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Strengthening Public Services through ICTs *Background Paper – Panel 3*

1. BACKGROUND

ICT applications have the capacity to promote sustainable development by reducing gaps in access to and improving efficiency in the provision of essential public services, such as health and education. To take maximum advantage of the ICT capabilities of any country, investment in telecommunication infrastructure must be driven by a national e-strategy that addresses the needs and priorities of the population with respect to basic services. To this end, the World Summit on the Information Society (WSIS) recommended in its *Geneva Plan of Action* that governments formulate national strategies¹ and “[d]evelop national e-Government initiatives and services, at all levels, adapted to the needs of citizens and business to achieve a more efficient allocation of resources and public goods”².

Responding to the WSIS call, the Governments of CIS Member States have taken steps to improve their transparency and increase citizens’ access to public services through ICTs. They have developed e-Government strategies and are coordinating at the regional level to improve the provision of healthcare services through telemedicine and e-health applications.

The successful implementation of e-strategies and ICT applications depends, however, as much on a country’s regulatory enabling environment and human capital, as on its level of ICT connectivity and infrastructural development. The current state of ICT connectivity in the CIS region poses diverse challenges and opportunities in the deployment of infrastructure.

Limited access to high-speed broadband Internet services in rural and remote areas curbs the introduction of advanced ICT applications - for example, those useful for healthcare services. While telemedicine services are still possible using the narrowband lines and dial-up service prevalent in CIS Member States, remote diagnosis is severely limited by the asynchronous transmission of static information (e.g. X-rays) via email with lower definition.

Meanwhile, the CIS region has achieved high levels of mobile cellular penetration (113.4 per cent in 2008) and has a growing number of mobile broadband Internet users. Mobile telephony provides a widespread, efficient and low-cost platform for facilitating the delivery of public services to remote and rural populations in the region using mobile ICT applications.

¹ WSIS, Geneva Plan of Action, C6, Para. 13.g, December 2003. <http://www.itu.int/wsis/docs/geneva/official/poa.html>

² Idem, C7, Para 15. E-Government.

The following sections provide an overview of the current use of ICTs for e-Government, e-Health and e-Environment by CIS Member States and propose two areas of action to harness existing infrastructure, as well as national and regional initiatives, to strengthen public service provision through the use of new and improved ICT applications.

2. CURRENT SITUATION

e-Government: e-Readiness has been defined the capacity and willingness of countries to use e-government for ICT-led development and is one of the different aspects evaluated regularly in the United Nations Global e-Government Survey³. As shown in Table 1, the latest Survey, conducted in 2007, ranked the e-Readiness level of six of the twelve CIS Member States as above the world average (0.454). The e-Readiness index is a combination of indicators evaluating a country's pattern of website development, ICT infrastructure penetration and literacy to indicate its level of ICT use to promote access to ICTs and inclusion.

Of the CIS Member States, Ukraine, Belarus, the Russian Federation, Kazakhstan, Azerbaijan and Georgia obtained the highest e-Government readiness scores in 2007, ranging from 0.46-0.57. While these are comparatively high scores among low- and middle-income economies, these countries still lag well behind European countries, such as Sweden (0.92) and Norway (0.89), suggesting that the CIS region can still take advantage of other advanced e-government capabilities.

With respect to the other indices included in the Survey, all CIS Member States rank above the world average in terms of human capacity, indicating that their populations have higher than average levels of adult literacy and primary, secondary and tertiary gross enrollment ratios. Higher literacy and education levels imply that their populations have access to basic skills that enable faster adoption and better usage of e-Government and other ICT applications in the region.

In contrast, the majority of CIS Member States ranked below the global average in the e-Participation index, which evaluates the ability of the government to establish e-government programmes that provide its citizens with useful information to promote their active participation in public policy-making. Countries with higher scores in this index typically have e-government programmes that include e-consultation for participatory processes and support e-decision making by increasing citizens' opportunities to contribute.

Over the last few years, CIS countries have made good progress in developing e-Government portals that provide citizens with useful information on government activities and two-way interactivity, expediting the online request of services and information by the public. Moreover, with ITU support, the Governments of Belarus, Georgia and Kyrgyzstan have conducted needs assessments to determine which e-services should be prioritized, using the findings to develop e-Government strategies. ITU has also assisted Azerbaijan and Uzbekistan in the development of their e-government portals⁴.

³ For further information on the Global UN E-government Survey: http://www2.unpan.org/egovkb/egovernment_overview/index.htm

⁴ For further information on ITU ICT applications projects in CIS: <http://www.itu.int/ITU-D/cyb/app/projects/cis/>

**Table 1. Global E-Government Survey
Sub-index scores for CIS Countries (2007)**

	e- Readiness Index	Web Measure Index	Infrastructure Index	Human Capacity Index	e- Participation Index
World average	0.45	0.35	0.21	0.78	0.19
Armenia	0.42	0.27	0.09	0.89	0.05
Azerbaijan	0.46	0.39	0.11	0.88	0.25
Belarus	0.52	0.33	0.28	0.96	0.09
Georgia	0.46	0.36	0.11	0.92	0.05
Kazakhstan	0.47	0.32	0.13	0.98	0.09
Kyrgyzstan	0.42	0.30	0.05	0.92	0.14
Moldova	0.45	0.31	0.15	0.89	0.07
Russian Fed.	0.51	0.33	0.25	0.96	0.09
Tajikistan	0.32	0.04	0.02	0.90	0
Turkmenistan	0.33	0.05	0.04	0.90	0.02
Ukraine	0.57	0.54	0.23	0.95	0.57
Uzbekistan	0.41	0.27	0.04	0.91	0.09
CIS average	0.45	0.29	0.13	0.92	0.13

Source: UNPAN, *Global E-government Survey 2008*.

http://www2.unpan.org/egovkb/global_reports/index.htm

It must be emphasized that e-Government strategies in the region are not solely limited to the provision of government information online. As part of their e-Government programmes, CIS countries have started updating their back-office activities, digitalizing records and streamlining internal processes to improve transparency and efficiency. In Kazakhstan, for instance, the Ministry of Finance has established an intranet interconnecting all its employees to a Ministry-wide human resources database system. The new architecture has facilitated workflow restructuration and the redesign of job functions⁵. Finally, many strategies also include programmes to promote ICT use in other economic sectors, such as agriculture, the environment and, particularly, healthcare.

e-Health: Based on Resolutions from previous World Telecommunication Development Conferences (Buenos Aires, 1994; Valletta, 1998), the 2002 WTDC recommended ITU to continue to raise awareness among key stakeholders — including decision-makers, health professionals and patients — about the benefits that telecommunications can generate through the implementation of e-Health applications in remote and rural areas (Istanbul 2002, Resolution 41 on e-Health).

Countries in the CIS region face many challenges in the health sector, which may include: a shortage of healthcare practitioners; lack of or underdeveloped healthcare facilities in rural and remote areas; centralization of medical specialists in capital cities and other large urban areas; and inadequate information and prevention activities (especially important for preventing and limiting the spread of HIV/AIDS and tuberculosis).

To support the implementation of e-Health projects in the region, ITU has provided expertise and financial resources to launch telemedicine projects in Georgia and Uzbekistan, and

⁵ ITU. *Electronic Government for Developing Countries*, Geneva, Switzerland, 2008. Available at http://www.itu.int/ITU-D/cyb/app/docs/e-gov_for_dev_countries-report.pdf

collaborated with the Government of the Republic of Moldova in conducting an e-health needs assessment that informed the country's 2006 e-health national plan⁶.

The Russian Federation, with a large part of its population in remote areas, has been particularly active in establishing the necessary facilities and communication channels to support telemedicine programmes. Its national telemedicine system includes strategies at the local, regional, national and international levels to support continuous medical monitoring even in low population density areas. To serve local communities, its telemedicine system uses mobile clinical and diagnostic units, as well as local telemedicine centers, linked to experts in Russian regional hospitals and abroad through satellite communications⁷.

The CIS region is also taking advantage of widespread mobile telephony to support healthcare education and awareness efforts. In 2008, UNICEF and Save the Children used mobile technology to distribute an HIV/AIDS educational film to thousands of young adults in Georgia⁸. The success of this project in reaching its targeted population illustrated the full potential of mobile technology for providing incentives for investment in e-Health applications and ensuring the incorporation of mobile technologies into future health strategies.

Other e-Health activities in the region have been the result of coordinated efforts among Member States. In 2005, Georgia, the Russian Federation and the Ukraine collaborated in the implementation of a Black Sea Economic Cooperation (BSEC) telemedicine project to fight HIV/AIDS, tuberculosis and malaria in the region⁹. Following this trend, in November 2008, CIS Member States signed a Memorandum of Cooperation¹⁰ for the development of compatible national telemedicine consultation and diagnosis systems, which will subsequently be integrated into a telemedicine system for the whole CIS region.

The Memorandum addresses key issues to ensure the scalability and sustainability of telemedicine programmes, such as: ensuring interoperability among national systems and their conformity with international standards; securing funding for these programmes; establishing eHealth/telemedicine strategies in accordance with national legislation; and enhancing the skills of its medical personnel through training and information exchange. Most importantly, the approval of this Memorandum shows the commitment of CIS Governments to a regional healthcare vision that harnesses the potential of ICTs to respond to health priorities in their countries. This political commitment is essential to the viability of telemedicine systems at the national and regional levels¹¹.

e-Environment: Similar to other areas of the world, the CIS region is already facing the consequences of climate change. Warming trends are increasing the risks of flooding in North-west Russia and southern parts of the Balkans and the Caucasus; rising sea levels are threatening settlements in low-lying coastal regions of the Adriatic Sea, Black Sea and

⁶ Further information on these projects and other ITU e-Health activities is available at <http://www.itu.int/ITU-D/cyb/app/projects/cis/> and <http://www.itu.int/ITU-D/cyb/app/e-health.html>, respectively.

⁷ M. Natenzon. "Russia: New Generation of Mobile Telemedicine Complexes Creates New Possibilities for Health Services to the Population in Remote and Hard-To-Reach Regions". In ITU-D. *Study Group 2 Final Report on Question 14-2/2*, Geneva, Switzerland, September 2009.

⁸ VitalWave Consulting. *mHealth for Development: The Opportunity of Mobile Technology for Healthcare in the Developing World*. Washington, D.C. and Yorkshire, UK: UN Foundation-Vodafone Foundation Partnership, 2009, p.42.

⁹ E. Kldiashvili, T. Berishvili and Georgian Telemedicine Union. "Georgia". In ITU-NiCT, *Making better access to healthcare services*. ITU-D Study Groups Report on Question 14-1/2, Geneva, Switzerland, October 2005, pp. 156-158.

¹⁰ CIS Member States. *Memorandum of Cooperation between CIS Member States in the Establishment of Compatible National Telemedicine Consultation and Diagnosis Systems*, Chisinau, Moldova, 14 November 2008.

¹¹ See, for example, ITU, *Implementing e-Health in Developing Countries: Guidance and Principles*, available at http://www.itu.int/ITU-D/cyb/app/docs/e-Health_prefinal_15092008.PDF

Caspian Sea basins¹². ICTs can play an important role in CIS Member States' efforts to adapt to and mitigate climate change. Low-cost remote sensing technology, satellites and even mobile phones can help Member States monitor and manage the environment, reduce greenhouse gas (GHG) emissions and improve energy efficiency¹³.

With the support of the UN Development Programme (UNDP), Azerbaijan, Belarus, Georgia, Moldova and Ukraine are preparing and training personnel to apply strategic environmental assessments (SEA) under the European Union SEA Directive and the UN Economic Commission for Europe (UNECE) SEA Protocol. However, mainstreaming environmental sustainability into CIS development policies remains a challenge. ITU is contributing to UNDP's mainstreaming efforts by incorporating information and reports into the UN Development Assistance Framework (UNDAF) that raise awareness at the country team level of the diverse areas where ICTs can support their environmental activities.

In the area of e-Environment, ITU is also developing an e-Environment Readiness Index (EERI) that, like the UN e-Government Survey, will bring together diverse indicators to assess the level of country readiness in regards to the use of ICTs for environmental sustainability. Indicators in the EERI express e-environment readiness as a composite index measuring aspects such as ICT infrastructure, human capacity, applications, e-environment programmes, energy quality, as well as national policies and initiatives to promote biodiversity, reduce GHG emissions, raise public awareness and improve long-term preparedness. Initial EERI results show that CIS Member States are at different stages of readiness, but indicate high levels of policy and public awareness in the majority of its countries, a crucial first step.

As with other ICT applications, adequate infrastructure, human capacity and an enabling policy environment are essential for the fruitful implementation of e-environment projects. Most CIS countries still lack sufficient human and institutional capacity to undertake environmental planning activities, making international collaboration indispensable to enhance the CIS region's abilities.

UNDP concludes that to ensure environmentally sustainable development, CIS countries have to address, among other challenges, "ineffective coordination between environmental and other sectoral ministries and scientific institutions; [and] insufficient cooperation on environmental issues across national borders"¹⁴. The *Connect CIS Summit* provides an excellent forum to address these challenges and coordinate regional activities to protect the environment, as discussed below.

¹² UN Development Program, Integrated Environmental Policies in Europe and CIS website, <http://europeandcis.undp.org/environment/iep>.

¹³ For further information on the use of ICT applications in the study and management of the environment, as well as in environmental observation, analysis, planning, capacity building, protection and climate change mitigation see ITU's report *ICTs for e-Environment: Guidelines for Developing Countries, with a Focus on Climate Change*, downloadable at <http://www.itu.int/ITU-D/cyb/app/docs/itu-icts-for-e-environment.pdf>

¹⁴ UNDP, "Main Challenges in the Region", Integrated Environmental Policies in Europe and CIS website <http://europeandcis.undp.org/environment/iep>.

3. CONCLUSIONS AND RECOMMENDATIONS

Based on an examination of the current situation in the CIS region and taking into account the opportunity for increased coordination that the *Connect CIS Summit* provides to the region's Member States, initiatives could be undertaken in the following two major areas of action:

A. Promote regional coordination among CIS Member States to facilitate the implementation of e-strategies and scalable ICT applications for health:

This proposal aims to support CIS in the execution of the proposals included in the recently signed Memorandum of Cooperation between CIS Member States in the Establishment of Compatible National Telemedicine Consultation and Diagnosis Systems. Recognizing that feasible telemedicine projects can only be implemented with the commitment of and coordination among key decision-makers from the telecommunication and healthcare sector and with the support of financial institutions and donor agencies at the national, regional and international levels, WTDC's Resolution 41 (Istanbul, 2002) invites ITU Member States to create a national committee or task force comprising representatives from these sectors.

Under this initiative, and in coordination with its CIS area office, CIS Member States and other organizations, ITU would:

- Help Member States identify senior decision-makers from the ICT, health and finance sectors who could compose each national task force;
- Enhance coordination with other relevant international and donor organizations (World Health Organization, Health Metrics Network, UNDP, USAID and the World Bank, for example) to avoid duplication of efforts in the region and secure financing for prioritized e-health and telemedicine projects in the region;
- Survey the identified senior decision-makers to help determine barriers, opportunities and resources for intersectoral collaboration;
- Organize a CIS forum that brings together senior decision-makers from different sectors of each Member State, as well as representatives from international and donor organizations to enable the creation of task forces, exchange of national experiences and raise awareness about existing resources;
- Promote the development of plans of action for each Member State task force;
- Contribute to information exchange among stakeholders and Member States through the collection of best practices and case studies from the region.

Expected outputs would consist of:

- Start-up of national e-Health task forces;
- Strengthening human resource capacity for the implementation of scalable e-health and telemedicine projects;
- Increase collaboration among key e-health stakeholders in the CIS region;
- Improved information exchange relating to e-health and telemedicine experiences in the region.

Based on the success of this initial forum, similar activities could be conducted in the area of environmental activity, enabling improved coordination of key stakeholders at the national and regional levels.

B. Build-on existing mobile cellular and wireless broadband technology projects to promote access to e-health applications in rural and remote areas:

This proposal aims to foster the use of low-cost and interoperable mobile e-health applications in the CIS region. The initiative would include the following activities:

- Attract partners from private industry, non-governmental organizations and donor agencies interested in supporting the development and implementation of low-cost and interoperable mobile e-health applications that respond to identified healthcare priorities in each of the beneficiary countries;
- Collect and diffuse information on mobile e-health applications useful to the region;
- Build local human capacity by training local experts on relevant mobile e-health applications;
- Coordinate with other ITU-D divisions to include mobile e-health applications as part of the projects to provide free or low-cost digital access to hospitals and underserved populations in rural and remote areas in the beneficiary countries.

Based on the success of these activities in the e-health area, similar initiatives could be conducted to promote the use of mobile and wireless technologies in the e-government and e-environment areas.