

ESCWA's Contribution to the 2011 Report of the Commission on Science and Technology (CSTD) on the Progress Made Since 2005 in the Implementation of and Follow-up to the Outcomes of the World Summit on the Information Society (WSIS)

I. Introduction

This report summarises the status of implementation in the ESCWA region of some of the WSIS Action Lines and gives examples of initiatives that ESCWA has carried out during the past few years to help with their realisation. One of the sources of information used for the preparation of this summary is an ESCWA publication entitled "Regional Profile of the Information Society in Western Asia (RPIS)".¹ For the reader interested in a more complete analysis of the status of the information society in the ESCWA region, RPIS would constitute a more comprehensive reference.

It is important for the reader to keep in mind that the WSIS implementation status of a country in the ESCWA region, when assessed separately, may diverge, sometimes significantly, from that of the region as a whole. Factors contributing to regional differences are mostly tied to economic realities. In general, the more affluent countries of the Gulf Cooperation Council (GCC) will score better than poorer countries or countries suffering civil strife, e.g. Yemen or Iraq.

II. REGIONAL PLAN OF ACTION (RPOA) FOR BUILDING THE INFORMATION SOCIETY IN WESTERN ASIA²

Created in 2005, the RPoA originally included 10 programmes and 38 projects. In 2007, it was enriched with additional projects that were proposed by the League of Arab States and other regional stakeholders. The RPoA was last reviewed and updated in 2009 during a conference entitled "Regional Follow-up to the Outcome of the World Summit on the Information Society."³ Attended by more than 275 participants, the conference took place in Damascus and was organised in partnership with the Syrian Ministry of Communication and Technology (MOCT), the International Telecommunication Union (ITU), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Global Alliance for ICT and Development (GAID), the International Development Research Centre (IDRC), the League of Arab States (LAS), the Arab Institute for Training and Research in Statistics (AITRS), the Syrian Computer Society (SCS), the Syrian Telecommunications Establishment (STE), Cisco, Microsoft as well as Talal Abu-Ghazaleh International (TAGI). Its main objectives were to review and follow-up on the implementation of WSIS Action Lines, the RPoA, the Arab ICT Strategy⁴ and other national strategies and plans of action and to update them in light of accumulated experiences. Its main outcomes included an update of the RPoA and the adoption of the "Damascus Proclamation for the Promotion of the Arab Knowledge Society for Sustainable Economic and Social Development."⁵

III. REGIONAL FOLLOW-UP OF THE WORLD SUMMIT ON THE INFORMATION SOCIETY

During 2013, ESCWA-ICTD⁶ produced the latest edition of the *Regional Profile of the Information Society in the Arab Region* (RPIS)⁷. The 2013 edition⁸ of RPIS is the sixth in a series that had been previously produced in 2003, 2005, 2007, 2009 and 2011. It examines the status of implementation of information societies in the Arab region, measures the progress made in building such societies and compares the performance of the region with that of other regions and the rest of the world. The publication uses WSIS action lines as a basis and contains related topics that are of special interest to the Arab region. The analysis and research undertaken to produce the 2013 RPIS have revealed that the Arab region has taken significant steps towards achieving WSIS goals and objectives.

¹ <http://isper.escwa.un.org/Default.aspx?TabId=65&item=24>

² <http://www.escwa.un.org/wsisis/conference2/RPoA.pdf>

³ <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=850E>

⁴ <http://isper.escwa.un.org/RegionalActionPlans/ArabICTStrategy/StrategyDocument/tabid/70/language/en-US/Default.aspx>

⁵ <http://css.escwa.org.lb/ICTD/850/DamascusProclamationAr.pdf>

⁶ <http://www.escwa.un.org/divisions/main.asp?division=ictd>

⁷ Previously, the Regional Profile of the Information Society in Western Asia

⁸ http://www.escwa.un.org/information/publications/edit/upload/E_ESCWA ICTD 13 4 e.pdf (tentative)

In 2006, ESCWA started development work on the Information Society Portal (ISPER).⁹ ISPER was created by the Information and Communication Technology Division (ICTD) as a follow-up activity to the outcomes of WSIS. This dynamic, bilingual (English/Arabic), database-driven, open-source application provides stakeholders with essential information on the current status of the information society in the ESCWA region and facilitates cooperation and regional integration. The portal features updated versions of the Regional and National Profiles of the Information Society and provides real-time discussion forums to WSIS stakeholders. It is also connected to the ESCWA Statistical Information System (ESIS) and allows users to query the database for the latest IS figures. ISPER is constantly updated and improved and is already at its third iteration. Its latest changes and or improvements include improved forum functionality, expanded support for Arabic language features, database upgrades, an updated IS indicator module as well as general improvements to the back office application.

IV. ACTION LINES (C1 THROUGH C11)

C1: The role of governments and all stakeholders in the promotion of ICTs for development

The governments of some ESCWA countries adopted ICT policies and strategies over a decade ago while others may have started but not completed the process.¹⁰ ESCWA has made it a priority to encourage member countries to draft, adopt and implement national ICT/information society strategies. To that end, ESCWA published in 2005 a study entitled “Towards an Integrated Knowledge Society in the Arab Countries: Strategies and Implementation Modalities”.¹¹ The study provided a framework and a guide for the design, development and implementation of national strategies aimed at the realization of a knowledge society and the advancement of knowledge-based economies in Arab countries. In 2007, ESCWA followed up with another publication entitled “Guidelines for the Formulation and Implementation of ICT Policies and Strategies”.¹² Its purpose was to assist policymakers in the region to formulate and update ICT policies and strategies. To complement its work on the subject, ESCWA held an online workshop on e-government policies and strategies which highlighted their institutional dimensions and promoted the measurement of their impact. The online workshop concluded that the establishment of an independent e-government entity at the national level would have a positive impact on various e-applications. Subsequently, ESCWA used the 2007 document and the findings and recommendations of related activities to assist the government of Yemen with the formulation of a national e-strategy and the government of Jordan with the development of a research and development strategy for a national ICT sector.

Along the same lines, ESCWA organised in 2006, in partnership with the United Nations Department of Economic and Social Affairs (DESA), a workshop entitled “ICT Policy Making in ESCWA Member Countries”.¹³ It included a number of presentations, case studies and discussions focusing on ICT policy and the integration of ICT and its applications in national development plans. In 2007, ESCWA followed up with the creation of a network of ICT policy-makers that aimed at promoting regional and international cooperation and that focused on identifying mechanisms for the implementation of regional projects, specifying models for the formulation of ICT strategies and plans of actions, disseminating best practices and lessons learned in the field of ICT policy making and harmonising ICT indicators.

Turning to the role of other stakeholders in the promotion of ICT for development in the ESCWA region, specifically NGOs, the 2009 edition of the RPIS found that the involvement of civil society was mostly limited to awareness-raising and ICT training. Addressing this limitation and recognising that NGOs could play an important role in the promotion of WSIS objectives, ESCWA organised two interlinked workshops on the “Delivery of e-Services in Civil Society”.¹⁴ The first took place at the end of 2009 while the second followed a little less than year later in 2010. The workshops aimed at increasing the awareness, capacities and capabilities of selected NGOs in the ESCWA region to provide and use e-commerce services that are based on the priorities and development needs of citizens and communities. It also looked into the impact that portal technologies and e-commerce applications may have on the sustainability of NGOs. It

⁹ <http://isper.escwa.org.lb>

¹⁰ Refer to comparison table at: <http://isper.escwa.un.org/Default.aspx?TabId=65&item=19>

¹¹ <http://isper.escwa.un.org/InformationLibrary/OurPublications/tabid/72/language/en-US/Default.aspx>

¹² <http://www.escwa.un.org/information/publications/edit/upload/ICTD-07-2-a.pdf>

¹³ <http://www.escwa.un.org/wsis/meetings/2-4may06/main.html>

¹⁴ <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=1188E>

further encouraged NGOs to use already existing e-commerce applications in order to increase economic opportunities and to expand markets and client bases. A Web-based forum complemented the workshops and was used by NGOs to discuss and assess their progress with respect to promoting and using e-commerce services, creating new economic opportunities, expanding outreach and encouraging the participation of communities.

A look at public/private partnerships (PPP) reveals that, while this mechanism is considered important for the achievement of the information society in the ESCWA region, many stakeholders have not yet addressed the challenges or taken advantage of the opportunities associated with cooperating and partnering together. In 2007, putting its money where its mouth is, ESCWA partnered with the Jordanian Ministry of Information and Communication Technology (MoICT) to organise a workshop entitled "Establishing Public Private Partnerships for ICT Initiatives".¹⁵ The main objective was to increase the capacity of public and private institutions to establish PPPs that would be focused on building the information society. Major topics included the strategic, operational and organizational aspects of PPPs, rationale and objectives, legal and regulatory frameworks, project finance, tendering and procurement. The Workshop recommended setting priorities for PPP projects and for the building of trust between the public and private sectors. The need for transparency and accountability from both sides was also stressed, as was the importance of a government's role in leadership and law enforcement. In 2008, ESCWA organised a similar workshop in Saudi Arabia in partnership with UNDP and the Saudi Arabian Ministry of Communications and Information Technology (MCIT).¹⁶

On the subject of multi-stakeholder partnerships (MSP), ESCWA believes that they play an important role in the successful implementation of many projects, including those that contribute towards the development of knowledge-based economies and, in particular, infrastructure projects, educational programmes, ICT training as well as research and development initiatives. In 2007, ESCWA organised an expert group meeting (EGM) entitled "Regional Networking and Partnership for Information Society Development"¹⁷ that aimed at activating MSPs for the purpose of implementing ICT projects that would contribute towards the socio-economic development of the region. The main objective of the meeting was to create, in the ESCWA region, networks of institutions and organisations that share similar or complementary goals and to monitor the development of partnerships between stakeholders in the public sector, private enterprises, academia and non-governmental organizations (NGOs). Created networks and partnerships would, in turn, incubate projects that would be of direct benefit to the development of the region and that would help achieve the main goals of WSIS.

C2: Infrastructure

The last years have seen the ICT infrastructure outlook develop steadily in the ESCWA region, albeit at a slow pace. When compared to 2005, the 2013 ICT infrastructure panorama in the ESCWA region shows a more sophisticated ICT regulatory framework, increased market competition and better international connectivity, especially in the GCC sub-region. It also boasts a host of new services and business models.¹⁸ The region still lacks, and could gain greatly from, cross-border infrastructure endeavours such as the installation of a fibre optic regional backbone that would dramatically improve the quality of communication.

In 2005 ESCWA addressed some of the recognised weaknesses of the ICT infrastructure in the region with the publication of a study entitled "Improving the Communications Infrastructure, Services and Policies in ESCWA Member States".¹⁹ In 2007, and in line with the strongly recognized importance of broadband technologies, highlighted by several articles of the WSIS Tunis Agenda, ESCWA produced with Alcatel-Lucent a joint publication entitled "Broadband for Development in the ESCWA Region: Enhancing Access to ICT Services in a Global Knowledge Society".²⁰ This report highlighted the vast development

¹⁵ <http://www.escwa.un.org/information/publications/edit/upload/ictd-07-4-e.pdf>

¹⁶ <http://www.escwa.un.org/information/publications/edit/upload/ictd-08-2-e.pdf>

¹⁷ <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=531E>

¹⁸ As of mid-2009, ten out of fourteen ESCWA countries had dedicated telecom regulatory authorities, ten countries had full competition in the Internet market and ten countries offered competitive mobile telephony markets.

¹⁹ <http://www.escwa.un.org/information/publications/edit/upload/ictd-05-5-a.pdf>

²⁰ <http://unpan1.un.org/intradoc/groups/public/documents/UNESCWA/UNPAN030321.pdf>

potential in Western Asia as it moves towards the broadband revolution, with examples of concrete business cases focused on selected countries in the region. It also provided an assessment of factors that hinder the deployment and spread of broadband, while proposing concrete actions to guide ESCWA countries in their quest for enhanced infrastructure. The report targeted various stakeholders - governments, regulators, operators, service providers and civil society – and aimed mainly at fostering the development of broadband in the ESCWA region.

C3: Access to information and knowledge

Over the past years, the majority of ESCWA countries have worked towards improving access to information and knowledge. Problems hindering better access include political conflicts, low broadband penetration rates, high cost and/or poor-quality Internet connections and an insufficient number of multi-purpose community public access points (MPCPAP), specifically in disadvantaged remote areas.

Recognising that MPCPAPs are vital for establishing affordable access to information and knowledge in remote and/or poor areas, ESCWA launched in 2006, in partnership with other UN Regional Commissions and NGOs from Egypt, Jordan, Lebanon, Sudan, Syria and Yemen, a project entitled "Knowledge Networks through ICT Access Points for Disadvantaged Communities (KN4DC)".²¹ The project was conceived to maximise the benefits of MPCPAPs by transforming them into networked knowledge hubs that could provide, develop, organise, share and disseminate knowledge which would help disadvantaged communities overcome problems in the areas of employment, education, gender and health.

In 2006, an inception meeting assembled RCs and resulted in the development of a detailed implementation plan. The second activity identified a small number of centres which would be willing and capable of taking part in the project. During 2007, ESCWA held a meeting entitled "Regional Stakeholders' Meeting on Knowledge Networks Strategies, Mechanisms and Tools for the ESCWA Region".²² It outlined the mechanisms for the transformation of MPCPAPs into knowledge hubs and defined the role of the regional knowledge manager (RKM). It recommended the creation of a regional portal and the identification of national coordinators. During 2008, ESCWA developed the Knowledge Portal in accordance with the specifications set forth by the aforementioned RKM. ESCWA also organised a workshop entitled "Knowledge Sharing and Networking in the ESCWA Region".²³ It focused on training MPCPAP managers on the use of the developed portal. During 2009, ESCWA partnered with telecentre.org in organising the "Telecentres' Leaders Forum",²⁴ which aimed at building functional relationships, presenting best practices, building the capacity of participants to use online tools and expanding the regional network.

During 2010, ESCWA followed up with the "Workshop on the Management and Sustainability of Knowledge Hubs".²⁵ Its main objectives were to bring together telecentre managers in order to consolidate relationships that lead to the strengthening of knowledge networks and to train them on the establishment and management of small business ventures. Further activities included workshops in Egypt²⁶ and Syria²⁷ that ironed out issues related to the sustainability of the knowledge network beyond the lifetime of the project. A further meeting²⁸ included an evaluation exercise that assessed the successes and shortcomings of the project, created a steering committee for the knowledge network and recommended the creation of a follow-up project that will build on the success of KN4DC.

In 2006, ESCWA started implementing a project entitled "Promoting New Technologies for Employment and Poverty Alleviation in the ESCWA Member Countries".²⁹ Also called Smart Community Project (SCP), the project created in Iraq, the Syrian Arab Republic and Yemen multipurpose technology community centres and agro-food processing units. In order to foster cooperation and the exchange of

²¹ <http://www.knowledgenets.net>

²² <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=519E>

²³ <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=925E>

²⁴ <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=1052E>

²⁵ <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=1217E>

²⁶ <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=1229E>

²⁷ <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=1279E>

²⁸ <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=1326E>

²⁹ <http://www.escwa.un.org/divisions/scp/iraq/index.asp>

knowledge, ESCWA facilitated networking between the created centres and with other institutions such as universities and NGOs. Other project activities included the targeted implementation of new technologies with the aim to improve employment creation, micro and small enterprise profitability, productivity improvement and poverty alleviation.

Even with limited ICT budgets, the public and private sectors in many ESCWA countries are still reluctant to use free and open source software (FOSS). This is due to the scarcity of FOSS experts in the region, a fact that negatively affects software suppliers which remain incapable of developing and supporting effective and marketable Arabic language FOSS applications. In 2006, ESCWA brought together FOSS experts, ICT professionals from the private sector and government policymakers for a 2-day event entitled "Expert Group Meeting on Open Source Software Solutions for the Public Sector in the Arab Region"³⁰. The meeting covered various topics including the challenges for using FOSS at the institutional or national level in developing countries, success stories related to the adoption of FOSS by developed and developing countries, FOSS solutions for government and higher education sectors, strategic approaches for the adoption of FOSS and the development of Arabic language FOSS applications.

C4: Capacity building

In the period extending from 2005 to 2013, ESCWA countries have seen steady improvement in their basic literacy rates. Some countries have started using ICT to help with the fight against illiteracy. Examples include using multi-purpose community public access points (MPCPAP) and educational CDs to teach poorer/disadvantaged communities living in the more remote areas of Egypt, the wiring of a large number of schools in Syria and Jordan or incorporating ICT into school curricula in Oman.

Starting in 2004 - and extending well into the period covered by this report - ESCWA has been implementing a project entitled "The Iraqi Networking Academies"³¹. The aim of the project was to deliver ICT education to Iraqi youth, university and college students. The program established regional networking academies in various parts of the country and relied on e-learning tools to enable Iraqis to learn anytime, anywhere and to do so at their own pace. To further the main goals of the project, ESCWA worked with various Iraqi universities to integrate updated networking technology theories into their ICT curricula. Recent related activities have included the organisation in 2010 of a workshop for staff members of the Iraqi ministry of education to build their capacity to design and equip new ICT training centres in accordance with established norms and standards.

In November 2009 and in January 2010, ESCWA organised two complementary workshops³²⁻³³ that aimed at developing the capacity of member countries to establish science, technology and innovation observatories (STIOs). The workshops drew an audience of high-level decision makers and experts in STI (science, technology and innovation) methodologies and policies. Participants learned about the impact of STI on socio-economic development, the guidelines for setting up national and regional STIOs, STI indicators, identification of national agencies that could create and manage national STI observatories, the importance of establishing networks and building partnerships amongst STI policy makers in the region and of partnering with universities on technology research and transfer.

ESCWA organised during 2009 and 2010 several workshops that were aimed at promoting the importance of statistics and data collection. They included theoretical and hands-on training sessions on the creation and measurement of indicators, the use of various statistical systems with an emphasis on the ESCWA Statistical Information System (ESIS)³⁴ - a system that was fully developed in-house - the role that data collection and analysis could play in the decision-making process and its impact on the socio-economic development of a country.

During February 2012, ESCWA, the Arab Lawyers Union (ALU) and the Arab Center for the Rule of Law and Integrity (ACRLI) organized a capacity building workshop entitled "ESCWA Directives of

³⁰ <http://www.escwa.un.org/divisions/ictd/events/19dec06.asp>

³¹ <http://www.escwa.un.org/divisions/pptcdadvisors.asp?id=16>

³² <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=1179E>

³³ <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=1224E>

³⁴ <http://esis.escwa.org.lb/>

Cyber Legislation in the Arab Region". Participants included lawyers from the Beirut and Tripoli Bar Associations in Lebanon, in addition to legal experts from Iraq, Jordan, Palestine and Yemen (refer to C6 for the main ESCWA cyber legislation activities of 2012).

During October 2012, ESCWA, in collaboration with the United Arab Emirates University College of Law organized a capacity building workshop entitled "Cyber Legislations in the Arab Region". Sessions included a presentation and a discussion of international models for the protection of children online as well as a detailed account of the activities that ESCWA had carried out with regard to the development and harmonization of cyber legislation in the Arab region. During November 2012, similar activities took place in Algeria and Sudan.

The United Nations University³⁵ (UNU), ESCWA and the Office of the Minister of State for Administrative Reform³⁶ (OMSAR) of the Government of Lebanon jointly organized a training workshop which took place in Beirut during November 2013. Its main themes were e-governance policies, infrastructure and measurement. The five-day event was attended by 30 senior Lebanese civil servants who showed a keen interest in the subject matter.

In February 2013, ESCWA started implementing a project entitled *Academy of ICT Essentials for Government Leaders in the ESCWA Region (AIGLE)*³⁷. The main objectives of the project are to create awareness and build the capacity of decision makers with regard to the utilization of ICT for sustainable development and to give them the skills that are necessary for the planning, managing and funding of development projects. The first activity of the project is an assessment of the ICT capacity-building needs of the Governments of the ESCWA region. The assessment will identify the main topics of training modules that will be created and implemented during the lifetime of the project.

ESCWA also created a study entitled *Impact of ICT on Arab Youth: Education, Employment and Social Change*³⁸. This study examines the changes that have contributed to shifts in areas such as economics, social life and education. It identifies key pivot points and provides recommendations for maximizing the positive effects of ICT on the lives of Arab Youth. It also highlights the impact of ICT on the global competitive landscape and the attendant impact on the labor market for youth and shows that ICT has reduced the number of middle-class jobs, while creating more jobs at both the high-skill and low-skill edges of the spectrum. Its main recommendations focus on the positive impact of ICT on the educational systems of countries in the Arab Region.

C5: Building confidence and security in the use of ICTs

With the exception of e-banking transactions, the use of electronic transactions is yet to be developed in the ESCWA region. Some ESCWA countries have already implemented initiatives aimed at encouraging users to integrate online transactions in their daily lives. The United Arab Emirates became a pioneer in the region when it enacted legislation intended for the protection of consumers who were willing to start using the Internet to purchase goods and services. Many countries followed suit but some, like Lebanon, are yet to enact laws that would ultimately reassure consumers. There are also severe shortcomings in the protection of personal data, privacy in the use of e-services and the development of trustworthy applications.

To entice governments to work towards building the confidence of would-be electronic transaction users, ESCWA developed and published in March 2009 a study entitled "Building Trust in E-Services in the ESCWA Region."³⁹ The study identified the various levels of cyber security, reviewed relevant national and regional policies, mechanisms and modalities and shed light on the legal elements that need to be developed in order to build the trust and confidence of ICT users and to encourage them to use e-services. The study also included a model set of laws and procedures that may be used to enforce information and infrastructure

³⁵ <http://iist.unu.edu/capacity-building>

³⁶ <http://www.omsar.gov.lb/Cultures/en-US/Pages/default.aspx>

³⁷ <http://css.escwa.org.lb/ictd/2094/12.pdf>

³⁸ http://www.escwa.un.org/information/publications/edit/upload/E_ESCWA ICTD 13 TP-3 E.pdf

³⁹ <http://www.escwa.un.org/information/publications/edit/upload/ictd-09-4-a.pdf>

security at the institutional and national levels. Furthermore, it tackled ethical and behavioural issues as well as questions related to cyber crime and cyber security awareness.

In 2010, in order to propagate the findings and the recommendations of the aforementioned study, ESCWA held a workshop entitled "Building Trust and Confidence in Arabic e-Services".⁴⁰ The workshop aimed at raising the awareness of policymakers and sharing best practices among member countries on issues related to trust building, securing data, personal data and individual privacy as well as developing national policies to protect cyberspace applications from threats. It covered various issues related to building trust in e-services including national and legal frameworks, best practices and experiences from the ESCWA region with a special focus on the Lebanese experience in the banking sector. Recommendations revolved around the formulation of national strategies and plans of action for trust-building and security in using e-services and called for the training of judges and lawyers on the application of cyber legislations and for the launching of national and regional awareness campaigns on the methods and measures needed for the ethical interaction with and the safety of the digital environment.

C6: Enabling environment

Underdeveloped legal and regulatory environments represent a serious obstacle to the development of the information society in Western Asia. Laws and regulations relating to intellectual property rights (IPRs), independent regulatory bodies for the ICT sector and cyber legislations remain underdeveloped. Over the past few years, ESCWA has worked to narrow the gap between the region it serves and the developed world by helping member countries improve their legislative and regulatory frameworks.

In June 2007, ESCWA published a study entitled "Models for Cyber Legislation in ESCWA Member Countries".⁴¹ The study reviewed successful international cyber legislations and the status of similar legislations in various countries of the ESCWA region and applied comparative analyses to enable policymakers and legislative bodies to determine priorities for their jurisdiction. Later in the same year, ESCWA organised a get-together for regional legal experts entitled "Peer Consultation Meeting on Cyber Legislation in the ESCWA".⁴² Its objectives were to present and discuss the aforementioned study and to create a network of experts and institutions that would be involved in the continuous development, improvement and implementation of cyber legislation in the ESCWA region. The meeting also included the presentation and discussion of a template that aimed at helping with the development of an implementation strategy for cyber legislation in the region. Two case studies helped highlight the template's applicability at the country level as well as the relevance of the study's guidelines and recommendations. In 2008, ESCWA followed up with a related event entitled "Workshop on Cyber Legislation and its Implementation in the ESCWA Region".⁴³ It included a review of the status of cyber legislations in Egypt, Jordan, Lebanon, Oman, Palestine, Syria and Yemen, in addition to an analytical study of the laws governing cyberspace in the Gulf region. Legal consultants and researchers, judges and lawyers, ICT and cyberspace experts as well as representatives of ministries of communications, ministries of justice and specialised non-governmental organisations proposed a list of actions that revolve around building the capacity of the region's legislators. They also called for the harmonisation of cyber legislations across the region in order to facilitate the movement of merchandise and data across borders, encourage the creation and proliferation of an information society and to spread the benefits of copyright protection laws to signatory countries.

The establishment of a reliable legal and legislative framework for cyber space plays an important role in the development of the ICT sector and the establishment of an enabling environment for the information society in the Arab region. In this context, ESCWA started implementing in 2009 a project entitled "Regional Harmonization of Cyber Legislation to Promote the Knowledge Society in the Arab World". Its main objective is to enhance regional integration through the harmonization of national cyber legislation in the Arab region. A brief description of the main activities of the project during 2012 follows:

- During March 2012, ESCWA organized, in collaboration with the League of Arab States (LAS), a workshop entitled "Developing and Harmonizing Cyber Legislation to Promote the Knowledge

⁴⁰ <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=1246E>

⁴¹ <http://www.escwa.un.org/information/publications/edit/upload/ictd-07-8-e.pdf>

⁴² <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=651E>

⁴³ <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=891E>

Society in the Arab Region”¹⁸. Trainers and presenters gave a concise analysis of the various areas of cyber legislation, clarified the applicability of the ESCWA cyber legislation directives at the national level and provided guidelines for the enhancement and harmonization of cyber legislation at the regional level.

- During May 2012, ESCWA officially launched the “ESCWA Cyber Legislation Directives”¹⁹. The publication aims at guiding Arab countries in the formulation and enactment of national cyber laws, the promotion of regional integration and the facilitation of electronic transactions between countries in the region. The directives cover various areas of cyber legislation, namely electronic communications, freedom of expression, personal data, cyber crime, electronic transactions, electronic signatures, e-commerce, consumer protection and intellectual property. At the request of Bahrain, Oman, Palestine, Jordan and Syria, ESCWA provided advisory services on the applicability of these directives to the legislation of the requesting countries.

- During December 2012, ESCWA organized the last activity of the project, a seminar entitled "Legal and Regulatory Requirements for a Sustainable Knowledge Society in the Arab Region"²⁰. The event brought together more than 50 ICT and legal experts representing the public and private sectors, NGOs and international organizations. The main objective of the seminar was to discuss the legal and regulatory frameworks of a knowledge society in the Arab region. The seminar highlighted the achievements of the project and included discussions on emerging trends in mobile money, cloud computing and cybercrimes and the protection of personal data.

During 2013, ESCWA continued to provide related advisory services. The Ministry of ICT in Algeria, the Ministry of Communications in Iraq and the Prime Minister Office in Yemen have been beneficiaries of *advisory services* which focused on the enhancement of their national cyber laws.

ESCWA also developed a *cyber legislation policy note*⁴⁴ to aid the various stakeholders involved in the legislative processes of cyber space. The policy note highlights the importance of cyber legislation in building an effective knowledge society in the region. It aims at setting the legal frameworks that are necessary for cyber space and focuses on the major challenges and obstacles facing the region in the formulation and adoption of cyber legislation. The policy note also elaborates the efforts and research activities of the Regional Commission that are aimed at harmonizing cyber legislation and promoting regional integration. The policy note ends with a set of recommendations categorized according to the target audience or scope of work, including recommendations for: (1) the governments on the formulation of cyber legislation; (2) legislative procedures and processes; (3) the implementation of enacted laws; (4) the regional perspective for cyber legislation; and (5) education and capacity building.

C7: ICT applications

In the period covered by this report, public administrations in ESCWA countries have become increasingly aware of the importance of integrating ICT in their daily work. A higher ICT adoption rate is transforming the way governments work in most countries of the region. The residents of UAE, Qatar or Bahrain have been able to use an increasing number of government transactions online. The aforementioned countries score well not only on a regional scale but also internationally.⁴⁵ The utilization of other ICT applications and e-services in daily life has also shown promising results. Users are increasingly aware that the integration of ICT in traditional processes and services could have a positive impact on efficiency, promote better participation, enhance transparency, facilitate the spread of information and knowledge and create new economic opportunities.

Over the past few years, the use of mobile services in Western Asia has become widespread and citizens have started asking their governments to link the conveniences provided by mobile telephony with e-government solutions and services. In order to encourage and assist governments in the creation of citizen-friendly ICT applications, the United Nations Department of Economic and Social Affairs (UN-DESA) and

⁴⁴ <http://www.escwa.un.org/information/pubaction.asp?PubID=1394>

⁴⁵ The Global Information Technology Report 2008-2009, 2009, World Economic Forum may be found at the following URL: http://www3.weforum.org/docs/WEF_GITR_Report_2010.pdf

ESCWA organised during November 2008 a capacity-building workshop entitled "Electronic/Mobile Government (e/m-government) in Arab States: Building Capacity in Knowledge Management through Partnership."⁴⁶ The workshop identified the main areas of e/m-government, explored the issues and challenges facing the development of related applications and delved into government ICT strategies for the region. Some participants also chose to present their country's achievements in the field.

During July 2009, ESCWA organised an expert group meeting (EGM) entitled "ICT Applications and e-Services in the Public Sector."⁴⁷ Participants discussed the national, regional and global challenges facing the development and adoption of ICT applications and the problems inherent in the delivery of e-services in the public sector. The EGM focused mainly on e-government, e-payment, e-health and e-learning.

From 2005 to 2010, ESCWA carried out regular advisory services on e-government applications to governments of member countries and contributed actively to various national and regional workshops on e-government and e-commerce.

During 2013, the process of improving e-government services continued in most countries of the ESCWA region. However, countries facing political instability suffered setbacks and, in some cases, some of their services failed and data collection for monitoring became more difficult.

ESCWA renewed its interest in e-governance and e-government applications with the *Regional Workshop on e-Government Best Practices*⁴⁸. The workshop took place in Amman during December 2013 and was jointly organized by ESCWA, the United Nations Department of Economic and Social Affairs (UNDESA) and the Jordanian Ministry of Information and Communication Technology (MoICT). It brought together directors of e-government programmes in the ESCWA region, project managers of e-government applications, experts from international and regional organizations and renowned relevant consulting firms. The main research material for the workshop was a 2013 ESCWA study entitled *E-Government Strategies in Arab Countries: Current Status and Development Prospects*⁴⁹. Participants reviewed regional e-government achievements and areas for enhancement, identified areas for cooperation and deliberated on the establishment of a council of directors of Arab e-government programmes.

C8: Cultural diversity and identity, linguistic diversity and local content

Arabic speakers constitute 5 percent of the world's population. In spite of national and regional efforts aimed at encouraging and disseminating the Arabic culture and the Arabic language over the Internet, the number of Arabic Websites and Web pages in the Arabic language is still below expectations. Policymakers, government officials, educators and content providers in the ESCWA region reasoned that an increase in the number of Arabic language offerings on the Internet would most likely encourage unilingual Arabic speakers to start using or to increase their usage of the Internet.

To encourage the creation of what has become known in the region as digital Arabic content (DAC), ESCWA started work in 2003 with a study entitled "Enhancing Arabic Content on the Digital Networks".⁵⁰ During 2005, it followed with a study entitled "Digital Arabic Content: Opportunities, Priorities and Strategies"⁵¹ and continued in 2007 with an on-line workshop on "Promoting the Digital Arabic Content Industry."⁵² During the same year, ESCWA launched a related field project entitled "Promotion of the Digital Arabic Content Industry through Incubation".⁵³ The project aimed at increasing the growth of the DAC industry in Western Asia by supporting and promoting the development of digital Arabic language applications. Work on the project started in early 2008 with the three following complementary feasibility studies: (1) "Software, Applications and Needs Assessment",⁵⁴ (2) "Models for Business Plan, Marketing

⁴⁶ http://www.escwa.un.org/information/meetings/editor/Download.asp?table_name=events_eventDetails&field_name=id&FileID=1766

⁴⁷ <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=01018E>

⁴⁸ <http://www.escwa.un.org/information/meetingdetails.asp?referenceNUM=3233e>

⁴⁹ <http://css.escwa.org.lb/ICTD/3233/StudyE-GovStrategies.pdf>

⁵⁰ http://www.escwa.un.org/divisions/ictd/workshop/forum_a/docs/Arabic%20Content%20on%20Digital%20Network.pdf

⁵¹ http://www.escwa.un.org/divisions/ictd/workshop/forum_a/docs/Digital%20Arabic%20Content%20Opportunities,%20priorities%20and%20strategies.pdf

⁵² http://www.escwa.un.org/divisions/ictd/workshop/forum_a/default.asp

⁵³ <http://www.escwa.un.org/divisions/projects/dac/index.asp>

⁵⁴ <http://www.escwa.un.org/divisions/projects/dac/01DACNabi.pdf>

and Multi-Stakeholder Partnerships for the Digital Arabic Content Industry”;⁵⁵ and (3) “Hardware and Software Incubation Requirements and Training Needs”.⁵⁶ These studies were meant to encourage and assist young entrepreneurs and incubators in their efforts to develop Arabic language content. In June 2008, ESCWA and partner incubators from Jordan, Lebanon, Palestine, Syria and Yemen held “The Digital Arabic Content (DAC) Competition” which drew in more than 55 applications that covered a variety of subjects ranging from the creation of software for language processing to the development of Websites offering services in education, culture, employment, tourism and e-commerce. Five national evaluation committees selected nine proposals which were incubated at the five national incubators for an approximate period of one year which started in early 2009 and ended in December 2009. The results of the project and of the various incubation exercises are accessible on the ESCWA Website.⁵⁷ The project’s final recommendations included the promotion of the importance of DAC for the Arab region, the development of standards for DAC applications and the implementation of a second phase for the project in the near future. In addition to the project’s activities, ESCWA took an active role in DAC conferences in Syria and Oman.

ESCWA is committed to ensuring linguistic and cultural diversity in the digital environment. In this respect, it has expended extensive efforts that are related to the development and promotion of an Arabic Domain Names System (ADNS). Going as far back as 2003 and extending into 2010, related ESCWA endeavours have included the formation of the Arabic Domain Names Task Force (ADNTF) and of the Arabic Script in Internationalized Domain Names Working Group (ASIWG). Over the years, ESCWA co-organized several ASIWG meetings which deliberated and adopted solutions to a number of technical and linguistic issues pertaining to the use of Arabic script in domain names. In 2007, ESCWA launched a project entitled “Promotion of the Arabic Domain Name System (ADNS)” that has provided much of the input to the deliberations and solutions adopted by the working group.

In view of regional differences in Arabic ICT terminology and in order to enhance the readability of ICT documents written in the Arabic language, ESCWA and other international agencies and organizations, particularly ITU, have felt the need to develop a unified Arabic ICT dictionary that could be used and understood in various parts of the Arabic speaking world. During 2009 and continuing in 2010, ESCWA collaborated with ITU, the League of Arab States, the Syrian government and various other regional and international organisations in the compilation of ICT terms and submitted the compiled terms for review by language experts. ESCWA also participated in regional coordination meetings that brought together local, regional and international organizations partnering to implement the project, with ITU as the lead organization.

During 2012, ESCWA built upon previous cultural diversity efforts with the following activities:

- Publishing a study entitled "Status of the Digital Arabic Content Industry in the ESCWA Region" that describes and assesses the digital Arabic content industry in the ESCWA region. The study also explores current and potential DAC markets in view of the considerable growth in digital content development and the emergence of highly successful DAC enterprises.
- Preparing a study titled "Business Models for Digital Arabic Content" that updates previously developed business models for start-ups and SMEs in the DAC industry and reflects the most recent innovations whether in mobile applications or in social media. ESCWA believes that the updated, profit-making models will encourage young entrepreneurs to launch start-up DAC businesses.
- Organizing during October 2012, in partnership with the Jordanian Royal Scientific Society, an expert group meeting that examined the mechanisms of partnership between various DAC stakeholders, such as ICT ministries and regulatory authorities, innovation funds, business and technology incubators, ICT associations as well as international and regional organizations. This meeting was organized within the framework of the ESCWA initiative entitled “Promotion of the Digital Arabic Content (DAC) Industry in the Arab World”.

⁵⁵ <http://www.escwa.un.org/divisions/projects/dac/02Samir.pdf>

⁵⁶ <http://www.escwa.un.org/divisions/projects/dac/03DAC.pdf>

⁵⁷ <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=1107E>

The second phase of the project entitled *Promoting the Digital Arabic Content (DAC) Industry through Incubation*⁵⁸ was launched in 2012. The project is being implemented in partnership with several technology business incubators in the region. The related 2013 competition was launched in Palestine in collaboration with the Palestinian ICT Incubator (PICTI), in Yemen in collaboration with the Science and Technology Centre of the University of Aden, and in Lebanon in collaboration with Berytech. Further competitions are planned for Egypt in collaboration with the Technology, Innovation and Entrepreneurship Centre and the UAE in collaboration with Abu Dhabi University. The competition will unlock the potential of entrepreneurs and university graduates who aspire to build novel DAC applications and products. The winners are granted an incubation period of 6 to 12 months with the partner, which will provide them with coaching, business advice, office facilities and guidance to establish a competitive start-up company.

For more than 9 years, ESCWA has actively promoted and supported cultural diversity on the Internet by encouraging and facilitating the use of the Arabic language in Top-Level Domains (TLDs). ESCWA believes that Internet Arabic domain names will help overcome the barrier that keeps a large segment of the population, namely unilingual Arabic speakers from being active in cyberspace. Within this context, ESCWA cooperated with LAS to apply for two generic Top Level Domain Names (gTLDs), namely ".arab" and its equivalent in Arabic, "عرب". It is worth noting that ESCWA has also had a valuable role in developing standards for the use of Arabic in domain names.

During January 2012, ESCWA hosted the final meeting between the Steering Committee of the Arab Top Level Domain (Arab TLD) project and the Telecommunications Regulatory Authority (TRA) of the United Arab Emirates (UAE). The meeting aimed at putting the final touches on assigning the registry functions of Arab TLDs to the UAE TRA. During April 2012, LAS submitted to ICANN an application aimed at securing the two aforementioned Arab TLDs. On 13 June 2012, ICANN released a list containing all applications for new TLD names. The list included 14 applications for TLD names in Arabic.

ESCWA developed during 2013 a study entitled *Business Models for Digital Arabic Content*⁵⁹. The study identified five potential areas of development, namely education and learning, content aggregation and curation, public services, entertainment and gaming, and social media. It also focused on a number of business models suitable for the DAC industry including: (1) the advertising model, which is an extension of the conventional advertising model of the media industry; (2) the manufacturer model, which is also called the direct sales or direct model; (3) the subscription model, which offers paid premium content that is not accessible by other means; and (4) other models, such as brokerage, infomediary, merchant, affiliate, community, utility and venture capital fast-growth models.

C11: International and regional cooperation

Many of the above-mentioned ESCWA initiatives were carried out in partnership with regional and international organizations. Collaborative efforts are coordinated primarily with the governments of ESCWA countries, non-governmental organizations, a host of stakeholders from the private sector, other United Nations Regional Commissions, UN specialized agencies and programmes and the League of Arab States. Below is a sample of activities that ESCWA co-organized with regional and international partners.

With the League of Arab States: ESCWA and LAS organized a regional workshop on "Developing and Harmonizing Cyber Legislation in the Arab Region" (Cairo, 14-15 March 2012). Throughout 2012, ESCWA and LAS worked extensively to establish, launch and lead the inception phase of the Arab Internet Governance Forum (AIGF) process.

With the private sector: The ESCWA Technology Centre (ETC), an ESCWA offshoot, partners regularly with national and regional innovation hubs and financial institutions to organize commercialization tours for technology investors in order to help them identify suitable investments and to help inventors develop their ideas into profitable products and services.

⁵⁸ <http://isper.escwa.un.org/FocusAreas/DigitalArabicContent/tabid/260/language/en-US/Default.aspx>

⁵⁹ <http://www.escwa.un.org/information/pubaction.asp?PubID=1319>

With UN-DESA: In November 2012, ETC and the United Nations Department of Economic and Social Affairs organized a regional consultation process in support of the 2013 annual ministerial review (AMR) on innovation, science and technology for sustainable development.

With UNODC: During April 2012, ESCWA and UNODC organized a workshop aimed at collecting data on the state of cyber crime and cyber legislation in the Arab region. Through its participation in this event, ESCWA ensured that this vital data collection exercise was well adapted to the needs of the EMCs.

In collaboration with the Union of Arab Banks (UAB) and the Government of Tunisia, ESCWA organized the *Arab Forum on the ICT Sector*⁶⁰, which took place in the city of Hammamet during May of 2013. Participants included experts and stakeholders from the public sector, the private sector, civil society and academia. The forum included discussions and deliberations on the strengthening of the financing and investment mechanisms, the promotion of business initiatives and the development of a competitive ICT sector in the Arab region.

The forum encompassed two consecutive events, namely the *Expert Group Meeting on Investment, Research, Development and Innovation in the ICT Sector*⁶¹ and the *Conference on Investment and Finance of the ICT Sector in the Arab Region*⁶². The first part of the forum aimed at reaching a vision and setting recommendations for the development of a competitive ICT sector in the Arab region. The second part was a conference that aimed at promoting financing, investments and business entrepreneurship in the ICT sector. The main document discussed during the forum was a 2013 ESCWA study entitled *Competitiveness of the ICT Sector in the Arab Region: Innovation and Investment Imperatives*⁶³. The forum concluded with a final statement entitled *Towards Strengthening Competitiveness in the ICT Sector through Investment and Innovation*. The statement stressed that governments had a role to play in the promotion of the ICT sector with the development of legal and organizational frameworks and legislations and the provision of a supporting infrastructure. It highlighted the need for universities and research centres to develop incentives for researchers and to focus on applied research and knowledge transfer in addition to theoretical research. It also invited the banking sector to increase its financing of and to promote better connections and cooperative mechanisms with the ICT sector.

During 2013, the ESCWA Technology Center⁶⁴ (ETC) in Amman prepared a study entitled *National STI SWOT Analysis Report for Arab Countries*⁶⁵. The study was based on an ETC survey which was filled by 5 countries, namely Yemen, Qatar, Oman, Jordan, and Palestine and complemented with desk research which covered the remaining countries of the region. It listed the strengths, weaknesses, opportunities and challenges (SWOC) of each ESCWA member country and suggested and facilitated partnerships in science, technology and innovation (STI). The chief aim of suggested partnerships was to identify and promote regional complementarities. The study was the main material for discussion during a regional workshop that took place at end of April 2013 and which assembled representatives from the STI sectors of all 17 ESCWA countries.

IV. MAIN THEMES

MT1: Internet governance

As a natural extension to its above-mentioned work in ADNS, ESCWA expanded its involvement to include Internet Governance. The Regional Commission helped in defining the mission of the group on Internet Governance and in articulating its mandate. In 2007, it carried out a regional survey on Internet Governance and presented its findings during the Rio Internet Governance Forum. Additionally, ESCWA

⁶⁰ <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=2118E>

⁶¹ http://css.escwa.org.lb/ICTD/2118/Agenda_EGM.pdf

⁶² <http://css.escwa.org.lb/ICTD/2118/Agendaconf.pdf>

⁶³ http://www.escwa.un.org/information/publications/edit/upload/E_ESCWA ICTD 13 4 E.pdf

⁶⁴ <http://etc-un.org/pr/default.aspx>

⁶⁵ <http://etc-un.org/PR/Default.aspx?ln=1&pid=4850&pvr=0>

continues to support a regional consortium of country code top level domains (ccTLD) operators in the Arab region, an initiative spearheaded by the Jordanian National Information Technology Center. ESCWA also published in 2009 a study entitled "Internet Governance: Challenges and Opportunities for the ESCWA Member Countries."⁶⁶ The study aimed at increasing the knowledge and understanding of Internet governance issues while promoting the role of Arab countries in the global Internet society. In 2010, ESCWA organised, in partnership with the League of Arab States, an "Expert Group Meeting on the Regional Roadmap for Internet Governance". Discussions focused on a proposed regional roadmap for Internet governance, a proposal for a call for an Arab IGF and public consultations on proposed registry policies for two top-level domains ("arab" and "عرب"). In 2012, ESCWA and LAS established the Arab Internet Governance Forum (IGF). The adoption of ESCWA resolution 306 entitled "Development of the Arab IGF process and sustaining efforts in the Arabic domain names field" during the 27th ESCWA Ministerial Session emphasized the importance that ESCWA places on Internet governance issues in general and on supporting the Arab IGF process in particular.

"The Conference and Public Consultation to Establish the Arab IGF", which took place at the end of January 2012, spawned the Arab IGF (AIGF) process. AIGF is a decentralized platform which falls under the joint umbrella of ESCWA and LAS and involves several stakeholders that include the National Telecom Regulatory Authority (NTRA) of Egypt, which is the home of the Arab IGF Secretariat, and the Kuwait Information Technology Society (KITS), which was the host of the first annual AIGF meeting.

In its first year of establishment, participants in the Arab IGF process formed the Arab Multistakeholder Advisory Group (AMAG) and convened two meetings and a public consultation (Cairo, 18-19 June 2012, and 4-6 September 2012). These activities mainly aimed at paving the way for the First Annual Meeting of the Arab IGF (Kuwait, 9-11 October 2012) which was held under the theme "Better Internet for a Better Arab World". In addition to the aforementioned entities – NTRA and KITS – participants included other AMAG members representing a wide array of stakeholders, the Internet Corporation for Assigned Names and Numbers (ICANN) and the Réseaux IP Européens Network Coordination Centre (RIPE NCC). The first annual meeting of the AIGF drew 350 participants and witnessed the birth of several coalitions, including one on regional peering and another on the domain names industry in the Arab region. AIGF activities held during 2012 constituted a learning process for the various stakeholders of the process. ESCWA and LAS are currently working on enhancing the cooperation model, clearly denoting roles and responsibilities and setting a financing mechanism aimed at ensuring the sustainability of the Arab IGF process.

The forum's main activities during 2013 included three preparatory meetings as well as the *Second Annual Meeting of the Arab IGF (AIGF-II)*⁶⁷.

The three preparatory meetings included one open consultation and two meetings of the Arab Multistakeholder Advisory Group (AMAG). They aimed at setting the program and focus areas of AIGF-II. They also included one coordination meeting which brought together the main partners of the process and resulted in a document entitled *Reference Framework for the Arab IGF Structure and Components: 2012-2015* which covers the functions and work mechanisms of AIGF components.

Under the slogan *Partners for Development*, the main AIGF activity for 2013 was the convening of AIGF-II in Algeria. The meeting took place during October 2013 under the high patronage of the President of the People's Democratic Republic of Algeria. Participants included 14 ministers from various Arab countries, with the total number of people in attendance surpassing 800, mainly from Arab and European countries. The main topics discussed during AIGF-II included Internet access and infrastructure, critical Internet resources, security and privacy, openness and content as well as Internet and youth. The meeting included 12 thematic workshops organized by various institutions covering the following: (1) ICANN's strategy to promote the DNS ecosystem in the Middle East and adjoining regions; (2) 4G networks in the Arab region; (3) Internet peering and exchange points in the Arab region; (4) child online protection in the Arab region; (5) Internet governance challenges and opportunities for law enforcement agencies; (6)

⁶⁶ <http://www.escwa.un.org/information/publications/edit/upload/ictd-09-7-e.pdf>

⁶⁷ http://www.escwa.un.org/information/pressescwaprint.asp?id_code=582

information security and privacy; (7) human rights and Internet governance; (8) community networks for education, research and health sectors; (9) Living labs and Internet governance in the Arab world; (10) innovation for economic development; (11) innovation engines and mindsets; and (12) education, employability and entrepreneurship.

MT2: Financing mechanisms

In 2008, ESCWA produced a study entitled "ICT Finance, Venture Capital and Entrepreneurship in the ESCWA region". The study sheds light on available financing programmes and donors in the field of ICT both at the regional and global levels and highlights the role of the entrepreneur in the development and growth of new ICT companies. It also provided a set of success stories and recommendations for the promotion of such financing mechanisms. In 2009, ESCWA organised a workshop entitled "Investment in the ICT Sector." Its main objective was to raise the awareness of member countries and to increase their understanding of policies, mechanisms and modalities that promote ICT investment and entrepreneurship in the region.

MT3: Measuring the Information Society

In accordance with the goals of WSIS to more effectively measure the information society, ESCWA has been proactively engaged in the Partnership on Measuring ICT for Development. In 2007 and in collaboration with the Arab Institute for Training and Research in Statistics (AITRS), ESCWA published a booklet entitled "Guidelines for ICT Indicators Measurements".⁶⁸ This booklet constituted an important step towards the standardization of the measurement process of ICT indicators. In 2010, ESCWA provided the Arabic version of the Partnership's publication entitled "Core ICT Indicators" as well as the Arabic version of UNCTAD's publication entitled "Manual for the Production of Statistics on the Information Economy, 2009 Revised Edition".

In support of governments and other stakeholders of the Information Society, ESCWA produced in 2003, 2005, 2007 and 2009 its biennial publication entitled "Regional Profile of the Information Society in Western Asia"⁶⁹ as well as various related "National Profiles" covering WSIS implementations in thirteen ESCWA countries.⁷⁰ Based mainly on information collected and submitted by member countries, the bi-yearly publication contains information covering all WSIS action lines. Other sections highlight regional and national ICT initiatives that impact the achievement of the MDGs.

Throughout the years covered by this report, ESCWA has carried out a number of training workshops benefiting member countries that have provided theoretical as well as hands-on training on methodologies that can be used for the collection of data which is related to the core list of ICT indicators, ICT infrastructure, access to and use of ICT by households, individuals and businesses, trade in ICT goods and ICT in education.

ESCWA is currently collaborating with ITU on the implementation of a project entitled "ICT Indicators and Capacity Building for ICT Measurement in the Arab Region".⁷¹ It aims at establishing a solid foundation for the collection of ICT statistics and at creating effective and efficient mechanisms to analyse and disseminate ICT indicators in the region.

Throughout 2012, ESCWA played an active role in the "Partnership on Measuring ICT for Development", an UNCTAD-led initiative. In this context, ESCWA participated in an interactive debate for a panel on "Measuring e-commerce", presented its findings on the barriers to measuring e-commerce and proposed a development measurement framework as well as a set of related recommendations.

During the same period, ESCWA developed research and development Indicators (RDI) that are useful and relevant to energy, water, construction, manufacturing, ICT, and food production. The developed indicators helped identify technology gaps as well as challenges in the water and renewable energy sectors.

⁶⁸ <http://www.escwa.un.org/information/publications/edit/upload/ictd-07-tech1-a.pdf>

⁶⁹ <http://www.escwa.un.org/information/publications/edit/upload/ictd-09-12.pdf>

⁷⁰ <http://isper.escwa.un.org/ISProfiles/NationalProfiles/tabid/64/language/en-US/Default.aspx>

⁷¹ <http://www.itu.int/ITU-D/arb/ARO/2010/ICT-Indicators/>

ESCWA produced during 2013 a publication entitled *Impact of Selected e-Services on Socioeconomic Development in the Arab Region*⁷². The study assesses the availability, maturity and status of selected e-services in the Arab region through available indicators and frameworks that aim to measure the impact of e-services on socioeconomic development. The study concludes with a recommended framework dedicated to the process by which e-services impact socioeconomic outcomes. It further suggests policy initiatives that exploit the transformation potential of ICT, as well as innovation in e-services, both made possible by technological advances and the increasing pervasiveness of ICT.

A related activity carried out during 2013 was an EGM entitled *The Role of ICT in Socio-Economic Development*⁷³. Its main objective was to examine the role which ICT plays in selected, high-impact sectors, such as governance, economic competitiveness, social relationships and education. Participants identified actions needed to enhance the impact of ICT on socioeconomic development to catalyze positive change in the development challenges in the region.

V. SUGGESTIONS AND RECOMMENDATIONS

The process of achieving an information society in the ESCWA region will most likely benefit from the implementation of the following suggestions and recommendations:

- Advancing and applying the concept of partnership between the various stakeholders of the information society, i.e. national governments, the private sector, NGOs and international organisations, to achieve the stated goals of WSIS;
- Promoting the benefits of regional integration to national governments by drawing their attention to successful models of regional alliances and by highlighting the advantages of common initiatives such as the development of high-speed regional network backbones, the harmonisation of cyber legislations and the development of an Arabic Domain Names Systems (ADNS);
- Measuring the impact of national ICT and/or information strategies and plans by bolstering the bodies and mechanisms necessary for data collection, measurement and analysis;
- Ensuring the relevance of ICT and/or information society strategies and plans by adapting them to constantly changing realities in accordance with data collected by and from all WSIS stakeholders;
- Maximising user accessibility by lowering access prices which could be achieved through the liberalisation of the telecom sector, the fostering of competition between access providers, increased investment in the sector by the private and public sectors, improving broadband access and the implementation of inexpensive-faster-to-deploy wireless solutions in regions where telecommunication infrastructure projects would be costly and time-consuming;
- Democratising access to knowledge by increasing the number and services of public access centres in regions where ICT is not affordable and by supporting the development of local digital content that would address the needs of local communities;
- Building a knowledge-based culture by instilling awareness of the developmental role of new and traditional knowledge and by training communities on how to gather, create, store, share and use data, information and knowledge which would enhance their quality of life and help them become active players in knowledge-based economies;
- Persuading reluctant users to start using e-services by attempting to build trust in their minds and hearts with regular mass media campaigns that are aimed at debunking the false theories and tall tales that are behind their most common fears and at teaching them how to deal with and overcome real and perceived online threats, by encouraging the development of trustworthy, citizen-centric e-services and by the creation and enforcement of effective cyber legislation;
- Becoming active information society players instead of passive consumers by devising and supporting research and development initiatives, establishing science and technology parks,

⁷² http://www.escwa.un.org/information/publications/edit/upload/E_ESCWA ICTD 13 2 E.pdf

⁷³ <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=2094E>

encouraging innovation and entrepreneurship in the ICT sector, integrating advanced ICT subjects in educational systems and curricula and by encouraging graduates and researchers not to emigrate with the facilitation of better work opportunities and the provision of better social benefits.