

Serving Beginning and Socially Disadvantaged Farmers in the U.S.: A Case Study Using the Agent Based Approach (ABA) to improve access to government programs and support

Mara Braddy^{a,b,c,@}

^a Cornell University

^b Jeb E. Brooks School of Public Policy

^c Cornell Institute for Public Affairs

@ email: meb448@cornell.edu

ABSTRACT: As the number of farmers in the U.S. continues to dramatically decrease, it's imperative that the system of support in place for beginning and historically underserved farmers is robust and accessible. The last several Farm Bill renewal cycles have expanded on programs that directly support this initiative, but frustration and trepidation about USDA funded programs prevails within farming communities and advocacy groups. This paper outlines an investigation using the Systems Thinking and the Agent Based Approach (ABA) to identify gaps in the system that prevent Beginning and Socially Disadvantaged Farmers (BSDFs) from accessing government support, to locate the areas for improvement in order to eliminate the barriers farmers face, and finally, find ways to concentrate more governmental support towards empowering the next generation of farmers.

Keywords: Systems Thinking | DSRP Analysis | Agent Based Approach | CAS Analysis | Recommendations

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Introduction

THE RESPONSIBILITIES OF FARMERS are not well understood by the general public. Beyond harvesting crops and raising livestock, farmers must apply for loans or grants to get their farm off the ground, purchase land, equipment, seed, animals, and all while ensuring they are meeting the food needs of their community. Farmers who are well supported in their careers are critical to a functional, resilient food system, and to ensuring that the future of agriculture can withstand the turbulent impacts of climate change. The foundation of our food system depends on the success of a farmer's hard work, and whether they have access to the resources they need to continue growing healthy food as well as tend the land in sustainable and regenerative ways. However, many new and historically underserved farmers (mainly farmers of color, veterans, and anyone who has faced social and/or economic challenges related to farmland access) are unable to adequately access governmental resources, despite many changes to farm legislation in recent years in favor of such initiatives¹. Furthermore, the challenges farmers already face are expected to escalate in the coming decades as the cost of farmland

¹ Juli Obudzinski, New team at USDA to help new farmers, , 2020



continues to rise, access to markets and infrastructure becomes more limited, and the uncertainty of climate change brings on devastating impacts to our communities ². If the barriers to government resources for farmers continue to increase, the more farmers we lose, and by extension, the more viable farmland we lose to large agriculture corporations whose interests do not align with sustainable agriculture principles. It's imperative that we lower the barrier-to-entry for beginning and socially disadvantaged farmers and ensure robust policies are in place to support them and future generations of farmers.

In this paper, I will investigate the current system of government support for beginning and socially disadvantaged farmers (which I will refer to as BSDFs) in the U.S. using the theory of Systems Thinking. To do this, I will apply the analytical framework of the Agent Based Approach (ABA) developed by Drs. Laura and Derek Cabrera at Cornell University. My analysis will be centered on three programs within the United States Department of Agriculture (USDA):

- the Farming Opportunities and Outreach (FOTO) Program;
- the Beginning Farmer and Rancher Development Program (BFRDP); and
- Section 2501(Outreach and Assistance to Socially Disadvantaged and Veteran Farmers and Ranchers Program).

In brief, FOTO is a new initiative established in the 2018 Farm Bill that combines two of USDA's flagship training and technical assistance programs for beginning and socially disadvantaged farmers – BFRDP and Section 2501. The BFRDP is a competitive grant program that provides funding for the education and training of beginning farmers and ranchers. Section 2501 is a program dedicated to helping historically underserved producers gain access to USDA credit, commodity, conservation and other programs and services. The goal of this analysis is to identify the gaps in the system that prevent BSDFs from accessing government support, to locate the areas for improvement in order to eliminate the barriers farmers face, and finally, find ways to concentrate more governmental support towards empowering the next generation of farmers.

Methods

WHILE THE FUTURE OF OUR PLANET and our agriculture systems may be uncertain, and seemingly too big or too complex to understand,



the theory of Systems Thinking provides us a lens through which to more clearly understand them. Systems Thinking is the field of study that aims to understand how to think better about the real world “wicked problems” we face ³. Wicked problems result from the mismatch between how the real world works and how we think it works ⁴. To that end, Systems Thinking theory posits that we must change our way of thinking about “wicked problems” in order to affect the wicked problems in the way we desire ⁵.

Every individual has their own, unique understanding of the world around them. One way to represent this ‘understanding’ is through mental models. A mental model is the relationship between information and the structure of that information ⁶. They are composed of many bits of information, and facilitate how we understand new information received as feedback from the real world, and in turn help to explain or relay information about the nature of reality. Everyone is born with the ability to form mental models. However, most of our mental models are misaligned with the real world, either due to missing or incorrect information, or due to other social, emotional, and political influences ⁷. Put another way, our mental models are full of bias. The real world is networked, variant, nonlinear, and constantly evolving, and often our mental models do not reflect this reality. Systems Thinking enables us to more closely align our current mental models to reality, to encourage iterative feedback from the real world ⁸, and to ensure our mental models are giving us an accurate representation of the challenges we want to overcome.

To best explain how I applied the theory of Systems Thinking to the current system of government support for BSDFs, I invite you to picture a farm in your head. The first image that comes to your mind is probably very green, bright, and warm. The farm may be big or small, but no matter the size, you are also likely imagining other things on the farm besides the plants or crops. Perhaps you see structures like barns and other buildings. Those structures may be full of tools and equipment. Perhaps you are thinking of the people on the farm, leaning over their growing vegetable rows, spreading seed, or gathering eggs from the chicken coop. The people use the tools to tend to the plants, the chickens make eggs for the people to eat, and the plants use energy from the sun to turn light into sugars. Each element of the farm interacts with another element to create the “farm system.” Imagine what would happen if we change one of the interactive elements on the farm (shading the plants from the sun, buying a new piece of equipment, putting in a new structure). It would change the way those pieces of the farm system interact. In other words, we can change the way the system behaves.

The “farm system” concept can be applied to any system we can imagine, and with the right tools, we can analyze and identify the dynamics of a system’s behavior. Systems thinkers use the term “Complex Adaptive System” (CAS) ⁹ which is any system that is composed of many interacting parts. The parts interact simultaneously according to a set of simple rules the agents follow (‘grow here, plant there, eat this, don’t eat that’). The interacting parts are called “agents,” and the combination of many agents simultaneously following the same set of rules creates the emergent behavior of the system ¹⁰. The parts, agents, and rules can change, and the result of that change may be a new emergent behavior – the system can adapt. The CAS is at the heart of Systems Thinking as it helps us understand that adaptive systems respond as a whole rather than as individual parts that respond independently of one another ¹¹. The goal of understanding a CAS (or in this case, understanding government support for BSDFs) is to understand the collective behavior of the system so that we can affect its outcome ¹².

In tandem with CAS, Systems Thinkers also use Agent Based Modeling (ABM) ¹³ which is similar to CAS in many ways. But where it differs is that ABM provides a method for creating mathematical models of CASs in action. ABM provides a means to define and quantify the parts, agents, and rules in the system, and run computer program experiments where the outputs of those systems can be measured and analyzed ¹⁴. It is a powerful tool for systems thinkers who want to predict the outcome of CASs. But a major downside to ABM is that it is limited in its applicability ¹⁵. Computer models need specific inputs and specific data to predict the outcome of the system. When it comes to policy-level issues, like government support for farmers, the inputs are much more variable. ABM requires data that is often unavailable for the systems we want to analyze, the variables we wish to define may be vague, and the computational skills to code a program that can run these models often requires one to be trained in computer science ¹⁶.

To address the challenges and limitations with ABM’s broad applicability, Drs. Laura and Derek Cabrera developed the Agent Based Approach (ABA) ¹⁷ which serves as an alternative to ABM, most commonly with policy-level models. The basic process of ABA is derived from the insights gained from CAS analysis, but can be applied universally regardless of degree, scale, or environment.

As a tool, ABA is well-suited for analyzing and understanding the system I’ve chosen to investigate in this paper: government support for beginning and socially disadvantaged farmers. Following the step-wise process of ABA allows us to see the underlying structure of farm policies, to understand the complex relationships playing out

between farmers, agency administrators, and farm policy advocates, and identify the simple interaction rules that everyone working within the system follows. Once the system is understood, recommendations can be made to change and improve the way the system behaves overall. If the current structure of government support is improved for BSDFs, when resources and funds to begin their farming journey are more easily accessible, then our farmers, food, and communities have everything to benefit.

Over the next few sections, I will outline the steps of ABA with an expressed focus on the analysis of policies aimed to support BSDFs as a CAS with the aim of generating viable policy recommendations.

Implementing The Agent Based Approach (ABA)

Step 1: DSRP Analysis of the System

AT THE ROOT of systems thinking are the four simple rules called the DSRP Rules (Distinctions, Systems, Relationships, and Perspectives)¹⁸. When combined, these universal rules give us the ability to be adaptive and fluid in the way we structure information (Table 1).

¹⁸ 3

Patterns	Elements
Distinctions (<i>D</i>)	identity (<i>i</i>) ↔ other (<i>o</i>)
Systems (<i>S</i>)	part (<i>p</i>) ↔ whole (<i>w</i>)
Relationships (<i>R</i>)	action (<i>a</i>) ↔ reaction (<i>r</i>)
Perspectives (<i>P</i>)	point (<i>ρ</i>) ↔ view (<i>v</i>)

Table 1: Table of DSRP Rules.

Together, they create the structure of any and all complex adaptive systems. To that end, DSRP rules can be represented visually using a map (for the analysis of the system in question, I used Plectica.com, an online mapping software, though there are many other mapping softwares and techniques that one could use). Square 'cards' represent distinctions, where lines drawn between the cards represent relationships, groupings of cards represent systems, and eyeball-dot icons represent perspectives on and within the system we are mapping. The DSRP Mapping Method¹⁹ introduces a process by which information can be placed and rearranged into structures that reveal new insights about the information.

¹⁹ 4

Essential to the process of DSRP mapping is the Systems Thinking Loop (or 'ST Loop') where one incorporates the feedback they receive from the real world into their map construction, improving the way the information is conveyed on and within the system²⁰. When the map is exposed to new information, the map can be changed, thus better fitting our mental models to the real world. My investigation

²⁰ 3



of the government support system for BSDFs depended heavily on ST Loops and checking my mental models against the real world with experts on the subject as well as feedback from colleagues on the understandability and feasibility of my map.

Another essential piece to DSRP Mapping is the use of Cognitive Jigs²¹. In the same way you would use a stencil to draw a particular shape, or a seedling tray to pot up many little seedlings, Cognitive Jigs are common underlying structures of systematic thought that are used to make our thinking faster – to get the thinking done quicker. They are hugely beneficial during the mapping process in that they are content agnostic, meaning they can be used across any subject or discipline²². With cognitive jigs, mapping out a complex policy system becomes simplified, and better at conveying information.

The final key piece of DSRP analysis lies in its predictive powers. By following DSRP rules, we can predict both the gaps we need to fill our knowledge on a topic, field, or domain, and where we can best spend our efforts to reach a solution²³. With the ability to predict the structural possibilities of ideas, cognitive jigs, feedback loops to check our mental models, and with the simple DSRP rules for thinking, it's time to move on to the next step in ABA.

Step 2: POSIWID and CAS Analysis

THE NEXT STEP IN ABA is the POSIWID and CAS Analysis²⁴. Systems and management scientist Stafford Beer coined an important and popular Systems Thinking term that “the purpose of a system is what it does,” shortened to POSIWID²⁵. The term explains how often the observed purpose of a system is at odds with the original way the system was intended to operate. POSIWID Analysis asks us to shift our focus from the ‘expectations’ we have of the system to what it's actually doing. The process involves identifying the difference between the “current POSIWID” and the “future POSIWID,” which lays the groundwork for a deeper analysis of the CAS²⁶. We must continually ask ourselves, what is the system currently doing, and what would we like it to do in the future? Is there alignment between the intended purpose and the actual outcomes? Is there a way to alter the structure of the system to drive a new emergent behavior?

The POSIWID Analysis is critical to the entire ABA process because it opens the door to finding the leverage points within the system where one can have the greatest effect on the outcome: the agents and the simple rules they follow. To that end, the purpose of the CAS analysis table is to identify the agents within the system and the

simple rules²⁷. As we know, agents act according to the rules they follow, and as such, if we change the rules, we change the behavior of the agents, and the behavior of the systems as a whole. The CAS Table will eventually become the backbone of the Recommendations we make for the system in question.

²⁷ 4

Step 3: Rubric and Recommendations

WE HAVE REACHED THE CRUX of the entire ABA process – the reason we started in the first place – to make recommendations for the given system. Pulling from the POSIWID analysis, we must create a set of ‘design principles’ that all future recommended changes to the system must meet. This step requires identifying the underlying pattern that connects all future recommendations, so that no matter the problem, system or issue we aim to address, all future changes do not fall into the same pattern that generated the problem in the first place. All recommendations must line up with future POSIWID. Of course, all recommendations can be adapted based on learning new information. But if a recommendation violates any of the principles, it must be rejected.

Now that we have a basis for analyzing a CAS using the ABA Method, I will outline how these techniques were applied to the current government support system for BSDFs, and how I identified recommendations to improve the system’s outcome.

Results

I BEGAN MY DSRP ANALYSIS of the government support for BSDFs system by drawing three simple cards; one for “Congress and Senate,” one for “USDA,” and one for “Farmers” with a line drawn between each card, showing a linear relationship between the three distinctions (fig. 1).

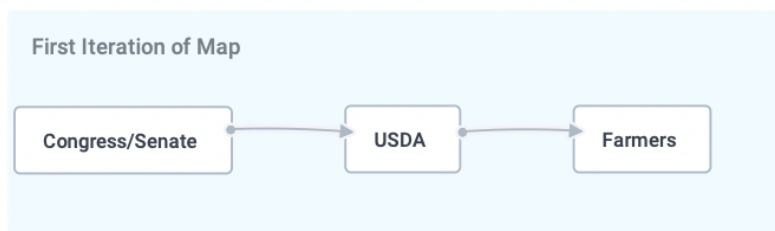


Figure 1: First iteration of the DSRP Map given just a simple idea about how the system worked.

This was the most simplified version of the system's structure with the limited information I had at the time, but with a vague idea how I thought the system worked. Before diving deeper into the literature, I had to create the boundaries of the map. In Systems Thinking terms, these are my "Framing and Stopping" rules which are designed to keep my thinking in check, to stop me if my analysis gets too broad, or if I'm overloading the system with information.

Framing and Stopping Rules

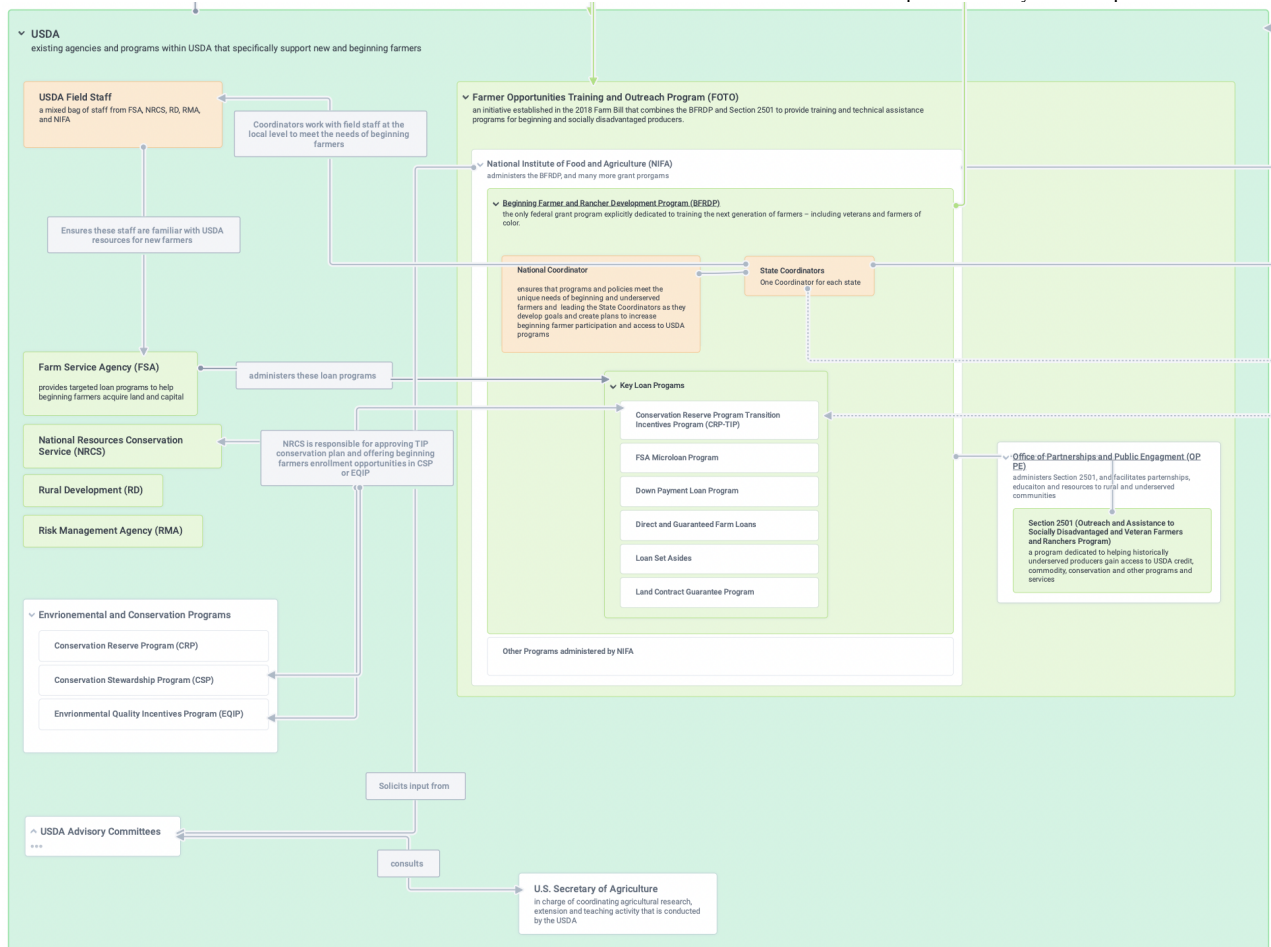
1. **Goal:** To understand the system of governmental support for beginning and socially disadvantaged farmers in the U.S. as it currently exists
2. **Scope:** 2018 Farm Bill provisions and other current USDA programs that help beginning and socially disadvantaged farmers
3. **Demographics:** beginning and socially disadvantaged farmers (defined by the USDA as someone who has been farming less than 10 years. includes first-generation farmers of all genders, age, nationality, and color, veterans, and ranchers. essentially, anyone who has faced social and/or economic challenges related to land access.)
4. **Qualities:** ability to reveal where the gaps/barriers exist to accessing governmental support and resources
5. **Desired Output:** reform/relax policies that create barriers to new farmer support, and develop policies that increase the number of new farmers and small farm ownership

With more time and research, I began flushing out, adding to, and expanding on the distinctions, part-whole systems, relationships and perspectives within these boundaries.

My initial research revealed that this system is flush with distinctions (shortened to 'Dio'). Many 'things' had to be put on the map in order to tell the full story. From there, the scattered mess of cards came together into several part-whole systems (shortened to 'Spw') – and several Spws within Spws – further emphasizing that government funding is a complex system with many interacting parts (fig. 2).

After creating the Dios and Spws of the various USDA programs, natural relationships (shortened to 'Rar') started to form in a way that better illustrated how policymakers, administrators, and the grassroots players are all connected in this system. The next challenging task was to draw the relationship lines between the parts within the Spws. Many relationships of varying function and definition exist within the USDA which are made all the more complex by how different agencies and offices within the USDA interact with one

Figure 2: Screenshot of many Dios and Spws in the system map.



another to deliver services to the public²⁸. Because I decided to focus primarily on the programs that are directly involved in distributing funding and resources to BSDFs, my framing and stopping rules prohibited me from drawing up any other distinctions or relationships within the USDA that do not directly relate to FOTO, BFRDP, or Section 2501 (fig. 2).

²⁸ 6

In these beginning stages of the map building, key information about how funds flow through the federal system can easily get lost in the noise. Incorporating cognitive jigs during this stage helped the information stick together. The “barbell” jig is a basic structure where two ideas or things have a relationship line connecting the two of them together²⁹. The barbell jig can be further expanded upon by adding a card to the relationship line that further defines the relationship between the two ideas. Many simple barbells in my map evolved into RDS Barbells, or “Relate, Distinguish, Systematize”³⁰

²⁹ 3

³⁰ 3

which are ways to deconstruct the complexity inside the relationship in question. Because of the nature of the relationships that developed in this type of system, nearly all of the barbells in the map are also RDS barbells that expand upon the interactions between the programs and groups involved. A major RDS barbell in my map is the relationship between advocates and BSDFs, which ended up looking like a circular feedback loop (fig. 3). Further thoughts on the significance of the RDS are continued in the Discussions section.

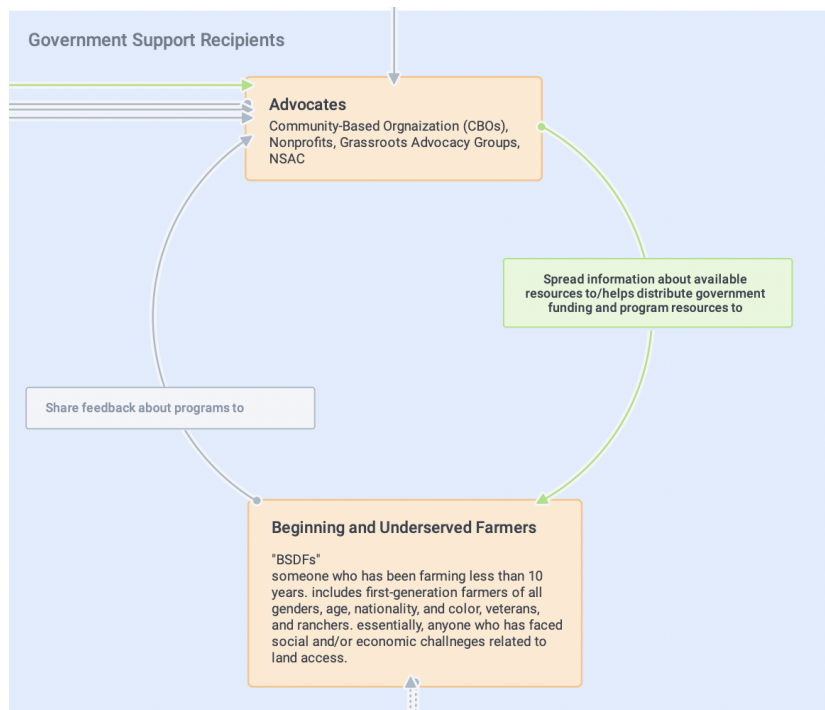


Figure 3: An RDS Barbell feedback loop showing the relationship between Advocates and BSDFs.

In further organizing the DSRP map, it also became clear that several part-party jigs would need to be used to more clearly communicate the information. The relationship dynamics playing out between Congress and the Senate in drafting and passing the Farm Bill have been simplified for the purpose of this investigation, but the power of the part-party jig is that I can accurately represent these dynamics and all their complexity with simple cards and lines drawn between them. (fig. 4)

The nature of DSRP analysis is that we are constantly applying the feedback we receive from the real world to improving the map which is a representation of my mental model of the system. The shape, distinctions, and regions of my map shifted many times over this course of this investigation, and I anticipate I will create more iterations of the map as I learn more about the intricacies of farm

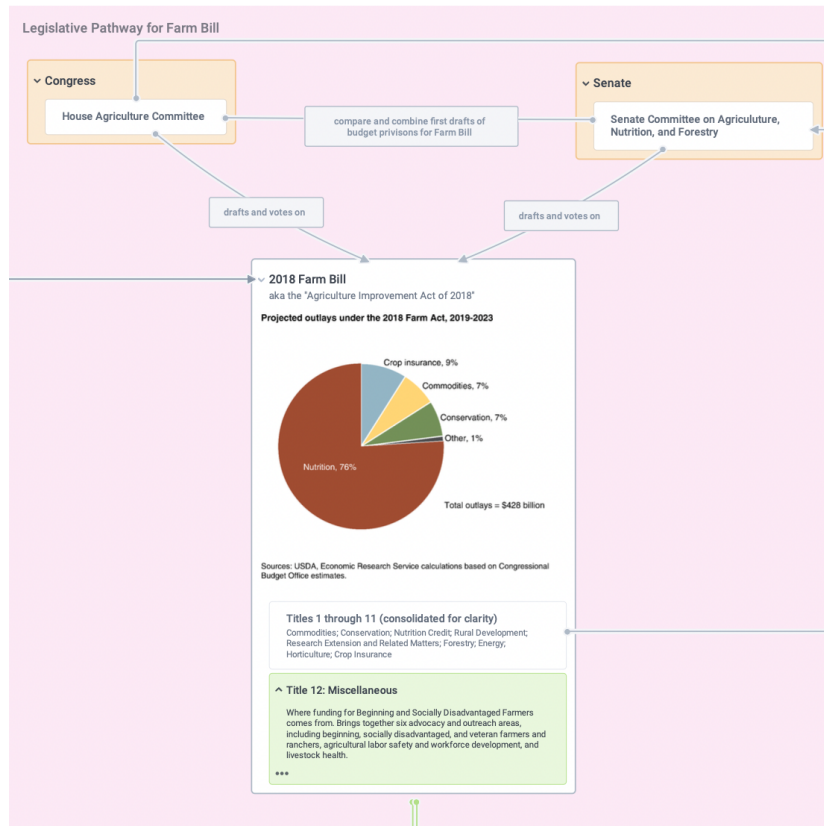


Figure 4: Part-party jig.

policy implementation, and incorporate feedback from people who work and live within this specific system. There is no “end point” per se of a DSRP map, but there are more steps to the ABA process that must be considered in order to reach our policy recommendation goal.

POSIWID Analysis, CAS Analysis, and Recommendations

THE FOLLOWING TABLES OUTLINE the Root Difference Analysis (tab. 2) and CAS Analysis (tab. 3) performed on the system, and finally the Recommendations Rubric which propose possible changes to improve the system. The bulk of information for these analyses came from three NSAC website articles detailing findings in reports from the Economic Research Service (ERS) that explicate on the cycle of funding reductions to support small farm ownership and BSDFs ³¹.

³¹ 1; 7; and 6

Recommendation Rubric

No specific recommendation should violate these principles:

CURRENT System POSIWID	FUTURE System POSIWID	Root Difference
Government support programs for BSDFs are exceptionally well designed at creating barriers in accessibility, limiting small, new farmer funding opportunities, and creating confusion over program rules and coordinator roles.	Government support programs for BSDFs are exceptionally well designed to support new and historically underserved farmers, making land ownership more equitable and accessible, and facilitating mass engagement in educating and training the next generation of farmers.	1. bureaucracy centered vs. small/new farmer centered 2. land consolidation and privatization vs land resiliency and equitability 3. complicated program navigation vs. streamlined program functions 4. investment in large farms corporations vs investment in the small, locally owned farms

Table 2: Root Difference Analysis

List of Salient Agents	Current Simple Rules	Current System-Level Behavior
Beginning and Socially Disadvantaged Farmers	Farm, produce food, feed my community, tend to the land, make ends meet.	Number of new farmers are decreasing, more small farms shutting down, control of local food systems decreasing.
Public Administrators and Program Coordinators	Administer programs, keep up to date on policies and regulations	Confusion over roles, oversaturation of offices and programs, uncertainty over roles.
Policymakers (Congress and Senate)	Draft and pass Farm Bill, periodically receive input from public on Farm Bill provisions	Historically prioritize subsidies to large farm operations and agribusinesses
Advocates (non profits, coalitions, CBOs)	Gather feedback, educate, train, and connect, advocate on BSDFs' behalf	Not all advocacy efforts get the results they hope for. Progress toward change is slow.

Table 3: CAS Analysis



1. Cannot make it harder for farmers to engage with or access USDA programs
2. Must incentivize small farm ownership over large farm business
3. Must incentivize increasing funding to programs that directly help BSDFs
4. Must ensure government program navigation is simple and streamlined for BSDFs
5. Must reinforce equitably in funding distribution and access to historically underserved farmers.
6. Cannot contradict the mission of any other listed recommendation

Specific Interventions/Recommendations

1. Intervention/Recommendation 1: Implement agency-wide funding goals for number of BFRDP projects funded
2. Intervention/Recommendation 2: Increase communication between administrators and advocates (committees, consolidate efforts)
3. Intervention/Recommendation 3: Relax BFRDP application criteria

Discussion

THE INVESTIGATION OF THE SYSTEM of government support for BSDFs began with an idea to better understand a trend – the number of farmers in the U.S. are decreasing, the barriers to enter farming as a career for new farmers are increasing. Several USDA programs including FOTO, BFRDP, and Section 2501 were created to provide competitive funding for the education and training of BSDFs. The explicit goal of these programs is to enhance food security by providing BSDFs with the skills, knowledge and tools needed to sustain their farm operation and enhance their sustainable agriculture practices. However, trends in the data suggest that although overall programmatic support for these endeavors has increased, the number of awards going towards these efforts have tended to decrease. A close reading of this system as a whole reveals that there may be ways to influence how agents behave within the system and improve upon the support network already in place for BSDFs, and in turn, increase resilience within the U.S. agriculture system overall.



DSRP Analysis Discussion

MY DSRP ANALYSIS OF THE SYSTEM makes clear that there are too many distinctions and vaguely defined relationships within the USDA, and between the USDA and grant recipients. Many distinctions and relationships were left out of the map for several reasons: either they are not directly related to the system I analyzed, but were tangentially involved, or because I simply do not know about certain offices and their functions yet. It's easy to conclude that there's a reason why advocates and farmers alike are frustrated by the beauractric pathways they must navigate in order to access funding. The roles of certain offices and administrators have been changed, removed, or expanded many times over the last few Farm Bill cycles, and so I found trying to capture every facet of these administrative dynamics very challenging. However, I did learn that in 2018, the role of a National Beginning Farmer Coordinator was created along with coordinators roles for each state in the U.S. ensures that programs and policies meet the unique needs of beginning and underserved farmers ³². There is limited information on the internet about what exactly these Beginning Farmer Coordinators are working on at the moment, but with further time to research, I would like to speak to one of the coordinators one-on-one to gain more insight into this relationship dynamic, and get further perspective on this area of the system.

³² 1

Meanwhile, available information online regarding existing support for BSDFs helped to more clearly define where government funds actually flow through the system, starting at the top with the decisions made by political leaders, and then how those funds are distributed to the public. I relied heavily on articles, guidance, and resources on NSAC's website to untangle all of this information. I represented this narrative thread by highlighting certain distinctions and relationship lines with the color green on the map (fig. 5). This decision led me to consider whether other elements on the map should be colored in order to emphasize the key players (or 'agents') within the system. I added the color orange to each card representing an agent (policymakers, public administrators, large ag groups, advocacy groups, farmers) (fig. 6).

Another insight gained from creating this map came from a conversation I had with Ariana Taylor-Stanley. She is the Associate Director of Organizing at the National Sustainable Agriculture Coalition (NSAC), and has extensive experience with farm policy and advocating for farmers in the government. She informed me that in the real world, most of the funding that gets to BSDFs actually



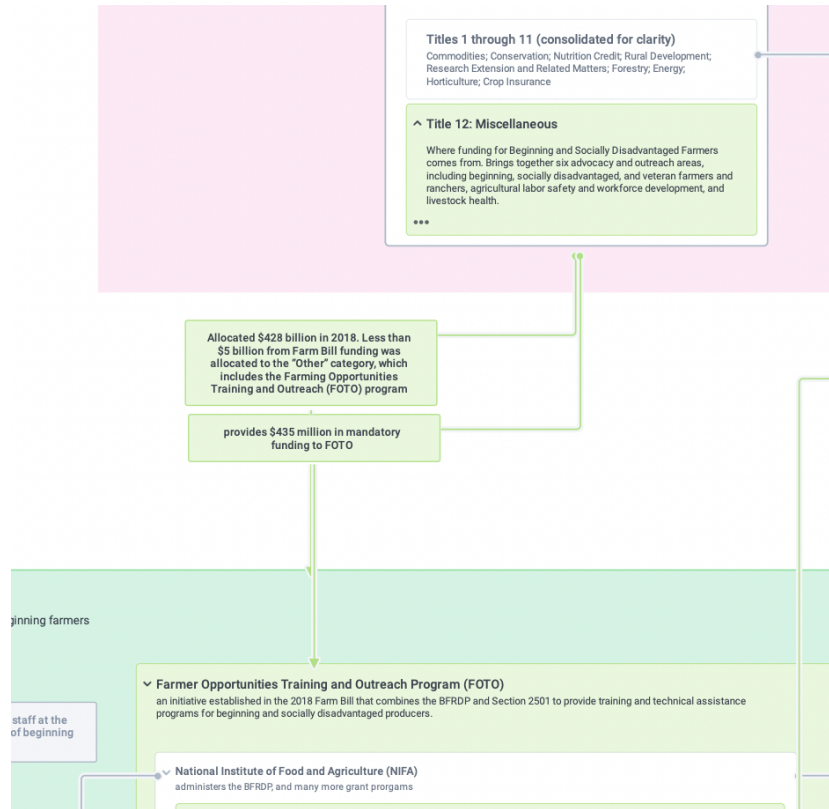


Figure 5: Green lines representing flow of Farm Bill funds.

passes through nonprofits and other advocacy organizations first, and that the role they play in accessing government resources on the farmer's behalf is critical to the work of advocates and nonprofits across the board. Prior to this conversation, my map did not include a distinction for "Advocates." After adding them to the map, I could see that advocates and other community organizing groups were essential to understanding this system, and that the relationship between the USDA and Advocates was stronger than I previously thought.

Then in early November, I was presented with a unique opportunity to test my map against the real world. Through an internship I'm doing with Groundswell Center for Local Food and Farming (a non profit organization based in Ithaca, NY), I was asked to help facilitate a Farm Bill Listening Session during the annual Northeast Sustainable Agriculture Working Group (NESAWG) Conference. The listening sessions are an opportunity for policy advocates and other groups working within the farmer advocacy sphere to hear directly from farmers about their experience with government programs, their funding priorities for the coming years. During the

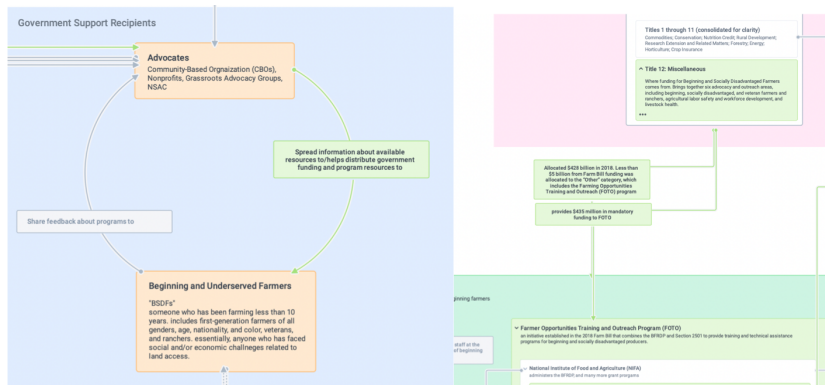


Figure 6: Orange boxes representing agents

session, I heard from many farmers of varying backgrounds explain the difficulties they've faced in accessing government funding. Several pointed out that their experience with USDA offices were often traumatic, and that systemic racism and prejudice persists throughout these bureaucratic environments. Distrust in government aid is common among farmers of color, and the overall energy of the room seemed to be one of contempt and disappointment. This experience made clear that accurately capturing these perspectives is a challenge that can only be addressed with more direct feedback from farmers, more data, and testing this map against the real world situation.

Another realization I made as a result of creating this map was that a major player was missing from the system all along. As a percentage of recipients who receive government funding for farming operations, it's actually large farm corporations and agribusinesses who take home the bulk of funding ³³. For several decades, the disturbing trend of funding going to bigger and bigger farms has increased at an alarming rate ³⁴. However, accurately and efficiently representing this trend in my map using DSRP was a challenge. How do I incorporate all of this information without overloading the analysis with information, and losing sight of the underlying structure? Future analysis of this area will have to be done to better understand the trends with the goal of proposing ways policy can be changed to reverse the harmful trends of farmland and farmer loss.

³³ 7

³⁴ 7

POSIWID Analysis Discussion

AS A RESULT OF THE OVERABUNDANCE of distinctions, lack of clearly defined relationships, and insights into what it's like for key players inside the system to experience the system, the current

POSIDIWD perpetuates a harmful trend of reducing funding opportunities for BSDFs. The farmers face larger and large barriers to entry, and are burdened with economic hardship, and loss of viable farmland as a result. However, the most significant difference between the future POSIWID and current POSIWID is the prioritization of expanding support for BSDFs in every phase of their career, lowering the barrier to entry into farming, and streamlining overly complicated processes and vaguely defined roles within the USDA grant programming with the goal of increasing investment in future farmers.

CAS Analysis Discussion

FOR THIS SYSTEM INVESTIGATION, I identified four main agents: BSDFs, Public Administrators/Program Coordinators with the USDA, Policymakers within Congress and the Senate, and Advocates (this category includes nonprofits, community based organizations, and sustainable agriculture coalitions). Previously identified relationships helped to reveal what simple rules each agent currently follows within the system. BSDFs produce food, feed their communities, tend to the land, and try to make ends meet with the limited government resources they have access to. Public administrators and coordinators implement the programs laid out in the Farm Bill, and stay up to date on changes to regulations and policy. The policymakers in this system draft and pass the Farm Bill, and every so often listen to feedback from the public on future Farm Bill provisions during public hearings. Advocates are responsible for gathering feedback, educating, training, and connecting BSDFs, and advocating on their behalf in the political sphere. Given these simple rules, and the root difference POSIWID analysis, it's clear that there's much room for improvement and manipulation of these simple rules in order to reach the future POSIWID where BSDFs are equitably supported by government programs, the number of new farmers and farms starts to trend upward, and more engagement in local farmer support. The burden of implementing these programs to BSDFs may be falling unequally on both the public administrator and advocates.

Recommendations and Conclusion

THE INVESTIGATION OF THE SYSTEM of government support for BSDFs began with an idea to better understand a trend – the number of farmers in the U.S. are decreasing, the barriers to enter farming as a career for new farmers are increasing. Having limited knowledge



and experience with Farm Bill policy and implementation, and the nuance of the USDA's role in this, I can only make three policy recommendations with confidence. However, each recommendation is aimed at improving the overall behavior of the system as it currently operates. Increased collaboration is the major objective to keep the success of BSDFs at the center of the solutions. The root of the problems BSDFs face in accessing government may be addressed by streamlining grant program processes, improving communication between advocates and administrators, and implementing funding goals going to BSDFs. The recommendations seek to bring down the barriers to entry for new farmers, and to empower the next generation of farmers to enter the agriculture industry without worry of failure or economic stress. With the conclusion of this investigation, it's clear that the Systems Thinking framework and ABA process successfully facilitated my understanding of the system, and I look forward to future opportunities to investigate this system further, and generate more policy recommendations that help to empower the next generations of farmers in the U.S.



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