



Università
per Stranieri
di Perugia



International Workshop

OPEN/BIG DATA AND CITIZEN SCIENCE FOR MANAGING THE WATER, FOOD, ENERGY AND ENVIRONMENT NEXUS



PERUGIA (Italy), November 22, 2018 - UNESCO Wwap headquarter Colombella

WITH THE SUPPORT AND PARTICIPATION OF



Food and Agriculture Organization
of the United Nations



ITALIAN AGENCY
FOR DEVELOPMENT
COOPERATION



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ITALIAN MINISTRY FOR THE
ENVIRONMENT, LAND AND SEA

Regione Umbria

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| BACKGROUND AND GOALS OF THE WORKSHOP

Global water demand, population growth and associated food and energy needs are expected to drastically increase in the next 30 years to feed the more than 9 billion people projected to live on our planet by 2050. Climate change is further impacting water, soil and land resource management with extreme weather events and severe soil and terrain constraints. These key facts derived from recent UNESCO WWP, FAO and other UN agencies are calling for urgent actions of the decision makers to cope with human and environmental needs related to sustainable and safe urban, land planning and risk management. Societal challenges linked to critical water, food, energy and wider environmental demands require public and private organizations to promptly plan and develop actions. Data-driven decision-making is needed for informed risk mitigation planning and development from the short to the long term. Data analytics is crucial to deal with uncertainties that characterize actual and projected resource and risk scenarios. Fortunately, in the last few years technological advancements have completely transformed the way we understand, observe and monitor earth and human processes. The frequency of the mutual feedbacks and interactions between citizens and urban/rural ecosystems is exponentially increasing with digital platforms that are gathering, producing and processing an infinite amount of information. From satellites and drones to smart phones, web-cams and low cost sensors we live, today, in a data-rich hyper-connected world. We are collecting every second a wealth of quantitative information related to urban-citizen-nature multidirectional feedbacks characterizing the diverse physical and behavioral dynamics happening in natural and urban ecosystems, but the value of all citizens acting as human sensors, sending and receiving information, is far from being fully unveiled and exploited. This workshop seeks to discuss the role of scientific and professional communities, international and national organizations involved in the water, environment, food and energy sectors in relation to the production and use of Open Data, Big Data and Citizen Science for addressing global water, food and energy challenges. Participants and attendees to the workshop will discuss how to best integrate data and citizen science into existing and next generation academic and professional training, capacity development, advocacy and outreach, risk awareness and scientific communication, technology and knowledge transfer activities. The goal of the workshop is to identify best practices and share a work plan for integrating the digital transformation at practical service of ongoing projects within the UN sustainable development goal framework. The day before the workshop a 1 day course is organized for students and professionals who will learn and work to develop data analytics, infographics and digital maps using water, food and energy open/big data. Students who participate in the workshop and present their projects on “Open/Big Data and Digital Mapping” will receive a certificate, and a best project award will be presented at the closing session of the workshop.



On November 21, 2018
**“Open/Big Data & Digital Mapping for Water,
Food, Energy and Environment” Competition**
(free 1 day course for students and professionals)
Location: University for Foreigners of Perugia
Piazza Fortebraccio
Perugia

OPEN/BIG DATA CITIZEN SCIENCE

09:30 Welcome coffee and registration

Opening of registration for participants and welcome coffee

10:30 Institutional Welcome Remarks

- **Stefan Uhlenbrook**, UNESCO World Water Assessment Programme (WWAP)
- **Giuliana Grego Bolli**, University for Foreigners of Perugia
- **Antonio Bartolini**, Regione Umbria
- **Giuditta Perozzi**, Minister of Foreign Affairs (MAECI)
- **Simona Angelini**, Ministry of Agricultural Forestry Policies and Tourism (MIPAAF)
- **Aldo Covello**, Ministry of University, Research and Education (MIUR)
- **Roberto Henke**, Council for Agricultural Research and Economy Analysis (CREA)
- **Jennifer Riley-Chetwynd**, MSU Denver OWOW, Denver Botanic Gardens

11:30 Presentation of the workshop

- **Fernando Nardi**, University for Foreigners of Perugia (WARREDOC)
- **Giuseppina Monacelli**, Institute for Environmental Protection and Research (ISPRA)
- **Raffaella Zucaro**, Council for Agricultural Research and Economy Analysis (CREA)

12:00 Coffee Break

12:15 High-level Panel Debate: “The digital transformation and global water, food, energy and environmental challenges“ Part 1

Moderator: **Stefan Uhlenbrook**, UNESCO World Water Assessment Programme

Invited Speakers:

- **Larry Vickerman**, Denver Botanic Gardens
- **Filippo Tessari**, Fondazione Eni Enrico Mattei (FEEM)
- **Rosaida Dolce**, FAO Land and Water Division
- **Francesco Tei, Francesca Todisco**, Università degli Studi di Perugia
- **Sara Carpinelli, Sara Simona Cipolla**, UNESCO Giovani

with 10 minutes Q&A

13:30 Lunch break

15:00 High-level Panel Debate: “The digital transformation and global water, food, energy and environmental challenges“Part 2

Moderators: **Giuseppina Monacelli, Raffaella Zucaro**

Invited Speakers:

- **Ambra Ciarapica**, Regione Umbria
- **Emilio Misuriello**, ESRI Italia
- **Laura Bizzarri**, Terni Energia
- **Nicola Colonna**, ENEA
- **Massimo Gargano**, ANBI
- **Pier Francesco Cardillo**, e-GEOS

with 10 minutes Q&A

16:00 Technical/Scientific session

Moderator: **Richard Connor**, UNESCO WWAP

Invited Speakers:

- **Elizabeth McVicker**, Metropolitan State University of Denver (MSU Denver)
- **Maria Cristina Rulli**, Polytechnic of Milan
- **Fabio Castelli, Elena Bresci**, University of Florence
- **Flavia Tauro**, International Association of Hydrological Sciences (IAHS)
- **Paolo Enrico Sertoli**, Italian Agency for Cooperation and Development (AICS)
- **Elena Francioni**, e-GEOS
- **Marco Petitta**, Sapienza University of Rome, International Association of Hydrogeologists (IAH)
- **Tiziana Perri**, Fondazione Eni Enrico Mattei (FEEM)
- **Tom Cech**, OWOW, MSU Denver

with 10 minutes Q&A

17:30 Closing remarks

- **Fernando Nardi**, University for Foreigners of Perugia (WARREDOC)

17:40 Award Ceremony

Presentation of “Best projects” and conferring prizes to participants of the “Open/Big Data & Digital Mapping for Water, Food, Energy and Environment” Competition (ESRI Italy, Geosmartcampus & WARREDOC)

**At the end of the Workshop
Social Event “Aperitivo”**

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November 22, 2018
UNESCO WWAP headquarter
Colombella

International Workshop

ORGANIZED BY

University for Foreigners of Perugia (WARREDOC)
Italian Institute for Environmental Protection and Research (ISPRA)
Council for Agricultural Research and Agricultural Economy Analysis (CREA)
One World One Water Center (OWOW) (Metropolitan State Univ. of Denver
& Denver Botanic Gardens)

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UN Food and Agriculture Organization (FAO, Land and Water Division)
International Association of Hydrological Sciences (IAHS)
Italian Agency for Cooperation and Development (AICS) (TBC)
Fondazione Eni Enrico Mattei (FEEM)
UNESCO Giovani
e-GEOS
Associazione Nazionale Bonifiche e Irrigazioni (ANBI)

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Ministry of University, Research and Education (MIUR)
Minister of Foreign Affairs (MAECI)
Ministry for Environment, Land and Sea Protection (MATTEM)
Regione Umbria

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ESRI Italy
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Denver Botanic Gardens

COORDINATING COMMITTEE

Fernando Nardi (WARREDOC), Giuseppina Monacelli (ISPRA), Raffaella Zucaro (CREA), Jennifer Riley-Chetwynd (MSU Denver, Denver Botanic Gardens)

LOCAL ORGANIZING COMMITTEE

Fabrizio Focolari, Simonetta Farinelli, Paola Tricoli (WARREDOC), Alessandro Lotti, Maria Chiara Sole (ISPRA), Jackline Canevello, Simona Capone (CREA), Tom Cech, Nona Shipman (MSU denver)

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#WaterManifesto
warredoc.unistrapg.it
wateropenday.org

