



EYE ON EARTH SUMMIT

2015 HIGHLIGHTS:

WEDNESDAY, 7 OCTOBER 2015

On Wednesday morning, Eye on Earth 2015 delegates convened in a plenary on data revolution-data supply side. Side events and launch events started in the morning and continued into the evening.

Fourteen sessions convened throughout the day, covering, in relation to data supply: the Global Network of Networks (GNON), small island developing States (SIDS), Arab civil society, sustainable development, urbanization, innovations, water security, oceans and blue carbon, costs of data generation and maintenance, SDG monitoring, citizen science, refugees and vulnerable populations, Eye on Earth Special Initiatives (SIs) and global frameworks.

In the evening, a plenary on reaching audiences through innovations in visualization convened and the winner of the Citizen Science Challenge was announced.

PLENARY: DATA REVOLUTION-DATA SUPPLY SIDE

Nima Abu Wardeh, Broadcast Journalist, opened the day, introducing the second panel's moderator, Barbara Ryan, Secretariat Director, GEO. Ryan, and Ahmed Abdulmuttaleb Baharoon, Executive Director, AGEDI, honored Elizabeth Tyson, winner of the Eye on Earth Summit 2015 blogging competition.

Ryan set the scene for the panel, exemplifying Landsat's free and open data policies as successful in creating public goods and generating economic benefits.

Philemon Mjwara, Department of Science and Technology, South Africa, focused on open data policies and iterative earth observation data exchange, providing examples from GEO, Global Earth Observation System of Systems (GEOSS) and AfriGEOSS. On challenges, he noted that Africa and the Gulf region are not well represented in GEO.

Christopher Tucker, MapStory Foundation, explored how their open, not-for-profit platform allows the public to drag and drop data to communally produce spatio-temporal analyses, providing an opportunity to enable a new generation of policymaking.

Mary Glackin, The Weather Company, presented on using "big data" to make people safer and businesses smarter, highlighting the growing diversity of actors involved in weather data collection.

Muki Haklay, University College London, described opportunities for facilitating participatory "extreme" citizen science, calling for expansion of citizen science beyond data collection and into all scientific processes.

Mae Jemison, 100 Year Starship, spoke of a visionary challenge to illustrate the "extraordinary" by using compelling data to deliver new perspectives to known challenges.



Elizabeth Tyson (center), winner of the blogging competition, accompanied by Ahmed Abdulmuttaleb Baharoon (left), Executive Director, EAD, and Barbara Ryan (right), Secretariat Director, GEO

TRACKS

CONNECTING NETWORKS TO SUPPORT ENVIRONMENTAL SUSTAINABILITY: WHAT GNON CAN DO FOR YOU!:

Moderator Bruce McCormack, European Umbrella Organisation for Geographic Information, presented a brief history of GNON, noting it as one of three fundamental, cross-cutting SIs of Eye on Earth.

Representing users within the network, David Stanners, European Environment Agency; Sabah Nait, Environment Agency Austria; and Rodrigo Barriga-Vargas, Pan American Institute for Geography and History, discussed environmental observation networks in different regions. Stanners pointed to the difficulty of bringing data together to produce indicators and reports, noting the need to enrich assessments to make data understandable.

Representing the technical side of the network, Rob Atkinson, Metalinkage; Gail Hodge, Information International Associates; and Steven Browdy, OMS Tech, presented issues related to understanding and comparing datasets, noting broad differences in terminology used across networks. Atkinson referred to "islands of data," underscoring the need to connect the dots with a monitoring architecture. Reiterating the need for a deeper understanding of data through semantics, Hodge



L-R: Rob Atkinson, Metalinkage; Steven Browdy, OMS Tech; and Sabah Nait, Environment Agency Austria

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<http://enb.iisd.mobi/>

pointed to resources such as data dictionaries as useful tools. Browdy highlighted the importance of standards, and suggested GNON's growth will be facilitated by its decentralized nature.

MOBILIZING DATA TO SUPPORT DECISION

MAKING FOR SIDS: In a session organized by the Global Island Partnership (GLISPA), panelists explored a proposed Eye on Islands SI that could help mobilize data for policymaking in support of sustainable development and resilience.

Aboud Jumbe, ISLANDS Project, presented on enhancing capacity to better use data in integrated planning and assessment through, *inter alia*, natural capital accounting and system dynamics modeling.

Floyd Homer, Independent Consultant, stressed focusing on the "human dimension, not only the technical side," to better understand data use and who benefits.

Asha Singh, Organization of Eastern Caribbean States, argued for a transformative agenda supporting modalities for the capture and sharing of spatial data.

Aditya Agrawal, presenting on behalf of GLISPA, stressed the need for more accessible data, stating that islands are laboratories for innovation, especially with regard to solutions for resiliency.

Corinne Martin, UNEP World Conservation Monitoring Centre (UNEP-WCMC), outlined several tools including the Ocean Data View, which provides access to free geographic information system (GIS)-ready time series datasets and the Global Island Database, a high-resolution shapefile for over 450,000 islands.

ARAB CIVIL SOCIETY: AN EYE ON EARTH: The session, moderated by Mufleh Abbadi, IUCN, began with Emad Adly, Arab Network for Environment and Development, speaking on internal and external challenges for strengthening civil society in the Arab region, including institutional weaknesses, cultural constraints regarding the legitimacy of NGOs, and illiteracy.

Yomn El Hamaky, Egyptian Sustainable Development Forum, identified the lack of harmonization among national strategies in the region as a challenge facing Arab civil society.

Fatma Zerouati, Environmental Journalist, recognized the worsening problem of desertification in Algeria resulting from a misbalance between national policies and traditional land-use patterns and knowledge of shepherds.

Salvatore Nigro, Education for Employment (EFE), spoke of EFE's objective to identify employment opportunities and foster public-private partnerships in the Middle East and North Africa. He said data input is pivotal to these partnerships, linking government with civil society actors.

Ayman Rabi, Palestinian Hydrology Group, highlighted a collaborative multi-stakeholder toolkit for engaging communities in understanding social and environmental vulnerability, constructing scenarios for adaptation and implementing demonstration projects.

DATA FOR SUSTAINABLE DEVELOPMENT:

Moderator Janet Ranganathan, World Resources Institute (WRI), opened the session. Marc Levy, Center for International Earth Science Information Network (CIESIN), compared differing approaches in defining the MDGs and SDGs, framing "big data" as an opportunity to be catalysts for broader social change.

Louis Liebenberg, CyberTracker Conservation, described the value of, and opportunity for, citizen science using CyberTracker Conservation projects as examples of facilitating data collection by non-literate local and indigenous communities.



Erick Khamala, LocatelT, during the event on 'It's an Urban World!'

Gary Lawrence, Former Vice President, AECOM Technology Corporation, spoke on the importance of understanding "where you are coming from and where you are going" when determining what data is required, highlighting the need to maintain relevance in the context of the communities involved.

Paul Van Gardingen, Ecosystem Services for Poverty Alleviation programme, highlighted demand, new technologies and data-sharing platforms as opportunities for "big data," noting challenges in facilitating data sharing and access, and calling for projects to plan for data sharing from the outset and investment in data and data management.

IT'S AN URBAN WORLD!: Fernando Echavarría, US Department of State, moderated this session. Rosario Giusti de Pérez, Environmental Systems Research Institute (ESRI) Venezuela, presenting on squatter developments in Latin America, said it is not just an urban world, "it's a poor urban world." She gave an overview of socially-based guidelines that respond to communities, citing: the need to maintain social domains; community fear of government expropriation; the benefits of focusing on small projects like drainage systems; and the importance of respecting aesthetic views of communities.

Reacting to the presentation, panelists commented on barriers related to land titling and citizens' willingness to use services, and underscored the importance of acknowledging informal settlements and that residents are often attached to their location. Others reported that informal communities score highly on social sustainability and understand where, for instance, their water comes from, whereas formal communities score low in these areas. Panelists then reviewed several funded and unfunded projects associated with the Eye on Community Sustainability & Resiliency (CSR) SI.

INNOVATIONS IN DATA SUPPLY: BIG DATA AND HOW TO MANAGE IT: Moderator Robert Chen, Columbia University, opened the session on tools for using and managing "big data." Stuart Minchin, Government of Australia, presented the 'Data Cube,' an open source, open data tool, calibrating Australian geospatial data archives into an intelligent analytical engine.

Ilya Zaslavsky, University of California, San Diego, presented 'EarthCube,' a cyber infrastructure for uniting geosciences by increasing data accessibility, citing projects that aggregate and interpret metadata from different sources.

Mark Reichardt, Open Geospatial Consortium (OGC), pointed to the growing recognition of the importance of geospatial "big data," discussing OGC initiatives and solutions, including best practices for the use of grids.



Brenda Rashleigh, US Environmental Protection Agency, during the event on 'Decision-making in Water Security - Community Strategy for Success'

Brian Sullivan, Google, presented tools from Google Earth Outreach, designed to leverage Google's mapping tools to make a positive difference by mapping and making data accessible to all, including deforestation and air quality maps.

Stefano Nativi, National Research Council, Italy, discussed GEOSS, presenting the GEO Discovery and Access Broker, a scalable, cloud-computing interface.

DECISION MAKING IN WATER SECURITY: COMMUNITY STRATEGY FOR SUCCESS: This session, moderated by Mark Sorensen, The Geographic Planning Collaborative Group, presented a variety of experience in utilizing data for improving decision making to overcome water security challenges. Panelists highlighted ongoing initiatives in water-related knowledge management: the identification of links between the state of water resources, water demand, management costs, climatic data and broader geopolitical analysis; the energy-water security nexus in the Arab region; space technologies for water security; participatory citizen-science mapping; and the role of automated data sampling to produce models that guide water-related policies.

In the ensuing discussion, panelists and participants emphasized: the reluctance of many organizations to share their data freely and the need to set conditions for doing so; mechanisms for developing water data standards for dissemination across political jurisdictions; and basing actionable projects on best practices.

OCEANS AND BLUE CARBON – THE ROLE OF MAPPING AND JOINT FACT-FINDING IN EFFICIENTLY CREATING COMMUNITY: Facilitated by Jane Glaven, AGEDI, and Carl Nettleton, OpenOceans Global, this session was organized as a discussion between panelists and the audience.

Christian Neumann, GRID-Arendal, described participatory stakeholder engagement in their Blue Carbon Ecosystem mapping tool.

Maria Arreola, Fondo Mexicano Para la Conservación de la Naturaleza, discussed engaging young practitioners through the Mesoamerican Reef Leadership Programme to build leadership skills and implement high impact conservation projects.

David Loubser, Secretariat of the Pacific Regional Environment Programme (SPREP), emphasized the need for data standards and strong coordination, providing examples from natural disaster response experiences.

Karl Donert, European Association of Geographers, highlighted the importance of networking and putting geo-science research in the hands of policymakers.

During the discussion, participants were asked to identify the core problems affecting data collection by communities. Together they noted the “lack of a facilitator organization to identify the needs of the oceans community, put pieces together, and share information so as to achieve impact beyond project lifespans.”

UNDERSTANDING THE COSTS OF KNOWLEDGE: COST OF DATA GENERATION AND MAINTENANCE: Emphasizing that generating knowledge for sustainable development is not free, moderator Thomas Brooks, IUCN, introduced speakers from IUCN, BirdLife International and UNEP, who described the structure and processes behind four knowledge products: IUCN Red List of Threatened Species; Protected Planet; Red List of Ecosystems; and Key Biodiversity Areas. The speakers pointed to costs associated with, *inter alia*, website and database products, staff time, supporting volunteerism, conducting re-assessments, regular updates and maintenance, harmonizing datasets and creating tools for impact.

Diego Juffe-Bignoli, UNEP-WCMC, presented the results of analytical work on investments in these four knowledge products to date (US\$116-204 million), annual maintenance costs for their structures and processes, and estimates for producing comprehensive baselines by 2020 (approximately US\$100 million). He noted that some costs are not included and concluded that generating biodiversity and conservation information through knowledge products is affordable and cost-effective, cautioning that questions remain on what the impact of these investments are and how to avoid duplication of efforts.

DATA INTEGRATION FOR EFFECTIVE MONITORING OF THE SDGS: Marc Levy, CIESIN, moderated this session.

Barbara Ryan, Secretariat Director, GEO, outlined three categories of challenges for integration of data: technological – how to integrate disparate datasets and domains; policy – lag between policies and technological advances; and governance – adapting institutions to technological changes.

Robbie Schingler, Planet Labs, described the work of Planet Labs and spoke on opportunities for geospatial data to contribute to monitoring and achieving the SDGs.

Jacqueline McGlade, UNEP, provided examples of how UNEPLive draws on data to track different environmental domains, stating that official statistics can be complemented by other data sources including citizen science, to capture more comprehensive statistics in an SDG ontology interface.

Chukwudozie Ezigbalike, UN Economic Commission for Africa (UNECA), highlighted the potential of “citizens as data collectors” and “data collection as a lifestyle” to contribute to national statistics and monitoring of the SDGs.

Frédéric Launay, EAD, called for working across government agencies and scales to better determine data needs and availability, underscoring the need to examine acceptable risk versus added value in data policies and practices.

EVERYONE IS A SUPPLIER: CROWDSOURCING, CITIZEN SCIENCE AND INDIGENOUS KNOWLEDGE: Moderated by Craig Hanson, WRI, the session showcased innovative approaches to crowdsourcing. Hanson offered the example of the Forest Watch mobile app for rangers to detect and report forest clearing.

Brian Sullivan, Google, showed how Global Fishing Watch's “big data” technology platform facilitates transparent monitoring of global fishing fleets and has been used by Kiribati to enforce no-take zones in the Phoenix Islands UN Educational, Scientific and Cultural Organization (UNESCO) World Heritage site.

Tuntiak Katan, Shuar Territory, Ecuador, shared experience in leveraging data to conduct ecosystem services valuation, forest carbon measurement, and forest restoration and management in a transboundary watershed.

Nick Wright, Crowdicity, described working with Rio de Janeiro, Brazil, and Montreal, Canada, to embed citizen crowdsourcing into the heart of municipal policy creation, strengthening relationships between governments and citizens. Andrew Hill, CartoDB, discussed finding the next approach to engage engineers and data developers in building strong communities around science in creative and visual ways.

SUSTAINING COMMUNITIES IN UPHEAVAL – DATA NEEDS TO SUPPORT REFUGEES AND VULNERABLE POPULATIONS: Douglas Richardson, Association of American Geographers, moderating the session, began by introducing three disaster risk reduction initiatives at the international, regional and local levels which utilize Spatial Data Infrastructure.

Ziad Ayad, the UN Refugee Agency (UNHCR), identified the critical need for using spatial data effectively to support the largest refugee crisis the world has ever witnessed, noting, *inter alia*, how data aids in monitoring displacement patterns, predicts population movements, and tracks and analyzes conflict situations.

Ivan DeLoatch, US Federal Geographic Data Committee, discussed their ‘Place-Based Understanding’ initiative as an integration of social, economic, environmental and crowdsourced data into a visual lens to support decision making during all phases of crisis, ranging from early-warning to decision support and monitoring.

Darane Petso, Grantmakers Concerned with Immigrants and Refugees, highlighted that Eye on Earth 2015 participants could support philanthropic responses to refugee crises by providing integrated data, which helps foundations understand the impact of their donations.

Lorant Czarán, UN Office for Outer Space Affairs (UNOOSA), emphasized the urgent need for high resolution image data for disaster response, but noted that such data is invariably costly and that coordinated access and shared licensing of commercial high resolution satellite data remains a challenge.

SPECIAL INITIATIVES CONTRIBUTION TO ENABLING CONDITIONS: Moderator Lalanath de Silva, WRI, outlined the format of the panel with each panelist speaking on how the three foundational Eye on Earth SIs, Environmental Education (EE), GNON and Access 4 All (A4A), could address two theoretical scenarios: a dam construction project involving tensions with indigenous communities; and a watershed development project with upland villages affecting downstream villages’ water quality.

Fares Howari, Zayed University, underscored the importance of stakeholder access to information, stakeholder involvement, and transparency and accuracy within the process.

Representing the GNON perspective, Jordan Hastings, University of Southern California, said GNON’s purpose is to organize and provide information to communities before problems arise, better equipping them with knowledge and tools to handle environmental management challenges.

Focusing on A4A, Ana Barreira, Instituto Internacional de Derecho y Medio Ambiente, stressed the role of community and stakeholder consultation and engagement, and that defining legal frameworks and clear rules of the game is an important part of this process.

GLOBAL FRAMEWORKS (SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION, SDGs, UNFCCC) – OPPORTUNITIES FOR EYE ON EARTH?: Moderator

Costis Toregas, The George Washington University, opened the session. Keynote Speaker Julio Serje, UN Office for Disaster Risk Reduction (UNISDR), underscored the importance of widening the scope of global frameworks to recognize the interconnected nature of the world in which different systems can influence each other positively or negatively.

He highlighted the importance of governance at all levels to mainstream risk knowledge into cross-cutting policies, and pointed to progress made in standards for loss indicators. He referred to the SDGs as highly ambitious, noting huge data requirements for collecting, assessing and homogenizing data to fulfill the goals.

During discussions, panelists pointed to: the parallel and complementary nature of the frameworks; the need to look for new sources of data; mechanisms to foster cooperation between different entities; and the need to support projects such as the Eye on Earth Strengthening Information Infrastructure for Emergency Management, to link data suppliers with data users to improve emergency management.

PLENARY: REACHING AUDIENCES THROUGH INNOVATIONS IN VISUALIZATION

Craig Hanson, WRI, opened the session stating it would show “what gets visualized gets used.” Janet Ranganathan, WRI, presented a sneak preview of Resource Watch, a prototype open data platform for advancing sustainable development, aiming to fill the gap between data supply and data use by providing a single, accessible platform bridging different resource issues.

Craig Mills, Vizzuality, underscored the need for a “presentation revolution” to enable the “data revolution” to be of real use. He pointed to the importance of design and emotional considerations when developing data interfaces.

Angela Lungati, Ushahidi, stressed the need to engage with usually passive observers, explaining that Ushahidi, meaning “testimony” in Swahili, had been designed as an enabling platform that allows ordinary citizens and marginalized people to make their voices heard.

Trista Patterson, GRID-Arendal, presented a video, inviting the audience to visualize the images as data, pointing to the importance of establishing feedback loops to connect the self with data, data with the audience, and audience back to the self.

Jacqueline McGlade, UNEP, announced that the Moabi team won the Citizen Science Challenge for their project ‘Logging Roads!’ that crowdsources a map of all logging roads in the Congo Basin rainforest to track logging violations, forest degradation and potential conflicts with customary land rights.

ENB+ SUMMARY: IISD Reporting Services’ summary of Eye on Earth 2015 will be available online on Sunday, 11 October 2015, at <http://www.iisd.ca/eoesummit/2015/>



The three finalist teams of the Citizen Science Challenge pose for a photo at the end of Wednesday’s proceedings