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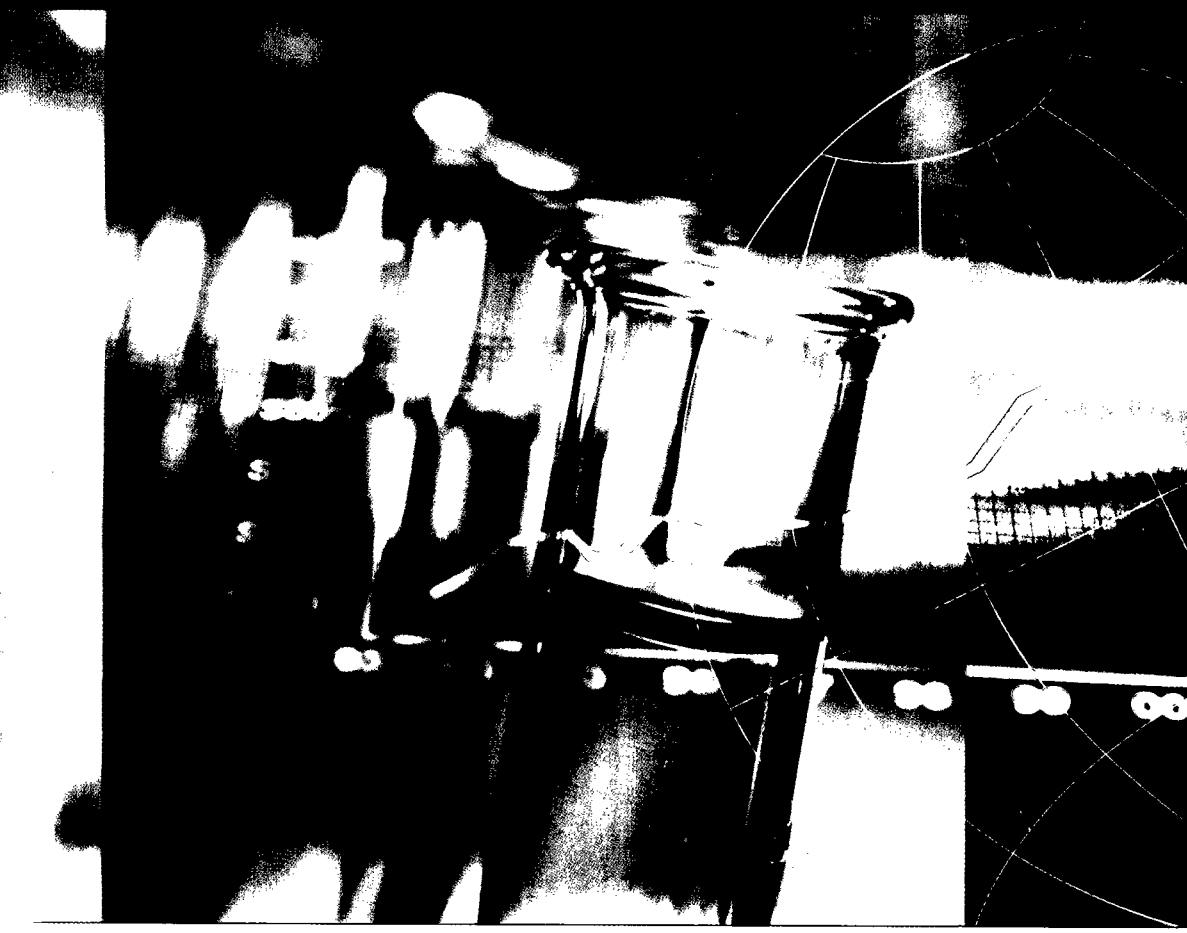
FIGHTING MARGINALIZATION THROUGH SUSTAINABLE INDUSTRIAL DEVELOPMENT

Challenges and opportunities in a globalizing world

UNIDO Industrial Development Forum



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

economy environment employment

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UNIDO Industrial Development Forum

5 December 2001

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

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Acknowledgement

This publication presents the proceedings of the Industrial Development Forum held on 5 December 2001. The Forum was prepared and organized by a special team within the UNIDO Secretariat that worked in cooperation with other UNIDO staff members. The team consisted of Hiroshi Kuniyoshi (chairperson), Helmut Forstner, Sarwar Hobohm, Barbara Kreissler, Ralph Luken, Pradeep Monga, Philippe Scholtes, Francisco Sercovich, Agustin Stellatelli, Akira Uriu, Frank Van Rompay and Anne Wollmann-Storey. Brigitte Gamperl-Baernthaler provided secretarial and administrative support. The proceedings have been compiled and edited by Sarwar Hobohm based on the papers presented at the Forum and the ensuing discussions.

Foreword by Mr. Carlos Magariños
Director-General of UNIDO

Continuing with a new initiative launched at the eighth session of the UNIDO General Conference in December 1999 to introduce a substantive element to the deliberations of the Governing Bodies, a one-day Industrial Development Forum was held on 5 December 2001 in connection with the ninth session of the General Conference. This Forum represented part of an ongoing effort by UNIDO to engage in a constructive discussion on fundamental, topical issues related to industrial development within a continuously evolving global context. Together with the Organization's more specific thematic meetings, regional forums, and research partnerships and publications, the Industrial Development Forums constitute an essential part of its re-oriented Global Forum function. They permit the continuous reflection and debate needed to keep UNIDO well-positioned in the international development community, and provide an analytical foundation for its technical cooperation interventions. As such, these Forums should be seen as part of the wider UNIDO effort to deliver the global public goods that our clients require in stimulating and guiding a sustainable industrial development process.

The 2001 Industrial Development Forum was organized under the theme "Fighting Marginalization through Sustainable Industrial Development: Challenges and Opportunities in a Globalizing World". The choice of this theme reflects UNIDO's firm belief that the central challenge that the world faces today is to ensure that globalization becomes a positive force for all the world's people. Indeed it is UNIDO's conviction that the achievement of the objectives of poverty reduction and environmental sustainability can only be realized through an updating of the international development agenda to promote a well-managed process for integrating marginalized countries and communities into the world economy through the globalization process. This means going beyond the structural and institutional reforms that have so far been undertaken, and initiating additional reforms deliberately aimed at helping developing countries to mobilize the key ingredients of productivity growth needed to enable them to share in the benefits of globalization. These key ingredients are information, knowledge, skills and technology.

There is a critical role for the multilateral system as a provider of global public goods to support developing countries in this process, since market forces alone are unlikely to reverse the prevailing inequities. Concerted action is therefore needed to support the

efforts of developing countries to strengthen the capacity of their private sectors to mobilize trade, capital and technology flows for a high quality of growth, which should be economically viable, socially equitable and environmentally sound. Although this task is broad and challenging, it is a task in which UNIDO should play a major role.

The topics selected for discussion in the two panels convened for the Forum – Technology, Investment and Trade for discussion in Panel I, and Environment and Quality in Panel II – are key determinants of this growth. Both sets of issues are sometimes seen as challenges, which threaten to marginalize many developing countries and economies in transition. To avoid such marginalization, and take advantage of the potential benefits of the globalization process, these countries need to convert these challenges into opportunities for an effective integration into the global marketplace. The purpose of the Forum was to show that although these challenges are complex and need to be faced with proactive responses, they are not insurmountable.

A large number of persons both inside and outside UNIDO contributed to the success of the Forum. Within UNIDO a special team of staff members under the overall guidance of Mr. Nilmadhab Mohanty and the day-to-day coordination of Mr. Hiroshi Kuniyoshi took on the responsibility of preparing the Forum in addition to carrying out their regular activities within the Organization. From beyond UNIDO, we were privileged to be able to draw on the expertise of a number of highly qualified and experienced speakers and moderators, who provided us with important new insights and ensured that the event was conducted in a very interactive and informative manner. I would like to express my sincere appreciation for the efforts of all of these persons, and to the representatives of the member States who participated in the discussions and contributed to the Forum's success.

Carlos Magariños
Director-General

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Abbreviations and acronyms

The following abbreviations and acronyms are used in this publication:

ABR	Africa Business Roundtable
AFNOR	Association francaise de normalisation
AGOA	African Growth and Opportunity Act
AIDS	Acquired immune deficiency syndrome
AIST	Agency for Industrial Science and Technology (Japan)
ANSI	American National Standards Institute
ASP	African Stockpile Project
AU	African Union
Baltic 21	Agenda 21 for the Baltic Sea region
BOBS	Botswana Bureau of Standards
BSI	British Standards Institute
CAS	Chemical Abstracts Service
COMSEC	Commonwealth Secretariat
COST	European Cooperation in the Field of Scientific and Technical Research
CP	Cleaner production
Danida	Danish Agency for Development Assistance
DDT	Dichlorodiphenyltrichloroethane
DE	Destruction efficiency
DIN	Deutsches Institut für Normung
EIA	Environmental impact assessment
EPV	Export production village
ES	Ecosystem
EU	European Union
EUREKA	Pan-European network for market-oriented, industrial R&D
FAO	Food and Agriculture Organization
FCCC	Framework Convention on Climate Change
FDI	Foreign direct investment
G-8	Group of eight developed countries
GATT	General Agreement on Tariffs and Trade
GDP	Gross domestic product
GEF	Global Environmental Facility
GOST R	State Committee of the Russian Federation for Standardization and Metrology
GSM	Global System for Mobile Communication
HCB	Hexachlorobenzene [CAS No: 118-74-1]
HDI	Human Development Index
HIV	Human Immunodeficiency Virus
IBN	Institute belge de normalisation
ICT	Information and communications technology
IDB	Industrial Development Board (of UNIDO)
IEC	International Electro-technical Commission
IMF	International Monetary Fund
INSTEP	Integrating New and Sustainable Technologies for the Elimination of Poverty
IPCC	International Panel on Climate Change
IPMP	Integrated pest management project
ISO	International Organization for Standardization

IT	Information technology
ITC	International Trade Centre UNCTAD/WTO
ITT	Information and telecommunication technology
ITU	International Telecommunications Union
JISC	Japanese Industrial Standards Committee
JITA	Japan Industrial Technology Association
JITAP	Joint integrated trade-related technical assistance programme
KIST	Korea Institute of Science and Technology
LDC	Least developed country
MAI	Multilateral Agreement on Investment
MBS	Malawi Bureau of Standards
MEA	Multinational environmental agreement
MITI	Ministry of International Trade and Industry (Japan)
MNC	Multinational corporation
NCPC	National cleaner production centre
NEPAD	New Partnership for African Development
NGO	Non-governmental organization
NSB	National standards body
OBM	Own brand manufacturing
ODM	Own design manufacturing
ODS	Ozone depleting substance
OECD	Organization for Economic Cooperation and Development
OEM	Own equipment manufacturing
PCB	Polychlorinated biphenyl
PCDD	Polychlorinated dibenzo-p-dioxins
PCDF	Polychlorinated dibenzofurans
PDF-B	GEF project development funds
POP	Persistent organic pollutant
PVC	Polyvinyl chloride
R&D	Research and development
RENPAP	Regional Network on Pesticides in Asia and the Pacific
SABS	South Africa Bureau of Standards
SAZ	Standards Association of Zimbabwe
SCC	Standards Council of Canada
SIS	Swedish Institute for Standards
SME	Small and medium-sized enterprise
SPS	Sanitary and phytosanitary measures
SQAM	Standardization, quality assurance, accreditation and metrology
STAP	Scientific and Technical Advisory Panel of GEF
STEPI	Science and Technology Policy Institute
STP	Sewage treatment plant
TBT	Technical barrier to trade
TERI	Tata Energy Research Institute
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environmental Programme
UNIDO	United Nations Industrial Development Organization
US/USA	United States of America
WTO	World Trade Organization
WWF	World Wide Fund For Nature / World Wildlife Fund

PART ONE

SUMMARY OF PROCEEDINGS

Opening Statement by Mr. Carlos Magariños
Director-General of UNIDO

The Forum was formally opened by Mr. Carlos Magariños, Director-General of UNIDO, with a brief introductory speech. In this speech, Mr. Magariños noted that income inequality between countries had increased over the past two centuries while the world economy had also become more integrated. In explaining this phenomenon, he pointed out that technological change is the main determinant of the productivity gains that stimulate income growth, and that industrialization, which is the main carrier of technological change, does not spread in a uniform manner. Countries that industrialized got richer, while those that did not stagnated.

Citing a variety of empirical observations, Mr. Magariños went on to show that the income gaps had widened during the past thirty years, leading in particular to a sharp increase in relative poverty among the least developed countries (LDCs). Their stagnation was explained by their failure to establish an industrial base, and their continued dependence on eroding static comparative advantages in resource-based sectors. Looking to the future, Mr. Magariños argued that regrettably the scope for an unaided reversal of this trend appeared unlikely, since the new setting of the WTO agreements had constrained the chances of LDCs to build up an industrial base. In particular, these agreements prevented LDCs from adopting such promotional measures as export subsidies, domestic content requirements, export-import linkages, restrictions on capital flows, copyright infringements, targeted credit and the like, which had been the stuff of previous industrialization attempts, both successful and unsuccessful.

Against this background, Mr. Magariños enumerated the measures taken by UNIDO to fight poverty by promoting industrialization and the associated economic growth and productivity gains. He noted that in the case of the small number of countries whose productivity levels and per capita incomes largely draw on the absorption and adaptation of technology and related domestic technological efforts, UNIDO helps to enhance their capacities in these areas through such instruments as Technology Foresight, the forthcoming World Industrial Development Report, Productivity Centres, Certification Centres, and UNIDO's Information and Communications Technology (ICT) and Biotechnology initiatives.

For the wide array of developing countries and transition economies falling behind the small minority of winners, UNIDO undertakes explicit developmental actions such as

building industrial and technological capabilities, improving governance and networking, and stimulating entrepreneurship. In doing so, UNIDO provides the public goods and services required to fight poverty that are under-supplied by the market. Specific measures of this kind include the promotion of agro-business, the provision of ICT services for small firms, support for the development of e-business, and the facilitation of direct investments and technology transfer.

Mr. Magariños concluded his statement by introducing the theme of the Forum and the moderators of the two Panels. He also stressed that he wanted the Forum to be seen as a true learning and sharing experience, and for this reason had allocated ample time for interactive discussions after the presentation of the formal papers. He therefore urged the delegations to take an active part in these discussions, and expressed the hope that they would provide an important input to the broader deliberations of the General Conference and inform the policy debate about UNIDO's future scope and activities.

Panel 1

Economic and Social Development: How Best can Industry Contribute to Fighting Poverty?

Moderator:
John Degnbol-Martinussen
Distinguished speakers:
Moncef Ben Abdallah, Maïgari Bello Bouba
Panellists:
J. Denis Bélisle, Ibrahim Fawzy, Masayuki Kondo, Yo Maruno, Kandeh Yumkella

This panel was moderated by Professor John Degnbol-Martinussen of Roskilde University in Denmark. It began with short speeches by H.E. Mr. Moncef Ben Abdallah, Minister of Industry from Tunisia, and H.E. Mr. Maïgari Bello Bouba, Minister of State from Cameroon, who had been invited as distinguished speakers from Member States to address the issues under discussion. These speeches were followed by panel presentations given by Mr. J. Denis Bélisle, Executive Director of the International Trade Centre; Professor Ibrahim Fawzy of Cairo University; Professor Masayuki Kondo of Yokohama National University; and Mr. Yo Maruno, Deputy to the Director-General and Managing Director of UNIDO. In addition, Mr. Kandeh Yumkella, UNIDO Representative in Nigeria and Director of UNIDO's Regional Industrial Development Centre, made a special contribution to the discussion.

H.E. Mr. Ben Abdallah addressed the conditions, tools and constraints of industrial development, while H.E. Mr. Bouba spoke on the particular industrial development needs of Africa. Mr. Ben Abdallah thus noted that industrial development could not proceed without such prerequisites as peace, stability, an enabling environment, and functioning markets; that it required research and innovation, human resource development, technology transfer and upgrading, supportive policies and programmes, and appropriate support institutions for entrepreneurship development; and that it faced various challenges from globalization, including the potential loss of jobs through industrial restructuring and the adoption of less labour-intensive modern technologies. He then went on to present the experience of Tunisia in promoting industrial development. Mr. Bouba, meanwhile, pointed to the severe socio-economic challenges facing Africa, and stressed the need to promote the productive sectors in general and industry in particular

as a means of achieving sustainable social development. In this context, he noted that these efforts should be focused on the development of agro-related industries and small-scale and cottage enterprises, which account for the bulk of the employment opportunities in African countries. He concluded by providing an overview of the measures taken by Cameroon in this regard.

In the first of the formal presentations, entitled "Trade and Industrial Development: Tools for Fighting Poverty", Mr. Bélisle spoke about the measures required to make SMEs in developing countries more competitive in global markets, and of the growing opportunities for collaboration in this field between UNIDO and ITC. He noted that empirical evidence had shown that greater openness to trade as a result of globalization had resulted in an increase in the competitiveness of developing countries, which in turn had had a significant development impact and helped to reduce poverty. Against this background, he argued that developing countries should adopt export-led poverty reduction approaches, and use targeted foreign direct investment (FDI) as an important instrument for this purpose. He concluded that UNIDO and the ITC had complementary strengths in providing technical cooperation to developing countries in the field of trade facilitation, and especially to help them overcome the effect of technical barriers to trade (TBTs) and sanitary and phytosanitary measures (SPSs). Mr. Bélisle's formal paper, which was circulated at the Forum, contained an additional section on the need to provide technical assistance in the area of TBTs and SPSs.

The second presentation, by Professor Fawzy, looked at the issues of investment, technology and development. Professor Fawzy pointed out that in recent years private capital flows, and especially FDI, have begun to assume a much more prominent role in stimulating development in developing countries than official flows. Consequently, developing countries are now called upon to provide a favourable business environment for attracting private investment, and Professor Fawzy listed a number of measures that governments can adopt to achieve this objective. Professor Fawzy then turned to the issue of technology and argued that under the paradigm of private-sector led growth, the private investor would be the most qualified judge of the most suitable technology for his project, since he would be the one taking the initiative and risking his own money. Against this background, Professor Fawzy argued that while UNIDO had traditionally been working with governments more than with the private sector, it must accelerate its recent shift towards working more closely with the private sector. To promote these efforts, he called for increased support from the developed countries.

Building in some respects on the issues raised by Professor Fawzy, Professor Kondo considered the issue of technology acquisition and mastering for development. Beginning

with the contention that technology is the key to international competitiveness and environmentally sustainable economic growth, Professor Kondo noted that technology is the only input to production that is not physically limited. He indicated further that developing countries had great potential for acquiring modern technologies from abroad, and for evolving a domestic capacity for technology development as they themselves became more developed. In this connection, Professor Kondo presented examples of the means for technology acquisition adopted by various countries in the past. In order to take advantage of this inherent capacity to access and master technology more easily than in the past, Professor Kondo noted in conclusion that developing countries needed to create an enabling environment for technology development. In particular, he stressed that UNIDO, as an intellectual organization with the appropriate skills and mandate, could play a major role in assisting developing countries to formulate and implement their respective technology strategies.

Mr. Maruno presented UNIDO's approach to fighting poverty. His presentation was based on the contention, already put forward in the opening speech of Mr. Magariños, that the growing inequality in the world economy during the last two centuries had its origin in the unequal spread of industrialization, which generates the increased productivity that allows growth in per capita income. Taking a historical perspective, Mr. Maruno argued that periods of trade globalization were typically accompanied by an increase in inequality between countries. This, he suggested, provided a revealing comment on the contention that globalization itself can lead to poverty reduction by promoting the universal spread of industry through market forces alone. Arguing that these inequalities between nations, and the associated poverty, posed a very real threat to the economic and social equilibrium of the world, Mr. Maruno contended that growth and productivity constituted two of the main weapons to fight poverty, and that in UNIDO's client countries, industrialization was central to both. By promoting industrial modernization, investment and technology transfer in countries left behind in the industrialization race, Mr. Maruno concluded that UNIDO could make an effective contribution to a lasting poverty reduction in these countries, and illustrated this contention by reference to four case studies of UNIDO projects in India, East Africa, and the Solomon Islands.

In a very vivid statement to conclude the panel presentations, Mr. Yumkella referred to the insights gained from his experience in the field and pointed out that the biggest problem with poverty was time. In Nigeria, for example, the competitive pressures unleashed by globalization had resulted in a significant erosion of the existing industrial base and an attendant loss of jobs. At the same time, the country had a growing number of well-educated youthful employment seekers, who had the potential of becoming

foot soldiers of rebellion if they did not receive adequate employment opportunities. Mr. Yumkella therefore stressed the need to take urgent action to promote industrial development, which he noted was the key to wealth creation. In particular, he proposed efforts to encourage the development of small and medium-sized enterprises (SMEs), macro- and sector-level interventions to develop production capacities, and improvements in governance to reduce transaction costs.

These statements were followed by a lively interactive discussion with the audience. Comments and questions were received from the representatives of the Industrial Promotion Agency of Italy, the Libyan Arab Jamahiriya, the Kingdom of Saudi Arabia, and two non-governmental organizations (NGOs), namely the International Association Znanie and the Centre d'Appui au Development Alimentaire. These interventions covered a wide range of issues, including the possibility of linking European and other developed-country technology innovation centres with similar institutions in developing countries, the importance of human resource development as a prerequisite for technology acquisition and improved industrial competitiveness, the scope for increased UNIDO collaboration with NGOs, and the need to address demand-side issues constraining the export performance of developing countries even after they have undertaken the appropriate supply side reforms.

The panel concluded with a brief summary by the panellists of the major issues to have emerged from the deliberations.

Panel 2

Global Norms and Local Manufacturing: Challenges and Opportunities

Moderator:
Ursula Stenzel
Distinguished speaker:
Osvaldas Ciukšys
Panellists:
Gene Hutchinson, R. K. Pachauri, Bamanga Tukur, Angelo D'Ambrosio, Octavio Maizza-Neto

The moderator of this panel was Ms. Ursula Stenzel, a member of the European Parliament from the Austrian People's Party. The proceedings of this panel began with a short speech by H.E. Mr. Osvaldas Ciukšys, Vice Minister of Economy of Lithuania, in his capacity as a distinguished speaker from Member States. The subsequent panel presentations were given by Mr. Gene Hutchinson, Managing Director of the Botswana Bureau of Standards; Mr. R. K. Pachauri, Director-General of the Tata Energy Research Institute in India; Mr. Bamanga Tukur, Executive President of the African Business Roundtable; and Mr. Angelo D'Ambrosio, Managing Director of UNIDO. An additional special contribution to the discussion was made by Mr. Octavio Maizza-Neto, Assistant Director-General of UNIDO.

In addressing the subject matter of this panel, H.E. Mr. Osvaldas Ciukšys acknowledged that the application of international norms and standards was a challenging and highly demanding process with a variety of economic, political and social dimensions. Specifically, Mr. Ciukšys noted that the adoption of these standards often demanded the rapid introduction of the latest technologies, which required significant resources and investments. Referring to the experience of Lithuania, he noted that the adoption of such standards had helped the country to enhance greatly its industrial performance based on acquired rather than traditional advantages, although this performance still fell short of that of western European countries. Turning to the role of the state in this connection, Mr. Ciukšys stressed that governments had an important role to play in supporting industry in areas where the market mechanism remained weak. He illustrated this point by reference to several initiatives undertaken by the Government of Lithuania in such areas as export promotion, information dissemination, SME support,

quality and innovation programmes, and the formulation of a Medium-term Industrial Development Policy. In this connection, Mr. Ciukšys also referred to the establishment of a national standardization and conformity assessment infrastructure for the implementation of international norms and standards as one of the measures aimed to facilitate EU integration, noting that the institutions established or modernized under this programme would be fully operational by 2002.

The topic of Mr. Hutchinson's presentation was "International Standards as a Means of Development". In this presentation, Mr. Hutchinson showed how the first countries to embark on the process of industrialization now rank among the strongest in the world, and how all of them also have well-established national standards bodies (NSBs). He showed further that developing countries today can access a wide range of international standards resulting from the work of these bodies, and that their adoption of these standards allows them to learn from international examples how to develop their industries. In particular, Mr. Hutchinson noted that such standards can play a positive role in the development of developing countries and economies in transition as a key to competitiveness; in protecting the environment; in protecting the health of citizens; and by facilitating the sharing of ideas and information. At the same time, however, he pointed out that international standards can also have a negative developmental impact, primarily because they are usually based on the requirements of developed countries and may act as TBTs for developing countries. Against this background, Mr. Hutchinson suggested that UNIDO could play a crucial role in helping developing countries to adopt and implement international standards and thereby improve their export capacity by ensuring that the quality of their products can be certified to the satisfaction of the importing country.

Mr. Pachauri's presentation addressed five major issues with regard to multilateral environmental agreements (MEAs) arising from his paper on "International Environmental Conventions, Civil Society and Industry – Implications for Local Action", which was circulated separately at the Forum. These five issues comprised:

- The need for an increased coordination of the international administration of MEAs;
- The need to provide assistance to developing countries for the creation of adequate local capacities to access and use the funds made available by the MEAs for the implementation of these agreements – UNIDO could play a significant role in this regard;
- The need to create synergies between stakeholders to enable them to take advantage of the opportunities offered by globalization, e.g. by providing market opportunities for the development of renewable energy in developing countries;

- The need to create awareness of the fact that the poor in developing countries constitute a business opportunity, e.g. through the creation of markets in rural areas, which would stimulate industrial development in these areas;
- The need to make modern technologies available to the poor as a source of opportunity for income generation.

In connection with last of these five points in particular, Mr. Pachauri showed that poverty alleviation could be a good business strategy with reference to a programme developed by the Tata Energy Research Institute called INSTEP (Integrating New and Sustainable Technologies for Elimination of Poverty) Global, which it aims to implement in several countries.

The third presentation by Mr. Tukur addressed the subject of business activities and environmental issues in Africa. He showed how the steady increase in human exploitation of natural resources had gradually reached unsustainable levels, leading to the recognition that environmental concerns would have to be integrated into development policies. He also showed how Africa had become increasingly marginalized for a variety of reasons during the 1990s, and argued that putting an end to the dangerous delinkage of Africa from the rest of the world should constitute the prime focus of any development strategies for Africa. While stressing that African countries were trying to implement all of the multilateral environmental treaties signed in recent decades, Mr. Tukur nevertheless argued that the achievement of the twin goals of economic development and environmental protection would require significant efforts at technology upgrading, especially since Africa suffered from a number of economic disadvantages which made developmental efforts an absolute imperative. To achieve these goals, Mr. Tukur concluded by calling upon international organizations such as UNIDO to provide a variety of support services for human resource development, institutional capacity building, wealth creation intitatives, partnership initiatives with developed countries and assistance in reducing conflict. To be effective, these support services would have to be supplemented by a number of complementary efforts undertaken by African governments and the business sector.

The final presentation was given by Mr. D'Ambrosio, who spoke on international environmental frameworks and development, with reference to UNIDO's recent appointment as an executing agency of the Stockholm Convention on Persistent Organic Pollutants (POPs). After describing the various forms of POPs and the threats that they pose, Mr. D'Ambrosio noted that the Stockholm convention adopted in May 2001 obliges signatories to reduce and/or eliminate emissions of POPs, but also pointed out that there was little practical experience of how to do so. In particular, Mr. D'Ambrosio argued that the approaches and measures used in OECD countries to

reduce or eliminate releases of POPs would not necessarily be appropriate for countries at different stages of industrial development. He pointed out that the Convention therefore provides for the rendering of timely and appropriate technical assistance in response to requests from developing country Parties and Parties with economies in transition in order to ensure the successful implementation of the Convention. In this connection, Mr. D'Ambrosio indicated that UNIDO's support activities would be carried out in two stages – the first stage involving "enabling activities" would result in the formulation of national implementation plans, while the second phase would involve specific technical cooperation activities to execute these plans. Mr. D'Ambrosio concluded his presentation by providing a number of examples of UNIDO's activities in this field.

Additional observations on the subject of international norms and standards were offered by Mr. Maizza-Neto, who pointed out that while their implementation seemed superficially simple, it was fraught with many complexities. He indicated, for example, that international standards had to be translated to the factory level as working standards. He also noted that as most standards had been formulated in developed countries, developing countries often had difficulties in adopting them because they did not have the necessary financial, institutional and technological resources. Mr. Maizza-Neto went on to point out that implementation of standards required the necessary metrology facilities and had to meet conformity requirements. In addition, standards organizations in developing countries needed to have international credibility, which could only be gained by establishing appropriate linkages with similar institutions in developed countries. While acknowledging the problems of establishing a functioning system of standards in developing countries, Mr. Maizza-Neto argued that such countries had no choice in this matter if they wanted to develop into industrialized countries, since there could be no industry without such a system of standards. In this connection, Mr. Maizza-Neto noted that UNIDO offered a variety of support services to developing countries, which were increasingly going beyond standards into broader areas of market access and trade facilitation, covering such areas as customs and other regulations.

These presentations were followed by an instructive interactive discussion between the moderator, the panellists and participants from the floor, including the representatives of Japan, Guatemala and Angola, and the UNIDO representative in Indonesia. This discussion covered a wide range of issues, such as the question how the effectiveness of the implementation of MEAs could be enhanced; whether developing countries regarded these conventions and the imposition of standards as TBTs; the fact that such standards were often particularly discriminatory towards small companies with limited access to capital, technology and other resources; the fact that energy conservation approaches involving the sudden lifting of government subsidies under structural adjustment pro-

grammes caused serious economic and social dislocation; the potential conflicts and trade-offs between the goals of increased industrial competitiveness and environmental sustainability; and the extent to which UNIDO can provide support to developing countries in such areas as the environmentally sustainable use of natural resources and the preparation of environmental impact assessments (EIAs) for industrial projects.

The panel concluded with a brief summary by the panellists of the major issues to have emerged from the deliberations.

Concluding Statement by Mr. Nilmadhab Mohanty Managing Director, Field Operations and Administration Division, UNIDO

The Forum ended with a closing statement by Mr. Nilmadhab Mohanty, Managing Director of UNIDO. Mr. Mohanty began by summarizing the lessons learned from the two panels. With regard to Panel I, he recalled that this Panel had addressed the role of investment, trade and technology flows in promoting industrial and economic development in a globalizing world. The major findings of this panel, Mr. Mohanty noted, were that the forces driving globalization were technology and liberalization, and that technology innovation rather than capital accumulation was the principal source of long-term growth. Further, the Panel had shown that although access to technology had become increasingly easy, the rate of diffusion varied. Mr. Mohanty concluded that these were findings of great relevance to UNIDO's work, and that the Organization would look more closely at these issues in the coming years in order to enhance its services to developing countries as explained in the Medium Term Development Programme submitted by the Secretariat to the General Conference.

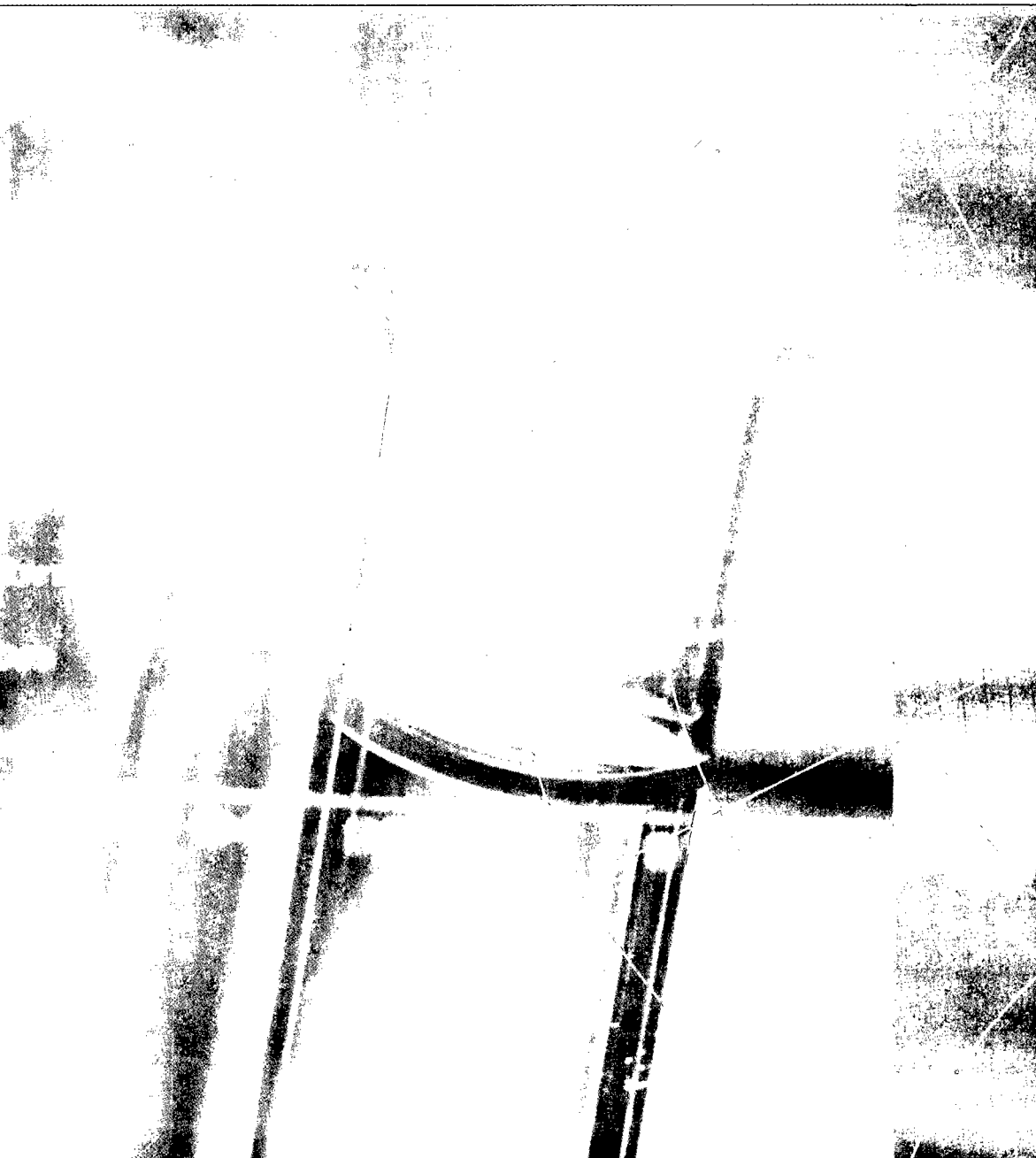
Mr. Mohanty then turned to the issue of investment promotion, and stressed that a congenial environment, and good governance in particular, represented a particularly important precondition for attracting investment. In this connection, Mr. Mohanty sought to compare the relative importance of liberalized FDI regimes and political stability in attracting investment. Noting that countries like China and the Republic of Korea had attracted much more investment than African countries despite the fact that they had a much more regulated business environment, he inferred that a stable political environment was more important than liberalization of the regulatory framework. In conclusion, Mr. Mohanty reiterated that investment promotion must be a major focus of the development agenda. Based on past experience, he suggested that three generations of investment-promoting laws can be identified – the introduction of a legislative framework for investment, the establishment of investment promotion agencies, and the development of brand names, inter alia through the development of SME clusters. These are all areas in which UNIDO can make a significant contribution.

Turning finally to the issue of globalization, Mr. Mohanty argued that it was a fact of life that globalization had few gainers and many losers. With reference to those firms in developing countries that stood to gain from globalization, Mr. Mohanty noted that UNIDO should provide whatever assistance would be necessary to enable them to meet the required international standards, and to provide assistance to the countries themselves in raising their capacities to engage effectively in trade negotiations. With regard to the many losers, who comprise mainly such disadvantaged sections of society as micro-entrepreneurs and women entrepreneurs, Mr. Mohanty stressed that it was UNIDO's role to help to integrate them into the world economy, even though this task might take decades or even generations. In particular, he noted that special efforts would have to be made to support these disadvantaged groups to ensure that their condition does not suffer a further deterioration. In pursuit of this objective, UNIDO plans to provide support to developing countries at both the policy and the institutional level. All of these issues are presented in detail in the Medium Term Programme Framework for 2002-2005, which Mr. Mohanty requested all delegates to consider carefully to enable UNIDO to fine-tune its programmes for the benefit of developing countries and economies in transition.

Mr. Mohanty concluded his statement by expressing his thanks, on behalf of UNIDO, to the moderators, panellists and participants for their contributions to the Forum.

PART TWO

PAPERS AND PRESENTATIONS



Theme Paper

UNIDO Secretariat

Abstract

Although greater integration through cross-border flows of goods, services and factors may yield higher global efficiency, many countries are at risk of missing its potential benefits entirely. For a variety of reasons, the business sector is the most exposed to the challenges of globalization; it is also the cornerstone of any successful integration strategy. Yet what are the specific challenges faced by firms in developing countries when attempting to enter the global marketplace? And how can these challenges be turned into opportunities for effective integration? These are some of the issues this paper sets out to address. It highlights the complexity and urgency of the challenges faced by developing countries and the need for proactive responses, which will become even more urgent in the coming years as the economic aftershocks of recent events reverberate through the world.

Introduction

As part of a continuous effort to stimulate a substantive discussion on the evolving role of UNIDO and its contribution towards the achievement of international development objectives, the Industrial Development Forum will be held under the theme "Fighting Marginalization through Sustainable Industrial Development: Challenges and Opportunities in a Globalizing World".

Previous global forum events organized by UNIDO have highlighted the need to address the missing links in the current international development agenda and have emphasized, in broad terms, the complementary measures that need to be taken. While the continued importance of industry for furthering socio-economic development, particularly in this era of increasing economic integration and liberalization, has been argued in past

events, the present development reality requires us to move on and examine more carefully how industry can serve as a dynamic force in bringing about a process of sustainable development. Thus, the Forum is intended to explore ways through which UNIDO can assist countries in gradually integrating into the world economy and thus maximize its contribution to reversing the process of marginalization.

While there is broad agreement that the economic reform programmes initiated by developing countries and economies in transition have done much to connect countries to international trade and investment flows, it is at the same time acknowledged that these programmes have been insufficient to translate this progress into sustainable productivity growth. As a result, widespread public support for economic reform has been waning, particularly in those countries that have failed to link up effectively with the international economic system and reap the benefits of liberalization. UNIDO has for some time now pointed to the need to update the international development agenda and make globalization a win-win proposition for all countries. The Organization has argued that, along with the urgent need to address present imbalances in the trade and financial rules of the multilateral system, the inadequate flows of information, skills and knowledge to and within developing countries also need to be dealt with. Thus, new measures are required to provide dynamic private enterprises in developing countries with access to the information, technology, skills and knowledge that they require to connect them with the global economy.

The task of updating the development agenda in such a way that it enables the international community to address the key dimensions of development (economic growth, productivity, social equity, poverty reduction and environmental protection) is a major undertaking. As such, it can only be conceived as a joint effort of all multilateral institutions, including UNIDO, which has a very significant role to play in this effort. Along with other international organizations, UNIDO needs to continue exploring the best ways of assisting Governments and the private sector to cooperate in fostering the mobilization of national as well as external resources for economic and social development.

Industry can make a particularly important contribution to growth and to the rise of incomes and the reduction of poverty in the developing world because:

- It is the main engine for improving the economic structure of developing countries from sectors with low growth and low productivity to those with high productivity and a growth potential;
- It is the most effective user and carrier of technology to the economy;

- It creates skills, knowledge, entrepreneurship and innovation;

- It promotes social mobility, is an important source of employment and generator of incomes, and acts as a powerful magnet for attracting external resources for development.

In most developing countries industry has historically had to depend to a large extent on local factors and capabilities. A rapidly globalizing world, however, relies in ever-larger measure on internationally mobile – and, at times, volatile – resources. Particularly in the case of the least developed countries, development strategies have to cope with new challenges stemming from the difficulties to attract and retain these resources and to combine them with upgraded domestic resources.

The international community has adopted a set of norms and conventions that are meant to speed up globalization and, at the same time, address some of its risks. This has often resulted in the setting of higher standards, which, if not addressed properly, might aggravate trends towards the marginalization of the stragglers in the globalization process. However, firms in developing countries are often able to adopt proactive strategies that allow them to transform challenges in such areas as environment and quality into opportunities.

Panel 1. Economic and Social Development: How Best can Industry Contribute to Fighting Poverty?

A substantial reduction of poverty throughout the world, which is now regarded as the overarching goal of international cooperation for development, is attainable only with sufficiently high rates of economic growth in the developing countries. Given what we know about the growth process, manufacturing industry has an important role to play in bringing about such growth. What remains to be examined in detail, however, are the ways in which industrial growth in the developing world is to be fostered, given the afore-mentioned central goal and present circumstances. Regarding the goal, the quality – and not just the rate – of growth also matters. The pattern of growth needs to be well suited for a significant reduction of poverty and inequality. The required growth and development need to be realized under conditions of a rapid and multi-faceted integration of the global economy. This will be further complicated in the coming years by the economic aftermath of the recent international events.

Globalization is characterized primarily by steadily intensifying flows of goods, services, resources, knowledge and information. While these flows potentially span the globe,

participation in them is in no way guaranteed in the same measure to all economies around the world. On the contrary, significant forces of agglomeration seem to be at work, which appear to be largely beyond the scope of policy and are concentrating the benefits of globalization in some parts of the globe whilst leaving others marginalized. The development objective is largely aimed at counteracting such adverse trends.

Opportunities to connect with and benefit from the various forms of international flows depend in large measure on local conditions, including resource endowments and policy orientation. Local conditions – including those related to trends in social development and capacity-building – are being transformed rapidly due to the impact of globalization and the international flows associated with it. In sum, the objective of a substantial reduction of poverty worldwide calls for deliberate efforts to connect economies to international flows and to ensure positive outcomes of the interaction between such flows and local factors.

The topics chosen for discussion in Panel I are best seen in the context of what is currently known about the nature and the sources of economic growth. A central piece of this knowledge is the link between poverty reduction and growth as mediated by productivity – since it is productivity gains that allow better living standards. But how is growth associated with productivity gains in developing countries? And which is the main force behind growth: factor – in particular, physical capital – accumulation, sector- and plant-specific efficiency gains, or shifts to higher-productivity activities? Of course, growth draws on advances along all three of these avenues. But their respective contributions may vary according to time and place and, in particular, according to the local circumstances of industrial development.

Technology

Current methods of measuring productivity change usually draw a dividing line between the influence of quantity and quality of factors of production and sizeable "unexplained" elements. With regard to the latter, technological progress is perceived as a key source of productivity increases, which in turn are strongly influenced by institutions and the incentive framework.

In the context of developing country growth, the basic distinction needs to be made between access to new technology through various channels on the one hand and its adoption, adaptation and efficient use on the other. The processes of adapting the relevant best practices, technology diffusion and improving technical efficiency, as well as the associated learning processes, figure prominently.

While in comparisons of growth performance across countries the dimensions of innovation and efficiency are pertinent, for developing countries the discussion usually centres on diffusion and efficiency and on efforts that are essential to them. Policy decisions need to be informed by knowledge about which of these efforts are most cost-effective under given local conditions. As a general feature, such decisions will involve combining measures that facilitate access to international flows of technology with those that support the complex processes behind its adoption, adaptation and efficient utilization.

While the diffusion and efficient utilization of technology thus represent a critical determinant of growth and development, the empirical record shows that the rate at which this has occurred has varied sharply from country to country. Even in the current era of globalization, which has undoubtedly facilitated and accelerated the spread and adoption of technology throughout the world, many less developed countries have been bypassed by this process. Proactive efforts to promote the spread of modern technology to the relatively disadvantaged countries, and its effective absorption by them, are therefore called for. These efforts include the establishment of specialized programmes to encourage technology diffusion, as well as technology foresight initiatives for the continuous assessment and monitoring of technology development and application in developing countries. In addition, these countries should also be given increased access to such advanced technologies as information and communications technology and biotechnology, which will play an important role in supporting economic development in years to come.

Investment and trade

Technological development in the developing world crucially depends on international flows of technical knowledge – as it does on costly domestic technological effort. With respect to growth and economic development at large, an argument of similar strength and plausibility applies to the role of international flows of goods and capital. These flows are assuming added and increasing importance also as channels for the transfer of new technology. All three types of international flows – knowledge, capital and goods – are expected to make important contributions to increased productivity and hence to growth.

Among investment flows, foreign direct investment deserves special attention as it represents one of the most effective ways for countries to access foreign resources, particularly technology, managerial expertise and skills. Viewed in a development per-

spective, the main problem with these flows lies in their high concentration among countries, both by source and destination. Low-income countries, in particular, seem to be increasingly marginalized also with respect to international investment activity. Areas for corrective policies include labour skills, technological capabilities, infrastructure and various kinds of transaction costs.

Trade in goods is one of the various channels through which technology can be transferred between countries. From this derives an argument for why openness and the resultant rise in the volume of trade are likely to make a significant contribution to growth. Another plausible argument for a positive trade-growth link has to do with the learning- and growth-enhancing effects of a drive towards exports. Exposure to increased competition in international markets usually leads to improvements in the performance of exporting firms or industries.

Addressing the role and quality of openness in fostering competitiveness helps to sharpen the focus on these two key aspects of trade without creating frictions between them. Rather, only by combining appropriate international market access and domestic efforts to enable firms to succeed in these markets can the desired growth-enhancing effects be realized. This is particularly true for manufacturing, where increasing competitiveness has to be conceived as a broad and complex goal, which, also for this reason, attracts much attention on the part of analysts and policy makers.

Panel 2. Global Norms and Local Manufacturing: Challenges and Opportunities

The stabilization and adjustment programmes of the early 1980s were predicated on the expectation that greater exposure to international flows of goods, services and factors would trigger faster domestic growth. At the same time, however, there was an increased awareness of the potentially adverse consequences of economic liberalization: faced with stronger competitive pressures, a firm would be faced with the dilemma of either undertaking risky investments to upgrade its product lines and process technologies or shifting towards more commodity-like, lower value-added, products – if it was to stay in business at all. Concurrently, the increasing application of international norms and conventions on quality and environment would leave it with an ever-narrowing scope to compete on low quality, low wages and environmental depredation. While these norms and standards were almost invariably introduced with the intention of promoting positive outcomes, such as public safety and health, environmental protection and economic

stability, they also restrained the capacity of developing countries to take the low value-added path to global integration.

These trends are facets of the same phenomenon. They underline the uphill struggle faced by policy makers in developing countries in their endeavours to stimulate the mobilization of domestic resources, along with the integration of their economies into international investment, technology and trade flows. This Panel will therefore concentrate on the role of international norms, and assess their impact on the growth of manufacturing industry in developing countries: Did they, in effect, further marginalize developing countries, or did they, on the contrary, help them join the mainstream of global integration? Much of the answer depends on how firms in developing countries have managed their integration process into regional and global markets, and how they have coped with associated international norms. Empirical evidence reveals a continuum of responses from a strictly passive compliance to international norms, which are then perceived as a constraint, to the proactive adoption of a strategic stance to take advantage of these new rules of the game.

Environment

Global cooperation for the preservation of the environment has been encouraged and supported by various means and forums. These range from international conventions – such as those on climate change to support sustainable energy options; biodiversity to ensure the conservation of species; and the Montreal Protocol to phase out ozone depleting substances (ODS) – to the demonstration effect of cleaner production centres where upgraded production processes and energy efficiency measures are shown to satisfy environmental and economic concerns. In this respect, the current ratification of the Stockholm Convention on Persistent Organic Pollutants (POPs) opens both challenges and opportunities for firms in developing countries to support the international sustainable development agenda, which clearly calls for a close relationship between productivity, competitiveness and environmental compliance.

Indeed, implementation of the international environmental conventions could radically alter the payoff structure of firms in developing countries: those that do not take timely steps to comply with the binding regulations will see their markets shrink considerably; manufacturing processes and technologies will need to be upgraded; competition and best practice patterns will evolve in ways that are a priori difficult to fathom, let alone foresee. On the other hand, as for any such international protocol based on the recognition that the planet is a common heritage, significant resources and technology will

need to be made available by industrialized countries to ease the adjustment in the developing world. Building partnerships and strengthening cooperation will be key to the successful implementation of various international protocols to preserve the global environment.

Quality

Quality is regarded by manufacturing firms as a strategic variable, along with price and customer service, and made into a specific marketing argument. It becomes a particular attribute of a manufactured good that, together with other features, determines the price of the product on a given market. This suggests the existence of a trade-off between price and quality: higher quality would command a higher price, or appeal to a different market. There is, in other words, no compelling requirement for developing countries to produce manufactures of the highest possible quality, although minimum standards are required, particularly in the food and pharmaceutical industries, where low standards easily translate into health hazards. But there are certainly solid economic reasons for them to move up the quality ladder in manufacturing output, as it expands market horizons and allows them to improve their terms of trade.

As in the case of environmental standards, the responses of firms in developing countries to the technical regulations and standards imposed in external markets can be erratic or systematic. The erratic reaction merely aims to ensure that particular products and underlying manufacturing processes satisfy international norms. It often causes firms in developing countries to suffer a temporary squeeze of their profit margins because their investment in the advanced equipment and higher skills needed to meet the new standards does not yield a return in the short term, but only generates dividends once the firm has successfully penetrated new markets. By contrast, a systematic approach involving the introduction of advanced quality management techniques enhances the ability of firms in developing countries to conform to evermore stringent standards, and to achieve more rapid and environmentally sustainable productivity increases. In addition, it yields immediate social benefits, for instance in areas where low quality can turn into a health hazard.

The adoption of such a systematic stance towards international quality standards and market requirements by firms in developing countries is predicated upon their having access to appropriate facilities in the areas of standards, metrology, testing, conformity assessment, quality and productivity. This requires the developing countries concerned to establish and maintain significant institutional capacities in these fields,

which in turn require considerable investments in both physical and human capital. These investments, which in many cases will only be possible with external support, could thus play a critical role in enabling developing countries to benefit from the opportunities of integration into global value chains offered by the process of globalization, rather than being marginalized by it.

Conclusion

This paper has attempted to show that it is possible, and indeed essential, to ensure that the globalization process and the concomitant development of international standards become an effective instrument for poverty reduction and for uplifting the economic and social standing of the most deprived sectors of society. It has also sought to show that industrial development can make an important contribution in this connection. In particular, this objective can be achieved through two distinct approaches: Firstly, through efforts to broaden the range of the international resource flows that enhance the value of domestic resources; and, secondly, through a systematic response to the increasing number of international norms in order to turn the challenges they pose into opportunities.

Opening Statement

Carlos Magariños*

We wanted to organize this Forum following the recommendations of many Member States because we wanted to address once more the interconnections between industry and poverty reduction, and the role of industry in helping developing countries to reconnect their national economies with the global economy. Without doubt, the poverty problem has many dimensions: Between countries and within countries; relative poverty and absolute poverty; present poverty and intergenerational poverty. As you may understand, I will confine myself today to the international dimension, which is perhaps the most significant dimension for a meeting like this one.

From an international perspective, poverty affects those countries whose income is much lower than in OECD, the most advanced countries, and for which it is highly uncertain when and whether their income will converge. To understand why these countries lag behind, it is necessary to take a long-run perspective.

I think that it is important to highlight that historians report that the world economy has become more unequal over the last two centuries. Meanwhile, the world economy has also become much more globally integrated. The correlation between these two facts does not necessarily establish a causation between them, but we know that the ultimate roots of inequality consist of the uneven distribution of the fruits of technical progress.

Technological change is the main factor explaining the productivity gains that feed per capita income growth. Industrialization is a key carrier of technological change and, without doubt, does not tend to spread in a uniform manner, as we have seen in our Conference in 1999. World inequality has been ever pervasive since the inception of the industrial revolution. Countries that industrialized got richer, while those that did not stagnated.

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* Director-General of UNIDO. This text is based on an edited transcript of the spoken presentation.

So our question today is: What is the role of globalization in this process?

Globalization, understood as the integration of the world economy, and particularly the financial and the commercial markets, has been performing in a very unequal way with ebbs and flows. When it is on the rise, it accentuates the gap between the countries that are and those that are not geared for industrialization. It helps countries that take timely and effective steps to equip themselves to integrate into the world economy and converge towards OECD countries. The countries that do not do so are exposed to important external risks.

Globalization has been accompanied by a net increase in relative poverty, again according to the records and available statistics.

Thirty years ago, the LDCs of today were at par with the other developing countries in terms of GDP per capita. Now, non-LDC developing countries are two and a half times better off than the LDCs. Whereas the gap between industrial countries and the other developing countries fell from around 40:1 to less than 30:1, the income gap between industrial countries and the LDCs widened from a ratio of 40:1 to nearly 80:1 in the same period of time.

Thirty years ago, the critical difference between LDCs and other developing countries was that the latter group enjoyed a percentage of manufacturing value added 50 per cent higher than the former group. That is to say that the small group of developing countries that what we today call the emerging economies, which were able to take advantage of the process of globalization thirty years ago, were at that time enjoying a percentage of manufacturing value added only 50 per cent higher than that of the LDCs. Nowadays, the difference is seven times bigger. Developing countries in this group of winners are seven times more productive in the manufacturing field than the LDCs.

This small group of developing countries that was able to profit from globalization has gained from the on-going process because they had previously moved their economies towards industry, which is at the core of long-term growth. All those familiar with economic theory know that this concept was first presented some years ago by Solow with regard to the long-term growth of the United States economy. It is clear that when there is industry and globalization opens the door to a larger market, the growth effect is boosted because industrialization builds externalities through research and development, expands product variety and enhances product quality.

The LDCs, for their part, did not set up an industrial base. They stayed put on eroding static comparative advantages in resource-based sectors. Regrettably for them and for the rest of the world, these LDCs, having no critical mass in industry, lost long-term growth opportunities when the onset of globalization came.

Can we regard the marginalization that occurred over the last thirty years as a costly step that opens the way for future convergence? Regrettably, according to the statistics, this does not seem to be the case at all.

The new setting of the WTO agreements constrains the chances of the LDCs to build up an industrial base. Although some uncertainties still remain about how such agreements will actually be applied, one thing is certain: They narrow down the scope for export subsidies, domestic content requirements, export-import linkages, restrictions on capital flows, copyright infringements, targeted credit and the like, which were the stuff of previous industrialization attempts, both successful and unsuccessful.

Delegates many times have indicated that this sort of Forum should be action-oriented and we very much would like to have such a Forum today.

How is UNIDO fighting poverty? We think growth and productivity gains are the most effective tools to fight poverty. In the range of countries that are in UNIDO's sphere of action, growth and productivity gains are strongly associated with industrialization. In fostering industrialization, UNIDO helps fight poverty. UNIDO's fight against poverty can be considered in two broad directions.

First, as I said already, there is a small number of developing and transition economies whose productivity levels and per capita incomes largely draw on the absorption and adaptation of technology and associated domestic technological efforts.

For these countries, we do things like the Technology Foresight exercise; the World Industrial Development Report, that will soon present an explicit analysis of the process of competition using the development of technological capabilities as its most potent tool; Productivity Centres; Certification Centres that signal quality to promote exports; and our Information and Communication Technologies or Biotechnology initiatives and Cleaner Production Centres.

But there is a wide array of developing and transition economies that are falling further behind the small minority of winners. For these countries, globalization poses a heightened risk. Preventing this risk will not come from mere static efficiency cum

trade liberalization, but from some explicit developmental actions such as building industrial and technological capabilities, improving governance, networking and stimulating entrepreneurship. The principle that orients our action is to provide public goods in order to make up for the under-supply by the market of goods and services that are required in the fight against poverty.

For these countries, we do things like agro-business and the work in the area of the food industry. We are integrating our activities to the extent possible in the area of agriculture with our sister agencies in the United Nations system like the FAO. UNIDO deals with the manufacturing firms that serve agriculture as suppliers of inputs to farms or as buyers of outputs from them.

In low-income countries, an inordinate portion of firms takes shelter in the informal sector to escape from the red-tape waiting for them in the formal sector. The drawback of informality is that it restricts the access to resources, in particular, financial resources, and this situation feeds poverty. To address this problem, UNIDO deploys information and communication technologies at the service of the small firms and, in particular, those in the informal sector. The idea is, at the same time, to use the Internet to foster more transparent and better governance.

Still in the field of information networks, we create Centres offering awareness and introduction to e-business. E-business is far behind in our second group of countries as compared to the first one. As long as individual firms miss the information they require to coordinate their decisions, externalities from networking are lost. This unduly delays the formation of networks and the bridging of the digital divide. The mission of the Centres is to enhance systemic coordination in order to entice agents to involve themselves in e-business.

We also facilitate direct investments and transfer of technology to increase productivity in the recipient countries and we are aiming to find an even greater linkage between the activities that we develop in the transfer of cleaner technologies and our activities in the field of investment and technology promotion.

UNIDO supports all these projects by offering a platform to reduce the cost of information and enhance confidence and trust. This way, projects will materialize that the market by itself would not have brought to life.

We are also presenting a number of regional initiatives in the area of market access facilitation. I am pleased to report that I have signed an agreement a few weeks ago with my

dear friend, Denis Bélisle, Executive Director of the International Trade Centre, who honours us today, taking part as a panellist in our morning session.

I think we are all aware that UNIDO is not in the business of alleviating poverty by means of direct resource transfers to the poor. Our approach consists of achieving a durable reduction of poverty by fostering modernization, productivity growth and technological progress. Our focus, as you have seen in the last years, is increasingly concentrated on countries that lag behind. Our means is the supply of public goods that bridge the gap between private and social costs and benefits.

It is against this background that this year's Industrial Development Forum is being convened: As a further step in our efforts to explore how best industry can be used to support a process of sustainable development. The topics selected for discussion in the two panels that we have convened for today are key determinants in this regard. In the morning, we will discuss the problems of economic and social development, and the role that industry can play to contribute in a more effective and concrete manner to fight poverty. This afternoon we will explore the challenges and opportunities offered by global norms and local manufacturing performance.

I think both sets of issues are sometimes seen as challenges arising from globalization, which threaten to marginalize many developing countries and economies in transition. To avoid marginalization and take advantage of the potential benefits of globalization, these countries need to convert these challenges into opportunities for an effective integration into the global marketplace. We hope to show in the course of today's deliberations that, even though these challenges are complex and need to be faced with proactive responses, they are not insurmountable.

The distinguished speakers and panellists will be introduced more fully by the moderators but I want to take this opportunity to express my gratitude to the moderator of Panel I, Professor John Martinussen, very well-known to many of us. A very good friend of UNIDO, a prominent development economist of Roskilde University in Denmark, he played an important role facilitating the UNIDO reform process as the leader of the team which conducted an assessment of UNIDO's reform process for Danida in 1997. I have been using his recommendations quite a lot in the last four years of reform.

The moderator of Panel II, the Panel we will have this afternoon, will be Mrs. Ursula Stenzel, a respected journalist and political scientist from our host country, Austria, who is now a member of the European Parliament in the faction of the European People's Party, Christian Democrats, and European Democrats.

I do not want to abuse your patience. You have listened to me many times before and you will have to listen to me a few more times during the week, but I would like to encourage you to participate in the Forum.

I think we have learned many lessons from the Forum of 1999. One was that maybe it was too technical and too long. The other was that we had to put it aside of the general debate. One thing that was not mentioned that much, but that I would like to mention today, is that we want you to participate in a very interactive manner in the discussions with the panellists. We want to know your views, your opinions, for us it would be important to get conclusions for the Forum. If we want global forum activities to become more realistic, useful and practical, we have to make them like that, by intervening in the debates and discussing with the people what are our real concerns. And the excellent group of panellists we have here will allow us to do that. We have people with a lot of experience, like Ibrahim Fawzy, Professor of Cairo University; Masayuki Kondo, Professor of Yokohama National University; Mr. Maruno; Kandeh Yumkella; who both have experience at the level of Headquarters and field operations of UNIDO. I sincerely hope that these discussions will provide an important input to our deliberations and to the shape of our future programmes. We have allocated enough time for discussions. So I thank you very much for coming this morning and I strongly encourage you to participate actively in the debate. Having said that, I will return the floor to the moderator to start the debates.

PANEL ONE

ECONOMIC AND SOCIAL DEVELOPMENT: HOW BEST CAN INDUSTRY CONTRIBUTE TO FIGHTING POVERTY?

Moderator's Introduction

John Degnbol-Martinussen*

It is a special pleasure for me to warmly welcome you this morning to the Industrial Development Forum. Let me say at the outset that I feel honoured by having been asked to serve as moderator for this distinguished panel on the theme of "Fighting Marginalization through Sustainable Industrial Development: Challenges and Opportunities in a Globalizing World". I want to thank the Director-General for giving me this opportunity.

This Forum, as part of the General Conference, provides an excellent opportunity to take the international development debate to a broader forum with leading scholars and policy makers from all over the world.

As you have seen in the programme, as indicated also by the Director-General, the Industrial Development Forum will be divided into two panels. The morning panel will deal with the topic "Economic and Social Development: How Best can Industry Contribute to Fighting Poverty?"

In a rapidly globalizing world, the United Nations organizations in general, and UNIDO in particular, have put specific measures in place in order to better serve the developing world and contribute towards the achievement of international development objectives. This Forum will examine how industry can play a dynamic role in the process of sustainable development, and I am personally very much looking forward to the discussion on this and related topics.

I am delighted and honoured to introduce to you this morning two distinguished speakers, Mr. Ben Abdallah, Minister of Industry from Tunisia, and Mr. Maïgari Bello Bouba, Minister of State from Cameroon. I would invite Mr. Abdallah to take the floor.

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* Professor, Roskilde University, Denmark. The text presented here is based on an edited transcript of the moderator's spoken introduction.

Statement by Distinguished Speaker

Moncef Ben Abdallah*

It is a particular pleasure for me to be able to take part in your work in this Panel as an invited speaker, and to make a contribution to our common thinking on a subject of ever-increasing importance for developing countries. I would like to take this opportunity to pay tribute to UNIDO for its dynamism and for its wise choice of a theme for this Forum. It demonstrates UNIDO's attachment to its vocation to create a favourable environment for thought on themes that are all the more topical because they affect the future of our economies and sometimes our countries.

This meeting, in my view, can improve our common vision on the challenges and opportunities for sustainable industrial development, which is a guarantee of human development.

I ask the Secretariat to make available to you the complete text of my statement but since there is a time discipline imposed on us in the Panel, I shall merely review the main comments and suggestions I have for the Panel.

We are all here convinced that industrial development is vital to fight poverty and marginalization. Indeed, industry plays a paramount role in alleviating poverty inasmuch as it makes it possible to enhance the countries' resources and to create synergies with many sectors such as agriculture, power, mines and services. It also creates employment and often a skilled labour force capable of mastering technology, which is itself a factor in development. It also optimizes the contribution of production factors, and in particular enhances human resources to that end.

Nevertheless, industrial development does require preconditions on the one hand, and methods and tools on the other. It is also subject to quite considerable constraints at

* Minister of Industry, Tunisia. This text is based on a transcript of the official interpretation of the speaker's original speech in French.

times. I say preconditions because it is clear that today sustainable development is only possible if certain conditions are met and I will refer in particular to political stability and social peace, a sound and favourable macro-economic framework, functioning market mechanisms, potential demand in those markets and a socio-economic environment which is favourable to investment, including foreign direct investment.

As to the methods and mechanisms and tools necessary for industrial development, I could refer above all to qualified and multi-skilled human resources, which meet the development requirements of the country; transfer mechanisms and mastery of technology; incentives for research and innovation, in particular in the industrial sector; physical and institutional infrastructures of adequate quality; development of policies, programmes and projects; support institutions for development of business and investment; and, of course, the existence of a private sector which is diversified, dynamic and enterprising; and finally, an environment which is conducive to attracting foreign direct investment, which is an essential part of technology transfer and exports.

Speaking of the challenges involved, they are basically inherent in globalization and regional integration where competition is becoming more and more fierce, particularly when it comes to the marketing of goods and services and when it comes to the attraction of foreign direct investment. In this connection, I must emphasize that globalization does indeed develop opportunities for industrial development, mainly by providing better access to potential markets, which guarantees the preconditions I referred to: The existence of market mechanisms and potential demand.

Nevertheless industrial development can sometimes entail the loss of jobs through restructuring, productivity gains, cost-squeezing (which is nevertheless necessary), and also through the introduction of more up-to-date technology, which is less labour-intensive in general. This explains the general existence of plans and social programmes to back up development and to improve the standard of living of our populations. These programmes are aimed at facilitating the integration and reintegration of deprived populations into the economic circuit in order to spare them, as far as possible, the consequences of marginalization and the threat of a return to poverty.

This is precisely what we have tried to do in Tunisia under the guidance of the President of the Republic. In our development, we have banked on the development of our human resources, through a proactive policy making education and training generally available and by improving the standard of living of the population. So for some time, a major part of our budget has been devoted to education and health.

In the economic sector, we have turned to industrialization, diversification of production, development of exports and the promotion of foreign direct investment. At the end of the 1980s, a wide-ranging plan of economic adjustment was launched in order to adapt our economy to radical global changes. This allows us to establish economic balance, to promote private initiatives, to increase the rate of job creation and to improve the standard of living of the population and reduce and alleviate poverty. All these achievements have allowed Tunisia to accede under good conditions to the WTO, and to conclude numerous agreements establishing free trade zones, particularly with the European Union and all the Arab countries. In parallel with these reforms and to take full advantage of the opportunities offered in this new context, the Tunisian Government has established several programmes and projects to contribute towards the competitiveness of the economy and the industrial sector in particular, requiring better mastery of technology and an on-going quest for increased competitiveness.

To this end, the Tunisian Government has established a forward-looking and integrated strategy to improve factors of production and to ensure their better distribution, in particular in terms of the labour force and technological progress. This strategy is based on a wide-ranging programme for upgrading manufacturing and related industries, and the industrial environment, and entails various activities. I would refer in particular to our main objectives, the development of competitiveness between enterprises and businesses to increase manufacturing value added, the creation of new jobs and better skilled jobs, the improvement of human resources skills, the promotion of investment and the development of industrial partnerships. Furthermore, particular attention has been paid to the improvement of the productivity of factors of production, which has increased by 2.4 per cent on average per year during the 1990s. In order to build on these achievements, the Government is now envisaging the establishment of a centre for industrial productivity. This movement has benefited from the improvement of business infrastructure, including the physical infrastructure, such as industrial parks, for instance, and the development of the IT infrastructure through the creation of a network of databases and special monitoring centres.

Being aware of the importance of scientific and technological research and innovation in particular, Tunisia has resolutely undertaken a strategy of promotion through establishing a legislative, institutional and financial framework for a national research system. We have created incubators with centres to support business start-ups, in particular for SMEs, and we have also established technological parks. In this context, the budget for research will increase by 0.5 per cent and reach 1 per cent in 2004.

When speaking of human resources, the policy followed since the end of the 1980s has provided impressive results, which means that 53 per cent of jobseekers now have university qualifications or a certified professional qualification. This allows us to meet the requirements of business in all priority sectors.

Thanks to these many-fold reforms, Tunisia has seen major achievements, 5 per cent growth in recent years, and achievements both in the economic and social sectors.

It is now recognized that sustainable industrial development is a major prerequisite to ensure that developing countries derive the benefits accruing from the globalization of trade and economies. In order to achieve these aims, i.e. sustainable industrial development, the eradication of poverty, the fight against marginalization and hence sustainable human development, it is essential in our opinion to adopt consistent development strategies reflected in short-term, medium-term and long-term action plans, which also continually upgrade human resources and establish an environment which is favourable to the expansion of small and medium enterprises, an essential factor for the creation of employment.

We should also establish institutions which support industry, exports and investment. We should promote regional integration by promoting industrial complementarity. We should attach particular importance to the global competitiveness of factors of production and promote the expansion and diversification of exports. Obviously, this requires a pooling of efforts on the part of all those involved, both at the national and international level.

In this connection, in our view, UNIDO has an important role to play, bearing in mind the expertise and experience that it has acquired over the years, in particular through assistance in the establishment of sustainable industrial strategies which are appropriate to the specific features and priorities of the country involved. Assistance also has to be given to developing countries to improve the contribution of the productivity of factors of production in economic growth. There should be support for national efforts to ensure a successful transition towards the economy of knowledge.

Technical assistance activities should also be offered and training should be provided to those countries which need it most. For their part, beneficiary recipient countries should strengthen their own human resources, their own capacities, and their institutional framework, so that they can play a full and resolute role in development with good chances of success.

Finally, I would once again like to underline the importance of South-South cooperation as the best means of achieving the objectives we hope for, and I would confirm to you that Tunisia, as a member of UNIDO, is ready to fully share its experience and expertise with countries who so wish, and thereby provide a contribution to international and regional cooperation, which carries with it rapprochement between peoples and nations and which is a vector of mutual development.

Statement by Distinguished Speaker

Maïgari Bello Bouba*

Firstly, I would like to thank the Director-General for inviting us to speak during this Forum on industrialization, not only as a means of promoting development but also as an instrument for combating poverty and marginalization. I would like to apologize for not having prepared a written address. Nonetheless, I would like to take advantage of this opportunity to draw the Forum's attention to two sectors and two realities facing our economies, especially in Africa.

First, I would like to recall a few realities of our economies. Africa, as is well known, is the least developed continent in the world. Indeed, most of the least developed countries are in Africa. Africa is a continent in which more than 80 per cent of the population lives in the rural areas with a mainly agricultural economy. Africa is also the continent where around 44 per cent of the population lives below the poverty threshold, with an income of a few dozen dollars. But in addition, Africa suffers from social evils such as a low rate of school attendance, a lack of adapted technologies, and urban drift. In addition to these traditional woes affecting our continent, a profound crisis has compounded our problems in recent years as a result of our indebtedness, and this has forced most of our governments to accept structural adjustment plans conducted under the aegis of the Bretton Woods institutions – the IMF and the World Bank. When they are rigorously pursued, they have produced substantial results in terms of macro-economic recovery, especially in countries like Cameroon, particularly in healing the problems of public financing. But we need to acknowledge as well that these structural adjustment programmes have had too heavy a social cost, which has thrown even more of our population, especially young people, into activities where they can barely eke out a subsistence.

* Minister of State, Cameroon. This text is based on an edited transcript of the official interpretation of the speaker's original speech in French.

Now, faced with this, Africa has only one chance of getting out of this predicament and that is to place emphasis on productive activities, with special emphasis on industrialization. Indeed, we should welcome this fact.

We may note that even the IFIs, the international financial institutions, which had contributed to relegating industrial activities to the background, have now acknowledged that if development is to be genuinely promoted, if there is to be sustainable social development, then these productive activities need to be given the importance they deserve. Hence the welcome for the recent meeting in New York between these institutions and UNIDO to which the Director-General referred.

Industrialization should be able to allow our countries to increase their rate of growth to around 7 per cent per annum if we wish to bridge the gap between the population growth rate, which very often cancels out our efforts to bring about economic recovery, and the need to produce surpluses to promote and sustain growth.

But to achieve this result, industrialization must have the wisdom to interest itself firstly in two of the essential sectors of our basic economy. The first is agriculture. At the start of my statement, I recalled that most of our countries have 80 per cent of their populations living off the proceeds of agriculture. Agriculture is not only a source of income; it is also a way of life and indeed it is a culture for these people. Dealing with agriculture and giving it the means to develop thus implies promoting economic development while also fighting the social evils I referred to earlier, such as urban drift and the redundancy of the working population. In our countries, however, agriculture suffers from a dearth of technology. The farm holdings are often family-owned and small-sized, and in certain countries they face the problem of land distribution. So they are not in a position to call on high-tech equipment. Nonetheless, they can benefit from research results and suitable technology.

The second sector in our economy which warrants special attention is small-scale cottage industry. Most of our African countries are multi-ethnic and multi-cultural ones, which means that in each of these countries there is an enormous cottage industry sector which exists and which is surviving. Like agriculture, it can be both a source of income and a way of promoting the individual and our societies. We believe that if industry is placed at the service of modernizing the cottage industry, then this should be a promising avenue for the future. Very recently, a number of developed countries opened up their markets to African products, including African agricultural products and small-scale industrial products. This was the case with the United States, for example, with the African Growth and Opportunity Act (AGOA) signed into law by President Clinton in May 2000.

But both our agriculture and small-scale industry are hard put to benefit from these markets and possibilities, firstly because they lack financial resources; secondly because they lack the technology to enable them to mass produce their goods and to meet international standards and norms. That is why the recommendation of the last Congress of African Ministers of Industry in Yaounde, which had been preceded by the Third African Private Sector Forum, had rightly placed emphasis on the development of appropriate technologies on the one hand, and on the wise application of scientific research on the other.

These are the two avenues, which I hope will be given proper attention at this Forum since they can prove to be essential instruments in the fight against poverty and marginalization.

Before concluding, I would like to point out that in my country, Cameroon, the Government has not only been well aware for a long time of the economic and social importance of these two sectors, it has also taken the necessary steps to give all the importance, attention and resources which they need. Thus, my country has witnessed governmental reform, which has created a special Directorate responsible for small- and medium-sized enterprises, cottage industries and the informal sector in the reorganization of the Ministry of Industry and Commercial Development. We have also set up a Sub-Directorate for Standardization in order to help these sectors to work towards meeting the demands and standards of the global economy and to ensure that they can compete. Likewise, our Head of State has just taken an initiative to promote, as my colleague, the Minister from Tunisia has said, a creativity fair in Yaounde, which is currently underway. We have established technology days to encourage local inventors who often have quite ingenious ideas for developing our raw materials and our traditional technologies alike. We have also instituted a national week for the cottage industry.

Having said this, it only remains for me to welcome the initiative of the Director-General of UNIDO to establish UNIDO Exchange, which will be an irreplaceable forum for networking and will allow us to improve our exchanges.

Paper 1

Fostering Development through Trade and Industry

J. Denis Belisle*

Globalization, trade liberalization, and more of the same to come as a result of the successful conclusion of the 4th WTO Ministerial Meeting held in Doha, Qatar, three weeks ago, make it imperative for developing countries and economies in transition to join in the world economy in a manner that will benefit their populations. Trade and industrial development represent powerful tools to do so, indeed powerful tools for development. To put these tools to work, the developing world has to become more competitive and more aggressive in world markets, and small and medium-sized enterprises (SMEs) are key players in this respect. My remarks today will touch on steps that SMEs, their business institutions and governments should take in this regard. They will focus, in part, on the contribution that UNIDO and ITC can make to help the developing world fight poverty.

I will make three points. I will first comment globally on trade and industrial development as tools for fighting poverty. I will then outline growing opportunities for collaboration between UNIDO and ITC. Finally, I will comment on technical assistance in the area of technical barriers to trade and sanitary and phytosanitary measures.

Trade and industrial development

Before globalization, local factories were shielded from imports through high tariffs and quota restrictions. They could then concentrate on the domestic market. They could sell even when inefficient and this inefficiency was passed on to consumers. Jobs were created but poverty was increased through higher prices for goods and the economy was weakened by non-competitive firms. Following trade liberalization,

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local goods now compete with imports. Countries export in areas where they are more competitive. This leads to more job creation, more foreign exchange and, indeed, to poverty alleviation.

Contrary to the apprehension of some that trade and globalization harm the poor, numerous reputable economists and trade experts have provided evidence that openness to trade leads to faster economic growth and net improvements in basic social indicators such as education, life expectancy, infant mortality and even water quality. A globally integrated economy leads to a better division of labour between countries. Low-wage countries specialize in labour-intensive tasks while high-wage countries use workers in less labour-intensive ways. Firms exploit economies of scale, and capital moves to countries offering the most productive investment opportunities. More and more investors from industrialized countries are setting up factories in developing countries with a comparative advantage for labour-intensive industries.

Developing countries can leapfrog their development process by targeting multinational and other companies which outsource part of their production requirements. For many of these countries, attracting foreign direct investment (FDI) is the most rapid way to acquire new export capacity of international competitive standard, to obtain immediate market access, and to generate dynamic competitive advantages. From a poverty reduction perspective, however, it is important that FDI has a positive effect on the income and employment of the poor and on the prices of what they consume. It is also important that FDI results in the transfer of skills through training and that it helps developing countries to participate in international production and distribution networks. Chile has done very well in this regard. It has attracted FDI, which has had a major impact on its export capabilities, especially in sectors that require large amounts of capital, such as copper and cellulose, and trade support industries such as energy and telecommunications.

Developing countries have to be attentive to creating a competitive FDI and export environment if they wish to attract FDI into export-oriented production. Such an environment includes adequate investment incentives, a stable foreign exchange regime, the possibility to repatriate capital, access to foreign exchange, and international competitiveness.

The poor of developing countries are often located in rural areas and employed in agriculture. Consequently, how trade reform affects agriculture will critically affect its overall impact on poverty alleviation. While meeting the standards and rules of origin requirements imposed under preferential arrangements granting duty-free

access represents a major challenge for LDC farmers, the mere size of the export markets provides them with big incentives to increase their production for those markets. Targeted FDI for improving yield and transforming crops into processed foods prior to export will, of course, bring additional opportunities for growth in LDCs. Investment promotion agencies should focus their efforts on areas where agricultural products can be processed further and where access to developed countries' markets is guaranteed. One such area consists in exporting organic produce (grain, coffee, tea, cotton) to the European Union and America. Demand is high, and keeps growing, but products marketed as "organic" have to meet demanding regulations.

Countries which have liberalized their markets have done better than those which have not. Chile (mid-1970s), China (1978) and India (1991) have all performed considerably better after than before trade reform. An ITC study entitled Development through Trade: a Cross-country Analysis of the Correlation between Trade and Human Development Indicators, published in 1999, shows a clear positive correlation between trade exposure (level of per capita exports and imports) and the human development index (HDI): the greater the trade exposure, the higher the HDI ranking, everything else being constant.

Let me conclude this point by mentioning the ITC Export-led Poverty Reduction Programme, a programme which lays out a strategy for harnessing the entrepreneurial capacity of producers in poor communities in developing countries and for linking this capacity to exports. The aim is to create new job and income opportunities, leading to economic and social development. This programme benefits the poor directly by ensuring that economic growth trickles down to them automatically. The programme aims at supporting poor communities in producing export-oriented products, enhancing the skills of support institutions and NGOs, and promoting export marketing links for poor producers.

Two examples. The first one comes from the Bangladesh handloom sector. Grameen Uddog, an NGO, has pioneered and promoted opening up the world market for traditional handloom workers of Bangladesh by providing assistance in quality improvement, product development and market testing of new designs. This has helped to alleviate the poverty of thousands of handloom weavers and helped to preserve their cultural heritage. The second involves Export Production Villages (EPVs) in Ghana. EPVs were started in several districts of the Brong Ahab region to rehabilitate cashew nut production for export. They resulted in the employment of more than 225 people and an output of 10 metric tons.

ITC and UNIDO

With regard to collaboration between ITC and UNIDO, my second point, UNIDO's expertise in productive capacity building complements very well that of ITC in the promotion of exports. UNIDO assists enterprises to produce efficiently whereas ITC helps them to market successfully. While both organizations have collaborated timidly for a long time, a new cooperation agreement, signed in August 2001, will greatly facilitate the development of joint projects to satisfy the needs of firms to produce efficiently for the global market.

The competitiveness of small and medium-sized enterprises (SMEs) will be enhanced by, among others, combining UNIDO's approach to continuous industrial improvement under its Quality and Productivity services with ITC's generic tools and services under its Programme for Competitiveness Improvement of SMEs. Linkages will be developed between ITC's "Market News Service" and UNIDO's enterprise-oriented programmes in sectors such as food processing, to improve the transparency of market places for goods with export potential produced in developing countries. Cooperative linkages between UNIDO and ITC programmes in the area of standardization, quality assurance, accreditation and metrology (SQAM) will lead to concrete measures to enable SMEs in developing countries and economies in transition to take advantage of their rights under the WTO Agreements on Technical Barriers to Trade (TBT) and and Sanitary and Phytosanitary Measures (SPS) to maintain and improve market access.

TBT and SPS

My third and last point focuses more directly on technical assistance work in the area of TBT and SPS, something you will hear more about in the second panel discussion on "Global norms and local manufacturing, challenges and opportunities". Let me illustrate with a few specific examples how ITC goes about awareness creation and capacity building in this area.

A regional project we conducted for the Arab region between 1997 and 2000 resulted in substantial awareness creation on the implications of the WTO Agreements on TBT and SPS in the business community and in the establishment of several standard information services and WTO enquiry points for TBT and SPS. Consultancy missions provided advice on the implementation of these two agreements.

Together with WTO and UNCTAD, ITC is also assisting seven African countries under JITAP, the Joint Integrated Trade-Related Technical Assistance Programme for selected African countries to strengthen or to set up their national enquiry points under the TBT Agreement. This enables them to provide information on export market requirements to their exporters more efficiently. Furthermore, assistance is being provided to the national enquiry points for creating their national databases on technical regulations and standards so that they can be in a better position to meet their obligations under the TBT Agreement to provide answers to exporters to their countries.

With the Commonwealth Secretariat, ITC is currently implementing a joint project to determine the technical assistance needs of developing countries in the areas of TBT and SPS. Countries have to use international standards as a basis for their technical regulations and SPS measures but many developing countries are unable to participate effectively in international standardization activities. Furthermore, it is a difficult and costly process for exporters to meet these requirements and to demonstrate compliance with them in the absence of an adequate standards and conformity assessment infrastructure. Case studies have been conducted in six countries to identify the technical assistance needs for, inter alia, developing standards for products of export interest and strengthening the national infrastructure for conformity assessment; and to examine the problems and difficulties encountered as a result of technical regulations and SPS measures applicable in the main export markets. The output will be a joint COMSEC/ITC publication on TBT and SPS. The results of the case studies will be disseminated through regional workshops. They will also lead to more focused technical assistance.

Finally, let me mention the *Exporter's Guide to Quality* book about to be published in the ITC Trade Secrets Series. The book will provide answers to the most frequently asked questions on standards and conformity assessment, particularly in relation to trade. ITC will cooperate with partner organizations interested in customizing this publication to the specific context of their countries.

This, indeed, is just the tip of the iceberg and I can only hope that together with UNIDO, we will be able to satisfy a greater share of the immense need for technical assistance in TBT and SPS to enable developing countries and economies in transition to improve market access for their manufactured goods and agricultural products. This should make a visible contribution to poverty reduction.

Paper 2

Investment, Technology and Development

Ibrahim Fawzy*

The Second World War left the world divided into two separate camps with two distinctly different ideologies, namely the Eastern Bloc led by the Soviet Union and the Western Bloc led by the United States of America. Most of the Third World countries were occupied by western forces and their economies were manipulated according to the convenience of the occupying countries. Their independence was associated with a tendency to move nearer to the Soviet Union and to follow its model of development through the governmental central planning style, which mostly relied on projects by governments either directly or indirectly through what emerged to be the public sector. They were keen to enhance the spirit of independence and national sovereignty by shifting away further from the Western countries and nearer to the Eastern camp where they found more governmental support, easier direct aid and deeper sympathy for their needs.

By the beginning of the 1980s the Soviet Union started to move towards the free market economy through gradual stages until it was dismantled to leave behind a number of newly liberated States in Eastern Europe and Asia. All those rapid developments had their impact on the Third World countries. Not only did they lose their traditional ally, the Soviet Union, but they also had to live up with a new world order which operated in the free market style with no sympathy for any special circumstances of less development, less education or less funds.

After the fall of the Soviet Union and the emergence of the newly emerging countries of the Eastern Bloc the west reduced its loans to the third world countries. Each government had to undergo a painful structural reform programme in order to qualify for any loan. The structural reform had many aspects, the most important of which was to reduce the governmental grip on the economy and to give way to private individuals and companies to operate instead of the governmental organizations. World statistics showed

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that loans dropped from 80 per cent of worldwide flows during the years 1978-1981 to only 20 per cent during the years 1990-1995. Foreign direct investment increased from 11 per cent to 36 per cent in the same periods.

This change presented a strong challenge to most of the governments in the Third World. It meant that they had to address their people with a new language contradicting all their previous preaching. Suddenly the private sector was hailed as the important partner in development who should take over the governmental projects to ensure their viability. Foreigners, after being suspected for many decades, were not only encouraged, but were also enticed and given a special welcome with new laws and legislation. Customs barriers, which were introduced to protect the indigenous industries, were reduced to encourage international trade and so on.

It is believed that these changes do play an important role in the development of the Third World. Paving the way for investment along the contemporary guidelines and the new principles is not an easy task. Some well-established dogmas have to change in such a severe manner, which means not only abandoning them but also adopting their opposite. It is also important to foster the new investment culture until it is accepted by the wider sector of population and employees. Setting the new legislation to prepare the environment is necessary but the implementation of these new rules is just as important. People will feel the change only when they practice the implementation, and bad implementation can remove the advantages of any new law no matter how good it may be.

Now how can a Third World government go about these challenging changes to secure an attractive environment for investment? Some key principles must be adopted and fostered through the population on the widest possible scale. These principles are discussed in the following section:

- The government must withdraw from the direct production activities and concentrate on general services. The private sector must be encouraged to run economic productive activities. It must also be given an increasing room to operate. The reason is simple: the governmental management system with its flat rules is no longer suitable for the contemporary industrial units. In many countries of the Third World the management system does not allow for rewarding special talents or marked initiatives which are vital for competition. Seniority is usually assigned to people with longer service periods and governmental auditing agencies are more of a hindrance than help.

- Although people and their welfare must come at the top of the priority list of any government, social objectives should not be a target by themselves in any industrial

project. The project must be planned and run according to economic and financial measures alone and social results will follow as an important product for any successful project.

- Capital has no nationality. Foreign investors must always be treated in the same way as national investors. In the old days foreign investors were always treated with suspicion and accused of profiteering and exploitation of national resources without the fair payback to the country. Recently the foreign investor usually comes with special expertise in production technology and management, and up to date knowledge of international markets and/or, access to international funding and finance.

- The benefits to the country are not confined to taxation and customs duties. These two areas have been traditionally targeted whenever an increase in government income was needed. It has now been widely accepted that the contribution of a successful project into the society is much more important than any increase in taxation or custom revenues. This point is very important and represents a real challenge to most of the Third World countries. People have been brought up on the traditional concepts and special efforts are always needed to convince them of new ones.

- Competition has now become the name of the game. Almost all the countries are now competing internationally to attract investors by offering special incentives. Each government must keep watching out for what other governments are offering so that it does not find itself left behind.

- Bureaucracy and corruption are most feared by investors, local and foreign alike. They must be fought continuously by reducing the red tape and by training the governmental staff.

- The governments must concentrate on improving the infrastructure and securing the necessary services like roads, electricity, communications, etc. They must also pay utmost attention to health, education and training.

- Incentives offered by the Third World countries have traditionally been "negative" in the sense that the government abstains from charging the investor the full taxation or the full customs or even exempting the investor completely. In many developed countries the incentive have been "positive" in the sense that the government contributes by the actual payment toward the initial cost of the projects.

Special industrial zones or free zones are very effective in enhancing development through attracting the projects into a special environment that can be adjusted much faster than the rest of the country. Governments, which need to see a quick result, must invest in them. They provide the investor with a protected haven in which he can operate with the minimum amount of problems and obstacles.

The above points all have a general nature. Specific fields have more specific aspects and must be addressed accordingly. The garment industry for example is different from mining, furniture-making or forestry. There is no harm in treating some fields with certain priorities. In deciding the importance of any specific sector special attention must be given to assessing the market. Marketing of the products, whether locally or internationally, is the most difficult challenge and should always be kept in mind for all planners for development.

The message in the above points is clear. Marginalization of developing countries can be avoided by adopting the new concepts of investment and also by reorganizing the whole society to gear up with the world trends. Changes are taking place very fast in many countries of the developed world and what is available now may represent a chance that may not occur again if not grasped on time as soon as possible.

So far this paper has only covered two parts of its title, namely Investment and Development. What about the third one: Technology? This is now the subject of many studies and comments and is generally hailed as the saviour from all problems. It is common to see papers about advanced technology, appropriate technology, intermediate technology, adapted technology and so on. It is also common to see papers discussing transfer of technology, acquisition of technology, developing technology, indigenous technology and other related topics. The traditional approach on handling technology issues was concerned mainly with the role of government to enhance technology adoption and whether it could be best achieved by incentives or by guidance or by direct interference to impose what is acceptable and what is not.

Experience in Third World countries has shown that all these approaches are not effective. The reason is that related studies and proposals are usually carried out by governmental committees that have limited or no industrial experience. The studies therefore tend to be more theoretical or influenced by what happens in advanced countries, and are not appropriate for implementation. In the context of the modern approach to investment and development the private investor is the main player in the field. He is the one who has the initiative and who accepts the challenge of investment by risking his own money. Naturally, he will be more concerned than any governmental committee about the success

of his project. He will therefore be most qualified to judge the most suitable technology for his project. Technology should not be treated as a target in itself but rather as a means to maximize the positive contribution of the project. In this respect success is the key issue. Projects can be successful with intermediate technology just as well as they are with advanced technology. The government can only play an enticing role by special incentives and guidelines to protect the environment against any harmful emissions or by-products. The degree of advancement of the technology used in any project is better left to the investor according to his own capabilities and experience.

Information technology and its related fields in computers, communications and the Internet is a special field by itself and all governments should save no effort to provide the infrastructure for this new technology which promises great chances for new fields in achievements and employment. It is also important for the young children at schools because it helps to orient their way of thinking to absorb the information technology in a very fast and efficient way.

So far this paper has presented a general discussion to emphasize some contemporary new concepts that are still debated and argued in some countries that are seeking to reach a compromise with the old concepts. We now present some points of direct relevance to the countries of the Third World in order to help them against marginalization in the present fast changing world.

- The government must issue legislation to ensure an attractive and enticing investment environment. This is vital to encourage the private sector to operate and to expand through existing and new projects. Special attention should be devoted to implementing the new rules and legislation with existing investors. When they are satisfied more investors will join. The government must show serious attitude towards encouraging the private sector to embark on investment projects and must also show sympathy and support to help in overcoming problems and obstacles.

- Preparing the new environment will take time while the world is changing rapidly. For this reason it is very appropriate to prepare a special processing zone or a public free zone that can be prepared with infrastructure and the appropriate facilities for the new projects. In this case the government ensures the presence of a protected zone where projects could gear up with the worldwide market in a relatively short time.

- In dealing with the existing public sector projects during the reform stage there is a tendency to start with the worst projects to improve their performance

before selling it to the private sector. This approach has been found lengthy and not guaranteed to reach the targeted goals. Another method is to start with the more "promising" projects. These are projects that are operating reasonably but not showing impressive results. With moderate effort these projects can be turned from loss to profit or from a small profit to a large profit followed by expansion. This provides tangible results for the government and for the people. These results produce reassurance and confidence in the governmental reform programme.

- Hard currency has always been a problem in all programmes of transition to a free market economy. Experience has shown that not even the rich governments of developed countries can afford any problems of hard currency. Naturally, each country will have its unique circumstances but it is worthwhile to remember that moving with the market forces is the best policy. It is also important to emphasize that facing hard currency problems may require steps to support production processes rather than just to adjust the rate of exchange with the national currency.

The first two points above may require assistance from some world organizations like UNIDO. We have witnessed in recent years that developed countries are pushing to start a world consensus on harmonization of investment incentives. If this move is successful, then incentives in Africa will be the same as incentives in Europe. This will be extremely unjust for Africa. Incentives in Africa are a substitute for the lack of so many things that are inferior to those in Europe such as education, training, infrastructure, transport, customs...etc.

Another international move is being gathered to prevent countries from having special processing zones or special free zones on the account that is gives a hidden subsidy to the products inside them. Again this will be totally unjust for Africa. European countries give state aid sums to industrial projects and African countries are not as rich. In 1995 the state aid in European Union countries reached US$ 49 million, which is very large by African standards. Here again help is needed to alleviate these unjust moves.

The developed countries must realize that it is in their interest to stabilize the economy in less developed countries. Such stability will benefit everyone. Also its absence will hurt many people. A chance lost today may never come back in the future. Poor and less developed countries do not have the needed strength to face moves of the rich countries. Organizations like UNIDO have a great responsibility and can offer great help, which is badly needed.

Traditionally, UNIDO has worked with governments more than it has been with the private sector. Recent years show a greater tendency on the part of UNIDO to work with the private sector. This tendency must be pushed further. It may be convenient to form, for each country, a joint committee including the government, the private sector, UNIDO and some relevant multinational companies to prepare an interim action plan for the country and revise it periodically. It may also be useful to form an international fund to help the poor countries in providing the appropriate investment environment inside specially assigned zones which could later serve as models to be repeated after their success. The cost may be seen as high by some people but the benefits are certainly worth taking the risk because there is no alternative. The world cannot go on neglecting its poor member countries. Rich countries have a responsibility and are expected to act. We pray to God that their action will not be too late!

Paper 3

Technology Acquisition and Mastering for Development

Masayuki Kondo*

Technology for growth and environment

The importance of technology for development is widely recognized. Technology is the key to international competitiveness and economic growth. Of the four inputs to production – capital equipment, raw materials and energy, labor and technology – technology is the only one that is not physically limited. In industrialized economies, many studies have shown that more than 50 per cent of long-term economic growth stems from technological changes that improve productivity and lead to new products, processes or industries.[1] In the East Asian countries, productivity growth, the best proxy for technology progress, accounted for as much as 30 per cent of gross domestic product (GDP) growth.[2]

The importance of technology is well understood when considering a production function. This function omits raw material as an input and takes value added as an output. Technology is the only source of output increase without increasing capital or labour as inputs.

$$dY/Y = dT/T + a\, dK/K + b\, dL/L$$

dT: total factor productivity increase (technology progress)
dY: output (value added) increase
dK: capital increase
dL: labor increase
a, b: coefficients where $a + b = 1$.

Technology is also vitally important for the world from the environment standpoint. Technology development saves energy and resources through productivity improvement and quality improvement. This will lead to the reduction of greenhouse effect gases and

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[1] See Kim (1997).

[2] See World Bank (1991), page 88.

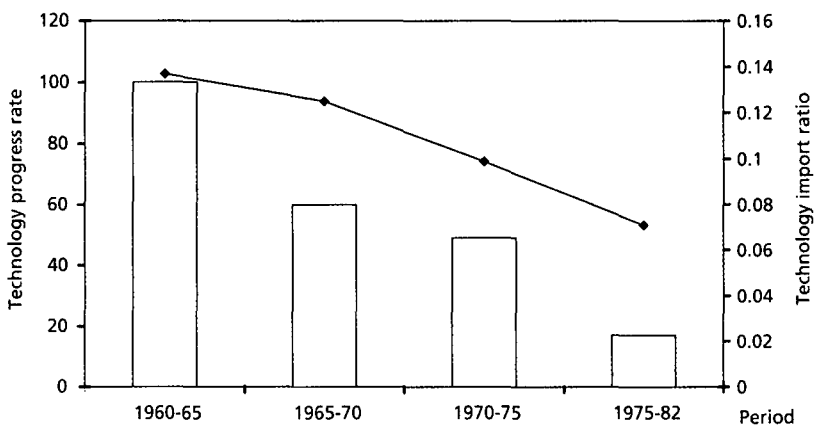
will realize sustainable development. Productivity improvement directly reduces energy and materials to produce the same amount of products. Quality improvement reduces energy and materials by reducing the number of defects and readjustment in the production process. Quality improvement reduces losses after shipment as well as by avoiding the transport of defective products, the checking of products by the customer and the assembling of products containing defective components.

Great potential for developing countries

The good news for a country undergoing industrial development is that it has a great potential to make technological progress. Technological progress is rapid at the early stages of economic development.

In Japan, the rate of technological progress, or the total factor productivity growth rate, was high in the early 1960s when Japan was developing, and fell to one seventh of that in the late 1970s and early 1980s as its economy matured (figure 1).[3] This fact implies that technology strategy needs to be modified according to the stage of development.[4]

Figure 1. Technology progress and technology imports in Japan



Sources: Technology progress rates: MITI (1988).
Technology import ratios: Author.

[3] See Ministry of International Trade and Industry (1988), pages 11-13.

[4] Technology strategy changes as a country develops. See Kim and Dahlman (1992) and chapter 5 of Kondo (1998).

In Japan, the role of technology imports was large in the early stage of its economic development and diminished as it developed. In the early 1960s, payments on imports of technology accounted for 14 per cent of total technology expenditure, which was the sum of domestic R&D expenditure and technology import payments; however, it decreased to 7 per cent in the late 1970s (figure I).[5] It was lower than 3 per cent in 1998.

Technology acquisition from overseas, in the form of technology imports, plays a more important role at the early stages of economic development than at the later stages, while domestic technology development increases its importance as an economy develops. Many developing countries largely benefit from importing readily available technologies from abroad to complement their technological capability. As latecomers, they can use already-established technologies existing overseas.

Technology acquisition means

To acquire technology from overseas, different countries adopt different means such as foreign direct investment (FDI), own equipment manufacturing (OEM) and licensing. For example, Japan mostly used licensing and technology services, Taiwan Province of China used OEM and other types of subcontracting, and Singapore and Malaysia used FDI.

There are clear differences among those means of acquisition. Each of the three means has both advantages and disadvantages (table 1). FDI requires only basic skills and brings in capital, management skills, market linkages and technology. To start industrialization, FDI is the easiest way to enter an international market, although basic infrastructure and political and macroeconomic stability are needed. However, management decisions are entirely in the hands of the foreign investors, who may be foot-loose. If labour costs increase, FDI may move to countries with lower labour costs. FDI usually does not invest in deepening the technological capacity of local subsidiaries unless local subsidiaries become world centres of some products.

[5] See JITA (1986), page 9. Technology import payment is only for patent licensing, know-how transfer and technology services.

Table 1. Comparison of means of acquisition

	FDI	*OEM and subcontracting*	*Licensing*
Assets acquired	*Capital* *Management skills* *Market linkages* *Technology*	*Market linkages* *Technology*	*Technology*
Required capacity	Basic	Middle	Advanced
Risk of entry	None	Low	High
Degree of subordination	High	Middle	Low
Profitability	Low	Low	High
Growth possibility	Low	Middle	High

OEM or other types of subcontracting are widely used to acquire technology and market linkages. OEM involves various levels of technology transfer from the provision of blue prints and specification of products only to the provision of production machinery, know-how, key inputs and worker training. OEM accompanies licensing in many cases. Subcontracting in Japan is sometimes accompanied by financing as well as technical assistance. Assembling firms sometimes provide financing for new production equipment to produce parts for them.

OEM requires existing companies to possess capital and management capability including production management capability.[6] Since markets are provided, the risk associated with starting a business is small, but profit margins are also small. The management decision of a subcontractor has a large effect on the management of the supplier ("subcontractee"). An OEM manufacturer has an incentive to move to ODM (own design manufacturing) and OBM (own brand manufacturing) to increase profit margins and gain management autonomy. The possibility of future growth is fairly large.

Licensing brings just technology. Sometimes licensing just involves paying royalties. A firm is capable of producing a certain product without further information but it has to pay royalties because of a patent right owned by the other firm. Licensing requires high management and technology potentials for licensees. Although licensing often offers more elaborate technical assistance, a licensee must have or create a market access and bear the entire business risk. If a licensee markets products successfully, its profit margin is large. Since a licensee possesses management autonomy, it has a great incentive to make efforts to develop technology and a high possibility to grow.

[6] See Hobday (1997) for benefits and disadvantages of OEM/ODM in Republic of Korea.

The choice of technology acquisition strategies differs depending on the technology capability of a recipient country. As noted above, FDI requires the lowest technology capability and management resources; licensing requires the highest technology capability.

Mastering imported technology is, however, not easy. It took a longer time and required higher R&D costs to develop a new product with imported technology than with in-house technology in Japan, though revenues from new products with imported technology were large. It took, on average, 2.50 years and 680 million yen at 1963 prices to develop a new product with imported technology, whereas it took, on average, 2.35 years and 170 million yen with in-house technology (table 2).[7]

Table 2. Costs of developing a new product using imported technology and in-house technology in 1963

	R&D expenditure per product (100 million yen)	*Time required (years)*
Imported technology	6.8	2.50
In-House technology	1.7	2.35

Source: AIST, White Paper on Industrial Technology (in Japanese), Jitsugyo Kohosha, 1963.

Japan's experience demonstrated that technology imports must be accompanied by domestic R&D to assimilate the imported technology. In Japan, domestic R&D expenditure paralleled the increase of technology imports from the early 1950s.[8] Domestic R&D does not mean scientific research conducted in universities or national research institutes. It means, rather, to experiment in firms with what technical documents state, changing some parameters or downsizing the scale of plants to adapt imported technology to domestic conditions. It means to experiment with ideas like Columbus' egg to make incremental innovation based on imported technology.

In the initial industrializing phase, R&D is needed for assessing and selecting foreign technologies to be imported. This role is expected for public research institutes to play making use of their international connections, though they sometimes conduct research for themselves isolated from industry. Public research institutes and universities are

[7] See Agency for Industrial Science and Technology (1963), page 11.

[8] The correlation coefficient was 0.9848. The data were obtained from JITA (1986), pages 6-8.

expected to assist firms to solve their technical problems or refer them to specialists in other institutions. Equipment suppliers and input material suppliers are also helpful in solving technical problems.

Easier access and quicker mastery of sophisticated technology

Technology development has changed the market situation. Because of the development of information technology, communication technology and transportation technology, we now live in a borderless economy. We can easily access information on the best readily available technology.

Some types of innovation are not carried out by current dominant producers. Radical innovation occurs in different industries from the industry that produces a dominant design product. Disruptive innovation is carried out by outsiders and newcomers. This phenomenon increases the suppliers of new technology.

The speed of technology development has been accelerated and the nature of technology has become more science-based. Thus, companies need to invest increasingly in R&D. Some companies alone invest more in R&D more than some developing countries. Thus, a large stock of technology is accumulated in world industry.

These facts indicate that a large stock of technology exists and it is easily accessible.

Moreover, it is quicker to master sophisticated technology these days. Since globalization brings inputs from all over the world, technology needs to be independent from local inputs. Since globalization results in global production, technology needs to be independent from local operating conditions. Technology is standardized and almost no local adjustment is needed.

In the case of steel mills, Japan, on the one hand, struggled to modify imported technology in the early 20th century because that technology was not intended for Japanese coals but British coals.[9] On the other hand, Republic of Korea had few problems in importing sophisticated technology in the 1980s.

The other factor that makes mastering sophisticated technology quicker is that much of tacit knowledge has changed into codified knowledge these days. As shown in table 3,

[9] See Sato (2001).

knowledge is codified if it is expressed in a digital form or in software or is science-based. It is tacit if it is expressed in an analog form or in hardware, or is skill-based. Since high technology contains embodied codified knowledge, it is hard to develop but easier to use. Using a microwave oven is easier than using a cooking stove and firewood.

Table 3. Knowledge classification

	Codified	Tacit
Form	Digital	Analog
Medium	Software	Hardware
Base	Science-based	Skill-based

Enabling environment and technology strategy for development

The opportunity of technology development is widely open to any country. If a country starts technology development, it will encounter less difficulties than its predecessors did. However, unless a country takes action, others will take action and develop quickly.

In order to promote technology development, an enabling environment for technology development is needed as a prerequisite. This enabling environment includes macroeconomic and political stability, an internationally harmonized trade policy, a sound human resource development policy, etc.

In addition, a country technology strategy is needed. To formulate such a country technology strategy, a review of the national technology capabilities, systems and policy is required.[10] In this review and strategy making, UNIDO, as an intellectual organization, can assist developing countries to a large extent.

In implementing a country technology strategy, UNIDO is also expected to make contributions in cooperating with other international organizations and countries.

[10] For example see Kondo (1999) for Malaysia.

Concluding remarks

We understand that technology development is critical for economic development and environmental protection. We also understand that technology development is easier than before. It is easier now to have access to the best technology in the world because we live in the age of globalization. Moreover, it is easier now to master technology because of the sophistication of technology.

The opportunities for technology development are wide open to any country. However, domestic efforts are needed to make use of these opportunities based on a solid technology strategy. With such efforts, we can develop technology. To survive and prosper, we need to be globally competitive through technology development.

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Paper 4

A UNIDO Approach to Fighting Poverty

Yo Maruno*

Today's globalization has introduced a new dimension in the age-old struggle to reduce poverty. It is supposed to reduce poverty through the sheer influence of market forces. However, these claims should be tested against earlier forms of globalization. A historical perspective is necessary to understand the growing inequality in the world economy and, in turn, for UNIDO to formulate an effective response. First let me spend just three minutes very quickly on a historical perspective of globalization.

At the end of the nineteenth century globalization came in the form of Pax Britannica. With the dominant industrial base, Britain provided the institutional drive for a global trading order spread by immigration to the New World and the British colonies. The first modern era of globalization was driven by new technologies, such as the steamship, railway and telegraph. An age of perpetual political and economic stability seemed to have arrived. However, in 1914, the Golden Age came to a sudden end. The First World War destabilized the global economic and political order. The United States withdrew into isolationism and protectionism. Shockwaves followed in the form of the 1929 New York Stock Market Crash, which triggered the Great Depression and helped to lead to the Second World War. Out of that came the stand-off between the world superpowers, finely balanced on the threat of mutual nuclear destruction.

Following the disintegration of Soviet influence, the United States emerged as the sole superpower at the end of the 1980s. This reaffirmed Pax Americana. Deregulation of world trade and the creation of the WTO institutionalized the second modern era of globalization. This time, it was driven by technology in the form of Internet capitalism and virtual business.

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The last decade believed that it was living through a perpetual economic boom. The lesson of 1929 became a distant memory.

No sooner had the new millennium dawned, but the second Golden Age also came to a sudden end.

Beginning in September 2000, US-led growth started to fade when the NASDAQ lost two-thirds of its value within a year. On 11 September 2001, instability rocked the second age of globalization to its roots. Pax Britannica, Pax Americana – the parallels between these two eras are very striking. They are based on an institutionalized trading order backed up by industrial and political power. Technology was central as a driving force for industry and trade. Both needed the combination of people, business and technology to carry their new economic order throughout the world.

We all know that instability has to do with inequality. At the height of Pax Britannica, between 1820 and 1910, economic inequality between countries increased. But between 1910 and 1960, inequality declined. At the ascendancy of Pax Americana between 1960 and 1992, inequality again increased. Can stability continue in a world of growing economic inequality? Adam Smith answered this question two centuries ago: "In modern times, the poor find it difficult to defend themselves against the opulent".

Everyone knows the United Nations Millennium Declaration. UNIDO's mandate is central to achieving the goals of the United Nations Millennium Declaration because UNIDO is in the mainstream of the fight against poverty. Industrialization is the main driver for growth and productivity. The importance of industrialization to poverty reduction is undeniable. The Director-General referred to these facts – therefore, I will not repeat them. Without an industrial base, LDCs have lost out on the long-term growth opportunity offered by globalization.

UNIDO takes a twin approach to fighting poverty. It assists both the small number of developing countries gaining from globalization and the majority that are falling behind. As the Director-General mentioned in his opening speech, UNIDO recognizes the need to help those countries that are gaining from globalization but due to time constraints, I would like to focus today on the poorest nations.

For the large majority of developing countries left behind by globalization, globalization means foremost a heightened exposure to external risk. This risk will not be reduced simply by trade liberalization. These countries require assistance in constructing the basic building blocks for industrialization. UNIDO provides them with services, for

example, to increase the technical skill levels of the poor; to support domestic-oriented firms that provide local goods to meet the demands of the poor; to enable domestic markets to meet international competition in manufactured goods.

I would like to introduce four concrete examples to illustrate UNIDO's services.

- The success of UNIDO's programmes can be, or should be, gauged by its impact on industry and eventually on clear-cut poverty reduction. In the home of India's Taj Mahal, in Agra, air pollution from coal-fired iron smelters threatens not only one of the wonders of the world, but also threatened 100 local foundries employing 10,000 workers when the Indian Supreme Court ordered them to clean up or close by 31 December this year. Through UNIDO's International Centre for Advancement of Manufacturing Technology, to which the Secretary of the Industry Ministry in India referred yesterday, the foundries have been upgrading their production technology to reduce pollution. Their future, plus 10,000 jobs and the Taj Mahal, will be saved. The people of Agra will have a healthier environment.

- In 1998, more than half a million persons were earning their living from the Nile perch fishing industries around Lake Victoria. Two hundred thousand lost their jobs when the European Union banned imports of Nile perch on safety grounds in 1999. Production in the surviving processing plants dropped to 20 per cent of the former capacity. UNIDO responded by providing an integrated package of services to build local capacity for fish safety and quality assurance. Exports to the European Union have now returned to their former level. New markets, including the United States and Japan, have opened up, even through the Internet. Processing plants are operating at full capacity today, and employment has returned to pre-1999 levels.

- Africa's slum and squatter settlements are expected to double within 25 years. Africa spends US$3 billion annually on imported building materials, with their prices in some sub-Saharan countries having increased eight-fold during the last 15 years. This still falls short of meeting Africa's housing requirements. When UNIDO brought low-cost construction materials technology from India to a trade exhibition in Tanzania, local entrepreneurs only spent US$52,000 on simple machinery to recycle agricultural and industrial wastes into building materials. The new approach has created 100 skilled, 220 semi-skilled and 600 unskilled jobs, totalling 920 people. Lower building material costs make cheaper housing possible for the poor.

- Most of the population of the Solomon Islands is living in rural areas, where incomes are low and job prospects are very poor. The resultant migration to urban

areas is creating a new class of unemployed, since jobs there are very difficult to find. UNIDO provided capacity-building services by training of support organizations to help small-scale entrepreneurs. Advice was provided to overcome bureaucratic hurdles to private enterprises, land tenure and access to credit and information. Local communities were helped to set up a processing capacity for local raw materials. The project made a significant impact through creation of sustainable income opportunities and 1,000 jobs.

Recently, the President of Senegal has said: "There is no free trade without fair trade". UNIDO's guiding principle is to provide developing countries with services whereby they are able to have a fair share of the wealth generated by a more equitable and stable global system. Globalization alone will not integrate poor countries into the mainstream of world trade.

UNIDO's approach to industrialization is to ensure that trade liberalization and market forces become effective weapons in the fight against poverty. Industrial support services are essential if poor countries are to sell their manufactured goods and become part of the global marketplace.

As the Director-General said at the opening speech of today, rather than alleviating poverty through direct aid that normally comes from the international community, UNIDO's services build the basis for modern industry and, in turn, sustainable economic growth. UNIDO's focus should be on those countries left behind in the globalization race.

Paper 5

Special Contribution to the Discussion

Kandeh Yumkella*

I was asked to be on this panel to provide a little bit of realism to the debates, because as a Field Representative for UNIDO I would claim that one is on Ground Zero, or the epicentre of poverty, in a region where poverty prevails heavily. One therefore wants to give some reality to the discussions and presentations that have preceded my own intervention.

I think the first reality one should emphasize relates to the comment made by Professor Fawzy who says, indeed, that the biggest problem we have in dealing with poverty is time. People at the country level, at Ground Zero, want to see results, and so the leaders, whether in the private sector or in the political arena, face this constraint of time. They are pressed to show results.

Let me give you some vivid pictures of some of the impacts of globalization or the lack of productivity in some of the manufacturing industries that the Director-General referred to earlier. Two months ago, we sent out a consultant to look at the tanneries in northern Nigeria. Twenty-eight tanneries existed five years ago, today there are about 17. Out of these 17, probably only seven are functional at 40 per cent capacity.

Textiles – the textiles sector employed over, probably, 700,000 employees. It is estimated that in the last three years about one third of these have been laid off because these textiles firms are all in trouble.

But a most striking statistic in the subregion is that we are graduating three to five thousand youths from high schools, universities and polytechnics every year. Where are the jobs for the people? You go to the cities – this is one of the most critical problems faced

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by many African countries: The growing number of unemployed urban youths. They will become the foot soldiers for rebellions in most of these countries. The question here is, how do we create the necessary jobs? Not any jobs but sustainable jobs.

This is where industrialization comes in, and you see this vividly in the case of Nigeria, where the President has said "We have done well with macro-stability in the last four or five years. We have done well with having democracy. The challenge we have is how do we expand our production to create jobs for the youth?" So they have launched their own initiatives, a bank of industry with an initial capitalization of $50 million. They have launched an initiative in which all commercial banks have said "we'll put aside 10 per cent of our pre-tax profit to create new SMEs, to create jobs for the youth".

So the question is sustainable jobs, not creating a job and there is no job tomorrow. It is creating a job that is sustainable for these youths. When people are educated from high school or polytechnics or university, they do not go back to the village. They stay in the city. I am not even talking about rural poverty yet, I am talking about the poverty in the urban areas that leads to instability. So, yes, industrialization has a key role to play in terms of creating these sustainable jobs.

But let us look at the other aspects. As shown in the Director-General's presentation and in some of the other comments, there is indeed a widening gap between Africa and other developing countries and the OECD. This widening gap is because of the lack of creation of wealth within some of these developing countries. Wealth creation is important, either in terms of the portfolio or set of goods and services that these countries produce, or even in terms of the physical wealth of these countries: The infrastructure and other facilities that exist within them. So, yes, industrialization is key to creating this wealth.

I will give you an example of why this is important. Nigeria generates $30 million a day from petroleum alone. We can argue here that Nigeria is a part of the globalized world economy. It is trading with the rest of the world. Nigeria earns $30 million a day just from petroleum alone, but yet it is poor. Why? Because petroleum is a raw commodity. It is traded. There is no wealth creation within the economy. The poverty is deep. You see the youths, probably a million a year, coming out of schools and finding no jobs. So while Nigeria is part of globalization, Nigeria is not creating wealth within the country, even though it is better off than the rest of Africa. You can imagine the challenge in the subregion. So the whole notion of wealth creation, job creation through industrialization, as Mr. Fawzy has said, is not taking place. In our case now, time is against us. The same is true in connection with the presentation of Professor Kondo:

There are opportunities for leapfrogging in terms of adopting new technologies, but this has to be geared towards manufacturing; towards employment creation through industrialization.

A couple of further points: Dumping – liberalization is necessary for globalization to move. It is necessary for the developing countries to tap into new opportunities to trade, but there is another side: dumping. There is massive liberalization. I gave you statistics of companies that are shutting down. In Nigeria, the biggest industrial base in that sub-region, most of the companies are comatose; they are closing. This is real. What do we do in the short term to begin to intervene, to enhance competitiveness, to introduce technologies, to introduce skills and capacities that will make these companies thrive. But there is another side as well. How do we create an enabling environment that ensures that private sector entrepreneurs, that ensures that new SMEs, can start off and thrive, to tap into the new opportunities that globalization supposedly creates?

In the field, as we talk with the World Bank and others, we are now using new terminology. We are talking about the vulnerability of the poor. Why? Because the studies in the Bank have shown that in spite of 25 years of in-depth structural adjustment and moving to get the macro-economy right, poverty has deepened. Go to the World Development Report 2000: The whole focus is on poverty. So we talk about vulnerability. This year you help people to move above the poverty line. For the next four years, they slide back because of some changes in the macro-environment. So the vulnerability of the poor can be overcome if there are sustained income-generation possibilities for them.

I will make two final two points:

- I was asked earlier to comment on what interventions are possible? I would say first we create this environment through macro-interventions, then through sectoral interventions that will make the private sector thrive. This goes beyond rhetoric. It really helps firms to tap into new opportunities, new technologies and new knowledge that will enable them to succeed.

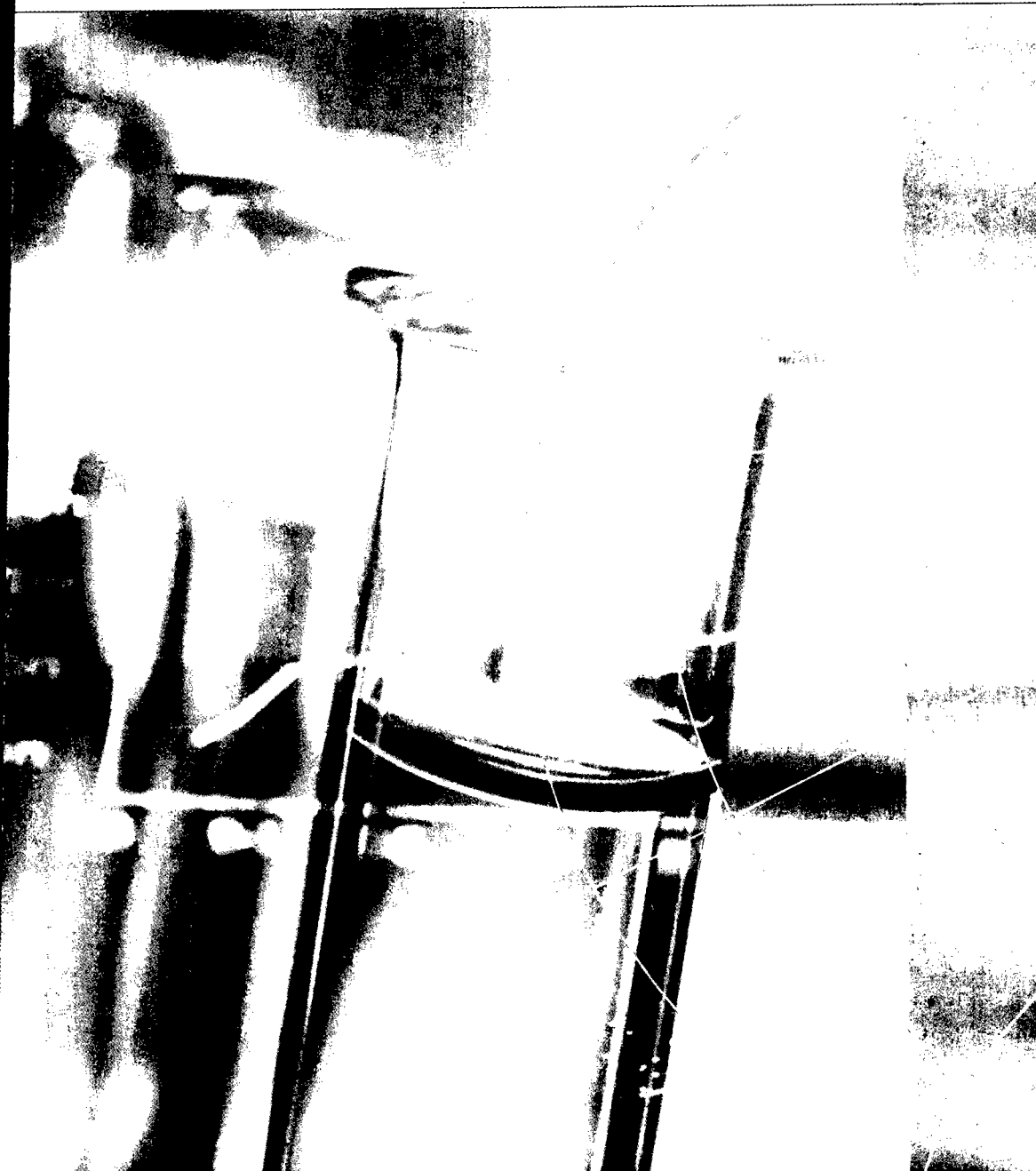
- Reducing transaction costs: Transaction costs go beyond just infrastructure; they include reducing the bureaucracy and corruption, which really stifles innovation and investment. Enhancing competitiveness, knowledge and skills is critical, as is the enhancement of local capabilities for innovation. Even if we tap technology elsewhere, we must have the local capacities to be able to adapt these technologies or make them commercially viable.

I firmly believe these are the areas that need to be dealt with. Based on my experience – and I have been in Headquarters; I have been a Minister myself – this is what I see happening in the subregion. These are the real challenges people are facing. It is jobs.

The other thing is, we talk about trade facilitation. It is no longer about tariff concessions. Africa has enjoyed these under the Lomé Convention but we have not capitalized on them because the production capacities were not there. So today, even if we have new tariff concessions, what will we trade? In globalization, you must have something to exchange. If you do not have services or knowledge or goods, you cannot really become a part of the globalization process. This for me is the challenge I see on the ground. This is what creates the instability in the subregion: The lack of hope for the youth, and the lack of jobs.

PANEL TWO

GLOBAL NORMS AND LOCAL MANUFACTURING: CHALLENGES AND OPPORTUNITIES



Moderator's Introduction

Ursula Stenzel*

It is an honour for me to participate as a moderator for the Industrial Development Forum of the Ninth General Conference. Also I wish to express my gratitude to you, the distinguished participants of this panel, as well as the high-level audience, for their interest in this Forum.

The second panel of today has a different but clearly interrelated topic to the one in the morning. This afternoon we are going to discuss the effects for the developing world of norms and conventions set up by the international community. While these norms can create opportunities for marginalized countries to integrate themselves into the globalizing world on the one hand, they can also create severe obstacles for developing countries in their struggle against further marginalization on the other.

It is now my great pleasure to introduce to you His Excellency, Mr. Osvaldas Ciukšys, Vice Minister of Economy, Lithuania, as the distinguished speaker.

Welcome Your Excellency. You have the floor.

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* Member of the European Parliament. The text presented here is based on an edited transcript of the moderator's spoken introduction.

Statement by Distinguished Speaker

Osvaldas Ciukšys*

It is a really great pleasure for me to address the Second Panel of the UNIDO Industrial Forum entitled, as already mentioned, Global Norms and Local Manufacturing: Challenges and Opportunities. And also may I take this opportunity to thank the Director-General, Mr. Carlos Magariños, for his sincere invitation to deliver the speech to contribute at the Panel.

It is evident that the economic globalization process, in one way or another, is affecting almost every country today, and that therefore industrial players in developing countries as well as in transitional economies have to adapt themselves to the new requirements of the global market. The worldwide integration of economies is raising more and more concerns. The application of international norms and standards is a challenging and highly demanding process that has different economic, political or social dimensions, evoking deep and long-term impacts and consequences in the mentioned spheres of our everyday life.

Globally applied standards and norms facilitate much of the technical relationship at international and domestic levels in order, first of all, to form relevant clusters and provide a common communication language for the companies on their way to entering modern and dynamic international markets, in order both to keep the traditional ones and to enter the new ones. This process is full of many controversial aspects with complicated questions and without simple answers to them.

What are the challenges of this process or what are the advantages and disadvantages?

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* Vice Minister of Economy, Lithuania. This text is based on an edited transcript of the spoken presentation.

On the one hand, the need to apply international norms and standards, especially in the areas of information technology, e-business, quality and productivity, as well as in environmental protection, to some extent, demands and stipulates a fast introduction of the newest technologies. It also facilitates access to information and know-how, enhances competitiveness, and subsequently allows a better access to be gained to markets.

On the other hand, the application of international norms and standards; the introduction of innovation, quality and environment management systems; training, and access to information, first of all requires significant resources and investments. Taking into account the fact that the financial resources of industrial enterprises are limited, utilization of the above opportunities could be restricted to some extent.

Let me take my country as an example. For several years the competitiveness of Lithuanian industry has been stimulated mainly be acquired advantages rather than by traditional advantages. In our case, we can identify as our traditional advantages our relatively less costly labour force, cheaper raw materials, convenient geographical location and well-developed traditional industries. The new advantages we spell out as follows: Liberal foreign and internal trade policy, including free trade treaties which cover around 80 per cent of our trade, WTO membership, and generally low customs tariffs. In addition, the new advantages include international levels of business management, awareness of new opportunities, and utilization of new opportunities by business. We also have special bodies and techniques to maintain the very good dialogue between various government institutions and agencies and the business community, including individual companies and associations. We are also increasing the business, service and new economy sectors, which is a key issue as well.

To illustrate the rapidly changing environment and the use of the new possibilities, let me take these examples. During the last six years, the Lithuanian ITT market has grown five times. The market for telecommunications in particular has grown almost six times, while the market for information technology has doubled. From the point of view of employed technologies, Lithuanian high-tech output accounted for about 13 per cent of the total industrial production last year. But being frank, I have to admit that, despite those significant improvements, the growth rate is still not sufficient compared with industrialized or Western European countries.

Let me turn to another point. What is the role of the State with regard to the application of global norms in local manufacturing? Considering the fact that the application of global norms is linked to the intensity of the incoming and outgoing flows of goods, services, resources, knowledge and information, there could be an evident need for the

State to intervene in order to facilitate this process. In this regard, Government policy, incorporated in Strategies and Programmes, could play an important role, supporting the traditional industries and even the new economy sectors in areas where the market mechanisms still could be, or will be, still very fragile for the foreseeable future.

In Lithuania, a number of such programmes were elaborated during the last few years, giving positive results already. Of these, I would like to mention the most successful and to my mind, the promising ones:

- The medium-term industrial development policy and its implementation strategy;
- The export promotion and development programme, which includes the launch of a number of databases and export portals, which are available free of charge for all of our companies, whether they are big exporters or just start-ups or SMEs.
- The SME support programme; and
- National quality and innovation programmes.

In addition, our government institutions, agencies and companies actively participated in high-tech-oriented pan-European and regional initiatives and programmes like EUREKA, COST, Baltic 21, and a number of others.

To a considerable extent, these positive industrial growth results were achieved due to a reasonable implementation of these programmes. The implementation of specifically targeted programmes helps the economy to gain steady growth and flexibility. For example, the sales volume of Lithuania's industrial production increased by 17 per cent during the first seven months of this year, compared with the same period of last year, while exports increased by 26 per cent and 24 per cent last year and this year respectively. Meanwhile, Lithuania has experienced a steady GDP growth of around four per cent per year over the last five years. The achievement of these figures and results indicates that the right direction has, in general, been chosen.

How is a national standardization and conformity assessment infrastructure, as one of the key elements for the implication of international norms and standards, involved in this process?

Here again, I will take our country's example because I am personally involved in the elaboration of these programmes. In the accession process to the EU, Lithuania is taking steps to develop its national standardization and conformity assessment infrastructure. To facilitate EU integration, Lithuania is adopting European standards as national standards, and implementing the Programme on Conformity Assessment Infrastructure Development. This process involves the transposition of technical legisla-

tion and the development of institutional capabilities. This Programme was approved by the Government earlier this year. It helped us to evaluate the needs of testing laboratories and certification bodies in Lithuania to allow testing and certification to be in line with the New and Old Approach Directives of the EU. It is a really very complicated issue. It has a very technical nature and is a process that requires a great deal of time, money and infrastructure. By the end of 2001, laboratories and certification bodies in various areas will have been set up or modernized and prepared for accreditation in order to be fully operational and to serve our markets, our exporters, and our market surveillance institutions in the year 2002.

The application of global norms affects almost each industrial enterprise but only companies able to compete at the international, regional and local levels have the chance to survive on the global economic scene. More significant importance falls on various sectors of the economy, of course, from the bigger companies down to the SMEs, which are initially only able to produce and supply limited volumes, but with deepening specialization and knowledge can produce unique products and services and supplement the powerful global clusters.

The adoption of international standards facilitates the adjustment of national industry to the needs and trends of the global market, enhances the capability of national enterprises to compete at the domestic and international levels, protects the clean and healthy environment, saves biodiversity and optimizes the consumption of the limited natural resources.

Let me conclude by saying that the application of global norms in local manufacturing obviously raises a very wide range of issues. In my address I have just briefly touched on some of them. I am, however, also including some Lithuanian web addresses, which might be useful and are related, in one way or another, to the issues we are discussing today:

- Lithuanian Ministry of Economy – www.ekm.lt
- Lithuanian Development Agency – www.lda.lt
- Export portal of Lithuania – www.tradeport.lt
- Bank of Lithuania – www.lbank.lt
- Lithuanian Statistics – www.std.lt

I would now like to conclude, being confident that our distinguished panellists during their valuable contributions will look more comprehensively than I did at the many aspects of the application of global norms in local industries. I also take this opportunity to express my since appreciation for having the opportunity of being together with you today in this discussion, and wish you fruitful work.

Paper 1

International Standards as a Means of Development

Gene A. Hutchinson*

Introduction

The first industrial revolution occurred in Great Britain at the end of the eighteenth century. Britain did not long remain the only country to experience an industrial revolution. The industrial revolution occurred in France, Belgium, Germany and the United States about the middle of the nineteenth century; in Sweden and Japan toward the end of that century; in Russia and Canada just after the turn of the twentieth century; and in parts of Latin America, the Middle East, Central and Southern Asia, and Africa, about or after the middle of the twentieth century.

Today, the countries where industrialization began are ranked among the strongest economies in the world. These countries also have well-established National Standards Bodies (NSBs).

The British Standards Institution (BSI) was established in 1901; the Association francaise de normalisation (AFNOR) in 1926; the Institute belge de normalisation (IBN) in 1946; the Deutsches Institut für Normung (DIN) in 1917 and the American National Standards Institute (ANSI) in 1918. The Swedish Institute for Standards (SIS) was formed in 1922; the Japanese Industrial Standards Committee (JISC) started in 1921 (as JESC) and the Russian (GOST R) and Canadian (SCC) national standards bodies in 1925 and 1970 respectively.

Industrialization preceded the establishment of National Standards Bodies, and it is to be noted that every one of those major economies has a well-established national standards body that takes an active part in the work of the international standardizing bodies, i.e. they are at the forefront of the development and use of international standards.

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In the beginning, British industry had no foreign competitors that utilized the same methods and exported on a large scale. When other countries began to industrialize, they had to contend with Britain's head start, but they also learned from the British example. In their case, successful industrialization involved not only the development of new methods of production, but also the modification of techniques used abroad in order to apply them successfully to the country's own conditions.

This can (indeed should) also be said of developing countries today, with this significant change in circumstances: Whereas in the early years of the industrial revolutions, examples of improved manufacturing techniques were difficult to come by, today the results of the work of the international standardizing bodies are readily available to developing countries. These results are collected and disseminated as International Standards.

A standard is "A document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context". This definition is the one used by the International Organization for Standardization (ISO), which is one of the three apex international standardizing bodies. The other bodies are the International Electro-technical Commission (IEC) and the International Telecommunications Union (ITU).

By extension, and for the purposes of this paper, an International Standard will be defined as a standard created by one of the aforementioned bodies.

International standards and development

When they use international standards, developing countries learn from international examples how to develop their industries. They are no longer constrained to use British examples, as was the case in the earlier times previously referred to.

ISO and the other international standardizing bodies also recognize the need to modify standards to make them applicable to the special conditions existing in a country. In this respect also, therefore, international standards aid in development in the developing countries.

While development is defined as the industrialization or economic advancement of a country, I propose to use a much broader definition of development as the improvement of the quality of life of the citizens of developing countries.

The role of international standards

International standards can play a positive role in the development of developing countries and economies in transition:

- As a key to competitiveness;
- In protecting the environment;
- In protecting the health of citizens;
- By facilitating the sharing of ideas and information.

International standards can also play a negative role in the development of developing countries and economies in transition.

Key to competitiveness

In a recent study, commissioned by the NSB of one of the world's major economies, it was reported that major manufacturing concerns in the countries surveyed recognized that they received both short and long term benefits from involvement in standards work. This translates into the improved development of the host countries.

Four thousand questionnaires went out, 707 were returned. Seventy-five per cent of those 707 were involved with a national standards organization and all 75 per cent of them said that they had gained both short-term and long-term benefits. Twenty-five per cent had adopted the standards even before they became the law and 36 per cent had made large to very large savings.

If pragmatic businessmen in a developed country report that they make money (for every businessman "benefits" equals "money", now or later) in the long-term by involvement in international standardization (hosting secretariats and taking part in meetings), is it not reasonable to suppose that the same benefits will accrue to developing countries if they too took part in the development of international standards?

International...standards can provide support for technology transfer... to developing nations.

The report goes on to say that, "International...standards can provide support for technology transfer...to developing nations. ...these nations may (then) present a threat to

our own competitiveness, because standards enable them to imitate our products and production processes."

Now, if that statement had been made by, let us say, a "Think Tank", it could be queried as the conclusion of theorists. If an international standardizing body had commissioned the survey, it could be said that the surveyors had been paid to prove the usefulness of international standards to developing countries. But this statement was made by neither of these. It was made, in passing, in a survey designed to determine the usefulness of international standards to a developed country.

The conclusion then is unchallengeable: International standards can provide support for technology transfer to developing nations and these nations may (then) present a threat to the competitiveness of industries in developed nations. It behoves the developing countries to note this conclusion and act on it.

This echoes the point made earlier in reference to the spread of the industrial revolution: By copying the innovations of an advanced country and, in some cases, modifying them to satisfy the conditions in the developing country, development can be catalysed or accelerated.

In this regard, one is reminded that one of the tenets of standardization is that one should not reinvent the wheel. International standards provide for technological advances to be made available to developing countries without the need to follow slavishly all the steps (nor the time line) by which (or during which) the advances came to fruition.

Botswana's experience

The Botswana Bureau of Standards (BOBS) gives a good example of the operation of this tenet. Botswana has a Long Term Vision for the people: "Vision 2016 – Towards Prosperity for All". This has as one of its targets that the nation should be "prosperous, productive and innovative", and that one of the means to this end is that there should be "sustainable growth and diversification". BOBS, the national standards body of Botswana, which began its operations three years ago, is one of the implementing agencies developed to achieve this goal.

The national standards bodies of some of its closest neighbours, South Africa (SABS), Zimbabwe (SAZ) and Malawi (MBS) had been established in 1945, 1960 and 1973 respectively. BOBS therefore had a significant amount of "catching up" to do.

As a deliberate policy, BOBS has chosen to use international standards as its first source for technological innovation. Forty-seven per cent of the 104 standards so far produced are direct adoptions from ISO. Only one of the 104 standards that we have introduced so far is totally indigenous – only one, because we have found that it is not desirable, it is a waste of time and energy and money to reinvent the wheel. And because we consider that if standards are to be used for facilitating trade, then with a population of about 1.3 million, we have a very small market. But if we use international standards, then we have a whole world open to us as our target market. That is one of the things that standards can do for you in development.

The best known of the international standards is the ISO 9000 series of standards. These standards are having a remarkable impact in Botswana. Organizations of all sizes are using these standards to improve the quality of their products and so improve their marketability (and of course the philosophy of continuous improvement is being inculcated at the same time).

But to my mind, much more importantly, these standards have been the catalyst for the more advanced companies to work with the less advanced ones to share their knowledge and experience. Once a quarter, representatives of fifteen to twenty companies get together to learn from each other how these standards can be used to improve their operations and promote their competitiveness. A local transfer of technology from an international base!

UNIDO's role

UNIDO can play a most useful role in helping developing countries to use international standards because of its recognized expertise in the realm of industrial development.

It is often not sufficient for an international standard to exist. More often than not the developing country needs technical help to implement the standard. For example, help may be required to ensure that the product meets the specifications laid down in the standard, either directly or by ensuring that the testing regime is in place so that the quality of the product can be certified to the satisfaction of the importing country.

Because of the wide range of expertise on which it can draw, UNIDO is in a position to field a multidisciplinary team of consultants to assist the developing country to make the best use of the competitive advantage bestowed on it by virtue of the existence of the particular international standard.

Protecting the environment

One aspect of development, which is receiving increased attention, is the matter of ensuring that development is linked with the creation of a sustainable environment.

In this respect, there are many international standards available to developing countries that provide them with the capability to monitor potential threats to the environment and thereby forestall their deleterious effects. Examples of such standards are ISO 10054:1998[1] and ISO 6879:1995, which are methods-type standards, and ISO 14001:1996 Environment Management Systems, which relates to the control of the entire environment which may be impacted on by the production (development) process.

On the other hand, some developing countries are cautious about the acceptance of these standards in some cases in which it may appear that the use of these standards may deleteriously affect the gains in other negotiations. The ongoing debate about the linking of process and production methods with trade is a case in point.

Protecting the health of citizens

Development, which is accomplished at the expense of the health and well-being of the citizens of the country concerned, or which does not include attention to the physical conditions under which the citizens live, would, in these enlightened days, be considered less than desirable.

International standards are available to developing countries, which when used alongside those related to the extraction of a useful mineral would make the country truly developed. The standards developed by ISO/TC 183 – Copper, lead and zinc ores and concentrates contribute to the development of some countries, but so too would ISO 7207-1-2[2] and ISO 10328 1-8[3] (related to lower limb prostheses) in countries where land mines are a hazard. How much development can there be in a land ravaged by HIV/AIDS, in the absence of the international standards ISO 4074 – Rubber condoms and ISO 8009 – Reusable rubber contraceptive diaphragms?

[1] ISO 10054:1998 – Internal combustion compression-ignition engines – Measurement apparatus for smoke from engines operating under steady-state conditions – Filter-type smoke meter.

[2] ISO 7207-1-2: Implants for surgery – Components for partial and total knee joint prostheses.

[3] ISO 10328 1-8: Prosthetics – Structural testing of lower limb prostheses.

Sharing of ideas and information

The standards for Mobile services – Global System for Mobile Communication (GSM), for Multimedia Systems and Teleconferencing Equipment, and for advanced wireless telephony, have a critical role to play in development in facilitating the sharing of ideas.

The cost of travel between the developing world and the locales in which standards are developed is often prohibitively expensive. This has a negative effect on development. First, because standards are developed which impact on the developing countries and yet those countries have had very limited input into the development of those standards. Second, because the ideas and innovations for standards suitable for conditions in developing countries often do not get the opportunity for scrutiny and informed discussion which they deserve.

The use of teleconferencing equipment would substantially alleviate the difficulty. This is a position I have advocated in many fora at home, in the region and internationally. With this equipment, people can see each other and discuss their ideas without the need for long, tiring and expensive journeys.

This is a particularly attractive solution because the advance in the technology is such that it is now possible for the developing countries to leapfrog from land mail ("snail mail") to solar powered e-mail without necessarily going through copper landlines and all that that entails.

The negatives

There are no totally positive situations and this is true also of the impact of international standards on developing countries.

While the opportunity to take part in the discussions, prior to the development of an international standard, exists in theory for everyone and is enshrined in the directives of the international standardizing bodies, in practice, quite often, the developing countries cannot, and do not, make use of these opportunities.

The result is that standards are developed which are ostensibly international but are actually developed-country standards. When these standards are then implemented, they serve as barriers to the products of the developing countries. This may be because they enshrine requirements that are unnecessary for use in the developing countries (in

effect requiring over-specification of the performance parameters of a product) or requiring testing methods (for certification), which effectively eliminates the competitive advantage of the developing country.

International standards, because they are consensus documents, may sometimes be the lowest common denominator. This then removes the comparative advantage that may exist in a developing country, since it would not be able to sell its "better" product if a product satisfying an international standard is available at a lesser price.

Conclusion

International standards can play an essential part in development. They can do so by being a means for the transfer of technology from the developed to the developing countries, thereby improving the competitiveness of the industries in the developing countries (and resulting in an increase in export trade).

They can be used to help preserve the environment and contribute to the development of a sustainable environment. They are an essential factor in the fight for a healthier people and are the means by which the digital divide can be bridged and ideas can be shared, thus contributing to increased innovation directly applicable to the developing countries.

International standards may have a negative impact on the developing countries, though this may be due to the application of the standards rather than the intrinsic properties of the standards themselves.

UNIDO can play a crucial role in helping developing countries to get the greatest advantage from the use of international standards by making its wide range of experts available to the developing countries in association with the international standardizing bodies that produce the standards.

In summary, then, the conclusion must be that international standards can help to improve the quality of life of the developing countries.

Paper 2

International Environmental Conventions, Civil Society and Industry: Implications for Local Action

R. K. Pachauri*

Historical evolution

Since the Stockholm Summit of 1972 major changes have taken place globally on perceptions and actions related to the environment. As is generally the case in areas where a break is being made from tradition, several countries followed an approach based on regulatory measures by which environmental protection was planned and implemented within a legal framework and through government decisions. While government initiatives were largely driven by voices reflecting the concerns of civil society, action by all members of society, including industry, came largely in response to regulations set by governments. Several pioneering works by individuals and organizations helped create a demand for environmental legislation, and the Stockholm Summit of 1972 was a timely articulation of sentiments expressed globally at the time, particularly in the developed countries. Rachel Carson's book *Silent Spring* created a widespread scare in the United States and other countries as toxic pollution increased at an alarming rate, which mindless industrialization had brought about during the 20th century. The work of the Club of Rome emphasizing the limits of growth and pioneering work by economists like Kenneth Boulding were instrumental in questioning the belief that resources were infinite, and that technology would solve problems of depletion and scarcity in more than adequate measure.

It was in the 1980s that a set of global environmental problems were acknowledged on the basis of growing scientific evidence. The problem of depletion of the ozone layer in the earth's stratosphere suddenly emerged as a health hazard, and world opinion was mobilized towards meaningful action under the umbrella of the United Nations. By 1988, when large parts of North America suffered a major drought, scientific evidence

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on the threat of climate change started receiving attention in the United States Congress and other policy-making bodies around the world. In response to this growing concern and the complexity inherent in the phenomenon of climate change, the United Nations Environment Programme and the World Meteorological Organization established the Intergovernmental Panel on Climate Change (IPCC), which, since its inception in 1988, has done outstanding work and has brought various aspects of climate change as a major piece of knowledge to the attention of the global community.

The Rio Summit was truly a global summit with well over a hundred heads of government in attendance. Even though the title of this landmark meeting was the UN Conference on Environment and Development, environmental issues largely dominated the agenda, almost to the exclusion of genuine development issues. And within environmental subjects it was global problems that received the largest share of attention in the deliberations. One major outcome of the Rio Summit was the agreement reached on the Framework Convention on Climate Change (FCCC). Consequently, a process was immediately taken in hand for giving substance to the framework developed in this Convention, which finally resulted in the Kyoto Protocol finalized in the 3rd Conference of the Parties to the Convention in 1997. This Protocol has major implications for industry, because not only would policies for domestic action by the developed countries require changes to be introduced by business and industry, but the flexibility mechanisms incorporated in the Protocol would essentially lead to projects being implemented through the initiative of the corporate sector. In the case of actions to restore the stratospheric ozone layer as envisioned under the Montreal Protocol, the role of industry has been paramount in phasing out ozone-depleting substances, particularly through the development and commercialization of suitable substitutes. Indeed, action by industry has generally run ahead of anticipation and planned results. The Montreal Protocol, therefore, has provided valuable lessons on approaches and methodologies for the involvement of industry in global environmental actions. It is in this context that the issue of clustering in these global environmental agreements becomes important.

There are overlaps not only in the actions to be taken under these conventions and protocols but also in the institutional arrangements through which these could be undertaken most effectively. If resources have to be utilized in an optimal fashion then clustering of these agreements and some degree of unified governance becomes important. Industry has as much a stake in these institutional changes as do governments and civil society. And, industry as an actor is now acknowledged as occupying centre stage in the implementation of global environmental agreements and in moving the world to a new technological age which would ensure not only the protection but the restoration of the environmental wealth of the planet.

Knowledge and awareness

The world is facing major challenges in protecting the global environment. What we see today as the cause for global environmental damage is the result of ignorance and neglect spread over at least a century and a half in the case of climate change and certainly three quarters of a century in the case of ozone depletion. The damage to biodiversity resources throughout the world is also the result of relatively recent activities, but in some cases the loss is permanent and irreplaceable. Hence the 20th century will go down as the dark ages in the ecological health of this planet. While conventions and protocols are essential for ensuring global action on a mandated basis, if the right awareness and understanding is created within civil society, individuals and organizations would also undertake voluntary actions to reach specified goals. In fact, the common weakness with protocols is the short-term nature of goals and targets, which often obscure the larger and longer-term outcome that should guide sustained action.

A good example of awareness and response to the expectations of civil society can be found in the actions of several corporate organizations, which have laid down voluntary targets for reduction of in-house emissions of greenhouse gases. Foremost among these are companies like BP, Shell, DuPont, and Unilever, accompanied by several others who are making similar and equally ambitious efforts. Even the automobile industry, generally regarded as a source of direct and indirect pollution, is now moving ahead in a determined fashion to come up with a new generation of vehicles and revolutionary new technologies whereby the footprint of the transportation sector on the earth's ecosystems can be reduced substantially.

Engaging the stakeholders

Global environmental problems can be solved only through concerted local action. This in turn will require unprecedented collaboration between various stakeholders. In fact, if such collaboration is not ensured, then global agreements themselves would be in serious jeopardy. The protests and demonstrations that have taken place, for instance, against the WTO ministerial meeting in Seattle and the meetings of the World Bank Group and IMF in Washington and Prague, and, more recently, the meeting of G-8 leaders in Genoa, are timely reminders that civil society cannot be taken for granted. The public would have to be a part of the solution, or it would become a huge part of the problem itself. Industry, in particular, has to anticipate the expectations of the public and take proactive steps to attain acceptability in society as a whole. Public disapproval can, over a period of time, also lead to legal problems for those who do not

subscribe to such wisdom. The example of the tobacco industry, for instance, cannot be ignored, and in fact Bill Ford, the Chairman and Chief Executive of Ford Motor Company has cautioned the automobile industry that they could suffer the same fate as the tobacco industry if they do not develop technology that results in a substantial lowering of air pollution from transportation.

In future, international environmental agreements would also get translated into national laws and regulations which would require local action. In the case of the Kyoto Protocol with the dilution in emissions reduction targets, it is likely that governments will not legislate any radical actions that industry would have to take, and instead would use fiscal instruments to the extent possible for meeting their national commitments. But this may not remain unchanged beyond 2012 when the next commitment period for the FCCC comes into existence. Every successive assessment of the IPCC has established stronger evidence of climate change and its significant impacts. Industry would, therefore, be well advised to anticipate a much greater requirement of reductions in emissions of greenhouse gases and stronger pressure from the public for action. Indeed, the fact that one of Shell's scenarios indicates that half of the world's energy will be sourced from renewables by the middle of this century is a realization of the fact that the economics of energy supply sources and technologies will change substantially with changes in the energy market and requirements for reducing pollution, both at the global and the local level. What we therefore perhaps see emerging in a decade from now, is an effective mix of regulatory action driven by international agreements and conventions and a strong expectation from the public requiring new technologies, new economic structures, and, undoubtedly, a new ethic by which local actions will be taken for meeting global environmental standards. Industry would have to be at the centre of this new regime, and it would be in its own interest to establish partnerships and a new compact with civil society. Neglect of this necessary relationship would not only harm industry's long-term objectives but actually impact unfavourably on the bottom-line of a company from quarter to quarter.

Eliminating poverty as good business strategy

A final word needs to be mentioned about poverty in the world, which is the root cause of growing social and political conflict, with the hundreds of millions of poor people spread across the globe providing a fertile ground for those who exploit the situation for socially harmful purposes, including terrorism. With global business expanding its operation into the developing world, it is important to consider the limitations for growth of business imposed by prolonged and widespread poverty in the developing countries.

Several countries in the world have seen a decline in income and well being during the last two decades. Industry as a stakeholder in the welfare of society has to do its bit in providing the means for the economic uplifting of the world's poor. Undoubtedly, the interests of the shareholders has to remain paramount in corporate decisions, but typically in the past the global corporation has focused only on traditionally well-off sections of the population in marketing its goods and services. It has hardly ever bothered to explore those products and services that would have a sustained demand among the poor. For expansion of business opportunities and for providing stability to the world's social order, this state of affairs cannot continue any longer. In particular, the upgrading of technologies in rural areas has to become an important part of the solution. With this in view, TERI has developed a programme which it aims to implement in several countries, called INSTEP (Integrating New and Sustainable Technologies for Elimination of Poverty) Global.

INSTEP Global would involve:

- Grassroots projects;
- Exhaustive surveys of existing knowledge, including indigenous knowledge;
- Data collection (primary and secondary) and analysis;
- Policy analysis;
- Stakeholder dialogue;
- Workshops;
- Conferences; and
- Dissemination of knowledge based on results achieved.

Model projects would be undertaken for poverty elimination at the grassroots level which could serve as the basis of nationally sponsored poverty elimination programmes. These models would identify technological solution sets and market/financial/institutional innovations for adoption that would result in poverty elimination of village clusters through:

- The provision of clean cooking fuels, light, and inputs for sustainable agricultural practices and natural resource management; and
- Access to modern information technology and credit.

Essentially, what is needed (if a cliché can be used to describe it) is a paradigm shift that brings about effective local action to reflect serious global concerns and problems. Industry has to be at the vanguard of this revolution and must lead a coalition of all the other stakeholders in this process.

Paper 3

Business Activities and Environmental Issues in Africa

Bamanga Tukur*

Introduction

It has been man's desire and quest since the time of creation to dominate the earth and exploit its resources for his sustenance and comfort. This seemed to have been divinely ordained, for after installing the first man in the perfect ecosystem of Eden, the Creator said to him "Be fruitful, and multiply, and replenish the earth, and subdue it; and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth" (*Genesis* 1:28). Thus God brought every living creature before Adam and not only mandated him to give names to the animals but also gave him an unfettered right to harvest freely from the vegetation and trees of Eden. Somehow, our forebears seemed to have understood and appreciated the symbiotic relationship between man and nature, and thus did not exploit the earth's resources to the detriment of future generations. Their worldview and daily patterns of living included the use of totems to regulate the exploitation of earth's resources, and contributed to sustaining a balance in the habitat and ecosystems.

Then came the Industrial Revolution, incubated and nurtured by the wonderful era of Renaissance, when man discovered the great potentials of the brain, mind and matter.

This era witnessed an explosion of ideas and inventions on man's ability to dominate nature and to exploit matter for the satisfaction of man's need under the utilitarian justification of "... benefit of the greatest number". This trend continued globally until it became evident that man has stretched the earth to its limit in pursuit of development with total disregard to the sustainability of the ecosystems and biodiversity of nature. Thus came the realization that man must take care of the environment and integrate environmental concerns in its development policies. The developed world, which is the major culprit, responded to this need by enacting appropriate laws and regulations. It was only in 1972 that the United Nations Conference on the Human Environment rec-

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ognized the need for a global initiative towards the deployment of the law in the battle to protect the environment. The global awareness of environmental issues culminated in the famous Rio de Janeiro Conference of 1992.

It is difficult to capture the full meaning of the term environment in one sentence but for the purposes of this paper we would adopt as our working definition the meaning that environment comprises the ecosystems and their component parts, including soil, atmosphere, water, human made and artificial structures, all natural and physical resources, any organic or inorganic matter, the interaction and interdependence within and between them and the social, economic and cultural conditions which affect or are affected by them. This definition, therefore, recognizes that the term "environment" is neither restricted to the natural conditions (air, land and water) in which we live, nor does it merely embrace the totality of life-sustaining elements such as plants and animals. Rather, it takes cognisance of the World Commission on Environment and Development's warning that "environment" does not exist as a sphere separate from human actions, ambitions and needs, and that any attempt to define it in isolation from human concern will give that very word a connotation of naivety in some political circles. The definition acknowledges the symbiotic relationship between man and his environment.

Business activities and environmental issues in africa

Many of the problems encountered by the economies of developing countries on the road to development have their origin in their dislocation from the framework of global strategic concern. To a large extent, this is attributable to the inability of these countries to produce goods and services that are of high demand in the global economic system. Instead, what they have to offer are mostly crude products and raw materials with little or no value added. Sadly enough the developed world has advanced in its search for alternatives for these crude products, thereby threatening the relevance of those materials and by extension, that of their suppliers in the present global economic dispensation.

Secondly, developing countries, in Africa in particular, do not have the technical know-how to develop their industrial capabilities for the processing of the crude products into finished goods. Africa's industries therefore have to rely on foreign technology in form of expertise or machinery, for their continued operation.

Thirdly, Africa does not possess the required volume of investable capital to make a meaningful impact on the world economic scene. Most of the world capital is held in

the developed countries of Europe, America and lately Asia. As such, with an acute capital shortage, Africa is forced to depend on the inflow of capital from the developed world for its industrial and development concerns.

It is therefore clear that the above-mentioned factors have, for long, ensured the vulnerability of Africa, and thereby resulted in the marginalization of the continent from the centre stage of global economic activities. Disturbingly, this perilous position is further complicated by the structure of the New World Order in the aftermath of the Cold War. One dramatic effect of the end of the Cold War has been the reduction (or near elimination) of the relevance of Africa in strategic geo-political calculations in the global system.

As the United States State Department rightly noted, "Africa is simply not commanding the kind of attention in the New World Order to keep it from dissolving into the New World Disorder".

The influential London based *Economist* was more categorical when it noted succinctly that: "With cold war interest gone, it is tempting to forget Africa ... all these aims are more likely to be achieved in Eastern Europe than in Africa." And truly, more resources have been going to countries of Eastern Europe, while the share of global capital flowing to Africa has been declining, especially since the dramatic end of the Cold War in 1989.

The era of the 1990s, just like the 1980s, was therefore a lost decade for Africa. Consequently, sub-Saharan Africa's share of Global GDP fell from 2.7 per cent in 1983 to 2.5 per cent in 1999. The exports of sub-Saharan Africa as a proportion of total global trade amounted to a meager 1.4 per cent in 1998. With the combined share of Nigeria and South Africa excluded, that region was left with an even more embarrassing share of 0.7 per cent for the same period. In the same vein, Africa lost out as far as global capital flows are concerned: sub-Saharan Africa's share of global foreign direct investment was only 1.6 per cent in 1998 (a drastic fall from the 5.1 per cent recorded in 1980). The same also applies for global manufacturing, where value added in sub-Saharan Africa amounted to only 1.6 per cent of the world total in 1999.

With this very small contribution to the global economic system, the whole world had little incentive to depend on Africa, and thus the stage for the marginalization of Africa was set. By today, it is becoming increasingly disturbing that Africa has drifted away from the rest of the world. As such, strategies for developing the continent, should, as a matter of priority, focus on putting an end to the dangerous de-linking of the continent from the rest of the world, and integrate Africa fully into the mainstream of the global economy.

This is crucial for the mandate of the African Business Roundtable (ABR), and pursuant to that the ABR strongly feels the desire to associate itself with UNIDO in the fight against the marginalization of developing countries.

Business activities and environmental conventions and treaties

The focus of this paper is on business activities as they relate to environmental issues. I will now enumerate the various conventions to which African countries are signatory, and address the relevant issues involved.

Table 1. International Conventions/Treaties

S/No.	*Convention*	*Status of convention*	*Implementation strategy*	*Convention hot spot*	*Date of ratification*
1.	Vienna Convention for the Protection of the Ozone Layer	Implementation stage	Development of National Action Plan		17 Feb. 1967
2.	Montreal Protocol on Substances that Deplete the Ozone Layer	Implementation stage	Identification and inventorization of sources of Ozone Depleting Substances (ODS); Phase-out programmes on ODS; Technology transfer and capacity building	ODS Phase-out period	23 Jul. 2001
3.	United Nations Framework Convention on Climate Change	Implementation stage	Preparation of National Communication; Identification and inventorization of emission sources of greenhouse gases; Training and institutional strengthening	Clean Development Mechanism; Emission Trading	29 Aug. 1994
4.	Convention on Biological Diversity	Implementation stage	Development of national Action Plan; Identification and inventorization of flora and fauna in all Nigerian ecosystems; Increasing network of protected areas; Promotion and enhancement of research, education, training, public awareness and scientific cooperation	Hetezygosity; Biosafety; Protection of indigenous knowledge and property rights	29 Aug. 1994

Table 1. *(Continued)*

S/No.	*Convention*	*Status of convention*	*Implementation strategy*	*Convention hot spot*	*Date of ratification*
5.	Convention on International Trade in Endangered Species of Wild Fauna and Flora	Implementation stage	Identification and inventorization of endangered species of flora and fauna in all Nigerian ecosystems (ES); Monitoring and controlling trading in ES; Promotion of education and public awareness		1 Jul. 1975
6.	Convention on Migratory Species	Implementation stage	–	–	
7.	Ramsar Convention on the Protection of Wet Lands	Yet to be ratified			
8.	Convention to Combat Desertification	Implementation stage	Development of National Action Plan; Tree Planting Campaign; Establishment of shelter belts; Afforestation and fuel substitution programmes; Harmonization and integration of sectoral programmes; Training and public awareness		
9.	Bamako Convention	Implementation stage			
10.	African Convention on the Reservation of Nature and Natural Resources	Implementation stage			7 May 1974
11.	Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their disposal		Hazard characterization and classification of wastes; Hazardous wastes and chemical tracking programme; Harmonization of lists of wastes and related procedures concerning their movements within the country; Classification of	Development of a protocol on liability and compensation for damage resulting from the transboundary movement of hazardous wastes	13 Mar. 1991

Table 1. *(Continued)*

S/No.	*Convention*	*Status of convention*	*Implementation strategy*	*Convention hot spot*	*Date of ratification*
			post-consumers such as plastics and other similar wastes; Preparation of technical guidelines on transportation and treatment of certain wastes	and their disposals	
12.	London Dumping Convention	Implementation stage			
13.	United Nations Convention on the Law of the Sea	Implementation stage			14 Aug. 1986
14.	Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10th December, 1992	Implementation stage			28 Jul. 1995
15.	Prior Informed Consent	Implementation stage			20 Apr. 2001
16.	Convention on Early Notification of A Nuclear Accident	Implementation stage			10 Aug. 1990
17.	Convention on Assistance in the case of a Nuclear Accident or Radiological Emergency	Implementation stage			
18.	Persistent Organic Pollutants	Still under negotiation			
19.	Protocol Concerning	Implementation stage			6 Jun. 1984

Table 1. *(Continued)*

S/No.	Convention	Status of convention	Implementation strategy	Convention hot Spot	Date of ratification
	Cooperation in Combating Pollution in Cases of Emergency				
20.	Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region	Implementation stage			6 Jun. 1984
21.	Convention Concerning the Protection of the World Cultural and Natural Heritage	Implementation stage			23 Oct. 1994
22.	Convention on the Prohibition of the Development, Production and stock-piling of Bacteriological (Biological) & Toxin Weapon, and on their destruction	Implementation stage			19 Jul. 1993

The centrepiece of those treaties in the above list is the protection of the environment and global commons. With respect to economic activities, the point here is to ensure that economic growth is attained, but not at an extra cost to the environment. Truly, if development is to be sustainable, then we should bequeath to the coming generation an environmentally friendly economic framework.

It is important to note at this stage that African governments have been trying to implement most of the multilateral agreements on the environment listed above. Suffice it to

note that a premise on which the conventions are built is self-reliance. While the end-point is to have a global environment conducive to development, the responsibility is on each country signatory to each convention to implement the respective provisions with a view to ensuring a good environmental condition in each country.

Implications for trade

Another point to note on the above provisions is their implications on businesses. Various scenarios could be drawn about the implications of each provision on trade in respective countries. With the trend in this present global economic system, only goods produced with good environmental standards may be traded on the international economic scene. A careful analysis of each of the above conventions will reveal specific impacts on trade.

Technology upgrading

Perhaps, a good strategy for attaining the twin element of development and environmental excellence is for economies to catch up with development in science and technology. Such technological innovation has, to a large extent, put paid to demands of environmental concerns in a number of ways.

For example, modern day energy generating systems have gone beyond the burning of fuel and firewood etc. Interestingly, developments in those regards are advancing by the day. One of the main tasks facing developing countries as they embark on the journey to development is therefore that of upgrading their technology to embrace the opportunities offered by the world-class technological system. This will, of course, require establishing partnerships with countries that could assist in terms of technology.

Here, members of the international development community have a role to play, especially in the case of Africa. Given that many African countries are endowed with huge resources and that the developed countries of Europe, America and Asia have the right technology for the optimum utilization of global resources, it is only logical that a partnership between both will be in their mutual interest as well as in the interest of the world.

For example, Nigeria is blessed with huge reserves of oil and gas. The technology for extraction, processing, refining and distributing these resources are to a large extent foreign as can be seen in the composition of major players in the Nigerian oil industry,

most of which are multinational firms of foreign origin. Both Nigeria and the multinational oil firms benefit from this arrangement, a feat which could not be achieved if Nigeria as a country would stick to its unexplored oil resources while the multinational oil firms stayed back from exploring opportunities in the Nigerian oil industry.

A step further in this regard will reveal that many Nigerian engineers and scientists are learning in the process. As such, there is the component of the transfer of technology and know-how built in into the system. As a side comment, Nigeria and indeed the whole world is being saved from the crude way of producing energy.

This example, to my mind, could be replicated in a number of African countries and in a host of economic sectors like manufacturing, agro-based industry and the petrochemicals business.

Challenges

There are several challenges towards the attainment of development within an excellent environmental framework, not only for African Countries but for the entire globe.

Implementation

Perhaps, the greatest of all these challenges is that of implementation of the relevant aspect of the conventions listed above. With over 80 per cent of the African population living below the poverty line, survival could be the first order of all concerns, thereby relegating environmental considerations to the background. While there is the obvious need for the protection of forestry resources, a man trying to survive could cut down trees in the forest for economic reasons. In the same vein, energy generation in the form of electricity may be expensive for a village man and as such may encourage the generation of energy through wood burning.

Certainly, unless the root cause of the problem – which is poverty – is addressed, it may be extremely difficult to move ahead satisfactorily on the environmental agenda.

Infrastructure

Another important aspect to be considered here is the availability of the required infrastructure to support private initiatives in the economic sector. If infrastructure facilities such as electricity are available, industrial activities could be carried out without sacri-

ficing good environmental concerns on the altar of economic growth. In fact, constant supply of such infrastructure facilities will aid economic activities.

Incorporating provisions of international conventions into national development plans

It is important that the provisions of the international conventions signed by the government of a country be incorporated in the country's national development plans. This will bring the existence of such treaties to the awareness of the citizens at home, and provide a framework for compliance by households, firms and industries.

Compliance

An independent monitoring system should be put in place for enforcing compliance by economic actors. Penalties should be spelt out for defaulters in a way that will discourage offenders. Indeed these challenges are far reaching. I wonder whose challenges they are, Africa's or UNIDO's ... perhaps both.

The way forward

Governments of African countries alone may not be able to overcome most of these challenges. It will require a joint effort and effective partnership with the organized private sector, civil society and international organizations. This could, of course, be done with a clear articulation and coordination of the role expected from each party. However, plans of this nature could best be tackled under a clear framework of wealth creation and a more equitable income distribution system. This again, requires the contribution of the parties mentioned above if the fear of creeping irrelevance and marginalization presently threatening Africa is to be prevented from becoming real and magnified.

Fighting marginalization is a complex task requiring reforms, innovation, structural transformation, integration, and political will. As long as the indices of development keep Africa in a perpetual backseat of shame relative to the rest of the world, the struggle out of the periphery in favour of a dignified mainstream position will continue.

Item two of the 10 point communiqué issued by the ABR at the end of its 11th Annual General Meeting and Conference in Accra, Ghana, reads in part: "The ABR welcomed

the 'New Partnership for African Development (NEPAD)' launched by the leaders of Africa as a home-grown development agenda for the new millennium, and calls on the UN System under the leadership of UNIDO and UNDP to assist the ABR to formulate a strategy and action plan for mobilizing private sector participation in the implementation of the initiative. Within this context, the ABR calls on UNIDO to assist in coordinating subregional private sector consultations on NEPAD during the first half of 2002, the outcome of which will serve as input to the next summit of the Heads of State and Government of the African Union (AU)."

In conclusion, it may be right to point out that only with such a structure in place can the fight against marginalization be won on the side of African countries. Only then could we bequeath an environmentally friendly world to the coming generation. As such, only then can we look back in years to come and be rest assured that today's gathering did not sit in vain.

Paper 4

International Environmental Frameworks and Development: A Case Study of POPs

Angelo D'Ambrosio*

The United Nations Industrial Development Organization (UNIDO), as the United Nations Specialized Agency for industrial development in developing countries and countries with economies in transition, has been actively involved in line with its Business Plan in the environmental agenda of sustainable development. UNIDO is an implementing agency of the Multilateral Fund for the Implementation of the Montreal Protocol and an observer organization to United Nations Framework Convention on Climate Change (UNFCCC). UNIDO is one of the depositories (with OECD) of mandatory information of the Clearing House mechanism of the Cartagena Protocol for Biosafety under the framework of the Biological Diversity Convention, and most recently UNIDO has become an executing agency of the Stockholm Convention on Persistent Organic Pollutants (POPs). In this issue paper the case of POPs is presented.

The issue

Persistent Organic Pollutants (POPs) are synthetic chemical substances with unique and harmful characteristics. They pose severe risks to human health and the environment due to their toxicity, their persistence, their ability to travel long distances on air and water currents, and their propensity to bio-accumulate in food chains. They include some of the world's most harmful chemicals including highly toxic pesticides such as DDT; industrial chemicals such as PCBs; and unintended by-products of industrial processes and incineration such as dioxins and furans. POPs are the "worst of the worst" of toxic substances. They are highly toxic to wildlife and humans. They have become common contaminants in fish, dairy products, and other foods around the world.

Among the twelve POP substances (the so-called "dirty dozen") there are four unintentionally generated by-products of human activities, which are listed in Annex C of the

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Stockholm Convention: Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF), Hexachlorobenzene (HCB) [CAS No: 118-74-1] and Polychlorinated biphenyls (PCB). While HCB is a single chemical compound, PCDDs have 75 different theoretical combinations (congeners), PCDFs have 135 congeners, and PCBs have 209. It should be noted that the toxicity and also the resistance against destruction (persistence) varies widely among the congeners. Only 7 of the 75 congeners of PCDDs and 10 of the 135 possible congeners of PCDFs are thought to have dioxin-like toxicity.

POP by-products will be formed and released unintentionally in all technological processes and/or natural biological and photochemical processes including human activities when heat is applied, transferred or exchanged in the presence of chlorine and organic substances. For example, any combustion or incineration processes, or certain processes in the pulp and paper industry, may generate POP by-products. Composting could generate POP by-products resulting from microbial activity on chlorinated phenolic compounds. Likewise, the photolysis of the black liquor of olive processing, which is rich in highly chlorinated phenols, generates POP by-products.

POPs are ubiquitous. Everyone has a body burden of POPs that their ancestors never had. POPs levels tend to be highest in species at the top of the food chain, such as eagles, polar bears, killer whales and human beings. Because POPs break down very slowly, they will be present in the environment for a long time to come, even if all new sources were immediately eliminated. There is evidence that many people worldwide may now carry enough POPs in their body fat to cause serious health problems, including reproductive and developmental problems, cancer, endocrine and immune system disruption, abnormal behaviour, and neurological problems. The developing embryo is most sensitive to the harm POPs can cause.

POPs, when released into the environment, can be transported on air currents to places far from their point of origin. Such transport can consist of a number of "hops" from one point to another. Each "hop" consists of three stages: evaporation, transport in the atmosphere and condensation at lower temperatures. Scientists have called this phenomenon the "grasshopper effect". Because evaporation is minimal in colder regions, POPs tend to build up in arctic and mountain ecosystems. POPs can travel long distances in a matter of days or weeks on air currents, and more slowly in water. Ocean currents, air currents and rivers, which funnel agricultural runoff and industrial discharges to the ocean, are important POPs transport pathways.

Municipal sewer systems and sewage treatment plants (STP) act as collection systems for industrial waste and agricultural runoff that can contain POPs. STPs are not designed

to destroy POPs; instead they accumulate in the sludge (solid wastes) or end up in the air if sludge is incinerated. When there is no advanced sewage treatment, POPs and other contaminants are discharged directly from sewage outfalls into the ocean.

Plastics containing chlorine such as PVC release dioxins, furans and other unintentionally generated POPs by-products, all deadly poisons, when incinerated. Furthermore, some plastics release substances which disrupt the natural hormone systems of human and wildlife when buried as wastes.

With the evidence of long-range transport of these substances to regions where they have never been used or produced, and the consequent threats they pose to the environment globally, the international community has called for urgent action to reduce and/or eliminate releases of these chemicals. Because they are so long-lived and toxic, POPs are inherently impossible to "manage". The key is to prevent production as soon as possible and reduce human and wildlife exposure as much as possible.

There are alternatives for all POPs, and alternative approaches to manufacturing and waste disposal that do not generate POPs. UNIDO is confident that such uses can be phased out over time and replaced with proven, non-POPs alternatives. Still, instituting alternatives poses a technological and financial challenge, especially in developing countries and countries with economies in transition.

After more than two years of intensive negotiations, the "Conference of Plenipotentiaries", meeting in Stockholm 22-23 May 2001, adopted the "Stockholm Convention on Persistent Organic Pollutants". This convention obliges Parties to take measures to reduce, and where possible to eliminate, emissions of POPs as well as their by-products. It also provides a framework for doing so. However, there is limited practical experience with successful implementation of measures under conditions that prevail in many developing countries and countries with economies in transition. In addition, the framework established for doing this under the Stockholm Convention is new and unique in many of its aspects.

However, one cannot assume that approaches and measures that have been used in OECD countries to reduce or eliminate releases of POPs will be appropriate or the best measures for use by countries at different stages of industrial development. In addition, even where similar measures could be applied, their replication under conditions that prevail in many GEF-eligible countries will often pose unique and different requirements and problems that must be addressed and resolved taking into account a country's particular stage of development.

In Article 12 of the Convention, the Parties recognize that rendering timely and appropriate technical assistance in response to requests from developing country Parties and Parties with economies in transition is essential to the successful implementation of the convention.

The convention further specifies that the Global Environment Facility, shall, on an interim basis, be the principal financial mechanism in order to assist eligible Parties through the provision of financial resources with the implementation of the convention.

Personal action on POPs to reduce risk

The World Wide Fund For Nature / World Wildlife Fund (WWF) gave some hints how to reduce individual risk of POPs. The task is difficult because POPs already in the environment will be around for decades. Our current body burden of POPs is very difficult, if not impossible, to reduce. But we can reduce our exposure to POPs and help stop more POPs from getting into circulation. To reduce the risks of POPs the following suggestions should be considered:

- Try to eat lower on the food chain or avoid fats. This will reduce lifetime accumulation of POPs and is especially relevant for children. Particular attention should be made to eat some fatty fish such as salmon and trout. In this respect some countries have issued fish consumption guidelines that should be followed.

- Choose unbleached paper products (including personal hygiene products) or those bleached without the use of chlorine. Chlorine bleaching processes unintentionally generate POPs by-products such as dioxins, furans and others.

- Avoid polyvinyl chloride (PVC or vinyl) plastics. This might be an impossible task given that there is an almost endless list of common vinyl items include packaging material, water pipes and other utility items, window frames, wall and doors, Venetian blinds and shower curtains, flooring, wall coverings, blood and infusion bags, medical equipment, credit cards, office supplies, garden and other furniture items, furniture coverings, auto parts, children's toys, etc. Don't burn the above listed items.

- Don't reuse old utility poles for garden and construction projects and don't burn them. In this respect some countries have issued wood preservation guidelines that should be followed.

- Avoid using weed killers containing POPs chemicals. A useful hint for the customers is to check the label for the active ingredient 2,4-D; they may contain dioxins and other POPs by-products.

The rationale for UNIDO's action

The United Nations Industrial Development Organization (UNIDO) has practical, hands-on experience, unique among United Nations Specialized Agencies, of working with developing countries and countries in transition in the provision of assistance for the introduction of best available techniques; industrial process changes; substitute or modified materials and products; cleaner production methods; and the environmentally sound management and minimization of wastes.

UNIDO also has a core group of staff with expertise relevant to the areas covered by the Convention, and especially technical assistance in these areas.

The eighth session of the UNIDO General Conference held at Vienna, Austria from 29 November to 3 December 1999 adopted the resolution GC.8/Res.2 Global Environment Facility and Technical Cooperation Activities. This resolution requested the Director-General of UNIDO:

- To mobilize available resources to increase the participation of UNIDO in identifying, preparing and executing Global Environment Facility projects;

- To actively cooperate with the World Bank, the United Nations Development Programme and the United Nations Environment Programme in their respective focus areas, with particular attention to the capacity-building activities implemented by the United Nations Development Programme;

- To strengthen dialogue and cooperation with the Global Environment Facility Secretariat in order to explore possible further cooperation lines of common and mutual interest;

- To explore possibilities to increase cooperation with national Global Environment Facility focal points in Member States;

- To identify Global Environment Facility-related cooperation opportunities between UNIDO and other competent organizations in order to create further synergies and

strengthen the pool of expertise to be put at the disposal of Member States for the identification, formulation and execution of Global Environment Facility projects;

- To submit a report on the progress made to implement the activities outlined in the present resolution to the Industrial Development Board at its twenty-second session.

The resolution GC.8/Res.2 greatly facilitated the development of UNIDO activities in the area of POPs. UNIDO could participate in the POPs intergovernmental negotiations (INC.3, INC.4 and INC.5) and the issue of POPs has been presented in UNIDO Round Table-Marginalization Versus Prosperity held during the twenty-third Session of the Industrial Development Board (IDB), Vienna, 14-16 November 2000. The issue paper entitled "UNIDO's efforts towards the Implementation of the Persistent Organic Pollutants (POPs) Convention" received very positive response from UNIDO Member States and consequently it became part of the Emerging and Future UNIDO Initiatives-Proposal on New Regional Programmes submitted by the Director-General to the IDB.

In the IDB conference room paper on Emerging and Future UNIDO Initiatives there is the following statement: "UNIDO has traditionally dealt with the reduction, phase out and elimination of POPs through its Cleaner Production Programmes even before such an acronym was coined. This has been the rationale behind the decision of the GEF Council in May 2000 to award UNIDO the status of Executing Agency. UNIDO is developing a portfolio on POPs to be financed by GEF".

UNIDO activities in the area of POPs were really facilitated by the GEF Council decision in May 2000 when UNIDO was awarded the status of Executing Agency with Expanded Opportunities inter alia in recognition of its comparative advantage in the area of POPs. In early 2001 UNIDO became a member of the GEF Inter-Agency Task Force on POPs that developed the Guidelines for Enabling Activities for the Stockholm Convention. Consistent with the decision to make UNIDO an Executing Agency with Expanded Opportunities, the GEF Council in May 2001 approved the direct access of UNIDO to GEF resources for expedited Enabling Activities on POPs.

UNIDO services offered to respond to the convention

UNIDO has offered a wide range of services in terms of programmes and projects that facilitated the reduction and elimination of POPs releases from intentional production and use as well as non-intentional production as by-products. An illustrative

summary of past and on-going activities relevant to the Stockholm Convention is given as follows:

- The "Regional Network on Pesticides in Asia and the Pacific (RENPAP)" project covering 15 countries in the region and executed by UNIDO has been instrumental in bringing in the newer technologies needed to replace the persistent organochlorine and other toxic pesticide compounds and to treat obsolete pesticide stockpiles and contaminated sites. It should be noted that the question of appropriately dealing with pesticides categorized as POPs was first discussed in the Tripartite Review meeting of RENPAP in Nantong, China, in 1995, with the participation of the representatives of the Government of Canada, and as such it was one of the very early international events on POPs.

  When the Government of India decided in April 1997 to ban hexachlorobenzene (HCB), CAS No.118-74-1, based on very sound technical back-up information provided by the RENPAP project, the question of a viable economic alternative was the major consideration as 30,000 MT of active ingredient production capacity with 500,000 MT of formulated material was being eliminated from agriculture and vector control. At this point of time UNIDO suggested the use of bio- and botanical pesticides through the Integrated Pest Management Programme (IPMP), which was then adopted as a National Policy. In India DDT has also been banned in agriculture, yet large quantities of DDT acquired for the National Malaria Eradication Programme are being used in agriculture. There are also residual stocks of HCB, which are being used in an unauthorized manner not only in India but also in the adjacent countries, e.g. Nepal and Bangladesh. Despite these difficulties, the very successful RENPAP programme has made a significant impact in China, Indonesia, the Republic of Korea, Myanmar, Thailand, the Philippines and Viet Nam where several POP pesticides have been banned or severely restricted and the IPMP has gathered significant momentum.

  Based on the experience gained through the RENPAP project, UNIDO will continue its efforts to reduce or eliminate the releases of POP pesticides from manufacturing processes and to ban or restrict their use in Asia and the Pacific region. A similar approach could be followed in other regions.

- Since 1994, when UNIDO initiated this programme jointly with UNEP, the global network of National Cleaner Production Centres (NCPCs) has been steadily growing. To date, 23 such Centres have been established, and further Centres will be established in the coming years. UNIDO is in regular contact with both recipient

and donor countries about extending this NCPC network further. The main objective for the Centres is to be catalysts for cleaner production in their respective countries. They do this by undertaking activities aimed at raising awareness, by offering practical training and direct assistance to enterprises requesting cleaner production services, and through policy advice to local and national authorities. They may also create national networks of cleaner production partners and more local Centres. The mission of the Centres makes them ideal to work on POPs, particularly concerning the reduction/elimination of POP-containing industrial wastes or emissions and the production/industrial use of alternatives to POPs. UNIDO intends to draw on the NCPCs and to use the network to intervene in all industrial aspects of POPs. Specifically they could also work in a systematic manner on issues related to inventories of obsolete stockpiles of POP pesticides and PCBs including the facilitation of take-back operations.

UNIDO intends to consult with national authorities in charge of the NCPCs, in order to build capacity in the NCPCs to gather data on the industrial production, import and export of POPs. These data will be used inter alia to prepare assessments of stockpiles of POPs and to elaborate models for estimating quantities of POPs released into air, land, water and in products. A key reliability element of these estimations will lie in the method used to extrapolate results from tested demonstration facilities to national estimates; here the practical experience of the NCPCs with the technologies and equipment used in local industry will be invaluable.

The NCPCs would also work with the relevant authorities to prepare action plans for the reduction or elimination of releases and stockpiles of POPs, and environmentally sound management of any residual POPs. The priorities set in these action plans could reflect among other things the differing toxicity/hazard posed by the various releases of POPs. (Since many of the POPs are often found as complex mixtures of individual substances, for risk assessment purposes the NCPCs will develop (or adapt) toxicity equivalency procedures to describe the cumulative toxicity of these mixtures).

Based on its long experience in cleaner production (CP), UNIDO intends to promote the most effective technologies, raw material changes, and waste management practices that reduce or eliminate the generation of POPs, and that in principle could be eligible for GEF funding.

- UNIDO has been involved in the early 1990s in reducing and eliminating PCBs in several developing countries, e.g. Malaysia, Thailand and Viet Nam.

Enormous stockpiles of dangerous POPs exist throughout the world. These may be, for example, PCBs found in electrical equipment such as transformers and capacitors. In many countries POP wastes are routinely burnt in incinerators and eliminated by other combustion technologies, e.g. boilers, metal furnaces, cement kilns. In view of the great concern that these technologies generate high levels of POP by-products emissions, UNIDO has been instrumental in promoting non-combustion technologies for destroying POPs.

In February 2001, GEF Project Development Funds (PDF-B) were granted to prepare in the Philippines and Slovakia a global UNIDO/UNDP/GEF Project entitled: "Demonstration of Viability and Removal of Barriers that Impede Adoption and Effective Implementation of Available, Non-combustion Technologies for Destroying Persistent Organic Pollutants".

The proposed project will destroy a large stockpile of PCBs in each of the two countries. The project will do this utilizing commercially available non-combustion technologies that meet project criteria. The project will also help remove barriers to the further adoption and effective implementation of such technologies.

The project recognizes that in recent years, newer technologies have emerged and been commercialized that can be used in the destruction of stockpiles of POPs (and some other species of persistent toxic substances). With regard to these newer technologies, the project document states:

"Some of them have operating characteristics that make them far superior to incinerators. They appear to be capable of being operated in ways that avoid problems that have been associated with the expert and public opposition to incinerators and other combustion technologies. These technologies can directly destroy POPs that are present in obsolete chemical stockpiles and in contaminated wastes and can be combined with other cleanup technologies to destroy POPs (and certain other PTS) trapped in soils and sediments."

The project document identifies two specific characteristics that should be demonstrated, at a minimum, by the destruction technologies selected by the Project:

- They operate in systems that are essentially closed. This means that uncontrolled releases of POPs and other substances of concern can be avoided and all residues from the destruction process (gaseous, solid and/or liquid) can be contained, analysed and, if necessary, further processed prior to release. It also means that the

technology can avoid the periodic "upsets" that plague incinerators and other open destruction processes.

- They can achieve total destruction efficiencies (DEs) for POPs and other substances of concern that approach 100 per cent. This means that they not only effectively eliminate gaseous, air-emissions of POPs and other toxic pollutants of concern but they also effectively eliminate releases of these pollutants as solid wastes and as liquid wastes.

The project document suggests that available and effective technologies that demonstrate the above two characteristics are most likely to win broad acceptance within civil society.

Based on the experience gained through this project, UNIDO will promote and assist in the adoption of suitable non-combustion technologies. These will be applied immediately within the framework of the African Stockpile Project (ASP) that has recently entered the GEF pipeline. The World Bank will act as implementing agency and the WWF as executing agency in cooperation inter alia with FAO, UNEP, and UNIDO.

Proposed UNIDO activities

In this section we provide an illustrative list of the proposed activities to be undertaken in the coming years, to be funded by a combination of GEF and donors/partners.

UNIDO was the first UN agency to submit POPs Enabling Activities project proposals for expedited approval by GEF. The first proposal was prepared for China in March 2001, and a number of subsequent proposals were approved by the GEF in 2001 and are currently under implementation. UNIDO will continue to assist countries requesting this high priority activity. During the process of the development and formulation of project proposals on POPs Enabling Activities, UNIDO has promoted awareness among high-level government decision makers. It has held special briefing sessions to stakeholders both of the donor community and of developing countries and countries with economies in transition. It has delivered training programmes in several developing countries with regard to POPs. These actions will continue as we receive further requests from countries seeking our assistance.

It should be noted that in the area of POPs only enabling activities, capacity building and pilot demonstration activities type of projects can be funded by GEF before the Stockholm Convention comes into force.

Enabling activities

The development and formulation of the National Implementation Plan is the main objective of the GEF POPs Enabling Activity projects that should lead to the ratification of the Stockholm Convention. UNIDO is assisting developing countries and countries with economies in transition that lack the capacity and expertise to prepare the National Implementation Plans, focusing on the following aspects:

- The process of developing the National Implementation Plan and information dissemination within the country; budgetary requirements and work plan;
- The national coordination mechanism to be put in place for the implementation of the Convention;
- The identification and involvement of the key stakeholders in the country, including relevant ministries, NGOs, the private sector, industrial and agricultural associations, etc;
- The POPs situation in the country with regard to the production, use, import and export of pesticides and PCBs, stocks of pesticides and PCBs, contaminated sites, emissions of dioxins, furans and PCBs into air, soil and water;
- The assessment of the country's infrastructure, such as legal frameworks, inspection systems, testing facilities, local commercial systems, development of new environmentally-friendly technologies.

To date UNIDO has submitted 24 POPs Enabling Activities proposals and received 12 approvals. The POPs project for China has been formally entered to the GEF official pipeline.

Pilot demonstration projects

In addition to the capacity building type of projects aiming at the formulation of National Implementation Plans, the GEF encourages the preparation of so-called demonstration projects that aim at proving the viability and effectiveness of specific phase-out measures through successful implementation. UNIDO has been very active in this area and one global demonstration project has already been approved. The project entitled "Demonstration of viability and removal of barriers that impede adoption and effective implementation of available, non-combustion technologies for destroying persistent organic pollutants in the Philippines and Slovakia" is under implementation.

UNIDO is developing and formulating several other pilot demonstration projects of global and regional interest in close consultation with the Scientific and Technical Advisory Panel (STAP) of the GEF.

Paper 5

Special Contribution to the Discussion

Octavio Maizza-Neto*

The questions raised by the panellists show that the issue we are dealing with is quite broad and quite complex. When we talk of standards, or some people say norms, it appears to be a very simple terminology. How is this linked to industrial growth; the growth of the productive sector? Of course, these standards are designed on a voluntary basis in order to allow linkages among different industries to exchange parts, components and final goods. Being voluntary, the majority of the standards have to be translated at the factory level, creating what we call the working standard.

Standards are increasingly developed in developed countries, and they are adopted by developing countries. The level of technology of developing countries is different and the developing countries therefore usually cannot cope with the requirements that are addressed by these standards. By not being able to do so, they find it difficult to penetrate the large foreign markets and remain limited to selling their goods in the local markets. When we come to promoting trade, its growth should be represented by an improvement of the developing countries in the utilization of these standards.

Since standards are activities that require time and extensive discussions before a good consensus can be reached, they cannot develop as fast as the growth in trade. Developing countries are therefore increasingly falling behind in terms of following or applying standards to comply with the requirements of external markets, and thereby ensuring export growth.

Is the issue of standards the only impediment for growth? If the developing countries would have standards, would they develop faster? That is another question we should link to these questions. Standards are a necessary condition, but not a sufficient one. Linked to the issue of standards at the working level is the need to have measurement

* Assistant Director-General, UNIDO. This text is based on an edited transcript of the spoken presentation.

instruments, which takes one into the field of metrology. This is a highly complex field, and large investments are required to guarantee that companies are complying with the given standards. Most developing countries do not have this metrology infrastructure, and they have to rely on measurements that do not compare with the measurements of developed countries.

There is yet another constraining effect linked to the issue of standards. Is what is produced in one country in conformity with what is required by another country? Conformity can be related to measurement, standards and regulations. If one country buys from another, the country stipulates a standard or regulation, and wants to receive goods according to that regulation, in conformity with that regulation. Conformity thus becomes a third standard-related constraint to growth.

The fourth and last problem facing developing countries today is related to credibility. Even if developing countries have the required infrastructure to produce standards, measure their compliance and attain conformity, they often still do not have credibility. They are not included in the international chains of measurement. They do not participate at all in the development of international standards. They do not participate in this world that defines trade flows.

How can these factors affect the growth of the manufacturing sector? They can affect manufacturing growth in the sense that industrialists in developing countries have to find the answers that they need in developed countries. They have to adopt the standards of developed countries and buy the required metrology services from these countries. But this increases their costs. By increasing their costs, they lose competitiveness and then it becomes more and more difficult to enter in the increasingly competitive markets of today. They thus face a hard battle to sell goods with the required level of conformity with these standards.

The issue of standards has been a problem for the last 50 years for developing countries, and it looks like it will continue to be a problem. If governments do not recognize this problem, their countries will fall further behind in international trade. We no longer find funds to help countries in establishing metrology institutes or buying equipment for metrology. There is a need for governments in developing countries to understand that they have to support the private sector by establishing this infrastructure.

We are now developing new initiatives to see if we can cope with the problems of market access that were mentioned by Mr. Bélisle and by the Director-General. In this way we will try to find a little more room for manoeuvre for the developing countries, but it

is a very difficult task because the number of variables to be considered is increasing. We no longer face merely the problem of standards, but also of customs, regulations and many other constraints to market access.

The question is, are standards important? How do they affect the manufacturing sector? The answer is that they not only affect it, but that they are critical for its growth. Either one has standards, or one does not have a manufacturing sector. Either one has them or one will continue to produce only handicrafts and not the goods that enter into international commerce.

In my opinion, we need international organizations and the private sector to make an effort to build the minimum structure, internationally recognized, in developing countries that could allow them to talk in the same language throughout the marketing world. This is a very short way of answering the question.

Concluding Remarks

Nilmadhab Mohanty*

It is my pleasant but tricky task to give the concluding remarks of this Forum. I will start with the tricky part, in the sense that I will make an attempt to put together, to summarize, and draw conclusions from the interesting and in-depth discussions that we had both in the morning and in the afternoon.

The issues raised related to technology, investment, sustainable development and the norms and standards required for achieving it, and the interaction between them and a dynamic process of globalization. How do these forces affect developing countries and the countries with economies in transition? And what role can UNIDO play in assisting them to meet the challenges arising from this process?

The forces driving globalization and increased flow of goods are two: Technology, in particular information technology and telecommunications, and liberalization, mainly brought about by GATT negotiations and the WTO agreements.

The main lesson of two centuries of economic growth is that technology innovation rather than capital accumulation is the real fuel of long-term growth. Technical change rather than capital accumulation lies at the core of long-term growth, and the role of technology and technology management in influencing economic development, in particular industrial development, is best illustrated by the recent experiences of the East Asian countries and China. In fact, that is the only experience of developing countries in the post World War years that is worth examining, and we should try to derive the best practices from these experiences.

As is well known, technology is created only in a small part of the world. Innovations are made only in the developed countries. If home-grown innovations were the only

* Managing Director, Field Operations and Administration Division, UNIDO. This text is based on an edited transcript of the spoken presentation.

major source of technological advance, only a few countries would surge in economic activity while the rest of the world would stagnate. And yet, some countries, with little innovation activity, such as Republic of Korea or China, have achieved spectacular growth in the post-war years. The key to such growth is that technology crosses national boundaries and today, as Professor Kondo reminded us in the morning, technology is footloose. This means that all countries can reap the benefits of innovation and – in fact, they can leapfrog, since it is available freely today. And globalization helps in that process of diffusion but the rate at which technology diffuses from the leader to the follower, across countries, differs greatly around the world.

We need to examine why this happens. There are two types of countries that have benefited from technology diffusion. The first category comprises countries that have participated in the export efforts, such as Republic of Korea and Taiwan Province of China. The second category of countries which have benefited are those who could get FDI, foreign direct investment, into their countries, like China, Mexico, Hungary and Poland. These have been successful in absorbing technology.

To be successful, it is not merely the import of technology that is important, but it is the technology management that is more important. In fact, technology management is a powerful tool for the growth of firms, regions and nations. Here again, the experience of Japan, Republic of Korea, and Taiwan Province of China are relevant. The East Asian economies that have achieved high rates of growth have a critical mass of industrial enterprises with the capability to adapt and diffuse technologies that originated in the most technologically advanced countries. They have created the capability to develop new products and processes based on defining, diffusing and advancing generic technologies.

Now as has been explained in our Medium-Term Programme Framework submitted as an agenda item for the General Conference, it will be a part of UNIDO's efforts to assist in this field by analysing the best practices and making them available to developing countries and countries in transition, so that we can derive lessons from these experiences and go forward in the industrialization process.

The second topic that was discussed in the morning was related to investment and Dr. Fawzy has very graphically illustrated in his presentation the preconditions and institutions required for investment, both domestic as well as foreign. Though most emphasis was placed on foreign investment, it must be remembered that unless there is domestic investment, unless domestic firms are competitive, foreign investment will never come into that country, and that requires a congenial investment climate. There are many

factors which he explained, but one factor which needs very specific emphasis is effective governance. There must be law and order to begin with, for investment to come in. There must be security. There must be the rule of law. You cannot have conflict and expect foreign direct investment. There must be a fair police, criminal, judicial system, otherwise no foreign investment will ever come. And this is what we need to look at.

But when these conditions are fulfilled, we look at other issues. In fact, unfortunately, in the international discussion today, there is a lot of emphasis on having a liberalized foreign direct investment regime. This was emphasized by the MAI initiative of the European Union, and also recently in the Doha Summit. There was an emphasis on bringing investment into the trade negotiations to make more liberalized rules. But that is not the important thing, if you look at some of the figures that I would like to give. Now while discussing FDI, a few facts need to be emphasized. In 2000, for example, FDI reached a record level of US$1.3 trillion, mostly coming from the MNCs (multinational corporations). Developed countries remained the prime destination for FDI. More than three-fourths of this US$1.3 trillion went to developed countries.

The developing countries got US$240 billion but its distribution was highly skewed. Out of these US$240 billion, US$143 billion went to Asia alone, $41 billion out of which went to China, and a major part went basically to Hong Kong SAR of China. The flows to Africa declined in 2000 from US$10.5 billion to US$9.1 billion.

These data show that the emphasis on establishing a more liberalized regime may be misplaced. China, Republic of Korea and all the major recipients of FDI have very regulated FDI regimes. They used their foreign investment policies to direct investment to specific areas for specific industries, whereas Africa has a more liberalized foreign direct investment regime. So the more important agenda for the international development community is how to balance this imbalance, and to determine the kind of policies that are needed to help the developing countries in increasing their FDI flows, because they also bring technology, better management practices, and marketing expertise.

Our experience is that there have been three generations of reforms in foreign direct investment. The first generation emphasized the kind of FDI policies that were needed, including trade liberalization, tariff reduction and opening up the economy to FDI. In the second generation, emphasis was placed on setting up investment promotion agencies. In the third generation today, the emphasis is on creating brand names. In India, you have Bangalore for electronic and computer industries, which attracts multinationals. Similarly, we need to create clusters of activities in every country where these firms will come up, will develop their networking and will be an attraction for foreign direct

investment. And in clustering, UNIDO had a very massive programme, both for industrial development promotion and for small industry development. This is an area in which we are also trying to work.

The third and last point that was repeatedly raised related to globalization and industry development. Globalization has many losers and few gainers. It is a fact of life, which is not going to change for some generations. There are gainers among developing countries. The main gainers among the industrial firms in developing countries are the more modern small and medium enterprises, which is the clientele that UNIDO approaches. For them, these international norms and standards are relevant. We should help those firms, those countries, to conform to international norms and standards on which lengthy discussions have taken place. We must help them, and we must have skills designed to help these firms to get into the international mainstream of globalization and participate in international trade.

We should not only help these firms directly, but we should help to develop their capability. Today the developing countries do not have the capability even to negotiate trade agreements, as in the case of the Uruguay Round and to some extent in the case of Doha, although things are improving. In Doha, I understand that the developed countries came to understand the points of view of developing countries. It is, I think, the responsibility of UNIDO to educate, to create capability. Industries can participate in the trade system only if they have the capability. Just repeating ad infinitum, that we should bring the enterprises of developing countries to the mainstream will not help unless we help develop their capability to do so. That is the role of UNIDO: To develop capabilities. And we have various schemes for that.

As I said, there are many losers from the process of globalization. Dr. Pachauri referred very graphically to them and to the problems that these countries face.

There are international efforts to bring these countries into the mainstream, but my view is that it will take decades, generations, before they come into this mainstream. In the meantime, there will be poor people in these countries and societies, whose economic and social conditions should not be allowed to deteriorate. In this scenario, special measures need to be taken for micro-enterprises and small business in various countries. Poor people, especially women, typically engage in these activities, most of which are in the informal sector. Dr. Pachauri referred to technological handicaps of these enterprises, but they in fact face a large number of barriers. They have limited access to credit and technology. Many of them lack property rights. They have low skill levels. There is poor infrastructure and inappropriate policies and regulations, which are

sometimes in favour of large enterprises and affect the small and macro-enterprises adversely. UNIDO proposes to put in place support measures that address these problems, not only in the technical areas but also in the areas of micro-finance and credit guarantee schemes, transfer of simple technology, establishment of low-cost manufacturing facilities using basic tools, and training for skills development and implement in policy and regulatory measures.

They are all reflected in the agenda note that we have circulated on the Medium-Term Programme Framework, which I will request the delegates to discuss at length and in-depth, so that we are able to fine-tune our programmes for the benefit of the developing countries and countries with economies in transition.

Annex
List of Participants

Opening Statement
Mr. Carlos Magariños
Director-General, UNIDO

Panel 1

Moderator:
Mr. John Degnbol-Martinussen
Professor of Economics, Roskilde University, Denmark

Distinguished speakers
Mr. Maïgari Bello Bouba
Minister of State, Cameroon
Mr. Moncef Ben Abdallah,
Minister of Industry, Tunisia

Panellists
Mr. J. Denis Bélisle
Executive Director, International Trade Centre, UNCTAD/WTO
Mr. Ibrahim Fawzy
Professor of Economics, Cairo University
Mr. Masayuki Kondo
Professor of Economics, Yokohama National University
Mr. Yo Maruno,
Deputy to the Director-General and Managing Director, Investment Promotion and Institutional Capacity-Building Division, UNIDO
Mr. Kandeh Yumkella
UNIDO Representative and Director of UNIDO's Regional Industrial Development Centre in Nigeria

Panel 2

Moderator:
Ms. Ursula Stenzel
Member of the European Parliament

Distinguished speaker
Mr. Oswaldas Ciukšys
Vice Minister of Economy, Lithuania

Panellists
Mr. Gene Hutchinson
Managing Director, Botswana Bureau of Standards
Mr. R. K. Pachauri
Director-General, Tata Energy Research Institute, New Delhi, India
Mr. Bamanga Tukur
Executive President, African Business Roundtable
Mr. Angelo D'Ambrosio
Managing Director, Sectoral Support and Environmental Sustainability Division, UNIDO
Mr. Octavio Maizza-Neto
Assistant Director-General, UNIDO

Closing Statement
Mr. Nilmadhab Mohanty
Managing Director, Field Operations and Administration Division, UNIDO

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