cut.copy.paste #1

Documentation Fit for Purpose / Purposeful Documentation / Tell People What You're Doing Already

Subtitle - Strategies for building shareable community resources

Attribution - By & for openTEAM, GOAT, & the people

About

"With words we begin to leave traces behind us like breadcrumbs: memories in symbols for others to follow."

- James Gleick, *The Information*: *A History, A Theory, A Flood* (2011)

"The most revolutionary thing one can do is always to proclaim loudly what is happening."

- Rosa Luxemburg

Our purpose here is building resilient systems.

A common concept of documentation is that it serves as a failsafe in case you get hit by a bus (or win the lottery – less gruesome, less likely). Either way, the question we're trying to answer with documentation resources is: **What would it take for someone else to come behind you and pick up where you left off?**

This is true on multiple levels. We want the record of our work to be there for ourselves, and for partners in our immediate community, but beyond the specifics of our projects (a piece of software, a paper, a working group) we're also collectively creating new processes and ways of collaborating that have the potential for transformative change in new applications, even ones we couldn't have imagined when we first began them.

To this end, we're working to expand our understanding of what documentation is for.

This community is doing new, innovative, and experimental work in the hope that it builds & scales toward a better future. We sometimes describe this work as 'making the path by walking it'. In this case, documentation is painting the blazes. It doesn't have to be perfect, it just has to be enough that other people can see where you started, where you're going, and how to take the next step.

Background

Who we are

Openteam.community
- Gathering for Open Ag Tech
- Vic & Anna specifically

Who is OpenTEAM? https://openteam.community/

OpenTEAM, the Open Technology Ecosystem for Agricultural Management - collectively building an open source, interoperable tech ecosystem that enables farmer-control of data, knowledge sharing, and access to programs and marketplace incentives.

Who is GOAT? https://goatech.org/

Group of affiliated people and organizations – working to coordinate existing development, support collaboration and feedback, reduce duplication of effort, & create a big-picture vision for open ag software and hardware.

What we're doing

Much of the documentation we see in the open source community focuses on documenting what lines of code do, how to use and expand upon a library, or other ways of describing the outcome of a project. There is a wealth of knowledge and value in being able to use the output of another person or group's hard work in this way. We also see value in not only sharing the final output, but documenting the **context** and **process** in which it was created.

Our community works collaboratively to arrive at outcomes and decisions. The open-source world has many great strategies at hand for sharing individual contributions, but we are often pulling together people from many different locations, to tackle more abstract problems with a less concrete outcome, and this requires new and different ways to share how decisions were made and why. This process of codesign is in of itself worth documenting, as it can inform how our community works together on future projects and help other groups learn from our successes and frustrations.

This booklet is meant to be a guide and an explanation of how we address common challenges. We're thinking in terms of strategies and examples, with the goal of making our unspoken or tacit assumptions explicit and sharable in new contexts, or for new collaborators.

Why

This work is hard. Documentation often falls off the list of priorities in part because it's so hard to do right.

We want to make it easier – actually, we have to if we intend for our projects to work

- If you can describe what you're doing in ways that other people can follow, then they can talk about it for you in rooms that you are not in.
- Sharing technology of process and methods is critical for effectively working in a distributed, decentralized community
- We're working to keep the product connected to the process, rather than separating them out, and developing ways to keep the context of our work integrated as a means of sense-making

We believe in FAIR principles, not just for research data, but for everything we're trying to do together. The goal is that we can support replicating everything shareable in useful, comprehensible ways that allow for evolution & mutual exchange beyond our initial design.

As with software, as with research data, as with final project outcomes – we want to make all the parts that are shareable or replicable visible

Challenges

> *"People derive sustenance in mysterious, creative, and unforeseeable ways from work not necessarily designed to give it."*
>
> – *Maggie Nelson, Freedom: Four Songs of Care and Constraint*

Context

When we're not able to document our projects fully & clearly, potential users and collaborators run into a host of issues:

- It's hard to figure out how to join or help: Saying a community is 'open' to new contributors or members isn't always enough for people to feel comfortable or clear on joining.
- Having to re-create a process each time: Our community goes through similar collaborative processes for a wide range of projects. These processes are often run by different individuals or teams that recreate common elements each time.
- Re-inventing separate wheels. Often we're each in our separate rooms, hitting our heads against the same problem, thinking 'hasn't someone figured out how to do this before?"-- and we have! If we can just find each other.

In our community, we have a wide range of people, from farmers to software developers, with different values and motivations. One thing we've clearly learned from working together is that we can't assume we have a shared set of assumptions about what's important, or what's obvious, or what's common knowledge. As is often (always?) the case, our biggest challenge comes entangled with our deepest strength – this means we have to purposefully & explicitly decide what our goals, parameters, and vocabulary are going to be, and renegotiate them throughout the course of our relationship.

[OBVIOUSLY we all know what a 'field' is]

When we make documentation for the purpose of sharing and community building, great things happen. In expanding what we document to include how we came to conclusions, when we share our methods for working in collaboration, we move more effectively towards these co-created goals.

Here's what that gets us:

- A shared foundation. If we can document what worked, what didn't, what you learned, etc. you can iterate and make our process better each time.
- More time. Saving time frees up our time and energy for other pursuits. Plus, time is important as we are working against an ecological collapse (lol).
- More resources to go further. We have an allotted amount of funding to put towards a certain effort. If we have clear processes as to how to do the work, not just the outcome we need, we can better focus on the quality of those outcomes and improving processes to get there rather than just doing them 'well enough'
- Sometimes our process discoveries, and information on technologies of collaboration are innovations in and of themselves.

"A novel idea that is openly released in the networked environment can often find its way to a distant person or improbable project that can really benefit from it"

- David Bollier, *Viral Spiral* 2008

Issues & Strategies

Making time for documentation

Documentation as a way of showing our work

Documentation often finds itself on the back burner, or even completely overlooked. Time and resources, which are often limited in the non-profit, open source, or grant-funded space, are often allocated to outputs - an MVP, a product, a paper. It is often hard to see the tangible value of documenting the project while working to create it.

"Stability is resource intensive"

- Gayle Rubin, "Geologies of Queer Studies"- Deviations, 2011

From FTRCR: "..many of the features that would make for ideal or exemplary entries are challenging for open-source and commons-based projects to achieve. With a focus on accomplishing minimum viable products (MVPs), experimentation and flexibility, and pursuing maximum utility with minimal resources, it can be hard to prioritize aspects such as documentation and testing. Part of what this project hopes to accomplish is to provide a means, method, and incentive for including more of these 'nice-to-have' aspects by showing their importance to the community and enabling a structure for prioritizing incremental progress toward the next FAIR step."

Turning above notes into paragraphs ⬇ Quotes not included
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This devaluing of documentation leads to [problems] once the project is complete. Similar projects are popping up frequently in this community and we find ourselves reinventing the process and how to document the output each time, often referring back to ill-documented Miro boards and meeting notes looking for a crumb of the work we know we have already done. The

belief that lessons learned will be remembered and applied in future endeavors often proves optimistic in practice, as human memory is fallible, and context can quickly fade.
We are looking to shift our mindset towards documentation being an integral part of project planning from the onset, as one of the core deliverables. This will allow the team the time and resources to capture vital knowledge and learnings for future projects or iterate on existing knowledge.
Additionally, rather than viewing documentation as a large, one-time task, we look to creating modules and 'building blocks' which can be reused and adapted towards future projects. This helps to foster a culture of continuous improvement and knowledge sharing.

- Something about shifting the mindset to see the inherent value of documentation in order to ensure long term success and resilience

Describing your work in an accessible way

Documentation as translation

One significant barrier we've encountered is that it's hard to talk about what we're doing for a general audience. We're working in areas of multi-field technical specificity – who would a general audience for that even be? What is the relevant information for a new application? What is the right amount of context? This can be unclear, even or especially to those of us in the middle of the work, which can make it hard to know where to start.

- From FTRCR: "We had a wide range of contextual familiarity across our groups, and were continually challenged to calibrate how much background knowledge each of us held individually and collectively. We also encountered a lack of shared language in the conceptual space where we were working, and often struggled to build shared mental models that were sensible across the fields or scales of participant experience."

Strategies:

- Start by describing what you're doing AT ALL
- Practice speaking in multiple registers (1); try to describe things in more than one format or language
- Developing our fluency in communication as a fundamental skill for openness
- Partnering with people who are good at translating across conceptual fields
- Creating machine-readable and human readable documentation

Finding Collaborators

Documentation as invitation to participate

When working in any niche space, such as open source technology for agriculture, finding the right collaborators with the necessary combination of technical understanding and practical skill sets can often feel like searching for a needle in a haystack. Poor documentation can exacerbate this challenge by obscuring the intent of the project and the openness of the community surrounding it.

Especially when you need a very specific combination of technical understanding and practical skill set, documentation can serve as an entrance to a community.

From FTRCR: "We are constantly reminded that 'findable' is not just a physical/ technical thing, but a social one. We can find what people have told us about."

- Particularly wide range of contexts in our community (collaborative & open ag tech)
- From FTRCR: "It appears that the gaps in findability at this juncture are so broad, any infrastructure we create to bridge them are welcome. "

***Strategies*:**

- Act in ways that invite contribution
- Insist on the importance of working together - value of networks
- Invest the time in documenting your work in a way that is legible to people who aren't already familiar with it
- If you can describe what you're doing in ways that other people can follow, then they can talk about it for you in rooms that you are not in.
- Show up to spaces that aren't 100% directly relevant to what you're already doing

Turning above notes into paragraphs ↓ Quotes not included

When working in any niche space, such as open source technology for agriculture, finding the right collaborators with the necessary combination of technical understanding and practical skill sets can often feel like searching for a needle in a haystack. Poor documentation can exacerbate this challenge by obscuring the intent of the project and the openness of the community surrounding it.

Effective documentation serves as more than just a repository of knowledge; it acts as an entrance to a community. It is the billboard that says 'Welcome in! We want you here!". Documentation provides a medium through which individuals can communicate and engage in work together.

The breadth of contexts within our community, from small scale farmers to university researchers, underscores the importance of bridging the gaps in findability.

"It appears that the gaps in findability at this juncture are so broad, any infrastructure we create

to bridge them are welcome."
Strategies:

- Start by describing what you're doing AT ALL! Some documentation is better than none. Even if the door doesn't look wide open, at least the door is there for people to knock on.
- Speaking in multiple registers (1), try to describe things in more than one format or language. investing the time in documenting work in a manner that is legible to individuals who may not be familiar with the specific domain is also crucial. By describing projects and processes in a clear and accessible manner, documentation enables individuals to understand, replicate, and build upon the work of others. As noted, if one can articulate their work in a way that others can follow, they empower those individuals to advocate for their projects even in spaces where they may not be present.
- developing our fluency in communication as a fundamental skill for open-ness!
- Actively participate in other group's spaces when possible (reciprocity)
- Partnering with people who are good at translating across conceptual fields
- Machine-readable and human readable documentation

Bottlenecks & Exhaustion

Documentation as a force for sharing effort, and for sharing power

> "In dealing with an open-secret structure, it's only by being shameless about risking the obvious that we happen into the vicinity of the transformative." (22)
>
> *Eve Kosofsky Sedgwick, Epistemology of the Closet*

Distribution of the stuff you need to make things happen - it shouldn't just be on one guy who is the only one who knows how to make something -
When only one guy is responsible for making something work, that guy is so tired!

- ""Redundancy–inefficient by definition–serves as the antidote for confusion. It provides second chances". - James Gleick, *The Information: A History, A Theory, A Flood*
- Cite FFAR indepth
  - On reducing reporting burdens:
  - "Some institutions have entire teams that do nothing but this. And some folks got one guy. And he is the PI, and he's in the field, and he's got to write reports--and that one guy is tired. He's tired. He's tired all the time." - Dr. LaKisha Odom, Scientific Program Director at the Foundation for Food & Agriculture Research (FFAR)
  -

    - From FTRCR: “With a focus on accomplishing minimum viable products (MVPs), experimentation and flexibility, and pursuing maximum utility with minimal resources, it can be hard to prioritize aspects such as documentation and testing. Part of what this project hopes to accomplish is to provide a means, method, and incentive for including more of these ‘nice-to-have’ aspects by showing their importance to the community and enabling a structure for prioritizing incremental progress toward the next FAIR step.”

Strategies:

- If we can make more resources available, it makes the lift for each individual lighter
- If we can lower the barriers to entry, it broadens the field for new participants to contribute
- If we can make collaboration easier, we can distribute the resources we have more effectively across multiple people or groups

Standardization and Level-Setting

being explicit about where you’re working
Plus Making sure you’re checking off the basics for FAIR / best practices
(saying a bunch of stuff is not sufficient! You need to say it in a couple of standardized ways or people won’t be able to use it)
you don’t have to include 101-level information every time - but you should say what you’re working on in a way that someone who needs 101-level information can go find it and come back when they’re ready
CEDAR - Why semantics are important
Being clear about the audience and what you expect them to know already, you can make assumptions but share what they are. Reference other materials where helpful
You also have to talk about the outputs in a useable way
If you’re creating something that you expect someone to use and scale, they have to be able to understand the environment that you created it in - you’re trying to share why it worked in your context. This gives room for others to begin to understand how it might work in their context or what may need to be adapted
https://digitalpublicgoods.net/standard/
https://documentation.divio.com/

Documentation being limited to outcomes only we want to also share processes and methods (this is critical for replicability) - I see what you got to but how did you do it?

Visuals:

- looking glass or microscope, being able to zoom in and see the components rather than just the big picture. See HOW it works, the people that made it possible, what it takes to pull it off

If you can talk about why you made the decisions you made, & went with one choice over another, that is also a space where other people can benefit from your process & what you learned - and ONLY documenting output erases that important info.

(like, this is especially important for us working as a collaborative community that does co-design – but it's also important for an individual contributor who's doing anything connected to open-source work!)

Conclusion

What we're doing now to support documentation

- Static sites that can be replicated
  - Add elements that we think make this work
- Forums & wikis
- FAIR tech registry

Criteria from FAIR Collabathon (link):

1) These are the things that our community identified as critical information for them to make a decision about using a tool or module

- Tool or Project Name
- Text description
- Link to source site / documentation / where it lives (has to have an external referenceable location)
- What is it built on/ with (language & tech stack)
  - What data/file formats does it export to?
  - What specific standards or existing ontologies are used?
  - What language is the tool / module written in?
  - API?
- System requirements (OS, versions, prerequisite software/environment, memory, storage
- License
- Organization
  - With details if possible - what kind of org, for what purpose, with what revenue model
- Change log/versioning/merge requests/contribution transparency
- Creation date, revision dates, date last updated

- Contact person, contact information (email)
    - Who manages...
        - The code repository account?
        - any mechanism that can gat keep access to assets?
        - the project roadmap?
- Statement of where & how data is stored, data privacy management
    - Mechanism for 'Disclosure, consent, and control required with respect to secondary uses of research materials and data' (link)

2) This is information that might be harder to describe or figure out, but is also where a ton of the value is - the more of this you can include, the better.

- Context for use
    - Who this was built for and what you expect that they might do with it
    - How can users and developers interact with the tool?
    - Actual use vs intended users
    - Referencing instructions / Attribution
    - Use documentation
        - Tutorials
        - Walk-throughs
        - Specific documentation on what schemas and cross-project interoperability tactics the project uses
    - How many people use this tool? How big is the community?
    - What level of skill is needed to utilize this module? (What are the "pre-reqs"?)

- Advocating for the concept! Like with this zine
- Meta documentation (process of making documentation zine, recursive)
- License & attribution

Resources & examples

- Governance & role types
- Grand Unified Theory of Documentation (via mike stenta via farmOS forum)
- Examples: Regen Registry Handbook, farmOS user guide, in-flight safety instructions (lol)
- BeautifulDocs
- WriteTheDocs community - Beginner's Guide

In Brief

Landing page - Do you have a single place where you tell about your project, and that you can share with other people?

> Does that page answer who, what, when, where, & why the project exists for?

Project Context - When describing your project, what assumptions do you make about previous knowledge? Can you find a way of saying what those assumptions are in your documentation?

> E.g. “this project assumes familiarity with x. For more information about x, start [here](link).”

Invite Engagement - If someone new finds your project and has a question about it, is there a place for them to ask?

> If you’re working on a generalizable workflow, you can do a search with your terms and pray that somebody has asked & answered it already on StackOverflow. But the more unique & specific the question is, the less likely someone is to have answered it before– and the more valuable it will be to capture it and get it answered.
>
> FarmOS uses community calls & forums for this – and we also have GOAT forums & Hylo. Even something like sharing a contact email & pointing people who have questions toward it can make a difference.

Ask - What do you want or need help with?

We sometimes do this across our community in the form of ‘resource mapping’. But you can also do it for your project- saying the thing you need out loud gives someone the chance to hear you & respond.

Some ways to make your project reproducible

1) By showing your process

2) Through your design

3) Through your format

4) Through context / metatext