

*Microsoft*

# Environmental Sustainability

## ICTs for Monitoring Climate Change

Microsoft Collaboration with UNEP World Conservation Monitoring Centre  
John Howie, Director

## Overview

- The challenges of monitoring Climate Change
- The role of ICT in monitoring
- Microsoft's contributions and assistance
- UNEP Partnership

## Monitoring Challenges

- Monitoring takes place over extended period
  - Years, decades and lifetimes, not days, weeks or months
  - Both current and historical data must be accessible
- Multiple data points will be collected
  - Many organizations will be involved in collection
    - Vast sum of data will need to be collated and stored
    - Organizations must be able to collaborate effortlessly

## Monitoring Challenges (continued)

- Data collected will come in multiple formats
  - e.g., Satellite imagery, weather sensors, sea levels
    - Data must be stored in lasting, standard formats
    - Data should be accessible using common tools
- Data must be analysed and qualified
  - Remove non-Climate Change factors and data
  - Apply Business Intelligence-type analysis
    - Complicated by variety, volume and historical data

## Role of ICTs

- Can help organisations monitoring Climate Change with:
  - Data collection
  - Transfer
  - Storage
  - Collaboration
  - Processing
  - Management
- Organisations can use off-the-shelf hardware and software
- Climate Change can bring new opportunities for ICT companies
  - Research can lead to new products and services

## Role of ICTs (continued)

- Satellite imagery is an example of how ICTs can contribute, and time-lapsed images can show
  - Deforestation
  - Sea-levels and flooding
  - Weather impact
  - CO2 emissions sources
  - Migration of species



April 15, 2008



May 5, 2008

Images courtesy of MODIS Rapid Response Project at NASA/GSFC

## Our Commitment

*At Microsoft, we believe in the potential of software and technology innovation to help people and businesses around the world improve the environment.*



## How We Think About The Challenge



Microsoft's Global Impact

- Microsoft's Opportunities
  - Reduce the 3-5% of energy consumed by software driven devices
  - Use software to address the larger challenge
  - Partner with leading environmental organizations and experts
  - Lead by example within our own organization



## Microsoft's Contributions

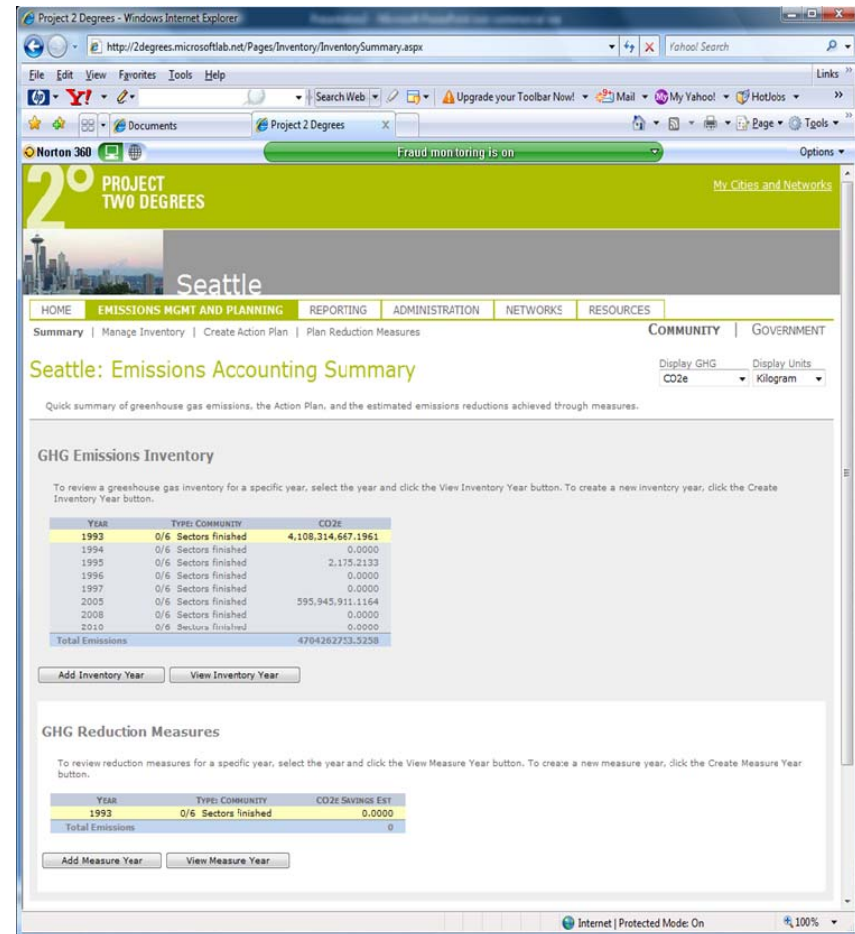
- Microsoft Research is working with FLUXNET
  - A carbon emissions project focusing on impact on vegetation
  - Microsoft is providing storage and collaboration tools (<http://www.fluxdata.org>)
- Product teams are working on reducing power consumption
  - Better power management of devices, laptops, desktops and servers through software

## Microsoft's Contributions (continued)

- Free web-based data storage, retrieval and collaboration tools allow truly-global access to data
  - Live Earth APIs to access satellite imagery
  - SkyDrive for data storage
  - Office Live for collaboration

## Microsoft's Contributions (continued)

- With the Clinton Foundation and others, Microsoft is building tools that help cities track GHG emissions
- Allows city government to run what-if scenarios
- Cities can be compared with each other
- Detail to buildings and GHG emission sources



## UNEP Partnership

- OARE is a PPP coordinated by UNEP to provide developing countries access to research
  - Including Climatology, Climate Change and Meteorology, Energy Conservation and Renewable Energy amongst others
- Microsoft has contributed software and services to OARE
  - Solutions provides access to research to researchers in developing countries
  - Same software and services used by HINARI and AGORA

## UNEP Partnership (continued)

- Microsoft Research UK is currently working with UNEP and others to develop tools for collecting, monitoring and modeling the planet's Life Support systems
  - Starting with biodiversity loss
  - Looking to expand coalition to include Climate Change organizations, researchers and space agencies
- Microsoft is working to join the Proteus partnership with UNEP's World Conservation Monitoring Centre
  - Proteus will rebuild World Database on Protected Areas
  - WDPA will allow the private sector to conduct risk assessment on impact of activities
    - Including activities that cause Climate Change, and are driven by Climate Change

## Summary

- Pivotal time for environmental action
- Software is essential to solving the 95% problem
- Microsoft is committed to providing energy efficient products
- We strive to lead by example with operational advances and education
- Microsoft is collaborating with leading thought leaders and global organizations to have a positive impact



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