

The background of the slide is an abstract composition. It features a dense field of small, circular dots in various shades of green and brown, scattered across a light-colored, textured surface that resembles sand or a fine-grained material. The dots are more concentrated in certain areas, creating a sense of depth and movement. The overall effect is a complex, organic pattern that serves as a backdrop for the text.

Role of Universities in Capacity Building on Application of Space Technologies

Viktor Lagutov
ISEPEI Project



UNEP's Global Universities Partnership on Environment for Sustainability

“provocative”

constructive

practical

The role is well recognized...



DIVISION OF
RESEARCH

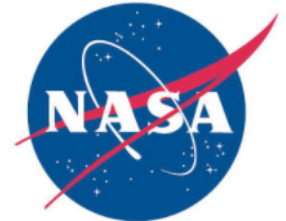
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Overview: UMD and NASA

UMD and NASA have established a close research relationship, much in part thanks to the NASA Goddard Space Flight Center in Greenbelt, Md., to the College Park campus. In 1996, the two organizations signed a memorandum of understanding that created a strong and lasting partnership. The agreement provided greater reciprocal access to each organization and allow easier identification, development, and implementation of collaborative research activities have included space-based research; bio-sciences; earth sciences, and education. The NASA-Goddard attract and retain scientific and engineering talent, and provide research associates as well as full-time scientists and engineers. NASA also provides employee recruits of any university in the country for NASA.



IS:

[Space Science & Technology \(CRESST\)](#)

[X-ray Energetics and Mass \(CREAM\)](#)

[Content of Temperate Forests Overestimated](#)

End of universities?

Will Coursera and Udacity Kill Non-Top Universities?

By Shamima Khan

MOOC

 Tweet 2

 Like {



Traditional college experience has its own appeal, but how many students can top schools accommodate?

TED #1 (49 mln views)

Watch Reactions

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Do schools kill creativity?

Amy Cuddy
Your body language shapes who you are

Brené Brown
The power of vulnerability

Ken Robinson
How schools kill creativity

Amy Cuddy
Your body language shapes who you are

Ten things you didn't know

iRevolution in collecting data



iRevolution in storing data



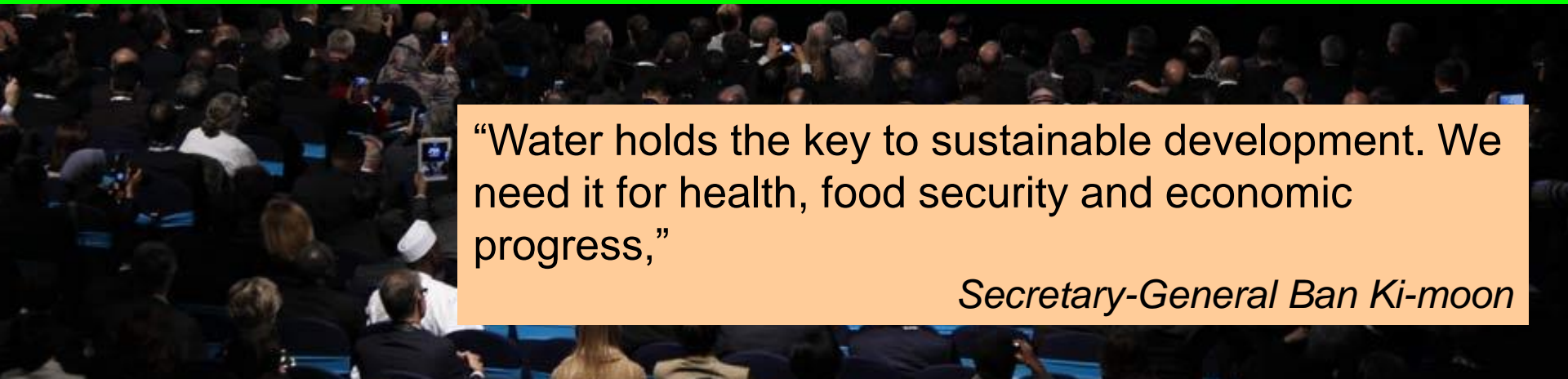
iRevolution in distributing data



Budapest Water Summit 2013



NO ICT related booths / presentations



“Water holds the key to sustainable development. We need it for health, food security and economic progress,”

Secretary-General Ban Ki-moon

There is a gap...



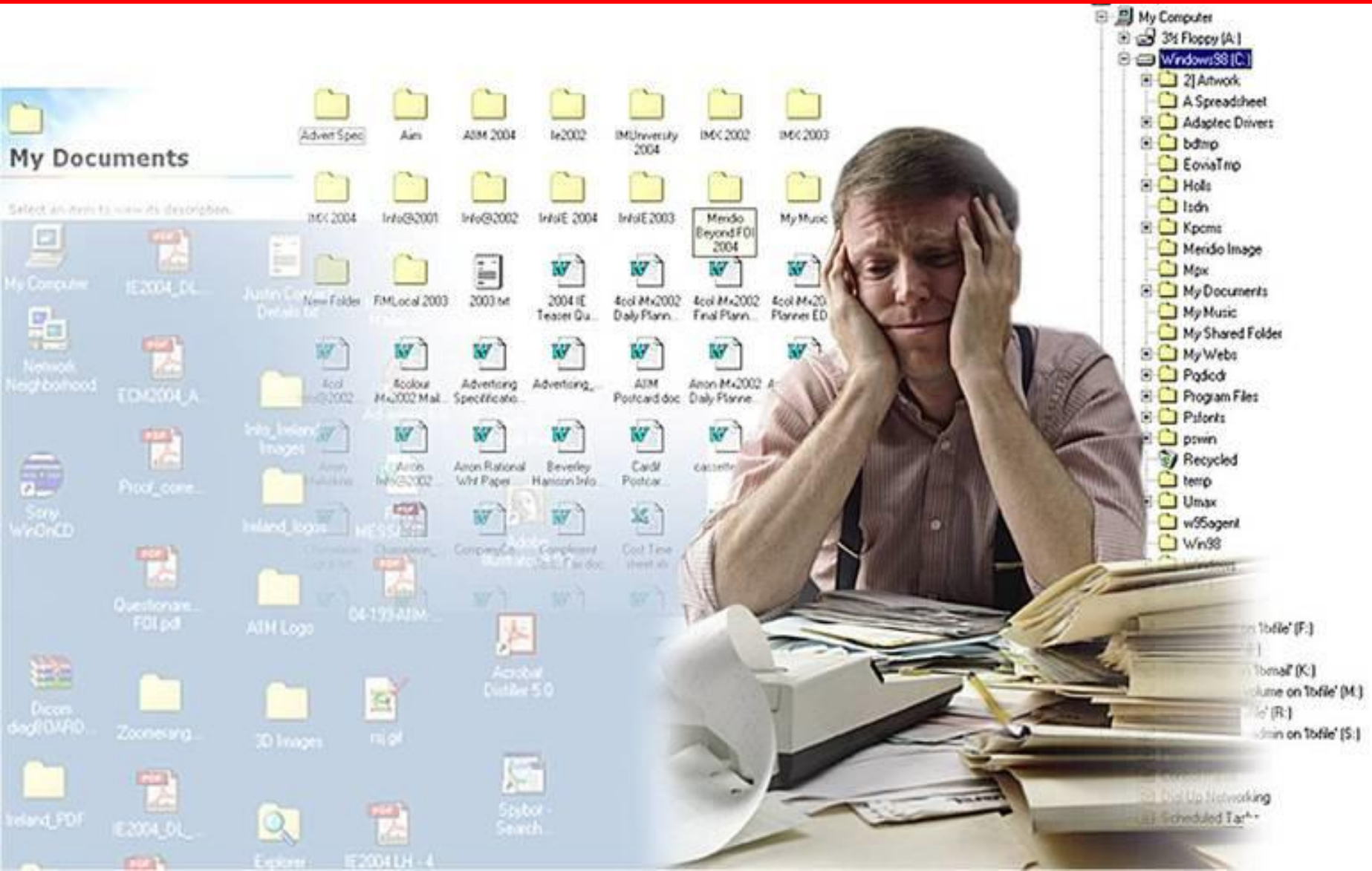
practitioners

ICTs

Many environmental, social, economic, technical disciplines are essential for sustainability, but they are “siloed”



ICTs can be very frustrating...



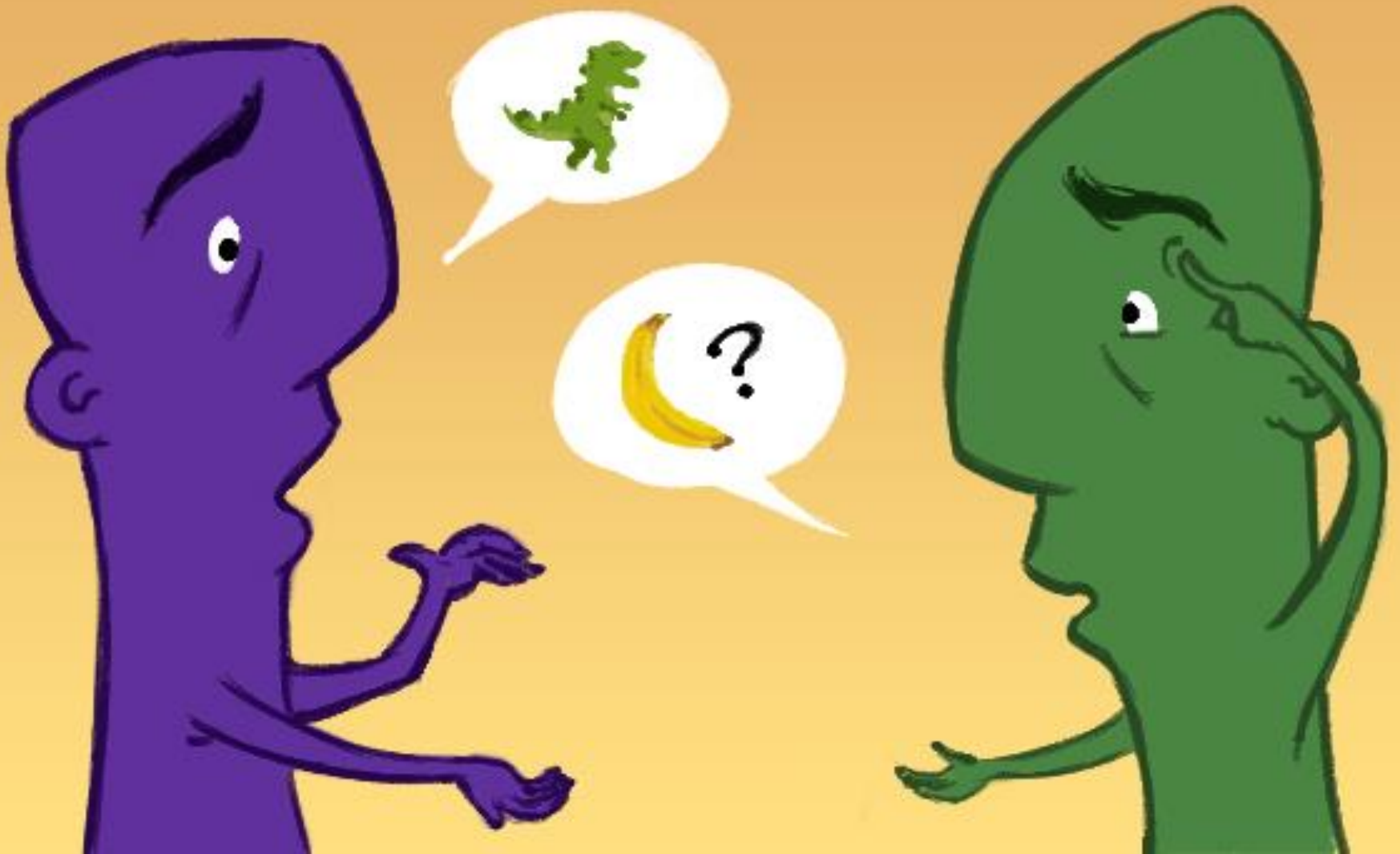


Data is NOT information / knowledge

Not affordable...



(Terminology) Language barrier



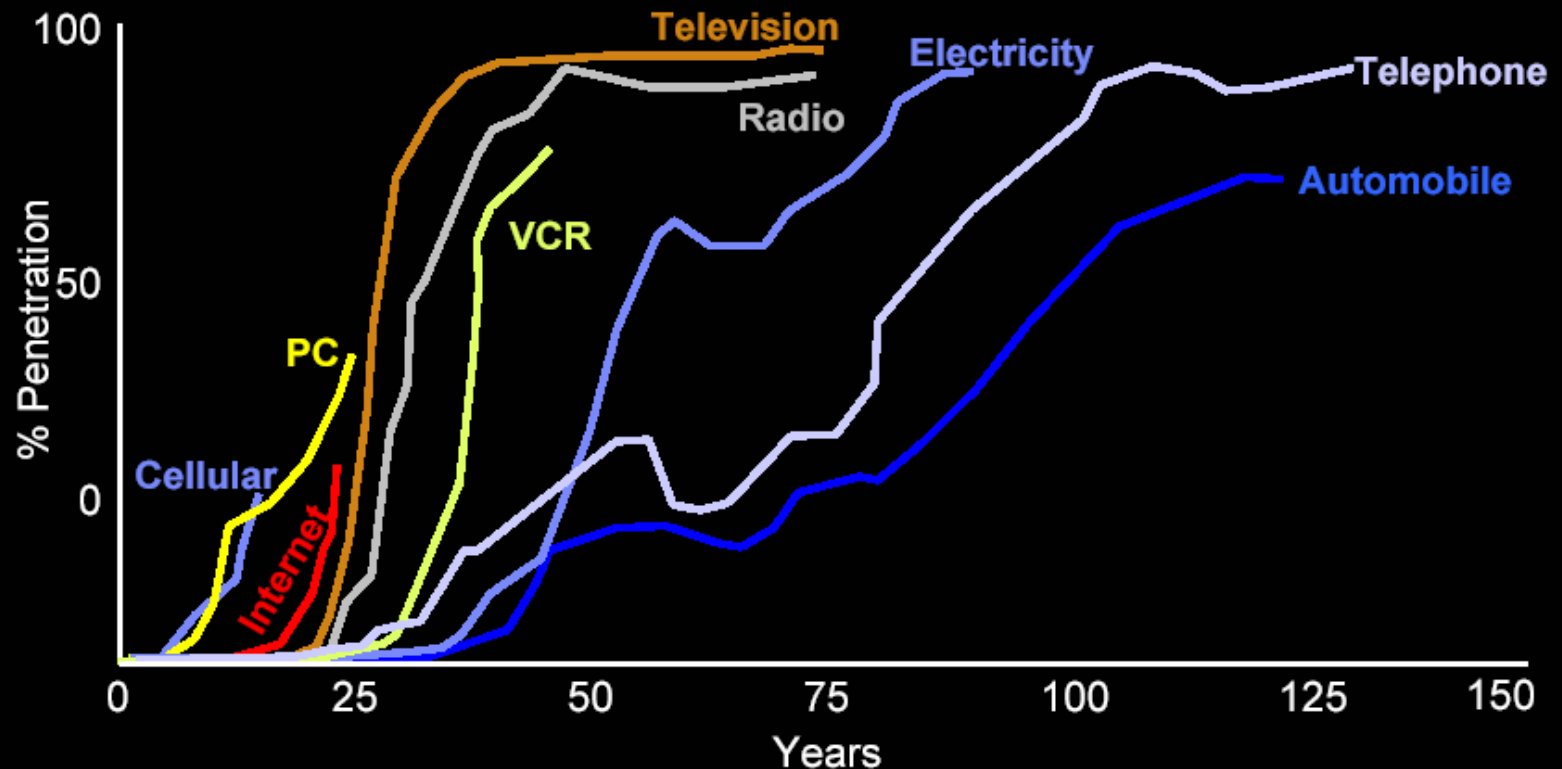
No trust...

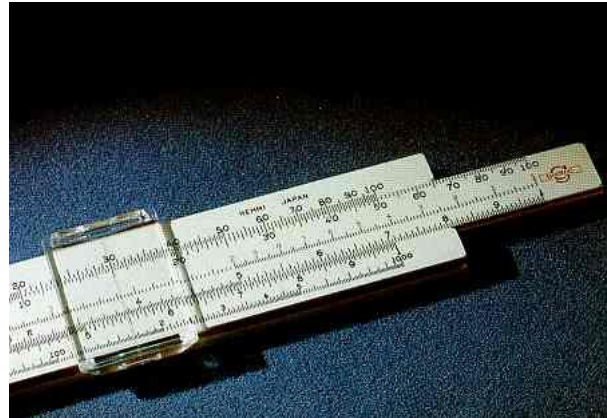


Innovation life span is shortening

Pace of Innovation Accelerating

- Newer technologies taking hold at double or triple previous rates





Curricula in 1970s





Curricula in 2000s



Curricula in 2020s???



Many challenges

- Data \neq information \neq knowledge
- Accelerating pace of new technologies
- Data overload
- Isolated communities of techs and targeted groups (e.g. *different language/ interests / tasks*)
- “Right answers for wrong questions”
- Crisis in education (*we are not pioneers in ICTs,*)
- Lack of institutional memory (project based activities)
- ...

Eye on Earth Process, 2010-...



Access and use of available Societal and Environmental Information

Eye on Education

Eye on Disaster management

Eye on Water Security



Global Process with many stakeholders



Implementing the Eye on Earth Vision

The Special Initiatives



- The SIs are a voluntary group of experts that meet regularly to advance the outcomes set for each SI through collaboration, networking and implementation of projects
- Multiple SI projects across 6 continents.
- 800 individuals from more than 150 organisations representing multiple sectors across society.

Eye on Earth Summit, 2011

<http://eoesummit.org>

Under the patronage of The President His Highness Sheikh Khalifa Bin Zayed Al Nahyan.

EyeOnEarthSummit.org

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Access to environmental and societal data and information has never been more important.

Our world is dependent upon the sharing, access, use and usability of environmental data and information for addressing some of our greatest ever challenges; water scarcity, food security...

“Informed Decision Making for Sustainable Development”



THE SUMMIT

Because missing, inaccessible or hidden data has serious consequences, the Eye on Earth Summit will bring policymakers and specialists together to define the key issues regarding data accessibility.

[About Summit](#) · [Become a partner](#)

THE EXHIBITION

The Exhibition will feature the best in new geospatial observation and data processing technologies. It will showcase innovative projects and partnerships, particularly from emerging economies.

[About Exhibition](#) · [Become an Exhibitor](#)

HIGHLIGHTS

Eye on Earth is not about setting up new systems or bureaucracies. It's about liberating what's already there, establishing new connections, and helping people interact with like-minded peers and professionals.

[Agenda](#) · [Submit a project](#)



EYE ON EARTH SUMMIT DECLARATION

We the Ministers, and high-level representatives of government, business, academia and civil society (The Eye on Earth Community) present at the first Eye on Earth Summit in Abu Dhabi from 12 to 15 December 2011,

Deeply concerned over the evidence of unprecedented environmental changes at all levels, including possible irreversible changes with potentially negative implications for economic and social development, especially for the poor and vulnerable groups in society,¹

Conscious that cooperation on exchange of, and access to, timely, credible and relevant observations and information among a wide array of actors is a critical part of the science-policy interface needed for advancing the development and implementation of goals, targets and indicators for sustainable development,

Recalling Principle 10 of the Rio Declaration on Environment and Development, which amongst others recognises

EyeOnEarth Summit 2015: Data-Driven Decision Making



Bridging the gaps



Eye on Earth networks and builds capacity across diverse knowledge communities to improve decision-making for sustainable development

Eye On Earth Seed-Funded Projects

Below is a summary of each of the seed funded projects and their alignment to the Eye on Earth principles.

Projects were selected to ensure they were compelling, specific, achievable outcomes that translate the principles of the Eye on Earth Summit Declaration to "on the ground" commitments and actions through the Special Initiatives, with priority emphasis on projects that provide support to Abu Dhabi, the UAE and the Arab region.

→ **EcoCitizen World Map-Building Eco Cities**



→ **GeoSUMR - GeoInformation for Sustainable Urban Management and Resilience**



→ **The GeoSUR Program, a model regional geospatial network for the Arab region**



→ **GUPES- Global Universities Partnership on Environment and Sustainability**



→ **In Service ICT training for Environmental Professionals (ISEPEI)**



Need for resource Centers

- *University Network and capacity building*
- *Sustainable, self-sustaining (potential)*
- *ongoing partnerships development (state, private, academia, society, etc)*
- *Transferable*
- ...



Universities as Resource Centers

CRITERIA

- Well-recognized higher education institution
- Excellence in public policy teaching
- Well-established links to ICT leaders
- Technologically-advanced infrastructure
- Convenient transport hub
- Attractive location
- Financially self-supporting

BENEFITS

- Economically efficient
- Self-sustaining
- Not project-based
- Curricula development
- Easy expansion into various thematic areas
- Funds attraction
-

ISEPEI: In Service ICT Training for Environmental mid-career Professionals

Despite overwhelming availability of data, large gap between environmental / public policy professionals and ICT communities

- Technical capacity to use, understand, and apply these technologies

Decision-makers will greatly benefit from a periodic overview of emerging technologies

- ICTs constantly evolving, more data becoming available

- Universities are hubs in promoting ICTs and fostering their timely and efficient usage;
- Platform between ICT industries and professional communities;
- Experience in teaching at postgraduate level;
- Sustainability and continuity in activities through establishing university-based Resource Centres;
- Forms of ICT training
 - ICT **potential** for policy/decision makers
 - ICT **trainings** for environmental professionals

Central European University

International postgraduate institution located in the heart of Budapest, Hungary

- Focused on Public Policy, involved in SGD's development
- Well-established links to int'l environmental/public policy organizations, government agencies
- Global coverage
- accreditations / partnerships with leading Universities and research institutions
- Developed infrastructure and support

CEU is among the world's top 100 universities in social sciences



TIMES HIGHER EDUCATION WORLD UNIVERSITY RANKINGS

Show me universities in Hungary × that offer any subject ∨
Or, find a specific university by name

RANKINGS ONLY		PERFORMANCE BREAKDOWN	KEY STATISTICS *
Rank ▲	Title ◆		
301-350	Central European University 📍 Hungary		Explore
501-600	Semmelweis University 📍 Hungary		Explore
601-800	Budapest University of Technology and Economics 📍 Hungary		Explore
601-800	Eötvös Loránd University 📍 Hungary		Explore

2nd in the world
in terms of international outlook

EoE Partnership in practice



ISEPEI



UNITED NATIONS
Office for Outer Space Affairs



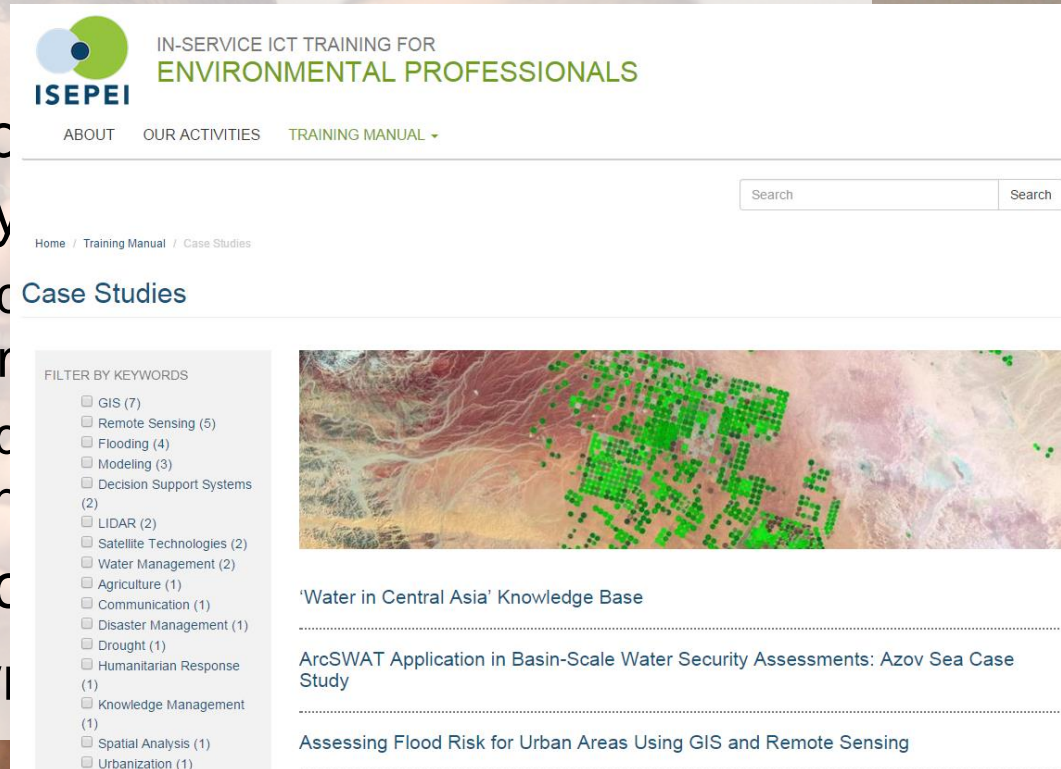
مبادرة أبوظبي العالمية للبيانات البيئية
Abu Dhabi Global Environmental Data Initiative



Training Manual: *ICTs for Water Security*

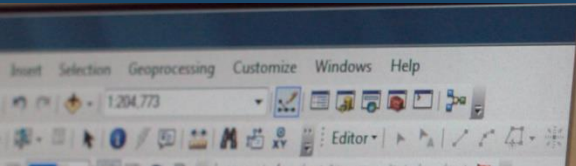
<http://isepei.org/training-manual>

- Repository available online for decision-makers to access
- Examples of real-world cases covering a wide variety of topics
 - GIS, remote sensing, modeling, knowledge management
 - Flooding, agriculture, disaster response, urbanization
- Description of each technology
- Possibilities to add own content



The screenshot shows the ISEPEI website interface. At the top, the ISEPEI logo is on the left, and the text "IN-SERVICE ICT TRAINING FOR ENVIRONMENTAL PROFESSIONALS" is on the right. Below this is a navigation bar with links: "ABOUT", "OUR ACTIVITIES", and "TRAINING MANUAL". A search bar is located on the right side of the page. The main content area is titled "Case Studies" and features a "FILTER BY KEYWORDS" section on the left. This section lists various keywords with their respective counts in parentheses, such as "GIS (7)", "Remote Sensing (5)", "Flooding (4)", "Modeling (3)", "Decision Support Systems (2)", "LIDAR (2)", "Satellite Technologies (2)", "Water Management (2)", "Agriculture (1)", "Communication (1)", "Disaster Management (1)", "Drought (1)", "Humanitarian Response (1)", "Knowledge Management (1)", "Spatial Analysis (1)", and "Urbanization (1)". To the right of the filter list is a large image showing a map with green dots representing data points. Below the image, there are two article titles: "'Water in Central Asia' Knowledge Base" and "ArcSWAT Application in Basin-Scale Water Security Assessments: Azov Sea Case Study". At the bottom, there is a link to "Assessing Flood Risk for Urban Areas Using GIS and Remote Sensing".

Portal: *ICTs for Water Security*



Authors Organizations Case Studies

AUTHORS

ORGANIZATIONS

IMPORTANCE OF DATA

TECHNOLOGIES

DATA PORTALS

GEOGRAPHIC INFORMATION SYSTEMS (GIS)

REMOTE SENSING

DATA ANALYSIS: MODEL SIMULATION, AND OPTIM

SENSORS AND COMMUNIC TECHNOLOGIES FOR SMART WATER MANAGEMENT

DISTANCE LEARNING

DECISION SUPPORT SY

MOBILE PLATFORMS / CROWDSOURCING

CASE STUDIES

CASE STUDY MAP

AUTHORS

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DISTANCE LEARNING

DECISION SUPPORT SYSTEMS

MOBILE PLATFORMS / CROWDSOURCING

CASE STUDIES

CASE STUDY MAP

FILTER BY KEYWORDS

☒ GIS

☐ Decision Support Systems (2)

☐ Agriculture (1)

☐ Communication (1)

☐ Drought (1)

☐ Flooding (1)

☐ LIDAR (1)

☐ Modeling (1)

☐ Remote Sensing (1)

☐ Water Management (1)

☐ Water Supply (1)

FILTER BY GEOGRAPHICAL SCOPE

☒ Europe

☐ Basin (3)

☐ Transboundary (2)

AUTHORS

ORGANIZATIONS

IMPORTANCE OF DATA ACCESS

TECHNOLOGIES

CASE STUDIES

CASE STUDY MAP



Airborne LIDAR Technology for Sustainable Watershed Management: Ecological Health of Riparian Zones

ArcSWAT Application in Basin-Scale Water Security Assessments: Azov Sea Case Study

GIS Based Communication Platform for the Sustainable Management of Transboundary Water Resources in Lithuania, Poland, Belarus and Kaliningrad Region (Russia)

GIS Based Tool for the Landscape Retention Planning

Remote Sensing Based Agricultural Drought Monitoring and Yield Loss Prediction Method



ISEPEI Trainings

<http://isepei.org/workshops>



Target Group: decision-makers and public



Speakers from leading institutions



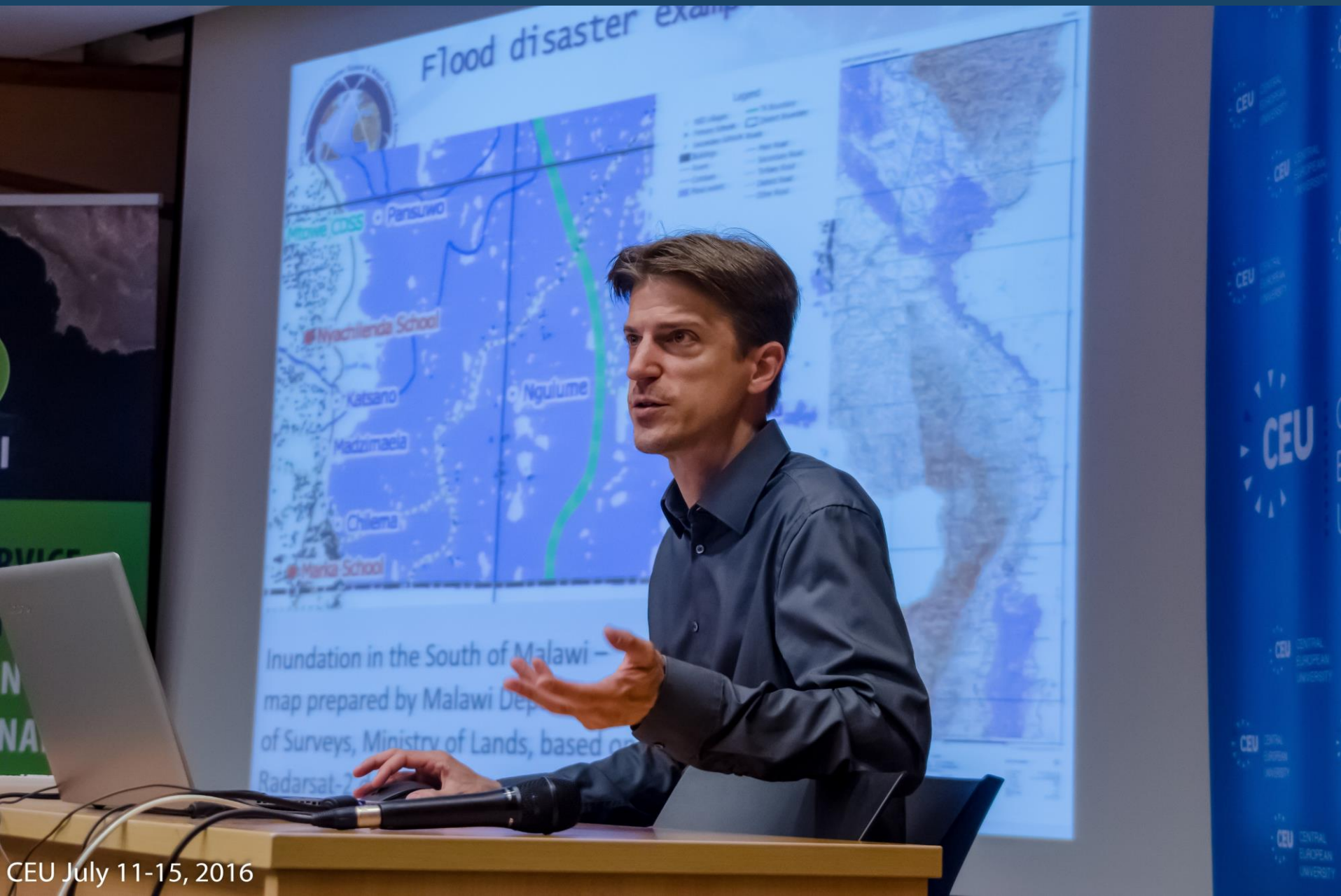
Speakers: UNESCO



Speakers: EC Joint Research Center



Speakers: German AeroSpace Center



Speakers: German AeroSpace Center



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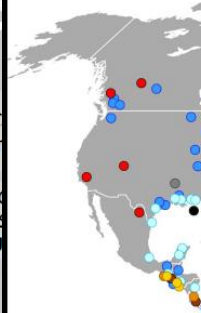
The Charter brings
technologies to s



The Charter's cap
available 24 hours

Space agencies co

- **Priority sa**
- Archive Re
- Organisati

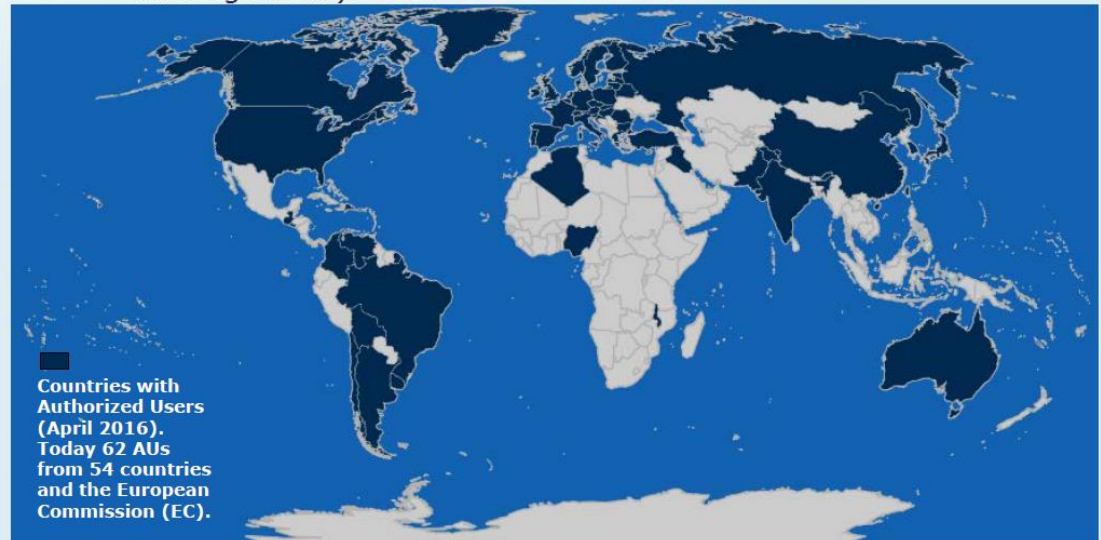


Legend: ● Earthquake



Activating the Charter: Authorized Users (AU)

The only bodies authorized to **directly** request the Charter to be activated are the **Authorized Users** - AUs (typically civil protection agencies, governmental relief organizations, or other authorities with a mandate related to disaster management).



Speakers: Google



The Quantified Earth..
From pixels to intelligence..

Ed Parsons
eparsons@google.com
@edparsons

CLEVERDOUGH

A man in a yellow and blue plaid shirt is standing in front of a large screen, gesturing with his hands while holding a small device. The screen displays a presentation slide with a satellite image of a coastline and text. A name tag is visible on his chest.



ISEPEI

IN-SERVICE
ICT TRAINING FOR
ENVIRONMENTAL
PRO...

The ISEPEI logo, consisting of two overlapping circles (one light blue, one light green), is positioned above the acronym 'ISEPEI'. Below this, a green banner features the text 'IN-SERVICE ICT TRAINING FOR ENVIRONMENTAL PRO...'. The background of the banner shows a map of Mexico.

Speakers from private sector

MOTOROLA SUPPORTING THE UN GLOBALLY



MOTOROLA SOLUTIONS

UN ACCOUNT TEAM

(Berlin, Rome, Paris, Copenhagen, Nairobi)

Project Managers

Field Engineers

System Engineers

Customer Support Manager
Johannesburg

Trainers

Contracts

Fin

AUTHORIZED CHANNEL PARTNERS

Local Presence in 100+ countries

400+ APPLICATION PARTNERS



Hands-on sessions








Improving university syllabi



Geospatial Solutions for Sustainable Water Management, 2-6 July 2018

- joint CEU / UNOOSA workshop
- Aimed at various sectors
- UNECE, EU JRC, Airbus ESRI, Google, etc
- <http://isepei.org/geospatial-2018>





Bridging ICTs and the Environment

GEOSPATIAL SOLUTIONS FOR SUSTAINABLE WATER MANAGEMENT

2 - 6 July 2018
Budapest, Hungary

COURSE DIRECTORS:

Viktor Lagutov
Central European University

Lorant Czarán
UN Office for Outer Space Affairs

SELECTED COURSE FACULTY:

Anupam Anand
Global Environment Facility,
World Bank Group

Geospatial technologies and remote sensing offer a crucial location element to the monitoring of Sustainable Development Goals and their corresponding targets and indicators. The unprecedented "power of where" allows for unbiased observation and analysis across borders, administrative boundaries, and nations.

The workshop, run in cooperation with the United Nations Office for Outer Space Affairs (UNOOSA), provides an opportunity for water professionals to get updated on the latest advances in geospatial technologies and remote sensing, and their application to the monitoring of water related SDGs. The lectures and practical sessions are conducted in English.

Invitation to cooperate



Armen Grigoryan
UNDP Regional Centre for Europe and CIS

Ed Parsons
Google

András Szöllösi-Nagy
International Hydrological Programme of UNESCO

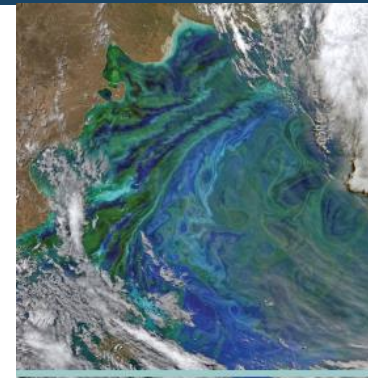
The workshop target group includes: National Focal Points of international organizations, environmental practitioners, and researchers involved in water and SDG-related issues. No prior experience in geospatial technologies is required.

For further information on the workshop and application, please visit <http://isepei.org/workshops> or contact us at info@isepei.org.

ISEPEI began as a flagship project of the Eye on Earth Global Initiative, aiming to bridge the gap between information and communication technologies (ICTs) and the environment (<http://eye-on-earth.net>). The ISEPEI workshops focus on potential use of ICTs (e.g. remote sensing, geospatial technologies, crowdsourcing) in various environmental and public policy themes.

Innovations in Disaster Risk Reduction, 25-29 June 2018

- Joint CEU / UNDP workshop
- Aimed at UNDP country offices and affiliated agencies/projects
- UNOOSA, UNESCO, GEO, EU JRC, ESRI, etc
- <http://isepei.org/innovations-drr-2018>



Summer
University

CENTRAL
EUROPEAN
UNIVERSITY



Bridging ICTs and the Environment

INNOVATIONS IN DISASTER RISK REDUCTION

25 - 29 June 2018
Budapest, Hungary

COURSE DIRECTORS:

Viktor Lagutov
Central European University
Armen Grigoryan
UNDP Regional Centre for Europe and CIS

SELECTED COURSE FACULTY:

Jeff Baranyi
Esri
Douglas Cripe
Google

The Innovations in Disaster Risk Reduction (DRR) workshop will highlight recent advances in information and communication technologies (ICTs) and how they are empowering both decision-makers and citizens to play a proactive role in managing disaster risks and providing more effective disaster response. This joint UNDP and Central European University (CEU) workshop will combine regional UNDP experience, ICT industry expertise, and accumulated first-hand knowledge from a global network of organizations, offering both theoretical and practical skills in disaster risk reduction, monitoring, and recovery.

The program will cover a number of themes, including ICTs for DRR, Early Warning Systems, disaster preparedness and response, smart cities, and integration of relevant innovative technologies. A range of topics related to remote sensing, geospatial technologies, and more.

The workshop is targeted at representatives of regional and country offices of UN agencies, National Focal Points of international conventions, relevant government agencies (e.g. Ministries of Emergency Situations, Environment), researchers and civil society. No prior experience in geospatial technologies in DRR is required.

For further information on the workshop, please visit <http://isepei.org/workshops> or contact us at info@isepei.org.

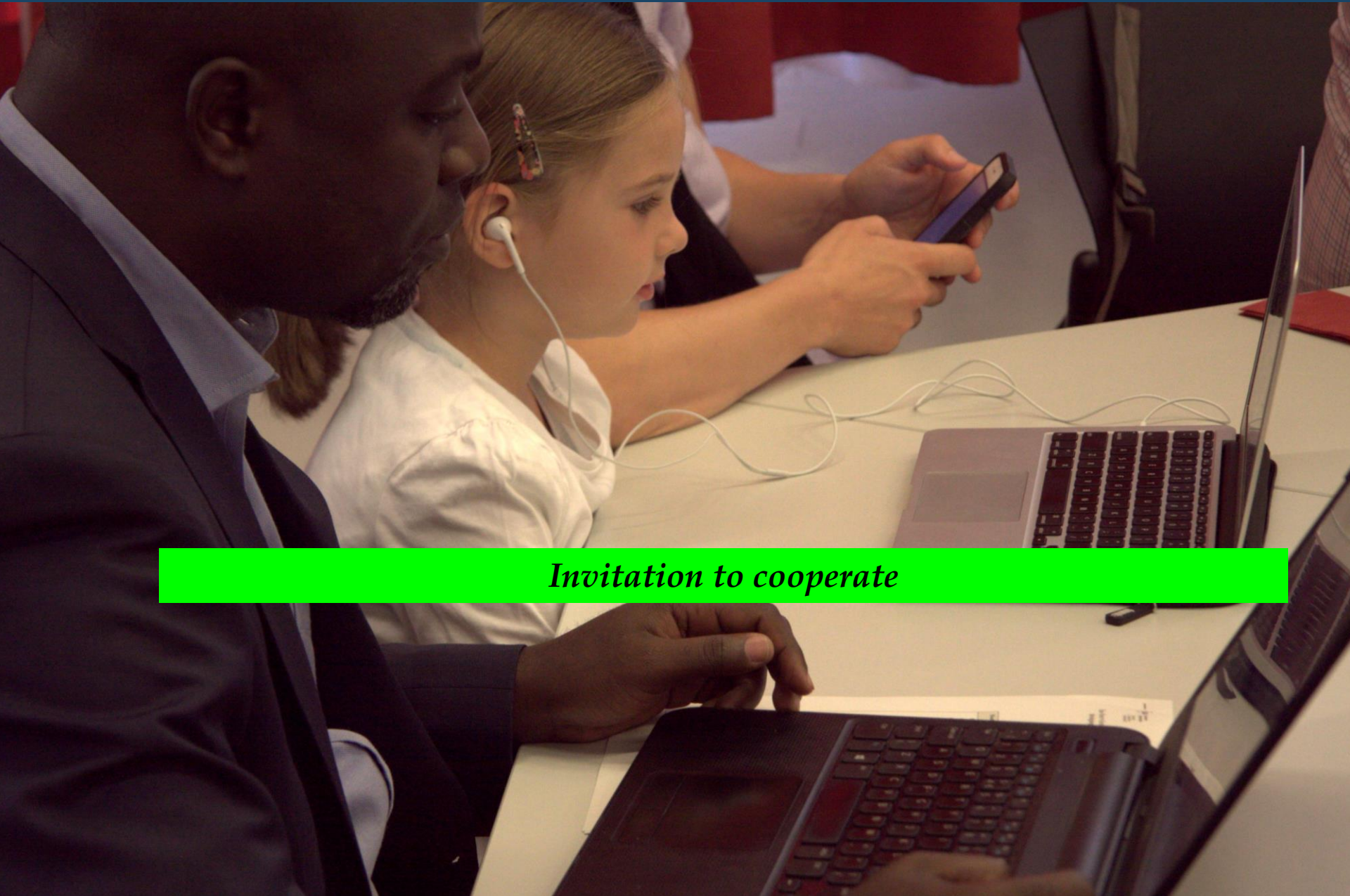
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Invitation to cooperate

Ed Parsons
Google
András Szöllösi-Nagy
International Hydrological Programme of
UNESCO

isepei.org
 info@isepei.org
 facebook.com/groups/isepei

Developing future curricula (MSc/PhD)



Invitation to cooperate

See you in Budapest next time?



THANK YOU

<http://isepei.org>



CEU July 4-8, 2016