

**ITU Regional Development Forum 2008**  
**“Bridging the Standardization Gap in Developing Countries”**  
**Tashkent, Uzbekistan, 10-11 June 2008**

# **ICTs, Climate Change and Emergency Telecommunications**

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# Agenda

- **The evidence for climate change**
- **ICTs ...**
  - **as a cause of global warming**
  - **in monitoring climate change**
  - **for mitigating climate change**
  - **for adaptation**
- **ITU Symposia:**
  - **Kyoto, Japan, 15-16 April, co-organised by MIC Japan**
  - **London, UK, 17-18 June, supported and hosted by BT**
- **ITU and Climate Change**

# Evidence for climate change



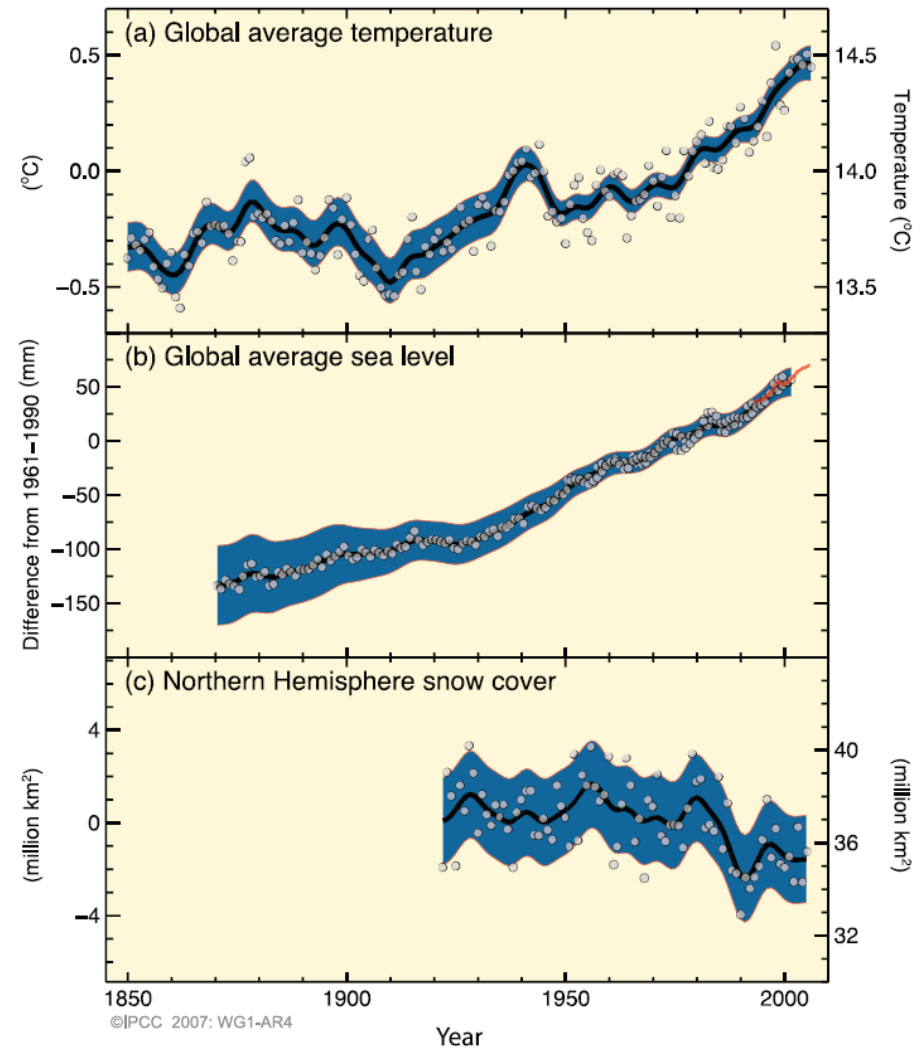
Global average temperature



Global average sea level

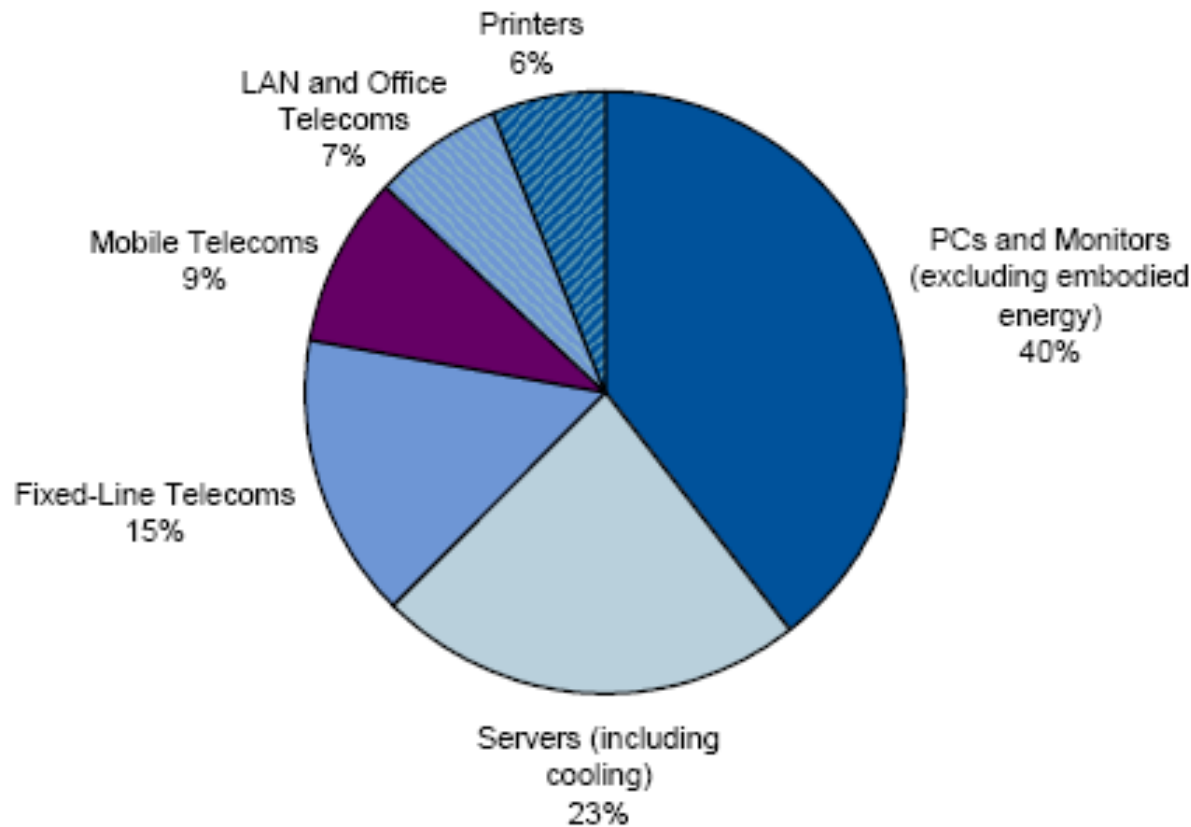


Northern hemisphere snow cover



# ICTs as a cause of global warming

## Breakdown of ICT contribution (in %)



- ICTs (excluding broadcasting) contribute an estimated 2-2.5% of global Greenhouse Gas emissions
- Around 0.9 Gigatonnes of CO<sub>2</sub> equivalent (GtCO<sub>2</sub>e) in 2007
- Telecoms contributed around one quarter of this total
- But Telecoms also have the biggest potential for climate change mitigation

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Source: Gartner Group (2007)

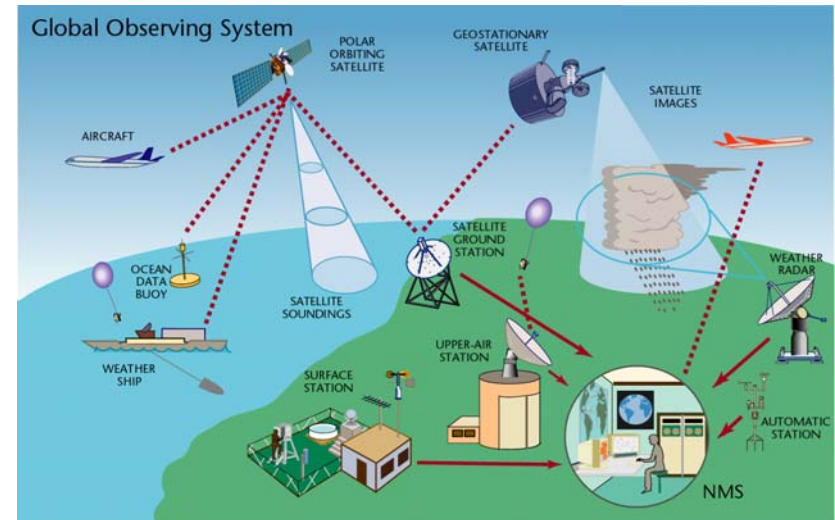
Committed to Connecting the World



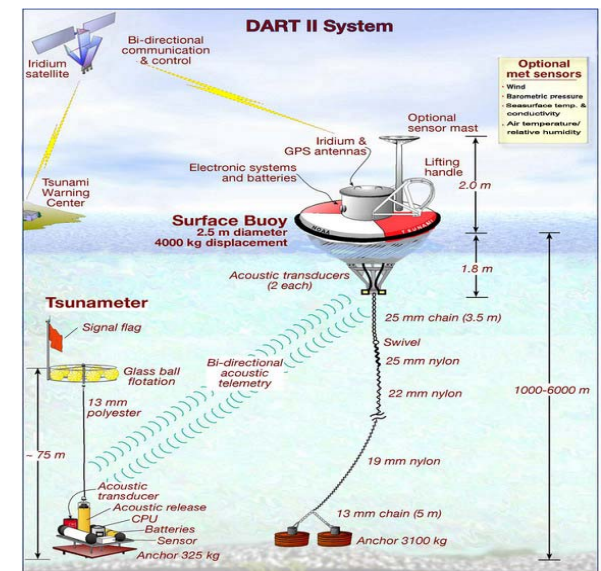
# ICTs at work for monitoring climate change

- **WMO World Weather Watch, incorporating:**

- **Global Observing system**
- **Global Telecom System**
- **Global Data Processing system**



- **Remote sensing**
- **Environmental monitoring**
  - **Tsunami early-warning system**
- **Digital climate forecasting models**
- **GPS-enabled telemetry**
- **Ubiquitous sensor networks**



# Mitigating the impact

- **Directly**, e.g., through energy-saving
  - **Next-Generation Networks (NGN) should reduce GHG emissions by 40% relative to separate, circuit-switched fixed-line and mobile networks**
  - **Modern radio technologies reduce energy consumption by transmitters ~ 10 times**
- **Indirectly**, e.g. ICTs for carbon abatement
  - **Video-conferencing to reduce business travel in Europe by 1% would save 1m CO<sub>2</sub> tonnes**
- **Systemically**, e.g., by “dematerialisation”
  - **Intelligent Transport Systems could reduce vehicle carbon emissions below 130g per km**

# Towards a climate neutral ICT sector

- **BT has reduced carbon emissions by 60% compared since 1996**
- **ETNO Members reduced carbon emissions by 7% and carbon intensity by 14%, 2000-03**
- **NTT's "Total Power Revolution" saved 124m kWh in 2007**
- **Other initiatives:**
  - **GeSI, Green Grid, WattWatt, FTTH Council Europe, EU codes of conduct, CBI Task Force etc**

# Using ICTs for carbon abatement / displacement

## ● Reducing / substituting for travel

- In 2007, Telstra held 7'500 video conferences saving 4'200 tonnes of CO<sub>2</sub>

## ● Flexible work arrangements

- Each one million EU workers could save one million tonnes of CO<sub>2</sub> annually by telecommuting

## ● Intelligent Transport Systems (ITS)

- In-car systems to assist in "eco-driving" can reduce CO<sub>2</sub> emissions by up to 20 per cent

## ● Dematerialization (replacing atoms with bits)

- ITU-T Recommendations Online save 105 tonnes of CO<sub>2</sub> annually compared with distribution of paper copies



# Emergency telecoms: ITU Role

- **Telecommunications/ICTs for disaster preparedness**
  - **Tampere Convention**
  - **PP-06 Resolutions 36 and 136 on use ICTs for humanitarian assistance**
  - **WRC Resolutions 646, 647, 673 on use of radiocommunications for environmental monitoring, public protection and disaster relief**
  - **WTDC-06 Resolution 34 on the role of ICTs in mitigation of effects of disasters and humanitarian assistance**
  - **Partnership Coordination Panel on Telecoms for Disaster Relief (PCP-TDR)**
  - **E.164 country code (888) for UN OCHA**
  - **Recommendations E.106 on call priority and X.1303 on common alerting protocol**

# Countries at greatest risk from climate change

Drought	Flood	Storm	Coastal (<1m) <sup>a</sup>	Coastal (<5m) <sup>a</sup>	Agriculture
Malawi	Bangladesh	Philippines	All low-lying island states	All low-lying island states	Sudan
Ethiopia	China	Bangladesh	Vietnam	Netherlands	Senegal
Zimbabwe	India	Madagascar	Egypt	Japan	Zimbabwe
India	Cambodia	Vietnam	Tunisia	Bangladesh	Mali
Mozambique	Mozambique	Moldova <sup>b</sup>	Indonesia	Philippines	Zambia
Niger	Lao PDR	Mongolia <sup>b</sup>	Mauritania	Egypt	Morocco
Mauritania	Pakistan	Haiti	China	Brazil	Niger
Eritrea	Sri Lanka	Samoa	Mexico	Venezuela	India
Sudan	Thailand	Tonga	Myanmar	Senegal	Malawi
Chad	Vietnam	China	Bangladesh	Fiji	Algeria
Kenya	Benin	Honduras	Senegal	Vietnam	Ethiopia
Iran	Rwanda	Fiji	Libya	Denmark	Pakistan

Source: World Bank. Note: Countries shaded in yellow are Least Developed Countries.

# Towards a climate-neutral ITU

- **Developing a knowledge base and repository**
  - **Conducting systematic review of ITU Recommendations**
  - **Creating a Focus Group on methodologies for estimating the GHG emissions from ICTs**
- **Positioning ITU as a strategic leader**
  - **Developing a Resolution for WTSA-08**
- **Promoting a global understanding through international fora and agreements**
  - **High-level segment at Council 2008**
- **Achieving a climate-neutral ITU within three years**
  - **Conducting carbon audit**
  - **Using remote collaboration tools**
  - **Developing projects under Carbon Development Mechanism**

# ITU Symposia on ICTs and Climate Change

- **Kyoto, Japan, 15-16 April, co-organized by MIC Japan**
- **London, UK, 17-18 June, supported and hosted by BT**
- **Outline agenda**
  - 1. ICTs to the Rescue?**
  - 2. Corporate responsibility: Towards a climate-neutral ICT sector**
  - 3. ICTs for monitoring climate change**
  - 4. ICTs as a green technology**
  - 5. Towards a high-bandwidth, low carbon future**
  - 6. Adapting to climate change**
    - **Webcast using GoToWebinar**

# Remote collaboration tools

*TSAG has initiated a trial to evaluation remote collaboration tools (GoToMeeting and WebEx)*

- To assist in bridging the standardization gap, especially for delegates from developing countries
- To provide training materials (archived on web)
- To make participation in short meetings more efficient (e.g. steering committees, seminars, rapporteur groups)
- To reduce carbon footprint

Website: [www.itu.int/climate](http://www.itu.int/climate)  
Tech Watch reports: <http://www.itu.int/ITU-T/techwatch/reports.html>  
email: [tim.kelly \(at\) itu.int](mailto:tim.kelly@itu.int)

Thank you