

# Central European University ISEPEI

Viktor Lagutov

<http://syslab.ceu.edu>

<http://isepei.org>



## How University can help SCERIN?



# Central European University

International postgraduate institution located in the heart of Budapest, Hungary

- Focused on Public Policy, involved in SGDs 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



**16<sup>th</sup> in BRICS and emerging economies**  
**91<sup>st</sup> in the world in social sciences**  
**2<sup>nd</sup> in the world in terms of international outlook**

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

Rank	Title	Explore
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



**SCERIN-5**  
 June 20-23, 2017



# CEU Departments:

- Environmental Sciences, Policy and Management
- Public Policy
- Legal
- Economics
- Sociology and Social Anthropology
- International Relations
- Business Management
- ...

## CEU Department of Environmental Sciences, Policy and Management

- Established in 1991
- 1<sup>st</sup> European program to introduce interdisciplinary cross-sectoral approach to environmental issues
  - Combines training in science and humanities
  - Postgraduate course
  - Wide professional network of graduates and partners
  - Experience and available infrastructure in outreach, vocational and executive education, curricula development
  - Numerous international projects (GEO Collaborating Centre, IPCC, FPs, etc)
  - Highly international

**INTERDISCIPLINARITY!!!**  
**Science-Policy Interface!!!**

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# Systems Laboratory

ICTs

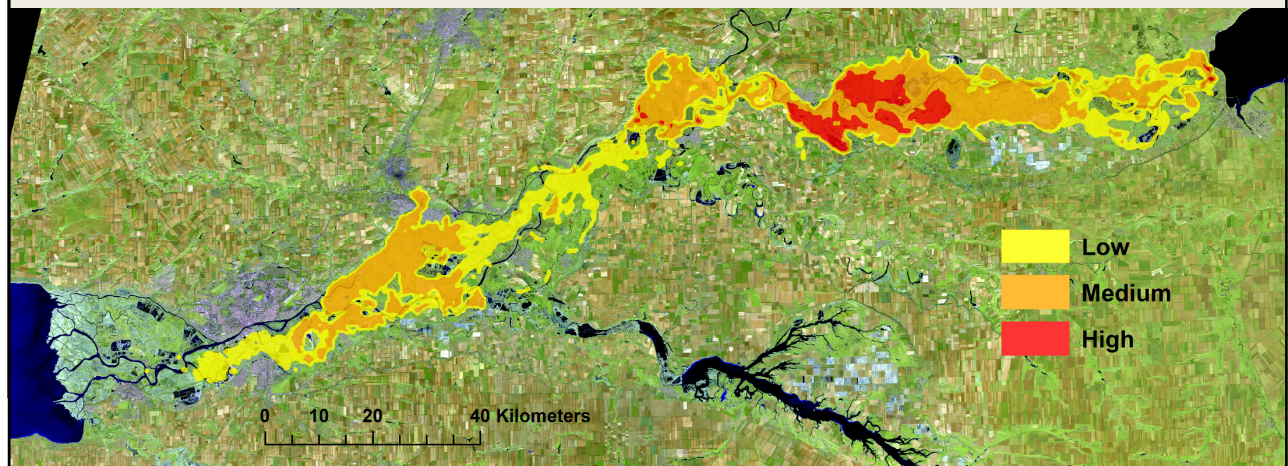
Environmental Modeling

GIS

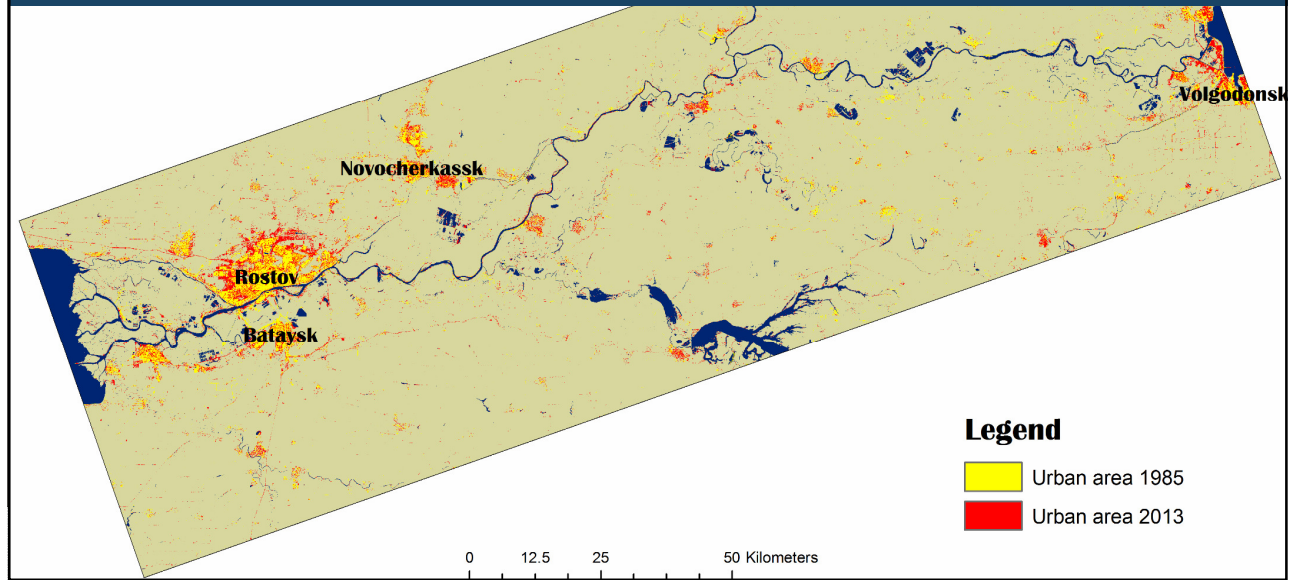
Remote sensing

**INTERDISCIPLINARITY!!!**  
**Science-Policy Interface!!!**

## Examples of lab's projects: Calculating Risk and flooding intensity



# Examples of lab's projects: Analysis of Floodplain Urbanization using RS



# Examples of lab's projects: Environmental Security / Hydrological modeling / ArcSWAT

NATO Science for Peace and Security Series - C  
Environmental Security

## Environmental Security in Watersheds: The Sea of Azov

Edited by  
Viktor Lagutov

Springer

Elevation, m  
High: 4200  
Low: 0  
National border

Black Sea  
Sea of Azov

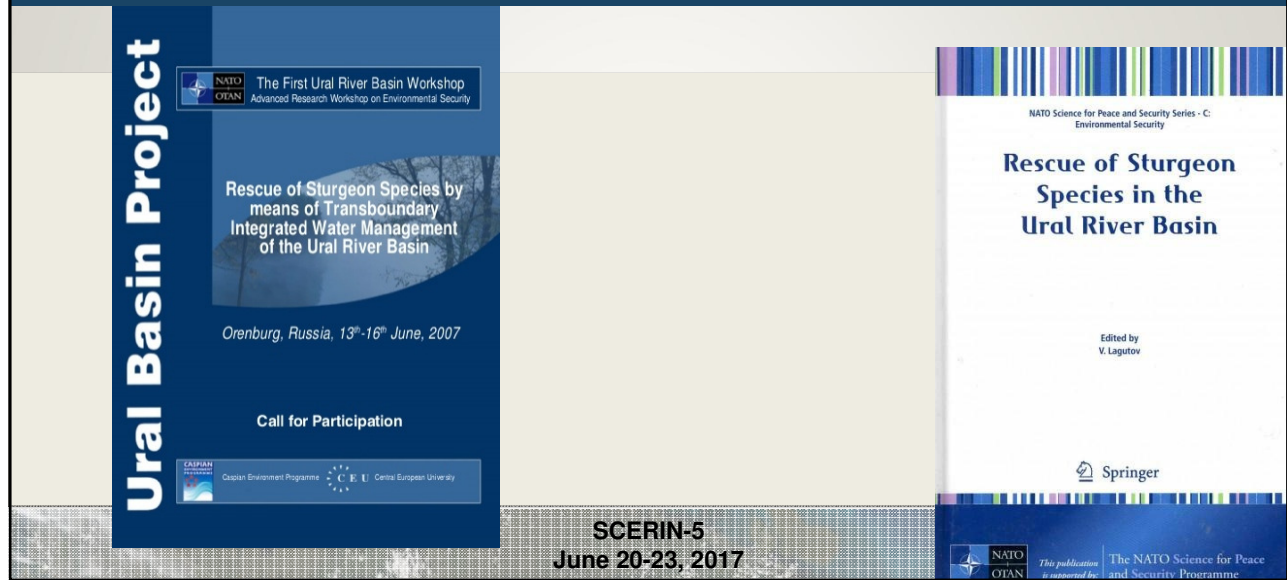
0 12.5 25 50 Kilometers

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NATO  
OTAN  
This publication is supported by The NATO Science for Peace and Security Programme

# Examples of lab's projects:

## Ural River basin : integrated watershed management



The image displays two promotional materials for the Ural Basin Project. On the left is a blue poster titled 'Ural Basin Project' with the subtitle 'The First Ural River Basin Workshop Advanced Research Workshop on Environmental Security'. The main text reads 'Rescue of Sturgeon Species by means of Transboundary Integrated Water Management of the Ural River Basin' and 'Orenburg, Russia, 13<sup>th</sup>-16<sup>th</sup> June, 2007'. It includes a 'Call for Participation' and logos for the EU, NATO, and OSCE. On the right is the cover of a book titled 'Rescue of Sturgeon Species in the Ural River Basin', edited by V. Lagutov, published by Springer. The book is part of the 'NATO Science for Peace and Security Series - C: Environmental Security'.

**Ural Basin Project**

The First Ural River Basin Workshop  
Advanced Research Workshop on Environmental Security

Rescue of Sturgeon Species by means of Transboundary Integrated Water Management of the Ural River Basin

Orenburg, Russia, 13<sup>th</sup>-16<sup>th</sup> June, 2007

Call for Participation

EUROPEAN COMMISSION  
Coastal Environment Programme

C E U Central European University

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NATO Science for Peace and Security Series - C:  
Environmental Security

**Rescue of Sturgeon Species in the Ural River Basin**

Edited by  
V. Lagutov

Springer

NATO  
OSCE  
This publication is supported by The NATO Science for Peace and Security Programme

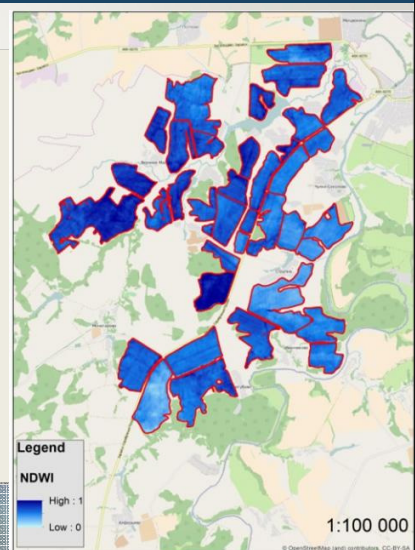
# Examples of lab's projects:

## Food Security Assessment using S2 and L8

Application of satellite technologies in agricultural management and monitoring in Eastern Europe:

- crop health monitoring
- overgrown areas detection
- water content and chlorophyll content assessment
- crop identification

Analysis would allow identifying crop parcels requiring farmers' attention and intervention to secure greater crop productivity and greater food security



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Examples of lab's projects: **REININ Project**  
Reindeer interactions from plants and birds to humans: balancing the odds of climate change



Examples of lab's projects  
**EU FP7 project "Envirogrids"**  
2011-2014



Russia Segment (Don, Terek basin rivers) of **EU FP7 project Building Capacity for a Black Sea Catchment Observation and Assessment System supporting Sustainable Development**

EnviroGRIDS is building a data-driven view of Black Sea catchment that feeds into models and scenarios to explore its past, present and future.

# Examples of lab's projects

## Practical Application of RS in Disaster Risk Reduction

This project is exploring obstacles in diffusion and implementation of innovative Geospatial and Information and Communication Technologies (ICTs) in community flood risk mitigation, prevention, response, and recovery. The aim is to identify existing issues in adoption, adaptation, and application of ICTs for community flood resilience and develop recommendations to tackle these challenges.

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## Yet not still actively used






there is still a gap....



Eye on Earth Process (2010-...) to tackle the problem



# EoE Mission: Bridging the gaps



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

Endorsed by 48 countries



## 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,<sup>1</sup>*

*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*

# Implementing the Eye on Earth Vision The Special Initiatives

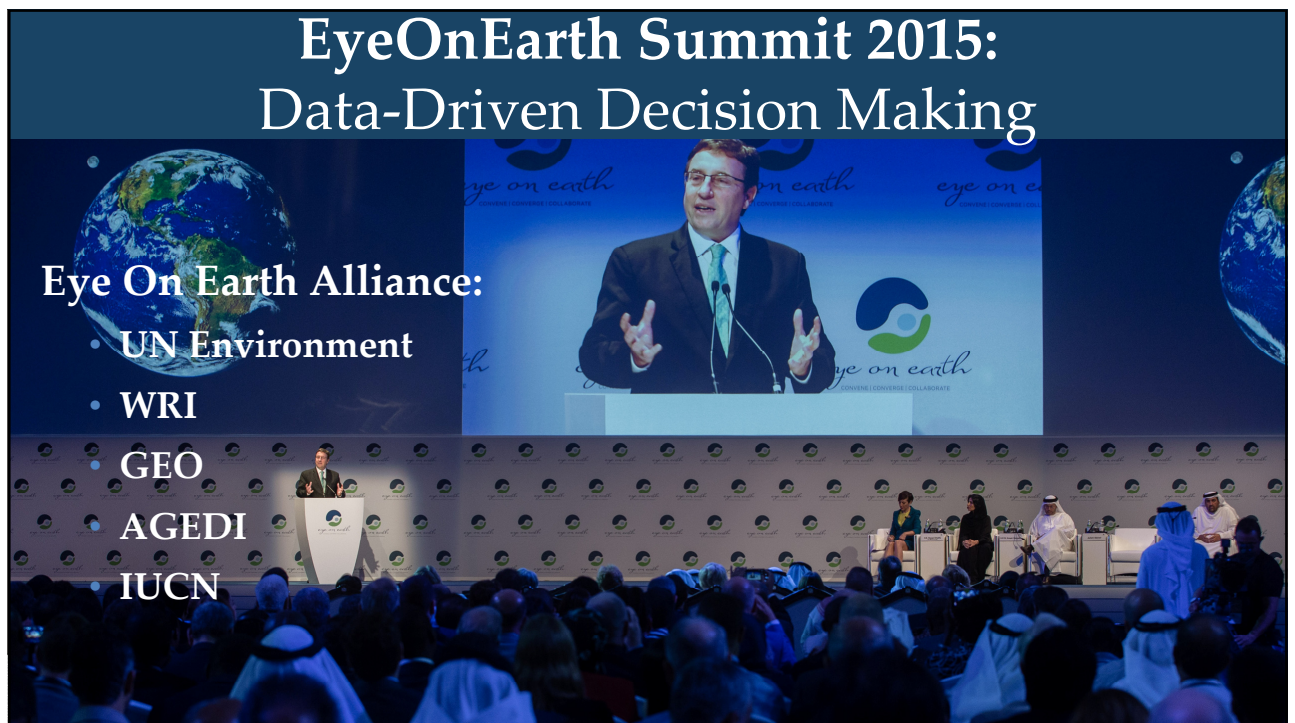


- The SIs are a voluntary group of experts that meet regularly to advance the outcomes set for each SI through collaboration, networking and implementation of projects
- Multiple SI projects across 6 continents.
- 800 individuals from more than 150 organisations representing multiple sectors across society.

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# Implementing the Eye on Earth Vision The Special Initiatives





# A flagship EOE project



- A project with
- University Network and capacity building
  - Modest seed funding
  - Sustainable, self-sustaining (potential)
  - ongoing partnerships development (state, private, academia, society, etc)
  - involvement possibilities
  - Transferable
  - ...



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# The ISEPEI Project

**ISEPEI: In Service ICT training for Environmental mid-career Professionals to secure access to and ability to use Environmental Information**

Despite overwhelming availability of data, large gap exists 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 and tools becoming available

ISEPEI offers

- Workshops, trainings, capacity building and knowledge management

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# The ISEPEI Project

- 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

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## Training Manual: *ICTs for Water Security*

- Repository available online for decision-makers to access
- Examples of real-world technological applications covering a wide variety of water security issues
  - GIS, remote sensing, decision support systems, and knowledge management
  - Flooding, agriculture, disaster management, human response, urbanization, water supply, drought
- Description of each technology covered in case studies
- Ability to add own cases

IN-SERVICE ICT TRAINING FOR ENVIRONMENTAL PROFESSIONALS

ISEPEI

ABOUT OUR ACTIVITIES TRAINING MANUAL

Home / Training Manual / Case Studies

Case Studies

FILTER BY KEYWORDS

- GIS (7)
- Remote Sensing (8)
- Flooding (4)
- Inoculating (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)
- Urbanization (1)

'Water in Central Asia' Knowledge Base

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

Assessing Flood Risk for Urban Areas Using GIS and Remote Sensing



# Training Manual: ICTs for Water Security

**Case Studies**

Authors	Organizations	Case Study Title
<p><b>AUTHORS</b></p> <p>IMPORTANCE OF DATA</p> <p>TECHNOLOGIES</p> <p>DATA PORTALS</p> <p>GEOGRAPHIC INFORMATION SYSTEMS (GIS)</p> <p>REMOTE SENSING</p> <p>DATA ANALYSIS: MODEL SIMULATION, AND OPTI</p> <p>SENSORS AND COMMU TECHNOLOGIES FOR SA WATER MANAGEMENT</p> <p>DISTANCE LEARNING</p> <p>DECISION SUPPORT SY:</p> <p>MOBILE PLATFORMS / CROWDSOURCING</p> <p>CASE STUDIES</p> <p>CASE STUDY MAP</p>	<p><b>AUTHORS</b></p> <p><b>ORGANIZATIONS</b></p> <p>IMPORTANCE OF DATA ACCESS</p> <p>TECHNOLOGIES</p> <p>DATA PORTALS</p> <p>GEOGRAPHIC INFORMATION SYSTEMS (GIS)</p> <p>REMOTE SENSING</p> <p>DATA ANALYSIS: MODELING, SIMULATION, AND OPTIMIZATION</p> <p>SENSORS AND COMMUNICATION TECHNOLOGIES FOR SMART WATER MANAGEMENT</p> <p>DISTANCE LEARNING</p> <p>DECISION SUPPORT SYSTEMS</p> <p>MOBILE PLATFORMS / CROWDSOURCING</p> <p>CASE STUDIES</p> <p>CASE STUDY MAP</p>	<p><b>adpc</b> Asian Disaster Prevention Center adpc@adpc.net http://www.adpc.net</p> <p><b>CEU</b> CENTRAL EUROPEAN UNIVERSITY public@ceu.edu http://www.ceu.edu</p> <p><b>ecocity builders</b> ecocity@gc.org http://www.ecocitybuild.com</p> <p><b>Eye on Earth</b> http://www.eoesummit.com</p>
		<p><b>Filter by Keywords:</b>  <input checked="" type="checkbox"/> GIS  <input type="checkbox"/> Support Systems (2)  <input type="checkbox"/> Agriculture (1)  <input type="checkbox"/> Communication (1)  <input type="checkbox"/> Drought (1)  <input type="checkbox"/> Flooding (1)  <input type="checkbox"/> LIDAR (1)  <input type="checkbox"/> Modeling (1)  <input type="checkbox"/> Remote Sensing (1)  <input type="checkbox"/> Water Management (1)  <input type="checkbox"/> Water Supply (1)</p> <p><b>Filter by Geographical Scope:</b>  <input checked="" type="checkbox"/> Europe  <input type="checkbox"/> Transboundary (2)</p>
		<p><b>Airborne LIDAR Technology for Sustainable Watershed Management: Ecological Health of Riparian Zones</b></p> <p><b>ArcSWAT Application in Basin-Scale Water Security Assessments: Azov Sea Case Study</b></p> <p><b>GIS Based Communication Platform for the Sustainable Management of Transboundary Water Resources in Lithuania, Poland, Belarus and Kaliningrad Region (Russia)</b></p> <p><b>GIS Based Tool for the Landscape Retention Planning</b></p> <p><b>Remote Sensing Based Agricultural Drought Monitoring and Yield Loss Prediction Method</b></p>



# ISEPEI Trainings

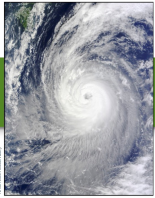
<http://isepei.org/workshops>



# UN-CEU Summer Courses on geospatial technologies

Bridging ICTs and the Environment

## INNOVATIONS IN DISASTER RISK MANAGEMENT



The Bridging ICTs and the Environment workshops are carried out through the CEU Summer University as a part of the Eye on Environmental Education Special Initiative in preparation for the Eye on Earth Summit 2015: <http://www.eoesummit.org>.

The Innovations in Disaster Risk Management workshop aims to highlight the advances in ICTs and how they are increasingly empowering both decision-makers and citizens to play a more proactive role in managing disaster risks and more effectively responding when disasters hit. The workshop builds upon existing UNDP experience in disaster management and risk reduction.

The workshop will cover a number of themes, including ICTs for disaster risk reduction (DRR), innovation in climate risk management and disaster preparedness and response, integration of innovative solutions in into sectoral and municipal development, and more.

For further information on the workshop, funding opportunities and applications procedures, please visit [http://summer.ceu.edu/bridging\\_innovations-2015](http://summer.ceu.edu/bridging_innovations-2015) or contact us at [isepei.ceu@gmail.com](mailto:isepei.ceu@gmail.com). Limited financial support is available for applicants from Europe and West Asia, though self-funded participants from other regions are welcome to apply.

The workshop is being run through the ISEPEI Project at CEU [http://eyelab.ceu.edu/projects/eeo\\_isepei](http://eyelab.ceu.edu/projects/eeo_isepei)



**CEU** Summer University  
CENTRAL EUROPEAN UNIVERSITY

**BUD HUN**

**13-17 JULY 2016**

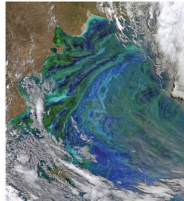
**WORKSHOP DIF**

**Viktor Lagutov**, UNDP European  
**Armen Grigoryan**, UNDP Bureau for Programme Supp

**SELECTED WORKSHOP FACIL**

**Milica Bedovic**, UNDP Regional Cen  
**Lorant Czarar**, United Nations Offi

Space Affairs (   
**Kirstin Miller**, Ecolity Bul  
**Vasko Popovski**, UNDP FYR!



**BRIDGING ICTS AND THE ENVIRONMENT**

**INNOVATIONS IN DISASTER RISK REDUCTION**

**11-15 JULY 2016**  
**BUDAPEST, HUNGARY**

**COURSE DIRECTORS:**  
**Viktor Lagutov**,  
Central European University, Hungary  
**Armen Grigoryan**,  
UNDP Regional Centre for Europe and CIS,  
Turkey

**COURSE FACULTY:**  
**Lorant Czarar**,  
United Nations Office for Outer Space  
Affairs, Austria  
**Jan Danhelica**,  
Czech Hydromet, Czech Republic  
**Jens Danzeglocke**,  
German Aerospace Center (DLR), Germany  
**James Doures**,  
World Meteorological Organization,  
Switzerland

**Zsuzsanna Gabor**,  
Central European University, Hungary  
**Hendrik Hoff**,  
International Federation of Red Cross and  
Red Crescent Societies, Hungary

**China Project**,  
The Joint Research Centre, European  
Commission  
**Ralf Stehr**,  
Mokorda Solutions, Germany

[www.isepei.org](http://www.isepei.org)  
[info@isepei.org](mailto:info@isepei.org)  
[facebook.com/groups/isepei](https://www.facebook.com/groups/isepei)

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, Central European University (CEU) and DG Joint Research Centre 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, innovations in climate risk management (CRM) and disaster preparedness and response, smart cities, and integration of relevant innovative solutions into sectoral and municipal development. A range of technologies will be presented including remote sensing, GIS, big data, citizen science, mobile technologies, data portals, 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, Communications), academia, researchers and civil society.

For further information on the workshop and application procedures, please visit: <http://isepei.org/innovations-itr-2016> or contact us at [info@isepei.org](mailto:info@isepei.org).



**BRIDGING ICTS AND THE ENVIRONMENT**

**GEOSPATIAL TECHNOLOGIES and REMOTE SENSING for MONITORING SDGs**

**4-9 JULY 2016**  
**BUDAPEST, HUNGARY**

**COURSE DIRECTORS:**  
**Viktor Lagutov**,  
Central European University, Hungary  
**Lorant Czarar**,  
United Nations Office for Outer Space  
Affairs, Austria

**COURSE FACULTY:**  
**Martin Engels**,  
E.ON Switzerland  
**Zsuzsanna Gabor**,  
Central European University, Hungary  
**Derek Gliddon**,  
United Nations Global Environmental Data  
Initiative, UAE  
**Annika Epperson**,  
United Nations Economic Commission for  
Europe, Switzerland  
**Ed Parsons**,  
Google, UK

With the recent adoption of the Sustainable Development Goals (SDGs) and the call by UN Secretary General for a "revolution" in the use of data for sustainable development, geospatial technologies have tremendous potential to effectively and efficiently monitor SDG progress.

This workshop provides a timely opportunity to get updated on the latest advances in geospatial technologies and remote sensing, and their application to the monitoring of SDGs. These technologies can be applied to many of the 17 SDGs: sustainable water management and sanitation; improving resilience and sustainability of cities and urban settlements; conservation of the world's oceans; sustainable management of forests, biodiversity, and terrestrial ecosystems and more.

The target group for the workshop includes: National Focal Points of international conventions, mid-level professionals, academia and researchers directly involved in environmental, water, or SDG-related issues.

The workshop has two tracks:  
1: Geospatial Technologies (July 4-8)  
2: Remote Sensing (July 4-9)  
Applicants must select one track, which will determine the practical sessions they will attend and the final project focus area.

For further information on the workshop and application procedures, please visit: <http://isepei.org/geospatial-2016> or contact us at [info@isepei.org](mailto:info@isepei.org). Limited financial support is available for applicants from developing countries.

[www.isepei.org](http://www.isepei.org)  
[info@isepei.org](mailto:info@isepei.org)  
[facebook.com/groups/isepei](https://www.facebook.com/groups/isepei)

## Target Group: decision-makers and public

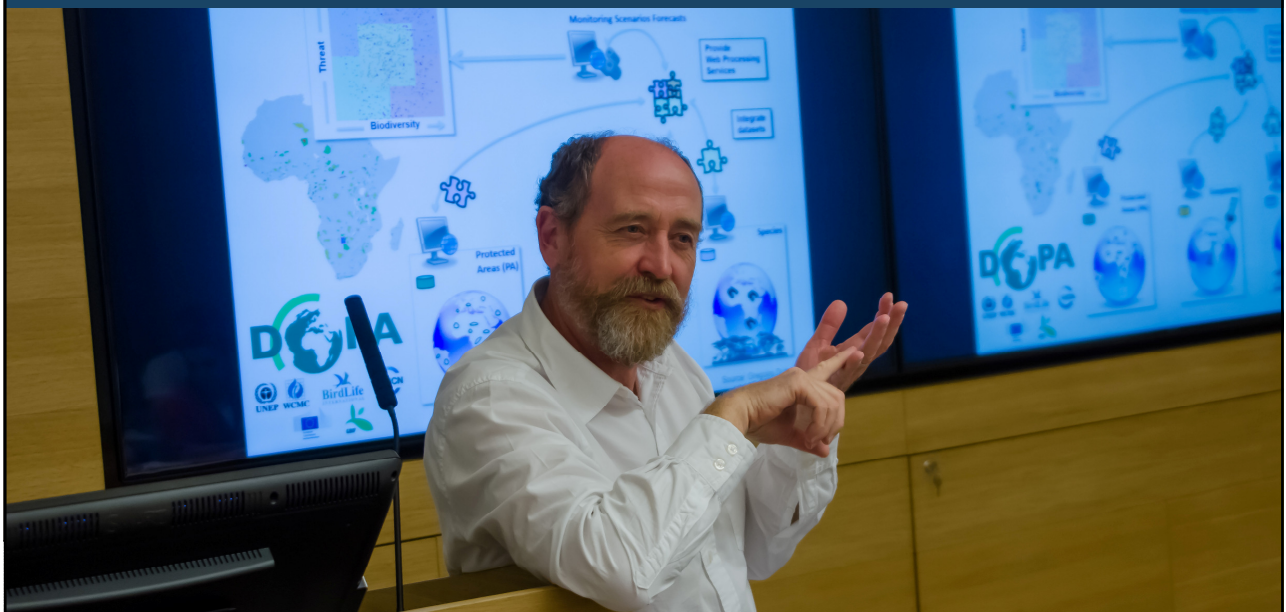




## Speakers from leading institutions



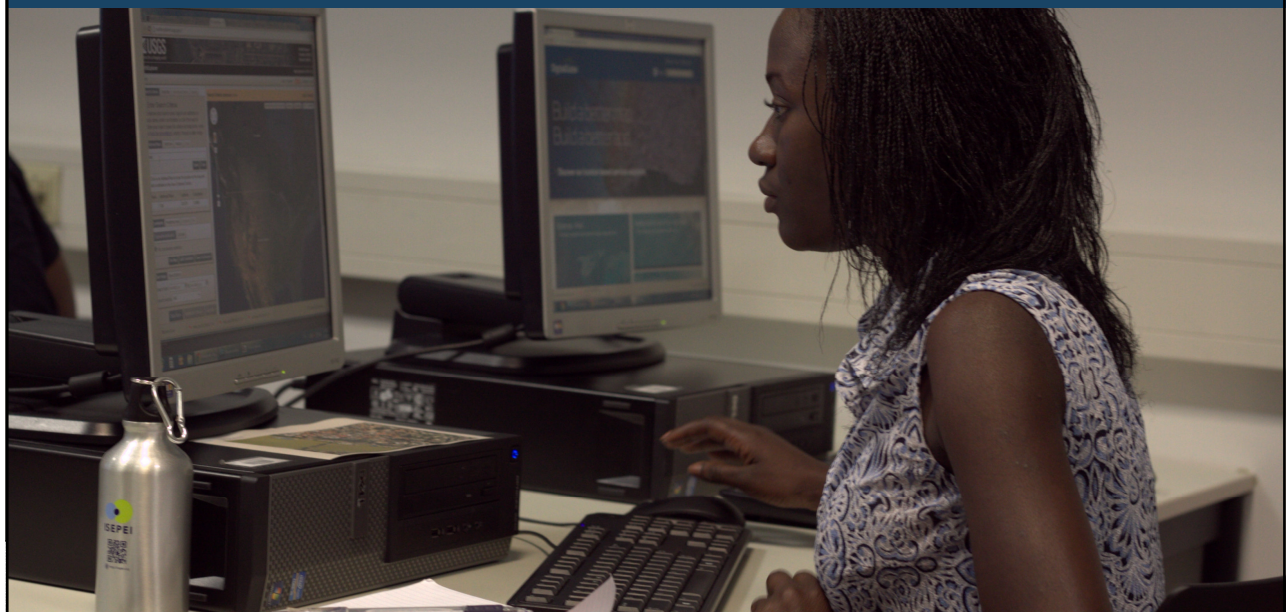
## Speakers: EC Joint Research Center



## Speakers: Google



## Hands-on sessions





Open to all stakeholders



## UN-CEU Summer Courses on geospatial technologies

### 2017 Events

[Geospatial Technologies for Sustainable Water Management](#), in cooperation with UNOOSA (Vienna office), July 3-7.

[Innovations in Disaster Risk Reduction](#), in cooperation with UNDP Regional Hub (Istanbul), July 24-28.

For details check <http://isepei.org>



Let's bridge the gap together

Contributions to the existing events and ideas for new ones are welcome



THANK YOU

<http://ceu.edu>

<http://isepei.org>

[lagutov@ceu.edu](mailto:lagutov@ceu.edu)

CEU July 4-8, 2016

