

Change for a sustainable future

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HAMADOUN TOURÉ is Secretary-General of the International Telecommunication Union, the specialised UN agency for telecommunications and ICT. Based in Geneva, ITU is an innovative, forward-looking organisation committed to connecting people around the world to the benefits of ICT and addressing the global challenges of our times, such as monitoring and mitigating climate change.

Our collective destinies are dependent on ensuring a healthy planet. One of the most urgent areas of concern is climate change, which presents us with dire challenges, including food and water security. New forecasts suggest that half the world's population could face ecological destabilisation and climate-induced food crises this century. Inevitably, the developing world will be the most vulnerable, in many cases offsetting our achievements in achieving the Millennium Development Goals.

We must act now in partnership with all stakeholders to ensure a more equitable and sustainable future for our children and coming generations. The Commonwealth Heads of Government Meeting in Port of Spain comes at a critical juncture as we head to Copenhagen to seal the deal.

UN Secretary-General Ban Ki-moon has described climate change as the "moral challenge of our times" and declared 2009 as the year of climate change. He urged world leaders and top-level business executives to launch a global 'Green New Deal' that creates jobs and fights climate change by investing in renewable energy and technological development. During a visit to ITU headquarters in Geneva, he remarked that "ITU is one of the most important stakeholders in terms of climate change" in bringing the benefits of ICTs to meet the challenge of climate change.

The digital revolution has changed people's lives dramatically and boosted economic growth. At the same time, the proliferation of information and communication technologies (ICT) has also had a negative impact on the environment. According to various studies, it is estimated that the ICT sector contributes around 2.5 per cent of GHG emissions, with 40 per cent of this deriving from the energy requirements of personal computers and data monitors, plus a further 23 per cent from data centres. Fixed and mobile telecommunications contribute an estimated 24 per cent of the total.

ICT: a solution to combat climate change

A recent study estimated that more effective use of ICTs could help reduce total global emissions by 15 per cent by 2020, representing carbon savings five times higher than the estimated emissions for the whole ICT sector in 2020. The Global e-Sustainability Initiative (GeSI), of which ITU is a part, estimates that these reductions could deliver energy efficiency savings to

global businesses of over EUR 500 billion.

The good news is that ICTs can play a critical role in combating climate change through mitigation of its effects as well as through monitoring and early warning. And going green in ICT is not necessarily an expensive option. As the UN Specialised Agency dealing with ICT-related issues and the global focal point for governments and the private sector in developing networks and services, ITU takes climate change very seriously indeed, focusing on how ICTs can help prevent and avert climate change. Probably the most obvious area for carbon abatement opportunities offered by ICTs is in reducing or substituting travel requirements. The ICT industry offers a number of different tools and services which can replace physical travel, especially business travel, ranging from the commonplace (e-mail, phone calls, text messaging) to the sophisticated (high-performance videoconferencing).

ICTs have also been extensively used for reducing CO₂ emissions caused by transport by promoting intelligent transport systems (ITS), such as 'eco-driving', congestion charging, as well as traffic management and parking optimisation. 'Dematerialisation', or the replacement of 'atoms' with 'bits', is the way forward with ICTs, exemplified by the shift away from pre-recorded movies and music (such as DVDs and CDs) to online delivery. ITU is also making its own contribution to dematerialisation by transitioning from paper-based publishing to online distribution. Many ITU publications are now available online free-of-charge.

New communication technologies are being designed to reduce emissions. Next-generation networks (NGN) have been a major focus of ITU's work in recent years. NGN are expected to reduce energy consumption by 40 per cent, compared to today's technology. The savings will be achieved in a number of ways, including:

- More tolerant climatic range specifications for NGN switching locations resulting in less need for air conditioning
- Implementation of standards, such as VDSL2 (ITU-T G.993.2), which specify three power modes (full, low and sleep) for ICT devices and to lower energy consumption.

The ICT industry is already taking steps to reduce its own CO₂ emissions, by adopting standards for environmental management and recycling waste. There have also been moves within the mobile industry to use renewable energy sources such as solar, wind or

sustainable biofuels to power new and existing off-grid base stations in developing countries by 2012.

ITU's mission is to connect the world and ensure that all people, wherever they live, have access to the vast range of benefits ICTs offer. This of course presents not just a huge development challenge, but a formidable ecological challenge as well.

The ITU Symposium on ICTs and Climate Change, held in Quito, Ecuador, in July 2009, stressed that bridging the digital divide and bringing the benefits of ICT to all citizens is fundamental to tackling climate change. Participants of the Symposium took note of the advantages of expanding broadband wireless networks that are more energy efficient. Furthermore, all ITU study groups working on standards have been encouraged to evaluate existing Recommendations and, in developing new standards, to always take into account ways to create more energy efficiency.

The ITU World Telecommunication Standards Assembly, which took place in Johannesburg, South Africa in October 2008 recognised that ICTs can make a substantial contribution and be a major factor in mitigating the effects of climate change, for example through energy-efficient devices, applications and networks. Most recently, ITU approved an energy-efficient charger designed to fit all mobile phones. The Universal Charging Solution (UCS) enables the same charger to be used for all future handsets, regardless of make and model. The Assembly agreed that climate change is a high priority for ITU in contributing to the UN processes and global efforts to moderate climate change.

ICTs save lives

The current impact of global warming on the world's climate is relatively small compared with what can be expected in the future, even if the increase in greenhouse gas emissions is stabilised. The impact of climate change is likely to be highly uneven in their distribution, with low-lying coastal areas (such as small island developing States, the Gangetic delta in Bangladesh and the Netherlands) at risk because of rising sea levels; sub-Saharan Africa threatened by increasing desertification; a growing number of environmental refugees and increased pressure on sources of fresh water and on vulnerable ecosystems such as coral reefs, tundra and coastal wetlands.

ICTs can save lives, and ITU promotes the use of ICTs for disaster management through the development of national emergency telecommunication plans, the setting up of early-warning systems and the deployment of remote sensing and geographical information systems (GIS). Wireless communications play an important role when disasters strike; and ITU has established a database of currently available frequencies for use in emergency situations. As part of

the work on standardisation in emergency situations, the United Nations office for the coordination of humanitarian affairs UNOCHA was assigned a special E.164 country code (888) to facilitate the provision of an international system of naming and addressing for terminals involved in disaster relief activities.


Satellite communications can make a critical difference during the first crucial hours and days after a disaster. They are employed to assess the extent of damage, help locate survivors, measure the potential danger for rescue teams and ensure that humanitarian response crews can communicate effectively with their team members, other agencies, local hospitals and paramedics. In addition to developing regulatory and technical standards for disaster prediction and detection, early warning and emergency telecommunication systems, ITU has provided equipment and facilities for emergency communications following floods, earthquakes and other natural disasters to affected countries. For example, in May 2008 satellite terminals were sent to help relief operations in two areas: Myanmar, hit by a devastating cyclone, and Sichuan Province in China, which experienced a major earthquake.

ITU committed to seal the deal in Copenhagen

ITU is pioneering the use of ICTs to reduce emissions through paperless meetings and offices, virtual conferencing and tele-working, as well as sharing its expertise with other institutions in optimising the use of ICTs as a vital component of energy-efficient work methods. ITU is also embarking on raising public awareness to illustrate the impacts of climate change and the relevance of its work in the field of ICTs to address this issue. By pioneering the use of remote participation tools in its own work and lending that expertise to others, ITU serves as a model for the UN system and also assists in bridging the standardisation gap.

ITU joins efforts of the UN system, which brings together the system's expertise and ongoing work in diverse areas – ranging from science and technology to agriculture, transport, forestry, and reduction of disaster risks – aimed at tackling climate change.

In 2000, UN Member States adopted the Millennium Declaration as a renewed commitment to human development, including the eight Millennium Development Goals (MDGs). However, the impact of climate change will tend to offset progress being made to meet the MDGs by 2015. It is therefore crucial to empower developing countries to access the ICTs needed to adapt to climate change and reduce their vulnerability to natural disasters.

ITU and its Membership are committed as partners to all stakeholders to making ICTs a critical tool and enabling technology to successfully combat climate change and will continue to actively participate in the negotiations aimed at sealing the deal in Copenhagen in December 2009. 

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