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GLOBAL FORUM ON INDUSTRY

Perspectives for 2000 and Beyond

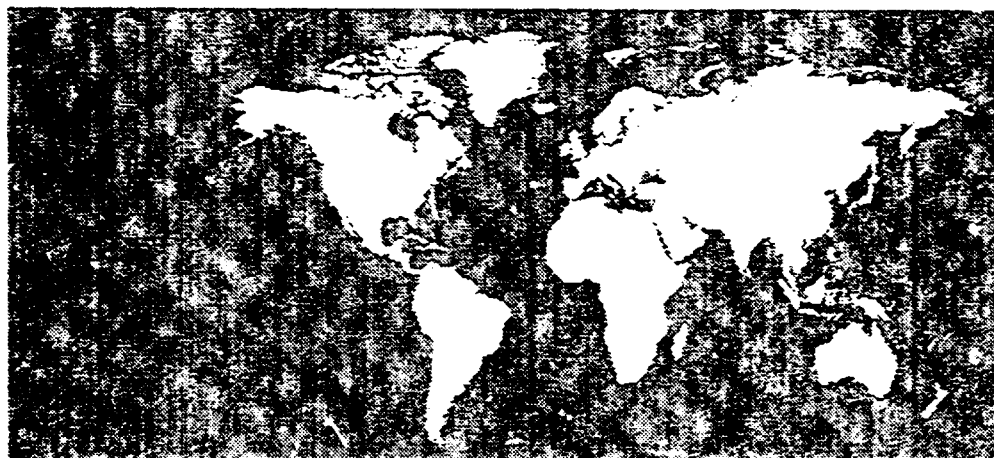
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Report

Report of the Global Forum on Industry: Perspectives for 2000 and Beyond



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

This report has been approved in draft by the participants of the Global Forum on Industry and finalized by the Industrial Development Review Unit of the Studies and Research Branch of the United Nations Industrial Development Organization (UNIDO).

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LIST OF ABBREVIATIONS

ACP	African, Caribbean and Pacific (Group of) States
FDI	foreign direct investment
GDP	gross domestic product
MVA	manufacturing value added
SMEs	small and medium enterprises
TIC	Technology for Industrial Competitiveness
TNCs	transnational corporations
TRIMs	trade-related investment measures
TRIPs	trade-related aspects of intellectual property rights

EXECUTIVE SUMMARY

The Global Forum on Industry: Perspectives for 2000 and Beyond, meeting at New Delhi, India, from 16 to 18 October 1995 to consider the long-term impact of current economic and technological trends on world industry, and the policy and strategy implications for Governments and industry, reaffirmed the continuing need for industrial development as a central element of international community concern. The Forum adopted conclusions and made recommendations in eight areas, as set out below.

Future of world industry

The Forum considers that rapid industrialization will continue to be the main engine of growth in developing countries and transition economies for several decades to come. Throughout the coming decades, industrialization will remain a unique solution and basic developmental goal for developing countries and a key objective of global development. These years will be a period of increasing interdependence of countries and markets. Accelerated industrialization of developing countries must remain an essential prerequisite of socio-economic transformation, and a crucial tool for reducing unemployment, poverty, social tensions and potential conflict in the global economy. Attempts to belittle the importance of industrialization in developing countries contradict common efforts towards global interdependence, partnerships, solidarity and prosperity.

In developing countries as a whole, manufacturing value added (MVA) is expected to grow at twice the rate of world gross domestic product (GDP), by almost 7 per cent annually. This will raise their share in world MVA to over 30 per cent in 2005. Developing countries will also raise their share of world manufactured exports from 24 per cent in 1995 to over 35 per cent in 2005. However, nearly all the increased growth will be accounted for by dynamic countries in East and South Asia.

This region, as well as some countries in Latin America, can anticipate continuous high growth rates. In a large number of developing countries, however, the pace of industrial growth will continue to be unsatisfactory. The Forum is particularly concerned that there may be only marginal growth in sub-Saharan Africa and the least developed countries. Unless major economic and industrial transformation can be brought about, many of the poor countries of today may be as poor or poorer at the end of the next decade. The Forum therefore underlines the importance of industrial growth, diversification and dispersal as the principal means of creating new jobs and incomes in less developed regions. Special attention and a separate approach is needed to accelerate industrial growth in such countries. The process of industrialization requires that the transition phase from low to high technology be properly managed in order to avoid increasing unemployment and widening income gaps.

The Forum considers it imperative that a new dynamic approach be adopted to accelerate the pace of industrialization in developing countries and transition economies, within a framework of private sector development and increased export orientation. Market-friendly interventions in the form of policies and institutional support will be

necessary to correct market failures and shortcomings. Such support functions must be provided at the local, State and international level.

The future growth of the world economy, and of manufacturing and services, will be largely skill-based. To reduce their initial handicaps, developing countries will need to concentrate on the development of human resources, new technological skills and innovative capability. At the enterprise level these aspects will be essential for competitiveness. Availability of skilled human resources and a supportive social infrastructure will be key determinants of an enterprise's ability to compete and thrive. Human resource development programmes suited to their needs have to be undertaken by developing countries, with proper support from international bodies and private investors.

Developing countries' industrial growth will also need to be sustained and supported by suitable physical infrastructure and maintaining the pace of liberalization, deregulation and open trade.

Globalization and industrial partnerships

With the internationalization of communications and markets, the globalization of industrial activities will increase significantly during the next decade. Firms in developing countries must adjust to the realities of a global market for most products and services, and the need to compete in a global arena. While the liberalization of trade will make it easier for them to operate internationally, they will have to develop the necessary competitiveness, access to additional investment resources, and the technological and market linkages required to achieve rapidly changing products and services of high quality.

Developing countries and economies in transition will need to be integrated into global production and marketing more effectively than permitted in their current relations with global corporations. Foreign direct investment, especially through the subsidiaries and affiliates of large corporations, will remain crucial to some countries and branches of industry; for example, countries with large potential markets and supplies of scarce raw material or cheap semi-skilled labour. Foreign direct investment will continue to be needed to cover investment gaps and to ensure the associated inward flows of technology. Increasingly, however, foreign direct investment will take place in the context of the provisions of the Uruguay Round agreements on trade-related investment measures (TRIMs) and trade-related aspects of intellectual property rights (TRIPs).

Alternative forms of participation must be developed for and by countries where, despite policy liberalization, foreign direct investment is likely to remain inadequate during the next decade, *i.e.* countries with limited internal markets, no major comparative advantages or economic policies preventing the full exploitation of comparative advantages. These alternative forms include joint ventures with minority foreign holdings, non-affiliate technology licensing, use of trade marks, technical and research services and other contractual arrangements. Such forms of participation may be preferred by local industrial enterprises and groups in countries with well-developed,

private sector entities and capital markets. There will also be considerable potential for the division of selected production functions in such industries as capital goods and consumer durables such as automobiles and electronic products, and aerospace. Because of the rising cost of industrial research, there will also be considerable potential for contractual industrial research in developing countries and transition economies. A common feature in all the alternative forms of participation will be ownership and control by local partners.

National firms must be adequately developed and have the necessary financial and technological support to globalize their activities for specific product groups or industry-related services in particular fields. These local enterprises must be able to take the initiative in locating suitable foreign partners and to determine the pattern of foreign participation. Governments should be able to promote such partnerships through the development of information systems. National firms must also be able to determine, on the basis of comparative advantage, which functions would be best undertaken abroad, and which at home, and whether research and innovative capability should be developed internally or through external partnerships and linkages.

In some countries where local entrepreneurship has been lacking in the past, a new class of entrepreneurs must be created for the future. Institutional support should be provided to local enterprises in areas of specialized skill development, managerial and organizational change and technology absorption and adaptation. Institutional facilities should provide for standardization, quality certification and applied research, including research in areas involving generic technologies.

In countries with a developed private sector and adequate facilities for finance, technology and export marketing, local enterprises will increasingly seek partnerships and strategic alliances rather than foreign direct investment. This, too, will require extensive institutional support.

Industrial implications of liberalized trade and investment

The Uruguay Round agreements on global trade liberalization will have far-reaching effects on industrialization in all trading nations. They will both liberalize and expand global trade, and increase global interdependence. The principal gains will accrue to developed economies comprising the major trading nations and a small number of developing countries. The Forum considers that there will be considerable potential for semi-industrialized developing countries to increase their share of world trade. In the short run, however, the impact of the agreements on many developing countries may be negative because they will lose their preferential trading arrangements. Careful assessment is required at the country level of the full implications of the agreements for industry and the necessary adjustments, which will be substantial in industrial strategies and enterprise-level restructuring.

The impact of the performance requirements in the agreement on TRIMs and the ensuing constraints will also be significant for the more advanced developing countries, resulting, for example, in higher import bills for sub-assemblies and spares. The

agreement on TRIPs will impact on the transfer of technology to developing countries, especially in pharmaceuticals and biotechnology.

The Forum considers that global trade liberalization will particularly challenge the African, Caribbean and Pacific (ACP) States whose trade preferences will be progressively eroded. To compete in open markets, they will need to raise the efficiency and competitiveness of their manufacturing sector, particularly their small and medium enterprises (SMEs). They will also need to adopt a more export-led strategy and promote effective regional and subregional cooperation in order to enlarge the size of their markets and they will require structured access to inputs and technology. This will require close interaction between the private sector and the Government and, in many cases, support from international organizations.

Least developed and ACP countries, often with weak industrial bases, must improve their capacity to identify and support sectors, sub-sectors and products with export potential. Their firms will need to establish production and marketing capabilities in new markets. For this, policy and institutional support will be needed to improve productivity, quality and standards, marketing, human resource development, information and access to finance.

All developing countries should be sensitized to the implications of the Uruguay Round agreements and the environmental, health, safety and technical standards essential for obtaining and maintaining their access to global markets.

Regional and subregional cooperation will be necessary to enhance market size. Regional agreements need not be inconsistent with global trade liberalization, but they should not develop into new forms of protectionism within each region. In particular, the anti-dumping provisions in the agreements should not lead to protectionist abuse.

Crucial role for technology

The Forum highlights technology as a core competence necessary for achieving competitiveness. It must be based on integrated development efforts and capabilities that can be used in different market conditions. Such competitiveness is necessary in both internal and external markets.

Concepts and approaches relating to technology development and transfer must be viewed in a new context encompassing rapid changes in technology itself, economic and industrial developments, new forms of enterprise-level cooperation and the changed intellectual property regime. Technology strategies range from absorption and improvement of traditional technologies to technology-intensive manufacturing based on recent advances in science and technology.

The Forum underlines the importance of new generic technologies such as informatics, biotechnology and new materials, which are creating new industries and offer scope for improvements in a wide variety of sectors. Based on science, generic technologies call for long-term capacity-building in both science and technology. Full

recognition of the technology factor in industrial development and competitiveness, often overshadowed by industrial and financial developments, is an urgent necessity.

The Forum recommends that all countries, particularly developing countries, formulate and implement national programmes for technological competitiveness. Such programmes will vary according to national conditions, address governmental-, institutional- and enterprise-level actions, and extend over three to five years.

National programmes must incorporate a vision of the country concerned with technology as a determinant of competitiveness. This would include: (a) technology upgrading in the context of a comprehensive understanding of manufacturing technology, design, distribution, organizational factors and managerial approaches; (b) technology management; and (c) innovation as the engine of competitiveness, including entrepreneurship development, strategic alliances and technology acquisition. The point of departure would be to address the needs of enterprises and to promote interaction between them.

Technological skills, upgrading and innovativeness at the enterprise level will determine the competitiveness of new products, processes and organizational structures. A shift to flexible manufacturing and the use of modern organizational and management techniques will be crucial also for developing countries and economies in transition. In an increasingly competitive environment, they must develop a new technological culture that integrates specialized training programmes, new technologies, product and process innovation and that focuses on the requirements of export markets.

Environmental challenges

The Forum considers that the emergence of stricter environmental requirements could pose a threat to the competitive position of certain resource-intensive and pollution-intensive enterprises. Some enterprises and sectors are in a better position to cope. For others, particularly SMEs, even marginal increases in their costs could be fatal. This need not, however, be the case if preventive measures are adopted by industry early on. If the policy thrust is on curative measures, strict environmental norms and legislation will adversely affect the competitive position of an enterprise. If, on the other hand, government and corporate policies are geared towards preventive measures, competitiveness will be strengthened. At the policy level, there is a need to introduce economic incentive structures to complement traditional command control measures. At the company level, wider application of cleaner production techniques and use of environmental management systems are essential tools for meeting environmental protection challenges, for ensuring ongoing compliance with national and international requirements and for continually improving environmental performance. Technical assistance and services for the application of cleaner production techniques is essential for small-scale industries that are constrained both by a lack of information on, and awareness of, the financial and environmental pay-offs of cleaner production as well as by a lack of easy access to such technologies.

Developing-country exporters may perceive the emergence of non-tariff and market barriers such as eco-labelling as threats to their competitiveness and export

earnings. Many countries lack pertinent information and the infrastructure (certification and accreditation bodies) essential to qualify for many eco-labelling schemes. Their firms have limited access to cleaner technologies and may thus incur high compliance costs in meeting eco-labelling requirements. The growing use of process criteria for awarding eco-labels is likely to accentuate this problem. A concerted effort is needed to meet the problems that may be posed by ISO 14000 environmental standards. It is also necessary to ensure closer cooperation between Governments and the international community with respect to the mutual recognition of international standards, certification, equivalency and transparency, besides technical assistance to ensure that eco-labelling does not become a significant barrier to trade.

There is an urgent need to establish certification centres and accreditation bodies in exporting countries to provide easy and inexpensive access to internationally recognized certification schemes based on mutual recognition. The centres, which may be set up with private participation, can be an important focus for multilateral assistance.

Employment and social aspects of industrialization

As emphasized by UNIDO at the World Summit for Social Development in 1995, economic development and more specifically industrial expansion and diversification are a necessary, albeit not sufficient, condition for social development. Social development is hardly possible without industrial development. The creation of new employment opportunities must continue to have the highest priority in the growth programmes of most developing countries. The growth of manufacturing industry, especially at the level of SMEs, is crucial to the generation of employment, however, the environment will be increasingly competitive. Technology and the commensurate human resource development will play an important role. Strategies to exploit the benefits of industrialization in this way must seek both efficiency and equity. Nevertheless, to reduce poverty effectively, such strategies must be accompanied by measures in other areas such as education, health care, social services and family planning.

At the same time, diversification and restructuring of industry in order to meet changing market demands are inevitable. Governments must identify those sectors likely to be significant in the future and the associated training required to equip workers and managers with new skills and attitudes thus creating an industrial environment that can respond rapidly to changing opportunities. Where possible, social safety nets should be created in conjunction with policies for restructuring industry.

Policies will need to be country-specific, not following any unique pattern. While export orientation proved to be an excellent way of leading the growth that took root in some countries of South-East and South Asia, networks of small and micro-enterprises initially geared to domestic consumption may be better for sub-Saharan Africa, the Caribbean and the Pacific. In countries with a large population such as China, India and Indonesia, both approaches may be necessary. Where such a twin-track strategy is appropriate, it should be welded into an integrated policy framework.

Micro-enterprises are especially important and need comprehensive support and assistance. The aim of policy, however, must be to create employment and to enable

such enterprises to compete on an equal footing without being unduly dependent on support. Such support should therefore be discriminating and be valid for a limited time period only. Specific programmes offering information, technology support, access to credit and market identification are required for micro-enterprises operated by disadvantaged groups, especially women.

At the broad policy level, industrial policies should counteract a tendency for income inequality to increase in the initial stage of industrialization, and for certain regions to benefit preferentially, as industry grows. They should also resist any bias towards capital-intensive solutions, which are inappropriate in countries short of capital. Counter-measures include stronger equity provisions and strong promotion of small and micro-enterprises.

Employment as a basic policy objective can be best realized through the use of optimal technology, organizational forms matched to national needs, and the development of sectors with ample opportunities for employment generation. While mechanization may be inappropriate in countries where markets are small and demand limited, a balanced pragmatic approach would allow the use of the latest techniques essential for enhancing product quality. As industry advances, technology upgrading should be undertaken vertically, avoiding sectors where expertise is insufficient.

Changing role of Governments

With increased market orientation, and the globalization and liberalization of trade and investment, the role and functions of many developing-country Governments are undergoing considerable change. In several ways, Government has to play a reduced role in ownership and levels of intervention in industry. Nevertheless, the Forum considers that Governments need to retain their role and functions in industrial restructuring and development. The precise role will vary from country to country but, in general, the prevalence of market failures will mean that the Government may need to provide institutional support for industry in terms of entrepreneurship development, standards and quality control, technology information, and research and development. It is vital that institutions in these fields are fully responsive to the needs of industry and benefit from increasing private sector participation.

It will also be necessary for Governments in developing countries to undertake a more challenging and comprehensive role in rural industrial development, in collaboration with the private sector.

In view of the special problems facing African countries, the Forum endorses the recommendations made at the twelfth session of the Conference of African Ministers of Industry (Gaborone, Botswana, June 1995) calling for dynamic action-oriented programmes by Governments for competitive and sustained industrial growth. The manifold constraints facing sub-Saharan African countries mean that major changes in their industrial structure may have to be made largely through programmes to develop SMEs. The policy objective should be to create a new class of entrepreneurs and a skilled labour force, and to develop the technological capabilities to manufacture non-traditional products in new areas where local enterprises can achieve a comparative

advantage. Governments will of necessity have to take the lead, in conjunction with the private sector, and where appropriate in consultation with international organizations and donor agencies.

International cooperation for industry

The prospective competitive structure of global industry highlighted in the Forum will necessitate major changes in the pattern of international industrial cooperation, particularly in the role of UNIDO. Increasing privatization, globalization and liberalization of trade and investment will add to the complexities of global industrialization, which will require increased specialized assistance on the part of the Organization for developing countries and transition economies. The Forum considers that such assistance should be more sharply focused on enhancing private sector participation, market orientation, competitiveness, industrial partnership and interdependence in selected subsectors.

The rapid pace of technological change and its impact on globalization and the emerging pattern of global industry underline the need for periodical assessments of key issues and trends in growth. The Forum considers that such assessments must be undertaken by UNIDO as part of its role as an international forum for industrial development. This role should encompass identifying and resolving common problems, exchanging experience on alternative policies and strategies, developing appropriate measures such as benchmarks of industrial progress and activities, and strengthening measures to promote enterprise-level linkages, partnerships and strategic business alliances. UNIDO's normative function will be important for the development of international standards and norms.

The Forum considers a second major role of UNIDO to be the provision of specialized services to promote and sustain industrial growth in developing countries and economies in transition. These services should extend from policy advice to technology management and transfer, development of institutional capability in standards and certification, promotion of industrial partnerships, alliances and linkages, development of human resources and support for compliance with international conventions and standards.

Noting the ongoing reform process in UNIDO including the five development objectives and seven major programmatic themes, the Forum considers that the Organization will have an increasingly vital role to play in privatization and enhancing the performance of the private sector. Its assistance should strengthen market forces and private enterprise, and improve the efficiency of markets through dissemination of information, diffusion of technology, upgrading of skills, enhancement of competitiveness, twinning of potential partners, promotion of SMEs, support for rural industrialization and promotion of investment in industry. The Forum considers that UNIDO has significant comparative advantages in developing the related institutional support systems and industry-related services.

The Forum is concerned that while the demand for UNIDO services is substantial, its resources are becoming more limited. Lack of funding prevents the implementation

of a large number of projects called for by developing countries and transition economies. Thus, additional funds must be generated, and new mechanisms for the mobilization of financial resources including from the private sector will need to be promoted. Although an intergovernmental organization, UNIDO will need to work more closely with the private sector, including transnational corporations, to promote industrialization in developing countries. Increased globalization implies both cooperation and competition with the private sector, keeping in mind the developmental role of UNIDO. It is equally important to identify what UNIDO can do that other organizations are not doing in areas of vital importance to industrialization.

The Forum supports the priority that UNIDO is according to Africa in its programmes and services and underlines the importance of South-South cooperation in the context of the increasing success of some developing countries. UNIDO services are needed by African countries and other least developed countries for restructuring their economies, institution-building, regional and subregional cooperation, private sector development and industrial restructuring and rehabilitation.

The Forum agrees that new initiatives will be required. Among them could be the re-establishment of a special advisory group of Government officials, industrialists, academics and consumer organizations to advise the Director-General, and the establishment of business-industry councils in various sectors. National committees in developing countries could also make a useful contribution to the work of the Organization, along with the appointment of "ambassadors" for industry in various fields.

The Forum considers it essential for UNIDO, which is facing considerable financial uncertainty, to ensure that its services are more sharply focused than ever and that its functions and core expertise are clearly defined. It is noted that endeavours in this direction are currently being undertaken and will be continued with streamlined procedures, decentralized decision-making and a lean organizational structure as major features.

I. ORGANIZATION OF THE FORUM

A. INTRODUCTION

1. The Global Forum on Industry: Perspectives for 2000 and Beyond, organized by the United Nations Industrial Development Organization (UNIDO) in cooperation with the Government of India, was held at New Delhi, India, from 16 to 18 October 1995. Almost 120 representatives from 43 countries participated in the Forum, including policy makers, industrialists, academics and experts on various aspects of industry and technology. A list of participants is contained in annex I.

2. Following the inauguration of the Global Forum by K. Karunakaran, Minister for Industry, Government of India, and the keynote address by Mauricio de Maria y Campos, Director-General of UNIDO, the Forum held its first plenary session in the morning of 16 October 1995, which was followed by a general discussion of the principal issues to be covered by the Forum. A full text of the speeches is contained in annex II. From the afternoon of 16 October to the evening session of 17 October, the participants met in a series of panel meetings dealing with key issues relating to industrial growth and the principal factors impacting on industry during the next decade and beyond. The panels dealt with the following specific issues:

- (a) The state of world industry and outlook for 2000 and beyond;
- (b) New technologies, innovation and competitiveness;
- (c) Globalization and industrial partnerships;
- (d) Global trade liberalization: Implications for industrial restructuring;
- (e) Industrial policy reforms: The changing role of Governments and private sector development;
- (f) Environmental policies and industrial competitiveness;
- (g) Employment and social aspect of industrialization;
- (h) Industrial development and international cooperation: The future role of UNIDO.

3. The programme of work and a list of chairpersons, vice-chairpersons and rapporteurs for each panel are given in annexes III and IV. The Forum had before it a document prepared by UNIDO entitled "Perspectives on industrialization: Global industrial partnerships, interdependence and competitiveness" (ID/WG.542/1(SPEC.))

and a set of issue and background papers which are listed in annex VI. In addition to the panels, a special session on the future role and activities of UNIDO was convened by the Director-General of UNIDO.

4. The conclusions and recommendations of each panel were presented at the second plenary session of the Global Forum on the morning of 18 October 1995. After a general discussion and review of each of the panel reports, the reports were adopted by the Forum, with the necessary modifications. The draft report of the Forum and the conclusions and recommendations on the issues covered by the various panels were submitted to the third plenary session and were approved by the Forum on the afternoon of 18 October 1995 and incorporated in its final report which was subsequently adopted. After the adoption of the report, the Forum was declared closed by the Minister of State for Industry of the Government of India.

B. OBJECTIVES

5. The objectives of the Global Forum were to assess the role of industry in the process of socio-economic development and to analyse the trends and prospects of industrial growth during the next decade and thereafter in the light of contemporary global economic developments. World industry is undergoing significant change with the shift to increased market orientation and emphasis on private sector development in both developing countries and economies in transition. This process has already brought about much greater complementarity and interdependence in industrial activities in various countries and regions. At the same time, a series of far-reaching global economic developments are taking place, which will have a major impact on and consequences for the pace and pattern of industrial activities during the next decade and which highlight the next few years as a major and decisive turning-point in global industrial relationships. The most important factor has been the continuing technological innovations and developments that have not only brought about the globalization of communications and markets but are also having a considerable effect on the globalization of production and services in various fields. A fast-growing range of new products and processes have emerged in informatics, bio-technology and new materials that are both research-intensive and subject to rapid change. Technological developments are also having a growing impact on manufacturing techniques and processes ranging from increased automation to varying degrees of flexible manufacture, combined with new organizational strategies aimed at ensuring greater flexibility and faster response to changing demands and situations.

6. Increased globalization of production has been combined with major liberalization of trade as reflected in the Uruguay Round agreements on global trade liberalization on the one hand, and the policy reforms undertaken in most developing countries for the liberalization of domestic and foreign direct investment, on the other. It is also increasingly recognized that social aspects and environmental norms must be harmonized with those of industrial growth in various sectors of production.

C. OPENING STATEMENTS

Inaugural address

7. Delivering the inaugural address on the occasion of the Global Forum on Industry, K. Karunakaran, Minister for Industry of the Government of India, stated that UNIDO represented a powerful and dynamic catalyst for ushering in industrial development in the less developed nations of the world. UNIDO was playing an increasingly indispensable role in providing the platform and the expertise to address the problems of underdevelopment and in assisting in the social, economic and environmental adjustments required to attain a smooth and healthy transition to industrialization. He expressed appreciation for the important initiatives being taken by UNIDO in focusing the world's attention on a number of issues that would have a major impact on the development and well-being of developing countries up to the year 2000 and beyond.

8. The Minister expressed concern that, at a point when a more dynamic UNIDO was needed, there had been a reduction in the funds available to the Organization to assist in the process of development. The steady decline in the availability of funds had severely hampered technical assistance to Member States. The Minister appealed to the developed countries of the world to arrest that trend and to contribute substantially to replenishing the resources of UNIDO.

9. The Minister suggested that two comprehensive issues be given prominence during the discussions in the Global Forum: employment and the social aspects of industrialization, and environmental considerations. He said that all labour markets needed to become more transparent even though significant progress had been made recently. Market restrictions were being rapidly reduced, allowing capital the freedom to be invested in sound economic propositions. There was no reason why labour ought to face a different criterion. On environmental issues, the Minister stated that there should be a harmonious balance between development needs and environmental imperatives.

Keynote address

10. The Director-General of UNIDO, on behalf of the Organization, expressed sincere appreciation to the Minister for Industry and the Government of India both for co-sponsoring the Forum and covering the local costs of most of the participants. He noted that industry was an indispensable vehicle for the technological development and modernization of developing countries, and industrial development must constitute a crucial element of any development strategy. He also expressed concern, however, that some industrialized countries appeared not to appreciate that critical need. The emphasis given to social issues and poverty alleviation often ignored industrial growth as the principal means of creating jobs and increasing incomes. He warned that attempts at the international level to underplay the need for industrialization in developing countries were not only short-sighted, but could result in unnecessary confrontation and conflict in the coming years.

11. He urged that it must be recognized by the international community that the process of industrialization was vital for developing countries. That would necessitate strategies to cover market failures in those countries, in addition to a greatly expanded programme of international resource support. Such support would have to cover not only increased investment and technology flows, but also the development of institutional and technological capability that was imperative for the development of an *industrial and technological culture* in developing countries.

12. The Director-General said that the complexities of industrial growth during the coming decade and beyond highlighted the continuing necessity of providing specialized industrial services to developing countries and transition economies. The role of UNIDO needed to be considered by the Forum in that context. As a result of its extensive restructuring and reforms, UNIDO was uniquely suited to meet fully the demand of its Member States for such specialized services currently and in the coming decades.

13. The Director-General emphasized that, in the past decades, there had been sufficient evidence to confirm that industrialization continued to be a strategic force for long-term, economic and social development and that process was possible through the political will and the joint efforts of the various sectors of society to formulate and implement within a market-oriented framework, strategies and policies for rapid and sustained industrial and technological development. East Asia had been the most important scenario of such consensual visions and achievements. It must be recognized that there were no miracles or recipes. India, the new rising industrial star, was very conscious of the efforts required. The years ahead posed enormous challenges to industrialization and development all round the world, especially for regions and countries that had been falling behind, the Director-General concluded. At the same time, the coming decades would pose a challenge of co-responsibility for all countries, particularly those already enjoying higher levels of industrialization, development and well-being. He said that future markets, future investment opportunities and future peace and stability would depend on effective recognition of that international interdependence. It would depend also on an imaginative programme of action for global industrial partnership, the design of which was the challenge facing the Forum.

D. PERSPECTIVES ON INDUSTRIALIZATION

14. The report prepared by UNIDO entitled "Perspectives on industrialization: Global industrial partnerships, interdependence and competitiveness" prepared by UNIDO was presented by Rana K. Singh, representing UNIDO, who explained that the report assessed the major trends in growth and the principal global economic factors expected to have an impact on industrial development during the coming decade and beyond.

15. The projections for growth had revealed that, for the first time, the focus of accelerated growth of gross domestic product (GDP), manufacturing value-added (MVA) and export of manufactured products would shift to East Asia because of the continuing remarkable growth of the newly industrializing economies of the region, including China. At the same time, the pace of industrial growth in other developing regions would

continue to be very uneven. It would be a matter of growing and disquieting concern that many of the currently poor countries would remain so by the end of the next decade unless major economic changes could be achieved. Basic social objectives and poverty alleviation could only be effectively tackled through the creation of new jobs and incomes as part of the process of industrial growth. The global industrial scene had undergone a major transformation in the last decade. The most important developments had been in technology, particularly in informatics, biotechnology and new materials. Those developments, combined with globalization, trade liberalization and environmental norms, had brought about fundamental changes in the future pattern of industry. Those issues required a changing role of the State, both for developing an international competitive capability for local industry and ensuring that the broader socio-economic goals of industrialization were achieved.

16. Several specific issues would need to be considered under each of those categories. The technology factor would certainly constitute a vital element of competitiveness. Major emphasis had to be given to technology upgrading and adaptation, besides innovative skills and the development of a new *technological* culture. The issue of globalization had to be viewed both in the context of national strategies and the operations of global corporations in certain countries. Foreign investment would be of crucial importance, besides alternative forms of external linkages, partnerships and alliances. The impact on industry of the Uruguay Round agreements was also expected to be very far-reaching. For most developing countries, particularly countries in Africa, the Caribbean and the Pacific, considerable restructuring of industry would be necessary in order for them to achieve competitive capability in selected fields. The harmonization of environmental objectives with those of industrial growth would also have to include an analysis of the implications of stricter environmental standards, including eco-labelling. It was also increasingly necessary to shift to the use of environmentally suitable technologies and cleaner production centres. The effects of global economic developments might require State support in selected fields where the market mechanism was inadequate. Such interventions should be essentially market-friendly and should support the growth of the private sector, and the development of the indigenous capability of local enterprises. The global pattern of industry would become increasingly complex during the coming decade, which would also necessitate increased assistance channelled through UNIDO in providing specialized services for industry, ranging from advice on selective Government support to the development of institutional facilities for quality production and technological development. A major catalytic and promotional goal must also be played by UNIDO to facilitate industrial linkages, partnerships and alliances and to assist in the development of closer relationships between Governments and industry, at both national and international levels. While UNIDO would need to concentrate increasingly on African countries and the least developed countries, it would also have to provide essential industrial services in middle-level and more industrially advanced developing countries, particularly with respect to technology upgrading, industrial restructuring, quality certification and the development of external linkages of industrial cooperation.

II. CONCLUSIONS AND RECOMMENDATIONS

17. On the basis of the issues considered by the Forum and the recommendations of its panels, the Forum arrived at the conclusions and recommendations set out below under the key and critical issues to which they relate.

18. The Forum considers that, with the growing impact of new technological developments and globalization, combined with the liberalization of trade and investment, the present period represents a critical stage not only for the assessment of industrial growth trends during the next decade but also for the pattern of international relationships between industrial institutions and enterprises in different countries. The Forum also considers it very opportune that such a conference of policy makers, industrialists, academics and industrial experts should be organized at this particular juncture to discuss the trends and implications of the future pattern of industry, technology and external trade especially for developing countries and economies in transition. The Forum fully endorses the coverage of the conference as focusing on the key and vital perspectives for industrialization including the outlook for world industry in the post-2000 period, the effects of technological developments on competitiveness, the trends in globalization and industrial partnerships, the need for industrial restructuring in the light of global trade liberalization and the impact of environmental factors on competitiveness. The Forum considers that it will be necessary in the view of these critical global developments to assess the future patterns of industrial policy reforms and the changing role of Governments in developing countries and the need for the specialized international assistance that may be required by developing countries and transition economies.

19. The Forum is of the view that, by bringing together representatives of Government, industry and academia from industrialized and developing countries and economies in transition, it is also possible to focus on the growing interdependence of the global economy during the next decade and thereafter. At the same time, the Forum considers that it will be necessary to assess the role of national policies and institutions in bringing about the necessary corrections in market shortcomings and also to ensure that the socio-economic objectives of industrial growth, diversification and dispersal in terms of increased employment and income in less developed regions are achieved to the fullest extent. While there will undoubtedly be more intense global competition in most fields, there is enormous scope and potential for forging new industrial relationships across national boundaries, which will not only reflect the growing interdependence but will also contribute to a further accentuation of this process. The present developments represent a great opportunity for stable industrial growth of the global economy and for a wide range of partnerships, alliances and linkages between enterprises in different countries. At the same time, the Forum emphasizes that the continuance of the existing uneven pattern of industrial growth between developing countries and the growing industrial and technological gap between industrialized and most developing countries

constitute a disquieting trend and provide potential sources of tension and conflicts in the future. The Forum considers that it is imperative and vital that certain groups of countries do not become marginalized in their quest for socio-economic and industrial growth and that crucial support, functions and services are provided for this purpose. The conclusions and recommendations on the wide-ranging issues posed to the Forum will assist policy makers in determining an integrated programme for accelerated industrial and technological development in developing countries and transition economies, together with an appropriate framework of national policies and specialized international assistance that can be channelled through UNIDO and international organizations.

A. CRITICAL NEED FOR INDUSTRIALIZATION

20. The Global Forum is strongly of the view that industrialization must remain a crucial element of any development strategy. The needs of and potential for industrialization in particular economies are closely interlinked with the socio-economic objectives of a comprehensive development agenda. Industry is the principal engine not only for economic growth but also for the modernization of developing countries and services. Industry is a seed-bed for entrepreneurship, a user of services, and a major source for the development of technological and managerial skills and capability besides enhanced product quality and productivity. The development of a promotional environment for private-sector industrial growth also constitutes a key instrument for promoting the socio-political involvement of the population in the development process. At the same time, liberalized economies, increased globalization of industry and extraordinary and rapid technological developments are leading to major changes in comparative advantage. As a result, industrial growth in developing countries is likely to become increasingly complex and difficult during the next decade and thereafter. The Forum also considers that, in all developing regions, major institutional changes and new strategies and mechanisms will be required for the successful integration of developing countries into the mainstream of international trade and investment and technological flows. Industrial policy reforms and the role of host Governments will need major changes and adjustments to ensure that market shortcomings are adequately adjusted and corrected through appropriate policy interventions for improving long-term economic performance. Host countries must increasingly assume a leading role both in enhancing competitiveness and the increased export orientation of local enterprises, and in maximizing social welfare through the creation of new opportunities for increased employment and income. At the same time, the growing complexity of industrialization in the light of global economic developments highlights the need for specialized institutional support at the international level to provide a range of technical services for accelerated industrialization and technological progress in developing countries.

B. STATE OF WORLD INDUSTRY AND OUTLOOK FOR 2000 AND BEYOND

21. The Forum takes note of UNIDO projections of faster economic growth and industrial development in developing countries as a whole during the next decade (1995-2005). The faster growth of developing countries has been primarily achieved through

the rapid growth of the manufacturing sector in East Asia and stable growth in certain Asian and Latin American countries, together with the major expansion of exports of manufactured products that has occurred, particularly from East Asia, with the percentage of manufacturing exports to total exports increasing significantly. This has resulted in the fulfilment of the target set in the Lima Declaration and Plan of Action on Industrial Development and Cooperation adopted by the Second General Conference of UNIDO in 1975. The contribution to industrial production of developing countries has increased from 7 per cent in 1975 to 22 per cent in 1995 and even, by conservative estimates, is expected to exceed 25 per cent by the year 2000. While the share of GDP, MVA and exports of manufactured products will increase substantially in developing countries, the share of developed countries is expected to decline. Economies in transition are expected to stabilize during the next decade and to register steady industrial growth thereafter. The growth of manufacturing in developing countries has been very unevenly distributed and is a matter of growing concern. The gap between developing countries and between developed and developing countries in terms of per capita income and manufacturing output has widened considerably and it will be vital to achieve accelerated industrial growth in the developing countries and regions, particularly sub-Saharan Africa, which is lagging significantly behind.

22. While world GDP growth is forecast to grow at over 3 per cent a year between 1995 and 2005, MVA growth in developing countries as a whole is projected at almost 7 per cent annually over the next decade. This will increase the share of developing countries in MVA to 30.6 per cent in 2005 against 21.5 per cent at present. The Forum notes with appreciation that the developing countries will meet the earlier target set at Lima in 1975 of a 25 per cent share of global production by the year 2000. The developing countries are also expected to increase their share of manufactured exports from 24 per cent in 1995 to over 35 per cent by the year 2005. It must, however, be pointed out that almost the entire increase in GDP, in MVA and exports of manufactured products will take place because of the continuing remarkable growth of the newly industrializing economies of East Asia, including China. This region will become the focus of accelerated growth compared with other regions. The Forum considers it a matter of gratification that a group of developing countries is expected to achieve such singular success during the next decade. At the same time, the Forum notes, with considerable concern, that the pace of industrial growth will continue to be unsatisfactory in a large number of developing countries, with only marginal growth projected in most of the sub-Saharan region. It is disquieting that many of the poor countries of today may continue to be as poor by the end of the next decade, unless a major economic and industrial transformation can be brought about. The Forum therefore emphasizes the importance of industrial growth, diversification and dispersal as being the principal means for the creation of new jobs and incomes in the less developed regions.

23. The Forum considers it imperative that a new dynamic approach should be adopted to accelerate the pace of industrialization in developing countries, within the framework of private sector development and increased export orientation. This would necessitate market-friendly intervention in the nature of incentives, especially during the present transition period, to bring about a more efficient allocation of resources. Global competition and domestic deregulation should reduce inefficient production and resource

allocation. Moreover, this may primarily nurture efficient production units, often with a high capital and skill base. The development of technological capacity at the enterprise level constitutes a critical factor. It is crucial that the present transition period is fully utilized by developing countries to ensure rapid development of a competitive capability on the part of local enterprises. Market-friendly policy intervention and support functions must be provided at the local, State and international levels.

24. Past data clearly demonstrate that, given the consumption pattern of most individuals and households, industrialization will be the principal engine of growth until a country reaches a threshold point of development in terms of per capita income and consumption of industrial goods. The consumption pattern may, in the future, have to be adjusted to developing-country needs and priorities. Most developing countries are expected to be in this industrialization phase for the next two to three decades, some, however, will reach the threshold point more rapidly and will join the group of industrialized developed economies sooner.

25. Developed countries are expected to concentrate to a greater extent on high-technology production but even more on the service sector, where both the proportion of services to GDP and to exports are signalling a significant increase.

26. With increased global competition, only the most competitive technologies can be expected to survive. It is recognized that high-technology processes tend to be more capital-intensive. The proportion of high-technology manufacturing is increasing in several developing countries and poses a key problem regarding the absorption of a growing labour force. During the transition period, it may be necessary for several less developed countries to concentrate on the absorption and adaptation of relatively low technology, with a higher labour-intensity and to upgrade such technologies and skills over a period of time, especially for developing an export capability.

27. The future growth of the world economy and of manufacturing and services will be fundamentally skill-based. To reduce their initial handicaps, the developing countries will need to concentrate on the development of human resources and on acquiring new technological skills and innovative capability at the enterprise level as these will be most essential for competitiveness.

28. It will also be necessary for developing countries to augment their own savings base and, at the same time, to make the best use of capital by deregulation and competition. Because of highly developed communication technologies and systems, movements of capital globally have become extremely volatile. Developing countries will need to develop appropriate mechanisms to deal with such inward flows of portfolio capital.

29. The early 1990s have witnessed a fundamental change in the global industrial infrastructure. It will be necessary to determine appropriate strategies for industrial and technological development over a longer time perspective. The global industrial economy is facing considerable uncertainty and appropriate corrective action can be taken, with early warning systems, which need to be developed.

30. The Forum concluded its discussions on this issue with the following observations:

(a) Under the global market system, the importance of and need for a long-term development perspective is unanimously appreciated, especially for those transitional economies who enjoyed protection in the past and who are less familiar with the fast-changing world capital market and trading system;

(b) Rapid industrialization will be the main engine of growth in the developing countries for several decades to come. This growth must be sustained by the support of suitable physical infrastructure and human resource development and by maintaining the pace of liberalization, deregulation and open trade. The role of international organizations and the State will be of great significance, especially in countries that are undergoing transition and where the market either does not exist or is undeveloped. Participants consider that countries in a reform process need to follow sound public finance and monetary policies and to encourage the market-oriented growth policies of the private sector;

(c) The Forum emphasizes the need to give special attention and to adopt a separate approach to the industrial growth of the less developed countries, particularly sub-Saharan Africa. In the industrialization process of these countries, the transition from a low-technology base must be properly programmed in order to avoid growing unemployment and increasing income disparities. Small, medium and micro-enterprises, especially in rural regions, should be a key element in the process of industrialization in African countries and other less developed economies;

(d) In future, the key determinants of growth will be the availability of skilled human resources and appropriate socio-economic infrastructure. For this, suitable human resource development programmes have to be undertaken by the developing countries where proper support will be required from international bodies and even from private investors to impart in-plant training to the local labour force for utilizing the fast-growing knowledge-based industries;

(e) In the development outlook for the future, the role of the private sector is seen to be dominant and critical. Most less developed countries have limited knowledge of the global market. Often, their market potential has not been properly demonstrated to international investors. There will again be a major role for international bodies such as UNIDO to help generate the necessary dialogue and networks for the dissemination of information and market linkages;

(f) The success of some countries in Asia and the Pacific or in Latin America may not always be easy to replicate by some of the less developed countries immediately because of the absence of basic infrastructure, an appropriate market and a suitable human resource base. International bodies such as UNIDO must develop a separate blueprint and a strategy for industrialization for such countries, particularly in Africa, which are encountering serious obstacles at least in the immediate transition period;

(g) Because of the existing external debt burden, less developed countries are facing major financing constraints in their development efforts. It is suggested that the

international community should consider appropriate measures of debt relief for African countries and other developing countries in a similar position;

(h) With regard to the advantages and disadvantages of regionalism in the context of a multilateral world trading system, the Forum considers that the concept of South-South linkages should now take the shape of regional cooperation between developing countries for harnessing and exploiting their natural resources and other complementary resource endowments to make them viable entities to participate in an interdependent, cooperative global industrial structure.

C. NEW TECHNOLOGIES, INNOVATION AND COMPETITIVENESS

31. The Forum considers that a leading message to the developing countries would be to highlight the importance of technology as a core competence for competitiveness. The competitiveness that developing countries aspire to results not from currency depreciation or low wages, but arises as an integral part of their development efforts and is based on a capability that can be used in different market conditions and lead to true global integration. Competitiveness in internal and external markets are two sides of the same coin. In the present-day world, both competition and cooperation coexist as a means of development and growth. The key players in competition are enterprises and it is competitive enterprises that make a competitive nation and place it on a growth path of increasing productivity, thus contributing to the attainment of a macroeconomic equilibrium.

32. It is recognized that the world economy is undergoing far-reaching changes both at the micro- and at the macro-level, i.e. in relation to the organization of individual enterprises on the one hand and, on the other, the global regime of incentives and regulatory frameworks in which enterprises and institutions operate nationally and internationally. The rapidly changing technological scene, as well as economic and industrial developments such as liberalization of trade, deregulation of markets, privatization, greater accent on foreign direct investment, globalization, new forms of enterprise-level cooperation and the changed intellectual property regime are all factors that make it imperative that concepts and approaches relating to technology development and transfer be viewed in a new context.

33. The efforts of developing countries to improve their exports of manufacturing goods have taken different forms ranging from processing of natural resources, export of low wage goods and absorption and improvement of traditional technologies to technology-intensive manufacture, drawing on recent advances in science and technology. The Forum considers that these strategies are not mutually exclusive but dependent on country conditions and capabilities. In all these efforts, however, there is scope for technological improvements contributing to greater competitiveness. A major concern that the Forum wishes to underline is the fact that in some 80 developing countries the export of manufactured goods is insignificant or non-existent. This is a situation that requires attention.

34. The Forum emphasizes the importance of new generic technologies such as informatics, biotechnology and new materials, which are creating new industries and also offer scope for technological improvements in a wide variety of sectors. Such generic technologies are increasingly science-based, calling for long-term capacity-building in both science and technology. Adequate recognition of the technology factor in industrial development and competitiveness is an urgent necessity since such policy issues and considerations tend to be overshadowed by macroeconomic events.

35. Particular attention must be paid to the development of technological capabilities at the level of individual enterprises. Such capabilities crucially depend upon continuous learning, and on the enterprise having an explicit technological management strategy and skills, which of necessity have to be based upon both imported and domestically generated technical knowledge, and catalysed by a supportive macroeconomic setting for such a process to take effect in developing countries.

36. The Forum considers that such a learning process crucially depends upon both the macro-environment in which enterprises find themselves operating and on their management including leadership style, systems of operation and organizational culture. In the import substitution regimes of the past, both the pace and nature of such a learning process were strongly dependent upon the fact that, in a closed economic environment, enterprises did not have to face up to the disciplinary challenge of the market and therefore embarked on learning trajectories that were not necessarily the most appropriate ones for attaining long-term international competitiveness. Under such circumstances, many enterprises and institutions have managed to accumulate the kind of domestic technological capabilities that are not helping them to take up the competitive challenges of more liberalized and deregulated market conditions.

37. Some countries have moved in an evolutionary way to higher levels of technological sophistication in production and exports, associated with the accumulation of technological knowledge by enterprises. Action is needed to ensure that enterprises invest sufficiently in this process of upgrading knowledge.

38. The development of human capital is the single most crucial element in the process of expanding the international competitiveness of a society. There are many potential synergies in the relationship between university research institutes, industrial extension agencies and manufacturing enterprises and this relationship must be promoted by both strengthening these infrastructural institutions and stimulating private sector enterprises to become explicit in identifying and formulating their requirements for technology.

39. The Forum recommends that developing countries give consideration to the formulation and implementation of national strategies and programmes for technological competitiveness. The contents of each country's programme will vary according to its conditions but will in all cases address the actions needed at the governmental, institutional and enterprise level. Such programmes could be formulated to cover periods of three to five years and could be reviewed and renewed periodically.

40. Such national programmes must incorporate a vision for the country concerned with regard to technology for competitiveness and stem from a dialogue among the principal stake holders such as Governments, industry and the scientific and technological community. The programmes must include the following components:

(a) Innovation as the engine of competitiveness calling for a change in the mind-set of the agents of technological and industrial change including entrepreneurship development;

(b) Technology upgrading in the context of a comprehensive understanding of technology extending beyond technical information, manuals, training etc. to manufacturing technology, design, distribution, organizational factors and managerial approaches. Conceived in this way, technological upgrading includes actions relevant to countries at various levels of development, whether they are new entrants to international markets for manufactured goods or well-established exporters;

(c) Technology management at the enterprise and institutional infrastructure levels, including rapid build-up of awareness of need, diagnosis of critical technological requirements, innovation management, including research and development and technology transfer management, technological information, and monitoring and forecasting of technology, as well as entrepreneurship development;

(d) Partnerships, strategic alliances and creation of capabilities for the negotiation and acquisition of advanced technology;

(e) Integration of foreign technology, assimilation of foreign direct investment and the integration of activities of transnational corporations in the domestic economy;

(f) Coordination of contributions from aid programmes and donor agencies.

41. These components address the changes required in an enterprise's mind-set. By acquiring a clear understanding of the linkage between technology and competitiveness, and profitability and growth, the private sector will increase its participation in technological policy-making and its investment in technology transfer, through licensing, strategic international partnerships and other means, and in research and development activities. Such investments, particularly in research and development, should be stimulated by and matched with significant funds from Governments, in order to seize one of the few openings for State subsidies contemplated in the Uruguay Round agreements, and in view of the fact that research and development is subsidized by most States around the world.

42. The point of departure for the new national programmes is the needs of enterprises and the promotion of interactions at their level, which in a sense is a bottom-up rather than a top-down approach. It is recognized that the needs and capabilities of SMEs differ in certain respects and also between national enterprises and foreign ones. The experience of both developing and developed countries in creating modalities (e.g. technology incubators, technology round tables) for stimulating enterprise-level actions and innovations needs to be studied and disseminated.

43. There is a continuing role for Government but that role must shift selectively to achieving a better balance between regulation and the creation of an enabling environment for private sector development and competition including the provision of infrastructure, institutional linkages, stimulating actions at the enterprise level and human resource development. The experiences of various countries including the industrialized countries could be drawn upon for this purpose. Governments need to build up the capabilities and flexible approaches needed to discharge these functions.

44. In the case of countries that have yet to enter into the export market, awareness generation, information coupled with advice, organizational arrangements for export marketing and adding value to natural resources would be some of the starting-points for policies to promote technological innovation, particularly for SMEs. Special measures to facilitate their adoption of generic technologies should be contemplated in particular.

45. In the light of the foregoing considerations and the experience of UNIDO in the field of industrial technology since its inception, the Forum recommends that UNIDO formulate and implement a comprehensive Technology for Industrial Competitiveness (TIC) programme as a central programme of UNIDO assistance to developing countries. The programme should address both the demand and supply aspects and take advantage of the comparative advantage of UNIDO in terms of promotional programmes, sectoral expertise and capabilities in investment promotion and feasibility analysis. The TIC programme should help define technological innovation needs for sustainable competitiveness at the plant and cluster levels. It should also promote capacity-building, strengthen technology acquisition and negotiation and include a Network of Innovation Systems Agents (NISA).

46. The technological and human resource services of UNIDO are called upon to contribute towards technological upgrading for promoting the international competitiveness of developing countries, in particular in the following areas of priority concern:

(a) Strengthening of national capabilities for the formulation and review of technological innovation policies and strategies as well as the technological infrastructure in terms of information, technology monitoring and forecasting, regulations related to the safety and environmental aspects of new technology, the linkage between research and development and industry, and the building up of technology management skills at the enterprise level;

(b) Assistance to developing countries in reviewing and assessing the effectiveness of policies, and developing a system of benchmarking, as well as in monitoring and reviewing emerging contextual factors affecting the technological innovation process;

(c) Assistance in the development of strategies, capabilities and regulations for promoting businesses based on new and emerging technologies, besides the international harmonization of safety regulations and certification of oversight procedures, and in the

* For a more detailed description, see paragraph 40 above.

development of international partnerships and technology transfer arrangements, particularly in view of the Uruguay Round agreements and internationally accepted environmental standards;

(d) Support for the development or revitalization of national, regional and international institutions at the governmental and enterprise levels that integrate innovation systems such as engineering, design and research and development centres, standardization bodies, small and medium consulting firms, and technology incubators, parks and management centres;

(e) Promotion of linkages and complementarities between the national innovation system agents of a region within the context of technical cooperation between developing countries;

(f) Continuing promotion of an increase in the international flows of technologies and investment;

(g) Assistance in the development of critical masses of human capital in the foregoing areas, with due consideration being given to vocational training systems, gender issues and the application of supporting information technologies.

47. UNIDO is called upon to undertake such activities in cooperation as necessary with other interested multilateral and bilateral organizations.

D. GLOBALIZATION AND INDUSTRIAL PARTNERSHIPS

48. The Forum notes that the concept of globalization, which essentially relates to the activities of individual firms across national boundaries, has acquired a new dimension because of the extraordinary growth of the international activities of enterprises, and of various combinations of inter-enterprise relationships in different countries and sectors. With the globalization of communications and markets, the globalization of production is also expected to increase significantly during the next decade. The opening of global markets through trade liberalization will not only make it easier for firms to extend their operations beyond national boundaries but will also provide great potential for expansion and growth. This will, however, require the development of increased competitiveness and additional resources for investment, besides technological and marketing linkages to promote rapidly changing and high-quality products and services.

49. The Forum also notes that an important factor in globalization has been the expansion of the activities of transnational corporations (TNCs) through foreign direct investment. Such investment through wholly-owned subsidiaries or majority-owned affiliates will continue to take place in large potential markets, such as China, India and Indonesia in Asia, and Argentina, Brazil and Mexico in Latin America, if appropriate economic policies are pursued in recipient countries. Foreign direct investment will also continue to be attracted to countries with ample resources of scarce raw materials, including petroleum and minerals in the case of Nigeria and in some of the States of

Central Asia, or sufficient cheap semi-skilled labour as was the case in the offshore production of electronic components in South-East Asia during the 1970s.

50. Apart from foreign direct investment, however, several alternative forms of foreign participation are becoming increasingly common in developing countries. These range from joint ventures with minority foreign holdings to non-affiliate licensing agreements and contractual arrangements. A key feature in such arrangements is that ownership and control rest with the local partner or shareholders.

51. Globalization is expected to increase rapidly and to take place in various forms and through different activities, in the next decade. It may take place through either TNC subsidiaries or affiliates, technology licensing, the use of trade marks and patents, or the supply of technical services. Another level of globalization can relate to a division of the production function between a foreign company and its subsidiaries or local partners in different countries. This level applies to different types of industries, ranging from automobiles or certain components and sub-assemblies that are produced for global markets to electronic products and components that are manufactured primarily in South-East Asia for final assembly in industrialized countries. Another level of globalization may relate to the research and development function, where certain aspects of research may be undertaken in developing countries, where research costs are much cheaper. However, the human resource base required for research and development is frequently less well developed in developing countries.

52. The Forum considers that, in the context of the emerging global industrial pattern, enterprises in developing countries and transition economies will need to globalize their activities either for specific product groups or industry-related services in particular fields. It will also be necessary for developing-country enterprises to determine the nature of enterprise-level activities in the home country and the production or research functions that can, more advantageously, be undertaken in other countries.

53. This decision can only be taken on the basis of information on potential markets, assessment of technology uses and the development of a competitive production and marketing capability for quality products and services. It also needs to be determined whether research and innovative capability should be developed internally by the enterprise concerned or through external partnerships and linkages. Comparative advantage is the deciding factor.

54. Promotion of the globalization function through foreign direct investment would of necessity involve the integration of local production or other functions into the activities of the TNC concerned. While decisions as to local production would rest with the foreign company, the decision regarding the initial establishment of the foreign TNC facility would be that of the host country. It should be borne in mind that the international competition for foreign direct investment is becoming more intense.

55. The Forum notes that globalization through the process of foreign direct investment will constitute an important form of global activity throughout the next decade. Two alternative variants may also, however, need to be considered. The first variant applies to small developing countries with limited internal markets and no major

comparative advantages, or with economic policies that prevent the full exploitation of comparative advantages where it may be difficult to attract substantial inward flows of foreign investment. In such cases, it may be necessary for local enterprises to take the initiative in locating suitable foreign partners and determining the pattern of participation. It will be desirable for Governments to promote such partnerships for local enterprises through the development of information systems and the facilitation of contacts with foreign firms. In order that local companies can develop appropriate external linkages, the Forum considers that institutional support must be provided to local enterprises including training programmes for skills development, managerial and organizational improvements, and technology absorption and adaptation, as well as institutional facilities for standardization and certification of quality, and applied research facilities.

56. The second variant may need to be considered in countries where the private sector and capital markets are already well developed and where institutional facilities for finance, technology and marketing of exports are adequately available. In such countries, local enterprises may increasingly prefer to enter into partnerships and strategic alliances in addition to foreign direct investment and participation. This pattern, which was followed by the *chaebols* in the Republic of Korea, normally involves substantial inward flows of technology, besides local adaptive and innovative research. In such cases also, fairly extensive institutional support functions will need to be provided in the home country of the enterprise concerned.

57. The Forum considers that, in order to develop a local capability in applying innovative technologies in developing countries and transition economies, enterprise-to-enterprise linkage should be sought through joint ventures and licensing and marketing arrangements, including with TNCs. The Forum is also of the view that the key role of foreign direct investment during the next decade must also be recognized as being of great importance for covering investment gaps and ensuring that inward flows of technology accompany such investments. It will be necessary, however, to take note of the provisions in the Uruguay Round agreements on trade-related investment measures (TRIMs) and trade-related aspects of intellectual property rights (TRIPs).

58. The Forum is of the view that there will be considerable potential for a division of selected production functions in industrial subsectors such as aerospace and capital goods, consumer durables such as automobiles, and electronic items. Whether or not developing and transition economies can make use of this potential depends largely on the economic policies of these countries.

59. The Forum also considers that, in view of the rising cost of research, there will be a growing potential for industrial research and development to be conducted in developing countries and transition economies during the next decade. Such research can be conducted either on behalf of foreign TNCs or on a contractual basis in particular subsectors of production. However, the degree to which developing and transitional economies can participate in research and development critically depends on the progress made with regard to human capital formation, a function in which Governments and enterprises have an important role to play.

60. The gap between the least developed countries and developed countries may increase if adequate policies are not implemented by the former. However, it is considered that the number of countries that will join the group of developed countries could be increased substantially.

61. SMEs have a specific role to play by becoming increasingly global in their orientation and operation. Better opportunities are being created by the availability of new information and communication technologies, but special attention should be given to encourage the efforts to engage in multinational activities.

62. Regionalization, being a natural, geographical and cultural development, might be a step towards globalization and should not be opposed, assuming that it will not be used to encourage protectionist and restrictive trading arrangements with other countries outside the region.

63. The globalization of trade will involve greater intergovernmental cooperation in such related fields as fiscal, social and environmental policies.

64. Accelerated industrial development cannot take place in any country unless infrastructure sectors, particularly power, surface transport, telecommunications and port facilities, grow commensurately. The scale of investment required for the creation of infrastructure is likely to be as large, if not larger, as that required for setting up manufacturing industries. A discussion on the foreign direct investment required for manufacturing industry would be incomplete without integrating the need for ensuring adequate infrastructure. The Forum notes, however, that the issues regarding assured returns to investors from infrastructure projects are extremely complex. While increased participation from the private sector will be necessary, the involvement of international bodies such as UNIDO and multilateral development financial institutions is required to deal with this important issue because of the essential linkage between infrastructure and industry.

65. UNIDO activities for promoting industrialization should include the collection, analysis and dissemination of information on various aspects of globalization. It should undertake training programmes and the assessment of various forms of globalization in developing countries and transition economies. It should also promote forms of globalization that are consistent with national policies. UNIDO should furthermore increasingly promote participation by the private sector and the private sponsoring of projects to be undertaken by the Organization. Certain additional conclusions and recommendations of the Forum to encourage globalization are summarized in annex V.

E. GLOBAL TRADE LIBERALIZATION: IMPLICATIONS FOR INDUSTRIAL RESTRUCTURING

66. The Forum considers that the Uruguay Round agreements and liberalization of global trade will have a major impact on all trading nations. There will not only be greater liberalization and expansion of global trade but also increased global interdependence. The principal gains are likely to accrue to developed economies

comprising major trading nations as well as some developing countries. There will be considerable potential for semi-industrialized developing countries to increase their participation in international trade, but the gains will accrue to those industries that compete most effectively. The difficulties of some developing and least developed countries in Africa, the Caribbean and the Pacific and elsewhere, which have enjoyed trade preferences under the Lomé conventions, the value of which will now be eroded, are likely to be aggravated particularly in the short term. The implications of this situation require careful assessment at the country level, together with the adjustments that would be necessary in industrial strategies and enterprise restructuring. The extent of the adjustment necessary will vary, but in a number of developing countries, it is likely to be substantial.

67. The basic challenge that the liberalization of global trade represents is whether developing countries, particularly the least developed and ACP countries, have the capacity to compete in open markets. To meet this challenge, the Forum considers that these countries need to focus on the following objectives:

(a) To raise the efficiency and competitiveness of their manufacturing sector, particularly of SMEs;

(b) To adopt a more export-led development strategy;

(c) To promote effective regional and subregional forms of cooperation, particularly with a view to raising market size and to increasing the availability of access to inputs and technology.

68. The Forum considers that each country will need to evolve its policies and strategies to realize these objectives in accordance with its own needs and conditions, supported by assistance from international organizations. The Forum also considers that close and structured interaction and consultation between the private sector and the Government is essential in order for these countries to meet the challenges of global trade liberalization.

69. In order that developing countries can meet these objectives, the Forum makes the following recommendations:

(a) The Forum recognizes that least developed and ACP countries, often with an already weak domestic industrial base, may have difficulties in identifying potential export sectors. Nevertheless, the challenges of the emerging trade environment require that they increase their capacity to identify and support sectors, subsectors and products with an export potential. To take advantage of the increased trading opportunities, a careful appraisal of world market demands is necessary. Most importantly, developing-country enterprises need to establish the production and marketing capabilities necessary to compete in the new markets. The assistance of international institutions in this task would be of considerable value;

(b) The Forum also notes that import substitution policies are being replaced by export-oriented strategies in developing countries, and that it is therefore essential to

provide support to local enterprises in identifying appropriate sectors, subsectors and products where exports could be competitive. This task may also require varying degrees of industrial restructuring and technological upgrading of products and processes. It will also require closer linkages and partnerships to be created with foreign enterprises. These external linkages must be structured within the framework of the provisions of the Uruguay Round agreements.

(c) The Forum considers that policy and institutional support will be needed in substantial measure in the following areas:

- (i) Productivity improvement;
- (ii) Technology;
- (iii) Quality and standards;
- (iv) Marketing;
- (v) Human resource development;
- (vi) Information;
- (vii) Access to finance on reasonable terms;

(d) The Forum considers that appropriate measures should be taken to improve access to finance and develop new financial instruments, wherever necessary. The Forum also considers it important to sensitize and guide developing countries, where needed, regarding the implications for industry of the Uruguay Round agreements and the emerging trading environment so as to enhance the approach and strategies adopted by developing countries. Assistance to developing countries in building up their information base on trade, marketing, investment and related matters is also important. The Forum agrees that market needs should be assessed by industry associations and the information made available to SMEs:

(e) The Forum considers that awareness and understanding on the part of developing countries should be raised with regard to environmental, health, safety and technical standards, as well as non-tariff barriers, without which they may find it difficult to gain access to markets;

(f) The Forum suggests that the technological capacity of the manufacturing sector of developing countries could be raised by:

- (i) Building up domestic technological capabilities;
- (ii) Acquiring and assimilating foreign technologies;
- (iii) Forging strategic alliances and partnerships with foreign enterprises;

Local extension services and international sources of technical assistance could both be used to support this endeavour;

(g) The Forum considers that access to inputs, including capital goods and technology at internationally competitive prices, is important in building up the competitiveness of the manufacturing sector;

(h) The Forum observes that a business-friendly environment and adequate infrastructure would improve, to a large extent, the competitiveness of the manufacturing sector;

(i) The Forum recognizes that manufacturing industry does not exist in isolation. Accordingly, linkages with both the agricultural sector and the service sector must be strengthened;

(j) The Forum considers that regional and subregional cooperation is necessary to enhance market size and to exchange experiences and ideas. The Forum recognizes that such regional agreements need not be inconsistent with the liberalization of global trade, but that they should not become new forms of protectionism.

70. International organizations need to play a major role in the implementation of the above measures. It is felt that UNIDO, given its mandate for the promotion and acceleration of industrial development, has a vital role to play in strengthening the efficiency and competitiveness of the manufacturing sector of developing countries, particularly SMEs and with special emphasis on the ACP and least developed countries. UNIDO could also become increasingly involved in the industrial restructuring programmes to be developed for Africa.

F. INDUSTRIAL POLICY REFORMS: THE CHANGING ROLE OF GOVERNMENTS AND PRIVATE SECTOR DEVELOPMENT

71. The Forum notes that there are two main views regarding the role of Governments in the new international environment. One is that Governments should concentrate primarily on liberalization, deregulation and on providing a promotional and functional framework for private sector development, leaving further industrial development largely to market forces. The other is that Governments should not only carry out these functions but also go further, assuming a strong proactive approach to defining industrial objectives and strategies and adopting measures to create competitiveness and overcome market failures. The second approach takes the need for good macroeconomic management and an enabling environment for private entrepreneurship as given, but emphasizes the need to improve upon existing market forces and create the capacities, markets and institutions to accelerate and deepen the process of industrialization.

72. The Forum draws attention to the successful industrializing economies of East Asia as examples of how Governments can use mixtures of functional and selective policies to promote industrialization along with a deepening of indigenous technological capabilities. Several different strategies are possible. It also notes that the process of liberalizing existing industrial structures needs the support of policies to prepare domestic industry to face international competition. This preparation often involves following a systematic strategy concerning trade, industry and labour policies, rather than a sudden and sweeping exposure to global competition. The nature of the policies is always highly specific to the economies concerned, and depends on their initial

conditions, level of industrial competitiveness and the ability of their Governments to mount appropriate interventions.

73. The Forum acknowledges that there are certain important preconditions for the effective implementation of industrial policies. Among the most important are:

(a) Political stability and the commitment of the Government to industrial development;

(b) Macroeconomic stability and a sustainable exchange rate, interest rate and fiscal and monetary policies;

(c) The ability to raise and allocate sufficient resources to industrial support measures, taking account of budgetary constraints and competing needs for government expenditure, and recognizing that some Governments may not be able to find the necessary financial resources in the short term;

(d) The adoption of open, outward-looking and competitive policy regimes, without which policy interventions can not produce the desired results in terms of industrial efficiency and flexibility.

74. The Forum notes that the global framework of industrial development has changed dramatically in recent years. With the rapid pace of technological progress, the growing importance of trade, the globalization of production and the increased emphasis on the private sector, policies in most developing countries have changed. Trade and investment are being liberalized. Markets are being given the primary role in resource allocation. Foreign direct investment is being welcomed. Export orientation is being stressed. The Forum approves of this general trend towards liberalization and export orientation, regarding it as a generally more conducive environment for industrialization than earlier import-substituting strategies.

75. The Forum also notes that the results of policy reform vary considerably according to country and region. There has been a significant increase in flows of foreign direct investment and technology to Asian and Latin American countries, and in their exports of industrial and manufactured goods. However, the least developed countries in general, and sub-Saharan Africa in particular, continue to suffer from poor industrial performance. They are marginalized from the flows of foreign direct investment to developing countries, their exports of manufactured goods remain very small and stagnant, industrial production and employment is contracting in many countries, and many Governments face severe constraints on financing policy initiatives in industry.

76. With the increased market orientation and exposure to global production and technology, the Forum recognizes that the role of the Government has to undergo considerable change. In several important ways, the Government has to play a reduced role in ownership and levels of intervention in industry. However, the Forum believes that the Government needs to retain and even strengthen its support for industrial restructuring and development. The precise nature of the Government's role will vary by country and conditions but, in general, the prevalence of market deficiencies means

that the Government needs to exercise an important influence on the promotion of competitive industrial development. The task of formulating and implementing policies to support industry has to be decentralized, where appropriate, to regional and local Governments. Non-governmental organizations and labour unions have to be included in the implementation of industrial policy.

77. The Forum welcomes the broad trend towards privatization, but emphasizes that the objective of reform is increased efficiency and that privatization is one of many instruments to achieve this aim. The Forum is of the view that, while the process of privatization in developing countries should continue, Governments should improve the regulatory framework for privatized monopolies, and undertake programmes for the retraining and absorption of surplus labour resulting from privatization. Where enterprises are retained in the public domain, suitable reforms should be undertaken in the organization and management of these enterprises to make them market-oriented and competitive.

78. The Forum notes the pressing need to develop the physical infrastructure in developing countries and transition economies, and welcomes the trend towards the increasing privatization of utilities. It stresses that the massive outlays of capital required, particularly for power generation, necessitate the increasing participation of the private sector, both domestic and foreign, in the setting up of new facilities. New contractual arrangements, such as Build-Own-Operate (BOO) and Build, Operate and Transfer (BOT), among others, are expected to be increasingly utilized for this purpose, and it recommends that other flexible methods of financing be explored.

79. The Forum considers it vitally important that government policies should focus on the promotion and development of local enterprises and local entrepreneurial capability. This calls for institutional support activities, ranging from human resource development to financial support, technological adaptation and applied industrial research, and external alliances and linkages. It recommends that Governments undertake specific programmes for the development of SMEs and for rural industrial development, in order to extend the socio-economic benefits of industrialization to less developed areas and to poorer and more vulnerable sections of the population.

80. The Forum is of the view that the emergence and growth of national enterprises should normally be driven by market forces. Since markets can suffer from failures, however, particularly in countries where private sector industrial activities have been very limited, the State has to play a catalytic role in entrepreneurial development. There may also be market failures in more industrialized economies in stimulating the entry of new complex technologies, in restructuring existing industries and in carving out new areas of competitive advantage. In such instances, the State can play a positive role in providing the signals, encouragement and support needed to restructure, deepen and diversify industrial activity.

81. The Forum is of the view that foreign direct investment has a crucial role to play in industrial development. The policy changes undertaken in most developing countries and transition economies with respect to the promotion of foreign direct investment and technology transfer are desirable and market-friendly. It appears unlikely, however, that

passive opening up will be adequate to attract sufficient foreign direct investment and lead to its upgrading into higher value-added activities and to technological deepening. The Forum considers that more proactive policies and targeting are needed for this purpose. At the same time, the need to promote local enterprises to complement and draw upon the resources offered by foreign direct investment is very important.

82. The Forum considers that the broad industrial strategy should be based on a review of the competitive structure of national industry and should assess, in consultation with representatives of industry, the principal subsectors and clusters of industries that have special potential for competitive growth. Major gaps and shortcomings with respect to human resources, technological capability and usage, and external linkages should be determined, and programmes and measures to cover such gaps implemented. The Forum recognizes that inadequate human resource development constitutes the principal shortcoming in most developing countries and has to be addressed urgently. In the first instance it is essential to upgrade the entire education system, particularly at the levels of primary and secondary education. It is also increasingly important to meet the needs of industry for higher-level skills and to provide for specialized training and retraining. In-plant training has to be encouraged, and provision made for continuing education at all levels of the workforce.

83. The Forum is of the view that institutional infrastructure must cover all the needs for industrial support: finance for industry, entrepreneurship and skill development, standards and quality control, technology information and research and development. It is vital that such industry-related institutions and services be made more responsive to the needs of industry and benefit from increasing private sector involvement and participation.

84. The Forum notes the special needs of industrial development in sub-Saharan Africa. It endorses the recommendations made at the twelfth session of the Conference of African Ministers of Industry (CAMI 12), which met at Gaborone, Botswana, in June 1995, where the need was highlighted for action-oriented programmes by Governments to stimulate competitive and sustained industrial growth. Apart from the implementation of the programme for the second Industrial Development Decade for Africa, CAMI 12 emphasized, *inter alia*, the necessity of creating an enabling environment for domestic resource mobilization, improving investment conditions for domestic and foreign investors, according priority to the development of human resources and industrial skills, particularly technological, engineering and entrepreneurial capabilities, promoting technological development, innovations and a technological culture, and developing appropriate financing mechanisms and incentives for channelling savings into productive investments.

85. In view of the many constraints facing sub-Saharan African countries, the Forum suggests that special emphasis be placed on programmes for SME development. The objective should be to create a new class of entrepreneurs and a skilled labour force, besides developing the technological capabilities for the manufacture of non-traditional products in areas in which local enterprises can build up a comparative advantage in international markets. With the liberalization in global trade following the Uruguay Round agreements, major industrial restructuring is necessary in most African countries.

It is necessary for Governments to take the lead in facilitating this restructuring, in conjunction with the private sector in each country and in consultation with the appropriate international organizations and donor agencies.

86. The Forum notes that all these recommendations require greatly improved capabilities on the part of Governments to design, administer, monitor and adapt their policies. This in turn involves considerable enhancement of the information, skills and resources available to government administrations, and in some cases reforms to their organizational and incentive structures. Coordination across different branches of the government has to be improved and a coherent and consistent set of policy objectives adopted. The policy-making process has to be made transparent and collaborative, with strong inputs from the private sector. The collection and dissemination of the information necessary for industrial policy formulation needs to be greatly improved. The Government has to ensure that industrial policy is insulated from day-to-day political pressures and that it retains the ability to penalize economic agents that are not able to meet the test of competitiveness within designated periods of time. The Forum notes that these measures have a special bearing on the requirements of sub-Saharan Africa.

87. The Forum emphasizes that UNIDO can play a valuable catalytic role in helping Governments of developing and transition economies to promote industrial development. It can provide information and analytical support to policy makers, draw appropriate lessons from industrial support policies and institutions in advanced industrialized countries, and advise Governments on how they can best orient their policies towards market-friendly, outward-oriented regimes rather than towards the inward-looking and over-interventionist approaches of the past. It can also bring policy makers together to share information and experience on industrial development. Finally, it can provide technical support in the detailed task of policy design and implementation.

G. ENVIRONMENTAL POLICIES AND INDUSTRIAL COMPETITIVENESS

88. The Forum notes that, although the relationship between environmental policies and industrial competitiveness is complex and difficult to quantify, the emergence of strict environmental requirements in the future could pose a potential threat to the competitive position of certain small-scale firms in resource-intensive and pollution-intensive sectors. The Forum notes that for certain small-scale units, even a marginal increase in costs of 1.5 per cent to 3 per cent could be burdensome or fatal. However, the Forum agrees that this need not necessarily be the case if preventive pollution measures are adopted by industry early on. The Forum agrees that in the medium to long term, adverse impacts on the competitive position of small firms could well be alleviated if the necessary action is implemented in a timely fashion.

89. The Forum notes that the emergence of non-tariff and market barriers such as eco-labelling requirements could be perceived as threats to competitiveness and export earnings by some developing-country exporters, assuming that eco-labelling becomes a significant marketing tool in developed countries. The Forum further notes that, whereas some firms and sectors in developing countries are aware of eco-labelling schemes and their requirements, not all sectors and firms in these countries have access to the

pertinent information and infrastructure (certification and accreditation bodies) needed to qualify for many eco-labelling schemes. Many firms have limited access to cleaner technologies and may incur relatively high compliance costs in meeting the requirements for eco-labelling schemes, which are becoming even greater with the growing use of process-related criteria for awarding eco-labels. The Forum notes that the ISO 14000 series of documents on environmental standards have the potential to overcome some of these negative effects but that greater efforts and closer cooperation between Governments and the international community are needed in the areas of international labels, mutual recognition, certification, equivalency, transparency, participation and technical assistance to ensure that eco-labelling does not become a significant barrier to trade. In particular, there is a need to ensure that developing-country representatives play an active role in international standard-setting procedures.

90. The Forum considers that if the policy thrust is on curative measures, strict environmental norms and legislation will have an adverse impact on the competitive position of enterprises. If, however, Government and corporate policies are geared towards preventive measures, they can only strengthen the competitive position of enterprises, even in the small and medium-scale sector.

91. The Forum is of the view that it is, therefore, necessary to identify appropriate measures that will enable industry to take advantage of win-win solutions that reduce pollution emissions per unit of output while maintaining the overall profitability of enterprises within a given industrial sector.

92. The Forum considers that the following measures are essential ingredients of win-win solutions for achieving pollution prevention and industrial competitiveness, and maintaining the profitability of enterprises: (a) widespread application of cleaner production processes and technologies as opposed to end-of-pipe treatment only; (b) use of environmental management systems by industry; (c) building up of technical capabilities and infrastructure for testing and certification to overcome non-tariff and market barriers arising from requirements such as eco-labelling; (d) wider use of economic incentives to complement the command and control measures of pollution prevention; (e) promotion of special programmes and support systems to improve the environmental performance of small-scale enterprises; and (f) efficient resource management by industry and Government, especially water and energy resources.

93. With respect to the application of cleaner production processes and techniques, the Forum notes that the major constraints faced by developing countries relate to a lack of awareness of the financial and environmental benefits of cleaner production activities as well as a lack of information about the availability of these techniques. The Forum considers that a coordinated effort by industry, Government and international organizations is needed to build capacities, disseminate information and train managers and the workforce in the advantages of cleaner production methods. This task may be done by setting up cleaner production centres and waste minimization circles or clusters of small units, as well as undertaking subsectoral demonstration projects on the benefits of pollution prevention. The Forum also emphasizes the importance of undertaking life-cycle analysis and research on environmentally compatible products, as well as providing infrastructural support to testing and laboratory facilities.

94. While stressing the importance of pollution prevention and waste reduction at source, the Forum also notes that traditional measures relating to end-of-pipe treatment must be made more cost effective through, for example, the setting up of common waste-treatment facilities and common cleaner production facilities for clusters of small-scale units.

95. The Forum considers that it is important to promote the application of economic instruments such as incentives, pollution charges, differential taxes and realistic cost pricing of natural resources as complements to command and control measures. Economic instruments serve to internalize environmental costs and provide incentives to industry for pollution control. The Forum cautions, however, that internalization policies can have negative effects if the environmental costs associated with production are so high that internalization requires a very high tax, or the country internalizes the full external cost instantaneously and unilaterally. In cases where such negative effects dominate on account of the application of eco-taxes, they may be offset by differential taxes, sector exemptions or rebates, and border tax adjustments. In general, the Forum agrees that the use of economic incentives has inherent advantages from an economic and environmental point of view. However, further work needs to be undertaken on the formulation and application of these measures. In particular, there is a need to undertake sector-specific case-studies, involving the private sector in policy dialogue and in the formulation of incentive schemes.

96. The Forum notes that eco-labelling is essentially a voluntary marketing tool reflecting consumer preference for environmentally friendly products and, despite its possible adverse consequences for exporters in the near future, enterprises must acknowledge this and undertake forward planning to overcome the perceived or real barriers inherent in the use of eco-labels. An increased preference by consumers for environmentally friendly products would also imply that they are willing to bear any increased costs for those products on account of the benefit accruing to the environment.

97. The Forum considers that, with respect to counteracting the perceived threats represented by eco-labelling requirements, there is a need for a concerted effort on the part of industry, Governments and the international community to disseminate timely and accurate information to industry and consumers on the many eco-labelling schemes that are foreseen. Technical subsectoral studies on the implications of the schemes need to be undertaken in order to examine their incidence, and the possibilities of mutual recognition. Since eco-labelling schemes are based on a cradle-to-grave approach, local industry associations should be supported in training their staff in the life-cycle-analysis management style of production and marketing, giving due consideration to local comparative advantage and resource availability. The eventual use of life-cycle analysis would reduce costs and conserve resources.

98. The Forum notes that there is an important need to establish certification centres and accreditation bodies in exporting countries as a means of obtaining easy and inexpensive access to internationally recognized certification schemes based on mutual recognition. These centres could be set up either with public or private participation, depending on the preferences and needs of each country. This will entail the training of local inspectors by specialized organizations and certifiers. These certification centres

could also assist in the establishment of graduated qualification systems that indicate the level of eco-quality of the product, provide more accurate information to importers and consumers regarding the environmental friendliness of the product, and make market access easier for developing-country exporters. Multilateral assistance would be required in this important area.

99. The Forum considers that the promotion of environmental management systems is essential as a tool for enabling enterprises to better meet the emerging challenges to protect the environment, to ensure ongoing compliance with national and international requirements and to continually improve their environmental performance.

100. The efficient management of natural resources, especially water and energy, by developing countries is an important area where policy initiatives at the local, national and international levels are essential. A concerted and integrated effort by all sectors of the economy, especially transport (for energy conservation), agriculture (for water use) and the domestic sector (for water and energy) is needed. Industry is not the only offender in this sphere.

101. All such measures to promote sustainable environment-friendly production have to be especially tailored to meet the needs of small-scale units, both in the formal and informal sectors. The promotion of special programmes and support systems to improve the environmental performance of SMEs has to be undertaken at the policy level and the institutional level. An enabling policy framework, technological assistance for the adoption of environmentally sound technology and institutional support are essential.

102. The Forum considers that all efforts, be they national or international, aimed at protecting the environment should also pay attention to their social, employment and gender implications.

H. EMPLOYMENT AND SOCIAL ASPECTS OF INDUSTRIALIZATION

103. The Forum considers that the current trends towards liberalization and globalization are bound to have uneven effects in different parts of the world. Some industries will respond by upgrading their production and technological capability, involving expansion into higher value-added market niches and larger investment in developing the skills of both labour and management. While newly industrializing Asian economies will expand into advanced sectors, African economies may be at a further disadvantage as a result of the Uruguay Round agreements. SMEs have a crucial role to play not only in employment generation but also in developing new opportunities in export markets. Industrialization must seek both efficiency and equity and UNIDO has, for a long time, correctly advocated industrialization as the only route to sustained improvements in living standards and reiterated this point at the World Summit for Social Development held in 1995.

104. The Forum is of the view that the creation of new employment opportunities in the rural non-farming sector must continue to have the highest priority in the growth programmes of most developing countries. This will, however, have to be achieved in an increasingly competitive environment in which technology and human resource

development will play an important role. It is essential that national Governments take note of this fact in formulating their policies.

105. The Forum recognizes that such policies will need to be country-specific and not be replicated on any single unique pattern. In fact, a twin-track strategy may be necessary; the promotion of export-oriented SMEs has been the preferred route for some countries in South-East and East Asia while, for others in sub-Saharan Africa and the Caribbean, a network of small and micro-enterprises, geared primarily to domestic consumption, may be a better strategy. Again countries like China, India and Indonesia with a large population extending over vast areas may need to use both approaches. The twin-tracks will have to be moulded into a policy whole, though centring of the policy in each country will depend on the resources (human and natural) and accumulated endowments of that country.

106. The Forum notes the dilemma posed by the increased inequality of income, which tends to widen in the early stages of industrial growth but becomes more equitable as growth progresses. The immediate benefits of industrialization may be limited to certain regions and sections of the population. Industrial policies must counteract this tendency and concentrate on bringing about greater equity among the population and through the establishment of small and micro-enterprises. It is also necessary to avoid any bias in favour of capital-intensive industries, which may be inappropriate in developing countries that are short of capital.

107. While employment is the basic objective, the Forum recognizes that it can best be achieved through the adoption of optimal technology and forms of organization that are matched to the needs of the country and the development of sectors with ample opportunities for employment generation. In most cases where markets are small and demand is limited, a high degree of mechanization is neither necessary nor desirable; however, in some cases such as subcontracting where good product quality is essential, the use of the latest techniques (which may reduce employment) may be inescapable. What is necessary is a balanced and pragmatic approach, using technology as a tool for growth and not as an end in itself. The upgrading of technology may focus on the improvement of existing products and processes, rather than on a rapid expansion into new sectors. In subcontracting, linkages between large and small units should be mutually beneficial and not exploitive.

108. The Forum is of the view that diversification and restructuring of industry are inevitable to meet the changing demands within a country (and abroad), which in turn will necessitate changes in the pattern of employment creation. Increasing specialization and concentration of industry in competitive sectors as well as privatization will lead to the decline of employment in some sectors and its rapid expansion in others. Government must support extensive training programmes to enable workers and managers to acquire new skills and attitudes that make them more amenable to change and create an environment in which the industrial sector (both public and private) can respond rapidly to changing opportunities. Where possible, social safety nets that are appropriate and feasible may be created in conjunction with suitable policies for restructuring industry.

109. It is considered that industrialization may not always produce the desired degree of poverty alleviation unless it is supported by measures in other areas such as literacy, health care, family planning and housing. When undertaken in conjunction with such programmes, industrial growth is likely to result in visible and tangible social benefits to the weaker sections of the population.

110. The Forum recognizes that efficient and competitive industries are often based on regional and local advantages. However, it is important to develop small units to benefit broader segments of the population. In China, township and village enterprises and, in India, small-scale industries have achieved some success in developing a wide entrepreneurial base, but micro-enterprises, which are specially important to the developing countries, need a comprehensive package of support and assistance. Such support should be discriminating and should be valid only for a limited period of time. The aim of government policy should be to create productive employment in order to enable such enterprises to compete on a level playing field without being unduly dependent on Government support.

111. Where such enterprises are operated by disadvantaged groups such as women and the handicapped, specific programmes concerning information on technology, availability of credit and identification of markets are necessary. Skill development and entrepreneurship training need to be undertaken so that the dormant potential of rural women can be fully realized. In regard to credit, examples such as the Grameen Bank in Bangladesh and *Sewa* in India can be emulated. Non-financial assistance is also essential to help identify markets and upgrade skills.

112. It is recognized that UNIDO has played an important role in the development of SMEs by providing information on what other countries are doing and on technologies available for utilization and by supporting enterprise-to-enterprise cooperation in developing countries. However, it is suggested that UNIDO should take a more active role in strengthening SME associations and non-governmental organizations dealing with SMEs. The Forum urges UNIDO to pay greater attention to micro-enterprises. UNIDO also needs to create closer interaction between managers and entrepreneurs of small businesses and micro-enterprises to enable them to acquire new skills and develop new attitudes that will help them face the challenges of growth in the coming century. Special attention needs to be focused on the problems of sub-Saharan Africa so that a comprehensive programme for the development of enterprises in that region can be undertaken.

I. INDUSTRIAL DEVELOPMENT AND INTERNATIONAL COOPERATION: THE FUTURE ROLE OF UNIDO

Introduction by the Director-General of UNIDO

113. In introducing the theme of international industrial cooperation, at the special session on the future role and activities of UNIDO, the Director-General of UNIDO began by outlining certain key issues that should be considered by the Forum regarding the emerging role of UNIDO in the light of the fast-changing developments impacting

on global industry and that were likely to be further intensified during the following decade. UNIDO had recognized the essential need for reorientation in the light of those changes, which were having a major impact on the demand for its services from Member States. An extensive internal review had been conducted, resulting in far-reaching reforms and restructuring of the Organization during the previous year. He said that the programme of reform was in its final stages of implementation and would enable the Organization to assume new and specialized responsibilities in the context of the emerging challenges and demands from Member States. At the same time, rapid changes had occurred in the financial situation of UNIDO since the introduction of the successor arrangements for agency support costs. The result had been a drastic decline of funding through the United Nations Development Programme from \$120 million in 1988 to only \$9 million in 1994. That situation had necessitated the mobilization of new sources of finance, including voluntary contributions, trust funds and new self-financed projects, and of the resources available for activities such as the implementation of the Montreal Protocol on Substances that Deplete the Ozone Layer, which had increased significantly in recent years. In sum, the financial position of the Organization was uncertain.

114. He said that the Forum constituted an important venue for discussing the future role of UNIDO in view of the rapidly changing external environment and the financial uncertainties facing the Organization in the immediate future. It was important for the Forum to make its recommendations regarding both the future role of UNIDO in the context of the specialized, industry-related needs of developing countries and transition economies and the resources that would be required to meet those needs, which were of growing complexity.

115. The Director-General of UNIDO noted that, in addition to the recommendations of the various panels regarding the future role of UNIDO, several other suggestions were being made during the Forum. The valuable discussions of the Forum were highlighting the need for an appropriate mechanism to be set up by UNIDO to continue such a dialogue between policy makers, representatives of industry, academics and industrial experts, on a regular basis. Consideration was also being given to the convening of a special advisory group to advise the Director-General on a regular basis. It had also been suggested that business-industry councils should be set up in key industrial sectors and that national committees in developing countries should be strengthened, which could contribute to the work of the Organization.

Conclusions and recommendations

UNIDO as a forum for industry

116. The Forum endorses the views of the Director-General of UNIDO both regarding the issues submitted for its consideration and the need for a suitable mechanism to be set up by UNIDO to assess periodically industrial growth trends and the impact of various key elements on the industrial and technological growth of developing countries. The Forum considers that such a periodical assessment by UNIDO, and its role as a regular forum for industry, will be of growing importance in order to catalyse the socio-economic integration of developing countries and transition economies into the

mainstream of global trade and industry. Such a role will also be useful in resolving common problems, facilitating the exchange of experience on alternative policies and strategies, and developing appropriate measures and benchmarks of industrial progress and activities, as well as in strengthening the promotion of enterprise-level linkages, partnerships or strategic business alliances.

117. The Forum recognizes that the competitive structure of global industry within the framework of a free-market economy during the next decade will necessitate major changes in international industrial cooperation and in the role of UNIDO. Increased privatization, globalization and liberalization of trade and investment will add to the complexities of global industry and will also inevitably require the provision of increased specialized assistance for developing countries and transition economies from UNIDO with a sharper focus on enhancing private sector participation, market orientation and competitiveness as well as industrial partnerships and interdependence.

Comprehensive specialized services for industry

118. The Forum takes a strong view that, in the light of the major global industrial changes that are taking place, it will be necessary for UNIDO to provide comprehensive specialized services for industrial growth in developing countries and economies in transition and to increase competitive capability in these countries. These services include policy advice, technology management and transfer, industrial partnerships and investment, development of human resources, and support for compliance with international standards and conventions. Such assistance can range from advisory services on policies, and selective government assistance to correct market failures, to the development of institutional facilities and the provision of specialized industry-related services for local industrial enterprises.

Industrial strategies and policies

119. Strategies and policies impacting on industrial development cover several macroeconomic issues as well as those specifically related to industrial growth and involving varying degrees of support. It is important that policies and institutional measures are developed that relate specifically to industrial and technological development. The Forum considers that it is with respect to such measures that UNIDO can, and needs to, play a key role as a catalyst, promoter and facilitator of industrial development.

120. The emerging pattern of global industry necessitates more complex industrialization strategies, particularly for countries that are at a disadvantage. In addition to market reform and liberalization, appropriate policies and measures for implementing industrial strategies are required in order to ensure the right market environment for a competitive industrial sector, mainly based on private enterprise. The desirable extent of government support whether functional or selective through a proactive industrial policy has to be assessed in the context of each country. It will be necessary for UNIDO to undertake analysis, dialogue and negotiation both with the Government and with the private sector, and to transfer experience and know-how for industrial policy-making and strategy formulation across borders.

121. The advisory services of UNIDO should include the determination of the nature of the promotional or regulatory measures that may be necessary in order to correct market shortcomings in particular country situations. These may relate to:

- (a) Legislation and regulations;
- (b) Guidelines and procedures for investment approval, incentives for industrial investment, fiscal and taxation measures, inward flows of foreign technology, and compliance with and harmonization of environmental and industrial objectives and standards;
- (c) Policies and measures for export-oriented industrial restructuring in selected subsectors, in the light of the Uruguay Round agreements, particularly in African countries, and for enterprise restructuring and privatization;
- (d) Policies for the development of SMEs and particularly micro-enterprises in less developed regions, especially in Africa.

Technological upgrading and management

122. The Forum is of the view that UNIDO has a crucial role to play in technology management and technological upgrading in developing countries, including the least developed countries, as it is well placed to facilitate the cross-border flows of ideas, information and technologies. This is also an area where developing countries are exposed to a severe competitive disadvantage, highlighting the need for UNIDO to formulate and implement a comprehensive programme on technology for industrial competitiveness as a service to developing countries. UNIDO can also assist in the formulation of technology innovation policies, a system of benchmarking, and the revitalization of institutions dealing with innovation systems. The provision of institutional assistance through UNIDO for technological development and new technological applications, including informatics and biotechnology, will continue to be of crucial importance in most developing countries. Support facilities with respect to industrial technology can also be provided by UNIDO at various levels. First, information can be provided on alternative technologies. Second, assistance can be given in technology selection and in the operationalization of new and modern technologies, particularly for SMEs. Third, technical support can be provided for the development of an applied research capability in selected industrial subsectors and in local research and development institutions. For the operationalization of new technological applications and management techniques, UNIDO can provide a package of technological support in selected priority sectors. UNIDO can also play an important role in defining emerging technological trends and assessing the likely impact of technological change in different country situations.

123. The Forum also takes note of a suggestion that UNIDO within its technology programme should assist developing countries to adopt national programmes for technological upgrading, competitiveness and new forms of technological coordination.

Promotion of foreign investment and inward flows of technology

124. The Forum considers it necessary that a comprehensive programme for technical services should be undertaken particularly for African countries and least developed countries by UNIDO and other international bodies to develop competitive capability among local enterprises.

125. The Forum considers that, given the growing importance of foreign direct investment in the global economy, UNIDO activities for the promotion of investment and inward flows of technology need to be substantially expanded. UNIDO should develop networks where industrial enterprises can request linkages with potential partners on identified projects, which should be processed by UNIDO with various foreign companies from both industrialized and developing countries.

Small, medium and micro-enterprises

126. The Forum is of the view that the role of small, medium and micro-enterprises is likely to assume growing importance in most developing countries, as well as in transition economies. UNIDO advisory and support functions for these enterprises should include: promotional policies for their development; development of institutional facilities including associations for standards and quality control; promotion of contacts and linkages with large-scale industries and foreign enterprises; development of institutional capability in applied industrial research; and creation of a favourable climate for the growth of local small, medium and micro-enterprises.

Strengthening of private sector organizations and associations

127. The Forum considers that UNIDO should play an important role in the strengthening of linkages with private sector organizations dealing with industrial development, both at national and international events.

Assistance to enterprises for enhanced competitiveness

128. The Forum considers it necessary that specific programmes be established by UNIDO for the development of competitiveness between developing-country enterprises. Such assistance can relate to the mobilization of investment, measures for local entrepreneurial development, industrial information, linkages with foreign companies, promotion of SMEs, promotional incentives and tax concessions etc. for new investments and exports and, in general, the development of the right environment and climate for new industrial investment including in less developed areas. Such an exercise must be primarily country-specific, and conducted in close consultation and dialogue with national Governments and representatives of industrial private sector interests.

129. The Forum considers that it is at the level of small, medium and micro-enterprises that the role of UNIDO is likely to be the most crucial. First, with respect to the clusters and linkages that it can promote with other SMEs and micro-enterprises, including foreign enterprises; secondly, with respect to the development of both institutions and human resources, particularly new entrepreneurs and managers; and

thirdly, with respect to the operationalization of new technological applications and managerial techniques in various fields, which would improve the competitive capacity of such enterprises.

Priority development objectives and programmes

130. The Forum takes note of the UNIDO reform process including the five development objectives and seven major programmatic themes. The Forum considers that the role of UNIDO will be increasingly vital for enhancing the role of the private sector and privatization in the changing global pattern of industrial development. Assistance of the kind proposed by UNIDO will strengthen market forces and private enterprise. Fundamentally, this assistance should aim at improving the efficiency of markets through the dissemination of information, diffusion of technology, upgrading of skills, enhancement of competitiveness, twinning of potential partners, facilitation of SME development and rural industrialization, and promotion of investment in industry. UNIDO has major competitive advantages and capabilities that can be further developed and institutional support systems that can be efficiently implemented.

Resource mobilization

131. The Forum recognizes that while the demand for specialized UNIDO services is expected to increase rapidly in the next few years, its resources are becoming more limited. Lack of funding prevents UNIDO from implementing a large number of pipeline projects in developing countries and economies in transition. The Forum recognizes the need to mobilize additional resources for UNIDO, particularly from private sector sources. These could include private sector foundations and other potential donors, besides groups of large companies, which could finance certain specific programmes to promote the development of industrial and technological capability in developing countries.

132. The Forum also considers that UNIDO should consider charging user fees for some of its activities and services directed to the private sector. Such fees could be charged for rendering services that should be considered as commercial, such as investment promotion. Even though such fees would not be sizeable in the initial stages, they may enable increased funds to be mobilized for certain key activities.

133. With a narrow resource base and a sharper focus, the future priorities of UNIDO will need to be concentrated on the emerging demand for services as determined by the rapidly changing global trends that significantly influence the determinants of industrial competitiveness. More flexible policies and a lean and decentralized management structure will be required to ensure efficiency and up-to-date knowledge in the fields of evolving specialization. The Forum notes that a stronger representation at the country level is envisaged in order to cater to the growing need for UNIDO to pursue its programming and marketing functions. The Forum notes that a networking approach is emerging as a general feature of UNIDO programmes. Furthermore, the international technical and information networks that UNIDO has built up over the years are also being significantly enhanced. Increased networking is also taking place regarding specific activities such as industrial information, investment promotion, technology development

and transfer, advisory information services, industrial standards and quality control, and human resource development, drawing on the experience, know-how, capabilities and resources that UNIDO has accumulated in the field of industry over the years. The status and standing of UNIDO will be important for supporting the development of international standards and guidelines as part of the Organization's normative function. Faced with new challenges, UNIDO must adapt its role, functions and programmes to serve developing countries in their continued and complex industrialization process, which is the prime road leading to sustainable socio-economic development.

134. The Forum considers it essential for UNIDO, which is facing financial uncertainty, to ensure that its services are more sharply focused than ever and that its functions and core expertise are clearly defined. It is noted that endeavours in this direction are currently being undertaken and will be continued with streamlined procedures, decentralized decision-making and a lean organizational structure as major features.

ANNEX I

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ANNEX II**SPEECHES****Inaugural address of K. Karunakaran
Minister for Industry, Government of India**

Mr. Director-General, Ladies and Gentlemen,

It gives me immense pleasure to be with you all on the occasion of the "Global Forum on Industry: Perspectives for 2000 and Beyond" where we would deliberate upon issues of shared interests. I am equally happy to have been afforded the opportunity to represent India and let me avail of this privilege to also welcome all those who are present here for this meeting.

The United Nations Industrial Development Organization today represents a powerful and dynamic catalyst to usher in industrial development in the less developed nations of the world. It today plays an increasingly indispensable role of providing the platform and the expertise to address the problems of underdevelopment and to assist in the social, economic and environmental adjustments required to attain a smooth and healthy transition to industrialization.

As we are preparing to usher in the 21st century, the Asia-Pacific region is marching ahead with greater confidence and a record of impressive economic progress. The economies of the Asia-Pacific region have exhibited great vibrancy and dynamism towards growth, earning for the times the sobriquet "Asia-Pacific age". In 1994, the Gross Domestic Product of the developing nations of Asia grew by more than twice that of the world average. Per capita income in the nations of the region also surged by about more than four times in comparison to Latin America and Africa. In 1994, the region's manufacturing-value-added index also soared ahead recording a growth rate of more than three times the world total.

We are therefore in an age of accelerated economic vibrancy of the nations of Asia and the Pacific. The contribution of UNIDO, set up almost three decades ago, has been creditable. Let me thank the Organization and its Director-General for the contribution of the Organization in the activation of the economic growth and for the assistance it has rendered in awakening of the forces of progress. Yet I should caution that there is no room for complacency or deceleration of the momentum that has been attained. Critical problems relating to the widening chasm of disparities, persistence of poverty, degradation of environment, infrastructural inadequacies, social and economic adjustments to new developments wrought by fast economic changes are some of the areas that would require careful attention to sustain and further improve the accelerating pace of economic growth.

Unfortunately, when we are in the need of a more dynamic UNIDO, there has been a reduction in the funds available to the Organization to assist in the process of development. The steady decline in the availability of funds has severely hampered technical contribution to member countries. We are acutely concerned about this trend. During the period 1991-1994, the decline in resources available has been a staggering 79 per cent in absolute terms. I appeal to the developed nations of the world to arrest this trend and contribute substantially to the coffers of UNIDO. When I make this appeal, I am confident and convinced that I am only airing what is foremost in your minds.

India is going through a period of rapid change. The bold programme of economic reforms tailored to integrate the national economy with the international mainstream has started yielding results and we are determined to be part of the growing global fraternity.

Our democratic institutions have endured the test of time and have served well the aspiration of its citizens. India's legal code protects property, contractual rights including economic transactions. These institutions provide the framework for pursuing the interrelated goals of economic development and social change.

Industry now stands substantially deregulated in India. The far-reaching changes accompanying the new industrial policy have abolished entry regulations in nearly all sectors. Opportunities are now available for substantial investments to be made in the rapidly expanding market.

Indian industry is responding enthusiastically to these policy reforms. In the fiscal year, 1994-1995, industrial growth was 8.2 per cent as compared to 6.0 per cent in 1993-1994. In April and May, 1995, overall industrial growth has been over 15 per cent. This accelerated growth is based on emerging competitiveness of our industry. Exports have also grown by about 20 per cent in each of the last two fiscal years. This growth has further accelerated this year. Capital formation in the private sector has also been commendable. Foreign direct investment has also been impressive. Since the announcement of the new economic policy, we have already accorded approvals to proposals worth about US\$ 9 billion.

The Indian corporate sector is large and diversified, with a mix of ownership in the public and private sector. The corporate sector appears to be well positioned to sustain the economic recovery through investments in new capacity and by competing successfully in a more liberalized environment. There is also a strong wave of corporate modernization and restructuring under way which portends well for foreign technology agreements and joint ventures.

What we have done in the last few years is to lighten the burden of our past baggage. We know we have miles to go before we sleep. Manufactured exports are leading our export growth. However, further acceleration in our industrial and export growth will require much greater investment in infrastructure.

These are all daunting tasks given the rapidly changing global scenario. Technology and its relevance in a globalized market is yet to become an operational parameter of our industry. Our companies have to invest much more in technology than they have in the past. Our advantage is that we have trained scientists and engineers in abundance. We only have to utilize them better. The new trading environment consequent to the Uruguay Round has begun to pinch and it would not be long before it begins to hurt. Any thought of protected markets or preferential market access is fast becoming a mirage.

Add to these the social dimension, the requirement to protect the weak and support the needy, to take into account the special circumstances of small industry, the concerns of cobblers and weavers and you have a situation which anybody, let alone those in my profession, would find daunting. Our society ought to change, it will change and is changing. We need to facilitate the process of change.

Changes are inevitable. As envisaged, it would open new vistas and virtually unlimited market opportunities. Pious words alone are unlikely to deliver. We need mature deliberation, wider consultation and interactive effort. Academia, industry and Government must pool their resources to evolve a concerted strategy. We should also attempt to work out the operational modalities to increase cooperation amongst the members of the Asia-Pacific region with a view to sharing industrial information and technology. This would facilitate transfer of technology amongst member countries without them having to expend scarce

resources on the purchase of technical know-how from advanced nations. India is willing to take the lead in this direction.

The Government of India highly appreciates this important initiative taken by the United Nations Industrial Development Organization in focusing the world's attention on a number of issues which will have major impact on the development and well-being of developing countries in the year 2000 and beyond. This Forum is both timely and appropriate. It will debate many issues which puzzle us, suggest directions which many may find unpalatable and expose a larger section of populace to global trends. The issues to be covered are comprehensive. I wish to emphasize two of these. First, "Employment and social aspects of industrialization". We believe that labour markets need to become more transparent even though the progress in the recent past has been significant. We are rapidly changing the market restrictions allowing capital the freedom to be invested in sound economic propositions. There is no reason why labour ought to face different criterion. Thus, poverty alleviation is not merely a question of applying part of the profits to material well-being; it is also a question of equal opportunity based on economic rationality. At the same time we acknowledge the need to operationalize policies more supportive of labour including freeing those in their early teens from the care of earning their livelihood. These are as much social problems as they are economic issues and defy easy solution.

Second, we believe that the environmental considerations should no longer be ignored. There should be a harmonious balance between development needs and environment imperatives. Mother Earth can withstand no more cannibalization. International norms and standards must continue to guide industrial growth without becoming an impediment to new entrants in the market place. In the recent past, environment has become the ally of neo-protectionism. The Global Forum may wish to discuss these concerns.

I am extremely happy about the interest this Forum has generated, the excellent participation and the high quality of the technical papers. I am confident that the three days of deliberations of the Forum would generate practical suggestions to guide and evolve new policies for the year 2000 and beyond.

Thank you.

**Keynote address by Mauricio de Maria y Campos, Director-General of UNIDO,
at the opening session, Vigyan Bhawan, New Delhi, 16 October 1995**

Honourable Minister of Industry.

Excellencies, distinguished guests and participants.

I consider it a great privilege to address this distinguished gathering of policy makers, industrialists, academics and other key decision makers involved in industrial development on an issue of vital global significance: the role of industrialization and the principal trends and issues in industry during the next decade and beyond.

I should like initially to express my sincere appreciation and gratitude to the Minister of Industry and to the Government of India not only for co-sponsoring this Forum but also for covering the local costs of most of the foreign participants. In view of the difficult times that international organizations are facing, it would not have been possible to convene this unique event without the Indian Government's generosity and unstinted support. It is also fitting that this Global Forum should be held in India, which is likely to emerge not only as a major industrial economy during the next decade but also as an essential bridge between developing and industrialized countries.

It is my firm belief that industrial development must constitute a crucial element of any development strategy. Industry is not only an indispensable vehicle for the technological development and modernization of developing countries but is also an essential seedbed for local entrepreneurship, and for the development of local industrial enterprises, with close linkages to other production sectors. It is imperative to develop an *industrial and technological culture* in developing countries in order to achieve rapid improvements in competitive industrial production and management. The need for rapid industrial growth will be all the greater during the next decade as liberalized conditions of trade and continuing technological developments result in changing comparative advantages and increased employment pressures.

I must express my concern and misgivings that the critical need for industrialization in developing countries is not always appreciated in certain industrialized countries. While great emphasis is given to social issues and poverty alleviation, the principal means of solving the grave problems of job creation and increasing incomes through industrial growth tends often to be ignored, or is given only little attention or resource allocation. It is argued that the interplay of market forces would, by itself, result in satisfactory industrial growth through the private sector. Such an approach is, I consider, quite simplistic and could prove to be a grave mistake, in view of the major constraints facing industrialization in most developing countries. Attempts at the international level to underplay the need for industrialization in developing countries are not only very shortsighted but could result in unnecessary confrontation and conflict situations in the coming years. It must be recognized by the international community that the process of industrialization is vital for developing countries, and that this would not only necessitate strategic State intervention to cover market failures and shortcomings in these countries but also a greatly expanded programme of international resource support. Such support must cover not only increased investment and technology flows but also the development of institutional and technological capability in these countries to achieve sustained industrial growth.

I must point out that, in my own region, there has been clear evidence of the severe adverse impact on the entire economy of unrestrained international market forces and financial flows. Such dangerous developments have major implications for developing economies and will require preventive or corrective action in future, both at the national and international level.

The Global Forum on Industry is a momentous occasion. Our intention in the coming days is not only to review the role and outlook for global industry at the turn of the century and beyond, but also to assess the implications of major global economic developments and their direct impact on industrial growth. These developments, ranging from revolutionary technological innovations to increased globalization and liberalization of trade and investment, will be taking place within the framework of greater market orientation and private-sector development. It is essential not only to reiterate the key role of industrialization of developing countries in the new context but also to assess the need and prospects for new international relationships at the enterprise and institutional levels. It will also be necessary for Governments, in both developing countries and in transition economies, to adopt a changing and more dynamic role to ensure that their economies can be truly part of the mainstream of global trade and investment.

It is necessary for us to learn from the past. Industrialization has been crucial and the principal source of growth and prosperity in today's developed economies. For developing countries, facing long-term adverse pricing trends for most commodities and raw materials, industrial growth must be recognized as the principal means to provide stability and economic growth. Abundant natural resources, low labour rates and even large markets are no longer indispensable factors for development, nor a sufficient attraction for investors. Essential infrastructure, enhanced skills, technological capability and improved management practices constitute the key elements of competitiveness in the emerging pattern of global competition. Industrial development continues to be the main channel for value-added, together with certain related service sectors.

But you will agree that the traditional boundaries between industry and service are becoming increasingly blurred. For example, computing, telecommunications, publishing, education, entertainment and consumer electronics are converging, promoting new intersectoral linkages and strategic alliances.

As a basis for our discussions, a document on perspectives on industrialization has been circulated by UNIDO, together with a number of issue papers. These papers highlight certain key aspects, such as the industrial outlook for the post-2000 period, and issues and trends in new technologies, globalization, global trade liberalization, policy reforms, environment policies and social aspects of industrialization. The issue papers, which will be considered in the respective panel meetings of the Forum, have raised several specific issues which will need to be considered by the Forum, particularly with respect to increased competitiveness on the one hand and the fulfilment of the socio-economic objectives of industrialization, on the other. I am particularly grateful to UNU/INTECH, for having assisted us in the preparation of some of the background papers on technology and for its participation in the Forum.

An important objective of the Forum is to assess the pattern of global industrial growth for the next decade and beyond. Long-term projections are always a matter of conjecture, and certainly even more so during a period of extraordinary technological development, accompanied by major changes in the pattern of global trade and investment. Twenty years ago, in the Lima Declaration and Plan of Action on Industrial Development and Cooperation, the target was set for developing countries to achieve 25 per cent of world industrial production by the year 2000, which at that time was seen as a dream. Today, they already account for 21.5 per cent and by the year 2000 the target will be achieved. UNIDO's industrial growth outlook indicates that the share of developing countries in global GDP could increase to 27 per cent by 2005 against 22.3 per cent at present. In manufacturing value-added, the share of developing countries is expected to rise to 30.6 per cent in 2005 from 21.5 per cent at present, while the share of manufactured exports from developing countries is expected to increase from 24 per cent in 1995 to over 35 per cent in 2005. This means that industry must grow at a faster pace than GDP as a whole in developing countries, as has always happened in the past in stages of rapid economic development. However, practically the entire increase in the share of the developing countries in manufacturing value-added and in manufactured exports in the last few years reflects the spectacular growth in manufacturing value-added and in manufactured exports from

the newly industrialized economies in East and South-East Asia, whose market share is expected to increase from 11 per cent in 1995 to 19.3 per cent in 2005. Indeed, indications are that the focus of accelerated industrial growth will continue to shift to this subregion. The successful experience of the East Asian economies is obviously not easy to emulate. At the same time, their success should certainly serve as an example and should exercise a strong *pull-effect* on the industrial and technological development of other regions and developing countries, certainly within the Asia and Pacific region, but also in other developing regions. Obviously one should be careful about extrapolation for future years of past trends. There are always surprises as a result of policy decisions or unexpected events. One nice surprise for instance was to discover yesterday at a press conference that the recent growth of India's manufacturing sector has far exceeded expectations, particularly during the first semester of this year. In some countries in Latin America, including my own, the situation has unfortunately been the opposite.

While industrial growth in developing countries as a whole will be higher than was expected, it is of growing concern that existing disparities in industrial growth in most developing regions and countries will not only remain but may become increasingly accentuated during the next decade, unless immediate corrective measures are undertaken at national and international levels.

The uneven pattern of industrial growth among developing countries and regions is extremely disquieting and could have serious consequences. If, by the year 2000, socio-economic conditions in most developing countries remain as inequitable within and between the countries as at present, the situation is likely to become increasingly explosive and may give rise to social upheavals, serious humanitarian problems, and migration across national borders on an unprecedented scale. This will not only be true in the case of sub-Saharan Africa but in a number of countries in various developing regions, where industrial growth has only been marginal in recent decades. Socio-economic conditions can only be significantly ameliorated through increased income and job opportunities, which necessitate a massive programme of industrial growth and restructuring in a number of these countries. Without the implementation of a comprehensive programme for industrialization geared to particular country situations, there is a grave danger that the basic objectives of the international development agenda and of peace in the world will remain largely unfulfilled.

What are the factors which will have a critical impact on the pattern of industrial growth during the next decade and beyond? Technological development and the increased application and use of generic technologies, such as informatics, biotechnology and new materials, will certainly constitute a fundamental driving force. It is vital in this context for developing countries to rapidly enhance and upgrade indigenous technological skills and capability, particularly with respect to these generic technologies both in specific industrial operations and in applied research and innovations. This task may be increasingly difficult in certain fields such as biotechnology, because of the provisions in the Uruguay Round agreement on trade-related aspects of intellectual property rights. At the same time, the increased globalization of markets, investment and industrial production will undoubtedly result in a growing interdependence between countries and between enterprises in different countries. In an increasingly private-sector setting, the ability to innovate and adapt to change will become the crucial factor in competitiveness: innovation in terms of products and processes, quality, and the organization and management of enterprises. Increasing competitive capability will also necessitate closer inter-firm relationships, sharing technology and brand names, and developing strategic alliances and partnerships with enterprises in different countries.

The technology factor and the trend towards computerization and increased automation results in the problem of reduced employment opportunities. Automation has already had a perceptible impact on employment in several industrialized economies, though job losses in manufacturing have been offset, to a large extent, by increased job opportunities in the industry-related services sector. In developing countries, however, many of which face serious problems of unemployment and under-employment, a proper balance would be desirable between the use of automated techniques for achieving competitiveness and the pressing

need for increased job creation. Nevertheless, higher quality requirements and international standards for global markets may not leave much room for manoeuvre.

The importance of harmonizing environmental norms with industrial growth has also become increasingly significant. This should not be viewed only as a question of reducing pollution or complying with environmental standards, but should be assessed in the broader context of the optimum use of natural resources, including energy and particularly water, which constitutes an increasingly scarce resource and a growing challenge not only for many developing countries but also for many industrialized countries as we know.

An important feature of recent global developments has been the increasing trend towards regionalism, as reflected by the growing strength of the European Union, NAFTA and other regional arrangements. In Latin America and the Caribbean, Africa, Asia and the Pacific, regionalism is theoretically quite consistent with global trade liberalization. At the same time, it can provide the opportunity and means for bypassing, or even ignoring, global trading arrangements. If this were to happen, it would have serious repercussions in terms of a re-emergence of protectionism and a major dislocation of global trade. It will be necessary to ensure that regional and subregional arrangements converge towards global trade liberalization and that technical assistance is provided to the less developed countries and regions with a view to levelling the playing field, as it has successfully happened in the European Union.

The next decade should not, in my view, be an era of confrontation between developed and developing countries nor between host developing countries and transnational corporations. On the contrary, it should be a period of increased interdependence, cooperation and partnership. This will, however, largely depend on the exercise of co-responsibility on the part of both developing countries and developed countries. Differences in approach and perceptions there undoubtedly will be. These must, however, be able to be reconciled unless the attitude of some industrialized countries remains inflexible, and the pressing urgency for rapid industrial growth in developing countries continues to receive little sympathy and support. Global industrial development should move increasingly towards a pattern where there will be intense competition between firms, on the one hand, and much closer relationships and partnership between enterprises in different countries, on the other. In this process, developing countries cannot, and must not, be marginalized. In the context of increased globalization, then, these developments will be reflected in new relationships ranging from foreign direct investment through subsidiaries to joint ventures and non-equity licensing and other arrangements. There is also considerable potential for strategic alliances between enterprises in developing countries and transition economies and those in industrialized developed countries. These may take the form of cross-shareholding, cross-licensing, joint research, and development of innovative products and processes. The large pool of scientific talent in several developing countries and transition economies, which is available at a relatively low cost, represents a considerable potential. At the same time, the effective participation of most developing countries in the future pattern of global industry will largely depend on the substantial allocation of resources for the development of physical and technological infrastructure and increasingly specialized institutional support functions.

The legitimate aspirations of developing countries to improve their standards of living, in my view, can only be met through industrialization. This must be fully accepted and recognized by the industrialized economies, who must support and participate in this process. At the same time, it is necessary to emphasize that new consumption patterns can and should emerge in developed and developing countries, which may be significantly different from those of the present industrialized economies. Very often we hear voices of concern in developed countries in relation to the pressures that could arise in terms of resource availability and environmental effects if the developing world, and particularly the countries with large populations such as China and India, industrialize according to present consumption patterns. There is no doubt that technology, human imagination and social responsibility offer many options for the future. The fact, for

example, that families in the developed countries have three polluting cars should not limit the genuine needs of future families of developing countries.

It will also be necessary to ensure that the multiplier effects of industrial innovations are adequately extended to other sectors in developing countries. This may necessitate retraining and the development of new technical skills. It should also, however, result in the opening up of new categories of jobs, particularly in the service sector. An example that I am fond of quoting in other countries is that of the extraordinary development of the software industry in the Bangalore area in this country. This is the kind of example that needs to be emulated by other countries as a result of new high-tech developments. It is creative growth of this nature that will enable promising young men and women, educated in developed economies, to remain in or sometimes return to their home countries and to pursue meaningful and successful careers in new fields.

An important aspect of the emerging pattern of industry is the need for quality standards. Developing countries will increasingly face the problem of having to meet high international standards such as ISO 9000, requiring considerable expenditure on certification. New international standards are also being prescribed for environmental norms and applications. It is necessary that developing countries become increasingly involved in the development of the new international standards that will govern global trade. Developing countries cannot remain just spectators: they must be active participants in the formulation of these standards. UNIDO can be of assistance in this regard, particularly in the defining of quality standards for small and medium industries in selected subsectors.

A critical issue also relates to the changing role of the State, which is a very important issue. Obviously, with increased market orientation and liberalized trading and investment regimes, the role of Governments is, and will have to be, significantly different in the future. Such a role cannot, however, be solely limited to the development of a suitable climate for private-sector investments, as is advocated in certain quarters. Recent international experience from successfully industrializing countries, and developed countries as well, shows that national Governments can play a positive and dynamic role through some types of interventions to correct market failures and shortcomings and ensure the necessary investment and technological capability for achieving increased competitiveness and sustainability. These interventions may take the form of policy measures, including the promotion and restructuring of subsectors and enterprises with promising growth potential, the creation or strengthening of competitive advantages through human resource and technological development and other types of institutional support for local enterprises. At the same time, Governments also have the wider responsibility for ensuring that the socio-economic benefits of industrialization in terms of the creation of jobs and increased income in developing regions are adequately achieved. This would, in most developing countries, necessitate an extensive programme for the development of small and medium industries through local entrepreneurs especially in less developed regions. Such industrial enterprises must constitute the hard core of programmes for job creation, especially in rural regions and for weaker sections of the population. These enterprises must increasingly emerge not only as the focal point of industrial growth but must also become increasingly competitive through clusters and through technology upgrading and the development of innovative capability.

The complexities of industrial growth during the next decade and beyond highlight, ladies and gentlemen, the continuing necessity for providing specialized industrial services to developing countries and transition economies. The pattern of industrialization in these countries must not only be reviewed and restructured within the framework of fast-changing global economic developments but must also be based on an integrated industrial strategy covering interrelated functions. Specialized technological and other support services must also necessarily be provided at the international level so as to ensure competitive and sustainable industrial growth.

It is, in this context, that the role of UNIDO needs to be considered by the Global Forum. While greater global interdependence implies increased cooperation and partnership at the enterprise level, and functions geared to this end, it also highlights the need for increased specialized services in developing countries and transition economies and for the periodical assessment of industrial and technological trends and issues on a systematic basis, as is being done in this Forum. It is intended that, on 17th October, a separate panel of the Forum will assess the role of UNIDO in providing specialized industry-related services. Such services must be adjusted to different country situations at the three levels of strategies and policies, institutional development and enterprise-level assistance. Following its extensive restructuring and reforms, UNIDO, in cooperation with other international bodies, is uniquely suited to meet fully the demand of its Member States for such specialized services today and in the coming decades.

Distinguished Minister, guests and participants,

In the last decades, we have had sufficient evidence to confirm that industrialization continues to be a strategic force for long-term, economic and social development and that it is possible through the political will and the joint efforts of the various sectors of society to formulate and implement - within a market-oriented framework - strategies and policies for rapid and sustained industrial and technological development. East Asia has been the most important scenario of such consensual visions and achievements. But let's face it: there are no miracles or recipes. India, the new rising industrial star, is certainly conscious of the efforts required in line with established cultural values.

The years ahead will present enormous challenges to industrialization and development in all corners of the world, especially to those regions and countries that have been falling behind. At the same time, the coming decades will pose a challenge of co-responsibility to all countries, but particularly to those that have reached higher levels of industrialization, development and well-being. Future markets, future investment opportunities, and future peace and stability will depend upon the effective recognition of such international interdependence and upon a realistic but at the same time imaginative programme of action for a global industrial development partnership that it is our challenge to design.

Realism and solidarity are essential. But at the same time let us not forget that it was the great visionaries like Galileo, Christopher Columbus, and Mahatma Gandhi who changed the world. It is time for new visions. India and the developing countries certainly have the capacities to meet this challenge.

Thank you.

Speech on major trends and impacts on world industry
by Rana K. Singh, Senior Advisor to the Director-General of UNIDO,
16 October 1995

Honourable Minister, distinguished guests and participants,

It is my privilege to present to you perspectives on industrialization: Global industrial partnerships, interdependence and competitiveness for the next decade and beyond. The UNIDO document that has been circulated on the subject assesses the major growth trends and the principal global economic factors impacting on industrial development. It is my intention primarily to highlight some of the crucial issues on which the Forum may wish to concentrate.

This Global Forum is undoubtedly a unique event. It has brought together well over 100 policy makers, industrialists, academics and experts from over 40 countries in different parts of the world who will not only assess the role of industry and its projected growth, but will also formulate specific recommendations on key issues facing the international community regarding the emerging pattern of industry during the next decade and beyond. The period up to 2005 and beyond will undoubtedly witness extraordinary economic and technological change. It will also be a crucial period, perhaps more critical than earlier decades, because of the extraordinary technological and structural changes that are transforming global industry and the new relationships that will become necessary between enterprises in countries at different stages of industrial growth. These changes represent a dynamic potential and opportunity from which all countries can benefit, whether they are developing or industrialized or in various stages of transition to market economies. The changes also, however, reflect serious danger signals of growing production and technological gaps and of increasing polarization between industrialized economies and a growing number of countries that may become increasingly marginalized.

The first issue for the Forum to consider is the role of industry itself. It would appear axiomatic to most of this distinguished gathering that the industrialization of developing countries must be a basic developmental goal and a key objective of global development. Yet, this concept has been considerably played down in certain quarters. The view has been expressed that industrialization is not a unique solution for these countries. It is also suggested that industrial growth will somehow take place automatically if left to market forces. With the enormous constraints facing industrialization in most developing countries, this view may appear to be rather simplistic and unrealistic. It will be, however, for the Forum to consider this basic issue, together with the implications it may have for the global development agenda for the next decade. It is our view, as expressed in the perspective document that, in a period of growing interdependence, the accelerated industrialization of developing countries is not only an essential prerequisite for socio-economic transformation in those countries but is also a vital necessity for reducing tensions and potential conflicts in the global economy.

The projections for growth during the period 1995-2005 reveal an interesting pattern. For the first time, the focus of accelerated growth of GDP, and of manufacturing value-added and exports of manufactured products, will shift to East Asia, because of the continuing spectacular growth of the newly industrializing economies of this region, including China. It is undoubtedly a matter of gratification that a group of developing countries will have achieved such singular success within a relatively short period. At the same time, it must be emphasized that the pace of industrial growth in other developing regions will continue to be very uneven. With the exception of a few countries in Asia and Latin America, industrial development is expected to be slow and sluggish in most other developing countries, with barely marginal growth in most of the sub-Saharan region. It will be a matter of growing and disquieting concern that many of the poor countries of today may be as poor, or poorer, by the end of the next decade, unless major

economic changes can be brought about. It is not enough to declare priority for social objectives or for poverty alleviation. These basic problems can only be tackled through the creation of new jobs and incomes and this can be most effectively achieved through industrial expansion and diversification.

The global industrial scene has undergone a major transformation in the last decade and it is necessary to consider the principal factors impacting on global industry. The most important of these is the revolutionary technological development, particularly in the generic technologies of informatics, biotechnology and new materials. Technological developments have combined with the globalization of markets and production functions, the liberalization of global trade and the harmonization of environmental norms with industrial objectives. These issues lead to the question of industrial policy reforms and the changing role of the State, both in developing international competitive capability for local industry in selected fields and in ensuring that the broader socio-economic goals of industrialization are achieved. The Forum also needs to consider the nature of the specialized international services that will be required for industrialization in the rapidly changing situation of the next decade.

The coming decade is expected to be primarily technology-driven, with technological skills and upgrading and the development of innovative capability at the enterprise level playing a key role. The technology factor will constitute a vital element of competitiveness with respect to new products, processes and organizational structures. At the same time, the impact of increased automation on new employment opportunities has also to be taken into account. It may be quite appropriate to use computer-aided designs as a necessary competitive element in the manufacture of garments or leather products. It may not, however, be as essential, in developing countries, to use a high degree of automation and robotics in construction projects or in the production of consumer durables, including the automotive industry, or for various levels of capital-goods manufacture. With fast-changing products and processes, a growing shift to flexible manufacture may, however, be increasingly necessary, together with the use of new organizational and management techniques.

With increasingly open economies, the next decade is likely to see intense competition in most production and service sectors. This will require major emphasis on the acquisition and use of new technologies and on their upgrading and adaptation, together the development of innovative skills and capability. A new technological culture has to be developed, in which specialized training programmes, the use of new, competitive technologies and innovative applications and research are effectively integrated at the level of increasingly export-oriented enterprises.

The extraordinary developments in global communications are expected to bring about a much greater globalization of production and services. Both developing countries and economies in transition will need to be integrated into global production and marketing. Globalization must, however, be a two-way process. It should not necessarily mean that national strategies must be merged in the operations of global corporations. National policies and the international operations of local enterprises must play a key role in determining the pattern of globalization. In certain countries and subsectors, foreign direct investment will be of crucial importance. In other situations, alternative forms of participation may be more appropriate and successful, ranging from joint ventures to technology licensing and contractual arrangements, which may be particularly necessary in countries where foreign investment flows are likely to be very inadequate during the next decade, despite policy liberalization. Partnership and linkages in countries with well-developed private-sector entities and an adequate resource base for industrial investments may also be a more popular form. The examples of the Republic of Korea and Taiwan Province of China highlight the necessity for national enterprises to take the lead and initiative in determining the pattern of external linkages. This, of course, presupposes that national enterprises are adequately developed and have the necessary financial and technological support to take up such a challenge.

The potential for private-sector entrepreneurship undoubtedly exists in every country. It must, however, be given the opportunity and support to grow and develop. A new class of entrepreneurs may need to be created in countries where the growth of local entrepreneurship has been lacking in the past. In several African economies and least developed countries, integrated programmes for the development of local entrepreneurship through small and medium enterprises will need to be intensified, so that the benefits of diversified economic growth, with adequate external linkages, can be rapidly achieved.

The impact of liberalized global trade and investment is closely related to globalization. The Uruguay Round agreements will undoubtedly have far-reaching effects on the expansion of global trade. In the short run, however, the impact of the Uruguay Round on a number of developing countries is questionable and may prove to be negative compared with the preferential trading arrangements for these countries. With increasingly open economies and competing imports, it is vital for enterprises in these countries to develop competitive capability in selected fields. This may necessitate considerable restructuring of industry in these countries, which must not only be initiated by national authorities but must receive extensive international support, together with external investment and technological participation. It is also essential that the growing regionalism, particularly among developed economies, does not emerge as an obstacle to global trade liberalization, and that developing countries and economies in transition are provided the full opportunity of participating in global trade, as envisaged in the Uruguay Round.

The need for harmonizing environmental objectives with those of industrial growth has been recognized in all countries. Most countries have prescribed, or are prescribing, environmental norms for various industrial subsectors. There is, however, growing concern that stricter environmental standards are being prescribed by developed countries, as reflected in eco-labelling, which may adversely affect exports from developing countries. International environmental standards and labels should, more appropriately, be determined by the international community, and international agencies should be associated with this process. Compliance with environmental standards will nevertheless be necessary. While this may result in additional costs for local companies, particularly small and medium enterprises in certain fields such as chemicals, pulp and paper and mining, the net return on appropriate environmental protection measures is expected to be positive, particularly in the long run. It is also increasingly necessary to shift to the use of environmentally suitable technologies and cleaner production centres, fields in which UNIDO can provide, and is providing, considerable technical services.

The effects of global economic developments, ranging from rapid technological change and globalization to competitive trade, are likely to be complex and far-reaching in most developing countries. These have further to be considered in conjunction with the pressing need to achieve socio-economic objectives. The nature of policy reforms and the changing role of the State have to be considered in this context. It will not be enough to privatize certain State-owned enterprises and to liberalize the provisions for investment, particularly foreign investment. State intervention may be necessary in several fields. With respect to privatization, for example, the problem of surplus labour has to be tackled. It may also be necessary to regulate the operations of private monopolies. The implications of extending privatization to electricity generation and distribution enterprises will also need to be assessed in particular country situations.

More importantly, State intervention will be necessary to provide policy and institutional support functions in order to improve the competitiveness of local enterprises. Such interventions will essentially be market-friendly, and can extend from fiscal incentives to technological support for upgrading and research and for the training of new categories of specialized personnel. Policy support to local industry will have to be consistent with the provisions in the Uruguay Round agreements on trade-related investment measures and trade-related aspects of intellectual property. Both these agreements include provisions which may restrict the role of host governments in negotiations with foreign investors and between enterprises in technology transfer negotiations.

Perhaps the most important factor to be stressed is that industrial competitiveness must be structured around indigenous capability. It is the innovative capability of local enterprises that, in the ultimate analysis, is the key factor as it is the local enterprise that must compete in international markets. At the same time, most developing countries need to promote small and medium enterprises in order to divert industry from areas of urban concentration to less developed non-urban regions and to extend socio-economic benefits over a much wider base.

The role of small and medium enterprises is expected to assume growing importance in developing countries during the next decade. Apart from such enterprises being more responsive to flexible manufacture and changing demand, they serve as a vital link to large scale industries and to foreign enterprises. The development of clusters and industrial districts concentrating on particular fields of production can serve as an important catalyst for creating globally competitive small and medium enterprises.

There can be little doubt that increased globalization and liberalization of trade and investment will add significantly to the complexities of the global pattern of industry during the next decade. This will also necessitate increased specialized assistance for developing countries and transition economies from international organizations, particularly UNIDO, which is the principal organization dealing with accelerated industrial development in these countries. Such assistance will range from policy advice and technical services to the development of institutional facilities and the provision of specialized industrial services. While industrial strategies are closely interlinked with macroeconomic conditions, it is vital that a major catalytic and promotional role is played by an organization such as UNIDO to facilitate industrial linkages and partnerships.

International assistance must be considered at the three levels of strategies and policies, institutional development, and enterprise-level support. UNIDO is in a unique position to provide a comprehensive range of services in all these three fields and is one of the few international organization equipped with multi-disciplinary personnel, including technical experts in different fields. The Organization also has an important field presence, both in developing countries through its Country Directors and in several industrialized countries where investment promotion offices have been established.

With industrial services becoming increasingly specialized, the role of UNIDO will need to concentrate on certain specific functions for which there is likely to be a growing demand from countries at various stages of industrial development. With respect to industrial policies, a major area of concentration will be on enterprise and industrial restructuring, particularly in African countries and least developed countries. Regarding small, medium and micro enterprises, a field in which UNIDO has a long proven track record, specialized facilities and services will include programmes for entrepreneurial and managerial training, development of institutional facilities in metrology, standardization and quality control, including certification of ISO 9000, and institutional support through the development of clusters of such enterprises, with efficient industrial information systems and linkages with foreign enterprises.

A crucial role can be played by UNIDO in technology transfer and upgrading, an area where market failure is endemic even in developing countries where considerable industrial growth has taken place. Information can be provided by UNIDO on alternative technologies, including environmentally suitable technologies, and on the development of cleaner production centres, besides selection and operationalization of new and modern technologies, especially for small and medium enterprises. Guidance in the use of computer-aided designs for traditional industries is illustrative of this approach. Technical support can also be provided for the development of an applied research capability in selected industrial subsectors at the institutional and enterprise level.

A vital function being performed by UNIDO, which is in great demand from most developing countries and which will need to be substantially expanded in the next decade, is the development of external

linkages and strategic alliances for developing-country enterprises. UNIDO has a fairly well-developed network of industrial enterprises in various countries which can be utilized for partnerships, alliances and other forms of cooperation between firms in different countries. At the enterprise level, support for developing closer technological linkages and quality production and innovation is being provided by UNIDO for developing international competitiveness among developing-country enterprises.

The role of UNIDO will be increasingly crucial for enhancing the growth of the private sector in the changing global pattern of industrial development. Interventions of the kind proposed by UNIDO will strengthen market forces and provide essential and specialized support. These activities will certainly be fully coordinated with those of other international organizations, such as the World Bank and ILO.

An important function envisaged for UNIDO during the next decade will be the strengthening of the international infrastructure for industry, including the development of codes, norms and good practices, and promotion of the harmonized adoption of new technologies. It will also be necessary for UNIDO to undertake periodical assessments of industrial growth trends and the changing impact of key growth factors. Such periodical assessments must be undertaken as a part of UNIDO's role as a regular forum for industry and will be of growing importance in order to catalyse the socio-economic integration of developing countries and transition economies with global trade and industry. Such a role will also be useful in resolving common problems, facilitating the exchange of experience and developing appropriate benchmarks of industrial progress besides strengthening measures for enterprise-level linkages, partnerships or strategic business alliances.

Honourable Minister, distinguished guests and participants,

I have, in these brief remarks, tried to identify some of the key issues relating to the perspectives of industrialization during the next decade. There is a great potential and opportunity for a new era of global industrial partnership based on interdependence and increased competitiveness, and the extension of socio-economic benefits in developing countries to the maximum possible extent. These issues will be discussed over the next two days in the various panel sessions and in the plenary session thereafter. It is my earnest hope that the panel discussions and those in the plenary sessions will provide the necessary guidance and new indicators for socio-economic and industrial growth and will define the new parameters within which such growth can be expected to take place in the next decade and beyond.

Speech of C. Silvera
Union Minister of State for Industry, Government of India,
at the closing ceremony

Director-General of UNIDO, Secretary for Industrial Policy and Promotion,
Shri Shunglu, participants and friends.

I am very happy to be with you on the occasion of the conclusion of our three-day deliberations in the Global Forum on Industry. I am sure that discussions in the Forum have enriched our knowledge on issues of mutual concern and all of us have immensely benefited from sharing our different experience.

I am glad that the communiqué which has been issued at the end of the deliberations of the Global Forum considers rapid industrialization to be the main engine of growth in developing countries for several decades to come. It is equally important that the Forum considers it imperative that a new dynamic approach be adopted to accelerate the pace of industrialization in developing countries. Significantly, the Forum considers technology as the core competence in competitiveness and recommends that all countries, particularly developing countries, formulate and implement national programmes of national competitiveness. Emergence of stricter environment requirements could pose a threat to the competitive position of medium and small-scale, resource-intensive and pollution-intensive firms. I am glad that the Forum has pointed out that this need not be the case if corrective measures are adopted by industry early on. The Forum has rightly pointed out that creation of new employment opportunities continues to have a highest priority in the growth programmes of most developing countries. Above all, the Forum has emphasized the growing interdependence between the developed and the developing world and sent a strong message for establishing the concept of global industrial partnership for competitiveness and sustainable growth.

We, in India, are making a tremendous effort to usher in a new era of efficiency and competitiveness. Major policy initiatives in the industrial and trade sectors were set in motion in 1991 along with measures for fiscal consolidation, tax reforms and expenditure control. Ever since then our intention has been to establish a viable macroeconomic environment which provides the basis for sustained economic growth as well as lasting price stability. These reforms have since been extended to the capital markets, the financial sector, the foreign exchange market and various infrastructural sectors also. Today, it is widely accepted that the Indian reform programme has been one of the most comprehensive and carefully sequenced liberalization programmes and has been evolved keeping in view our needs, perceptions and national interest.

We have succeeded in building a national consensus around the reform process and tailored it to our requirements. The policies pursued have proved to be of great support to the industry and we have received a very enthusiastic response from thousands of large, medium and small Indian entrepreneurs. A new wave of industrial activity can now be seen throughout the country.

A new development in the last two years has been the recognition accorded by the world capital market to India as the country with most significant emerging market. The world investment community has begun to realize the enormous potential offered by India as a mega global market of the next century. More than 300 authorized foreign institutional investors have begun to operate in Indian markets bringing in an investment of approximately 4 billion US dollars. During these two years, more than 30 Indian companies have also raised over 3.5 billion US dollars in the international capital markets by way of global depository receipts. All this shows that we have become part of the worldwide process of global capital integration.

We recognize that for being truly competitive, the key requirement for us is to upgrade technology on a widespread basis. Unless we pay full attention to technology, its development as well as adaptation, our development efforts will not bring in the desired results. This will also prevent us from deriving full benefits of international integration. The opening of the economy is enabling our companies to acquire new technology fast. But I feel that our companies will also have to make their own efforts and investments in research and development to be able to stand on their own feet. This is essential for our future. This is a concern common to all developing countries and an area where much mutual cooperation is needed.

Modernization of industries also involves redeployment of employees. The issues of efficiency and labour welfare are, therefore, interlinked. Efficiency demands that the productive assets are reallocated to their best uses as quickly as possible. This reallocation, however, needs to be effected with utmost caution so that minimum dislocation is caused to the labour. Keeping this in view we have strengthened the scheme of labour training and redeployment under the National Renewal Fund. This is also an issue of common concern for countries that are adjusting to the rigorous demands of the new global competition. Flexible labour policies accompanied by programmes for human resource development are essential. We must learn from each other's experience in sensitive areas.

Small-scale industries form the future industrial strength of the country. Small industries of today are the world beaters of tomorrow. We, therefore, place great emphasis on encouraging small entrepreneurs in every possible manner through credit and technology support. Large industries themselves depend on output and services of the small industries. I, therefore, look forward to the growing mutually beneficial linkages between large, medium and small industries.

The broad-based industrial recovery which is currently under way can be attributed to the cumulative success of our industrial, trade, financial and capital market reforms. It is also due to growing confidence in our policies and improvement in investment climate. Our experience so far has also shown that opportunities available to all of us are indeed massive and we can move forward together in a big way.

Before I conclude I would like to thank all the delegates for the active participation in the deliberations of this Forum which went a long way in making this event a success. I must compliment UNIDO for organizing this Forum in collaboration with the Government of India. I must also congratulate the organizers for meticulous arrangements made for making this Forum possible. I hope that the consensus arrived at in the Forum on various issues will be useful to all of us.

Thank you.

ANNEX III

PROGRAMME OF WORK

Monday, 16 October 1995*Hours*

0800-0930	Registration of participants
1000-1100	Inaugural session
	Inaugural address by the Minister for Industry, Government of India
	Keynote address by Mauricio de Maria y Campos, Director-General of UNIDO
1130-1300	Plenary session I
	Presentation on major trends and impacts on world industry by Rana K. Singh, Senior Advisor to the Director-General of UNIDO
	Organizational matters and designation of Working Panels
1400-1600	Panel discussions
1630-1800	Panel discussions

Tuesday, 17 October 1995

0900-1100	Panel discussions
1130-1300	Panel discussions
1400-1600	Finalization of Panel reports
1630-1800	Finalization of Panel reports

Wednesday, 18 October 1995

0900-1100	Plenary session II: Presentation and discussion of Panel reports
1130-1330	Continuation of plenary session II: Presentation and discussion of Panel reports
1600-1700	Plenary session III: Adoption of report and conclusions and recommendations
1700	Closing ceremony

ANNEX IV

LIST OF CHAIRPERSONS, VICE-CHAIRPERSONS AND RAPORTEURS

<i>Panel</i>	<i>Chairperson</i>	<i>Vice-Chairperson</i>	<i>Rapporteur</i>
PANEL I State of world industry and outlook for 2000 and beyond	Ahmad D. Housseini (Islamic Republic of Iran)	Kelbert Nkomani (Zimbabwe)	S. P. Gupta (India)
PANEL II New technologies, innovations and competitiveness	K. Venkataraman (India)	Jorge Katz (United Nations) and F. Machado (UNIDO)
PANEL III Globalization and industrial partnerships	O. Giscard d'Estaing (France)	Kyung-Tae Lee (Republic of Korea)	D. V. Kapur (India) and Nagesh Kumar (UNU/INTECH)
PANEL IV Global trade liberalization: Implications for industrial re- structuring	J. Olu Bajowa (Nigeria)	Raj Makoond (Mauritius)	A. V. Ganesan (India)
PANEL V Industrial policy reforms: The changing role of Governments and private sector development	R. Kaijuka (Uganda)	Hannah G. Woanyah (Ghana)	Sanjaya Lall (United Kingdom) and Nitish Sengupta (India)
PANEL VI Environmental policies and industrial competitiveness	H. T. Specker (Netherlands)	Gustavo Pinto (Ecuador)	Ritu Kumar (UNIDO)
PANEL VII Employment and social aspects of industrialization	Huijong Wang (China)	Alexander Sinkevich (Belarus)	Ram K. Vepa (India)
PANEL VIII Industrial development and international co- operation: The future role of UNIDO	Ibrahim Abdel-Rahman (Egypt)	Ernesto G. Marcos (Mexico)	Torben M. Roepstorff (UNIDO)

ANNEX V

ACTIONS TO ENCOURAGE GLOBALIZATION

Actions of UNIDO

- * Provide a forum and platform to serve as an "exchange" to help bring together participants in the globalization process (i.e. investors and recipients).
- * Help developing and transitional economies to chart approaches and action plans to attract foreign direct investment and technology transfers.
- * Maintain databases and develop case-studies of successful globalization experiences for others to emulate.
- * Help participants in the process of globalization to avoid pitfalls, as negative experiences and setbacks could deter the process.
- * Moderate the expectations of participants from developed economies to levels supportable by developing and transitional economies.
- * Convey the genuine concerns of investors and transferors of technology regarding intellectual property rights, tariff barriers etc. to recipients so that such concerns are adequately addressed.

Actions of other multilateral development financial institutions

- * Help manage the transition of developing economies from dependence on development assistance to foreign direct investment and other forms of foreign participation.
- * Evolve mechanisms for providing transitional safety net measures and quasi-guarantees to private investors in developing countries that would be seen as credit enhancements (for instance, the expanded co-financing programme of the World Bank).
- * Provide advisory services to developing economies on how they can best present themselves as attractive destinations for foreign direct investment as well as look after their own interests.
- * Provide loan syndication services.
- * Provide project appraisal services, which are more credible in the eyes of the international investor.
- * Assist developing countries in improving skills and expertise in management in general and in project management in particular.

Actions of developing countries

- * Reduce tariff barriers.
- * Encourage foreign direct investment within a regulatory framework that is transparent, predictable and equitable.
- * Reduce the need for bureaucratic approvals and scrutiny.
- * Ensure political and macroeconomic stability.
- * Encourage local companies to invest and set up manufacturing facilities abroad.
- * Demonstrate non-discrimination of foreign investment *vis-à-vis* local investment by establishing ground rules and boundary conditions that are applicable to all alike.
- * Utilize the process of globalization to upgrade technology and skills rather than simply to open up markets.
- * Encourage private enterprises to take the initiative in ensuring that their goods and services are considered as global products and inputs.

Actions of industrialized-country enterprises

- * Develop relationships with local companies based on synergies including sourcing to globalize manufacturing operations.
- * Ensure regular upgrading of the local partner's technology so as to have a strong partner rather than regarding technology transfer as a one-time sale.
- * Ensure uniformity of quality globally, be it for products or services.
- * Have a long-term view of investment taking due care to plough back some of the returns into the developing country so as to nourish the local market.
- * Establish research and development facilities in developing countries, so as to use specific local contributions and low-cost high-calibre professional managers.
- * Decide not to resort to any measures that would hinder the progress of developing and transition economies in participating in globalization either by trade or investment restrictions.

ANNEX VI

LIST OF DOCUMENTS

Aide-mémoire: Global Forum on Industry: Perspectives for 2000 and Beyond
Vigyan Bhawan Conference Centre, New Delhi, India, 16-18 October 1995

Provisional Agenda and Programme

Provisional List of Participants

Plenary

- *Main Paper: Perspectives on industrialization: Global industrial partnerships, interdependence and competitiveness* (prepared by the UNIDO Secretariat in cooperation with Tony Hawkins)
(ID/WG.542/1(SPEC.))
- *Executive Summary: Perspectives on industrialization: Global industrial partnerships, interdependence and competitiveness* (prepared by the UNIDO Secretariat in cooperation with Tony Hawkins)
(ID/WG.542/2(SPEC.))

Panel I: State of world industry and outlook for 2000 and beyond

- *Issue paper: State of world industry and outlook for the post-2000 period* (prepared by the UNIDO Secretariat in cooperation with S. P. Gupta)
(ID/WG.542/3(SPEC.))

Panel II: New technologies, innovations and competitiveness

- *Issue paper: New technologies, innovations and competitiveness* (prepared by the UNIDO Secretariat)
(ID/WG.542/4(SPEC.))
- *Background paper: Technology, manufactured exports and competitiveness* (prepared by Charles Cooper)
(ID/WG.542/5(SPEC.))
- *Background paper: Foreign direct investment, technology transfer and exports of developing countries: Trends and policy implications* (prepared by Nagesh Kumar)
(ID/WG.542/6(SPEC.))*
- *Background paper: The implications of new organizational techniques for developing countries* (prepared by Raphael Kaplinsky)
(ID/WG.542/7(SPEC.))**
- *Background paper: Information and communication technologies: Growth, competitiveness, and policy for developing nations* (prepared by Edward Steinmueller and Maria-Ines Bastos)
(ID/WG.542/8(SPEC.))
- *Background paper: Technological change and dual economics* (prepared by Charles Cooper)
(ID/WG.542/9(SPEC.))
- *Background paper: Does new technology bode well for working women? An evaluation and analysis* (prepared by Swasti Mitter)
(ID/WG.542/10(SPEC.))***
- *Background paper: The impact of industrial automation on industrial organization: Implications for developing countries' competitiveness* (prepared by Ludovico Alcorta) (ID/WG.542/11(SPEC.))

Panel III: Globalization and industrial partnerships

- *Issue paper:* Globalization and industrial partnerships (prepared by the UNIDO Secretariat) (ID/WG.542/12(SPEC.))
- *Background paper:* Globalization of manufacturing activity: Evidence and implications for industrialization in developing countries (prepared by Peter Nunnenkamp and Erich Gundlach) (ID/WG.542/13(SPEC.))
- *Background paper:* Foreign direct investment, technology transfer and exports of developing countries: Trends and policy implications (prepared by Nagesh Kumar) (ID/WG.542/6(SPEC.))*

Panel IV: Global trade liberalization: Implications for industrial restructuring

- *Issue paper:* Global trade liberalization: Implications for industrial restructuring (prepared by the UNIDO Secretariat) (ID/WG.542/14(SPEC.))
- *Background paper:* Effects of the Uruguay Round Agreements on industrialization in developing countries (prepared by Tracy Murray) (ID/WG.542/15(SPEC.))
- *Background paper:* The impact of the Uruguay Round Agreements on manufactured products of the African, Caribbean and Pacific Group (prepared by Adrian Hewitt, Antonique Koning and Michael Davenport) (ID/WG.542/16(SPEC.))
- *Background paper:* Sectoral impact of the Uruguay Round Agreements: Export of textiles from Asian developing countries (prepared by the Indian Council for Research on International Economic Relations) (ID/WG.542/17(SPEC.))
- *Background paper:* Sectoral impact of the Uruguay Round Agreements on developing countries: Engineering goods (prepared by C. Niranjan Rao) (ID/WG.542/18(SPEC.))
- *Background paper:* Sectoral impact of the Uruguay Round Agreements on developing countries: Leather industry (prepared by Nisha Taneja) (ID/WG.542/19(SPEC.))
- *Background paper:* Sectoral impact of the Uruguay Round Agreements on developing countries: Pharmaceutical industry (prepared by Jayashree Watal and Anu P. Mathai) (ID/WG.542/20(SPEC.))

Panel V: Industrial policy reforms: The changing role of Governments and private sector development

- *Issue paper:* Industrial policy reforms: The changing role of Governments and private sector development (prepared by the UNIDO Secretariat) (ID/WG.542.21(SPEC.))
- *Background paper:* Recent industrial policies in developing countries and economies in transition: Trends and impact (prepared by Katherin Marton) (ID/WG.542/22(SPEC.))
- *Background paper:* Governments and industrialization: The role of policy interventions (prepared by Sanjaya Lall) (ID/WG.542/23(SPEC.))
- *Background paper:* Formulating industrial policy in Africa: 2000 and beyond (prepared by Mudziviri Nziramasanga) (ID/WG.542/24(SPEC.))
- *Background paper:* Industry-related services: Key to competitiveness (prepared by the UNIDO Secretariat) (ID/WG.542/25(SPEC.))

Panel VI: Environmental policies and industrial competitiveness

- *Issue paper:* Environmental policies and industrial competitiveness (prepared by the UNIDO Secretariat) (ID/WG.542.26(SPEC.))
- *Background paper:* Environmental policies and industrial competitiveness: Are they compatible? (prepared by the UNIDO Secretariat) (ID/WG.542/27(SPEC.))

Panel VII: Employment and social aspects of industrialization

- *Issue paper:* Employment and social aspects of industrialization (prepared by the UNIDO Secretariat) (ID/WG.542/28(SPEC.))
- *Background paper:* Industrialization in developing countries: The challenges of employment and social integration (prepared by John Humphrey) (ID/WG.542/29(SPEC.))
- *Background paper:* The implications of new organizational techniques for developing countries (prepared by Raphael Kaplinsky) (ID/WG.542/7(SPEC.))**
- *Background paper:* Does new technology bode well for working women?: An evaluation and analysis (prepared by Swasti Mitter) (ID/WG.542/10(SPEC.))***

Panel VIII: Industrial development and international cooperation: The future role of UNIDO:

- *Issue paper:* Industrial development and international cooperation: The future role of UNIDO (prepared by the UNIDO Secretariat) (ID/WG.542/30(SPEC.))
- *Background Paper:* Industrial development and international cooperation: The future role of UNIDO (prepared by the UNIDO Secretariat) (ID/WG.542/31(SPEC.))

Report of the Global Forum on Industry: Perspectives for 2000 and Beyond (ID/WG.542/32(SPEC.))

* Issued as background paper for panels II and III.
 ** Issued as background paper for panels II and VII.
 *** Issued as background paper for panels II and VII.