



Middle Path
EcoSolutions

Build it and they will come?: Community Engagement for Earth Science data initiatives

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Goals of this presentation

- Understand community engagement in the context of Earth Science data projects
- Identify some useful strategies and action items for doing community engagement in projects

What is this presentation about?

Outline

- A little bit about me
- What and Why community engagement?
- Community engagement in Earth Science data initiatives
- Common components of community engagement

Arika Virapongse, MS, PhD

Researcher, Scientist, Trainer, Consultant, Community builder

Blog post:
middlepathco.com/my-journey-to-community-activation/

Current/recent roles

- Consultant: Community Engagement in Science
- Researcher: Social-Ecologist
- Writer: *"A Guide for Community Stewards"* (forthcoming book)

Knowledge areas

- People & environment
- Conservation & Development
- Environmental management & sustainability
- Teaching & training to work with communities
- Community Resilience
- Place-based and online-distributed communities



Thailand, 2001-2006



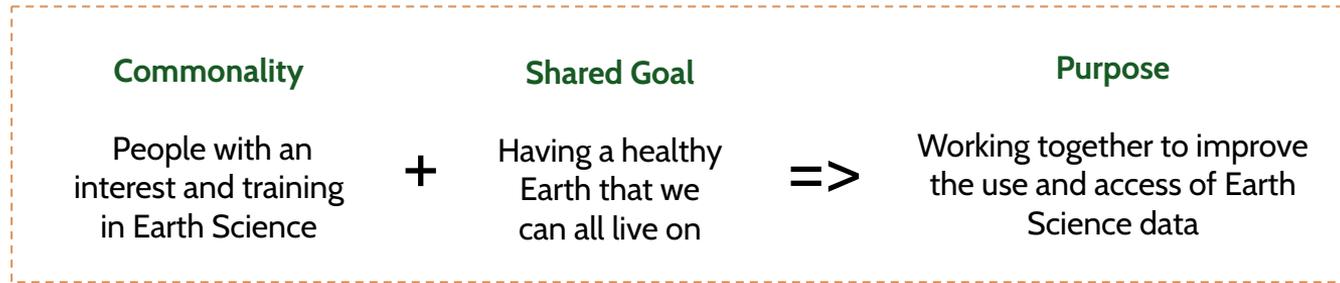
Bocas del Toro, Panama, 2013



Amazonas, Brazil, 2013 & 2014



Main elements of a community



In addition to having a shared purpose, communities **do things together**.

They might:

- Organize conferences to share information
- Write co-authored papers
- Identify data standards
- Host hack-a-thons

Governance

Decision-making, policies, administration, documentation

Communication

Externally & internally

Infrastructure

Processes & platforms

**Main elements of a
Community**

Participation

Membership, leadership, contributions

Events

Scheduled activities

What is it?

Community engagement

What is Community Engagement?

- The development of mutually beneficial relationships between an organization and target external groups.

Why do Community Engagement?

- Increase an organization's alignment with users' needs and expectations
- Maintain the long-term relevance of an organization or initiative
- Increase an organization's efficiency and breadth (e.g., leveraging volunteer contributions)
- Discover new applications for services
- Increase an organization's benefits to society and its users



Community Activation growth pyramid

What is it?

Community engagement in Science



Community Activation growth pyramid

Community around science



From the NCAR website (<https://edec.ucar.edu/>)

Community within science

Outside of a project



Photo by Arika Virapongse of the OPeNDAP booth at the 2023 American Geophysical Union conference

Within a project



EarthCube meeting 2022 (www.earthcube.org/2022-earthcube-annual-meeting)

Why is community engagement important for Earth Science data projects?

Sustainability of Earth Science data infrastructure project: A study of 11 projects

Database projects aim to bring together data and data resources for use.

Database projects relied heavily on the commitment to, and contribution from, a disciplinary community. Database projects succeeded when they were able to position themselves as part of the core workflow for disciplinary-specific scientific research.

Middleware projects seek to develop software and technology.

Middleware projects borrowed heavily from sustainability models used by software companies, while maintaining strong scientific partnerships.

Framework projects focus on developing best practices.

Framework projects often used bottom-up governance approaches to maintain the active participation and interest of their community.

Project name & Website	Project type
BCO-DMO www.bco-dmo.org	Database
ESIP esipfed.org/	Framework
Force11 force11.org	Framework
HDF Group www.hdfgroup.org	Middleware
IEDA www.iedadata.org	Database
IRIS www.iris.edu/hq/	Database
OGC www.ogc.org/	Framework
OPeNDAP www.opendap.org	Middleware
PaleoDB paleobiodb.org	Database
SERC serc.carleton.edu/	Database
Unidata www.unidata.ucar.edu/	Middleware

How do these project types differ?

Database projects aim to bring together data and data resources for use.

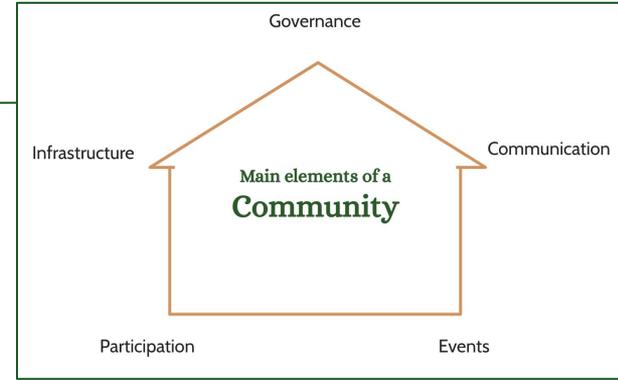
- High reliance on community who must actively *contribute* to the project.
- Focus is on coordinating people's contributions.
- High: Communication, Participation, Infrastructure

Middleware projects seek to develop software and technology.

- Community is often composed of users and developers.
- Focus is on understanding people's needs.
- High: Communication, Infrastructure

Framework projects focus on developing best practices.

- High reliance on community who must actively *participate* in the project.
- Focus is on facilitating the connections between people.
- High: Governance, Communication, Events, Participation, Infrastructure



How is community engagement a part of your project?



What are some things you can do?

Community engagement actions

- Get to know your audience
- Lean on your partners
- Support communication
- Encourage participation
- Be intentional with decision-making & governance



Get to know your audience

Audience:

- What audience groups do you want to target?
- What do you want each group to do?
- What do you need to know about your audience?



Identify what might motivate each audience group to participate.



An example: A database for soil samples

Audience groups:

- Data providers
 - We want them to submit their datasets to our database
- Data managers
 - We want them to collaborate with us around interoperability
- Researchers
 - We want them to use our database

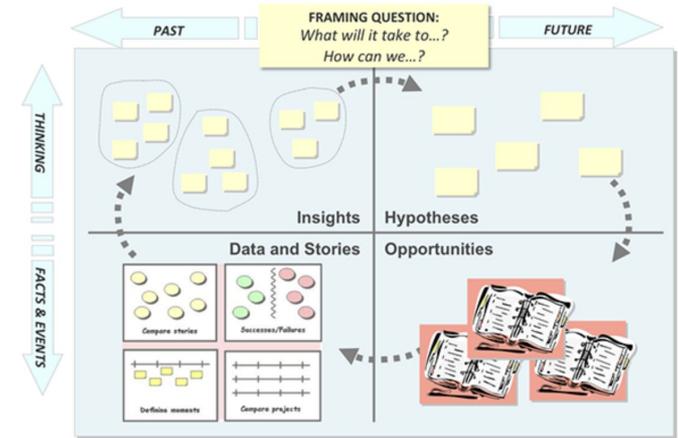
Get to know your audience

Be a learning organization

Try this!

Next time you're at a conference...

- Survey your audience by asking people simple questions like:
 - Have you ever heard of our database?
 - What kind of data do you work with?
- Write down their responses as well as some basic demographics
- Look for patterns in the responses
- Talk about the results with your colleagues and what they might mean for your project



Emergent learning

Lean on your partners

- What organizations represent or overlap with the audience groups that you are targeting?
- What are ways that you can get to know your audience through these partner organizations?
- How do these organizations work with their audiences?

An example: Earth Science data organizations



Get to know your partner's community

Try this!

- Identify a community event that you can attend:
 - Look at a partner's website for a community meeting
 - Reach out to an organizer and ask: How can I get involved in the community? Where can I meet other community members?
- Attend a meeting.
 - Find at least one way to introduce yourself.
 - Listen for ways that you might participate further in the community, like give a presentation.
 - Get a sense for who is there, and what the community feels like. What are the expectations?
 - Ask yourself: Are there people in this community that might benefit from mine?

Support Communication

What do you want people to know about your org or community?



How can you help people interact with each other?



Digital communication:

- Website: Your digital home
- Email lists: MailChimp, Constant Contact, Google group
- Social media: LinkedIn, Twitter, Facebook, Instagram
- Social network: Slack, Discord, Discourse (forum)
- Mobile phone chats: Whatsapp, Telegram



Aim to integrate with technologies that people are already using.

Start a mailing list



- Collect contact information from interested people by:
 - Having an event registration or a sign in sheet.
 - Having a link/QR code for people to easily sign up for your mailing list
- Systematically record contact information using a newsletter platform like MailChimp, Constant Contact, or Beehiiv – or even just a spreadsheet.

The goal is to have a way to reach out to everyone who has indicated an interest in your project. Collecting people is one of the first steps for creating critical mass around your project.

Encourage participation



Tips on increasing participation:

- **Low barrier to entry:** Make it easy for people to contribute data, e.g., minimize sign in
- **Immediate results:** People want to see results of what they've done, e.g. a list of their previous observations.
- **Community-oriented:** Offer ways for a participant to interact with others—without you there.
- **Keep it simple:** Direct participants towards doing just one thing, and make that work flow as simple as possible.
- **Mission driven:** Make it possible for people to see how they are immediately impacting the mission.
- **Value each person:** Be responsive and treat each person as an individual.

Decision-making & Governance

What decision-making models makes sense for your project?

- Consider your size, your culture, your values/principles
- It's likely that you need multiple ways to make decisions

How will hierarchical structures be leveraged and balanced?

- What does hierarchy look like? How do you want it to show up? How do you NOT want it to show up?

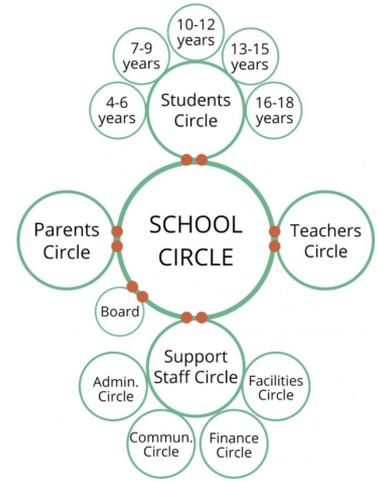


Image from: Wondering School

Governance Model	Key Characteristics
Autocratic	One person makes decisions
Board Model	A group of designated individuals makes decisions for the community
Sociocracy/Consensus	Every individual within the group comes to agreement on decisions
Democracy	Each member gets a vote and decisions are made based on majority (or other ratio) of "yes" votes
Do-ocracy	Any individual who is willing to do the task takes on leadership and decision-making for the task
Holacracy	Flattened leadership structure that aims to distribute power across the community
Peer Governance	Based on the concept of "commons", where individual benefit is gained via the group, rules are developed while bound by basic principles

Have one way for community members to be involved in decision making

Some ideas:

- Organize an advisory board
- Host an online community meeting
- Organize a workshop at a conference
- Post on social media asking for people's opinions



Be sure to document what decisions are made and who contributed to making them.

What is one community engagement action that you'd like to try in your community?



Middle Path EcoSolutions, LLC

"Taking engagement to the next level with community activation"

A Woman-Owned Minority Small Business founded in 2017.
Founder & Principal Consultant: Arika Virapongse, PhD

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Consulting services:

- Community engagement and development
- Community manager training & hiring
- Working with place-based and virtual communities

Forthcoming book on:

*"A Guide for Community
Stewards"*

Sign up for my mailing list!
<http://eepurl.com/c-DALP>

