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ICTs for e-Environment

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Kerstin Ludwig

ICT Applications and Cybersecurity Division

Policies and Strategies Department

ITU Telecommunication Development Sector

Summary review of the report: "ICTs for e-Environment",
prepared for ITU by Mr Richard Labelle (2007) with input from
Mr Ralph Rodschat (independent advisor), Mr Tony Vetter (International
Institute for Sustainable Development), and
ITU ICT Applications and Cybersecurity Division

Agenda

- Introduction: e-Environment & climate change
- Objective of the report
- Methodology & e-Environment categories
- Using ICTs to tackle climate change
- Implications for developing countries
- Conclusions of the report
- Recommendations
- Proposed approaches & tools
- Role for ITU-D



Objective of the report

- To provide guidelines for developing countries on how to use ICTs for better management & protection of the environment as a key part of their development process, with particular focus on **climate change**
- Target groups:
 - Decision-makers in developing countries
 - Donor agencies
 - International development community
 - Private industry
 - Research & development institutions & academia
 - Civil society

Methodology

- Extensive data collection via internet, literature reviews & interviews
- Analysis ranking e-Environment applications
 - Ease of adoption by developing countries
 - Environmental scope, technology, transferability, and impact
- Analysis of organizational domain
 - Linkages of agencies & administrations for specific e-Environment programmes
- Categories of e-Environment applications

e-Environment categories

Report examines
ICT use in 6 areas
of environmental
action

Capacity Building
Public Awareness
Education
Sustainable Development

Lists > 150 ICT
environmental
applications

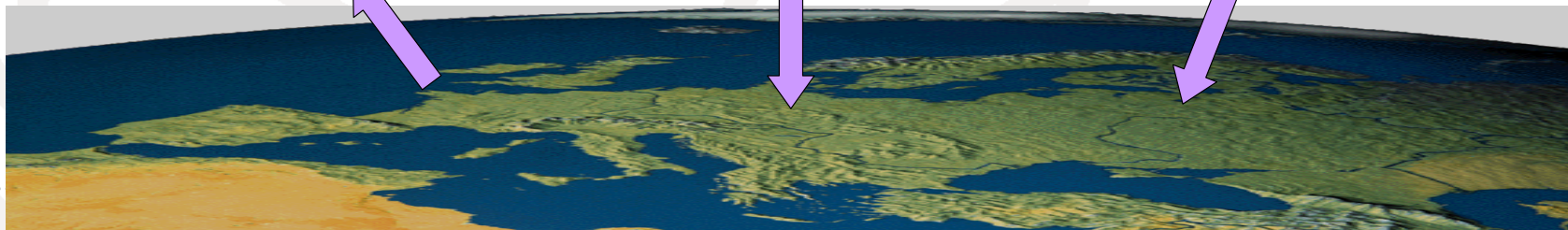
Analysis
GIS Systems
System Modelling
Grid computing

Planning
Data correlation (e.g.,
georeferencing)
Forecasting
Policy Formulation

Observation
Satellite Observation
(air, water soil)
Human observation
Data archives

ICT Mitigation
ICT Operation
Telecommuting
Collaborative Tools

**Management &
Protection**
Implementation
Enforcement



e-Environment – using ICTs to tackle climate change

- 1) Monitoring & better understanding climate change
- 2) Improving energy-efficiency & reducing GHG emissions of ICTs themselves
- 3) Improving energy-efficiency & reducing GHG emissions in other sectors
 - Production efficiency
 - Logistics & transportation efficiency
 - Efficiency in work practices (telecommuting, videoconferencing, dematerialisation)
- 4) Early warning & response to disasters caused by climate change

Need to...

- Carry out further research
- Change business & consumer behaviour
- Have effective government policies & priorities

Implications for developing countries

- All countries can respond to climate change by a process of *adaptation* to its impacts and by reducing GHG emissions (*mitigation*), thereby reducing the rate and magnitude of climate change
- The capacity to adapt and mitigate is dependent on socio-economic and environmental circumstances and availability of ICTs
- Many countries have limited capacity to make beneficial use of ICTs for environmental action:
 - Limited access to affordable infrastructure & internet
 - Limited human capacity to analyze & interpret climate change data
 - Limited capacity to integrate scientific data into decision- and policy-making
 - Limited capacity to undertake adaptation, mitigation, R & D

Report conclusions

- ICTs as villain & hero to reduce GHG emissions
- Facilitate systematic approach at int'l & nat'l levels for complex and cross-cutting issues such as climate change
- Timely and preventive action for national & coordinated international planning
- Increase energy-efficient ICTs, infrastructure & their disposal
- ICTs to aid process efficiency, information flow & networking
- Developing countries to use potential of ICTs for environmental & climate change action

Recommendations

- 1) Raise awareness on ICTs for environment & climate change, particularly at decision-making levels in the public & private sectors
- 2) Further research on use of life cycle assessment methodology to determine the real costs/benefits of ICT use in environmental terms
- 3) Strengthen the capacity of developing countries to use ICTs for environmental action & climate change adaptation & mitigation
 - Strengthen national analysis, planning & implementation
 - Foster technology transfer
 - Use existing & new financial mechanisms
 - Promote best practices
 - Promote PPPs

Approaches & tools

- 1) National strategic planning framework (e-Environment Action Plan)
 - Assessment (of requirements & capabilities)
 - Consultation and awareness promotion
 - Vision statement & goals
 - Strategy:
 - Policies
 - Immediate & longer-term objectives
 - Action plan
 - Performance indicators (RBM → PRSP indicators)
 - Monitoring and evaluation

Approaches & tools (cont'd)

2) Faster option: Rapid e-Environment assessment

- Assessment phase (as per nat'l action plan)
- Recommendations, priorities with cost & benefits

3) Need to develop an e-Environment toolkit

– to support e-Environment assessments

Role for ITU-D

- ITU mandate on ICT applications & strategies
 - Co-facilitator of WSIS Action Line C7 on e-Environment
 - Develop guidelines, training materials & toolkits on technology & policy aspects of e-Environment applications
 - Assist developing countries in implementing relevant ICT applications for environment & sustainable development
- Challenges & opportunities
 - Awareness promotion
 - Work with int'l partners for capacity building & coordinated initiatives
 - Support developing countries for pilot project implementation
 - Monitor & evaluate results, & expand to other countries

... with highest priority to climate change

More Information

- ITU Climate Change
 - www.itu.int/climate
- ITU-D e-Environment home page
 - www.itu.int/ITU-D/cyb/app/e-env.html

email: kerstin.ludwig@itu.int

Thank you

Annex: Key Partners for e-Environment Activities

- ITU Member States, WMO, UNEP (UNEP-WCMC, UNEP-GRID, Convention Secretariats), FAO, UNESCO, WHO, UNIDO, UNDP, other UN specialized agencies and programmes, UN Regional Commissions, GEF, WSIS partners, World Bank, etc.
- Regional environmental centres/groups: AOSIS, REC (Budapest), Bogor (Biotrop, etc.), IICA/CATIE (Costa Rica), IDRC, IISD
- Key private sector partners: ICT industry (e.g. GeSI), business associations (WBCSD)

Annex: Key Partners for e-Environment Activities

- Environmental / agriculture organizations:
 - IUCN, WWF, FOE, IIED & other stakeholders
 - CGIAR & NARS (National agriculture research services)
- Researchers:
 - IPCC, ICSU, GEO/GEOSS, etc.
 - Research associations, networks and centres, etc.