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**SELECTED ISSUES AND STRATEGIES FOR MANAGING GLOBALIZATION:  
PART II: INFORMATION, COMMUNICATION AND SPACE TECHNOLOGY,  
AND ENVIRONMENT AND SUSTAINABLE DEVELOPMENT**

(Item 5 (b) of the provisional agenda)

**OVERVIEW OF CROSS-CUTTING AND SECTORAL ISSUES RELATED TO  
INFORMATION, COMMUNICATION AND SPACE TECHNOLOGY,  
AND ENVIRONMENT AND SUSTAINABLE DEVELOPMENT**

*Note by the secretariat*

**SUMMARY**

The present document addresses key issues of information, communication and space technology (ICST) and environmentally sustainable economic growth (green growth). It stresses that ICST and green growth would directly contribute to improving the competitiveness of developing countries and stimulate economic development while significantly improving ecological efficiency and ensuring the environmental sustainability of the region. The document further discusses the opportunities and challenges confronting the developing countries in the region in the use of ICSTs to bridge the digital divide and pursue environmentally sustainable economic growth against the mandates and action-lines provided by the Millennium Development Goals, the World Summit on Sustainable Development, the World Summit on the Information Society, the fifth Ministerial Conference on Environment and Development in Asia and the Pacific and the sixty-first session of the Commission. In this regard, the document suggests a possible role for ESCAP in support of developing countries to address these issues.

The Committee is invited to deliberate on the relevant issues, including those raised in the present document, with a view to providing further guidance to the secretariat on its future direction.

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## I. INTRODUCTION

1. The process of globalization has profound, and still unfolding, implications for the region's economic and social development. The challenge is how to manage globalization effectively by formulating and implementing effective policies to seize the new opportunities while minimizing the inevitable costs.

2. The Commission at its sixty-first session undertook a mid-term review of its revised conference structure, in accordance with Commission resolution 58/1 of 22 May 2002. An outcome of the review was the adoption of Commission resolution 61/1 of 18 May 2005. In the resolution, the Commission decided that "To ensure that the key sectoral issues formerly dealt with by the subcommittees can be addressed more effectively within a thematic framework, the format of the thematic committee sessions shall include segments as follows: ... (ii) Committee on Managing Globalization: Part I: International Trade and Investment, and Transport Infrastructure and Facilitation and Tourism; Part II: Information, Communication and Space Technology, and Environment and Sustainable Development". The decision will come into effect from 2006.

3. In this regard, by February 2006 the secretariat will prepare the strategic framework for the biennium 2008-2009, which will subsequently form the basis for the programme of work for that period. The purpose of the present document is to take stock of the profound and still unfolding implications in the form of persistent and emerging issues along with the related ongoing and mandated activities of the secretariat and to invite the Committee to provide the relevant divisions with guidance as to some of the major elements that should be included in the strategic framework.

4. Section II provides an overview of the principal drivers and results of globalization, highlighting the rapid regional growth in all sectors. Section III focuses on some of the persistent and emerging issues in managing globalization that still need to be addressed if the region is to remain competitive and submits a number of proposals for future work by the secretariat that could assist regional member countries in addressing those issues with a view to the formulation of the strategic framework for the biennium 2008-2009. Finally, section IV seeks the guidance of the Committee on Managing Globalization concerning the areas considered of particular relevance and importance.

## II. GLOBALIZATION AND REGIONAL GROWTH

5. While there is no general agreement about the relative importance of the various causes of globalization, there exists a consensus that the main driving forces behind the current phase of globalization are lower barriers to trade and investment, lower transport costs, lower information and communication technology costs, and the availability of cheap and reliable energy, as well as income growth and convergence.

6. The most visible illustration of globalization is the increased international trade in goods and services. In 2004, real world merchandise trade grew by 9 per cent globally compared with 4 per cent

world GDP growth.<sup>1</sup> Asia remained among the most active trading regions. Particularly noteworthy is the rapid growth of trade in Central Asia and other countries of the Commonwealth of Independent States. Asia's real export growth rate, at 15 per cent in the same year, was the highest in the world, with China, the Republic of Korea and Singapore recording growth rates of over 20 per cent.

7. Foreign direct investment (FDI) flows into the Asian and Pacific region rebounded in 2003 to US\$ 107 billion, up about 14 per cent from 2002.<sup>2</sup> Within the ESCAP region, there was considerable unevenness of FDI flows to different subregions and countries, as well as industries. Overall, inflows were concentrated in North-East Asia (\$72 billion in 2003) and in services. China became the world's largest FDI recipient in 2003, overtaking the United States of America. Flows to South-East Asia, South Asia, Central Asia and the Pacific were \$19 billion, \$6 billion, \$6 billion and \$200 million, respectively.

8. As a result of burgeoning trade growth, world container port traffic expanded by 9.2 per cent in 2003, reaching 266 million twenty foot equivalent units (TEUs). Asian countries dominated world container shipping, as they accounted for 46 per cent of container ship operation, 62 per cent of container port throughput, and 83 per cent of container ship building. Twelve major South and East Asian exporters together are responsible for half of the world's containerized exports. However, inter-country land transport has received less attention than maritime transport in Asia and the Pacific.

9. In 2004, international tourist arrivals reached an all-time record of 763 million, up 11 per cent over the previous year. More than half of this increase (or 34 million) was in the ESCAP region. International tourism receipts reached a new record, amounting to a total value of US\$ 622 billion in 2004, of which US\$ 125 billion were spent in the Asian and Pacific region, an impressive increase of 24 per cent over the previous year.

10. By July 2005, an estimated 15 per cent of the world population (or 940 million) were Internet users, up from 10 per cent in September 2002. There are an estimated 346 million Internet users in the ECAP region (i.e., one in eleven Asians).<sup>3</sup> Since the end of 2002, Asia-Pacific has been the world region with the largest numbers of Internet users, now well ahead of North America and Europe. There are more than 100 million Internet users in China and almost 40 million in India, and Internet market penetration levels are catching up rapidly with those in North America.

11. Information and communication technology (ICT) enables other sectors to move towards sustainability. All sectors can improve the impact of their operations, reducing their use of resources through smart energy management, more efficient transport, transport substitution, dematerialization, electronic commerce and substitution of services for products.

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<sup>1</sup> WTO, *World Trade Report 2005* (Geneva, 2005).

<sup>2</sup> UNCTAD, *World Investment Report 2004*.

<sup>3</sup> Internet World Stats ([www.internetworldstats.com](http://www.internetworldstats.com)), accessed August 2005.

12. At the same time, globalization, with its international flows of capital, labour and technology, has increased the opportunities for a shift towards environmentally sustainable economic growth or “green growth”. For example, through easier sharing and transfer of knowledge and technologies, there are now potential new win-win alternatives to the traditional trade-offs between growth and environmental sustainability. More efficient and less materials-intensive production is cost-effective, reduces emissions and creates new job opportunities.

13. Despite the high transport costs of energy fuels, energy markets have been increasingly integrated regionally as well as worldwide. This has been evidenced by the rising share of energy crossing borders before reaching final consumers. Energy trade increased to about 55 per cent of primary energy use at the end of the twentieth century, mainly due to Asian energy imports that more than tripled between 1985 and 1997, reaching 13 per cent of world energy imports. Nepal, the Lao People’s Democratic Republic and Bhutan have been able to develop their hydropower potential and Bangladesh and Myanmar their natural gas reserves, to their own benefit and that of their neighbours. For the landlocked countries in Central Asia, cross-border flows of gas and oil are of vital economic importance, while the negative externalities of oil and gas production and transportation have remained a subject of concern.

### **III. PERSISTENT AND EMERGING ISSUES IN MANAGING GLOBALIZATION: INFORMATION, COMMUNICATION AND SPACE TECHNOLOGIES AND ENVIRONMENT AND SUSTAINABLE DEVELOPMENT**

#### **A. Globalization and environmentally sustainable economic growth (green growth)**

14. Globalization has brought enormous opportunities for dramatic economic growth in Asia and the Pacific. However, the rapid increase in industrial and agricultural production, as well as rising levels of consumption, exercise increasing pressure on the environmental carrying capacity of the region. The region’s environmental sustainability is under serious pressure and the need for continued economic growth is urgent, given the persistent poverty, population growth and a poor nutritional status in many countries.

15. Industrial production in the region increased by almost 40 per cent, as compared with a global increase of 23 per cent, from 1995 to 2002, with significantly polluting industries using outdated technologies and operating under weak pollution control regimes. Agricultural production increased by 62 per cent from 1990 to 2002, largely through the intense use of agro-chemicals. Over 60 per cent of the water used is for agriculture in the region. Rapid and unplanned urbanization has brought considerable problems of air pollution, access to clean water and sanitation. The development of adequate waste management and transport infrastructure is not keeping up with the growth in the urban population. The nature of waste is also changing, reflecting the adoption of urban lifestyles and a growing demand for personal vehicles and energy-intensive consumer durables. Finally, growth in water demand places significant pressure on the environment.

16. The rapid economic growth of the past few decades has been supported by relatively inexpensive energy resources. Fossil fuels, in particular, have contributed enormously to the pressure on the environment. Uncertainties and distress over the rising price of oil in recent months, coupled with an increase in already high energy demand, have added new threats to energy security. One way of addressing these issues could be through improving eco-efficiency by changing energy consumption and production patterns.

17. In many countries of the Asian and Pacific region, water is increasingly becoming a scarce resource. The efficient use of water resources is considered a primary means of easing the pressure on water resources and achieving the sustainability of their development. The secretariat continues efforts to promote policy formulation and capacity-building for strategic planning and management in the water resources sector, as well as water-use efficiency within the concept of integrated water resources management.

18. Contemporary urban transport networks are heavily dependant on privately owned vehicles. Most of the Asian mega-cities have adopted this style and mode of urban life, which has become a chronic problem, with significant traffic congestion and air pollution. Owning and using an individual vehicle is a distinct feature of the neo-consumeristic pattern in the region. However, the enormous opportunities presented by urban settlements for collective and much more effective means of transport favouring better social distribution and equity have not yet been fully explored.

19. In order to respond appropriately to the above issues, the secretariat seeks and actively promotes the effective implementation of the relevant resolutions and recommendations of the Commission and other United Nations, global, international and regional agreements, such as the Johannesburg Plan of Implementation of the World Summit on Sustainable Development, Agenda 21 and the Millennium Development Goals, as well as the Ministerial Declaration on Environment and Development in Asia and the Pacific, 2005, and the Regional Implementation Plan for Sustainable Development in Asia and the Pacific, 2006-2010.

20. By adopting resolution 61/9 on the fifth Ministerial Conference on Environment and Development in Asia and the Pacific, the Commission supported the approach of environmentally sustainable economic growth or “green growth” as a relevant and appropriate regional response towards attaining the Millennium Development Goals for poverty reduction and environmental sustainability.

21. The “green growth” approach opens up increased opportunities for maximizing the benefits of globalization, such as sharing and transfer of knowledge and technologies for eco-efficient production processes, for renewable resources use and for integrated natural resources management as well as for creating new job opportunities. It also advocates eco-efficient and resource-saving economic and production activities based on the full life-cycle production and consumption processes, which are cost-effective and minimize emissions. It enhances the competitive edge and advantages of the

countries from the region on the world trade market, which currently dominates their export driven economic development.

22. In the light of the above, two of the major elements of “green growth”, eco-efficiency and environmental sustainability, and trade and environment are discussed below.

### **1. Eco-efficiency and environmental sustainability**

#### **(a) Persistent and emerging issues**

23. The conventional environmental management approach has been focused more on improving environmental performance by controlling and regulating pollution and effluents from production processes. Despite the progress achieved, however, pollution control does not provide for lessening the pressure increase from the pattern of economic growth or for “development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs”.<sup>4</sup> In order to “ensure the environmental sustainability” of the society, it is also imperative to improve the efficiency of the way natural resources are being used.

24. Improving the eco-efficiency of consumption patterns could be achieved through policies providing for individual consumers to make environmentally friendly choices. In order to improve the environmental sustainability of the consumption and production patterns of the society, there is a need to address both aspects of the consumption-production cycle. Technological changes, coupled with supporting policy measures and sensitizing the end-users about the social benefits of these changes, would be needed.

#### **(b) Ongoing and mandated activities**

25. Many of the ongoing activities of the secretariat are aligned to promote sustainable development. These activities address both broad environmental policy and sectoral issues, related to sustainable energy and water resources development. Moreover, some of the regional and subregional initiatives, such as the Kitakyushu Initiative for a Clean Environment, the North-East Asia Subregional Programme for Environmental Cooperation (NEASPEC) and the Dust and Sand Storm project, are largely supportive of further promotion of sustainable development in general and eco-efficiency in particular.

26. Within the framework of the Kitakyushu Initiative, the Government of Japan continues to support the project activities aiming at tangible improvement of environmental quality in cities in the region. Measures are undertaken to assist local governments in enhancing their capacities, primarily by information exchange through the Kitakyushu Initiative Network, and by the demonstration of successful policy measures. In addition to solid waste and water quality management, two sectoral

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<sup>4</sup> World Commission on Environment and Development (Brundtland Commission), *Our Common Future*, Oxford, New York: Oxford University Press, 1987.

pilot projects are being implemented to demonstrate water-use efficiency in Tehran and energy efficiency in Ulaanbaatar. Possible replication of these projects will be analysed in early 2006.

27. Under NEASPEC, the secretariat is addressing the issues of nature conservation and community participation in the management of protected areas, the reduction of emissions from coal-fired power plants as well as commissioning a subregional study on emerging issues related to environmentally sustainable economic growth in North-East Asia.

28. The secretariat is also working towards the preparation of a GEF demonstration project for the mitigation of dust and sandstorms in border areas of China and Mongolia. This project follows up on earlier activities related to the prevention and control of dust and sandstorms in Northeast Asia undertaken jointly by the Asian Development Bank (ADB), the United Nations Environment Programme (UNEP), the secretariat of the United Nations Convention to Combat Desertification and ESCAP from 2002 to 2005. It aims to create demonstration sites for re-vegetation, sustainable grassland management and integrated water resources management to stabilize and prevent the movement of sands, and is expected to start from late 2005.

29. As a follow-up to the World Summit on Sustainable Development and with funding from the Government of the Netherlands, the secretariat implemented a project on pro-poor public-private partnerships consisting of four demonstration pilots for providing basic services to poor people in an environmentally sustainable manner and in collaboration with the private sector. The project focused on key sustainable development sectors: water, energy, health (HIV/AIDS) and biodiversity. The secretariat seeks further opportunities to advocate pro-poor policies in these areas.

30. ESCAP has contributed to the joint report with ADB and the United Nations Development Programme (UNDP) on achieving the Millennium Development Goals in Asia and the Pacific.<sup>5</sup> The report links Goal 1, on poverty reduction, and Goal 7, on environmental sustainability, and includes detailed analysis on issues related to water and sanitation, and the required institutional changes and reforms to meet the Goals in the region.

31. The secretariat is currently developing capacity-building tools for policy- and decision makers on the green growth concept and the system changes needed for the integration of environment and economy through the creation of synergy between the two. Tools are being developed for the use and application of green accounting, green GDP and eco-tax reform, as are market economy incentives for implementing environmental policies and enhancing corporate responsibility and stewardship.

32. The secretariat has initiated a consultative process in cooperation with the Ministry of Environment of the Republic of Korea to develop a joint framework for the Seoul Initiative Network on Green Growth (SINGG) following the recommendations of the fifth Ministerial Conference on

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<sup>5</sup> *A Future Within Reach: Reshaping Institutions in a Region of Disparities to Meet the Millennium Development Goals in Asia and the Pacific* (United Nations publication, sales No. E.05.II.F.27).



Environment and Development in Asia and the Pacific, 2005. The joint framework will provide a platform for the implementation of the Seoul Initiative through a policy consultation forum comprising representatives of the Governments of ESCAP member and associate member States, various stakeholder agencies and financial institutions.

33. The secretariat is developing a cultural and traditional values approach in creating an environment conducive to enhancing eco-efficiency in modern Asian society. A research study on the role of culture and traditional values in promoting lifestyles which are in harmony with nature as a means of enhancing the eco-efficiency of production and consumption is currently being designed.

34. A publication entitled *Green Growth @ a Glance* and designed to raise awareness of various economic, environmental and cultural aspects and the general philosophy of green growth is being prepared. Web portals and online discussion forums for interactive knowledge-sharing and dissemination for propagating and stimulating green-growth-oriented business development are also being developed. The secretariat aims to establish a knowledge hub for “green growth” through collaborative research and partnership with leading regional and world experts and scientists, think-tank organizations and Governments implementing eco-efficiency concepts and policies.

35. In the Pacific, ESCAP works closely with several subregional organizations in the area of energy, water and environment. While a comprehensive 10-year review of the Programme of Action for the Sustainable Development of Small Island Developing States articulated the need for urgent action in 12 key areas, the consultation process for the preparation of the fifth Ministerial Conference on Environment and Development in Asia and the Pacific, 2005, successfully identified the specific concerns of the Pacific countries. The secretariat plans to support follow-up activities on the outcome of the subregional consultations, the recommendations of which primarily focused on promoting a community lifestyle based on traditional cultural values.

36. Measures to improve eco-efficiency in the use of energy could include diversifying the energy mix by increasing the share of low- or no-carbon sources of energy, such as natural gas and renewable energy, which would result in reducing dependence on fossil fuels. Since that dependence will continue to dominate the energy supply in the near future, other measures could be taken to improve energy efficiency and conservation through demand-side management in changing consumption patterns. These measures would also contribute to building resiliency to external factors. In order to formulate, strengthen or institutionalize these measures, the first priority is an integrated energy policy. As energy policy has implications for the future development of the energy sector to support sustainable economic growth or “green growth”, it should be based on an appropriate analysis of the sector, taking into consideration driving factors that determine a sustainable path. Such factors include the integration of legislative and economic instruments to change the current unsustainable consumption and production patterns of energy. The introduction of such instruments needs to be further researched and documented for effective use in policy formulation and decision-making.

37. Pursuing the concept of sustainable economic growth at the subregional level, the secretariat is focusing on joint activities with the Economic Commission for Europe in implementation of several project proposals aimed at implementing the Cooperation Strategy to Promote the Rational and Efficient Use of Water and Energy Resources in Central Asia, prepared within the framework of the United Nations Special Programme for the Economies of Central Asia (SPECA). Those proposals were presented to the donor community at the International Conference on Subregional Economic Cooperation in Central Asia and the Future Role of SPECA, held in Astana from 25 to 27 May 2005, and are awaiting approval.

38. In the area of energy, the activities of the secretariat during the current biennium have focused on technical assistance in promoting access to energy services, institutional capacity and human resources development in the integration of rural energy and rural development in seven Asian countries and a training package for the Pacific. The secretariat organized workshops on the Clean Development Mechanism. Moreover, with the support of the Government of China, the secretariat has also implemented workshops and seminars to share the experiences of the region in the development and diffusion of renewable energy technologies, such as biomass, biogas, solar, wind and small hydropower. Most of these activities are expected to contribute to the promotion of eco-efficiency. The secretariat has also been facilitating subregional energy cooperation in North-East Asia.

39. In the biennium 2006-2007, the capacity-building projects of the secretariat will focus on promoting and supporting national efforts in enhancing eco-efficiency through the efficient utilization of energy, enhanced utilization of renewable energy and regional and subregional energy cooperation. In support of these, the secretariat will also carry out policy research on sustainable development indicators in the power sector. It will also package and share lessons learned and the policy implications of energy and climate change.

40. With respect to policy alignment towards sustainable development, regular dialogue among energy sector policymakers together with research institutions and other concerned stakeholders may contribute to the creation of the enabling environment necessary to improve eco-efficiency in the energy sector.

41. To facilitate and support the implementation of the Johannesburg Plan of Implementation, the secretariat will be holding a Regional Implementation Meeting in January 2006 in collaboration with the Food and Agriculture Organization of the United Nations (FAO), UNEP, UNDP and the United Nations Industrial Development Organization (UNIDO). The Meeting is expected to provide regional inputs for the fourteenth session of the Commission on Sustainable Development through a consolidated and agreed review document on the status of implementation towards achieving the goals of sustainable development and barriers to the implementation focusing on (a) energy for sustainable development, (b) industrial development, (c) air pollution/atmosphere, and (d) climate

change. It is also expected that a message reflecting the views of the specific needs of the Asian and Pacific region will be issued, calling for the attention of the Commission.

42. Rapid urbanization combined with a lack of planning as regards transport policies has led to traffic congestion and air pollution. Traffic congestion impedes economic growth by increasing travel time and decreasing productive hours, while air pollution decreases the productivity of workers by impairing their health. Governments have access to tools that may be easily utilized to control traffic congestion: taxes and subsidies. Fuel subsidies and taxes are key to controlling pollution levels and urban economic growth. The secretariat is planning a multi-country study on policies and tools to promote tax policies that support the development of public transport, including the dissemination of good practices and lessons learned.

**(c) Strategic framework for the biennium 2008-2009**

43. It is proposed that the secretariat continue to facilitate the integration of the three dimensions of sustainable development by promoting environmentally sustainable economic growth and the sustainable use of natural resources through regional and subregional policy dialogues, the promotion of wider participation by all stakeholders and the use of innovative and pragmatic approaches to public- and private-sector capacity-development activities.

44. During the biennium 2008-2009, the secretariat will continue to implement activities initiated earlier to address persistent issues or in any other emerging issues. Such activities will be in support of the implementation of global mandates, such as the Johannesburg Plan of Implementation and the Millennium Development Goals, and regional mandates from the fifth Ministerial Conference on Environment and Development in Asia and the Pacific, 2005, the Commission and the Committee.

45. Emphasis will continue on identifying various mechanisms to promote “green growth”, including technical assistance and capacity-building, policy dialogues, studies on economic instruments, and public awareness and information-sharing activities.

**2. Trade and environment**

**(a) Persistent and emerging issues**

46. The fast economic growth experienced by the region has been driven primarily by exports. The growing production needed to fuel a mounting flow of exports has significantly increased the pressure on the environmental carrying capacity of countries in the region. Therefore, while there is a need to promote trade and enhance export competitiveness in order to maintain economic growth, a shift to more environmentally sustainable production patterns has to take place so as to make this growth sustainable.

47. With international trade liberalization and the progressive lowering of tariffs and the phasing out of quotas, non-tariff barriers, including environmental and health-related requirements, have become increasingly important factors affecting market access/entry and export competitiveness.

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Increasingly stringent environmental regulations and private sector requirements pose particular challenges, especially to producers in developing countries. On the other hand, they provide an opportunity to disseminate and develop more environmentally sustainable production methods, while at the same time sustaining export-driven economic growth. In order to arrive at a win-win solution, trade and environment policies need to be mutually supportive.

**(b) Ongoing and mandated activities**

48. The need for developing mutually supportive trade and environmental policies was expressed at the World Summit for Sustainable Development, where Member States called on United Nations organizations, including regional organizations, to enhance the delivery of coordinated and targeted technical assistance and capacity-building programmes on trade and environment, including in the context of the World Trade Organization (WTO) Doha Development Agenda.

49. In response, the secretariat has developed an interregional project on capacity-building in trade and environment, which is implemented with assistance from the Development Account and in collaboration with the United Nations Conference on Trade and Development (UNCTAD), UNEP, WTO and other regional commissions. The project aims to enhance the capacity of developing member States to formulate coherent trade and environment policies that address issues related to environment in an effective manner, thereby increasing market access for products in developed country markets while enhancing environmental sustainability.

**(c) Strategic framework for the biennium 2008-2009**

50. Areas for future work and opportunities for interventions for the secretariat will evolve from the WTO negotiations, which the secretariat will closely monitor and analyse. In particular, trade liberalization in environmental goods and services could provide new opportunities for trade and environmentally sustainable economic growth.

**B. Globalization and information, communication and space technology**

51. The digital revolution, fuelled by the rapid development, widespread deployment and increased affordability of information, communication and space technology (ICST), has an impact on all sectors of the economy and on all layers of society. It has fundamentally changed the way people think, behave, communicate, work and earn their livelihood. It has become not only a tool for sustainable socio-economic growth and poverty reduction but also an essential driver of managing globalization. Although the development and application of ICST in some Asian and Pacific countries is dynamic, a large number of developing countries lag behind in terms of access to and application of ICST. This digital divide has widened the disparity not only between countries but also within countries, such as between urban and rural areas, rich and poor, and socially stronger and weaker groups.

52. The role of ICST in achieving the Millennium Development Goals is well recognized by the World Summit on the Information Society, as reflected in the Declaration of Principles adopted at the Geneva phase. Many issues involved in transforming the digital divide into digital opportunities have been identified in the Plan of Action adopted at the Geneva phase and the Regional Action Plan towards the Information Society in Asia and the Pacific. These issues are to be dealt with in partnership with all relevant stakeholders at the global, regional and national levels.

53. During the regional preparatory process for the Tunis phase of the World Summit on the Information Society, several priority issues for action by ESCAP were identified. They include assisting developing countries of the region in creating an enabling ICST policy environment, human resource development, promotion or diffusion of ICST applications for sustainable development, empowerment of disadvantaged societal groups and application of space technology to improve access to ICST and connectivity. Additionally, knowledge-based disaster management and the use of ICST for enhancing competitiveness and promoting green growth, which are cross-cutting in nature, were identified as priority issues.

### **1. Creating an enabling ICST policy framework**

#### **(a) Persistent and emerging issues**

54. While the importance of enabling ICST policies and strategies was emphasized at the World Summit on the Information Society at the highest political level, the formulation and implementation of a systematic, comprehensive and articulated policy and regulatory framework have reached an advanced stage in only a few countries in the region. The experiences of these countries demonstrate that such a framework should be integrated fully into the national economic and social development plans. This framework should give due regard to the participation, rights and obligations of all stakeholders while maintaining economic incentives and ensuring the trust and confidence of businesses and consumers. Furthermore, policymakers should have the capacity and instruments, such as ICST indicators, to monitor the impact of policies on social and economic development and make appropriate revisions if required. Unfortunately, the lack of a coherent and integrated policy in some countries contributes to the inefficient use of resources and uncoordinated efforts by various government agencies and stakeholders.

55. The Geneva phase of the World Summit on the Information Society recognized that the Internet was a central element of the emerging information society and had an important role to play in attaining the targets set forth in the Millennium Development Goals. The Working Group on Internet Governance established by the Summit concluded that Internet governance extended beyond merely the technical domain to other significant public policy issues. Unfortunately, many developing countries do not have sufficient capacity to participate effectively in global Internet governance or to have an understanding and awareness of public policy issues.

**(b) Ongoing and mandated activities**

56. ESCAP has been undertaking a number of training and advisory service activities to assist countries in creating an enabling ICST policy and legal framework. ESCAP has developed a training module of ICST policy and strategies, an e-business primer and a model of international management standards for ICST development for policymakers and representatives of the private sector. It also assists countries with economies in transition to build their capacity to address intellectual property rights in the development and application of ICST.

57. In the next biennium, ESCAP will initiate work to assist selected developing countries and countries with economies in transition in building their national capacities for formulating and implementing public policies on and effective participation in global and regional Internet governance. ESCAP will also work on developing appropriate guidelines and other information materials and the promotion of public-private partnerships. Finally, ESCAP will conduct a comprehensive review and trenchant analysis of the state of ICST development in Asia and the Pacific, covering various subregions, and recommend policy measures to facilitate the coordination of subregional ICST development initiatives aimed at bridging the digital divide.

**(c) Strategic framework for the biennium 2008-2009**

58. During the biennium 2008-2009, ESCAP will continue its assistance in creating an enabling ICST policy framework in developing member countries, focusing on building their capacity in collecting, analysing and using ICST indicators for monitoring and reviewing ICST policies and strategies; promoting the integration of e-strategies into national economic and social development plans; forging partnerships among all stakeholders; and ensuring the compliance of ICST policies and legislative framework with multilateral agreements, such as the World Intellectual Property Organization (WIPO) and WTO agreements. It will also continue its work on national capacity-building in selected developing countries, LDCs, PICs and countries with economies in transition for implementing public policies related to Internet governance and assessing the level of ICST development.

## **2. Human resources development for ICST**

**(a) Persistent and emerging issues**

59. The rapid developments in ICSTs have resulted in dramatic changes in employment patterns and in the requirements for human resources. Furthermore, the global integration of the human resource market place in some ICST sectors, such as outsourcing, offers new opportunities and challenges for the entire region and, in particular, for developing countries.

60. It is now well recognized that qualified human resources with up-to-date skills in ICST are a prerequisite for competitiveness in the global market and that the adoption and development of ICST

require a large pool of professional and vocational skills at all levels ranging from policymakers to ICST professionals to workers in different ICST businesses and facilities.

61. Unfortunately, many countries of the region face enormous gaps between the demand for and the supply of human resources with the proper skills in various information, communication and space technologies. Therefore, a crucial challenge to countries of the region is how to develop their human resources to seize greater benefits from ICST. Some questions arise that need to be examined for strategic human resources development. Where are the skill gaps that provide competitive advantages to the developing world? How large are the demand for and the supply of human resources? What are the good practices that can be used to forecast and develop human resources in ICST? What are the respective roles of stakeholders, Governments, the private sector, civil society and regional organizations? What are the priority ICST training needs of countries in the region?

**(b) Ongoing and mandated activities**

62. Most of the activities of the ESCAP ICST programme include capacity-building and human resources development components, in particular, training activities in different issues of ICST policies, e-business, e-government and space technology. To further strengthen its activities, ESCAP and the Government of the Republic of Korea are jointly establishing the Asian and Pacific Training Centre for Information and Communication Technology for Development (APCICT). The Centre is expected to be operational in early 2006.

**(c) Strategic framework for the biennium 2008-2009**

63. ESCAP plans to assist, particularly Pacific island countries, LDCs and countries with economies in transition, in developing and implementing appropriate ICST human resources development policies, strategies and applications to enhance the contribution of the ICST sector to economic growth and to achieving the Millennium Development Goals. For this purpose, ESCAP will focus on the analysis of the relative contributions of ICST-producing and key ICST-using industries to the economy and determine the human resources development requirements of these sectors. It will identify relevant best practices in the region and study the differences among countries of the region in investment in and uptake of ICST and human resources development. These activities will be undertaken in close cooperation with APCICT, which hopefully will evolve into a sustainable institutional framework for the training of trainers in ICST.

### **3. ICST applications**

**(a) Persistent and emerging issues**

64. A large number of least developed and small island developing countries in the region face the danger of being left behind in an increasingly interconnected world economy because of their limited access to information technology applications. ICST applications have become of great importance in government operations, health care and services, industry, agriculture, transport and

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other economic and social sectors. The challenge is to make these applications accessible and affordable to all, easy to maintain and operate, and adapted to local needs and culture.

**(b) Ongoing and mandated activities**

65. Under the current ICST programme, ESCAP has been assisting the Governments of member States in harnessing the full potential of the application of ICST in a number of areas. In the area of e-government, ESCAP seeks to improve the delivery of various government services to people in such areas as social security, health care, business transactions, local tax and financial management and vehicle registration.

66. To provide access to the population in the rural and poor areas, community e-centres are promoted as an important development tool having considerable potential to empower communities. There have been many initiatives to establish community e-centres in the region by Governments, NGOs and development agencies. ESCAP has been able to play a major role acting as a catalytic agent through various partnerships not only with government institutions but also with the private sector.

67. E-business/commerce applications enable small enterprises to use information actively to improve their business and eventually raise competitiveness as work procedures become more efficient. When correctly applied, these applications also help to alleviate poverty by transforming domestic-oriented business markets into cross-border markets, in some cases with global outreach.

68. In recognition of the important role played by ICSTs as a vital tool for enterprises, large and small, to participate in the global economy, ESCAP is in the process of implementing a project on e-business development services for enterprise support agencies in the Greater Mekong Subregion.

**(c) Strategic framework for the biennium 2008-2009**

69. ESCAP will continue to strive towards achieving global and regional mandates such as the Millennium Declaration and the outcomes of the World Summit on the Information Society and the World Summit on Sustainable Development, in bridging the digital divide in the Asian and Pacific region. It will continue to provide assistance to its members, promote the use of ICST tools for socio-economic development, establish needed regional and subregional institutions in support of national capacity-building, and form partnerships with both the public and private sectors. It will implement ICST application in e-government, e-business, e-learning, e-health and others within the framework of global and regional mandates as well as national e-strategies.

70. In collaboration with other international organizations, including ADB, UNDP, the International Telecommunication Union (ITU), the International Labour Organization (ILO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO), ESCAP will examine the contribution of ICST to competitiveness in the global market and to sustainable economic and social development in Asia and the Pacific. It will assist countries, particularly developing countries,



LDCs and countries in economic transition, to develop the requisite capacity and implement appropriate ICST programmes and applications to enhance the contribution of the ICST sector to economic growth and to achieving the Millennium Development Goals.

#### **4. Space technology applications**

##### **(a) Persistent and emerging issues**

71. Because of the enormous size and diversity of the Asian and Pacific region, equitable access to ICSTs, in particular space technologies, has been a persistent issue. There is need to develop and strengthen broadband network infrastructure, including delivery by satellite and other systems, to help in providing the capacity needed by countries for the delivery of ICT-based services. The challenge is to develop strategies for and encourage the use of wireless capacity, including satellites, to provide access to remote areas in least developed and developing countries, landlocked developing countries, and small island developing countries, and to improve low-cost connectivity.

##### **(b) Ongoing and mandated activities**

72. ESCAP has engaged in a dialogue with satellite communication operators to prepare the region for forthcoming satellite broadband products and services and foster public-private partnerships, which are essential for a sustainable service mechanism. It is recognized that the broadband products and services that are provided for the poor and marginalized will be sustainable only if they are at the same time affordable, easily accessible and usable. A survey of satellite broadband resources to help establish a forum for developing partnerships between service providers and potential national government user groups has been conducted jointly with the Asia-Pacific Satellite Communications Council and other regional and international organizations, such as the International Telecommunication Union and the Office for Outer Space Affairs of the United Nations Secretariat. A focus on connectivity, including the issue of affordability, accessibility and usability of information products and services benefiting the poor, has been recommended for priority discussion at the Third Ministerial Conference on Space Applications for Development in Asia and the Pacific, to be held in 2007.

73. The Intergovernmental Consultative Committee on the Regional Space Applications Programme for Sustainable Development (RESAP) at its tenth and eleventh sessions, held respectively in Bangalore, India, in October 2004, and in Esfahan, Islamic Republic of Iran, in September 2005, addressed this issue of access to space technology applications and reviewed the achievements made in implementing RESAP since 1994, including its evolving role in achieving the Millennium Development Goals and the goals of the World Summit on the Information Society and the World Summit on Sustainable Development.

74. Discussions with heads of space agencies and national focal points of RESAP focusing on regional issues and common priority areas are currently under way in preparation for the Third Ministerial Conference.

75. Coordination at the national and regional levels in preparation for the Ministerial Conference is essential to support the wide range of activities, including consultations and the preparation of the theme papers, regional strategy papers and draft declaration for endorsement at the Conference. Extrabudgetary resources will be required to support these preparatory activities.

**(c) Strategic framework for the biennium 2008-2009**

76. For 2008-2009, the recommendations emanating from the Third Ministerial Conference will be implemented and incorporated into the strategy and action plan of a new Regional Space Applications Programme (RESAP-III). This will include the mainstreaming and integration of space technology applications into one overall regional ICT strategy and programme.

**C. Knowledge-based disaster management**

**1. Persistent and emerging issues**

77. Strengthening disaster management beyond post-event relief and recovery to pre-disaster risk assessment, preparedness, planning and mitigation is a persistent problem that has received increasing attention. As it demands stronger information support, the role of space technology lies in its criticality to produce information, address gaps in conventional systems and also disseminate real-time information to stakeholders at various levels. Although better space-sourced information on floods and drought has demonstrated its value for hazard reduction, the gain from better information depends not only on the quality of the information but also on how it is used for decision-making purposes, such as planning, regulatory actions, insurance coverage, relief and rehabilitation. The challenge is to enhance the capacities of countries in the region to develop multi-tier information systems supporting risk assessment, which depend on a number of elements, such as the institutional base to produce thematic maps, the associated databases and hydro-meteorological networks.

**2. Ongoing and mandated activities**

78. The Commission at its fifty-ninth session recommended the institutionalization of cooperative mechanisms to facilitate equitable sharing of the benefits of space technology throughout the region. Since then, the secretariat has been working with member countries and international organizations towards regional cooperative mechanisms in space technology applications for disaster management to foster a harmonized environment for the international sharing of resources and to help overcome national gaps in capabilities to respond to natural disasters. An increasing number of space-capable countries within and outside the region are expressing their intention to support disaster management.

79. The secretariat organized several workshops and expert meetings on ICST-enabled disaster management in 2004-2005, including on drought monitoring and assessment, floods and related disaster management, space information products and services, and promotion of regional cooperative mechanisms. Responding to the earthquake and tsunami of 26 December 2004, the secretariat organized the High-Level Expert Group Meeting on Technical Options for Disaster Management Systems: Tsunamis and Others. The secretariat also participated in a large number of meetings organized by others on complementary aspects of disaster management. The workshops recommended networking at the institutional, subregional and regional levels to exchange experts and share information products and services. At the national level, there is a need to strengthen inter-agency coordination to include clear responsibilities for nodal and supporting agencies as well as supporting policies and resources to allow countries to participate and benefit from cooperative mechanisms, such as the International Charter "Space and Major Disasters".

80. The secretariat is playing a catalytic role in many international and regional initiatives on disaster management. Recent examples are the proposal by the Islamic Republic of Iran to establish an ICST-enabled centre for disaster management, the proposed establishment of an Indian Ocean tsunami early warning system and the proposal by China for a satellite constellation for environment and disaster monitoring, to supplement existing space resources providing contributions to international disaster reduction efforts.

### **3. Strategic framework for the biennium 2008-2009**

81. ESCAP will continue to help prepare the region for improved cooperative mechanisms for disaster management. This includes the holding of thematic meetings on different aspects of disaster management, and other activities aimed at institutional/mechanism building in this area.

#### **D. The role of ICST in promoting green growth**

##### **1. Persistent and emerging issues**

82. The World Summit on Sustainable Development considered sustainability as crucial to development and highlighted the role of ICT in providing the infrastructure of the knowledge economy. In the same vein, the Geneva phase of the World Summit on the Information Society stressed the need to assist countries in narrowing the digital divide, creating digital opportunities and harnessing the potential of ICTs for sustainable economic growth. The challenge lies in providing increased opportunities for maximizing the benefits of globalization in such areas as the sharing and transfer of knowledge and technologies for eco-efficient production processes and use through integrated natural resources management.

83. Because of this pervasive feature, the new technologies have brought about structural changes in industry and economies as a whole. A knowledge-based economy enabled by ICST and a shift towards green growth are instrumental to increasing the competitiveness of countries in the region in

the world economy and in sustaining economic growth and development. The challenge is how to enhance the contribution of ICST to green growth, particularly to the sustainability of production and consumption in the Asian and Pacific region.

84. It is estimated that knowledge now accounts for approximately three fourths of the value added in the manufacturing sector. Over the last 30 years or so, it has been demonstrated that knowledge is clearly the primary source of wealth in high-technology industries and other knowledge-intensive industries and institutions. Many of the sectors which have been experiencing rapid growth are knowledge-intensive. A distinguishing feature of the knowledge-based economy is the pervasive nature of knowledge as both an input and output of production. As knowledge facilitators and inputs, such as ICST, are key to both the productivity and competitiveness of firms, knowledge is becoming more important as an output of production. This results in accelerating the shift to a service-oriented economy and offers an opportunity for continued economic growth with no increase in the use of resources, thus creating an alternative to the traditional trade-offs between growth and environmental sustainability.

85. Furthermore, as green growth is as much about social equality as about efficient resource use, ICST and the Internet in particular, empowers people, including those in socially disadvantaged groups through improved access to education and health care and the provision of new opportunities for economic activity and democratic participation. With the environment being a large complex system, managing and protecting it contributes to improving human health conditions, sustaining agricultural and other primary production, and reducing risks from disastrous floods as well as wildfires, mudslides and other natural disasters, such as tsunamis.

## **2. Ongoing and mandated activities**

86. Advances in science and technology and especially ICST coupled with increased flows of knowledge and technology among countries at the regional and global levels have placed an emphasis on the building up of technological capabilities as a prerequisite for competitiveness and green growth. Accordingly, ESCAP has focused on assisting countries in building their ICST capacity at the national as well as at the firm level. The activities include building the capacity for formulating and implementing ICST policies and strategies, different ICST applications, such as e-business, e-governmental, e-health and community e-centres, and space technology applications. At the same time, the Asian and Pacific Centre for Transfer of Technology (APCTT) focuses on capacity-building for and transfer of new and emerging technologies, such as biotechnology, environmentally sound technology and clean production technology.

## **3. Strategic framework for the biennium 2008-2009**

87. ESCAP will continue to focus on capability-building in new technologies and knowledge management and human resources development, in particular, in order to help developing countries,

especially least developed countries, acquire new factors of competitiveness and boost existing comparative advantages to enhance cost effectiveness, make efficient use of natural resources, and integrate and compete in the international market and knowledge-based economy. In this respect, it will analyse the links between ICST, the knowledge economy, and sustainable development and how a shift towards sustainable consumption and production can promote social equity and economic development by improving efficiency and sustainability in the use of resources and production processes. ESCAP will further focus on strengthening regional cooperation for the sharing of knowledge and best practices in ICST and sustainability, including public-private partnerships.

#### **IV. ISSUES FOR THE CONSIDERATION OF THE COMMITTEE**

88. The secretariat seeks the advice of the Committee on the proposed activities for strengthening the opportunities and tools used to be able to provide better services to the ESCAP members and associate members in the areas of globalization and green growth, globalization and ICST, knowledge-based disaster management, and the role of ICST in promoting green growth.

89. The Committee may further wish to provide guidance on the elements of the strategic framework for the biennium 2008-2009. They may be summarized as follows:

(a) Promoting eco-efficiency and environmental sustainability through policy dialogue, capacity-building, awareness-raising activities on sustainable water use, renewable energy and efficient energy use and integrated natural resources management;

(b) Promoting eco-efficiency in consumption and production through a Regional Help Desk on Sustainable Consumption and Production expected to be hosted by the China Certification Centre for Energy Conservation Products;

(c) Strengthening and fully utilizing regional and subregional cooperation mechanisms in promoting eco-efficiency and environmentally sustainable economic growth, in particular by advocating and demonstrating synergy between environmental and economic policies;

(d) Developing mutually supportive trade and environmental policies to support environmentally sustainable economic growth (green growth) and to enhance the export competitiveness of developing countries, in particular in the context of the WTO negotiations;

(e) Promoting pro-poor public private partnerships, with a special focus on opportunities for green business growth addressing the needs at the bottom of the pyramid;

(f) Strengthening the capacity of ICST stakeholders and their partnerships in formulating, implementing and reviewing ICST policies and strategies, including the capacity of using ICST indicators;

(g) Strengthening national capacities for formulating and implementing public policies on global Internet governance and effective participation therein;

(h) Strengthening national capacity in building an enabling policy environment for promoting the application of ICT;

(i) Strengthening human resources in the application of ICT, in cooperation with APCICT and other partners;

(j) Building national capacity in the use of ICST for sustainable social and economic development;

(k) Strengthening analytical studies on the status and impact of ICT policies and applications for fostering the information society;

(l) Monitoring, creating awareness and building capacity in the use of the forthcoming broadband service and application;

(m) Sharing good practices in ICT applications and policy through the establishment of knowledge networks;

(n) Formulating and implementing a new phase of the regional space applications programme based on the results of the Third Ministerial Conference;

(o) Promoting the use of ICST for developing countries to acquire new factors of competitiveness that will help them to integrate and compete in the international market and the knowledge-based economy;

(p) Strengthening regional cooperation through improved cooperative mechanisms for disaster management.

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