# ITU-D activities on ICT, Environment and Climate Change

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ITU Arab Regional Office

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# BACKGROUND

## Evidence of Climate Change

- **Figure1** shows that the global mean **temperature** has been steadily rising since 1880 and every year and 2017 was hots year reaching record levels in the first decade of the current century.
- **Figure2** shows Globally averaged combined **land and ocean surface temperature**.
- **Figure3** shows Globally averaged **sea level change.**
- **Figure4** shows Globally averaged **greenhouse gas (GHG) concentrations.**

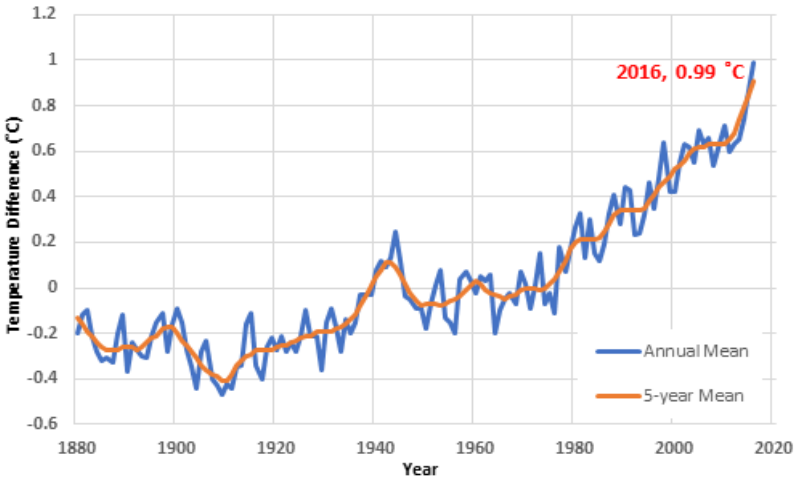



Figure 1

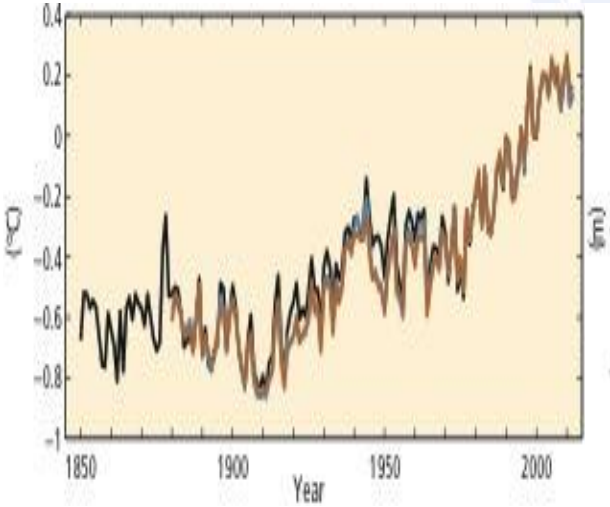



Figure 2

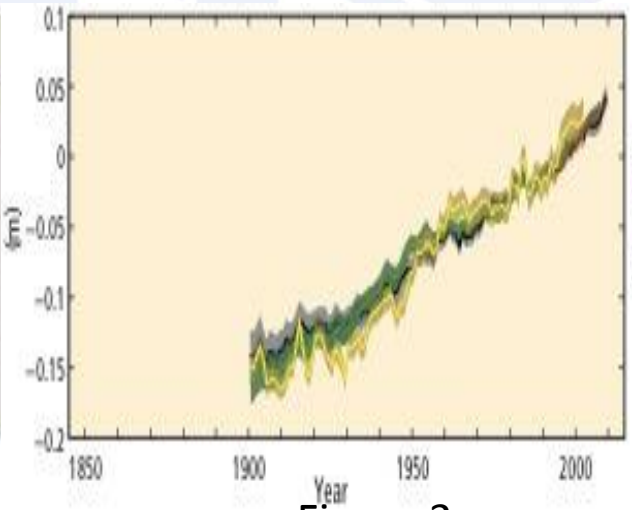



Figure 3

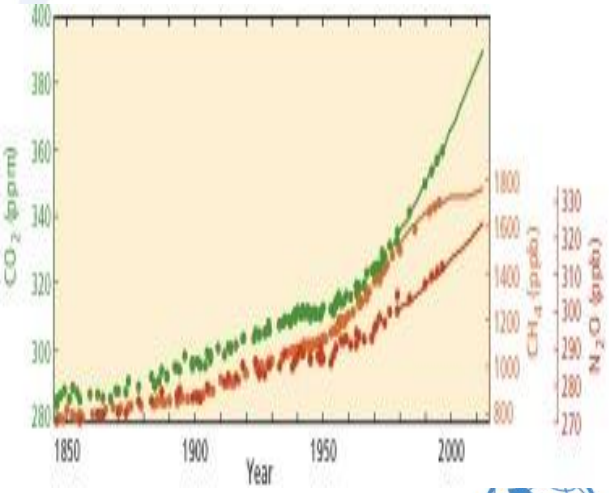
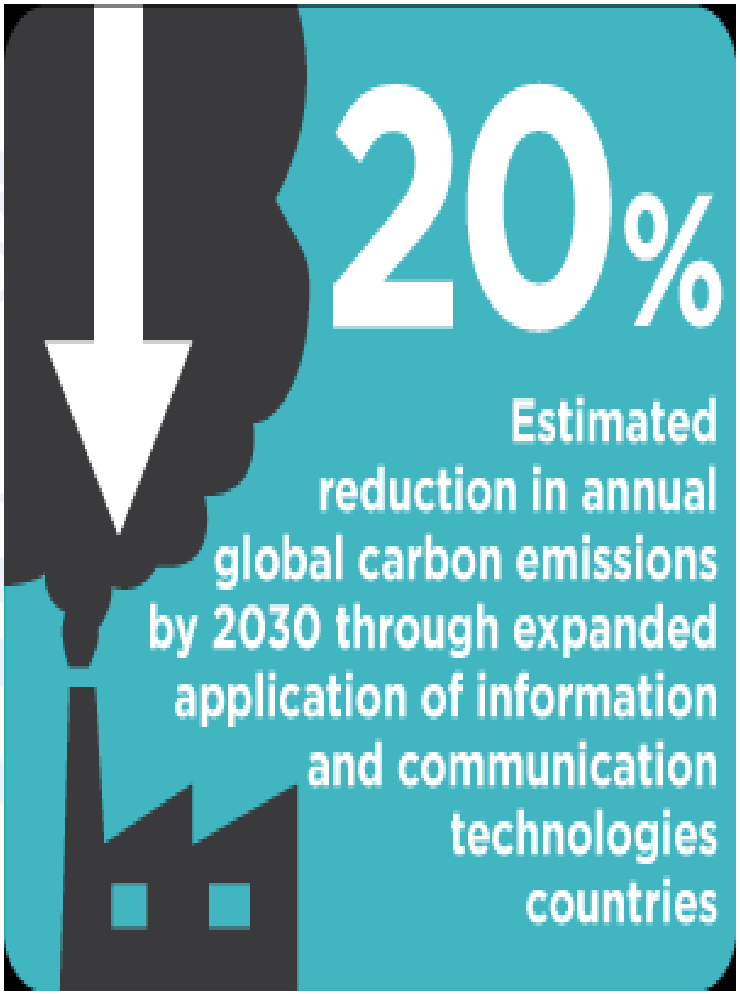



Figure 4

## ICTs for Mitigation of Climate Change

- ICTs improve the energy efficiency in the telecommunications, transportation, construction, and services industries.
- It is possible to reduce the emissions of CO2 in a substantial way through ICTs, and make our economic system more sustainable
- ICT emissions are expected to decrease to 1.97% of the global total by 2030, from 2.3% in 2020
- ICTs—including the Internet, mobile phones, geographic information systems (GIS), satellite imaging, remote sensing, and data analytics—could reduce yearly global emissions of carbon dioxide ($CO_2$) **20% by 2030**, thus holding them at their 2015 level.
- ICTs are also critical for climate change adaptation, providing vital tools for all phases of the disaster risk management cycle.




Source: http://www.worldbank.org/en/topic/ict/brief/connections-note-30

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# UPDATE FROM WTDC-17 ON ICT AND ENVIRONMENT

**Objective 2** - Modern and secure telecommunication/ICT Infrastructure: Foster the development of infrastructure and services, including building confidence and security in the use of telecommunications/ICTs.

**Output 2.3:** Products and services on disaster risk reduction, management, and emergency telecommunications, including assistance to enable Member States to address all phases of disaster management, such as early warning, response, relief, and restoration of telecommunication networks.

**World Telecommunication Development Conference (WTDC-17)**
Buenos Aires, Argentina, 9-20 October 2017

ITUWTDC BUENOS AIRES 2017 9-20 October

CELEBRATING 25 YEARS OF ACHIEVEMENTS

**Objective 4** – Inclusive digital society: Foster the development and use of telecommunications/ICTs and applications to empower people and societies for sustainable development.

**Output 4.4:** Products and services on ICT climate-change adaptation and mitigation, such as promotion of strategies and dissemination of best practices on mapping vulnerable areas and developing information systems, metrics, and e-waste management.

# ITU PLENIPOTENTIARY CONFERENCE AND WTDC RES ON ICT AND ENVIRONMENT

**Plenipotentiary Conference Resolution 136 (Busan, 2014)**

The use of elecommunications/ICTs for monitoring and management in emergency and disaster situations, and for early warning, prevention, mitigation and relief;

RESOLUTION 66 (REV. BUENOS AIRES, 2017)

**Information and communication technology and climate change**

RESOLUTION 34 (REV. BUENOS AIRES, 2017)

**The role of telecommunications/information and communication technology in disaster preparedness, early warning, rescue, mitigation, relief and response**

The World Telecommunication Development Conference (Buenos Aires, 2017),

# REGIONAL INITIATIVES ON ICT AND ENVIRONMENT

**ARB1: Environment, climate change and emergency telecommunications**

**Objective:** To raise awareness of and provide support in respect of major challenges in the field of environment, climate change and emergency telecommunications, establish regulatory frameworks, and take necessary measures to address the challenges in this field.

**Expected results**

Assisting countries to:

1) Issue policy guidelines, regulatory and technical frameworks and necessary measures, providing them with information to meet their needs pertaining to this initiative, specifically in the area of exposure to electromagnetic fields (EMF), emergency telecommunications and the management of electronic waste

2) Launch training programmes on emergency telecommunications and the adverse effects of exposure to EMF and e-waste, find appropriate solutions to deal with these issues and formulate a model for making use of e-waste in a manner that supports development

3) Develop ICT applications on the basis of which awareness campaigns and programmes can be launched concerning the risks of exposure to EMF and the recycling and processing of e-waste.

Arab Region

**ASP5: Contributing to a secure and resilient environment**

**Objective**: To assist Member States to develop and maintain secure, trusted and resilient networks and services, and to address challenges related to climate change and disaster management

ASP Region

# ITU-D Study Group 1 and 2 : Questions under study (2018-2021)

**WTDC-17 Question 6/2** on **ICTs and the environment** will work to:

- Identify **applications** based on expressed needs in countries and regions;
- Gather **evidence and information** for best practices.
- **Develop best practice guidelines** for the implementation of relevant ITU-T Recommendations (related to WTSA Res. 73, WTSA Res. 44).
- **Develop strategies and policy guidance** for approaches to and treatment of e-waste, in collaboration with ITU-T, and more...

**SG2:** ICT services and applications for the promotion of sustainable development

| Study Question | Relevant SDG<br>WSIS Action Line |
|---|---|
| Q1/2: Creating smart cities and society: Employing ICTs for sustainable social and economic development | |
| Q2/2: Telecommunications/ICTs for e-health | |
| Q3/2: Securing information and communication networks: Best practices for developing a culture of cybersecurity | |
| Q4/2: Assistance to developing countries for implementing conformance and interoperability (C&I) programmes and combating counterfeit ICT equipment and theft of mobile devices | |
| Q5/2: Utilizing telecommunications/ICTs for disaster risk reduction and management | |
| Q6/2: ICT and the environment | |
| Q7/2: Strategies and policies concerning human exposure to electromagnetic fields | |

www.itu.int/ITU-D/study-groups/



ITU-D study groups assist Member States in achieving their SDG targets and development goals

# EMERGENCY TELECOMMUNICATIONS

**PROMOTION, AWARENESS AND PARTNERSHIP BUILDING:**

- GLOBAL FORUMS (GET)
- REGIONAL WORKSHOPS AND FORUMS
- NATIONAL WORKSHOPS

**STRATEGY DEVELOPMENT & IMPLEMENTATION:**

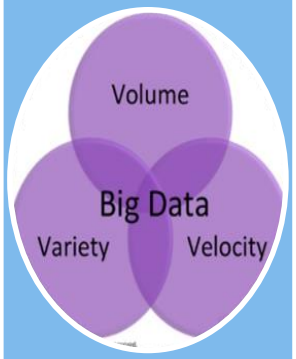
- POLICY, LEGAL & REGULATORY FRAMEWORKS
- DESIGN AND IMPLEMENTATION OF NATIONAL EMERGENCY TELECOM PLANS
- BEST PRACTICES AND KNOWLEDGE EXCHANGE THROUGH STUDY GROUPS

**EMERGENCY TELECOMMUNICATIONS PROJECT IMPLEMENTATIONS:**

- SETTING UP EARLY WARNING SYSTEMS
- ESTABLISHMENT OF EMERGENCY COMMUMICATION INFRASTUCTURE

**CAPACITY BUILDING:**

- USE OF ICT FOR EMERGENCY RESPONSE
- ESTABLISHMENT OF EMERGENCY COMMUMICATION INFRASTUCTURE
- POLICY DEVELOPMENT AND IMPLEMENTATION




**BIG DATA:**

- ICT APPLICATIONS FOR EMERGENCY RESPONSE (EPIDEMIC, NATURAL DISASTERS, ETC)
- BIG DATA STORAGE INFRASTRUCTURE


**EMERGENCY RESPONSE:**

- DEPLOYMENT OF EMERGENCY TELECOM SYSTEMS DURING EMERGENCIES
- EXPERT SUPPORT ON SITE FOR COMMUNICATION RESTORATION

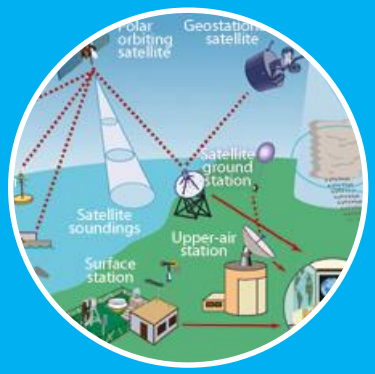
# ICTS AND CLIMATE CHANGE ADAPTATION AND MITIGATION

**PROMOTION, AWARENESS AND PARTNERSHIP BUILDING:**

- ORGANIZATION OF ACTIVITIES AT INTERNATIONAL EVENTS (GLOBAL PLATFORM FOR DRR)
- ORGANIZATION OF REGIONAL WORKSHOPS AND FORUMS
- ORGANIZATION OF NATIONAL WORKSHOPS

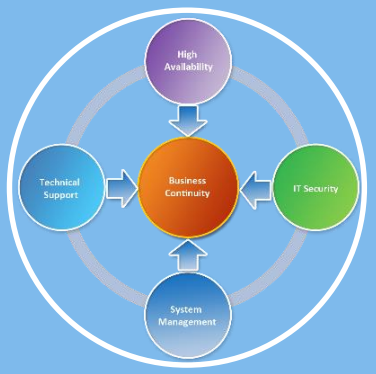
**STRATEGY DEVELOPMENT AND IMPLEMENTATION:**

- POLICY, LEGAL & REGULATORY FRAMEWORKS
- INTEGRATION OF ENVIRONMENTAL REQUIREMENTS INTO ICT POLICIES
- BEST PRACTICES AND KNOWLEDGE EXCHANGE THROUGH ITU-D STUDY GROUPS




**PROJECT IMPLEMENTATIONS TO DEAL WITH CLIMATE RELATED HAZARDS:**

- SETTING UP EARLY WARNING SYSTEMS
- ESTABLISHMENT OF REMOTE SENSING FOR ENVIRONMENTAL MONITORING




**CAPACITY BUILDING:**

- ON THE USE OF ICT TACKLING CLIMATE CHANGE ISSUES
- POLICY DEVELOPMENT AND IMPLEMENTATION

# TACKLING E-WASTE


**AWARENESS RAISING ON :**

* **THE ENVIRONMENTALLY SOUND MANAGEMENT OF ICT WASTE**
* **THE IMPACT OF E-WASTE ON HUMAN HEALTH AND THE EVIRONMENT**
* **ECONOMIC GROWTH GENERATED BY E-WASTE**
* **THE IMPORTANCE OF RECICLING AND REUSING ICT COMPONENTS**

**PROJECT IMPLEMENTATION TO DEAL WITH E-WASTE:**

* **PILOT PLANT TO RECYCLE ICT WASTE**
* **GLOBAL E-WASTE STATISTICS TO**

**IMPROVE DATA AVAILABILITY AND QUALITY AS A FIRST STEP TO ADDRESS THE E-WASTE ISSUE**


**STRATEGY DEVELOPMENT AND IMPLEMENTATION:**

* **DEVELOPMENT OF POLICY, LEGAL & REGULATORY FRAMEWORKS AND GUIDELINES**
* **INTEGRATION OF ENVIRONMENTALLY SOUND MANAGEMENT OF ICT WASTE INTO NATIONAL POLICIES**
* **THE IMPORTANCE OF BUILDING PARTNERSHIPS BETWEEN ACADEMIA, PRIVATE AND PUBLIC SECTORS**
* **BEST PRACTICES AND KNOWLEDGE**

**EXCHANGE THROUGH ITU-D STUDY GROUPS**

# MAJOR EVENTS ON ICTS AND ENVIRONMENT AS OF APRIL 2018

**Recent Events:**

- Coming in 3-days here "Training on E-waste Statistics 12 April 2018 (Room XX)",
- WSIS Forum 2018 High-level dialogue: An end to electronic waste: Building the E-waste Coalition, co-organized with the Secretariat of the EMG, 21 March 2018, Geneva, Switzerland
- WSIS AL C7 e-Environment "Multi-Hazard Early Warning Systems and Role of ICT", co-organized with WMO and UNEP, 19 March 2018, Geneva, Switzerland
- Regional Training Workshop on ICT and Climate Change Mitigation and Adaptation in Arab Region, Organized in collaboration with the Tunis-International Center for Environmental Technologies (CITET), 12-13 July 2017, Tunis, Tunisia
- WSIS Thematic Workshop: Addressing the Global e-Waste Challenge, co-organized with UNU and ISWA, 16 June 2017, Geneva, Switzerland
- WSIS Forum 2017: Action Line C7. E-environment: Environment, an Important Pillar to Building a Sustainable Future, 12 June 2017, Geneva, Switzerland
- WSIS Action Line C7. E-environment: Environment, an Important Pillar to Building a Sustainable Future, co-organized with WMO and UNEP-Basel Secretariat, 12 June 2017, Geneva, Switzerland
- "WMO Multi-Hazard Early Warning Conference, Session 3: Bringing the message to the communities-at-risk, organized by ITU, in cooperation with CENAPRED (Mexico), 22 May 2017, Cancun, Mexico
- 2017 Global Platform for Disaster Risk Reduction, contributing partner along with other UN agencies, 22-26 May 2017, Cancun, Mexico

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# ICT AND CLIMATE CHANGE TRAINING PROGRAMME (ICT&CCTP)

- The ICT&CC TP is a programme being developed under the auspices of the ITU Academy. It consists of a set of high level training materials and covers a range of topics in ICT & Climate Change.

## 6 Foundation Modules

- OM0: Overview Module
- FM1: Introduction to ICT & Climate Change
- FM2: Roles of stakeholders in ICT and Climate Change
- FM3: Developing ICT Service Provider Strategies
- FM4: Assessing the Impact of ICT on Climate Change
- FM5: Applying Green ICT Strategies
- FM6: E-waste and the Circular Economy

## 15 Elective Modules

- EM1:
  - Elective Module 1.1: Climate Modelling
  - Elective Module 1.2: The role of Satellite & Radio Communication in Environmental Modelling
  - Elective Module 1.3: Global/Regional Frameworks for GHG Emissions Reduction
- EM2:
  - Elective Module 2.1: Policy Makers & Regulators
  - Elective Module 2.2: TSPs and IT Service Providers
- EM3:
  - Elective Module 3.1: Telecom Service Provider (TSP) Strategies
  - Elective Module 3.2: IT Service Provider Strategies (including Cloud Services)
  - Elective Module 3.3: Adaptation for Infrastructure Providers

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# INTERNATIONAL AND REGIONAL COOPERATION INITIATIVES IN AREAS RELATED TO ICT AND ENVIRONMENT

- UN Framework Convention on Climate Change (UNFCCC)
- WSIS
- ITU BDT SSDM
- WTDC, WTSA, WRC, WTDM
- ISO and IEC
- United Nations Environment Programme (UNEP)
- ITU and Regional development forums
- The United Nations University (UNU) and the International Solid Waste Association (ISWA) -
- Intergovernmental Panel on Climate Change (IPCC)
- others




# SAMPLE ON GLOBAL AND/OR REGIONAL PROGRAMMES ON ICTS E-WASTE

- **The E-waste Statistics Guidelines on classification and indicators**

The partnership on measuring ICTs for development and its task group on measuring e-waste was established with aim to develop a framework for monitoring e-waste based on internationally-defined indicators and classifications that will help to develop e-waste statistics.

- **Global E-waste Monitor:**

The Global E-waste Monitor 2017, a joint effort of the ITU, the United Nations University (UNU) and the International Solid Waste Association (ISWA), provides the most comprehensive overview of global e-waste statistics and an unprecedented level of detail, including an overview of the magnitude of the e-waste problem in different regions.

- **The WEEE Calculation Tool Manual:**

UNU E-waste calculation tool" is an integral part of the methodologies for the calculation of the weight of electrical and electronic equipment (EEE) placed on the market, imported, exported, collected and recycled

The Partnership

UNITED NATIONS UNIVERSITY

UNU-VIE SCYCLE

Sustainable Cycles Programme

ISWA

International Solid Waste Association

ITU

# Thank you !

**More information on ITU-D works on ICTs and Environment can be found at:**
**https://www.itu.int/en/ITU-D/Climate-Change/Pages/default.aspx**

**We look forward to hearing from you!**