Data feminism and agriculture

# Abstract

Agricultural systems are a function of complex institutional structures that have historically had, and continue to have, power imbalances embedded within them. The XX (how many are there?) principles of data feminism were developed by data scientists to aid in identifying, examining, and addressing power inequities related to data generation, interpretation, and dissemination. We believe these principles provide an accessible, but under-utilized framework for helping agricultural researchers understand, acknowledge, and address power inequities prevalent in our discipline. Here we present three themes in which we interpret the tenets of data feminism specifically in the context of agricultural research: power, reciprocity, and framing. Many researchers already apply these principles in their work, but we hope that providing this explicit framework in an agricultural context will make the application of those principles more intentional, visible, and ubiquitous. We posit that applying these principles concomitantly fosters creativity, leading to better outcomes for sustainable agriculture as a whole.

# Introduction

## Issues and concerns with data and power in general

**In a broad sense, the intersection of data and power has become a focal point of global discourse and concern (CITE). Issues arise along the entire data lifecycle, from data provenance to utilization, and include a suite of complex interactions that require novel ethical, technical, and regulatory considerations (CITE). Without intentional examination of these issues, existing power differentials will likely be exacerbated, and new ones will be created (CITE). In a time when human ingenuity is arguably most needed (CITE), these consequences will deny vast numbers of people the ability to fully realize their contributions to society, and thus contribute to our survival (CITE).**

## Academic movements, pop culture

**The emergence of novel issues surrounding data and power has catalyzed the creation of innovative academic fields dedicated to understanding and addressing these complex dynamics. Fields such as data ethics (CITE), algorithmic accountability (CITE), and critical data studies (CITE) interrogate the ethics and power structures embedded within algorithms. Data justice (CITE) and techno-politics (CITE) explore how data and power intersect within socio-political contexts. These themes have not been isolated to academic realms; numerous books, films, series, and art pieces grapple with tensions between power distribution in data-driven societies. These cultural artifacts reflect both the urgency and importance of exploring these themes.**

## Researchers in general

**Researchers and scientists in technical fields have traditionally operated under the assumption of value-neutrality, relegating ethical considerations to separate domains while technical advancement is pursued independently from such considerations. However, researchers are increasingly having to contend with the potentially profound ethical and social implications of their work as it relates to data and power (I`CITE). Researchers must become adept at recognizing their role in either reinforcing or challenging existing power differentials.**

**This new awareness has been primarily discussed within the context of domains such as technology, health care, and criminal justice (CITE). We argue that despite power being a particularly salient theme within the agricultural sector, less awareness has been built within the agricultural research community concerning the intersection of agricultural research, data, and power.**

## Agricultural research

**Discussions about ‘big data’ and/or ‘data science’ in agriculture start to appear in the literature in XXXX. Many of the highly cited papers mention data privacy issues, but ethical or power-related implications are not discussed in depth, if at all, and to our knowledge little guidance is given regarding *how* to consider such implications (e.g., XXXX).**

**This gap has been acknowledged within the larger food studies community, and concerns about power distribution and fairness are becoming codified within the field of agroecology (the European principles, is there something from that big meeting that happened that I’m salty about not being accepted into?). An XX working group recently released XX that provide excellent examples of guiding principles, but they are framed in the context of social science…**

**The tenets of data feminism were developed in response to a need for tools that foster awareness about the interactions between power and data science. The principles provide guidance on how to approach data science with an explicit acknowledgement of the power imbalances the work is embedded within, and therefore foment reflection on the ethical implications of the work. The principles are designed to be domain-agnostic, and the book has been cited over 2,000 times by work from a range of disciplinary contexts. However, to our knowledge, it has had limited interpretation in the context of agriculture.**

**All aspects of agricultural research – something to convince everyone they need it. Laila is a great example.**

**Agricultural research depends on data, equally so in the fields of such topics as precision agriculture, remote-sensing, and data-analytics, as well as breeding, agronomy, soil science, clearly re**

As advancements in precision agriculture, remote sensing technologies, and data analytics

**A recent paper evaluated the United States Department of Agriculture’s National Agricultural Statistics Service data reporting practices through the lens of data feminism, demonstrating the utility of such approaches for fostering creative problem solving in agricultural institutions (Rissing).**

**The goal of this paper is not to reiterate the principles laid out by D’Ignazio and XX. Nor do we intend to suggest one set of guiding principles is superior to another. Rather, our aim is to offer our interpretation of the principles of data feminism specifically in the context of agricultural research, and provide what we feel is evidence that their application lays the foundation for more transformative research.**

# Theme 1: Examining and challenging power disparities

## Historical perspective

**Agriculture has a unique relationship to power inequities compared to other domains. At its most fundamental level it involves the cultivation of land to produce food, which is a fundamental resource for human survival. Therefore, its very existence invites a potential power inequity: those who control access to land hold significant power over others. Indeed, there is a large body of scholarly work suggesting the advent of agriculture played a pivot role in the formation of social classes (Isett and miller, diamond, against the grain, child, marx). In addition to dependence on access to and control of resources, other features of agriculture likewise invoke potential power inequities. Farming is labor-intensive, and therefore invites opportunities for labor exploitation; negative environmental impacts from agriculture can disproportionately burden certain communities; agricultural interests influence public policies related to land use, taxation, trade, insurance, environmental standards, and subsidies; cultural hegemony built on agriculture legitimizes beliefs about landownership, property rights, stewardship, and dictates which voices are marginalized.**

**Maybe this is a supplementary table?**

Agricultural interests may also shape public policies related to land use, taxation, trade, and agricultural subsidies

**Political influence is often connected to land ownership or control,**

**Cultural hegemony**

The study of how historical legacies of power imbalances manifest today falls under various academic disciplines

**It plays a central role in providing sustenance, influencing political systems, reinforcing cultural norms, and impacting the environment**

Those who control access to land and agricultural resources hold significant power over others, as they can determine who has the means to sustain themselves and their communities

central role in providing sustenance, shaping social structures, influencing political systems, reinforcing cultural norms, and impacting the environment.**Agriculture It is directly connected to**

1. **Control of Resources**: Agriculture involves the cultivation of land and the production of food, which are fundamental resources for human survival. Those who control access to land and agricultural resources hold significant power over others, as they can determine who has the means to sustain themselves and their communities. Historically, landowners and elites have wielded considerable influence by monopolizing landownership and controlling the distribution of agricultural surpluses.
2. **Labor Exploitation**: Agricultural societies often rely on labor-intensive farming practices, which can create opportunities for the exploitation of labor. Peasant farmers, sharecroppers, and agricultural laborers throughout history have been subject to various forms of coercion, indebtedness, and exploitation by landowners and elites who benefit from their labor. This unequal power dynamic between landowners and laborers contributes to social inequalities and reinforces existing power structures.
3. **Political Influence**: Control over agricultural production can translate into political power and influence at the local, regional, and national levels. Agrarian societies often develop political systems in which landowning elites hold disproportionate sway over decision-making processes, legislation, and governance. Agricultural interests may also shape public policies related to land use, taxation, trade, and agricultural subsidies, further entrenching power differentials in society.
4. **Cultural Hegemony**: Agriculture is deeply intertwined with cultural practices, traditions, and identities in many societies. Dominant agricultural practices and beliefs about landownership, property rights, and stewardship of the land often reinforce existing power structures and inequalities. Cultural narratives surrounding agriculture can serve to legitimize and justify the privileged status of landowners and elites, while marginalizing the experiences and perspectives of marginalized groups such as peasant farmers, indigenous communities, and rural laborers.
5. **Environmental Impact**: Agriculture has significant environmental implications, including deforestation, soil degradation, water depletion, and biodiversity loss. Those who control agricultural resources often have the power to shape environmental policies and practices, influencing land-use decisions, resource allocation, and conservation efforts. This can exacerbate environmental injustices and disproportionately harm marginalized communities who bear the brunt of environmental degradation and climate change impacts.

Overall, agriculture's special relationship to power inequities stems from its central role in providing sustenance, shaping social structures, influencing political systems, reinforcing cultural norms, and impacting the environment.

**Arguably more**

**Power inequities have been fundamental features of agriculture since its inception.**

**Many flavors of power inequities stem from exclusive access to resources such as education, healthcare, and land, labor, and capital, the latter three being what classical economic theory describe as the foundations of wealth creation (Adam Smith).** Identifying unequal access to resources is a helpful starting point for understanding historical, as well as modern power inequities in agriculture. Delineations based on gender, race, ethnicity, class, and familial status are well documented.

**In fact, there is a significant body of scholarly work that suggests the advent of agriculture played a pivot role in the formation of social classes.**

**allowing social hierarchies based on wealth, lineage, and access to resources to form.**

**. As agricultural societies grew more complex, social hierarchies based on wealth, lineage, and access to resources became increasingly entrenched. This led to the development of social classes, with elites holding disproportionate control over resources and wielding authority over subordinate groups.**

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Yes, there is a significant body of scholarly work that supports the idea that the advent of agriculture played a pivotal role in the formation of social classes.**, and some have suggested (Isett and miller, diamond, against the grain).**

1. **The Neolithic Revolution**: The transition from hunting and gathering to agriculture, often referred to as the Neolithic Revolution, occurred independently in various regions around the world between approximately 10,000 and 4,000 BCE. This transition marked a fundamental shift in human societies, as people began to settle in permanent villages, domesticate plants and animals, and develop more complex forms of social organization.
2. **Surplus Production**: Agriculture allowed for the production of food surplus beyond immediate subsistence needs. This surplus enabled the development of non-food-producing specialized roles such as artisans, traders, bureaucrats, and rulers, who did not directly engage in food production but relied on the surplus produced by agricultural laborers.
3. **Social Stratification**: The emergence of surplus production created opportunities for the accumulation of wealth, power, and prestige by certain individuals or groups. As agricultural societies grew more complex, social hierarchies based on wealth, lineage, and access to resources became increasingly entrenched. This led to the development of social classes, with elites holding disproportionate control over resources and wielding authority over subordinate groups.
4. **Division of Labor**: Agriculture necessitated the division of labor, with some individuals specializing in farming while others engaged in activities such as craftsmanship, trade, administration, and defense. This specialization contributed to the emergence of social differentiation and stratification, as certain roles became more valued and rewarded than others.
5. **Land Ownership and Control**: Control over land, the primary means of agricultural production, became a key determinant of social status and power. Landownership conferred economic privileges and political influence, allowing landowners to extract surplus production from tenant farmers or laborers and accumulate wealth over generations.
6. **Monumental Architecture and Ceremonial Centers**: The surplus generated by agriculture often funded the construction of monumental architecture, such as temples, palaces, and administrative centers, which served as symbols of elite power and authority. These centers also facilitated the centralization of political control and the consolidation of social hierarchies.

Scholars such as V. Gordon Childe, Karl Marx, and Jared Diamond have explored these themes in their works, highlighting the transformative impact of agriculture on human societies and the development of social classes. While there may be variations in the specifics of how agriculture influenced social stratification in different regions and time periods, the general consensus among scholars is that agriculture played a central role in shaping the dynamics of inequality and hierarchy in early human societies.

Agriculture has

Understanding the historical context of a society with regards to these resources provides an

Historical artifacts often result in structural inequalitie that persist across generations.

***Discuss examples of land, labor and capital access disparities…*?**

1. **Historical Context**: Understanding the historical context is crucial to comprehending contemporary power dynamics. Many societies have experienced colonization, slavery, imperialism, or other forms of exploitation, which have left lasting imprints on social structures, economic systems, and cultural norms.
2. **Structural Inequality**: Historical injustices often result in structural inequalities that persist across generations. For example, discriminatory policies and practices in the past have led to disparities in wealth, education, healthcare, and access to resources among different racial, ethnic, and social groups.
3. **Intersecting Identities**: Power imbalances intersect with various aspects of identity such as race, ethnicity, gender, sexuality, class, and nationality. Intersectionality theory, developed by Kimberlé Crenshaw, highlights how these different forms of oppression intersect and compound to create unique experiences of marginalization and privilege.
4. **Institutional Racism and Discrimination**: Many institutions, including government, education, criminal justice, and media, perpetuate systemic biases that disadvantage certain groups while privileging others. This can include biased hiring practices, racial profiling, unequal access to justice, and stereotypical portrayals in the media.
5. **Cultural Hegemony**: Dominant cultural narratives and representations often reinforce existing power structures by marginalizing alternative perspectives and identities. Critical cultural studies examine how media, literature, art, and popular culture reflect and perpetuate unequal power relations.
6. **Resistance and Social Movements**: Despite enduring inequalities, marginalized groups have historically organized and mobilized to challenge power imbalances and advocate for social change. Studying resistance movements provides insights into the strategies and tactics used to challenge oppression and promote justice.
7. **Transnational and Global Perspectives**: Power imbalances are not confined within national borders but are also shaped by global forces such as colonialism, globalization, neoliberalism, and geopolitical conflicts. Understanding global power dynamics requires analyzing historical and contemporary patterns of imperialism, economic exploitation, and cultural imperialism.
8. **Policy Implications**: Research on historical power imbalances informs policy debates and interventions aimed at addressing inequality and promoting social justice. This includes affirmative action policies, reparations for historical injustices, diversity initiatives, and human rights advocacy.

## Modern expressions

**While historical legacies shape current states, it is important to recognize how modern systems legitimize or challenge historical power artifacts. While it is not reasonable to expect an agricultural scientist to be an expert in these topics, conceptual tools have been developed to aid in dissecting where and how power inequities may manifest.**

### Table x. Domains through which power is expressed and experienced (adapted from XX)

|  |  |  |
| --- | --- | --- |
| **Domains** | **Description** | **Select modern agricultural example** |
| **Structural domain** | Organizes distribution of power through laws and policies | The budgets of the black land grants? The heirship laws in the south? |
| **Disciplinary domain** | Administers and manages distributions of power by implementing and enforcing (or not enforcing) laws and policies | Pisgah suit about usda resources, the NASS survey issues? |
| **Hegemonic domain** | Circulates ideas related to power | Land Grant Universities extension systems staffed by white men to help white men  Techno-focused solutions |
| **Interpersonal domain** | Individual experiences, expression, and awareness of power | Being a woman doing ag field work paper? Andrea/Angie’s paper? |
|  |  |  |

## Challenging through research

Scientists have a role in this…

This is not an all-inclusive list. It is meant to provide inspiration, and to demonstrate it’s utility.

### Technical audits

Identifying areas of inequities requires domain knowledge...Andrea Rissing’s NASS paper?The Canada soil inequity paper

### Listening to and serving the margins

Women land owners

### Legitimizing other’s knowledge

Disparities between university and farmer field trials (Andrea’s cc thing, Seig Snapp’s thing, Anabelle Laurent’s thing). Stefan’s field workable days, iowa nitrogen project, others?

*contemporary power dynamics in agriculture. Smith emphasized the importance of the aforementioned factors in driving wealth creation, and in modern agricultural systems, and by adopting an expanded definition of capital (the flora’s stuff?) we can see how power imbalances arise due to unequal access to these resources. Therefore, the enduring relevance of the distribution of land, labor, and capital serves as a starting point for examining power inequities in XXXXXx. Who owns land? Who has access to capital? Who manages land? Who works the land?*

*Adam Smith's classical economic theories regarding land, labor, and capital provide a lens through which we can understand contemporary power dynamics in agriculture. Smith emphasized the importance of these factors of production in driving economic growth and wealth creation. However, in modern agricultural systems, power imbalances often arise due to unequal access to these resources.*

*Large agribusiness corporations, with substantial capital and land holdings, wield significant influence over the agricultural sector, exerting control over production processes, market prices, and regulatory policies. Meanwhile, small-scale farmers and agricultural laborers, who possess limited capital and often lease land, find themselves at a disadvantage, facing challenges such as exploitation, low wages, and barriers to market access. This concentration of power in the hands of a few entities not only perpetuates inequities within the agricultural supply chain but also impacts broader socio-economic dynamics, including rural livelihoods and food security. Thus, Smith's insights shed light on the enduring relevance of understanding the distribution of land, labor, and capital in shaping power dynamics and inequalities within contemporary agriculture.*

***Land and, labor, and capital have been expounded as the foundations of wealth (adam smith), and as such any accumulationthey are likewise the foundations of agriculture.***

For myriad reasons, researchers may not have the ability, resources, or power to do research that aligns with their desires to directly challenge power. However, the way you do research can also present an opportunity to redistribute power more equitably. The next two sections present guidance relating to the way in which research is done.

**NRCS staff are. Impacting their education while also understanding women’s conservation needs.**

**Shifting the power to the farmers to collect data that is meaningful to them.**

**Listening to minoritized farmers.**

**When working on an agricultural problem, it is imperative to understand the relations of power Who owns land, who manages land, who works the land**

**Identifying who is being minoritized, and amplifying their challenges, their perspectives, and their needs is a baller thing to do. For example, the national narrative in the United States is that land is owned by white men. Technical audits are useful tools for separating power narratives being . The Midwestern United States contributes XX of the world’s maize and soybean production on a yearly basis, and contains some of the most productive and expensive arable land in the US. A recent estimate showed XX% of this land is owned (and an additional xx% co-owned) by women (CITE). In XX NASS allowed for more than one person to identify as a farmer-operator, data suggested XX% of farm operators were male, Women were not permitted to own land until XX, and culturally are often not seen as capable of making farming decisions**

**Women land-owners represent a minoritized group. By using a technical audit to examine power**

**Work**

**is an agriculturally productive region**

**Listening to the margins**

**Understanding power relations is needed in order to understand who is being minoritized.**

* 1. Who owns land, who manages land, who works the land,
     1. Power matrix, applied in agriculture
        1. Women
        2. Workable field days

# Theme 2: Reciprocity in farmer relations

**Traditionally, research plots have been utilized for controlled experiments, allowing researchers to isolate variables and study specific phenomena in a controlled environment. However, as agricultural research has evolved, there's been a growing recognition of the importance of conducting trials at the farm scale to better understand how research findings translate into real-world agricultural systems (CITE).**

***Advances in the ability to organize and streamline data collection from farm environments has opened the door for more nuance, as well as more efficient use of resources in blending research plots with farm fields to answer novel research questions.) this sentence needs help***

**There are significant opportunities for performing better, more statistically powerful, and more relevant public research in collaboration with farmers (igancio’s paper, laila’s, mother daughter stuff, participatory breeding thing). However, these arrangements require careful consideration to support equitable and fair power relations.**

**There are numerous guides for farmers on conducting on-farm research (Stefan’s list). However, to our knowledge, there are fewer resources suggesting best practices for the scientists, researchers, and organizations who might collaborate with farmers in their research efforts. NEED TO READ THAT one paper angie sent me, they talk about this, need to acknowledge that.**

## Compensation

**The context for farmer involvement in research can vary widely. A project may be initiated by a university researcher and the farmer is only expected to contribute land and management of the crop, wherein the research is ‘owned’ by the university. Farmers may simply give researchers access to data previously collected on their farms. Farmers may initiate a research project with the researcher contributing coordination or data analysis. Regardless of the degree of involvement, farmers should be compensated. The form this compensation takes is particularly germane to this paper’s topic of power.**

**In many on-farm research arrangements, farmers are compensated by ‘the experience and knowledge gained from the activities,’ ‘access to research findings,’ or a similarly self-aggrandizing phrase. This practice is elitist, extractive, disrespectful, and in the authors’ opinions, unacceptable. Participating in research projects requires farmers to allocate significant time, resources, and land for experimentation and coordination of data collection. Projects should provide tangible compensation that acknowledges the farmer’s investments and sacrifices, ensuring fair renumeration for their professional contributions to the research process. Fair compensation also fosters mutual respect, and builds more equitable partnerships that are more likely to be sustained in the long-term. Failing to provide compensation further exacerbates historical biases, favoring well-resourced farmers in access to on-farm research activities.**

**Monetary compensation is the most direct form of compensation. Paying farmers for their participation in research has been shown to promote a climate of mutual respect between farmers and researchers (Thornley 1990). Since its inception, Practical Farmers of Iowa has incorporated farmer payments in grant proposals, wherein a farmer received a set dollar amount for conducting an on-farm trial, and 1.5 times that amount if the trial included a farm tour open to the public (Liebig paper). Criticisms of monetary compensation include warping of incentives, creating selection biases towards those who are not truly interested in the research. While these unintended artifacts are indeed possible, we feel the benefits outweigh the concerns in most cases.**

**While monetary remuneration may often be preferable, it may not always be possible. The reality of funding limitations and grant restrictions on how monies are spent necessitates exploration of other methods of compensation. ‘Work a day’ compensation, wherein researchers offered to work on the farm for some period of time in exchange for research collaboration, showed benefits to both participating farmers and university researchers (Liebig et al. 1999). However, the high degree of mechanization on many farms and liability issues may restrict this to unique situations. A recent on-farm study comparing precision nitrogen management approaches found most farmers would not have participated without payment, but they also appreciated the technical training and assistance that accompanied the project (Laila’s paper). Alternatives such as training opportunities, technical assistance, or in-kind support may be acceptable alternatives to monetary compensation, but should be considered carefully, and exact dollar values on the compensation should be calculated and communicated. Arrangements wherein a donation is made on behalf of the farmer as compensation also merit careful deliberation. Without deep considerations of the context, issues concerning choice and control, transparency, cultural sensitivity, perceived influence, and perceptions of tokenism of this practice may undermine good intentions.**

*Do I want to get into specifics on the range of participation? Probably not.*

Farmer involvement in research can vary widely. A project may be initiated by a university researcher and the farmer is only expected to contribute land and management of the crop, the research is ‘owned’ by the researcher and (Francis et al. 1992).

1. **Perception of Tokenism**: Farmers may perceive the donation as tokenistic if it is not accompanied by meaningful recognition or tangible benefits. If the donation is seen as a mere symbolic gesture without addressing their actual needs or concerns, it may not be well-received.
2. **Choice and Control**: Farmers may prefer to have control over how any compensation or recognition is allocated. Donating to a non-profit organization on their behalf may not align with their priorities or preferences. Farmers may have specific needs or initiatives they would like to support directly.
3. **Transparency and Accountability**: It's essential to ensure transparency and accountability in the donation process. Farmers should be informed about which non-profit organizations will receive the donations, how the funds will be used, and any administrative fees or overhead costs associated with the donation.
4. **Equity and Fairness**: There may be concerns about equity and fairness if donations are made inconsistently or disproportionately among participating farmers. All farmers who contribute to the research or initiative should be treated fairly and receive equal recognition and compensation for their efforts.
5. **Cultural Sensitivity**: In some cultural contexts, the practice of donating on behalf of someone else may not be appropriate or may even be considered disrespectful. It's important to consider the cultural norms and preferences of the farmers involved and ensure that any compensation or recognition aligns with their values and beliefs.
6. **Long-Term Impact**: While donations can provide immediate support to non-profit organizations, their long-term impact on farmers' livelihoods and well-being may be limited. Sustainable solutions to address farmers' needs and challenges require more comprehensive approaches that involve capacity building, policy support, and systemic change.
7. **Perceived Influence**: There may be concerns about the perceived influence of donors on the research or initiatives being conducted. Farmers may worry that accepting donations could compromise their independence or autonomy in decision-making processes.

**How to judge whether the compensation is soft??**

Instead of monetary payments, other incentives such as access to research findings, training opportunities, technical assistance, or in-kind support (e.g., provision of inputs or equipment) could be offered to farmers. These incentives may be more aligned with the goals of fostering collaboration, knowledge exchange, and mutual benefit between researchers and farmers.

**Public funding sources, and private sources committed to fair and equitable research activities, should explicitly provide funding for monetary compensation of farmers and require renumeration of farmers for their participation in research projects, xxxx**

**Laila’s paper showing they need to pay them.**

**This section needs a figure.**

Additionally, participating in research projects often requires farmers to allocate significant time, resources, and land for experimentation and data collection, which can detract from their primary farming activities and livelihoods. Providing monetary compensation acknowledges the farmers' investments and sacrifices, ensuring fair remuneration for their contributions to the research process. Moreover, compensating farmers fosters more equitable partnerships between academia and agriculture, promoting mutual respect, collaboration, and long-term sustainability in agricultural research endeavors.

* + 1. **Compensation- deserves its own section**
       1. **Perpetuates an extractive mentality. The ‘gift’ of ‘knowledge’ is XXXX.**
       2. **Grants should require any on-farm collaboration to be monetarily compensated**

## Two-way sharing

## Metrics for success

Common metrics for projects include

Common objectives for projects working with stakeholders include increasing knowledge, creating new relationships

Trust was builtpower and resources were shared, learning happened in both directions, transformation happened in both directions, inspiration in both directions

* + 1. **Metrics for the relationship**

# Theme 3: Framing as a strength

* + 1. **Wizard and the Prophet, they are both demographically very similar, but have very different values and histories that are expressed in their world framing**
       1. **No such thing as an objective scientist**
    2. **Embrace your framing, it is there whether you acknowledge it or not**
       1. **Example? Need to think of a good one.** 
          1. **Do cover crops reduce weeds?**
          2. **Are cover crops as effective at reducing weeds as herbicides?**
          3. **Different framing, could have same figure, your figure should say why you are including it, what your take-away is. Maybe use PFI?**

## Contextualize (don’t be a big dick data ninja)

There are numerous initiatives that advocate for free and open sharing of data generated by governments, industries, and research institutions ((CITE). The open science movement champions the ethos of transparency, collaboration, and accessibility in scientific research; as a corollary the movement promotes the unrestricted sharing of data (CITE). Additionally, there are similar efforts surrounding open government data . Indeed, the sharing of data has facilitated more efficient use of resources for research through data re-use (Piwowar), and in some countries freely available governmental data XXX both public and private entities leverage governmental data that is freely available (Piwowar). However, the open sharing of data also introduces risks regarding data misinterpretation or misuse. Data shared openly may be used out of context.

FAIR data principles (findable, accessible, Interoperable, Reusable)

Narratives should be included in the meta data.

Data should be treated within the gift culture of scholarship, in which goods are bartered between trusted colleagues rather than treated as commodities (Wallis).

Practices of releasing, sharing, and reusing of data in CENS reaffirm the gift culture of scholarship, in which goods are bartered between trusted colleagues rather than treated as commodities.

The open science movement champions the ethos of transparency, collaboration, and accessibility in scientific research, advocating for the unrestricted sharing of research findings, methodologies, and data. Embracing principles of open access and open data, this movement seeks to democratize knowledge production, accelerate scientific progress, and foster innovation by removing barriers to information. Indeed, the sharing of data has facilitated unprecedented opportunities for collaboration, reproducibility, and interdisciplinary research, enabling scientists worldwide to build upon each other's work and address complex global challenges more effectively. However, while the open sharing of data holds immense promise, it also introduces risks, particularly concerning the potential for data misuse or misinterpretation. Data shared openly may be used out of context, leading to misrepresentations, erroneous conclusions, or even harm if not properly understood or interpreted. Therefore, while promoting data sharing, it is crucial for researchers to uphold ethical standards, provide context and metadata for shared data, and actively engage in transparent and responsible data stewardship practices to mitigate the risks associated with data misuse in the open science ecosystem.

Top of Form

* + 1. **Why is this helpful?**
       1. **Cropscape data article (double cropping)**
       2. **NASS data increase in women producers**
       3. **Andrea R’s work**
    2. **Fill out the ‘what is this data’ card**
    3. **Present your results to people connected with the data before publishing them**

**Option 2**

1. **What research you do**

Data feminism is acutely tuned to the interactions between data and power, and the first two tenets relate directly to it. As an agricultural researcher, understanding the matrices of power within which you are working can help you identify research that is, at least directionally, working to dismantle configurations of unearned structural privilege and oppression. Power as related to agricultural research has

While the examples we provide are broadly specific to the US agricultural power context, the themes are applicable at any scale and location.

When thinking about a given system, one may ask ‘is someone being minoritized?’ Once that has been identified, research can be designed that amplifies, validates, XX their experiences. Angie’s work, Tom Kaspar, Matt Liebman.

Even seemingly technical research questions are embedded within a power matrix. If you are, for example, trying to understand

For researchers who are concerned with the power context of their work, examining how a research question fits into the domains of power (Table X) can be helpful. At a high level, agricultural researchers can think about how their research can help to address legacies of power imbalances, more evenly distribute power, expose problematic power imbalances, or simply challenge common thought patterns.

Who is your research serving?

Dismantling configurations of structural privilege.

Is your research working to address legacies of power imbalances, more evenly distribute power, or

* 1. **Power matrix, applied in agriculture**
     1. **Women**
     2. **Workable field days**
  2. **Listen to the margins, who is being minoritized in your system?**

1. **How you do it**

For myriad reasons, researchers may not have the ability, resources, or power to do research that aligns with their desires to directly challenge the power matrix. However, the way you do research can also present an opportunity to redistribute power more equitably. Practicing reciprocity, utilizing metrics for measuring the success of exchanges, and putting in the effort to contextualize data are XX.

* 1. **Reciproprocity in farmer relations**
     1. **Compensation- deserves its own section**
        1. **Perpetuates an extractive mentality. The ‘gift’ of ‘knowledge’ is XXXX.**
        2. **Grants should require any on-farm collaboration to be monetarily compensated**
  2. **Establish metrics for collaborative relationship**
     1. **On/farm collaboration**
     2. **Other organizations**
  3. **Contextualize (don’t be a big dick data ninja)**
     1. **Why is this helpful?**
        1. **Cropscape data article (double cropping)**
        2. **NASS data increase in women producers**
        3. **Andrea R’s work**
     2. **Fill out the ‘what is this data’ card**
     3. **Present your results to people connected with the data before publishing them**

1. **How you relay it**

The way you relay data

* 1. **Framing**
     1. **Wizard and the Prophet, they are both demographically very similar, but have very different values and histories that are expressed in their world framing**
        1. **No such thing as an objective scientist**
     2. **Embrace your framing, it is there whether you acknowledge it or not**
        1. **Example? Need to think of a good one.** 
           1. **Do cover crops reduce weeds?**
           2. **Are cover crops as effective at reducing weeds as herbicides?**
           3. **Different framing, could have same figure, your figure should say why you are including it, what your take-away is. Maybe use PFI?**

1. **Supplemental material with our ‘who I am’ statements**

**Agricultural research data, its interaction with power**

**Current efforts, why data feminism (big data mentions social issues but not in depth, the agroecology folks’ stuff which has a fair amount of overlap but is ‘clubby’ and ‘exclusive’, we don’t want to follow the environmentalists’ problem of insult you then ask you to join us)**