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HARVESTING CHANGE

An interview with Sweet Water Foundation's Emmanuel Pratt

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SCALING UP WITHIN EXISTING INSTITUTIONS

Janette Kim: How did the Sweet Water Foundation start? And how did you fund the foundation in your early days?

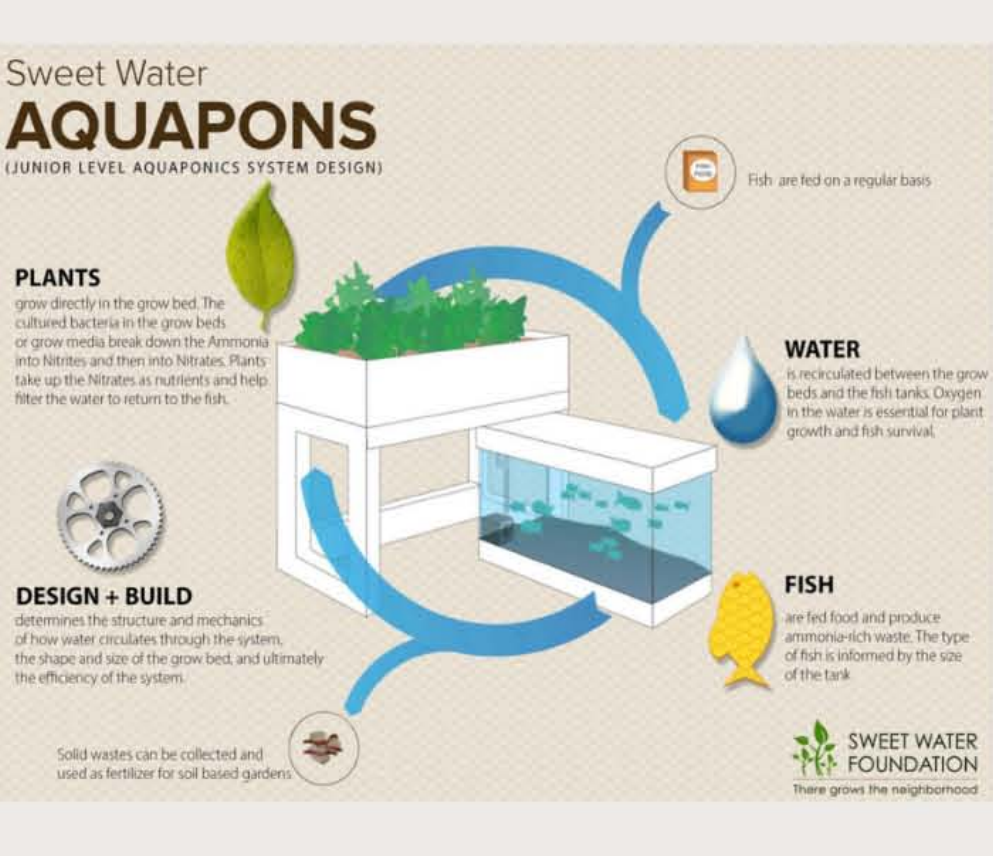
Emmanuel Pratt: Sweet Water grew out of questions related to education: how do we re-engage disengaged learners and offer opportunities to explore career pathways in science, technology, engineering, and math? While STEM was the buzzword, most teachers were just struggling to reactivate empty classrooms. We were working in "food deserts" or lower-income neighborhoods with little access to healthy food. There's a correlation between poverty and access to healthy food options, which also has implications for unemployment, underemployment, and the quality of education. So, for us, one of the best entry points into this cycle was through agriculture—thinking about resilience through agriculture. And we were able to sneak science, technology, engineering, art, and math into it with a combination of indoor and outdoor classroom-based aquaponics, with questions like: How many gallons are in a tank? What's the optimal ratio of fish to plants?

In the early phases, we tapped into existing networks of teachers, who already worked within existing schools and already had paychecks. There was this interesting split at the beginning between people volunteering their time and labor pro-bono, and teachers getting paid through the schools. All we really needed to worry about upfront was source materials and planning time. So, as we were working with teachers and teaching the kids in their classrooms, we were building the system. Parents and relatives started to offer resources and support: like, so and so has a cousin who's a former electrician and someone else has an uncle who wants to help. We started with a series of experimental projects, if you will, and once we had more evidence of how these functional systems were working in the classroom, how it activated people in and around it, the question became how do you get grants to support this too? Everybody wanted numbers. What's your impact? How many teachers are you working with? How many students? We quickly became familiar with the formulas that grants required.

We got a grant from Newman's Own Foundation in 2010 for a seed to table pilot program. And people started to donate because they liked what they saw with the teachers, the students, and the families. Small money became bigger money, which meant more time and labor invested in strategies and planning, lesson plan development, etc. What was also surprising was that as teachers saw how our projects were re-engaging students and transforming the space of the classroom—and the more they were just increasingly disenchanted with the structure of the school system itself—they began to come work for us. We ended up getting this teacher training program grant from the US Department of Agriculture (USDA) with the Milwaukee Teacher Education Center, which put Sweet Water in contact with larger structures and institutions (including various city colleges and universities) in Chicago and Milwaukee. The premise of the program was that one of our staff teachers would teach five other teachers. And then those teachers would teach each five others. Each teacher would also identify five to seven students. So, the program had this kind of exponential growth model built into it, which allowed our program to become more self-reliant.

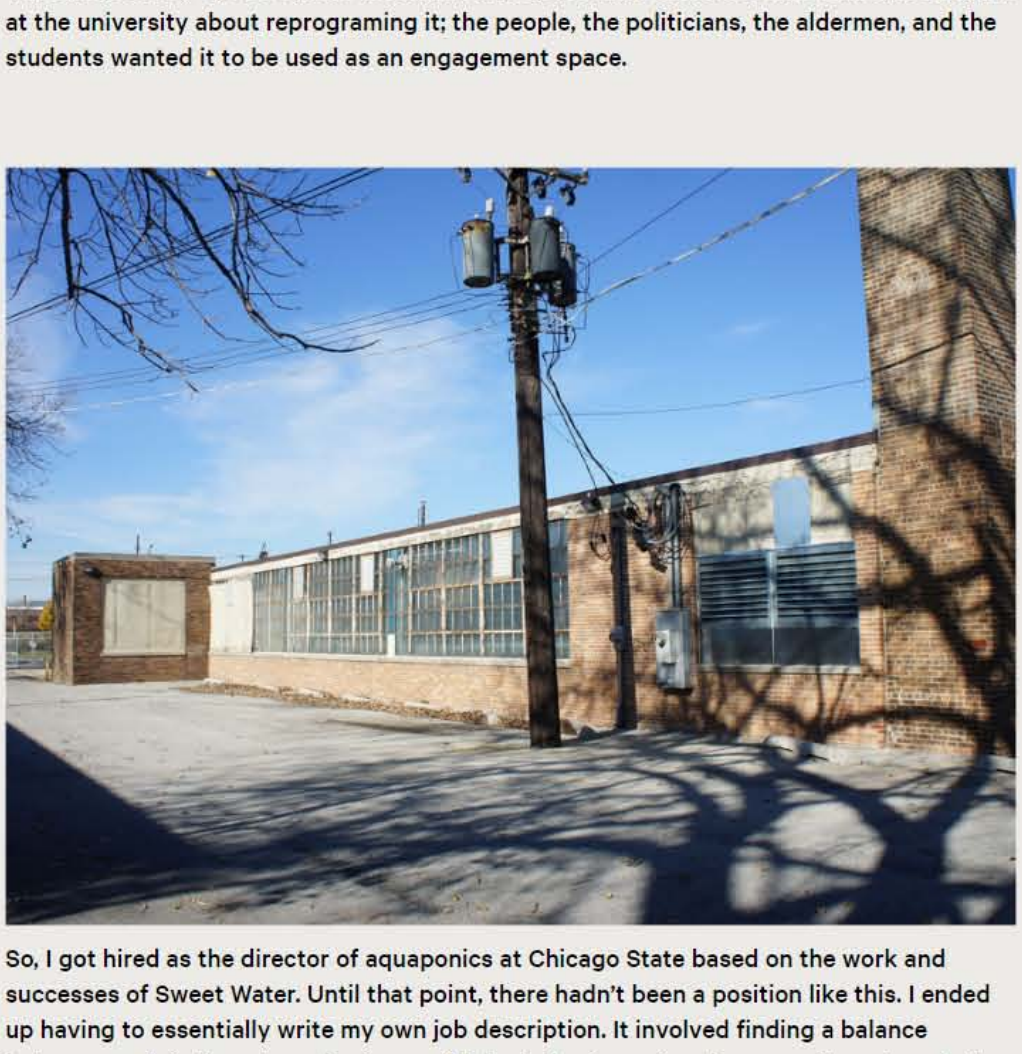
It goes without saying, but when you work within the large bureaucratic structure of the school system, maintaining consistent funding is extremely challenging. We've worked with a lot of schools on the verge of closing—which ultimately means working in the most disinvested and disengaged communities. If you do get a check from the Milwaukee or Chicago Public School System, it usually doesn't come on time. We were constantly balancing the school system's budget with whatever other grants were available. These financial dynamics meant that we had different audiences and different demographics converging all the time. We, of course, needed money for basic infrastructure development—but the worry was less about finding the money, and more about just making sure the system kept going, kept attracting new people, and kept growing and supporting the life within it.

A couple years later, the MacArthur Foundation and the Mozilla Foundation awarded a Digital Media and Learning grant to Sweet Water to support the development of lesson plans and curriculums embracing technology and experiential education.[1] It was around this time, in 2012, that I, along with a couple core teachers and some students, developed the idea of introducing the "A+," which integrated art, architecture, and agriculture into STEM. We were asking ourselves: how do you work beyond just the classroom and the school? How do you do bring this learning into the community, into the household, into the church? Our goal was to create a feedback loop within the neighborhood. These questions formed the foundation of our apprenticeship program. We started pairing folks up with mentors. That's when Sweet Water really started to take off outside of the classroom. With support from the Mozilla Foundation we became part of the Hive Chicago Learning Network, which connected alternative or experiential education across the city. The Hive itself was a national platform, which increased our visibility and access to funding in general. However, what was most interesting was that while we understood what we were doing as a strategy for neighborhood development, everybody else just saw it strictly as education.


Sweet Water
AQUAPONS
(JUNIOR LEVEL AQUAPONICS SYSTEM DESIGN)
Fish are fed on a regular basis
PLANTS
grow directly in the grow bed. The cultured bacteria in the grow beds or grow media break down the Ammonia into Nitrites and then into Nitrates. Plants take up the Nitrates as nutrients and help filter the water to return to the fish.
WATER
is recirculated between the grow beds and the fish tanks. Oxygen in the water is essential for plant growth and fish survival.
DESIGN + BUILD
determines the structure and mechanics of how water circulates through the system, the shape and size of the grow bed, and ultimately the efficiency of the system.
FISH
are fed food and produce ammonia-rich waste. The type of fish is informed by the size of the tank
Solid wastes can be collected and used as fertilizer for soil based gardens
SWEET WATER FOUNDATION
There grows the neighborhood

EXPANDING MODELS OF EDUCATION

EP: Between 2011 and 2012, we started to engage more directly with the USDA and various universities. In Milwaukee, we partnered with the Milwaukee School of Engineering. In Chicago, we started working with Chicago State University, a predominately black institution on the south side. The university had relationships with the Chicago High School of Agricultural Sciences and other schools and city colleges that led to university enrollment. They also had this shoe warehouse, which was typically used for storage. It was this perfect, 14,500 square foot industrial space. And there was this constant struggle at the university about reprograming it; the people, the politicians, the aldermen, and the students wanted it to be used as an engagement space.



So, I got hired as the director of aquaponics at Chicago State based on the work and successes of Sweet Water. Until that point, there hadn't been a position like this. I ended up having to essentially write my own job description. It involved finding a balance between work in the arts and sciences (biological sciences) and community outreach. It was fun, I got to agitate and disrupt by introducing new, nontraditional ways to bring the arts and sciences together. Working in the warehouse, we were able to develop a larger-scale aquaponics system that included four different 1,000 gallon-tanks of water, each holding 300 fish (with 1,200 fish total). It became a kind of commercial demonstration system; and we ended up attracting people looking for new business opportunities. So, it really became a space where different audiences could meet. This lead to a much larger grant from the USDA's National Institute for Food and Agriculture about how to increase urban minority youth in agricultural pathways.

With this, and later a Title III grant from the US Department of Education, we were able to pay students for work study to build, maintain, and operate aquaponics and agricultural systems—real-world cross-cultural research in geography, public health, business, and mathematics. These students ended up activating their neighborhoods. They were leading tours and writing their masters' theses on the implications of aquaponics within particular geographies or demographics.

However, although we were in touch with increasingly more neighborhoods and in conversation with people doing similar work in other cities around the world, we still weren't seen as agents of neighborhood development. This work wasn't seen as neighborhood stabilization. We were stuck in the "education" context. We kept hitting this glass ceiling—what we understood to be the limits of education. What we were implementing didn't even really make sense within the historical paradigm of education. We wanted and needed to be working outside of the university. Because in order for these systems to work, you have to be able to build them. In order to build them, you have to work with folks within the various trades of the built environment—carpentry, plumbing, electrical, architecture, engineering—alongside those in chemistry, physics, and biology.

And it just so happened that we were also working in neighborhoods that were stratified, disinvested, and "blighted"; neighborhoods with a long history of toxic soil, brownfields, or dumping—places extracted and just left vacant. The term "blight," urban blight, disturbs me. It's so often used in the real estate world, sampling from agriculture to describe the death and decay of a crop from disease. During my own academic work in urban planning and architecture, I kept coming across the term and it was always used in the same way: as an economic tool to create a tabula rasa, to get rid of whatever was already there. This idea of blight is deeply anchored in the racial and political histories of urban renewal. Almost all the communities we've worked with over the past several years live in and among the byproducts of redlining and disinvestment: neglected housing, empty lots, and toxic soil and air quality.

We're dealing with people. Our audience is traumatized people. People that have historically been neglected or abused by various systems. And sometimes, rightfully, our project has been met with skepticism. This is when the project really came to life for me and the team. People would ask: who's funding this and why? Are you trying to do something to actually spark real change? Or is this another project of control, something that just reinforces the existing power structure?

PROBLEMATIZING RESEARCH CRITERIA

JK: Can you give an example of ways in which funding agencies like the USDA or the ED reinforce those kinds of economic structures or power dynamics?

EP: Well, the USDA wants to understand the market demand that underpins and structures our entire national platform—which to a certain extent is understandable. For example, in agriculture you traditionally need to know what the yield is, like how many pounds, or heads of lettuce, are produced per acre. There's a reliance on efficiency metrics, which are concerned strictly with maximizing expenditures and dollars—almost irrespective of the sustainability or quality of the product. Also, historically, the structures for farming systems have relied on one or two farmers working thousands of acres with folks hired at the cheapest possible pay. This history is baked into the metrics that the USDA expects us to supply. But ironically, even as aquaponics systems are becoming more popular, there is no certified form of measurement for it. It's too new as a business. The USDA doesn't know what the implications of it are in terms of yield, for example, because its outputs are too foreign to existing paradigms.

Aquaponics and urban agriculture also thrive off of biodiversity, which means that you're not going to have a monocrop practice, but instead something that's more seasonally in tune, like crop rotations to replenish the soil. Sweet Water is really committed to increasing the awareness around sustainability, access, and labor. The hope is that we're not just growing exponential amounts of lettuce or basil, for example, because the market demands it. The aim is to grow stuff that the body actually needs. Remember, the audience that we're serving has little access to healthy food. So, part of the process is asking what people need to live a healthier life. In a low-income neighborhood with high unemployment, compost systems provide instant education, and I think instant therapy as well. You're working with people, bringing in the youth and bringing in the elders. It's a win-win. It's also hard to quantify.

JK: Do you think this indicates a lack of a structure to measure, categorize, and understand systems that large agricultural industries are not used to handling? Or a conflict of interest that actively dis-incentivizes these kinds of experiments?

EP: Are you familiar with Thomas Kuhn's *The Structure of Scientific Revolutions*? In it, he argues that around 25 to 30 percent of scientific discoveries fundamentally shift our understandings of science and our structures of evaluation.[2] These paradigmatic shifts are very volatile, both for the infrastructures of research and the logical structures of funding. They question the legitimacy and expertise of the individuals who created these structures. And this seems to be when power kicks in to get rid of any alternative that might challenge or destabilize things. Aquaponics and education definitely fall into that category.

JK: But what if you look at, for example, something as seemingly mundane as the administration of a grant, how you fill out reports, prove impact and things like that…

EP: It's kind of predictive. It forces you to say "my outcomes are going to be this," or "I'm looking for a certain type of yield according to this old formula." Funding agencies and philanthropic institutions want predictive outcomes as proof of their return on investment, on the dollars they're expending. This doesn't leave space for experimentation.

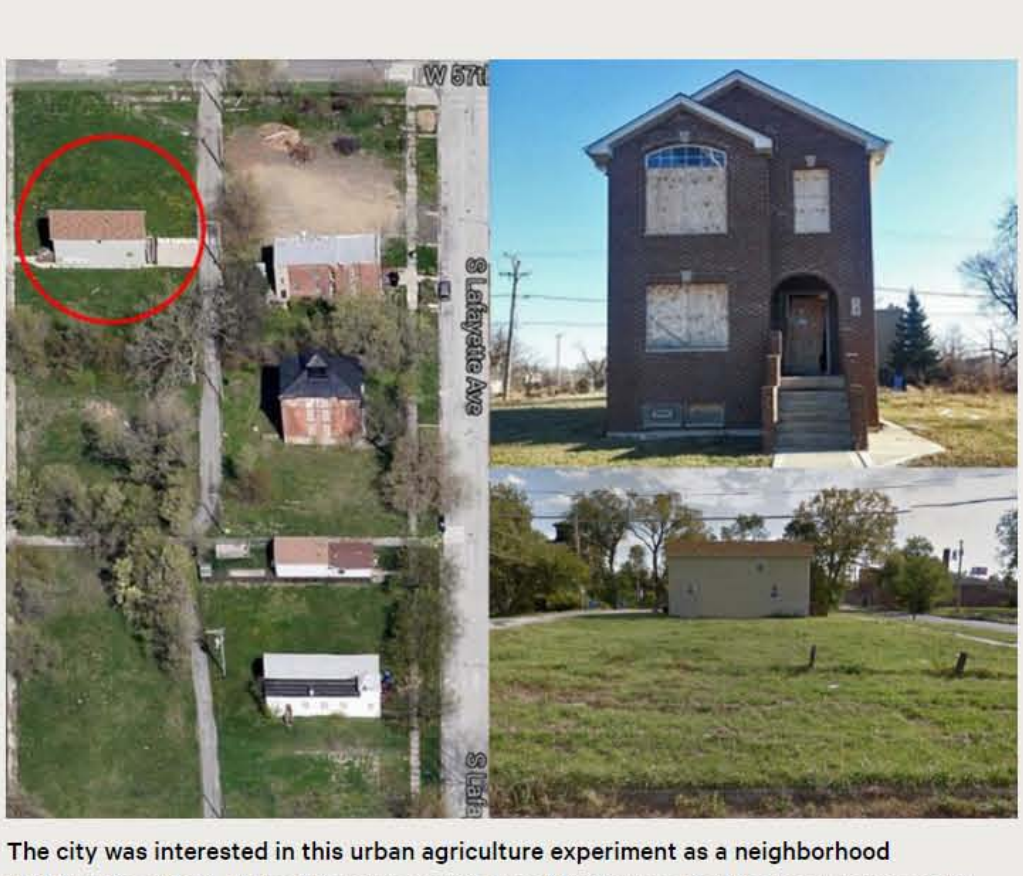
We were able to take advantage of a vulnerable moment at the USDA. Like I hinted at before, the USDA was concerned about the fact that the average farmer is white, rural, and 62 to 70 years old; and that their family members are no longer interested in farming because it's isolating, it's stressful, it's unpredictable, climate is changing, and technology has changed. We proposed that we'd utilize the field of education to help the USDA reach more audiences and put forward a wider concept of agriculture. And they agreed. In this way, our numbers could stray from the reductive analysis of the plants and products produced and instead address the structure and mindset of our framework and system. How do we attach a value to the people we reach? Sure, we can run the numbers. Every teacher within a classroom setting can reach twenty to thirty students. Out of that group of students we hope at least 30 percent feel like they are actually learning something—that they understand why agriculture is important to their lives, especially in a system that doesn't understand where food comes from or why food is important. So, we subverted the framework. We were influenced by E.F. Schumacher's *Small is Beautiful: A Study of Economics as if People Mattered* and Andre Gorz's *Reclaiming Work: Beyond the Wage-Based Society*.

BUILDING COMMUNITIES

JK: This aligns with a trajectory in Sweet Water's development as an organization, from a focus on education to agriculture to neighborhood building.

EP: Absolutely.

In 2014, our team began working on a project that we've since named the Perry Avenue Community Farm. The farm sits on the site of a former school in Chicago referred to as the "Moseley School for Bad Boys" and hints at the way all these concerns and interests converge. The school was one of the oldest schools of social reform in the city, known really as a pipeline to prison. This was an extremely scarred site on every level: in terms of actual toxicities, violence and crime, trauma, and the loss of labor. 65 to 70 percent of the population had died, moved away, or been incarcerated for years. So, the neighborhood suffered from lots of empty land and lots of foreclosure. Then all of a sudden, Adler University did a study on million-dollar blocks in Chicago, which long story short showed that 2.79 million dollars was being spent by the city to incarcerate people on that block yearly.[3]



The city was interested in this urban agriculture experiment as a neighborhood stabilization effort. We had the aldermanic or political support of the local government. But in order for it to work, the city had to rethink things. How do you put a farm in a residential neighborhood? It's really not something that's supposed to happen. So, while we leased the site from the city, it took lots of negotiating and relationship building across the Department of Urban Planning, Water Management, Street Sanitation, Economic Development, etc.—all of these different players had to be in the same room. It was interesting because we got to understand the politics of the structure of the city and see how it operates.

The nonprofit LISC Chicago initially partnered with the city to support the base transformation of the site. They treated it, they put a fence up, and they helped with some basic infrastructure, which was critical. The city even put up enough money to sponsor compost and a clay cap buffer to avoid liability issues from contaminants. LISC historically partners with different banks or developers for neighborhood development, but this funding doesn't support the base operations of the farm, so we were basically given the site with no electricity and no water. The city was like, "Here you go, here's the site." How are you supposed to operate a farm without electricity and water? I had to strike a deal with the water department to get a key for the hydrant on the site in order to figure out a drip irrigation system for the farm. It took us about a month to even get internet to the site because it was an "Internet desert" as well. It was really difficult to get activities and utilities there—trash and waste services didn't service the block regularly. We had to flag people down.

Fortunately, the site had good soil. I reached out to friends at Purple Cow Organics (they're organic soil producers in a network of cooperative farms), who really believe in what we do. I can't overstress that the farm survives because of these structural relationships, these human relationships. Purple Cow gave us a discounted rate and even did a scientific, biological assessment of the soil to figure out how to support it nutrient-wise, so that our capillary action was as productive as it could be. Good capillary action means we don't need to water the soil very much—which for us really meant that we didn't have to worry about the labor of watering. We could focus our efforts on the planting and harvesting.

We were getting educational funding, which went towards paying teachers and students. But we also wanted to attract local residents—retired residents and people who were basically underemployed and existing with no money and no source of revenue. Access to food was one of the ways we compensated people for their work. Because the products of the labor were food, food that they otherwise didn't have access to, people were less concerned about how much money they were getting since it wasn't the only form of payment. Most of the folks we brought in, that were unemployed or underemployed, were also formerly incarcerated. They could not get a job. Agriculture became a way for them to plug into a system that they were otherwise excluded from—you can imagine the various challenges they face with structural inequity, especially in an area that is 99.9 percent African American.

The farm bridged education and career pathways to labor and nourishment—it really was about healing people and healing the neighborhood. Most of the community said, "Well, we want collards and kale," because culturally and historically most of the people in the neighborhood were from Mississippi, Arkansas, and Alabama. Obviously, there are certain menus and recipes affiliated with this cultural, ethnic heritage. It was great news for us, because ironically, you get the most yield out of collard greens and kale, and actually most leafy greens like chard. You get more production with less labor. That's a win-win.

Across the street from the farm there was a foreclosed house, which a group, Open Lions, ended up acquiring from the city. They were going to board it up. We stepped in. Boarding it up would just make things worse, so we offered to reprogram it. We said, "Listen, we just reprogrammed an empty, two-acre lot that used to be a school and turned it back into a school." A couple things ultimately made it possible for us to get the house: first, the USDA was super happy with our progress and had evidence of the reach and capacity of an urban farm. Second, the city realized that in order for us to do what we needed to do, the site had to be rezoned as commercial. This was awesome for us. At the time, and even now, there weren't many commercial urban farms in residential neighborhoods around the country. More interestingly, our new lease reflected a commercial, urban agriculture education site.

So, the house was negotiated into our lease with the city—at that point there was enough trust, enough evidence, and enough impact that the city basically said, "that house has been on the market for too long, it's been nothing but a hole in the community, so we'll tack it onto your site." All of a sudden, we had access to electricity and water in a new way. We had a space that was enclosed. We started welcoming the community that we met and employed at the farm to have meetings at the house. We said, you know what, this should be called something else. It's not just a house. We called it the Think Do House. If you think it, do it. Remix it, share it, test it, try it again, get better at it. There was enough of a buzz and strangeness around it that it started to seriously attract people in the community. It meant different things for different people: it was simultaneously an agriculture site, an education site, an employment site, and a safe space.

QUANTIFYING THE QUALITATIVE

The Chicago Design Competition in 2015 was kind of a turning point for us. The premise was how you fight neighborhood crime and violence. We didn't have a formula, but we did have something that worked. We still know it works. Through agriculture, we can stabilize a neighborhood—increasing employment and creating safe spaces linked to education. We won. Well, we were one of three entities that won. We got some pilot seed funding, around several hundred thousand dollars. And like that, we had to figure it out all over again.

The unfortunate reality is that statistical analysis looking at the impact of fighting crime and violence is only about numbers: the number of shootings and stabbings, the rate of incarceration, etc. In this neighborhood, that logic structure doesn't apply. Even if something happens, it might not be called in. We knew this just by talking to our neighbors. So, we had to work with the evaluation team from the University of Chicago Crime Lab on their metrics. The randomized control trial (RCT) framework being used was borrowed ironically from the pharmaceutical and the medical industry, and we realized very quickly that it wasn't the most accurate or reflective in terms of a longitudinal analysis of a multi-generational issue—it didn't take into account what it means to scale a program up over time. Instead, we argued for a method that was more relational and based upon the structure of relationships—something more dependent on the context and scenario. In the end, we agreed to try a mixed-method of analysis that was both quantitative and qualitative.

We sort of just ran the program and let them evaluate it. The lab recognized that our program was successful on many levels, but mostly in ways that they couldn't quantify. Unfortunately, because we were not evaluated successfully under the RCT framework, we weren't advanced for more funding. It was funny though—the crime lab said, "We love you. But maybe you should go look and partner with the poverty lab that does more qualitative frameworks." We decided it was time to diversify our audience.

We reached out to the art world, museums and galleries, and they opened their spaces up to us. They obviously don't have the same criteria and are not restricted by any kind of predetermined framework for metrics. We started doing these agricultural installations with carpentry, finding wasted resources like wood and glass. We found that suddenly we were addressing new education aspirations and, very quickly, connecting with different audiences.

We did an installation at School of the Art Institute of Chicago's Sullivan Galleries with Mary Jane Jacobs and Jonathan Solomon, as part of their show *Outside Design*. We made an indoor, modular, aquaponics classroom that hung inside a vertical structure. Then at Columbia College, we did an installation called *The Ecology of Absence?* Here, we recreated the spaces of the home—the living room, the kitchen, the garden, the play room —through furniture made from reclaimed, wasted wood from the Chicago Transit Authority and bus stations. The show also had a hydroponics or aquaponics system baked into it with a greenhouse for growing food. We wanted to turn the gallery into a space you could touch, sit, experience, and eat in. We had been teaching kids at the foundation how to deconstruct and reconstruct materials; how to take things apart and understand them in reverse; how to make new products out of them. In this case, that product was furniture. Deconstructing the home into furniture was a part of that process. In the gallery, people started to recognize the home, like "Oh, this is a living room. Oh, this is the patio."

What was interesting was that the people who visited the gallery, who sat down and used the furniture like they were supposed to, put requests in for their own. So, it was also a productive thing for us—the money that we made from these sales went to sponsor our apprentices and to continuing our work in education around agriculture and neighborhood development.

DESIGNING NEW FORMS OF VALUE

JK: It occurs to me, too, when we talk about funding, we tend to assume that we're talking about money, about currency of a certain kind. I think some of these stories that you're telling recognize so many other forms of value. It could be land. It could be the resources that a neighborhood has. It's very much about realizing all that's there, activating it, and then bringing in external funding around that whole structure that exists already.

EP: Right. We are definitely interested in different types of investment: social capital, human capital, and natural capital. Historically and traditionally, one would figure out how to build housing to increase the land tax or the housing tax as a way to get more money for the schools, the infrastructure, the streets, the water. But this logic structure does not work in disinvested neighborhoods. It just doesn't work. So, what we've tried to do is think of it as one ecosystem, a dynamic bio-feedback system.

This is how we conceived of the Perry Avenue Commons, which we got funding for through an ArtPlace America grant in 2016. The Commons was thought of like a commonwealth collective where we could build new spaces based off of what we'd learned from our first ones, like the Think Do House. We proposed rehabbing two other foreclosed houses and turning them into live-work spaces for our apprentices and other international designers—having everyone live in a communal space. We also proposed to design and build two different community greenhouses and a multifunctional "Thought Barn" that could be used as a reflective safe space, a performance and art venue, and an educational workshop center.

I was recently looking back through my emails and I realized that I had been proposing something like this to different audiences since 2012. It just never stuck. We managed to connect with ArtPlace America at the right time. At that particular moment, there was lots of conflict over the presidential library, which was announced to be in Chicago. There was debate about whether it was going to be in Washington Park or Jackson Park. Of course, the presidential library will bring in a ton of capital. They recently made an announcement that it's going to be a one billion dollar project. But the Obamas did not want it to be just a library. They wanted it to be an attractor, a safe space, an exploratory space, a training space for self-reliance. So, I proactively reached out to certain people in the Obama Foundation. At first, they said "Oh, you got that garden and the farm." But once we had them in the room with other political players, they were like, "Wow, this is actually a neighborhood thing." I thought "Yeah, we've been saying and doing this for a long time."

Because of our newfound relationship with both ArtPlace America and the Obama Foundation, we got donated a house, more land, and a barn for the Commons. This marks the beginning of introducing architecture to Perry Avenue, or at least new forms of architecture. How often do you see a barn? I mean it's really a piece of architecture that touches people in so many different ways. It's symbolic. In certain communities, there will be a barn raising for three days. The community stops. It's a food event. It's a music event. Everyone comes together to support one another.

JK: There's some irony in the fact that a lot of funding sources come from the very people who were involved in the foreclosure crisis or in the more general economic dynamics that produce the kind of blight you were talking about earlier.

EP: Yeah, Sweet Water came out during the global financial crisis, which was catalyzed by the banks' complicit involvement in predatory lending. Now, years later, we're on the verge of striking a deal with the city to get ownership of twenty-two contiguous parcels of land.

We do have partnerships now with certain community loan funds that are saying, "Well, these are the ways we can structure a loan." And we're like, "OK, but we don't want certain types of debt based off of that predatory model." This means we're actually looking at how to include other forms of natural and human capital in the loan process. It's amazing and kind of unprecedented.

In becoming a community land trust, Sweet Water Foundation has partnered with Jeanne Gang and Mass Design Studio. Having these two architects come into our world to support, endorse, and partner with us on our work with the Thought Barn means that the banks and the cities are following suit. They're actually starting to be more open to explore new forms, models, and systems of experimental neighborhood development.

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[1] DML4 Badges for Lifelong Learning Competition, "Project Q&A With: Sweet Water Foundation (AQUAPONS), Hastac: Changing the Way We Teach + Learn, July 1, 2013, https://www.hastac.org/wiki/project-qa-sweet-water-aquapons. ^

[2] See Thomas Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1962). ^

[3] For more on this visit, "Intro: Million Dollar Blocks," Chicago's Million Dollar Blocks, http://chicagosmilliondollarblocks.com/#section-1. ^

Emmanuel Pratt is co-founder and executive director of the Sweet Water Foundation. Emmanuel's professional and academic work has involved explorations and investigations in such topics as architecture, urbanization, race/identity, gentrification, and most recently transformative processes of community economic development through intersections of food security and sustainable design innovation. While most of his early work was anchored in the field of architecture, Emmanuel's work has since explored the role of art and social praxis as a key component of urban design, urban farming, and sustainability with a particular concentration on the creation of a new paradigms for regenerative neighborhood development. Emmanuel was a Loeb Fellow in 2017, is the director of aquaponics at Chicago State University, and currently is a visiting lecturer at Taubman College of Architecture and Urban Planning at the University of Michigan.

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