element in international co-operation, including the systematic mobilization and development of human resources as the engine of social and economic as well as of scientific and technological progress.

The German Democratic Republic is devoting great attention to those questions. The implementation of resolution 1989/120 concerning the development of human resources - a resolution adopted by consensus, at the initiative of the German Democratic Republic, at the summer session of the Economic and Social Council this year - is of importance not least for the United Nations work in the field of science and technology. Similarly, the expert meeting on the assessment of new and emerging fields of science and technology held in Berlin last year, in co-operation with the United Nations Centre for Science and Technology, is to be considered in that context. We shall endeavour to promote such activities of the Centre in the future as well.

History teaches us that science and technology can be used either to the advantage or to the detriment of man. The span of time to the turn of the millenium is short. To make sure that mankind can survive it is necessary that further decisive actions be taken to eliminate the threat of a nuclear holocaust, achieve disarmament, prevent an environmental disaster, and overcome the worst forms of underdevelopment.

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This is all the more necessary since disarmament would release resources which could be used for the solution of all these global issues. The activities of the United Nations in science and technology should be viewed in this context. The United Nations and its Member States are called upon to pave the way for a world of peace and to use scientific and technological progress exclusively to that effect.

Mr. BETANCOURTH (Colombia) (interpretation from Spanish): The globalization of major international problems provides an excellent opportunity for a multilateral effort to ensure that science and technology are effectively directed towards the promotion of development, in order to obtain peace and security for all nations and for future generations. The technological progress in the world has obviously been used to promote or increase military power. Now, at a time of understanding and dialogue, we have a unique opportunity to ensure that the whole force and power of technical and scientific capital is utilized to promote that aim of development.

During the tenth session of the Intergovernmental Committee on Science and Technology for Development, we participated in a debate on the substance of this matter. The basic theme was the end-of-decade review of the Vienna Programme of Action. As is clearly stated by the Chairman of the Intergovernmental Committee in the report before the Assembly:

"There was near unanimity that the high aspirations of the Vienna Conference remain largely unfulfilled. None the less, the principal focus of the Vienna Programme of Action, which brought the dimensions of science and technology to the forefront of the multilateral agenda, remains not only valid, but has become more crucial. It seems clear, however, that, in spite of the validity of the focus, the international community has yet to design the frame and

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mobilize the means and the wisdom to marshal the immense power of modern science and technology for the good of human kind, particularly those who inhabit the developing world." (A/44/37, page v)

A favourable economic climate, a balanced environment, and the training of our human resources to meet the technological challenge of the coming century are fundamental requirements. Within this context, and in the light of present facts, it is essential to give an important role to the United Nations and particularly to the United Nations Centre for Science and Technology, so that they can provide us with an overall view of the core elements and available options.

In regard to the environment - as we said in our statement to the Assembly on 24 October in reference to the conference on environment and development, to be held in 1992 - the development of environmentally safe technologies is critical. There can be no doubt that the future development of technology should lead to relations in which our countries benefit from the effective transfer of technology within a just and favourable international economic climate. Since the technological aspect is one of the factors most relevant to the environmental challenge, the United Nations Centre for Science and Technology must be involved in this matter throughout the preparatory phase of the conference. What is more, the substantive theme chosen for the eleventh session of the Intergovernmental Committee - "Ways and means of ensuring the participation of developing countries in international co-operation for research on and development of environmentally sound technologies, and the rapid and effective transfer of such technologies to the developing countries" - together with the report the Centre will present, could lay the foundation for an entire process of technological exchanges during the coming decades.

(Mr. Betancourth, Colombia)

When we speak of the technological challenge, we cannot but refer to the important role of foreign investment in our countries. The economic integration of the industrialized world should contribute to a significant flow of resources into our countries, with no borders keeping out trade or information. That is why we think that the role of the United Nations Centre on Transnational Corporations is of paramount importance in this exchange of experience and in enhancing our countries' negotiating capacity.

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Finally, we hope that the meeting of eminent persons that has been convened by the Secretary-General to address the question of peace, development and the role of science and technology, will put forward new alternatives for meeting the challenges that we are confronting.

Mr. KARUKUBIRO-KAMUNANWIRE (Uganda): The Representative of Malaysia has already stated the position of the Group of 77 on science and technology for development. We fully share the views reflected in his statement as Chairman of the Group.

Ten years ago, in Vienna, the nations of the world reached a consensus on the concept of science and technology as a tool for development. The Vienna Programme of Action articulated the basic covenants relating to the restructuring of international scientific and technological relations and the mobilization of sufficient resources to build up the endogenous capacity of the developing countries to choose, adopt, internalize and utilize science and technology for development.

As we approach the threshold of a new decade and prepare for the twenty-first century, we undoubtedly find ourselves at a cross-roads, facing the biggest contradiction of our time. We hear of the aura of détente and the positive fundamental changes in international relations. We talk about the dawn of a period of reduced tensions. We are daily reminded by the news media of the unprecedented advances in scientific and technological innovations, about block market integration, the globalization of financial markets, and, yes, about the microchip revolution.

Paradoxically, in many parts of the developing world, and in Africa in particular, we hear about crises of heavy debt burden, increasing poverty and excessive environmental degradation. Indeed the international economic, scientific and technological climate as the 1990s approach continues to reflect the negative

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dimension of the current transformation in international relations. The concept of the "trickle-down" theory has clearly been discredited.

How can there be economic stagnation and regression in many parts of the world in the face of spectacular technological advances? What has caused the widening of the technological gap between the developed and the developing countries? In other words, what has undermined the aspirations of the framers of the Vienna Programme of Action on Science and Technology for Development?

Science and technology have become the key area of comparative advantage and the determinant of the relative competitiveness of countries and firms in both productivity and international trade. The widening technological gap between the developed and the developing countries has, therefore, been the fundamental cause of the increasing marginalization of developing countries. Indeed, Africa's market share in global trade has dwindled to barely 1.5 per cent.

The introduction of new materials and substitutes has left Africa clinging to dwindling export revenues from commodities such as coffee and cocoa. Breakthroughs in genetic engineering have made the peasant farmer look like a high-cost food producer. New designs and products have created consumption patterns out of tune with the production capabilities of many developing countries.

The advances in information technology and communications have created the globalization of financial markets and new financial products. A whole new area of tradable services has been created. The low level of technological development, lack of adequate resources for research and development and insufficient credit arrangements for innovative enterprises have meant that once again the African continent will not benefit from critical technologies at the cutting edge of development.

In many African countries lack of the scientific and technological capabilities needed for the preservation and conservation of the environment and

(Mr. Karukubiro-Kamunanwire, Uganda)

other national resources is now a major concern. The challenges of drought, soil degradation and deforestation continue to bedevil the African continent. The African farmer continues to rely on the hoe for shifting cultivation, friends and relatives for harvesting and storage, and firewood for energy use.

To achieve self-sustaining and environmentally sustainable development, therefore, Africa will have to choose processes and technologies that increase productivity with minimum impact on our environment. Indeed, that is why African countries, in the June 1989 Kampala declaration on environment and development, defined, inter alia, the following objectives at the national, subregional and regional levels: first, the establishment of new regulatory measures for economic incentives to strengthen research and development, and investment in technologies for efficient renewable energy sources, such as biomass, solar and wind power and hydro-power; secondly, the creation of gene-banks and biosphere reserves so as to establish a link between natural reserves, protected areas such as tropical forests, germ-plasm banks and bio-technology research centres; thirdly, the development of desertification research to improve technologies on sand-dune stabilization and select crop species; and, fourthly, the putting in place of legislative and regulatory measures, as well as training programmes, to align industrial technologies with environmental objectives.

The fulcrum of the Vienna Programme of Action was the agreement to mobilize resources to strengthen the endogenous scientific and technological capacities of the developing countries at the national, subregional and regional levels. This was intended to enable them to undertake research and decision-making in policy analysis, technology assessment, institution-building, and the creation of subsystems for financing and promoting technology acquisition.

(Mr. Karukubiro-Kamunanwire, Uganda)

Indeed, we believe that if our countries were enabled to build an endogenous capacity to choose, assess and adopt science and technology for development, Africa would be in a position to: first, improve food production, processing and distribution methods for local consumption, and competitiveness in international trade; secondly, preserve the environment through control of deforestation, soil degradation, reduction of the effects of drought and the development of environmentally sound technologies suited to local conditions; thirdly, revitalize the rural areas by diversifying energy sources and introducing integrated aspects into education, health, housing and higher productivity; and, fourthly, increase their capability of detecting, analysing and destroying toxic, nuclear and other hazardous materials.

We therefore believe that in creating a viable and self-sustaining endogenous capacity in science and technology the African countries should focus on a number of critical areas, including human-resources development, demand-driven research and development, and the role of subregional and regional economic co-operation and integration.

The relationship between science and technology and human resources development has now been recognized. In current structural adjustment programmes, however, in the desire to cut government deficits this critical factor has often been overlooked. In order to build a science and technology culture, it is important to invest in education and the improvement of human capabilities so as to produce competitiveness, skilled labour, and a knowledge-based employment and management capacity. If agriculture in Africa is to be transformed into an innovative and productive sector, the African farmer must be able to evaluate information about improved technology and market opportunities.

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African countries have been increasingly marginalized in the resources invested in the training of scientists and facilities for research and development. According to statistics of the United Nations Educational, Scientific and Cultural Organization (UNESCO), in 1985 for example there were 1,500 scientists per million Africans, while in North America the figure was 126,000 per million inhabitants. In 1980 expenditure, as a percentage of gross national product, on research and experimental development was 0.3 per cent for Africa, 2.4 per cent for North America and 4.6 per cent for the USSR. The debt crisis of the 1980s and the adjustment programmes supported by the International Monetary Fund (IMF) in Africa have since aggravated the situation.

In building up research and development and other institutional arrangements for science and technology, we must ensure the involvement and commitment of all stake-holders. Scarce national resources cannot be efficiently utilized nor can the research results be used to deal with development issues if the farmers, entrepreneurs, bankers and legislators are not part of the process. The world and universal truth on genetic engineering or biotechnology may be knowable to the scientists. Such knowledge, however, will be useless to an African entrepreneur or farmer if he cannot use it to develop new products or obtain pest- and drought-resistant seeds and crops. Scientists, rural extension workers, national media and credit managers, as well as product innovators, must be jointly involved in national endeavours so as to establish a viable endogenous capacity.

We believe that the public and the private sectors can and should play complementary roles in planning the administrative and institutional structures necessary for an effective, efficient and self-sustaining scientific and technological base. While the private sector could play a critical role in the

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development, acquisition and adaptation of as well as trade in technology, clear State policy guidance and investment are required at the macro-, meso- and micro-levels. The Governments of developing countries have a clear role to draw up short- and long-term strategies for strengthening national data resources, ensuring a proper relationship between technology and economic growth and welfare, supporting research and development infrastructures, and negotiating for fair rules of international co-operation.

The Vienna Programme of Action failed to create an effective transfer of technology to the developing countries in the 1980s. That was largely due to a lack of the political will to mobilize the necessary financial resources for science and technology. We believe that in reaffirming our commitment to the Vienna Programme of Action we should not see it as a menu from which to pick and choose. The need for viable financing arrangements for science and technology should be our major objective during the 1990s. Indeed, the 1990 United Nations special session on the revitalization of growth and economic development; the second United Nations conference on the least developed countries, in 1990; the preparatory process of the fourth international development strategy; and the United Nations conference on environment and development, in 1992, should offer opportunities to take concrete action in this area.

Besides attempts at strengthening a coalition of resources within the existing bilateral and multilateral development system, fresh and innovative thinking about concrete and substantial financing arrangements will be required. We would prefer access to markets and technology to enable us to increase our productivity and process and market our commodities and products, rather than more tied aid and food aid. The discussion this morning with Nobel Prize winner Professor A. Salam and his eminent friends was as refreshing as the new ideas it stimulated.

(Mr. Karukubiro-Kamunanwire, Uganda)

Uganda followed closely the work of the tenth session of the Intergovernmental Committee for Science and Technology for Development, last August. We were encouraged by a few of the recommendations now before the forty-fourth session of the United Nations General Assembly for approval. The need for the Secretary-General to mobilize adequate resources for an extension of pilot studies on endogenous capacity-building at national and subregional levels cannot be overemphasized. We hope the pilot projects will produce concrete proposals and programmes for the implementation in the 1990s of the Vienna Programme of Action for Science and Technology for Development.

We look forward to the recommendations by the Centre for Science and Technology on ways and means of enabling African countries to enhance their capacity to assess new technologies, especially in new materials and processing of raw materials. We hope the study will be carried out in consultation with African research institutions and various African policy-makers. Efforts should also be made to link such recommendations with the work currently being undertaken by the Secretary-General's group of eminent personalities on African commodities.

Mr. TANASIE (Romania): Our consideration of sub-item 82 (i), "Science and technology for development", which coincides with the tenth anniversary of the adoption of the Vienna Programme of Action on this matter, gives us the opportunity to emphasize once again the great importance of science and technology for the progress and prosperity of the contemporary world.

We should like to express our appreciation of the President's statement and that of the Secretary-General on the role of science and technology for development. We are pleased to note also the contributions made by the group of eminent persons invited to Headquarters, who expressed their readiness to consult on peace, development and the role of science and technology in bringing about a better world.

The wide promotion of science and technology and of the great scientific discoveries of the last part of this century could have a decisive impact on the social and economic development of all countries, the elimination of underdevelopment and the advancement of mankind as a whole. Technological development and economic growth are closely linked. For that specific reason we share the opinion that science and technology should be brought into the mainstream of social and economic thinking, planning and execution, both by Member States and by the United Nations. Technological achievements should be incorporated in the process of equitable economic growth, stability and world peace.

The evolution of international life proves the increasing awareness of the importance of science and technology for development following the 1979 Vienna Conference. Although the achievements of the 1980s have been far short of the objectives sought by the Vienna Programme of Action, the Programme has stood the test of time remarkably well against the backdrop of the difficult social and economic landscape, as was pointed out at this year's session of the Intergovernmental Committee on Science and Technology for Development. It is a

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widely shared opinion that the inadequate implementation of the Vienna Programme of Action should be attributed chiefly to the unfavourable conditions in the world economy during the current decade and the lack of a genuine commitment to support the science and technology sector in developing countries. On the other hand, we see a paradox in the increasing role of science and technology in the daily lives of Member States and the eroding support for multilateral co-operation in this area.

I take this opportunity to express my delegation's support for the demand of the developing countries that they be provided with better conditions for the use of the benefits of the high potential of science and technology for development. Indeed, in an era of unprecedented technological development, the new discoveries and innovations are not within the reach of developing countries. Since they have not been asked to share these benefits, the scientific and technological gap between developing and developed countries is continuously widening. This is particularly true in the case of new and emerging technologies which have a direct bearing on the future of mankind as a whole.

Rapid advances in science and technology during the past two or three decades, while distinctly enlarging production frontiers and broadening choice, have bypassed developing countries because of the lack in these countries of the physical and human resources that would enable them to absorb and apply new technologies.

In this connection, it might be useful at a certain stage to consider convening a second United Nations conference on science and technology for development in order to strengthen the role of the United Nations system in bringing about greater international co-operation in this field and provide increased access by developing countries to high technologies.

(Mr. Tanasie, Romania)

In our view, one of the main obstacles to the world-wide promotion of scientific and technological discoveries and applications is the continuation of the arms race. The arms race diverts from the process of socio-economic development the important resources that are wasted on stockpiling new, ever more sophisticated arms. On a more specific level, as a result of the arms race there has been an increasing trend towards secrecy in the scientific and technological field. This has resulted in restrictions on the free flow of new ideas and on sharing the benefits of the research and development process. In the past decade considerations of military security have increasingly been used for the purpose of imposing new restrictions and discrimination in the field of the transfer of technology.

Another important factor obstructing the transfer of technology for the benefit of developing countries is represented by the high price and restrictive commercial terms imposed upon the recipients, although the research and development expenses of the technologies that are being transferred have already been recovered.

The scientific and technological advancement of developing countries is further affected by the reverse transfer of technology, generally known by the term "brain drain". In this connection, I remind the Assembly that the Heads of State or Government of the Non-Aligned Countries, at their recent Conference in Belgrade, underscored the need:

"to pay due attention to the serious problem of brain drain from developing countries".

All these negative features of the current status of international co-operation in the scientific and technological field are the main cause of the inability of the international community to attain the objectives set out in the Vienna Programme of Action.

(Mr. Tanasie, Romania)

Since the adoption of the Vienna Programme of Action new global problems with a direct bearing on the development of science and technology have emerged. I have specifically in mind the prospect of the exhaustion of fossil fuel and other raw materials, and the tremendous degradation of the reproductive capacity of biological systems and of the environment. Great damage to the environment has been caused recently by the increased traffic in toxic and hazardous wastes and products, which affects developing countries most.

Romania pursues a policy fully consistent with the provisions of the Vienna Programme of Action on Science and Technology for Development. Our efforts are aimed at building up our endogenous capacity to make it possible to choose, acquire, adapt, utilize and innovate technologies within the framework of our national institutional mechanism. We understand that the building up of national scientific and technological capacity should be the primary concern of each individual country. Keeping that in mind, we have continued to allocate an important share of our national income for research and development activities and for the wide-scale introduction and application of new technologies in the production process. In 1986 Romania undertook unilateral cuts in its military forces and expenditure amounting to 5 per cent. The funds thus released have been directed mainly to research and development activities in the civilian sector.

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Romania's policy guidelines in the field of science and technology are contained in a special national long-term programme to the year 2000. On the basis of that programme, five-year and annual plans containing sectoral chapters on specific technologies and products are put into effect.

The end-of-decade review of the implementation of the Vienna Programme of Action provides us with the opportunity to reflect on the significance of science and technology for development and to assess both the positive and the negative impacts of world advances in science and technology. The report of the Intergovernmental Committee on Science and Technology for Development offers a good synthesis of the debate which took place during its tenth session.

We are particularly pleased that one of the resolutions recommended to the General Assembly reaffirms the validity of the Vienna Programme of Action and considers that science and technology should be one of the major components in the deliberations of the special session of the General Assembly on international economic co-operation, in particular the revitalization of economic growth and development of the developing countries; the Ad Hoc Committee of the Whole for the Preparation of the International Development Strategy for the Fourth United Nations Development Decade; the Second United Nations Conference on the Least Developed Countries; and the proposed United Nations conference on environment and development. In this respect, the Advisory Committee on Science and Technology for Development is called upon to make a valuable contribution by identifying critical issues of common concern and proposing new ways for future action in this area.

The strengthening of multilateral co-operation requires a proper institutional framework. We share the opinion that the Intergovernmental Committee on

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Science and Technology, as the only policy-making and co-ordinating global body on science and technology in the United Nations system, could assist the General Assembly by providing the necessary inputs and background information on the scientific and technological dimensions of the global issues on the agenda of its debates. The access to new and emerging technologies should be considered by the United Nations system to be a fundamental right of nations.

As far as the Centre for Science and Technology is concerned, we consider that it has done valuable work as the support Secretariat unit. Resolution 2 adopted by the Intergovernmental Committee at its tenth session confers on the Centre a clearly defined mandate for its future work.

We welcome the resolutions adopted by consensus by the Intergovernmental Committee on Science and Technology for Development. We hope the General Assembly will adopt them in the same manner.

Given the recent development in the world's political climate and the prospect for reduced military outlays, the future might be more promising than the past in revitalizing the efforts of the world community to strengthen the endogenous scientific and technological capacities of developing countries, fostering international scientific and technological co-operation that inspires trust and confidence, and ensuring full access to scientific and technological knowledge, including new and emerging technologies, and the unimpeded transfer of technology on mutually beneficial terms.

Mr. TARMIDZI (Indonesia): Let me begin by welcoming the decision to devote this plenary meeting to deliberations on the important subject of science and technology for development. The Indonesian delegation would like to express its deep appreciation to the Secretary-General for addressing the commemorative

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meeting; that indeed signals the importance the United Nations attaches to this issue. We would also like to take this opportunity to thank the Executive Director of the Centre for Science and Technology for Development for his concise and informative introduction of the report before us.

We meet today in the wake of the tenth anniversary of the adoption of the Vienna Programme of Action on Science and Technology for Development. My delegation fully endorses the outcome of the substantive end-of-decade review and in particular the Committee's consensus resolution on the revitalization of the Vienna Programme of Action. We therefore trust that the General Assembly will unanimously adopt the draft resolutions recommended by the tenth session of the Intergovernmental Committee.

Allow me to reflect briefly on the background and crucial need for implementing the Vienna Programme of Action.

The Programme was designed to seek viable and innovative options to bring science and technology into the mainstream of socio-economic development. It was born at a time of hope and optimism and it was therefore expected that multilateral co-operation would ensure its promotion and implementation. Regrettably, however, no sooner had the Programme of Action been adopted than an unfavourable economic era emerged. Multilateralism went into retreat and the promise of support for the Programme never fully materialized. The subsequent years of the 1980s have now become known as the lost decade for development.

At the same time, the decade was dominated by another major phenomenon: the unprecedented and rapid pace of science and technological innovations. This revolution and radical breakthroughs in science and technology fundamentally transformed the social and economic processes of the world economy. Science and

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technology joined the more traditional agents of economic growth, such as trade and investment, so as to propel such growth to new heights which would also hold enormous potential for development. Paradoxically, however, the development of the developing countries during these years of rapid change became more economically marginalized than ever. To mobilize science and technology in the service of development remains our compelling objective at this session.

Nevertheless, it is also true that recently a small glimmer of hope has re-emerged. Political détente between the two super-Powers seems to ensure a period of reduced global tensions. It also creates a climate for renewed multilateralism and hence new opportunities for advancing development and accelerating the implementation of the Vienna Programme of Action.

We are fully convinced that the fulcrum for accelerating the implementation of the Vienna Programme of Action is the need to strengthen the endogenous capacity of the developing countries. Without such a self-reliant capacity to decide upon and utilize science and technology in the service of development, the developing countries run the risk of falling further behind in the global economic stakes. Since the beginning of the decade a large number of developing countries have remained stagnant and the building of endogenous capacities has failed to make the necessary progress.

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My delegation supports the belief stated in the report that in strengthening the endogenous capacity of the developing countries the participation of all stakeholders in society is paramount. Directives alone from the top down have not been successful. Thus the identification of priority areas for attention should be evolved through national policy dialogue involving all relevant actors and constituents and reflecting their demands and interests in the development process.

A second key objective of the Vienna Programme of Action is the restructuring of international scientific and technological relations better to facilitate the transfer of science and technology to developing countries. While we consider the building of endogenous capacity to be of primary importance, we acknowledge that it cannot take place in a vacuum. Access to adequate and relevant science and technology is also crucial. To date, the transfer of technology has been inhibited by the lack of adequate support from the industrialized countries. Drastic revision of current approaches to technical co-operation is needed, with emphasis on well-conceived areas of priority attention. New opportunities are emerging to create consultative mechanisms for international co-operation through various innovative types of arrangements. At the same time the developed countries have a special responsibility in promoting international co-operation for development owing to the impact of their macro-economic policies on the international economic environment.

My delegation has always felt strongly that the scope of the transfer of technology and technical co-operation should be enlarged so as to embrace also human resources development and environmentally safe industrial technologies. In this context it is important to point out that environmentally sound technology for sustainable development should obviously be made available to the developing countries, and, as indicated in the report before us, the effective application of

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science and technology to development requires the mobilization of the full gamut of national and global resources, including in particular the wealth of human resources.

The Vienna Programme of Action also called for the maximization of the potential contribution of the United Nations system in view of the fundamental and pervasive role of science and technology in the development process. The role of the United Nations in bringing science and technology into the mainstream of the development process is all the more urgent now, and will be in the foreseeable future, owing to the rapidly changing social, economic and technological environment. If the United Nations system is to maximize its potential in this area, harmonization and co-ordination of its science and technology efforts have to be emphasized. Given the pervasive nature of science and technology in a large number of major organizations of the United Nations system and the limited resources available, it is imperative that such harmonization and co-ordination be fully utilized. My delegation endorses the request to the organizations of the United Nations system to provide sustained support for the process of building the endogenous capacities of the developing countries in science and technology, including the capacity for technological assessment. In the same vein we fully hope that Member States will be able to adopt unanimously the draft resolution now before us to ensure the revitalization of the Vienna Programme of Action.

In conclusion, we would like to reaffirm our belief in the validity of the Vienna Programme of Action and its basic objectives. We also fully support the activities of the United Nations Centre for Science and Technology for Development and trust that the response of most developed countries to the United Nations Fund for Science and Technology for Development will be greatly enhanced. In short, we must focus our collective resolve on ensuring the revitalization and successful

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implementation of the Vienna Programme of Action, for to do less would be to neglect to harness this powerful force for development and risk widening the present technological gap between the developed and the developing countries. In this vein it is important also that the international community should not fail to address this crucial issue for development at the forthcoming special session of the General Assembly and in the preparation of the next international development strategy.

Mr. KAGAMI (Japan): Since the invention of the steam engine in the eighteenth century the pace of technological advancement has greatly accelerated and human frontiers have continually expanded. We have directed our gaze higher, into space, lower, towards the ocean floor, and deeper, into the human body, to try to understand the secrets of life. These dramatic developments in science and technology have yielded knowledge that has the potential to help us solve the problems facing us. Science and technology thus constitute a basis for the well-being of humankind as a whole. The reality however is that, while developed countries have been able greatly to exploit the knowledge that has been gained in this area, most developing countries have not been able to derive the full benefits it brings.

It was against the background of these rapid changes on the one hand and unequal success in keeping abreast of them on the other that the Conference on Science and Technology for Development was convened in 1979 in Vienna. It was an important landmark in international efforts to find appropriate ways of making maximum use of science and technology for the purpose of promoting development in developing countries.

(Mr. Kagami, Japan)

The Conference, which was attended by 142 countries, culminated in the adoption of the Vienna Programme of Action, which stressed, inter alia, the importance of bringing science and technology into the mainstream of social and economic development efforts in developing countries. Furthermore, it was the Vienna Programme of Action that introduced the concept of "endogenous capacity" as one of the elements most important to the realization of the Programme's goals. This Programme, in short, was the embodiment of the aspiration of developing countries to enhance their social and economic situation.

Japan believes that the basic message and main thrust of the Vienna Programme of Action is still valid today despite the ongoing need for new operational interpretations in the light of changing socio-economic conditions in developing countries. We are pleased, therefore, that the Intergovernmental Committee on Science and Technology for Development, at its tenth session, held in August this year, reaffirmed the validity of the Vienna Programme of Action and put renewed emphasis on the importance of fostering the endogenous capacity of developing countries.

(Mr. Kagami, Japan)

That having been said, however, it should be noted frankly, as we observe this tenth anniversary, that although expectations for the promotion of science and technology for development were very high when the Vienna Programme of Action was adopted, they have subsequently been frustrated. Disparities between the scientific and technological capabilities of the developed countries and those of the developing countries have widened, as has the economic gap between them. This failure can be attributed to various problems. Among these are the continued shortage of resources to implement the programme, failure on the part of both developed and developing countries to understand properly the term "endogenous capacity", and factors that have been compounded by the generally adverse economic environment that prevailed during the 1980s. If the goals of the Vienna Programme of Action are to be fully achieved, difficulties such as these must be overcome.

Our experiences of the 1980s in this area have taught us valuable lessons, and we would do well to consider them as we formulate new courses of action for the 1990s and beyond, so as to ensure successful realization of the basic objectives of the Vienna Programme of Action. The end-of-decade review of the Programme, undertaken by the Intergovernmental Committee at its tenth session, was a laudable step in the right direction. It shed light on possible future courses of action based on an overall review of the activities undertaken during the ten years since its adoption. In view of the results achieved at that meeting, Japan fully endorses the report of the Intergovernmental Committee, which is now before us as document A/44/37.

When we talk about the needs of developing countries we should always keep in mind the fact that their requirements in the field of science and technology are very diverse - reflecting their particular domestic situations. They differ, one from another, geo-politically, socio-economically, culturally and in other ways. It is important, therefore, to identify those areas of science and technology in

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which concrete efforts are necessary to improve a particular country's industrial structure and help to build up its endogenous capacity, so that science and technology can be promoted as an integral part of its overall economic-development activity. Thus a case-by-case approach is vital, and the role to be played by the United Nations system in the field of science and technology for development will be basically an advisory one.

To ensure attainment of the goals of the Vienna Programme of Action in the next decade and beyond, we should reaffirm, and place greater emphasis on, its basic philosophy, which is that the primary responsibility for the development of developing countries rests upon those countries themselves. In this respect, we commend the Centre for Science and Technology for Development for its initiative in undertaking a series of pilot projects recently in such countries as Nepal, Jordan and Thailand, with a view to enhancing their endogenous capacity. In particular, the initial results of the project in Thailand - a project implemented with financial support from my Government - are quite encouraging, and we hope that that project will be useful in identifying priority issues in the field of science and technology there.

We are of the view that the possibility of efforts being made to foster endogenous capacity should be explored further by the Centre, with financial support from interested donor countries.

In view of those considerations the role to be played by the Intergovernmental Committee, the Centre and other - related - institutions will become all the more vital to our collective efforts to promote science and technology for development. Their role, as catalysts and focal points within the United Nations system, in the field of science and technology for development should be further enhanced. We trust that these bodies will meet the challenges ahead by devoting their limited

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resources to a few useful and effective activities, fully co-ordinating and harmonizing them with the activities of all the other relevant agencies within the United Nations system.

Japan, as a nation that owes much to science and technology for its own development, attaches great importance to the promotion of this field, believing it has a vital role to play in advancing development in developing countries. Particularly since the adoption of the Vienna Programme of Action, Japan has actively engaged in bilateral technical and research-assistance activities aimed at strengthening science and technology in such countries. It has also rendered support for the various relevant efforts of international organizations such as the United Nations Development Programme (UNDP). My delegation is pleased to note, in this connection, that since 1980 Japan has concluded science-and-technology-co-operation agreements with China, Indonesia, Brazil, India and the Republic of Korea, and has been promoting the exchange of information and of experts and the implementation of joint research projects with those countries.

The major problems facing us today are quite diverse and wide-ranging. All such issues as poverty, population, debt and environment are interlinked and, hence, call for concerted joint efforts on a global scale. Unless sustainable and sound development is achieved through the proper use of science and technology, a solution to the problems will not be possible. Therefore, the theme of science and technology for development should be of concern not to developing countries alone but also to developed countries. Developed and developing countries should jointly grapple with this theme from a long-term and global perspective.

In this respect, what is pointed out in the preamble to the Vienna Programme of Action holds true even today:

"The experience of the last few decades makes evident the need for determined measures on the national and international planes to redress this situation,

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for without such action the present inequitable situation will be aggravated further and the gap between developing and developed countries will continue to widen."

We hope that this important issue of science and technology for development will be duly taken into account as we prepare for the special session of the General Assembly next April, as well as for a new international development strategy.

For its part, Japan, bearing these matters fully in mind, is ready to take part in concerted joint efforts to improve human welfare, particularly in developing countries, through science and technology, and is determined to contribute further to the successful implementation of the Vienna Programme of Action.

Mr. KHORO (Pakistan): Ten years ago the United Nations Conference on Science and Technology for Development ended on a note of optimism with the adoption of the Vienna Programme of Action. The objectives of the plan were noble and intended to benefit the peoples of the developing countries and, indeed, the entire international community. There were hopes of a greater momentum towards the strengthening of the indigenous scientific and technological capacities of the developing countries, the restructuring of international technological and scientific relations, and the invigoration of the role of the United Nations system in that field. Ten years after the adoption of the Vienna Programme of Action, it is time to take stock of our achievements and shortcomings.

It is true that during the early years of the decade the world witnessed a major international economic crisis that cast its dark shadow on the expectations aroused by the Vienna Conference. However, it is equally true that some countries continued to progress in that environment, while in a large number of countries the situation of science and technology either remained stagnant or even deteriorated.

The Vienna Programme accepted the partnership of responsibility in which technically disadvantaged States would be assisted by industrialized States in the area of research and development. That mutual obligation has unfortunately not been met. The developing countries still trying to catch up with the first phase of technological revolution have been left further behind because of rapid technological advances. The financial commitments to the Fund for Science and Technology for Development, which was designed to play a central role in the implementation of the Vienna Programme, have not been forthcoming. Ironically, at the 1988 Pledging Conference the commitments came primarily from the developing countries, showing an absence of any commitment to the cause on the part of the developed countries. Furthermore, a substantial part of the amounts pledged remains outstanding.

(Mr. Khoro, Pakistan)

The institutional arrangements for science and technology in the United Nations - namely, the Intergovernmental Committee on Science and Technology for Development, the financing system for science and technology for development, and the Centre for Science and Technology for Development - have not been able to realize their anticipated potential. Their role during the past decade, however, points to their continued usefulness, which could be enhanced by changing their scope and functions.

Primary importance was given in the Vienna Programme to development of the indigenous capabilities of the developing countries with the help of the United Nations system. That has not happened. The developing countries remain far behind their developed counterparts in regard to the possession of advanced technologies.

The second basic goal of the Vienna Programme of Action was the restructuring of international scientific and technological relations and the strengthening of the role of the United Nations system. So far, support for science and technology has been bilateral. The multilateral approach to the implementation of the Programme could be more effective within the United Nations system, which, as mentioned earlier, remains under-utilized.

The ability of the institutions in the United Nations system to be effective depends essentially on financial support. We believe that generous contributions must be made to the United Nations Fund for Science and Technology for Development.

The tenth anniversary of the Vienna Programme of Action comes at a time when we are in the process of preparing for a special session of the General Assembly on international economic co-operation and the new international development strategy for the fourth United Nations development decade. The present debate presents us with an opportunity to incorporate scientific and technological development as an important factor in the strategy under preparation. The anniversary session should also be used to renew our commitment to the full and early implementation of the

(Mr. Khoro, Pakistan)

Vienna Programme of Action, with a global vision of the scientific and technological dimensions of issues in the mainstream of world concerns.

With the improving political and economic climate, science and technology should be harnessed to work in relation to the economic and social processes, with new and innovative approaches at the national level as well as an integrated view of science and technology in international development at the global level.

Mr. EMENYI (Nigeria): Nigeria is pleased to participate in these discussions being held to commemorate the tenth anniversary of the adoption of the Vienna Programme of Action on Science and Technology for Development. The adoption of the Vienna Programme of Action was an important milestone in international economic co-operation in that it signalled the willingness of the international community to accelerate the pace of development in developing countries by enhancing their capacities in the critical field of science and technology.

Since the Programme was adopted 10 years ago Nigeria has participated actively in the various processes connected with its implementation. Most recently, at the tenth session of the Intergovernmental Committee on Science and Technology for Development, which was held in New York from 21 August to 1 September, Nigeria worked along with other States members of that body to produce a consensus draft resolution on the end-of-decade review of the Vienna Programme of Action. That draft resolution has been recommended to this session of the General Assembly for adoption.

As we commemorate the tenth anniversary of the Vienna Programme of Action it is important that we remind ourselves of the three main goals that were agreed upon in the aforementioned Programme of Action. These were the strengthening of the scientific and technological capacities of developing countries; the restructuring of existing patterns of international scientific and technological relations; and the strengthening of the role of the United Nations in the field of science and

(Mr. Emenyi, Nigeria)

technology, and the provision of increased financial resources. The considerations that informed those objectives are as valid today as they were when the Programme of Action was adopted 10 years ago. Yet the objectives have remained unfulfilled. This was one of the main conclusions of the end-of-decade review.

The role and impact of science and technology in economic development has increased significantly and is bound to increase further, owing to its ever-growing application in many areas of national and international endeavour. A number of issues on the international agenda, such as environment, natural disasters, poverty alleviation and other socio-economic issues that require co-operative international action, would be considerably ameliorated by solutions based on science and technology.

If the developing nations must be part of the international effort to solve those problems, it must follow that their national efforts to strengthen their scientific and technological capacities should be a matter of collective concern, as envisaged in the Vienna Programme of Action.

The end-of-decade review of the Vienna Programme of Action undertaken during the tenth session of the Intergovernmental Committee examined the difficulties that had been responsible for lack of progress in the implementation of the Programme. The difficulties were generally attributable, in part at least, to the unfavourable international economic environment that had confronted the developing countries, but we must also acknowledge the lack of political will on the part of the technologically advanced countries to implement commitments undertaken within the framework of the Vienna Programme of Action.

(Mr. Emenyi, Nigeria)

The inability of the United Nations system to generate adequate financial resources and design programmes to implement the Vienna Programme of Action reflects the lack of political will to deepen international economic co-operation in the field of science and technology.

An agenda for future work consistent with the Vienna Programme of Action must necessarily focus on enhancing the indigenous scientific and technological capabilities of the developing countries. To realize that objective, a strategy to pool financial resources from the World Bank, the United Nations Development Programme (UNDP) and bilateral and donor agencies must be established and acted upon as early as practicable. In addition, universities and research and development institutions in industrialized countries which would be willing to train scientists and technologists from developing nations and carry out joint research with those nations with a view to assisting them to adapt and promote innovations in environmentally sound technologies should be identified.

We must renew and strengthen the resolve of the international community to enhance the scientific and technological capacities of developing nations through practical actions.

While the search for collective solutions to the emerging global problem is in itself a refreshing spur to support for development of the scientific and technological capacity of developing countries, it must be remembered that those countries are confronting a number of social and economic problems that would be amenable to solutions based on science and technology. Among these are the provision of such essential requirements as safe drinking water, the production of food to meet the requirements of their populations and the development of a modern information and communications system in the countries concerned.

(Mr. Emenyi, Nigeria)

In this regard, I want to emphasize the importance which Nigeria attaches to the role that has been assigned to the Centre for Science and Technology for Development in the context of the end-of-decade review, namely, that of studying ways and means of enhancing the capacity of developing countries to assess technologies to determine which meet health, safety and environmentally sound criteria, in their efforts to process locally their agricultural and mineral raw materials.

The Government of the Federal Republic of Nigeria looks forward to close collaboration with the Centre in this particular endeavour.

In conclusion, my Government is taking a number of actions to give pride of place to the development of science and technology in Nigeria. In addition, Nigeria is ready to participate in bilateral and multilateral arrangements in order to strengthen and deepen our science and technology base.

Mr. BANDARA (Sri Lanka): Since I am speaking in plenary meeting for the first time during this session, I should like to join other speakers in congratulating Ambassador Garba of Nigeria on his election to steer the deliberations of this session of the General Assembly. My delegation is very pleased to see him presiding over the Assembly and we are convinced that under his able guidance the current session will achieve satisfactory results.

This morning we had the opportunity of listening to Ambassador Garba's statement at the plenary meeting in observance of the tenth anniversary of the adoption of the Vienna Programme of Action on Science and Technology; it was very encouraging indeed. We also listened with appreciation to the excellent and comprehensive speech of the Secretary-General, Mr. Javier Perez de Cuellar, and the interesting statements by the leaders of the regional groups.

(Mr. Bandara, Sri Lanka)

My delegation wishes to make a special reference to the keynote speech delivered by Professor Abdus Salam, the Physics Nobel Laureate, which was indeed thought-provoking, and to thank Professor Swaminathan for the statement he made on behalf of the panel of eminent persons convened by the Secretary-General. On behalf of my delegation and on my own behalf, I express our gratitude to Mr. Sergio C. Trindade, Executive Director of the United Nations Centre for Science and Technology for Development, for the good work he has done so far.

The decade of the Vienna Programme of Action and its three basic aims have brought into focus the important message it was designed to transmit to the scientifically and technologically poorer nations of the world. It has also focused the attention of the developed countries on their enormous global responsibilities in the field of science and technology and their impact on development in the developing nations. In that context the Vienna Programme of Action has truly laid the basis for the development decade of the 1990s and even beyond.

The implementation of the Vienna Programme of Action is, in retrospect, a process which has become rooted in the chemistry of development in the developing nations. The international community has recognized as one of its prime responsibilities the task of showing the way through the complex web of development, which encompasses the elements of scarce resources and the social aspirations of the people of the developing world.

Science and technology have paved the way, through the Vienna Programme, for a new era of global understanding. Our ability to live in harmony with one another requires a common policy. The design of such a policy can never be far away if a catalyst exists for its creation. The Vienna Programme of Action is the catalyst.

(Mr. Bandara, Sri Lanka)

The visualizers of the Vienna Programme may or may not have realized that they had really embarked upon a long journey towards peace. Their goals were more physical in nature and measurable in scope. Yet it is the tangible that sometimes leads to the intangible. The true nature of the Vienna Programme may have brought us to the decade when we shall take the actual first steps in this long journey. Furthermore, it has stimulated the same enthusiasm in the developing nations as a toddler feels as he or she takes the first steps in the lifetime that stretches ahead.

So with the first manned space flight, those pioneering astronauts never imagined the era of skylabs; their immediate concern was getting into space and traversing space. The Vienna Programme of Action is similar; its initial moves have now led to the frontiers of science and technology becoming accessible to the developing nations.

The first decade of the Vienna Programme has been a period of rapid progress in science and technology in the developed world. It has also been a period in which there has been a significant diffusion of it or of its impact in the developing nations. The level of awareness of the relevance of science and technology for development has spread among those countries in a manner not witnessed when other dimensions of development were in the forefront of debate. A direct contribution to this has been the activities of the United Nations Centre for Science and Technology for Development and other United Nations bodies created under the Vienna Programme. The Intergovernmental Committee on Science and Technology for Development, which met in August/September of this year for the end-of-decade review of the implementation of the Vienna Programme of Action has set the direction for the next decade.

(Mr. Bandara, Sri Lanka)

It has recommended that we co-ordinate and harmonize the science and technology activities of the United Nations system. It has also stressed the importance of the work being carried out by the United Nations Fund for Science and Tehnology for Development as an identifiable entity. Further, it has urged that the United Nations Centre for Science and Technology for Development, as the only forum in the United Nations system with a mandate in the field of science and technology, reassert itself as a mature and far-sighted body designed to reconcile policy differences and render more effective assistance to global debate. In this context, my delegation fully endorses that position and would like to add that priority should be accorded to pilot projects in the endogenous capacity-building of science and technology in developing countries.

My delegation is also pleased that the Assembly decided to consider this item on this memorable occasion. It is indeed a step in the right direction in that it involves all stakeholders.

Sri Lanka has followed a path that is somewhat typical of nations that integrate science and technology in development. Its traditional institutions of scientific research in the plantation and domestic agricultural sectors and in the universities have been augmented over the past decade with institutions that are mandated to work in the newly emerging technologies - especially in the information technologies, which encompass computing and communication technologies. The spectrum of institutions has been supplemented with science and technology positions created at the policy level.

The scenario is encouraging for the next phase, when science and technology in development can lead to the realization of measurable benefits by national stakeholders. His Excellency the President of Sri Lanka aptly called the attention of the country's scientific and technological community to the following:

(Mr. Bandara, Sri Lanka)

"For whose benefit is science meant? For whom is technology? If hunger cannot be eliminated through science and if it cannot eliminate sickness and physical weakness, we have no need for that science. If technology cannot eliminate poverty, unemployment, want, we have no need for that technology. If the scientist and the technologist cannot provide relief to the poor, what need has humanity for such a scientist or technologist?"

The words of His Excellency the President reflect the reality of a part of the world that was envisaged by the pioneers of the Vienna Programme of Action. It is in such a context that endogenous capacity-building has become important for Sri Lanka, like many other nations.

We in Sri Lanka are deeply conscious of our own responsibilities in issues of global concern in the sphere of science and technology. The depletion of the ozone layer and global warming are two such issues. We have ratified the Montreal Convention and are keenly observing the ongoing initiatives of the World Meteorological Organization and the United Nations Environment Programme. In our capacity and capability for involvement in such global activity we believe that there must be a sharing of environmentally sound technologies. We are aware that the sharing of any technology, big or small, has vast implications in the global marketplace. It further justifies this forum as a meeting place to arrive at a consensus on the rules of supply and demand for public good.

This is the time to applaud the first decade of the Vienna Programme of Action. My delegation firmly supports the views expressed by the Chairman of the Group of 77 when he addressed the Assembly this afternoon. My delegation also believes that it is the time to begin in earnest to survey these actual issues, which have surfaced in the first decade. Let us all strive to comprehend them and make this Earth in the next decade and in the next century the attractive planet it truly is.

Mr. VALLENILLA (Venezuela) (interpretation from Spanish): My delegation is very pleased to have an opportunity to put forward some thoughts on the evolution of the first decade of the Vienna Programme of Action.

The Vienna Programme of Action is composed of three substantive elements: strengthening of the endogenous scientific and technological capacity in the developing countries, the restructuring of the current system of international scientific and technological relations, and the supply of greater financial resources. Aware of the way those elements have developed, we acknowledge that the Vienna Programme of Action has given us new inputs for dealing with our countries' scientific and technological activities. However, we must recognize that during this first decade it has been impossible to meet the expectations of 1979.

We understand that the complex international economic situation, the lack of the political will to support science and technology, and the lack of an awareness of the need to make progress in this sphere as a matter of paramount importance for economic and social development are all factors that have made it difficult to achieve the objectives of the Vienna Programme of Action.

The interrelationship of science and technology, on the one hand, and the changing international economic situation, on the other, has created such ambivalence that difficulties have been generated that delay the implementation of science and technology policies while, at the same time, new opportunities are created that encourage progress in science and technology. This has given an impetus to the search for new national approaches at the political level designed to take advantage of favourable situations.

In that connection, it is this awareness of the ambivalent relationship between science and technology and the international economic order that, in the concrete case of a country like Venezuela, has promoted or had an impact on

(Mr. Vallenilla, Venezuela)

important decisions directed towards strengthening and consolidating the bases of the national science and technology system. In fact, Venezuela shares the view that in order to build an endogenous capacity it is of fundamental importance to have national demand by the public and private sectors that will encourage the establishment of an indigenous capacity in science and technology. That is why we must step up national efforts to encourage a real supply of national technology - not by discarding those that already exist, but by adapting these efforts to the economic reality of the country.

However, the scarcity of resource flows and the complexity of the technological problems now facing us militate in favour of real co-operation on the part of all the States Members of the international community.

The progress of science and technology in developing countries, particularly in Latin America, has been restricted by the unfavourable developments in the international economic situation and the crushing weight of external debt, which could cancel out the little that has been achieved in development over the past 10 years.*

* Mr. Abdoun (Sudan), Vice-President, took the Chair.

(Mr. Vallenilla, Venezuela)

This situation tends to increase the inequalities between the developed and the developing countries, leading us to overlook the relevant role science and technology should play in our countries' progress towards economic and social development.

That is why our Government is deeply concerned about the prospects for progress in science and technology in the developing countries in the 1990s, when there is this unprecedented retrogression in scientific and technological development because of such factors as financial imbalances in the international economic system. We cannot forget that in the 1980s, called "the lost decade for development", the inequalities in the international economic order have increased. These inequalities might have made it possible for the developed countries to finance their scientific and technological research and progress, whereas the opportunities of the developing countries have been limited.

Venezuela is firmly convinced that an endogenous capacity should promote a true supply of science and technology. The developed countries must understand that we must achieve autonomy in new technology and not depend exclusively on external sources of science and technology. We must direct our efforts towards encouraging and strengthening the endogenous capacity of developing countries. Otherwise, we shall be condemned to external dependence and subjected to unforeseeable changes in the international economy, which are almost always translated into higher costs for the countries importing science and technology.

My delegation thinks that direction must be given to the programmes of the Centre for Science and Technology for Development and other bodies of the system, and that real effect must be given to the activities of the Intergovernmental Committee, in order that efficient and viable machinery can be established that would encourage participation by the productive sectors in our economies. My delegation stands ready to lend its whole-hearted support to that purpose. The

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inclusion of Venezuela's Minister of State for Science and Technology, Dr. Dulce Arnao de Uzategui, in his personal capacity, in the Advisory Committee on Science and Technology for Development is very encouraging in that respect. Similarly, beginning in 1990 Venezuela will assume the presidency of the Latin American Council on Science and Technology and will provide its secretariat. Our country hopes that it can thereby contribute to strengthening this important body for scientific and technological co-operation in our region.

Priority should be given to stepping up international co-operation directed mainly towards providing very good training to human resources. The industrial countries have an important role to play in the current unfavourable situation of the developing countries. My delegation believes it is indispensable to encourage the mechanisms to support the process of industrial reconversion, as a choice that can guarantee an endogenous capacity with regard to innovation. We are convinced that policies on science and technology must be made compatible with the policies governing industry and trade.

To sum up, the delegation of Venezuela considers that in future activities in the field of science and technology consideration should be given to the following factors, on which we think most developing countries agree.

First, we must encourage the implementation of State science and technology policies, with a view to facilitating decentralization of scientific and technological administration, in order to develop capabilities of strengthening endogenous-capacity-building efforts, by establishing a specialized body for this purpose.

Second, the programmes of the United Nations Centre for Science and Technology for Development and the activities of the Intergovernmental Committee should be directed towards setting up effective, viable mechanisms that can encourage

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participation by the productive sectors of our economies, within a context that can generate the proper conditions for the integration of the entities concerned with the supply and demand of science and technology.

Third, we should promote regional co-operation for truly joint activities to study and deal with common problems in the context of genuine multinational action, and not merely mechanisms to finance isolated national activities.

Fourth, international co-operation should be aimed primarily at the training of human resources at the highest possible level. In view of the economic difficulties faced by most of the developing countries at this time, this could be the most meaningful contribution the industrialized countries could make to the relatively less developed countries.

Fifth, we should support regional and international integration, including commitments, into national science and technology plans, guaranteeing the necessary resources for their implementation.

Sixth, we should encourage parliamentary committees on science and technology, to act as follow-up bodies to assess the resources that would be required to do this.

Seventh, a high-level committee should be established to evaluate the various subregional, regional and international bodies that have been established to promote the development of science and technology, in order to assess their effectiveness and establish mechanisms for collective efforts and activities.

Eighth, ways and means should be sought to support industrial reconversion processes, as this constitutes a viable choice for guaranteeing endogenous capacity-building in technological innovation, training and assimilation.

(Mr. Vallenilla, Venezuela)

Ninth, we should propose lines of action that would ensure more compatibility between science and technology policies and industrial and trade policies.

In the field of new technologies, the establishment of the international Centre for Genetic and Bio-Technological Engineering, under the auspices of the United Nations Industrial Development Organization (UNIDO) and in accordance with the principles of the Vienna Programme of Action, has particular significance. This Centre is a reflection of the collective will for international co-operation. Bio-technology can make a substantial contribution to enhancing the quality of life, particularly in the developing countries. We must acknowledge that the international scientific community played an important role in the establishment of the Centre. We offer our co-operation in this important effort and hope that other Member States will do the same, with a view to improving the functioning of the Centre and utilizing the beneficial results of its activities.

Finally, my delegation believes that science and technology are and will continue to be decisive factors in economic and social development. That is why it is indispensable for us to develop our scientific and technological potential and place it at the service of our peoples.

Mrs. SAWADOGO (Burkina Faso) (interpretation from French): The gap between the developing and the developed countries has grown unceasingly in recent decades. While scientific and technical innovation has accelerated, the international economic situation has worsened. So far the participation of the developing countries in the new scientific revolution has been extremely limited; science and technology have remained the monopoly of a few countries. However, the new scientific and technological revolution has radically transformed trade, communications, the means of production and the role of man in the production process.

Science and technology for development are of fundamental importance for the Government of Burkina Faso and have a two fold effect. They have an effect, first, on world economic and social development. In this context, the new technologies must be made available to the developing countries to enable them to develop their industry, increase their agricultural productivity, eliminate poverty and satisfy their energy needs. Secondly, they have an effect on the environment, in particular in the developing countries. The fight against drought and desertification is particularly urgent for many developing countries in Africa. Science and technology have an important role to play in developing new means of combating drought and desertification.

The importance of science and technology for the economic and social development of all countries has increased since the 1979 Vienna Conference on Science and Technology for Development.

I am happy to recall here also that in April 1986, in New Delhi, and in September 1986, in Harare, the non-aligned countries reached a consensus to the effect that it was necessary to adopt a policy of sharing experience and to

(Mrs. Sawadogo, Burkina Faso)

develop a strategy for co-operation concerning new technologies and new state-of-the-art techniques.

The Vienna Conference adopted the Vienna Programme of Action. Its principal decision concerned enhancement of the endogenous capacities of Member States, especially the developing countries. Technological development and economic growth are closely linked. Progress in science and technology cannot be stopped. They must therefore be incorporated in the processes of equitable economic growth and world peace and stability. To that end, the endogenous scientific and technological capacities of all countries, but especially the developing countries, must be strengthened.

Endogenous scientific and technical capacities can be extremely useful for all countries since they allow them to reap the maximum advantage from the technology employed. Modern technology is developing rapidly and unequally and the gap between the developed and the developing countries is increasing. That is why we support the idea of the acquisition of endogenous capacities as indispensable for all countries if this growing gap is to be closed, in keeping with the ideals of the United Nations.

The spirit of the Vienna Programme of Action should be reaffirmed. The creation of the Intergovernmental Committee on Science and Technology for Development and the United Nations Centre for Science and Technology for Development raised great hopes, particularly in the developing countries. However, we are forced to recognize that the expectations have not been realized. The restructuring of the international framework for the relationship between science and technology and development has not taken place. The international community has shown little interest in the integration of science and technology in the principal macro-economic strategies and policies, in particular in the light of the

(Mrs. Sawadogo, Burkina Faso)

rapid progress in such state-of-the-art technologies as micro-electronics, biotechnology, information science and superconductivity, all of which are revolutionizing manufacturing procedures and communications and will have a profound impact on the economic and social development of many developing countries.

The celebration of the tenth anniversary of the adoption of the Vienna Programme of Action gives us an opportunity to reaffirm the role of the Intergovernmental Committee on Science and Technology for Development and the United Nations Centre for Science and Technology for Development as instruments in the service of Member States and the vital cause of applying science and technology to development. This is also an opportunity for us to revive the "spirit of Vienna".

The end-of-decade review of the Vienna Programme of Action is a challenge that must be met; it is a unique opportunity for all countries that can contribute to a strategy for the incorporation of science and technology in the development process with a view to achieving a consensus on true international co-operation in this field. It is also an opportunity to assess the achievements and analyse current problems, but equally to assess the constructive guidelines for subsequent implementation of the Vienna decisions.

Thanks to economic, scientific and technological progress, drought no longer causes famine in the developed world, but that is not yet the case in the developing countries, above all in Africa. The great drought in the Sahel, which began in 1968, has persisted and spread, becoming the most serious drought of the century and one of the main causes of the critical economic situation in Africa. The Government of Burkina Faso attaches great importance to international co-operation in technologies which affect the environment, especially those concerning drought and desertification.

(Mrs. Sawadogo, Burkina Faso)

Burkina Faso, which is part of the Sahel, is one of the African countries most affected by drought and desertification. It is necessary for the countries affected by drought and desertification, first, to strengthen their own means of monitoring and combating drought and desertification and, secondly, to make effective use of scientific and technological discoveries such as the selection and propagation of species by the new biotechnological methods, new sources of energy, weather monitoring, the development of forecasting models, and hydrological monitoring and modelling for the rational conservation and use of water.

That is why the Government of Burkina Faso has adopted a national policy of environmental restoration. An extensive programme of conservation and reforestation was begun five years ago.

While one cannot correct overnight the abuses which the natural environment has suffered for decades, the Government of Burkina Faso is convinced that, with the support of other Governments, the United Nations system and non-governmental organizations, the efforts it is making will contribute to the restoration of the environment in Burkina Faso.

At the subregional level, the Permanent Inter-State Committee on Drought Control in the Sahel (CILSS), as part of the regional strategy in the fight against drought and for the development of the Sahel adopted in 1984, and the United Nations Sudano-Sahelian Office are playing an active role in combating desertification. The fact that the importance of this activity was recognized in the United Nations Programme of Action for the Economic Recovery of Africa 1986-1990 added a new dimension to these efforts.

It is a paradox that the Vienna Programme of Action was not applied in practice, basically because of financial problems, even though science and technology are of such great importance for development. Science and technology are the keys to development.

(Mrs. Sawadogo, Burkina Faso)

Burkina Faso hopes that the Centre for Science and Technology for Development will take the necessary measures, in co-operation with the United Nations Fund for Science and Technology for Development and other competent bodies within the United Nations system, to prepare new programmes and projects in the area of co-operation and to develop those that already exist, with a view to strengthening endogenous capacity in the sphere of scientific and technological innovation, in particular in the areas of information, training, planning, technological assessment and forecasting, research, development and application.

It is also a task of the Intergovernmental Committee, the main deliberative body within the United Nations system for scientific and technological matters, to study the major challenges and possibilities which the new technological revolution presents for the development of the developing countries in the mutual interest of North and South.

The problem of the reverse transfer of technology is to a large extent linked to the present world economic crisis. Burkina Faso supports the adoption of measures and joint action at the international level to ensure that the migration of trained manpower from the developing to the developed countries is so arranged that the interests of the countries which are penalized in the transfer of technology are adequately protected. Similarly, with regard to co-operation among developing countries, we believe that the present deterioration in the international economic situation calls for the strengthening of collective self-reliance through economic and technological co-operation, the exchange of experience, and co-operation and assistance in the application of new technologies that can help developing countries to overcome some of the difficulties they face in gaining access to the markets of developed countries.

(Mrs. Sawadogo, Burkina Faso)

The developing countries should not limit themselves to the role of passive spectators of the technological revolution. They should seek actively to mobilize, adapt and develop new state-of-the-art technologies compatible with their own national social and economic policies and objectives.

In conclusion, the United Nations should step up its activities in the area of science and technology in order to be able to meet the increased needs of numerous countries and promote the role of science and technology in the solution of the problems common to all mankind. Although bilateral co-operation in the area of science and technology is a useful aspect of international co-operation, it cannot take the place of or exclude multilateral co-operation. The two types of co-operation are complementary.

It is necessary to enhance the effectiveness of the United Nations system in such vital areas as the strengthening of the scientific and technological potential of developing countries, the formulation of a coherent policy for the use of science and technology for development, the expansion of scientific and technological co-operation among all countries and improvement of the functioning of the bodies and specialized agencies of the United Nations concerned with science and technology.

Mr. OBMINSKY (Union of Soviet Socialist Republics) (interpretation from Russian): The present scientific and technological revolution is increasing in pace and the quality of its own developments is rising to a new level. At the same time, the revolution carries within it the danger of new contradictions and largely unpredictable consequences for the development of civilization while sharply reducing the amount of time available for taking decisions on the future development of the world economy. The cost of possible mistakes has grown

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immeasurably. In present conditions, the surest way to avoid miscalculation is by uniting the efforts of all members of the world community in managing scientific and technological progress for the common good.

As was stressed by Mikhail Sergeyevich Gorbachev at the Sorbonne:

"We have entered an era in which all progress must be integrated in the common interest of humanity. It is necessary to seek - and to seek jointly - common criteria for progress during the ineluctable scientific and technological revolution in the nuclear, and then in the post-nuclear, age."

The current renaissance of the role and authority of the United Nations and its universal character are important conditions of its more effective use as an instrument for bringing about a practical consensus on problems relating to scientific and technological progress.

The United Nations system has the necessary ability to carry out a regular analysis of global consequences and prospects for the development of science and technology, to assist in mutually profitable technological exchanges free of any ideological basis and to establish an effective, preventive scientific and technological policy which would make it possible to avoid the undesirable side effects of scientific and technological progress. All this, in our opinion, would facilitate greater predictability and stability in the world economy and the balanced and effective settlement of global problems. In the future we might consider working out a global programme for multilateral scientific and technological co-operation within the framework of the United Nations.

We approach from the same angle the implementation of the Vienna Programme of Action on Science and Technology for Development and the attainment of its objectives. In this connection, we must enhance the effectiveness of the relevant

(Mr. Obminsky, USSR)

bodies and agencies in the United Nations system by harmonizing efforts in the area of technical assistance and developing common approaches to world scientific and technological problems of interest to all countries.

The delegation of the USSR endorses the main proposals and recommendations in the report (A/44/37) of the Intergovernmental Committee on Science and Technology for Development, including recognition of the need to improve multilateral scientific and technological co-operation in resolving the social and economic problems of the developing countries and strengthening their endogenous scientific and technological potential. We support the central co-ordinating role of the Intergovernmental Committee within the United Nations system.

One of the major problems discussed at the tenth session of the Intergovernmental Committee was technology assessment, and that was no accident. The increase in crisis phenomena caused by exhaustion of the potential of the technological base for material production has led to the need for a shift to a qualitatively new set of technologies based on deep understanding and scientific analysis of the interactions of man, nature and society. On our agenda is the definition of the reasonable demands of mankind in the light of the resources available in terms of energy and raw materials, demographic requirements, ensuring food production, and so on.

There is a special place among the priorities for the question of the relationship between the problems of scientific and technological revolution and those of environmental protection. The worsening environmental situation in the world, climatic changes and the consequences of major industrial accidents mean that specific solutions must be found to problems related to the traditional model of industrialization and the use of technologies that are far from perfect.

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We therefore we consider the decision of the Intergovernmental Committee to entrust the United Nations Centre for Science and Technology for Development with a mandate to act as the focal point in the assessment of technology within the United Nations framework in terms of co-ordination with other organizations and to use for this purpose the Advanced Technology Alert System (ATAS).

(Mr. Obminsky, USSR)

However, hard work lies ahead both from a strictly scientific and technological point of view and in the light of the need to adjust national plans and priorities for economic and social development. Clearly it is necessary to seek a solution to these problems through maximum co-ordination of the actions of governmental and non-governmental organizations and of the specialized agencies, in terms of assessment of technology.

We probably should be bolder in expanding co-operation within the specialized agencies of the United Nations, in particular the United Nations Industrial Development Organization, which have practical experience in this field. Such co-operation will make it possible to eliminate unjustified duplication and to find the most rational ways and means of achieving the goals that have been set. And we cannot do without the advice of scientists and specialists.

There has been a proposal that the substantive theme of the eleventh session of the Intergovernmental Committee should be "Ways and means of ensuring the participation of developing countries in international co-operation for research on and development of environmentally sound technologies, and the rapid and effective transfer of such technologies to developing countries".

We feel that important and urgent tasks are comprehensive research on and development of the area of environmentally sound technologies and businesslike preparations of the mechanisms for the transfer of technologies to countries that do not have them. There is a clear need to co-ordinate this work and to develop broad, practical international co-operation in close co-ordination with the activities of the United Nations Environment Programme. Important thoughts on this are bound to emerge from the 1992 conference on environment and development.

The Soviet delegation commends the United Nations Centre for Science and Technology for Development on its activities in carrying out the Vienna Programme

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of Action, including the measures for strengthening the endogenous science and technology potential of the developing countries. The effectiveness of this work could be enhanced by periodically assessing the results of projects carried out, bearing in mind the opinions of those States whose territories are involved.

Useful work is being done by the Task Force on Science and Technology for Development of the Administrative Committee on Co-ordination, which is participating in experimental research and in preparing recommendations for the integration of world experience at the national level. Such work, in our opinion, must be closely co-ordinated at the regional and subregional levels, in keeping with principles of the Vienna Programme of Action. In the future activity of the United Nations Centre for Science and Technology for Development and of other organizations, it will be important to seek ways of harmoniously combining technical assistance activities under the Vienna Programme of Action with the development of approaches for solving global scientific and technological problems.

The Soviet Union has actively participated in and co-operated with the United Nations activities on these questions. Our scientists and specialists are directly participating, for example, in preparing research on space technology and will help in every way in the drafting of scientifically justified recommendations in this field. They will also work to make this information on all of these accomplishments available to the members of the world community. As part of this topic, there will be a major seminar for scientists, technicians and businessmen in Moscow in 1990.

In conclusion, I should like to emphasize that the Soviet Union is giving priority attention to participation in the United Nations, its bodies and specialized agencies. We have been given a mandate to do so by the highest body of the Soviet State - the Congress of People's Deputies. We are prepared actively to

(Mr. Obminsky, USSR)

promote the increased effectiveness of the work of the United Nations system, which has great potential for speeding up the integration of States into the world economy and the system of division of labour. These activities are also a source of international scientific and technology co-operation.

Mr. MENON (India): I should like to begin by expressing my delegation's satisfaction with the outcome of the deliberations of the Intergovernmental Committee on Science and Technology for Development at its tenth session, held in New York from 21 August to 1 September this year. The Committee reaffirmed the continued validity of the Vienna Programme of Action after conducting its end-of-decade review. We are happy to note that the international community is united in expressing its support for the three basic goals of the Vienna Programme of Action - namely, endogenous capacity building, restructuring of international relations in this field, and strengthening the role of the United Nations system in the field of science and technology, including the provision of financial resources.

The Vienna Programme of Action was adopted in 1979 with the objective of giving concrete shape and content to international co-operation in the field of science and technology for development. The situation facing the developing countries at that time was already grim. In many ways the situation that we face today is worse than that 10 years ago. The external environment in which developing countries have to pursue their development efforts continues to be adverse. It is characterized by the shrinking of resource flows for development financing, the spectre of ever-rising protectionism against the developing countries' exports, the continuing burden of external indebtedness, and prohibitive and restrictive terms for transfer of technology - to name but a few. The efforts of developing countries in building endogenous capability in the area of science and technology are especially hard hit by this adverse external environment.

(Mr. Menon, India)

Added to this is the unprecedented technological evolution the world has witnessed in recent years. As a result, patterns of production and consumption are undergoing vast changes which, in turn, are changing the existing patterns of trade. While technological advances are harbingers of long-term benefits to mankind, they need to be managed carefully, in such a way as to ensure that in the short- and medium-term they do not aggravate the already difficult situation of developing countries. The developing countries cannot either ignore or choose to opt out of the technological revolution lest the ever-increasing technological gap between the developed and the developing countries should widen further. That is particularly true of the new and emerging areas of science and technology, such as - to name a few - bio-engineering, new materials, informatics, micro-electronics, super-conductivity, and robotics. Let me hasten to add that the efforts of the developing countries to adapt and internalize these new areas have the primary objective of improving the standards of living and meeting basic minimum needs of their people. Hence it is essential that developing countries be enabled to participate in, and benefit from, the ongoing technological revolution.

In spite of the adverse external environment, developing countries have made strenuous efforts in endogenous capacity building. To take the example of my own country, we have increased the overall budget allocation for research and development from about 0.6 per cent in the 1950s to about 3 per cent in the late 1980s.

(Mr. Menon, India)

This is well above the target of 1 per cent proposed in the Vienna Programme of Action. Sizeable investments have been made in establishing a network of research centres, laboratories and institutions of excellence, apart from extending support for science education in schools and universities. These investments in infrastructure have been complemented by investments in human-resource development by providing opportunities for training, retraining and upgrading of skills. Among competing demands for the allocation of resources, the area of science and technology may sometimes suffer. More international assistance would have helped developing countries to devote greater attention to endogenous capacity-building.

We attach considerable importance to the question of financing for science and technology for development in the multilateral framework. One manifestation of this is our own regular, though modest, contribution to the United Nations Fund for Science and Technology for Development. We urge those in a position to do so, particularly the developed countries, to increase their contribution to the Fund and to the system-wide activities in this area. This will help to ensure full implementation of the Vienna Programme of Action.

In the same spirit of enhancing international co-operation, we have participated actively, and often taken the lead, in multilateral activities at the regional level and in our own bilateral co-operation programmes. We are honoured to host the International Centre of Genetic Engineering and Biotechnology, which was established with the objective of bringing the fruits of biotechnology to developing countries. The first meeting of the Governing Council of the Centre for Science and Technology of the non-aligned and other developing countries was held in September this year. At that meeting the details of its programme of work, funding mechanism, and so on, were adopted. The Centre will provide a solid foundation for co-operation among developing countries and will promote collaborative action in the field of science and technology. I should like to

(Mr. Menon, India)

request the international community and the United Nations system to extend the maximum possible assistance to the Centre in its efforts.

India was privileged to host the meetings of the Advisory Committee on Science and Technology for Development in September 1988. This provided our own scientific community with an excellent opportunity to interact with the members of the Committee and to exchange with them views on a wide range of scientific and technological questions. We are pleased to note that the Intergovernmental Committee has adopted a decision encouraging the Advisory Committee to meet as far as possible in developing countries so as to provide opportunities for such stimulating interaction. We are pleased also that the Advisory Committee has been requested to make a substantive contribution to the work of the Ad Hoc Committee of the Whole in the preparation of the international development strategy for the fourth United Nations development decade.

My delegation feels strongly that science and technology should be one of the major components of the international development strategy for the 1990s. This would signal the importance that the international community continues to attach to this area in the development of developing countries and the need for continued international assistance for the efforts of developing countries in this area. The new international development strategy should contain specific objectives and commitments in this field agreed to by the international community.*

The question of faster transfer to developing countries of scientific and technological know-how has acquired added importance in recent times. This is reflected in the substantive theme chosen by the Intergovernmental Committee for its eleventh session - namely, "Ways and means of ensuring the participation of developing countries in international co-operation for research on and development

* Mr. Pawlak (Poland), Vice-President, took the Chair.

(Mr. Menon, India)

of environmentally sound technologies, and the rapid and effective transfer of such technologies to the developing countries."

It is regrettable that the international code of conduct for the transfer of technology has not yet been finalized. However, the explosion of awareness of the environmental impact of technologies has made it imperative that developing countries not be hindered, either by prohibitive costs or by restrictions on the grounds of protecting intellectual-property rights, in their efforts to acquire environmentally safe technologies. In fact, they should be enabled to acquire and absorb environment-friendly technologies on at-cost, non-commercial and preferential terms if we are determined to translate into action our serious commitment to environmental protection.

It was in view of the importance that we attach to this question that our Prime Minister, Mr. Rajiv Gandhi, in his address at the ninth summit of non-aligned countries in Belgrade last month, proposed the establishment of a planet-protection fund under the aegis of the United Nations. The fund, to which all countries except the least developed would contribute a percentage of their gross national product, would be used to develop and acquire environmentally sound technologies and make them available to all. Such a mechanism would combine the global endeavour in this important area with the priorities, capabilities and needs of both developed and developing countries. I trust that the General Assembly will lend its support to this proposal, which exemplifies the commonality of commitment and effort in this field of the developing and the developed world.

In conclusion, my delegation would like to commend draft resolution 1(X) of the Intergovernmental Committee for adoption by the General Assembly.

Mr. LEMERLE (France) (interpretation from French): I have the honour of speaking on behalf of the European Community and its member States.

Everybody knows that in none of our policies, national or European, of assistance for development is the scientific and technological dimension neglected. We would not know how to engage in specific activities concerned with co-operation without paying due attention to technological factors. The European Community is therefore understandably keen that this tenth anniversary should lead to a number of helpful changes of course. We feel that it is important to do more than simply draw up a balance sheet, particularly if the bottom line is to be a distribution of responsibilities between States or groups of States. I intend, therefore, to comment upon the contrast between the relevance of the objectives pursued and the limited nature of the steps taken to date, before describing the practical approach that we feel will be essential for the future.

An analysis of the past 10 years reveals a contrast between the limited headway made since the Vienna meeting and the facts that have confirmed, sometimes in quite striking fashion, the importance of our enterprise. The modest results achieved should lead us to think about the mistakes that have marred our plans.

Conceptual mistakes seem to us to explain setbacks that are likely to arise in any excessively doctrinal endeavour in this field. The pace of scientific and technological change, which to a large extent fails to behave as forecast, has meant that expectations have often not been fulfilled. Some much-touted high technologies have failed to pan out. Transferable technologies are not ubiquitous; they are less common than had been thought.

(Mr. Lemerle, France)

Lastly, impressive successes achieved by certain countries or in certain branches of activity have demonstrated that relatively simple technologies can have very significant spin-offs. We thus see the limits of the approach that holds that modernization must be achieved by the rapid integration of discoveries made possible by technology transfers. Economic facts tell us that process is progressive and endogenous - the theory of qualitative leaps notwithstanding.

We are also aware of the practical mistakes made in the Vienna process, since they were discussed at the last two sessions of the Intergovernmental Committee.

First, we must note that science is such an ever-present factor in development that it simply cannot be managed by a single, specialized organization.

Secondly, in our view, another error relates to the choice between supply and demand in the field of scientific and technological co-operation. Some supply strategies lead to a diversion of the developing countries' limited human and material resources to activities selected in the light of criteria they should not be using. The Secretary-General's report of 7 July this year emphasized that point, which we consider to be critical.

Furthermore, the harmonization of the guidelines for action throughout the system are a sine qua non for consistent implementation. It presupposes better dialogue between the organizations concerned.

Mistakes have also been made in the definition of the North-South split. A number of countries have experienced broad-based scientific and technological development, while others have considerable expertise. South-South co-operation can and should be developed, particularly in that area.

Apart from those mistakes, we should take into account new patterns of development as well as avenues explored since 1979. The new patterns of development illustrate that the take-off of a number of countries in the developing world has gone hand in hand with the integration in those countries of new

(Mr. Lemerle, France)

technologies, together with a sustained rate of scientific investment. In that endogenous evolution, the dissemination of information, the quality of the labour force, and investment strategies are features common to successful experiments. The intuition in Vienna concerning the concept of endogenous development was therefore important and correct.

The diversity of the avenues opened up 10 years ago is another contribution by the Vienna Conference. There can be no doubt that certain practical results should be credited to the prevailing spirit of the decade. The United Nations Centre did the preparatory research that made this possible. The problems of defining its role, the focus of its activities, and its relations with the system are real and have been repeatedly discussed. But it is only fair to recall today the thinking that was triggered by the Centre and its publication activities. At the last session of the Intergovernmental Committee we were able to evaluate the scope of the reorientation that started several years ago and should continue, particularly, in our view, through making the body an expert committee.

The growing awareness by those principally concerned with the scientific and technological dimension of their development problems could be the Vienna Conference's most positive contribution. The least developed countries must also experience that awakening.

I also note that in rereading the report of the Vienna Conference one feels that many of the actions it recommended have been undertaken spontaneously. To mention only the case of the States in the European Community, I would recall the acceptance of many students from developed countries in our training and research centres, as well as co-operation between the centres and their equivalents in the South. Our development assistance programmes also emphasize the improvement of endogenous capacities.

(Mr. Lemerle, France)

At the same time, the activities of many bodies in the United Nations system, and those of regional and non-governmental organizations, have helped to strengthen an awareness of the scientific and technological dimension of development. Unlike those who feel they have been ploughing the sea, the 12 States members of the European Community prefer to take note of the positive developments of the past 10 years and draw from them a picture of the future. Indeed it is with our views on the future that I shall conclude my statement.

Many of the guidelines we are recommending flow from the lessons we have learned from the recent past. We believe that the Vienna initiative deserves to be pursued, but not without an effort to be pragmatic and to ensure clarity.

The subsidiary nature of United Nations activities is in our view the primary principle; if respected, it should guarantee the consistency that has been lacking so far. Subsidiary, of course, does not mean secondary. The United Nations Centre can play a useful co-ordinating role, particularly in preventing the duplication of activities - and, of course, not creating new activities out of a misplaced sense of zeal.

That co-ordinating role can usefully supplement the Centre's work in publicizing the issues - work whose results we appreciate, as I have already said. The first beneficiaries will be the developing countries if the Centre acts as their adviser in response to their requests. It can direct them to appropriate specialized agencies, rather than taking charge itself of requested tasks that could further burden its work-load.

Together with that side of the activities of the Centre - as the conscience of the system - those of the specialized agencies are also particularly important in many areas. Their effectiveness could be enhanced if they were harmonized with the principles whose formulation will have to be one of the first activities carried

(Mr. Lemerle, France)

out in the years ahead. The Centre seems to be the most appropriate forum for the discussion and framing of those principles.

We believe that the second area requiring urgent review is the clarification of the notion of science and technology for development. With respect to the endogenous factor, the documents we have received seem to reflect a state of mind based excessively on theory. The experience of the newly industrialized countries highlights the parameters of so-called endogenous capacity, which is embodied in the quality of the work-force, the adaptability to technological change, and the receptiveness of societies.

A more precise definition of the sciences and technologies concerned is the other area requiring clarification. The experiences of the recent past suggest that the real needs of each developing country should be the overriding criterion. Indeed, the diversity of technologies in various countries militates against oversimplification. Suggestions in recent United Nations reports for a limited number of areas of specialization in inherently more accessible areas are sensible. They appear to be geared to the least developed countries, which must be a subject of concern for us.

(Mr. Lemerle, France)

In conclusion, I reaffirm the willingness of the Community and its member States to continue and develop their long-standing co-operation in supporting all those who desire assistance in using science and technology for their development.

Mr. SVARTBERG (Sweden): I have the honour to speak on behalf of four Nordic countries - Denmark, Finland, Norway and Sweden.

The Vienna Conference was one of many international conferences to take place during the 1970s on global issues and with an emphasis on the problems of developing countries. The outcome of the Conference, after long and difficult negotiations, was the extensive Programme of Action. Most important of all, in our opinion, was the fact that science and technology were ensured a more central role in international discussions on economic and social matters.

Various opinions prevail on the issue of how within the United Nations system matters related to science and technology for development should be handled. We shall limit ourselves to referring to the discussions that have taken place recently about the restructuring of the United Nations in the economic and social fields. We look forward to participating in the follow-up to these discussions with a view to improving the organization of United Nations activities in the field of science and technology. Every change in organization or ways of implementation should aim at a better use of science and technology for development and a more pronounced role for these matters in the United Nations system.

The Advisory Committee, which meets at expert level, has been able to produce inputs of high professional value. Now, that the Intergovernmental Committee on Science and Technology for Development is meeting only once every two years, the importance of the Advisory Committee has become even greater. The competence of the Advisory Committee should be utilized to an even higher degree. In our view,

(Mr. Svartberg, Sweden)

it could, for example, be asked to identify issues or matters on which future United Nations involvement should be given priority. Another task might be to provide feedback to the Centre for Science and Technology for Development regarding its activities, bearing in mind the non-political character of the Advisory Committee.

The Centre has a great responsibility to give substance, within its limits, to the decisions of the Intergovernmental Committee. Together with the Advisory Committee and the United Nations Fund for Science and Technology for Development, the Centre also represents continuity within the United Nations in the area of science and technology. The demands are high on priorities. The Intergovernmental Committee has entrusted the Centre with important tasks of harmonization of United Nations activities within the area of science and technology. Of special importance in this context is the relationship between the Centre and the United Nations Fund for Science and Technology for Development. Here the Centre, with its competence and perspective, has an important role to play in making valuable contributions to the United Nations Development Programme (UNDP) in its activities in developing countries, particularly the least developed ones. The Centre should intensify its efforts to reach those countries, especially in Africa, and try to develop a strategy for development and transfer of technology which can meet their special needs.

However, the Fund is not the only source of finance for technology-related activities. Indeed, a major part of UNDP-financed activities have important technological components and it seems legitimate to ask whether a separate fund for science and technology is really needed.

Regarding further aspects of the implementation of the Vienna Programme of Action we have the following comments.

(Mr. Svartberg, Sweden)

It is true that the results achieved during the 10 years since the Vienna Conference fall far below the goals set in the Programme. Important progress has, however, been made in the development, transfer and application of technologies in many areas, for instance, agriculture and health, where the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) have made considerable contributions. Other United Nations organizations that carry out significant activities in science and technology are the United Nations Industrial Development Organization (UNIDO), the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the United Nations Conference on Trade and Development (UNCTAD), among others. Great efforts have been undertaken, even if they have not always corresponded exactly to what was foreseen in the Vienna Programme of Action. Often the activities have been launched from relatively modest bases, when seen in relation to the high demands with which the United Nations system has been faced. We believe that it is important to bear in mind that international support for science and technology, bilateral as well as multilateral, cannot be expected to play more than a catalytic role in support of efforts which appear promising.

Given the wide and constantly increasing range of different technologies, no single institution, however richly endowed, can cover in a meaningful way more than a fraction of currently available technologies. The large number of active agents and the limited resources available necessitate a continuous effort towards harmonization and co-ordination of activities and a careful selection of the tasks for which the United Nations system is most suitable.

We have the following brief comments to make regarding some of the main elements of the Vienna Programme of Action.

(Mr. Svartberg, Sweden)

We welcome the draft resolutions agreed upon by the Intergovernmental Committee as set out in its report (A/44/37). They highlight, among other things, the importance of international co-operation to foster endogenous capacity-building in developing countries.

They also stress that efforts already undertaken by the United Nations system must be strengthened. We believe that work initiated within the Centre should be continued, drawing upon the experience gained from national policy dialogue and inter-agency missions to individual countries.

To enable the United Nations to make the best possible contribution, co-ordination and harmonization between governing bodies of the organizations within the system must be further enhanced. The appropriate ways of doing this are clearly indicated in one of the draft resolutions before us. Continuous follow-up of the programmes and activities of the United Nations system is needed in order that the goals and objectives set may be achieved.

In the area of information, the Intergovernmental Committee took initiatives at an early stage designed to provide countries with a better basis for considering matters relating to science and technology. The Advance Technology Alert System, inter alia, seems to be of particular relevance in the promotion of endogenous capacity-building. We therefore very much welcome the follow-up and improvements proposed in the draft resolution.

(Mr. Svartberg, Sweden)

Before concluding, I wish to add that the Nordic countries firmly believe that issues related to science and technology are of the highest relevance and importance for development in the third world. The struggle for improved understanding of the reasons for poverty and environmental degradation must never end.

The United Nations and its various agencies, therefore, must always give a key role to these issues in their future work and in their debates on development issues.

Mr. de ALENCAR (Brazil): The tenth anniversary of the adoption of the Vienna Programme of Action is of particular significance for the United Nations. In spite of the obstacles the international community has faced in the current decade, the issue of science and technology for development is firmly inscribed in the agenda of the United Nations as a fundamental dimension in the promotion of development.

Brazil is proud of having played an active role in the United Nations Conference on Science and Technology for Development, held in Vienna in 1979, not only through its delegation's contribution to the debates and the final result, but also through the work of one of its most distinguished diplomats, the late Ambassador Joao Frank da Costa, who acted as Secretary-General of the Conference and to whose memory my delegation pays a special tribute today.

Ten years after the Vienna Conference this discussion provides us with a good opportunity to reaffirm the commitment of the international community to the principles and objectives of the Vienna Programme of Action. It is regrettable that in spite of the dramatic technological progress achieved during this decade the situation of the developing countries has actually deteriorated as compared with 1979. The economic and financial crisis that hit the developing countries in

(Mr. de Alencar, Brazil)

the 1980s has had a tremendous negative impact on the amount of investment in these countries to support scientific research and technological development. The economic crisis has indeed widened the technological gap between developed and developing countries.

It is distressing that the expectations raised in the wake of the 1979 Vienna Conference have given way to the realization that technological innovation is a critical dimension both of the integration of the markets of developed countries and of the marginalization of the economies of the developing countries.

It is ironical that efforts made by developing countries to develop their own technological capabilities and to establish their own high-tech industries in compliance with the General Agreement on Tariffs and Trade (GATT) rules concerning "infant industries" are often hampered by unilateral measures adopted by some developed countries which are contrary to those universally agreed rules.

Furthermore, under the pretext of preserving international security, barriers are raised to prevent access by developing countries to technologies that are essential to their development.

The current concern for the protection of the environment reinforces the principles and objectives of the Vienna Programme of Action. The success of any strategy for the protection of the environment will depend on the existence of endogenous scientific and technological capacities in developing countries and on ensuring access by these countries to clean technologies.

The launching of the international development strategy for the fourth United Nations development decade and the convening of the special session of the General Assembly devoted to international economic co-operation, in particular the revitalization of economic growth and development of the developing countries, offer a unique opportunity to strengthen the role of the United Nations in the

(Mr. de Alencar, Brazil)

attainment of the targets we all agreed upon 10 years ago. The Intergovernmental Committee and the Centre for Science and Technology for Development need, therefore, to be strengthened and supported to assist us in carrying out these tasks, pursuant to the commitments undertaken in 1979 by all Member States.

My delegation believes that the impact of scientific and technological developments and the complexity of co-operation in the field of science and technology for development deserve a prominent place in discussions within the United Nations.

At its last session, the Intergovernmental Committee for Science and Technology for Development carried out an end-of-decade review of the Vienna Programme of Action. At that time the Committee decided by consensus to recommend to the General Assembly the adoption of a draft resolution on that matter. My delegation supports the text agreed upon at that time and hopes that the General Assembly will approve it without a vote.

As I conclude this statement I wish to reaffirm the validity of the Vienna Programme of Action. The international asymmetries are today more evident and even more disturbing than they were 10 years ago. This makes the fulfilment of the principles and attainment of the objectives of the Vienna Programme of Action even more imperative in our quest for a brighter future for mankind.

The PRESIDENT: The Assembly will now take a decision on the five draft resolutions 1(X) A to E recommended for adoption by the Intergovernmental Committee on Science and Technology for Development in paragraph 3 of its report (A/44/37).

May I take it that the Assembly decides to adopt the draft resolutions?

Draft resolutions 1(X) A to E were adopted (resolution 44/14 A-E).

The meeting rose at 7.10 p.m.