Online Tools for Science and Policy Community Building

February 18, 2007

AAAS
ADVANCING SCIENCE, SERVING SOCIETY

AAAS:

- Founded in 1848
- Membership association: 150,000 members
- Publisher of *Science*
- Many grant / contract funded science, education, and policy activities

Two relevant web-based products

- A forum to compile information and help define ‘sustainability science’ or science and technology for sustainable development
- A geographic information system that provides information on *where* organizations are working and what they are doing
- Both relatively small scale, inexpensive ($40K for both)

Forum: Science and Innovation for Sustainable Development (sustainabilityscience.org)

- Adaptation of site originally hosted at Harvard University (KSG)
- Product of Initiative on Science and Technology for Sustainability (ISTS)
- AAAS asked by ISTS, Harvard, and our members to further this topic
- What is sustainability science, beyond the jargon?
- What do people mean when they state they ‘do sustainability’

References

- *Science* magazine: Sustainability Science (R. Kates et al)
- Proceedings of the National Academies sustainability science section
- ICSU, TWAS, ISTS: S&T for sustainable development
- http://sustainabilityscience.org

Design criteria

- Database driven, entirely web based and capable of distributed administration
- Low-bandwidth
- Low-cost
- Interconnectivity of content, authors, organizations
- Organized according to taxonomic criteria
- Frequent (weekly) updates
- Flexible

Process

- Budget: $15,000
- AAAS worked with Harvard / ISTS and served as architect
- Contracted small programming firm to build
- Customized and refined by AAAS

Specifications

- PostgresSQL database
- Served and administered by PHP rendered HTML pages
- Eight main content types:

- Programs
- Publications
- People
- Projects
- Opportunities (jobs, grants, etc)
- Educational Programs
- Events
- Integrated Studies

Specifications

- Each content type stored as a PSQL table
- Each content type has up to two dozen specific descriptive fields
- Designed to provide info on that content item, its creation date, and editor-imposed criteria
- All content classified according to underlying taxonomy

Taxonomy

- Quite experimental
- WEHAB (water, energy, health, agriculture, biodiversity – plus cities)
- Millennium Development Goals (Poverty and Hunger, Education, Gender Equality, Health, Environment, Global Partnerships)
- Core Research Themes (if applicable)
- Geographic region of activity
- Geographic scale

Taxonomy

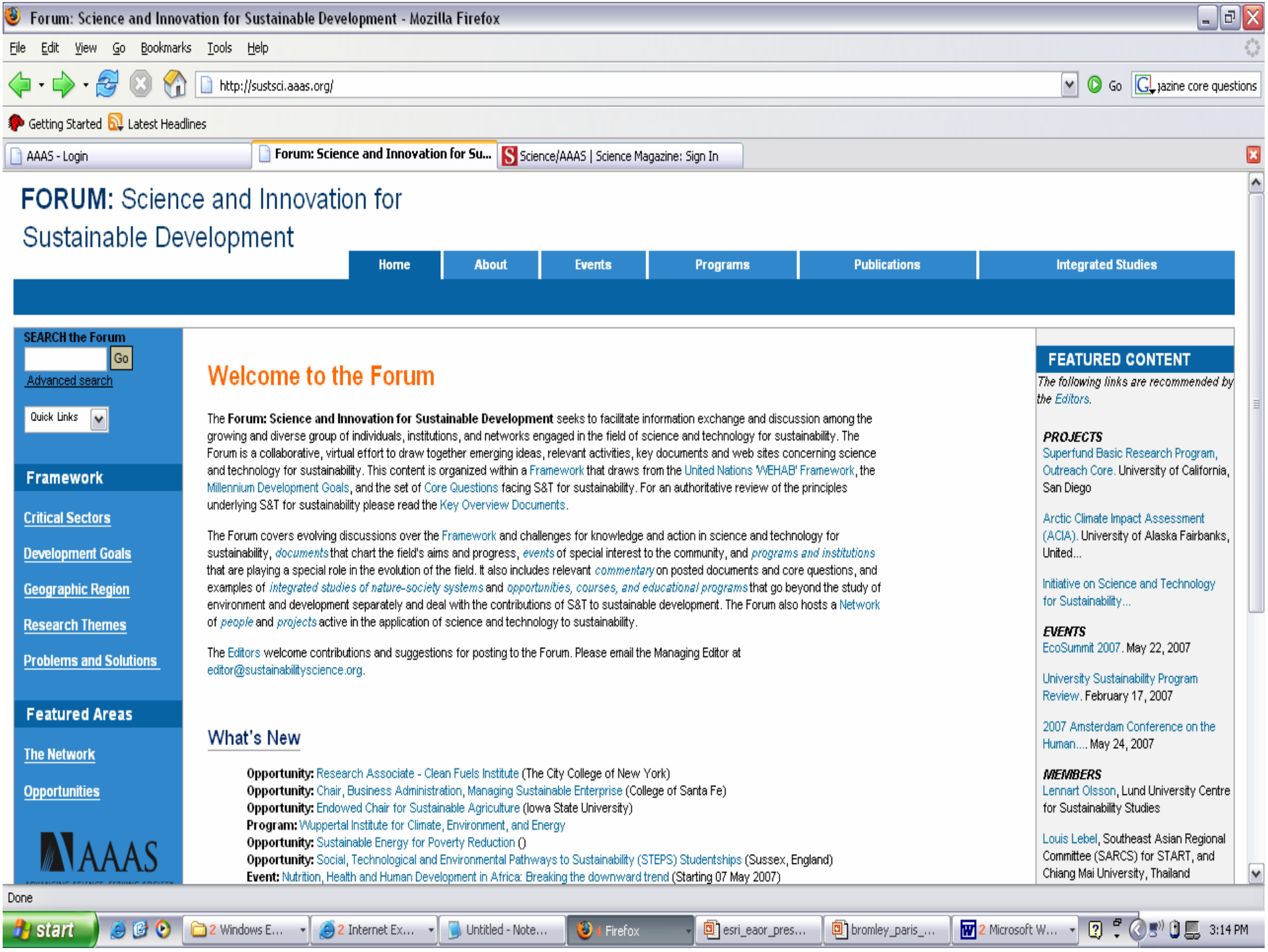
- Allows similar items to remain linked together
- Literally flexible within database, can be wiped out and replaced
- After one year, we will look at all content items according to their classifications to see ‘what is sustainability’

Editorial Control

- Managing editor administers all content
- Solicits inputs from Forum Members, public
- Editorial board reviews and monitors content
- Only 2,000 separate content items right now

Other features

- Database administrator can link items together (eg, a paper, it's author, and the event at which its presented can always reference each other)
- Web-based admin accessible anywhere, allows distributed editors
- No blog or discussion area yet, too labor intensive
- Registered members allow significant outreach regardless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Problems and Solutions
Featured Areas
The Network
Opportunities
AAAS
Welcome to the Forum
The Forum: Science and Innovation for Sustainable Development seeks to facilitate information exchange and discussion among the growing and diverse group of individuals, institutions, and networks engaged in the field of science and technology for sustainability. The Forum is a collaborative, virtual effort to draw together emerging ideas, relevant activities, key documents and web sites concerning science and technology for sustainability. This content is organized within a Framework that draws from the United Nations 'WEHAB' Framework, the Millennium Development Goals, and the set of Core Questions facing S&T for sustainability. For an authoritative review of the principles underlying S&T for sustainability please read the Key Overview Documents.
The Forum covers evolving discussions over the Framework and challenges for knowledge and action in science and technology for sustainability, documents that chart the field's aims and progress, events of special interest to the community, and programs and institutions that are playing a special role in the evolution of the field. It also includes relevant commentary on posted documents and core questions, and examples of integrated studies of nature-society systems and opportunities, courses, and educational programs that go beyond the study of environment and development separately and deal with the contributions of S&T to sustainable development. The Forum also hosts a Network of people and projects active in the application of science and technology to sustainability.
The Editors welcome contributions and suggestions for posting to the Forum. Please email the Managing Editor at editor@sustainabilityscience.org.
What's New
Opportunity: Research Associate - Clean Fuels Institute (The City College of New York)
Opportunity: Chair, Business Administration, Managing Sustainable Enterprise (College of Santa Fe)
Opportunity: Endowed Chair for Sustainable Agriculture (Iowa State University)
Program: Wuppertal Institute for Climate, Environment, and Energy
Opportunity: Sustainable Energy for Poverty Reduction ()
Opportunity: Social, Technological and Environmental Pathways to Sustainability (STEPS) Studentships (Sussex, England)
Event: Nutrition, Health and Human Development in Africa: Breaking the downward trend (Starting 07 May 2007)
FEATURED CONTENT
The following links are recommended by the Editors.
PROJECTS
Superfund Basic Research Program, Outreach Core. University of California, San Diego
Arctic Climate Impact Assessment (ACIA). University of Alaska Fairbanks, United...
Initiative on Science and Technology for Sustainability...
EVENTS
EcoSummit 2007. May 22, 2007
University Sustainability Program Review. February 17, 2007
2007 Amsterdam Conference on the Human.... May 24, 2007
MEMBERS
Lennart Olsson, Lund University Centre for Sustainability Studies
Louis Lebel, Southeast Asian Regional Committee (SARCS) for START, and Chiang Mai University, Thailand
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Environmental Areas of Responsibility (EAOR)

- Web-based GIS
- Grew out of NSF-funded Biocomplexity pilot grant focused on Plata Basin of South America
- Larger project not funded, but EAOR funded by NOAA as prototype tool
- Designed to answer: who is doing what, where?
- $23,000

Plata River Basin

EAOR

- AAAS and partners networked with hundreds of science, policy organizations active in Plata
- Plata is a multinational river basin (Argentina, Brazil, Paraguay, Uruguay, Bolivia)
- Common theme: ‘we have no idea what goes on next door, much less in the next country’
- A fundamentally geographic question

Specifications

- ArcIMS GIS system for the spatial data
- Accompanying PostgresSQL database to hold all the standard organizational information
- Started with almost 400 organizations across the basin, derived from AAAS networks

Process

- Contracted Argentine partner to gather information on those organizations
- Partner contacted each one, asked them to fill out online form with address, website, mission statement, etc.
- Also emailed or faxed them a map of the basin, asked them to draw *where* they worked in the basin
- Partner then logged into ArcIMS administrative tool, hosted at AAAS, and digitized that drawing

Process

- ArcIMS spatial information and PSQL information connected by common reference number
- ArcIMS chosen because of existing relationship with vendor, and because of EditNotes tool
- EditNotes allows the remote, web-based spatial data entry
- ArcIMS also serves the data to the end-user via a web page, no special software needed

Database

Organization Name Department Org. Type Org. Address City, State, Postal Code Country Org. Phone Org. Fax, Org. Website 1 Org. Website 2 Org. Type of Work Org. Other	Org. Comments Org. Document Library Org. Mission Objectives Contact Title Contact Name Contact Job Title Contact Address 1 Contact Address 2 Contact City, State, Postal Code Country Contact Phone Contact Fax Contact Email

Organizational Types

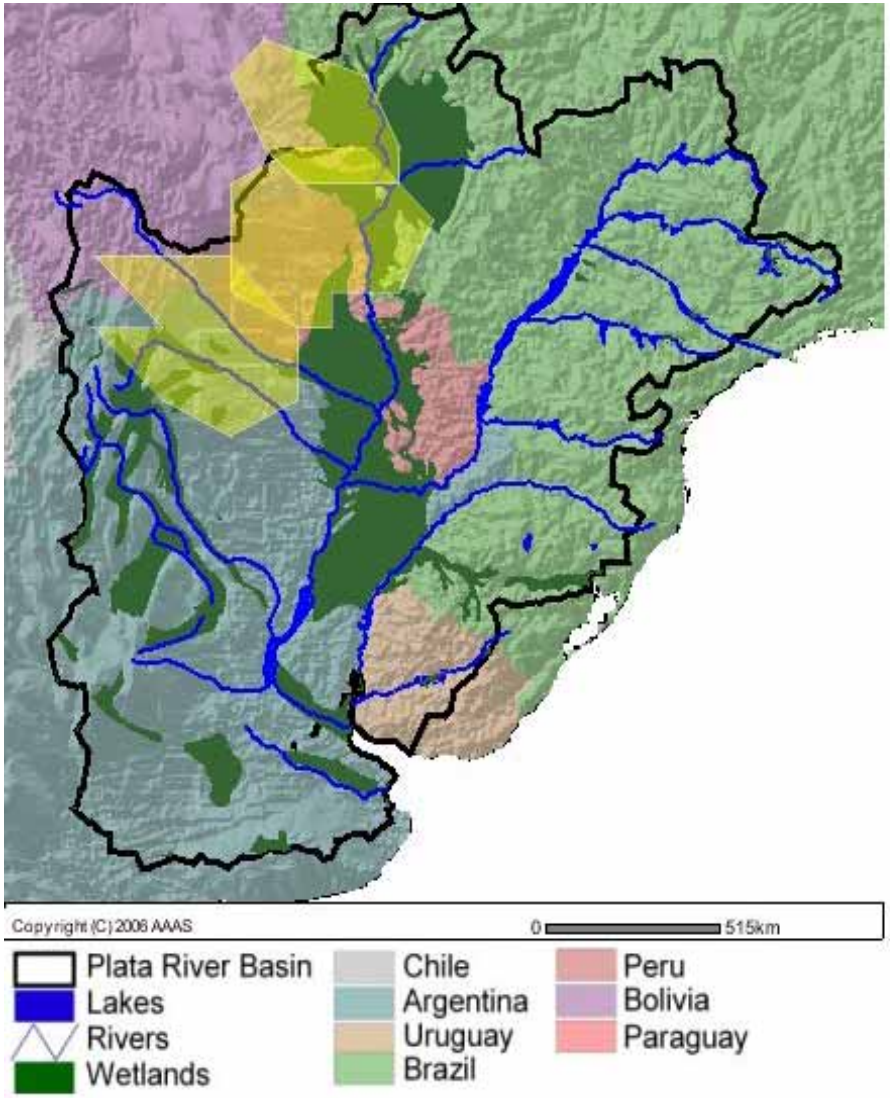
- Commercial Groups
- Foundations
- Government Agencies
- Individuals
- International Organizations
- News Media
- Museums
- Non-Governmental Organizations
- Professional Associations
- Research Institutes
- Universities and Colleges
- Other

Results

- Many organizations have national coverage, discarded
- Many organizations, when asked where they work, say ‘everywhere’
- We were interested in relative boundaries of specific areas of work
- Only ingested those organizations working within a specific locale

Results

- Ended up with 243 such organizations from the original 371
- To avoid a mess we divided the 243 organizations into three spatial scales: local, sub-national, national-international
- Divided based on area of polygon coverage
- Users must choose their level of interest when accessing the data



Query Results for NGOs

Click on the organization name to see their area of activities.

1 Centro de Estudios Regionales de Tarija - Pueblos del Chaco

Website: www.elgranchaco.com/sitios/cerdet

Mission: El CER-DET es una institución de acompañamiento a las organizaciones y familias indígenas para facilitar su fortalecimiento interno y empoderamiento económico-político en el ámbito local y regional. El CERDET logra sus propósitos mediante la organización

AAAS

Sample Output

User has clicked a point in the NW area of the Basin

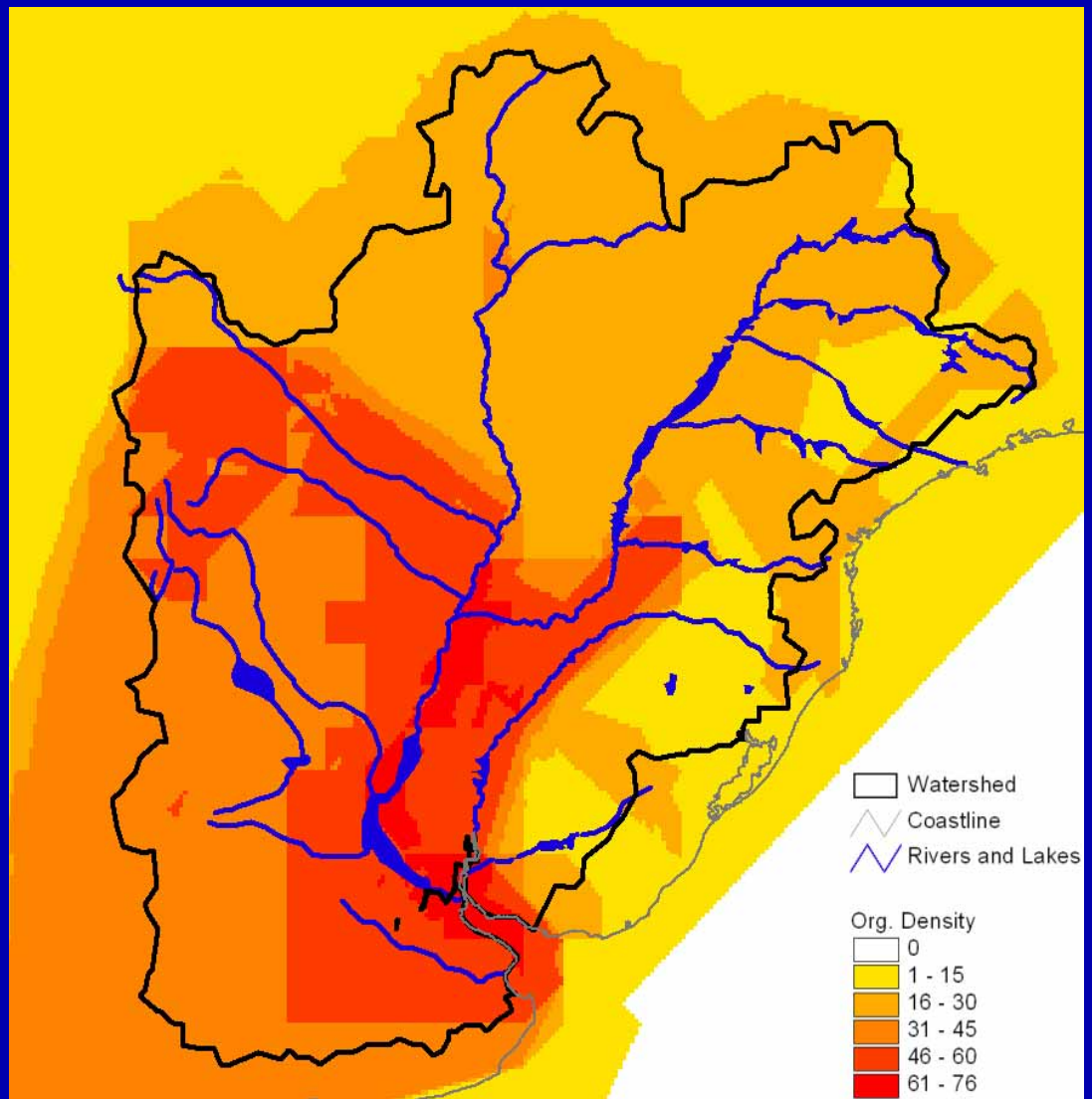
EAOR returned info on three different organizations working in that area

Text info, link to website provided at the bottom of the page

Basemap: topography, rivers, wetlands, basin boundary

http://www.aaas.org/programs/international/eaor/

Derived Product: Organizational Density



Cost Breakdown

- Salary / benefits: 30%
- ArcIMS software: 15%
- Partner sub-contract: 33%
- Overhead and technical services: 22%

Notes

- ArcIMS extremely painful
- Other options now on the market possibly better (ArcSDE)
- GoogleEarth possible, but lacks spatial search function
- Scale a problem: must avoid a mess of returns on search
- Data ingestion the key issue really, like any data project