Linking Information Communication Technologies (ICTs) with the Cancun Agreements

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ITU is the oldest UN specialized agency

- 145 years old

- Based in Geneva, Switzerland with 5 regional offices and 8 area offices

- 192 Member States, 700+ Sector Members, Associates and Academia

- Language and diversity friendly

- 6 official languages:
  - ➢ Plenary meetings with interpretation
  - ➢ documents translated

- 760 staff, from 80 countries

The Problem

...climate change is happening......

...GHG emissions need to be reduced......

…Information and communication technologies (ICTs) have a fundamental role to play in reducing greenhouse gas emissions and in helping countries worldwide adapt to climate change.……
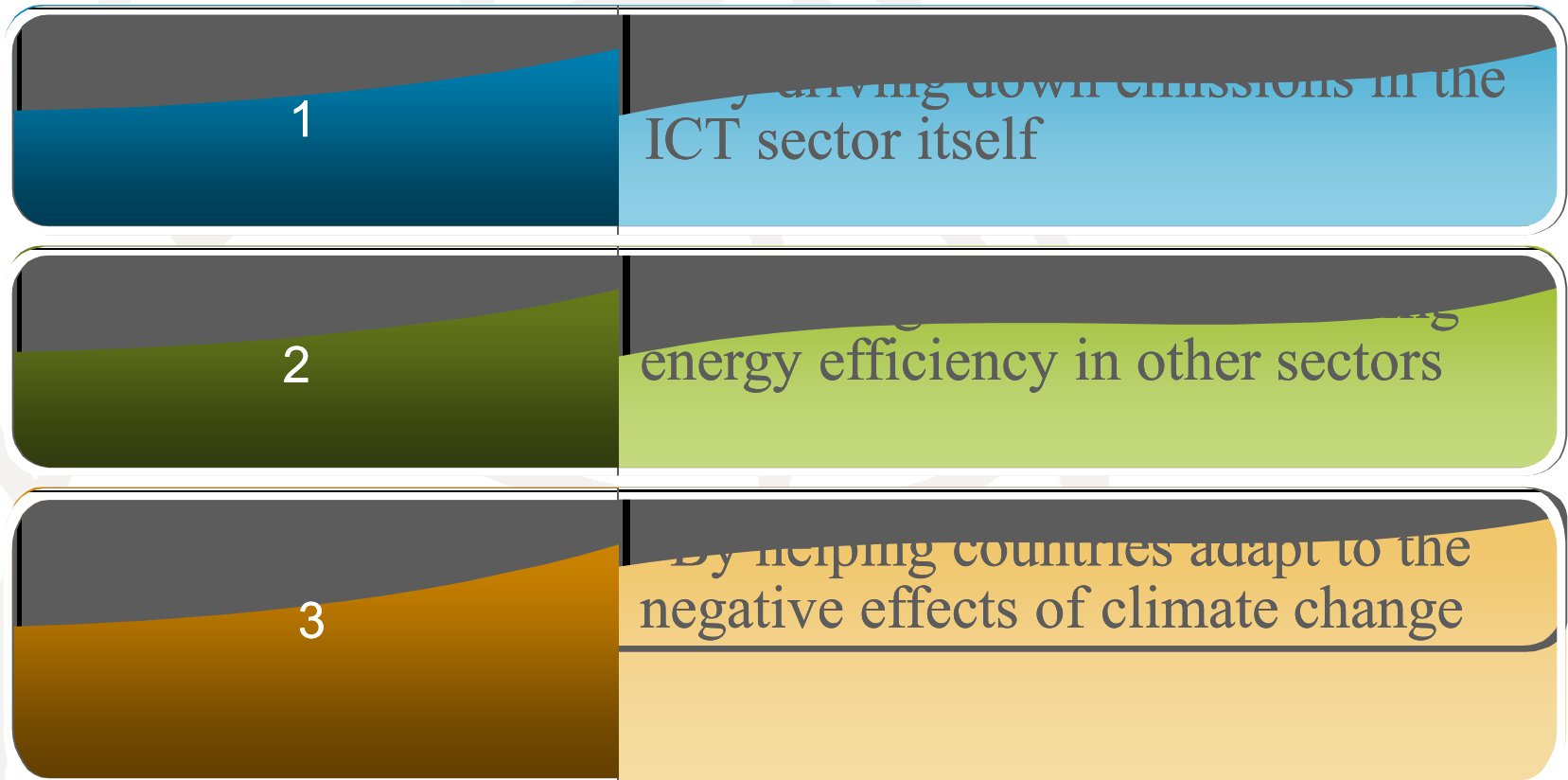
Why ICTs matters?

Benefits....15%

...amount ICT could reduce global emissions by

= 5x

...it's own footprint

How ICTs Can Help to Tackle Climate Change ?

1 — By driving down emissions in the ICT sector itself

2 — By increasing energy efficiency in other sectors

3 — By helping countries adapt to the negative effects of climate change

PCs:

> Efficiency gains and longer product life.

> Shift from desktops to laptops

> Shift from CRT to LCD screens

> Potential breakthroughs – solid state hard drives, new LCD screens, new battery technology, quantum and optical computing

Data Centres:

> Higher rates of virtualisation; more efficient virtualisation architectures

> Low energy cooling

> "Utility"/"cloud" computing, Software as a service

REDUCING ICT SECTOR EMISSIONS

Telecoms Devices :

> "Smart" chargers

> 1W or lower standby devices

> Broadband routers and IPTV boxes' footprint increases over timeframe due to higher penetration from small base today

Telecoms Infrastructure:

> New network management tools

> Network optimisation packages

> Solar-powered base stations

> Potential breakthroughs – night battery operation, natural ventilation, "network sharing"

GREEN By ICT

Industry
- Smart motors
- Industrial process automation

Transport
- Smart logistics
- Private transport optimisation
- Dematerialisation
- Efficient vehicles
- Traffic flow monitoring, planning simulation

Power
- Smart grid
- Efficient generation of power, combined heat and power (CHP)

Buildings
- Smart buildings
- Dematerialisation

The opportunities where ICT could play a driving role include:
- Smart grid
- Smart buildings
- Smart logistics
- Smart motor systems
- Dematerialisation

Transport: Travel Avoidance using ICT

- ■ Tele-working

  - ➢ "Up to 260 MtCO2e savings each year (detailed assumptions in Appendix 3). For example, in the US, if up to 30 million people could work from home, emissions could be reduced 75-100 MtCO2e in 2030, comparable to likely reductions from other measures such as fuel efficient vehicles"

  - ➢ Delivers less benefit if your home's heating and cooling is less efficient than at a central office

- ■ Tele- and videoconferencing

  - ➢ "Conducting meetings online or on the phone instead of face-to-face – could also reduce emissions

  - ➢ Previous conservative estimates have suggested that tele- and videoconferencing could replace between 5 and 20% of global business travel

  - ➢ Advanced videoconferencing applications in the early stage of adoption could have a very significant impact in transport sector reduction"

Agriculture with Smart ICT

- Control of watering and fertilisers using satellite imaging and Global Positioning Systems

  ➤ "In the past a complete field would receive the same treatment, whereas precision farming makes it possible to split up the crop into sub-field management areas. Today it is even possible to conduct spatial analysis of the crop in blocks as small as 20m by 20m. This allows local soil or climate conditions to be taken into consideration and encourages more efficient fertiliser application".

A nitrogen management map for winter wheat.

http://www.geoconnexion.com/uploads/precisionfarming_intv9i5.pdf

Waste Management with Smart ICT

- Waste management often linked to farming because of methane emissions

- In the context of ICT, there is
  - ➢ Industrial waste during production
  - ➢ Waste due to obsolescence

- A 'cradle to cradle' raw material and recycling approach aims to keep all the materials in circulation [1]
  - ➢ Design includes easy disassembly
  - ➢ Obsolete products returned to factory
  - ➢ No need for mining of raw materials

Standard for a universal charger for mobile phones

- "Universal power adapter and charger solution for mobile terminals and other ICT devices" (ITU-T Recommendation L.1000)

  - ➢ specifies general requirements
  - ➢ covers charger for mobile phones
- Future version will cover other ICT devices

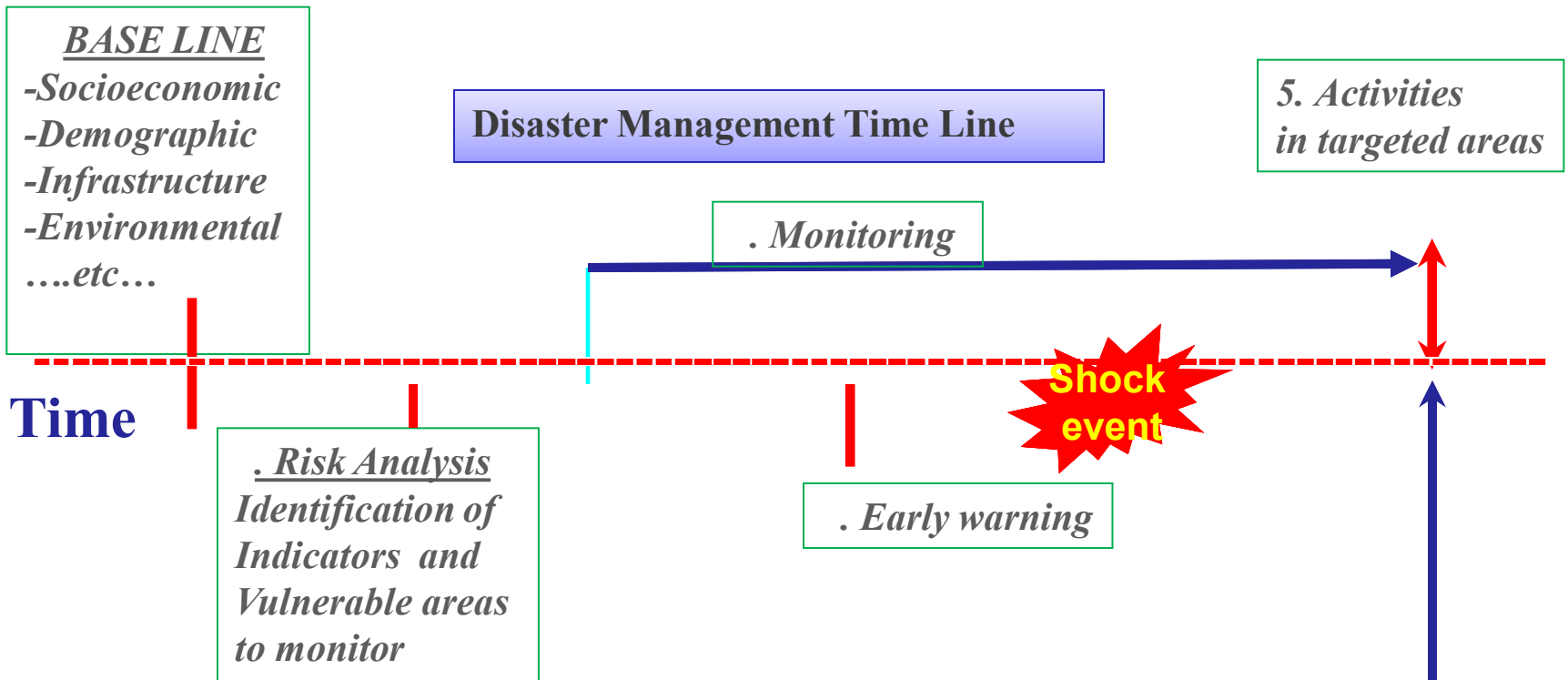# ITU's universal charger standard

Instead of this ...

... have this:

**Recommendation L.1000
Approved March 2010
Currently under revision....**

Applications of ICTs to Climate Change Adaptation

BASE LINE
- Socioeconomic
- Demographic
- Infrastructure
- Environmental
....etc...

Disaster Management Time Line

5. Activities in targeted areas

. Monitoring

Time

. Risk Analysis Identification of Indicators and Vulnerable areas to monitor

. Early warning

Shock event

Country- Capacity Building

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
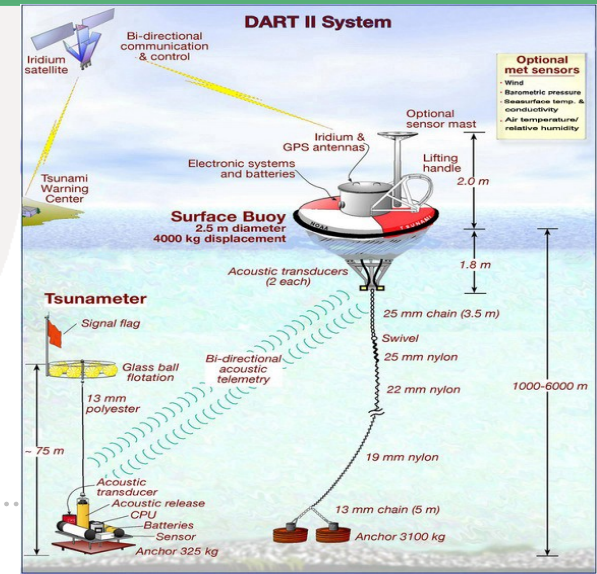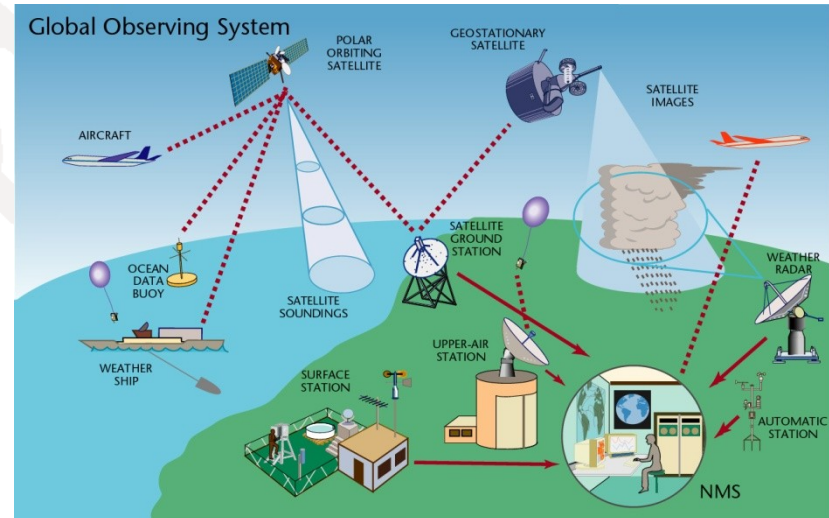
ITU Symposium on ICTs, the Environment and Climate Change

- **Where:** Accra, Ghana
- **When:** 7-8 July 2011
- **Objective:** to move forward the agenda on using ICTs to monitor climate change, mitigate and adapt to its effects and, in this light, identify future requirements for ITU's related work – including standardization of ICT equipment and networks as well as development activities.

- Organiser

- Host

- Sponsors

…..including Remote participation

ITU GREEN STANDARDS WEEK

ITU is organizing the first *Green Standards Week* from **5 to 9 September 2011** in Rome, Italy, hosted by Telecom Italia.

The Green Standards Week will bring together leading specialists in the field, from top policy-makers to engineers, designers, planners, government officials, regulators, standards experts and others.

The main purpose is to raise awareness of the importance and opportunities of using ICT standards to build a green economy.

Organiser

Host

General Information

- **When**: 5 - 9 September 2011
- **Where**: Rome, Italy
- **Participation** is free of charge
- **Discussions** will be held in English only

http://www.itu.int/ITU-T/climatechange/gsw/201102/index.html

ITU Green Standards Week

- **5 September 2011**.: Workshop on <u>Methodologies for Environmental Impact Assessment of ICT</u> will examine work underway to measure the impact of ICTs on climate change and how to standardize the way to calculate the reduction of GHG that ICTs have.
  - ➢ **Jointly organized with European Commission**

- **6-8 September 2011**: Workshop on <u>Moving to a Green Economy through ICT Standards</u> will explore how ICTs can help to address climate change and build a green economy, shedding light on standards, policies and best practices.
  - ➢ **High Level Segment with Ministers & CEOs**

- **8-9 September 2011:** Workshop on <u>Using Submarine Communications Networks to Monitor the Climate,</u> will aim to encourage the development of new technologies and standards and will explore business opportunities for telecommunication companies to become active players in monitoring climate change.
  - ▪ **Jointly organized with WMO**

Broadband Commission WG on Climate Change

- The **Broadband Commission** is an initiative of ITU and UNESCO advocating for the role of broadband to achieve the MDGs. The Commission is a multi-stakeholder group with representation from high-level officials and industry leaders;
- The **WG on Climate Change** is a sub-group working to:
  - highlight the opportunities to link the innovation of the ICT industry to broadband plans to accelerate the uptake of transformative low-carbon solutions;
  - Support activities to promote the role of ICTs on the global climate agenda.
- Deliverable: The group will produce a report on broadband and climate change to be presented in October 2011 at the Broadband Summit.
- The report, to be focused on integrated policy approaches, may also be presented at COP17, together with other key actors of the ICT sector.
- Further information:

  www.broadbandcommission.org   bbcommission@itu.int
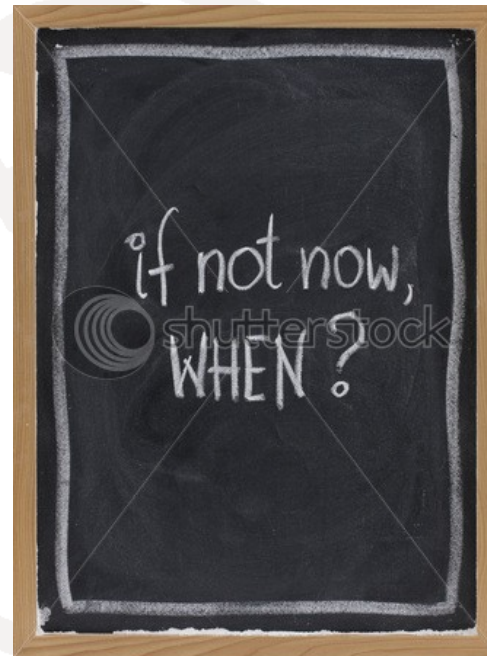
What policy makers should consider...

- Raise awareness of the positive role that ICTs can play in combating climate change

- Engage the private sector which has a major stake in the greening of the environment through the use of ICTs

- Develop and implement a national Green ICT plan

Call to Action

www.shutterstock.com · 40187713

"ITU is urging UNFCCC delegates to include a specific mention of ICTs in the negotiating text."

ITU @ UNFCCC

- Ongoing role in UNFCCC process
  - ➢ Promoting the role of ICTs in reducing GHGs
  - ➢ Providing technical assistance to developing countries
  - ➢ Innovation and the transfer and dissemination of technologies, including ICTs, is key to both mitigation and adaptation.
  - ➢ ITU as a partner of the Nairobi Work Programme
  - ➢ Standards are essential for the wide adoption of new technologies anywhere in the world.

Conclusions

ICT plays a critical role for:

- Mitigation
- Adaptation
- Capacity building
- Technology transfer

Overall ICT impacts every facet of human life – it is a driving engine for socio-economic development

Links & Additional Information

- ITU-T and climate change
  http://www.itu.int/ITU-T/climatechange
- ITU Symposia & Events on ICTs and Climate Change
  http://www.itu.int/ITU-T/worksem/climatechange

- *"The objective of this competition is to push contestants to think outside the box and develop concept papers for an ICT application that will be a valuable contribution to green ICT industry. Looking forward to receiving your creative and exciting ideas! "*

  - Malcolm Johnson
    Director, ITU
    Telecommunication
    Standardization Bureau

ITU GREEN ICT APPLICATION CHALLENGE

Sponsors

RIM

Telefónica

Collaboration with ICT Industry

- **Technical Specifications for Sustainability Standard for the ICT Sector**

  - ➢ The project will focus on development of a standardized checklist of sustainability requirements specific to the ICT sector that will become a contribution to ITU-T Study Group 5 with the goal of developing a global standard in this area.

1. ITU
2. UNEP
3. RIM
4. Climate Associates
5. Alcatel Lucent
6. Huawei
7. Microsoft
8. UNEP Basel convention
9. CEDARE
10. Step Initiative
11. BBC
12. European Broadcasting Union (EBU)
13. Verizon
14. Telefónica
15. Telecom Italia
16. France Telecom
17. United Nations University (UNU)
18. BIO Intelligence Service
19. Datec Technology
20. Ernst & Young
21. Vodafone Ghana
22. 3p Institute for Sustainable Management
23. Dell
24. MicroPro Computers
25. PE INTERNATIONAL AG
26. ETNO
27. Thomson Reuters
28. Infosys
29. BT
30. Alcatel Lucent

Collaboration with UN Agencies

- ITU with UNEP Basel Convention, United Nations University and in collaboration with SteP Initiative and the Center for Environment and Development for the Arab Region (CEDARE) will carry out a joint survey on e-waste (June 2011)

- ITU will develop Technical Specifications for Sustainability Standard for the ICT Sector together with UNEP, UNU and more than 20 partners

New Reports

- <u>ICTs as a Key Technology to Help Countries Adapt to the Effects of Climate Change</u> World Resource Institute (February 2011)

- <u>ITU-GeSI Report on Using ICTs to Tackle Climate Change</u> (December 2010)

- <u>Using Submarine Communications Networks to Monitor the Climate</u> (November 2010)

- <u>ICT as an Enabler for Smart Water Management</u> (October 2010)

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