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Inclusive Innovation in Agriculture:

Redesigning Agtech Ecosystems for All

Farmhand Ventures

VISTA Valley Institute for Sustainability, Technology & Agriculture

F3 FARMS FOOD FUTURE INNOVATE

RIFFLE VENTURES

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About the Authors

This paper was authored by Sarah Mock, Connie Bowen, and Ben Weinberg on behalf of Farmhand Ventures, and Suma Reddy, Jamil Wyne, and Fayzan Gowani at Riffle Ventures. Established in 2021, Farmhand Ventures is an impact investment firm building and backing startup companies enabling a better future of work in agriculture. Riffle Ventures is a research and innovation studio that supports and builds emergent climate innovation ecosystems through localized partnerships.

Design was led by Charvi Shrimali.

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Executive Summary

Our modern agricultural sector faces an exceptional set of challenges, from misalignment between solutions and actual use-cases, to cultural and social barriers that hinder inclusive innovation. **Inclusive innovation is a strategy that actively involves a diverse range of stakeholders in the design, development, and implementation of solutions to ensure they are technically viable, socially acceptable, and practically usable.** Herein, we propose an inclusive innovation approach to bridge the gaps between entrepreneurs, customers, users, and the use-cases they serve. By fostering more intentional, holistic, and inclusive technology development strategies, inclusive innovation can ensure that solutions are more valuable and applicable to the complexity of agricultural businesses.

Our suggested approach is not without its limitations, however. The upfront costs associated with inclusive innovation can be prohibitive for startups and under-resourced organizations. Additionally, cultural resistance and social barriers may prevent widespread adoption of inclusive practices. To overcome these challenges, community and ecosystem stakeholders must engage in education and dialogue to demonstrate the economic, social, and ecological value of inclusivity.

Funders and entrepreneur support organizations play a critical role in promoting inclusive innovation. By creating advisory boards, formalized networks, and other unconventional partnerships they can integrate core stakeholders early in the development process, ensuring that solutions align with real-world problems and gain preliminary acceptance from users. To pursue the inclusive innovation approach, entrepreneurs should be encouraged to adopt, and be evaluated on, a series of strategies including but not limited to:

Inclusive innovation can help in aligning the agriculture sector's diverse needs with technology solutions.

1. Understand the Problem and its Context
2. Identify and Understand Solution Participants
3. Identify and Center those at the Margins First
4. Practice Co-creation
5. Understand Conflicting Outcomes, Prioritize Common Goals

Inclusive innovation can help in aligning the agriculture sector's diverse needs with technology solutions. It has the potential to create a triple win by facilitating customer adoption to benefit entrepreneurs, providing more technological solutions to critical issues to benefit customers, and enabling better solutions for users that are accessible to them and allow them to solve problems more quickly and efficiently. Through intentionality, ongoing commitment, and strategic support, inclusive innovation can lead to more resilient and sustainable agricultural practices.

This report will provide an overview of the inclusive innovation approach. Inclusive innovation is especially important in the agtech innovation space. This report serves as a blueprint to guide entrepreneurs towards solutions that reduce agriculture's environmental impact, increase nutritional access, and improve the quality of life for the agricultural workforce.

Introduction

Farm businesses face many challenges, from rapidly changing regulatory landscapes, to increased climate and pest pressures, to the need to manage public perception and find creative paths to market. This spectrum of stressors has given way to a growing set of agtech solutions. Many technological solutions have helped support growers, and in the process have begun to transform farm production and management practices. The range of these agricultural technologies (and the companies that create them) is vast.

However, agtech adoption and impact has faced serious challenges. Issues like poor adoption rates and a general skepticism about potential value have been signs that, in many cases, technologies are simply not well-suited to solve agriculture's specific and complex problems. Along the way, growers have invested in evaluating, purchasing, and learning to use these technologies, which when unsuccessful, has created additional bias among growers against new solutions. This loss of trust and credibility harms both the agriculture sector as well as current and future agtech entrepreneurs.

A key alignment issue that is common between ag-customers and tech-creators is the failure of entrepreneurs to consider how their technologies interact with important ag stakeholders. Too many **entrepreneurs** underestimate the gap between their technology and the **customer** (with the power of the purse), the **end-user** (who will use the tool to do their job), and the main **use-cases** (the problem that needs the solution).

Farms are complex, multilevel organizations, and in this ecosystem, users of the technology are often not the buyers of a given tool, and thus solutions create variable costs and benefits for different stakeholders within farm businesses.

Defining Key Terms

Entrepreneurs are individuals or teams developing solutions to address on-farm challenges. They often lack extensive agricultural work experience and may have limited exposure to the diverse operational contexts of different farms, focusing instead on technological innovation.

Customers are typically farm owners or managers who are responsible for making purchasing decisions for farm operations. They may have performed manual labor in the past but now focus more on administrative tasks. They tend focus on optimizing for crop yield.

Users are generally farmworkers who handle most of the manual labor. According to U.S. Department of Labor's 2019-2020 National Agricultural Workers Survey, 62% of US farmworkers feel most comfortable speaking Spanish, only 31% report being able to read English "well", and half of farmworker families report an annual income of less than $30,000. Their expertise lies in practical tasks such as harvesting, thinning, and weeding, and they tend to prioritize solutions that increase their earnings and/or enhance efficiency and ease of use in their daily work.

The **Use-case** refers to the specific job or task that the product is intended to facilitate or simplify, ensuring the technology meets the practical needs of those who will use it.

For example, on a large operation, a farm manager or technology lead might evaluate a tech tool, a farm owner might make the final purchasing decision, and a farmworker might end up using the tool to solve problems in the field and train others on its use. Each of these parties is likely to have different goals and priorities when evaluating, selecting, and using technology. Even in instances where the entrepreneur is aware of the gap between users and customers, they may not understand the magnitude of the differences between farm owners and farmworkers.

There are existing approaches that can provide guideposts to entrepreneurs to avoid these alignment issues, better understand the agriculture sector's needs, and develop better technological solutions to address them. The approach that best balances the need to solve agriculture's unique and pressing problems while ensuring that solutions are aligned to the customers and users who need them is the inclusive innovation approach. Funders, both philanthropic and profit-seeking investors, and entrepreneur support organizations are key participants in defining and shaping the agtech ecosystem. Their efforts can be leveraged to keep entrepreneurs on track and ensure that farmers and farm stakeholders maintain open-mindedness about agtech adoption.

This report will provide an overview of the inclusive innovation approach. Inclusive innovation is especially important in the agtech innovation space. This report serves as a blueprint to guide entrepreneurs towards solutions that reduce agriculture's environmental impact, increase nutritional access, and improve the quality of life for the agricultural workforce.

> **Farms are complex, multilevel organizations, and in this ecosystem, users of the technology are often not the buyers of a given tool, and thus solutions create variable costs and benefits for different stakeholders within farm businesses.**

Inclusive Innovation in Agtech

What is Inclusive Innovation?

Inclusive innovation is an approach that prioritizes consulting all of the relevant stakeholders who will utilize or otherwise be impacted by a technology during the development process, to ensure that the solution meets the needs of the customer, users, and the use-case, especially those on the margins whose perspective is often excluded.

Figure 1. In customer-centric approaches, the entrepreneur's focus on business needs without direct product feedback from end-users leads to lack of adoption and no improvement in solving on-farm problems.

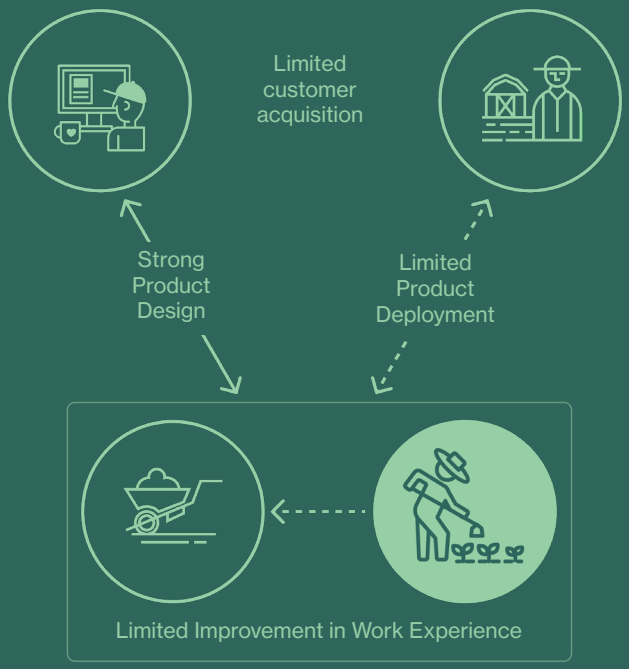

Figure 2. In user-centric approaches, the entrepreneur can design a product that solves real end-user needs but often fails to make the economic business case to the decision makers who ultimately need to pay for the solution, leading to limited customer acquisition and scale.

The inclusive innovation approach differs from more common existing tech development approaches. Customer-centric approaches, for example, emphasize a focus on meeting the demands of the decision-maker who pays for the product, which places a high priority on the trade-off between high-value features and affordable pricing (Figure 1). More user-centric approaches, on the other hand, tend to focus on archetypes of users, and cater more to ease of use and intuitiveness (Figure 2). These two approaches have been effective strategies to create and market consumer technologies, but they are not well-suited to agtech. Though these "lean" innovation models have for years prioritized hyper-focus on only the customer, the result of that strategy in agtech has led to many "flash in the pan" technologies that created temporary excitement but failed to build trust, adoption, and inevitably, a viable market.

Entrepreneurs who use an inclusive innovation approach must adopt a wide lens. Agricultural businesses tend to be multi-centric, where multiple stakeholders within an organization have varying, and even conflicting, needs and incentives (Figure 4). Any entrepreneur working in the sector needs to account for this spectrum of stakeholders and their needs. Failure to do so leads to the same lingering challenges of agtech solutions that are not fit for purpose. The inclusive innovation approach is a framework to manage this process and mitigate these risks (Figure 3).

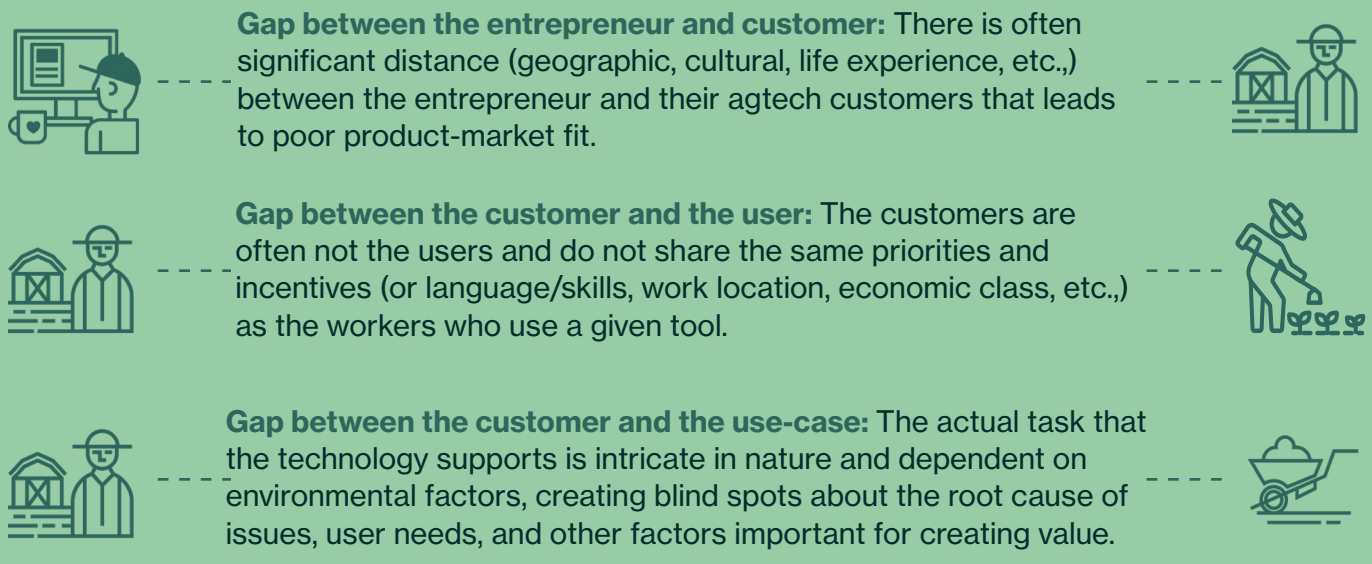

Figure 3. Agricultural operations often have convoluted stakeholder relationships. These complexities lead to deeper misalignment between entrepreneurs, customers, and users. An inclusive innovation approach aims, not necessarily to close these gaps between the entrepreneur, the customer, the user, and the use-case, but to clarify and understand them so that technologies can solve actual problems, that customers will find valuable, and that users will use

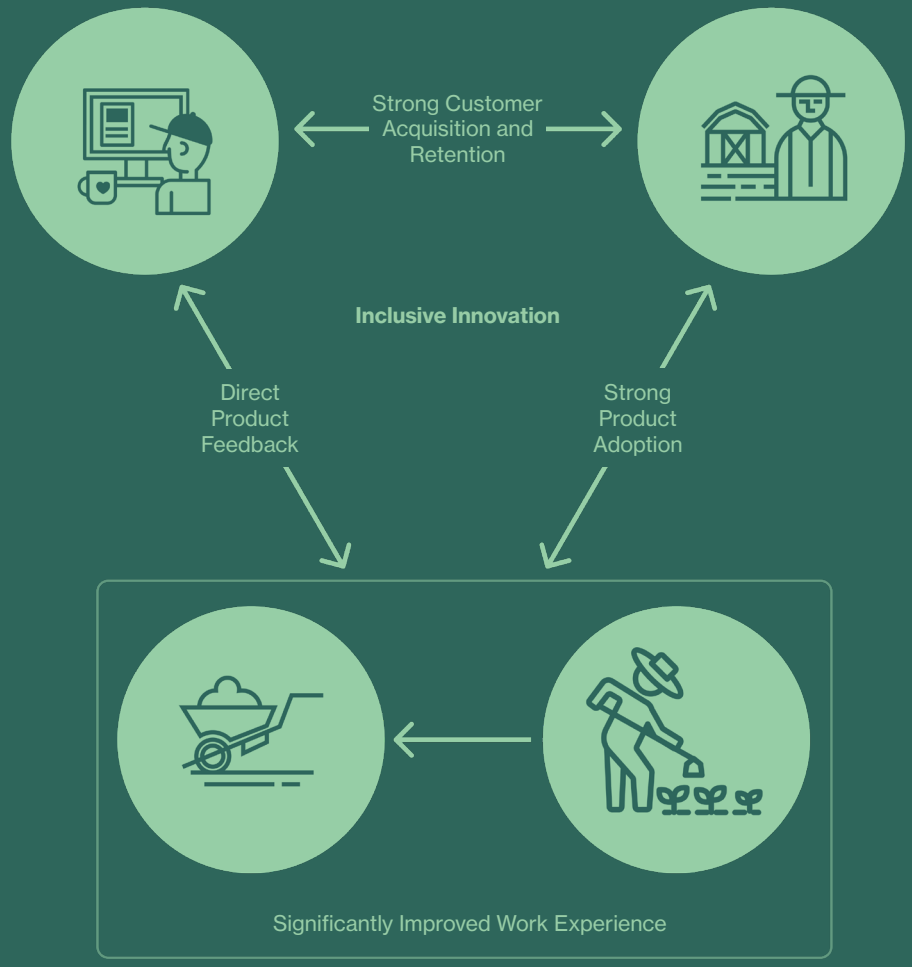

Figure 4. Inclusive innovation approaches guide entrepreneurs to ensure they are taking both customer and end-user perspectives into account. These ultimately help entrepreneurs find a balance between business and end-user needs.

Inclusive Innovation Strategies

1. Understand the Problem and its Context:

Entrepreneurs should start with a complete understanding of the whole problem their technology aims to address, which includes not just the specific issue, but the context in which the issue occurs and how it is currently being addressed.

2. Identify and Understand Solution Participants:

Next, the entrepreneur must identify and meet the full spectrum of people who are currently involved in addressing the problem. Getting to know these individuals/groups should involve gaining a deep understanding of each participant's strengths, weaknesses, needs, and specific expertise.

3. Identify and Center those at the Margins First:

Then, the entrepreneur should endeavor to ensure that they collect and integrate input from those solution participants who have the least power to affect the form of the adopted solution.

4. Practice Co-creation:

Once participants are identified, the process of co-creation, building, collecting feedback, and iterating on possible solutions, can begin, involving relevant stakeholders without allowing any to be overlooked or ignored. Some stakeholders' participation will be more costly, and entrepreneurs should be prepared to overcome those cost barriers.

5. Understand Conflicting Outcomes, Prioritize Common Goals:

Finally, the entrepreneur will have to negotiate through the varying and, at times, conflicting wants and needs of various stakeholders. Determining clear and transparent justification for outcomes and eliciting feedback from co-creators is essential.

1. Understand the Problem and its Context

Entrepreneurs should start with a complete understanding of the whole problem their technology aims to address, which includes not just the specific issue, but the context in which the issue occurs and how it is currently being addressed.

Entrepreneurs frequently fail to understand the differences between customers, who include farm owners, managers, and channel partners selling to farm operations, and end users, frequently farmworkers. While there is often some degree of distance between customers and end-users in B2B product development, the differences in culture, incentivization, and resource access between farmers and farmworkers are more substantial than in most other industries.

Benefits to Entrepreneurs:

- Foster better product-market fit
- Build trust with potential customers
- Identify non-obvious solutions

Example Tactics:

- **Visit farm operations to observe and experience the problem from multiple vantage points:**
  Entrepreneurs should spend a meaningful amount of time in the field, experiencing where/how the problem occurs and how it is currently solved in different operations/geographies/etc. Engage with and observe people in different roles to the extent possible.
- **Commit resources to establishing long term understanding:**
  In agricultural contexts, problems might be experienced and dealt with differently throughout the growing season. Entrepreneurs should be expected to develop an understanding of the problem they hope to solve not based on a single visit, but over a long period of interactions at many times under varied conditions.
- **Gain experience solving the problem:**
  Ideally, entrepreneurs will find the opportunity to do more than just observe problems and solutions on-farm but will also test current and alternative solutions themselves to gain a first-person understanding of existing limitations.
- **Engage third-party perspectives:**
  Entrepreneurs should actively seek out Cooperative Extension services and other organizations that work closely with farmers. These relationships can offer invaluable insights, access to research, and a network of experienced professionals who understand the broader agricultural landscape.

Evaluating Tech for Inclusivity | Critical Questions:

- ☐ What is the problem that technology is aiming to address? How much experience do you/your team have with this problem?
- ☐ Where does it occur? When? How?
- ☐ Who is currently responsible for addressing the problem? How are they expected to address it? Is it working?
- ☐ What works about the way the problem is being handled now? What doesn't? How do different conditions affect the outcome?
- ☐ How do different stakeholders perceive the problem? Where do their perceptions align or diverge?
- ☐ What external pressures (e.g., economic, environmental, regulatory) influence the problem?
- ☐ What solutions have been attempted in the past? Why have they succeeded or failed? How have past solutions affected stakeholders, particularly those at the margins?
- ☐ How is information about the problem shared among stakeholders? Are there barriers to communication that could hinder understanding of or solutions to the problem?

Equitable Food Initiative:

Building an Ecosystem to Find Shared Priorities in the Food System

Equitable Food Initiative (EFI) is a nonprofit that brings together growers, farmworkers, retailers, consumers, and many other key food system stakeholders to transform agriculture and improve the lives of farmworkers.[1] EFI aims to ensure that:

- Best practices in food safety are both understood and adhered to
- Farmworkers are treated fairly and experience a safer and healthier work environment
- Farmworkers are engaged to identify problems and create solutions that drive both assurance and business efficiencies on the farm

Figure 5: EFI aims to bring all relevant stakeholders to the table, including farms, retailers, investors, farmworker non-profits, policy scientists, government agencies, and scientists, among others. The logos here are not comprehensive of the organizations with which EFI collaborates.

This collaboration catalyzes programs that lead to multiple wins across the industry. For example, the EFI Standards certification is a comprehensive audit for farms that addresses labor conditions, food safety, and pest management. Andrew & Williamson Fresh Produce/GoodFarms/Crisalida Berry Farm became the first EFI Certified farm in 2014, made possible by Costco's commitment to pay a premium on EFI certified produce to fund a bonus to workers for the additional diligence required to comply with the EFI Standards.

This industry leading B2B certification program, rather than mainly providing a marketing benefit, instead provides meaningful risk mitigation for farmers and their customers who can be confident that critical social, environmental, and health standards are being met. Since EFI's founding in 2008, the organization has gone on to spearhead other projects advancing their goals of safe food, good farmwork, and improved agricultural production.

Though EFI is a good example of an organization that has holistically adopted an inclusive innovation model, they commit to **understanding the problem and its context** particularly well. The organization began as a massive collaboration, and the instinct to bring stakeholders together to discuss and find common ground, rather than prioritizing the needs of a single group, has led to both a unique view into the food system, and exceptional access to its most untapped leverage points. It's also, as Kevin Boyle, Director of Workforce and Organizational Development at EFI, reports, a lot of work to bring disparate and often combative groups together and has required the **commitment of resources to establish long-term understanding**, including financial, staffing, and social capital to maintain and strengthen stakeholder relationships. This process is the only way to uncover and understand the full complexity of a problem so that real, workable solutions can be found.

EFI is also a leader in **identifying the relevant solution participants.** During the development of the 300+ point certification process, EFI collaborators wanted to ensure they had a full understanding of how farmworkers participated in key food safety activities. Rather than simply distribute surveys to growers or to farmworkers themselves, EFI led dozens of focus groups, facilitated with interpreters in spaces where farmworkers could participate, and in coordination with participants from the California Department of Labor. By accessing this deeper level of qualitative data from the focus groups, EFI was not only able to ensure that their certification requirements could be met by workers in the field, they also identified other opportunities for (and barriers to) skill-building among farmworkers that could lead to enormous benefits for the workers themselves, their employers, and everyone across the value-chain.[2]

> **"The question you have to ask yourself is whether you believe in a 'Win-Win-Win' proposition? In other words, can farmers really succeed without a stable professional workforce? Can retail customers really find the product at the quality and price that they want without farmers who have a skilled workforce? A lot of the work that we've done is on constructing the narrative around the interdependence within the system."**
>
> –Kevin Boyle, Director of Workforce and Organizational Development at EFI

2. Identify and Understand Solution Participants:

Next, the entrepreneur must identify and meet the full spectrum of people who are currently involved in addressing the problem. Getting to know these individuals/groups should involve gaining a deep understanding of each participant's strengths, weaknesses, needs, and specific expertise.

Benefits to Entrepreneurs:

- Avoid potential customer blind spots
- Understand the stakeholders that could support solutions
- Build relationships with potential collaborators

Example Tactics:

- **Discuss the user/use-case in depth with potential customers:**
  The customer of agtech solutions is often not the end user of the tool. Ask the customer who will be utilizing the solution, and how. Ask the customer about their relationship with the users and, where possible, connect directly with users.
- **Keep a record of participants during on-farm visits:**
  When observing the problem/existing solution on-farm, entrepreneurs should carefully note who interacts with the process. Sometimes, customers may not even be aware of how the full solution plays out at different times and under various conditions.
- **Follow chains of introductions:**
  Entrepreneurs can leverage conversations with stakeholders to unlock opportunities to connect with others. Asking the customer if they can facilitate an introduction or working session with their farmworkers can help entrepreneurs get access to other perspectives.

Evaluating Tech for Inclusivity | Critical Questions:

- ☐ Who is seeking a new solution to this issue? The customer? The user? Why are they seeking it?
- ☐ Are the same groups who come into contact with the problem likely to utilize the technology?
- ☐ Will new stakeholders be necessary to utilize the technology? If so, what is the impact on existing stakeholders?
- ☐ What less obvious stakeholders might be indirectly affected by the problem or its solution?
- ☐ What barriers (e.g., language, access to technology, geography) might prevent certain stakeholders from participating fully in the innovation process?
- ☐ What training or resources are provided to stakeholders to enhance their capability to engage effectively in the innovation process?

Elemental Excelerator:

The Funder's Prerogative on Community Engagement

Elemental Excelerator is a nonprofit investor in a broad range of technologies, including sustainable agriculture, with deep community impact.[3] "Elemental" fills two gaps to address climate change: funding projects for climate technologies in communities and embedding equity and access into climate solutions.

The organization has multiple strategies for embedding community and equity priorities into its funding model. They ensure "equity in" at the level of sourcing and diligence and "equity out" by requiring companies they fund to engage with communities they affect. They consider intended and unintended consequences as part of their planning processes, and they generally encourage a mindset shift around thinking of community participation not as a "nice to have" but as essential to the future viability of their business, projects, and products.[4]

> **"Often for startups, bandwidth and capacity-wise, [they're] not going to have that in house expertise when it comes to how do you relate to the community, how do you understand the community, and how do you, in a trusting and humble way, partner with community members. Often what they need to do that is some form of a community partner."**
>
> –Justin Marquez, Senior Partnerships Manager of Equity and Access at Elemental

Elemental requires the companies they fund to engage with community partners. This enables the companies and the entrepreneurs to have a uniquely deep **understanding of the problems and context** in which their projects and products will exist. There are as many different ways to pursue these goals as there are companies in Elemental's portfolio, including strategies like the one used by ChargerHelp! in engaging with the community, this organization saw the opportunity to center the lived experience of customers and users by hiring from the community it serves. This deep community engagement also helps funded organizations to **identify and understand all the relevant solution participants**, both because they have developed more trust throughout the community and because, by gaining a deeper understanding of the problem, they're able to identify a greater group of stakeholders whose jobs or livelihoods could be impacted by a new technology.

Elemental's prioritization of inclusivity also situates their companies well to take the long-term view in **negotiating through conflicting outcomes.** Justin Marquez, Senior Partnerships Manager of Equity and Access

at Elemental, points out that companies can face major risks from the communities they work in. “It can be hard to get community coalitions together to get a project moved forward,” he explains, “but it’s much easier to mobilize communities to get a project shut down.” By requiring that companies consider both intended and unintended consequences before projects begin, entrepreneurs are much better prepared to communicate with key stakeholders transparently throughout the process, and to mitigate negative outcomes before they lead to the kind of resistance that could sink a project, a technology, or even a whole company.[5]

“Often for startups, bandwidth and capacity-wise, [they’re] not gonna have that in house expertise when it comes to how do you relate to the community, how do you understand the community, and how do you, in a trusting and humble way, partner with community members.” Justin continues, “Often what they need to do that is some form of a community partner.”

3. Identify and Center those at the Margins First:

Then, the entrepreneur should endeavor to ensure that they collect and integrate input from those solution participants who have the least power to affect the form of the adopted solution.

Benefits to Entrepreneurs:

- Prevent potential users from being shut out of the process
- Fuel adoption demand from users
- Understand the tradeoffs customers face

Example Tactics:

- **Center farmworkers and other internal non-customers:**
  In the case of many farms, the farmer-customer is not necessarily the user of technology or the individual responsible for solving critical production problems in the field. Identifying and centering those users who likely have critical information about the problem that the customer might not know, is vital.
- **Invest in translation services both in the technology and in communication with customers/co-creators:**
  According to U.S.Department of Labor's 2019-2020 National Agricultural Workers Survey, only 32% of US farmworkers report being able to speak English "well" and 40% report not being able to read "at all." The average level of formal education completed by US farmworkers is 9th grade. To ensure clear and meaningful communication, entrepreneurs should invest in engaging in the languages of stakeholders and creating products that are accessible to those same groups.
- **Invest in wraparound support services where appropriate:**
  It is not enough to simply extend invitations to participate for populations who cannot afford to bear the opportunity cost of participation. Many farmworkers are low-wage workers with limited access to transportation, childcare, and other types of economic security that would enable them to engage in agtech events, educational training, or product-design and feedback sessions without compensation or other support.

Evaluating Tech for Inclusivity | Critical Questions:

- ☐ Who has the most responsibility for completing the physical or mental work that will cause the problem to be solved?
- ☐ Who has the least power to affect the way this problem is solved? Why?
- ☐ What accommodations are needed to be able to actively include stakeholders, especially farmworkers? Ask stakeholders and community partners what they need.
- ☐ How might the different stakeholders who will come into contact with this problem/solution be impacted by it?
- ☐ Who's incentives will need to be altered to create demand for the technological solution? The customer? The user? How will they be altered?
- ☐ What potential is there to optimize between the wants/needs of the different groups involved?

4. Practice Co-creation:

Once participants are identified, the process of co-creation, building, collecting feedback, and iterating on possible solutions, can begin, involving relevant stakeholders without allowing any to be overlooked or ignored. Some stakeholders' participation will be more costly, and entrepreneurs should be prepared to overcome those cost barriers.

Benefits to Entrepreneurs:

- Diversify inputs to create stronger products
- Build buy-in from customers and users
- Access knowledge/expertise that is otherwise unavailable

Example Tactics:

- **Account for economic incentives and consequences:**
  Participating in the co-creation process will be more difficult for some stakeholders than others. Providing resources such that all can participate will be necessary. This could include paying workers for their time and expertise, providing childcare, assisting with or eliminating the need for transportation, and other creative solutions to make the process accessible to all.
- **Build buy-in across stakeholder groups:**
  Prioritizing the wants/needs/incentives of workers may not be immediately sensible to farmer-customers, or to farmworkers themselves, both of which are likely to want to prioritize completing tasks over consulting on potential technology solutions. Marshaling financial and influence resources to encourage participation will be necessary.
- **Consider how social structures can affect feedback:**
  If farmworkers are in a room with the owner of their company, they might give different feedback than if they're alone. Considering ways to ensure confidentiality and anonymizing/ aggregating perspectives may be necessary in some cases.

Evaluating Tech for Inclusivity | Critical Questions:

- ☐ Who has been/will be consulted in the creation of the technology solution?
- ☐ How is the technology solution shaped by the specific needs of users? Customers? Specific use-cases?
- ☐ How are various stakeholders involved in the testing and iteration processes as the technology is developed? How is their feedback integrated into these processes?
- ☐ How is the co-creation process enabled, and resource limitations overcome, especially to include the least powerful stakeholder groups (e.g., compensation, etc)?
- ☐ How are power dynamics between different stakeholders addressed during the co-creation process?
- ☐ What incentives can be put in place to create long-term alignment between the ag stakeholders and the entrepreneur?

AgLaunch:

A Farmer-Centered Model

AgLaunch is a non-profit entrepreneur support organization based in Memphis, TN that aims to "transform regional agriculture and food economies centered around farmers, innovation, and prosperity."[6] AgLaunch clearly articulates a "commitment to intentional inclusion" with and for their national network of diverse farmers and agriculture startups.

At its core, AgLaunch is a farmer network with farmer members ranging from operations like **Knowledge Quest**, a 1-acre certified organic learning farm in the Orange Mound neighborhood in Memphis, to multi-generation family-owned row crop operations like **Mid-South Family Farms** in Ripley, TN. These farmers guide the organization's decisions, provide input to entrepreneurs, gain early access to new innovations, and share in any upside that results from the startups and other initiatives of AgLaunch.

This program provides startups with access to farmers who are interested in working with entrepreneurs as well as agronomic support for field trials. The program also includes more traditional technology accelerator services like coaching and investment.

AgLaunch's programs encourage entrepreneurs to **negotiate through conflicting outcomes** by creating ample opportunities for companies to both **communicate with customers** and **continuously monitor impact.** AgLaunch365, one of the organization's core programs, is a 6-week-long hybrid-attendance program for pre-seed and seed-stage companies with a prototype. The selection process for the competitive accelerator is facilitated by AgLaunch staff and driven by the farmer network members. The selection process is carefully timed around the growing season, though it's not unusual for farmers to Zoom in from their combines during startup feedback sessions. This program provides startups with access to farmers who are interested in working with entrepreneurs as well as agronomic support for field trials. The program also includes more traditional technology accelerator services like coaching and investment.

One critical way that AgLaunch **practices co-creation** is by **accounting for economic incentives and consequences**. Working with tech companies and participating in field trials can be costly for both entrepreneurs and farmers, so AgLaunch helped overcome this limitation by collaborating with the Tennessee Department of Agriculture to pay

for AgLaunch365-related farm trials through a unique public-private partnership. This specific program is currently geographically constrained, but it is highly impactful both for de-risking technology trials on farms and for enabling startups to demonstrate traction to investors and other stakeholders.

Additionally, in AgLaunch's model the farmer-owned sibling entity takes equity in the companies that participate in the AgLaunch365 accelerator and pools that equity for redistribution to its farmer members. There are 45 members in the network currently, and the network is growing. Of the 45 existing farmer network members, 31% are African American and 15% are Female, and they farm across 10 states throughout the Pacific Northwest, Southern Plains, Mississippi Delta, Midwest and Appalachia. Collectively these farmers have a minority equity stake in 36 startups for providing field trials, data, due diligence/screening, and insights. This model ensures that farmers get rewarded for their role in working with early stage agtech startups and ensures that the AgLaunch farmer network is inclusive of under-resourced farm types.[7]

5. Understand Conflicting Outcomes, Prioritize Common Goals:

Finally, the entrepreneur will have to negotiate through the varying and, at times, conflicting wants and needs of various stakeholders. Determining clear and transparent justification for outcomes and eliciting feedback from co-creators is essential.

Benefits to Entrepreneurs:

- Identify an optimum product
- Manage negative side effects, which, left unchecked, will create reputational and legal risk
- Reduce customers' tech adoption risk
- Build novel and defensible business relationships and models

Example Tactics:

- **Communicate the price-feature trade-off:** A key barrier for many technologies is the demand for high functionality paired with the desire for a low-cost solution. Inclusive agtech innovators have a particular challenge in communicating to the customer about price, while communicating to the user about features. The ability to bring those groups together to find a tradeoff that both groups can live with is critical.
- **Continuously monitor impact:** To negotiate the positive and negative outcomes of a given solution, entrepreneurs must be deeply enmeshed in the rollout of the product. Inclusive agtech innovators should pay particular attention to data around marginal impacts, and how these impacts affect the way tools are used, problems are solved, and users'/customers' perception of the product. Iterations will be required to mitigate issues as they arise.
- **Build communication channels for ongoing feedback:** Once a product has been developed and deployed in its commercial context, entrepreneurs should make sure to continue touching base with all stakeholders to gather feedback and communicate improvements.

Evaluating Tech for Inclusivity | Critical Questions:

- ☐ How were conflicting needs of various stakeholders (customers, users, technologists, etc.) balanced in the development of the technology solution?
- ☐ What justification was used to determine whose priorities prevailed?
- ☐ What are the benefits and results of this negotiation? Have the positive and negative results been communicated to customers, users, and other stakeholders for feedback?
- ☐ What mechanisms are in place for ongoing collaboration and feedback with all stakeholders?

Conclusion

An inclusive innovation approach can help solve some of the critical issues within agriculture. Misalignment between the solution, the customer, the user, and the use-case is a lingering challenge that can benefit from a more intentional, holistic, and overall inclusive product development strategy. Inclusive innovation helps bridge the gaps between the entrepreneur, the customer, the user, and the use-case so that technologists can build solutions to actual problems that customers will find valuable and that users will use.

Potential Limitations

An inclusive innovation approach is not a panacea. There are many existing problems within both the agricultural and technological spaces that can and will persist, regardless of a company or community's engagement in inclusivity. Cultural and social barriers to inclusivity are chief amongst these persisting issues, including the fact that not all customers will want their user-employees to participate in co-creation, or to be catered to at all. There is significant opportunity for community and ecosystem stakeholder groups (e.g., non-profits, educational institutions) to reduce these barriers through more education and dialogue on the economic, social, and even ecological value of inclusivity.

There are also a few specific limitations of the inclusive innovation approach as compared with alternatives. First and foremost, practicing inclusive innovation is often more expensive up-front for entrepreneurs to carry out. For cash-limited startups and other under-resourced organizations, finding financial, human, and social capital to spend on engaging with the broadest possible range of stakeholders can seem like an impossible hurdle. However, the long-term benefits of inclusivity are also clear, particularly as a preventative measure against misalignment with the market. Considering this, funders and entrepreneur support organizations should be aware that to encourage more inclusive innovation will require both more traditional and non-traditional capital support up-front. Though on its face this may feel like a less-than-appealing economic proposition, the slightly higher initiation cost is likely to translate into a lower failure rate and reduced capital losses in the long term.

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Finally, meaningful implementation of the inclusive innovation approach requires effort, commitment, and a desire to understand the agricultural context. Of course, this approach is not a fit for all entrepreneurs or solution

providers. Therefore, a high level of discernment will be required to find entrepreneurs willing to engage meaningfully with this approach. Funders, entrepreneur support organizations, and even collaborators from local and regional communities should take part in determining whether entrepreneurs and technology providers are a good fit.

Further Considerations for Supporting Inclusively Innovating Entrepreneurs

Beyond simply envisioning and cultivating inclusive innovation within their priority ecosystems, funders and entrepreneur support organizations have significant power to extend the benefits of inclusivity further than entrepreneurs will be able to. Considering the work of organizations like EFI, funders have the opportunity to convene– bringing together stakeholders from throughout the value chain to find potential stores of value. The example of EFI facilitating the certification of its first farm with a financial commitment from a major downstream retailer (Costco) represents the power of support organizations to facilitate unconventional partnerships that can bring unrealized benefits to all involved.

Funders can also upgrade their own work to better support their companies and further strengthen the ecosystem in which they operate, as both AgLaunch and Elemental Excelerator have done. Agtech funders or support organizations can implement their own community, farmer, or farmwork advisory boards, or formalized community networks, to be able to tap relevant stakeholders for their perspective on companies and technologies being considered for support. By integrating these core stakeholders at the earliest part of the process, funders can ensure that entrepreneurs have some level of exposure to, and even preliminary acceptance from, stakeholders while also giving them a better chance to meet the criteria of both solving an existing problem and doing so inclusively. Oftentimes stakeholders (farmers, farmworkers, etc.) will have a clearer idea of whether a company is achieving these criteria than funders alone.

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Endnotes

1. Disclosure: Farmhand Ventures and EFI do work in partnership with each other
2. Interview with Kevin Boyle and Peter O'Driscoll, Equitable Food Initiative, 4/26/24
3. Disclosure: One of the authors, Suma Reddy, participated in Elemental Excelerator
4. Square Partnership, Elemental Accelerator
5. Interview with Justin Marquez, Elemental Excelerator, 4/29/24
6. Disclosure: One of the authors, Connie Bowen, is a former AgLaunch employee and helped develop their equity model
7. Consultation with Pete Nelson, AgLaunch, 5/7/24

Recommended Readings

Agriculture Stakeholders

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Inclusive Innovation Frameworks

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