FOR A

BETTER

NORMAL

FOSTERING THE INFORMAL SECTOR
IN POST-HURRICANE PUERTO RICO,
AS A PATHWAY FOR ECONOMIC
STABILIZATION

JONATHAN W. MELENDEZ DAVIDSON RHODE ISLAND SCHOOL OF DESIGN MASTER OF INDUSTRIAL DESIGN GRADUATE THESIS 2018

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A thesis presented in partial fulfillment of the requirements for the degree Master of Industrial Design in the Department of industrial design of the Rhode Island School of Design, Providence, Rhode Island

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and Family.

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FOR A BETTER NORMAL

JONATHAN W. MELENDEZ DAVIDSON

MASTER OF INDUSTRIAL DESIGN THESIS

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ABSTRACT

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ABSTRACT

01

For a Better Normal is a proposal to aid informal produce vendors in post-hurricane Puerto Rico. The project takes the shape of a toolkit that facilitates the creation of a cooperative buyer's club. This cooperative not only provides vendors with the opportunity to create sustainable businesses, but also acts as a pathway to formalization. The outcome of this thesis becomes a case study for how to re-think the potential of the informal economy in relation to the Island's economic crisis.

+ A NORMAL +

A NORMAL

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On September 20th, 2017 the Island I call home was left in ruins by the category 4 Hurricane Maria. The Hurricane left millions of Puerto Ricans homeless, without access to power, and in need of aid. But it also had larger long-term effects on the Island; it burst a false bubble of comfort which covered the Island's inhabitants. It exposed our dependence on foreign goods as the Island's inhabitants waited for weeks to receive supplies. It also revealed the reality of the government's 70 + Billion dollar debt¹ as the government was unable to provide services required for the Island's recovery process. Now Puerto Ricans face a long and slow road to recovery. Maria created a "new normal," and although unfortunate, it created an opportunity for progress. As we face adversity, we must change and adapt, relieving us from the stagnations of our past selves. As the economic staples of recent decades, such as tourism and the pharmaceutical industry, have been severely crippled we must use this moment as an opportunity to look into new and novel methods to rebuild our economy, to build a better normal.

"It's an old electrical grid, which was in terrible shape, was devastated. Much of the Island was destroyed, with billions of dollars owed to Wall Street and the Banks which, sadly, must be dealt with."

Donald Trump 5:50 pm - 25.09.17 (Twitter)

There is a need to be resilient through adversity, to recover normalcy, and to build a new economy to alleviate the economic and humanitarian crisis. I see our informal sector as a particularly fruitful site which can catalyze changes to improve Puerto Rico's economy and therefore the wellbeing of its citizens. I believe it has the potential to become the backbone of our economy. The Informal economy, which makes up 26% - 27% of Puerto Rico's national GDP², is made up of illegal businesses which span across a vast spectrum of markets, from illicit substances to arts and crafts. For this thesis the terms "Informal Sector" or "Informal Economy" is utilized to refer to businesses which perform extralegal transactions but who are merely illegal because of tax

Gustavo Velez, a local economist, estimated in 2014 that the Puerto Rican government currently received only 56 cents per every dollar it was owed in taxes from the local population. If this rate was increased to 75 cents out of every dollar, the economy could receive a much needed economic input of around 300 million dollars per year.

¹ Kranz, Michael. "Here's How Puerto Rico Got into so Much Debt.", Business Insider, 9 Oct. 2017, www.businessinsider.com/puerto-rico-debt-2017-10.

² Lopez , Lucinana. "Desperate for Taxes, Puerto Rico Tries to Get Grip on Underground Economy." Reuters, 9 Apr. 2014.

³ Hart, K. "Informal Income Opportunities and Urban Employment in Ghana." In Third World Employment-Problems and Strategy: Selected Readings. 1973.

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Due to an unknown percentage of the population unemployed (estimates range from 14%-30%)⁴, high taxes (11.5%), and immediate necessity, the informal sector in Puerto Rico continues to increase. Evidence of this phenomena can be seen in the main roads and streets of the Island in the form of food carts, produce vendors, and illegal service providers. Instead of utilizing current deterrence tactics such as fines up to \$20,000 for tax evasion which hurts the vendors, Could the government (or public sector organizations) instead provide services for this sector, to view them as small business owners in need of help rather than people running away from the law? I believe we can.

So I ask, How might we create formal sustainable businesses out of the informal sector to rebuild our economy?



⁴ Schoen , John W. "Here's Why Puerto Rico's Broke,", 4 Aug. 2015.

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02 _ FARMACIA _ INFORMAL VS FORMAL CONTRAST _By Melendez Davidson _ 2017

+ A BETTER NORMAL +

A BETTER NORMAL

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For a Better Normal proposes an innovative cooperative business model for the Island's informal street-side produce vendors, a low margin sector of the informal economy. It introduces the cooperative through a kit, which contains educational materials on cooperatives buyer's clubs, tools like invoices and record charts to aid in creating supply chain efficiency, and a branding strategy called TUYO to help consumers identify the new model. The kits will be passed on to a small group of produce vendors. If established and successful, the cooperative strategy and kit could help vendors attain formality through profit increase. Formalization, in this case, is not only for the good of the government but as well can aid vendors by giving them the ability to grow their businesses, to apply for loans, and to provide sustainable sources of income for their families. Sources of livelihood which could be fostered and passed down to future generations.

Why a buyer's club?

The cooperative will take the shape of a buyer's club helping vendors attain and provide lower prices for their produce. But it also can aid vendors formalize. Interviewing vendors in Puerto Rico. I learned the reason why they are informal is not that they lack business knowledge but rather because of their clients. Clients and consumers ask for lower prices when buying produce, leading vendors to cut away

the 11.5% tax they are required to charge by law.

How does a buyers club work?

Imagine yourself being a vendor with a little street-side shop. Selling produce sporadically without any apparent pattern or anticipation of what might sell that week. You pay a visit to your supplier weekly or every two weeks (depending on the sales of a produce X) to buy a crate or two of X. Because of this inconsistency and low quantity of produce the supplier charges you a premium for their product. This premium then gets passed on to the consumer cost. The clients then ask for a better price which you are forced to provide because if not you will lose your client to one of the big box stores in the area which offer lower prices. The only alternative to lower the product price point and maintain your business alive is to sell these products without charging taxes.

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Now imagine, if instead of buying a crate or two of X, you got together with a few other vendors and friends to begin buying in bulk. Instead of a crate or two of X, you buy six or eight. This would give, and you and your colleagues leverage to negotiate prices, gaining the ability to lower your product costs and ultimately increase profit margins.

The previous scenario sounds like a best-case scenario if you are the vendor. But if you increase your profit margin without sharing your "wins" with the customer, the customer will still ask you to lower your prices, and well you still might take off that 11.5%. So How can we make this model sustainable to give vendors the ability to formalize? What I'm proposing past this point is that the vendors lower the prices they offer to their customers, this would decrease their profit margin but would welcome new customers as the typical Puerto Rican customer is looking for the lowest prices they can get after the Hurricane. Decreasing profit margins but the increasing volume of sales which could increase your revenue.

This is not a simple proposition. The ecosystem requires for produce vendors, produce suppliers, and consumer engagement for the system designed reach its full potential. It requires the buy-in of vendors, tapping into the local population's (consumer) need and desire to help after Hurricane Maria, and potentially gaining the attention of the local government and or public service providers. But the implementation and success of this strategy could serve as a case study for how Puerto Rico's Government can provide services for the informal sector with the intention creating stronger local markets and stabilizing our economic and unemployment crisis.

KIT

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KIT



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04 _ TOOL KIT_CONTAINING TOOLS FOR PRODUCE VENDORS _ By Melendez Davidson _ 2018

+ THE PROCESS +

THE PROCESS

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I was interested in how as a Puerto Rican systems designer I could aid Puerto Rico's economic crisis. The crisis is affecting our well being, as the lack of capital has resulted in the closure of many public institutions such as schools and hospitals. I began to study the Jones Act and its ecosystem, as a report from the Federal Reserve Bank of New York suggested that the act as one of the critical factors in Puerto Rico's economic crisis¹. Acting quickly I began to conduct site visits, interviews, workshops and started to strategize plans on how to dissolve the Jones Act.

Then on September 20th, 2017 Hurricane Maria occurred, and after engaging in extensive work and research on the Jones Act, the needs of the Island's inhabitants changed dramatically. Indirectly aiding the Island's socio-economic crisis proved to be potentially irrelevant if the islanders lacked the most basic of necessities. There was a disconnect between the progress of this thesis and the reality of the situation. This natural event shifted my focus. In the midst of the disaster, I saw a moment of opportunity arise from devastation and began to study and act to bring it to fruition.

¹ Jason Abel, Report on the Competitiveness of Puerto Rico's Economy. Federal Reserve Bank of Newyork, 29 June 2012





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REACT

Then several weeks after the Hurricane the content and tone of the posts changed. They highlighted post-hurricane resilience in a proud tone. In many cases, these posts highlighted the ingenuity which grew out of necessity. Things like bicycle spun laundry machines, or homemade wind turbines, and even hanging rope and pulley systems with attached shopping carts to transport goods where bridges once stood.

These acts reflected a post-hurricane uprise in ingenuity among citizens. In Hindi, this concept is called jugaad, a well-crafted solution created with scarce resources. This newly created sense provided a tangible way for me to see how locals had to adapt to their new normal. It was a sense of ingenuity which was not visibly present on the Island before the disaster. I began to see this as a moment of exception where the disaster had brought something positive.

¹ Radjou, Navi. "Jugaad: A New Growth Formula for Corporate America." Harvard Business Review, 25 Jan. 2010.



ninammfoto Santurce, Puerto Rico >

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07 _ POSITIVE INSTRGRAM POSTS EXAMPLES _ Screenshots By Melendez Davidson _ 2017

By Melendez Davidson _ 2017

CAYEY PUERTO RICO _

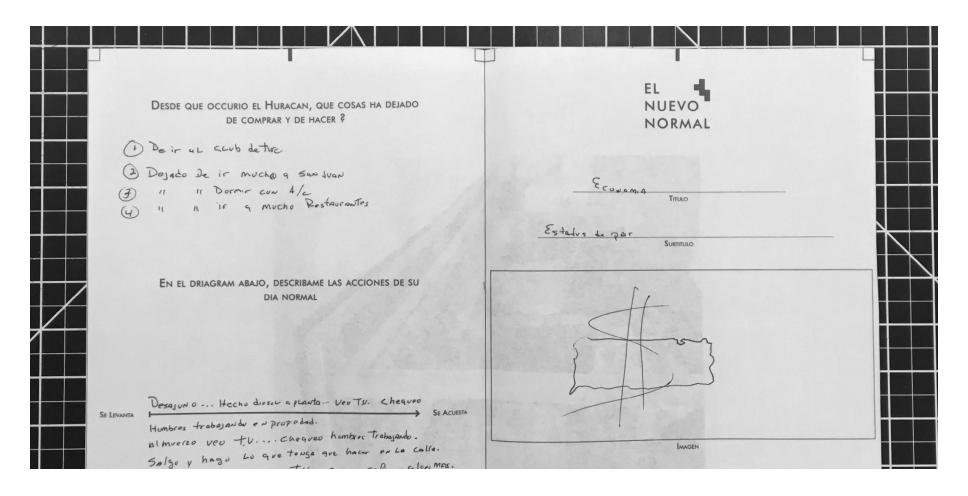
_ INFORMAL ICECREAM VENDORS _

08

Having observed the uprise in jugaad through social media, I had to see them for myself, to validate them. My need prompted a site visit to the Island two months after the disaster. Upon arrival, the reality was a bit different. The senses of d.i.y. resilience and ingenuity were still visibly present, yet it had morphed. Ingenuity was no longer represented by d.i.y hacks but rather by small street side entrepreneurs and vendors illegally selling products and services. Where once ingenuity was solving immediate needs it was now dealing with long-term prosperity. Engaging in conversation with some of the vendors I was able to learn about how they had to completely change their lives after the Hurricane, highly unfortunate but equally inspiring.

During the site visit, I also wanted to get a sense of the local's morale. The posts in social media had made me suspect that a sense of national/communal pride had started to grow. To attain a result a small pool of locals were prompted with an empty mockup newspaper front page which asked them to write and draw the news headline they wanted to see in the future. As a result, the small pool asserted my hypothesis as the answers depicted a future of national prosperity rather than an individual gain.





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09 _ MOCKUP NEWSPAPER FRONT PAGE _ FILLED IN BY PARTICIPANT _ By Melendez Davidson _ 2017

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Upon conducting secondary research, I learned of the post-hurricane unemployment rise because of the amount of job-creating industries which were destroyed (many of them foreign). These facts explained the increase in the informal sector. I also became aware of the up to 30% (GDP)¹ pre-hurricane informal economy. With my original prompt on how can I as a designer aid the Puerto Rican economy these statistics became highly relevant as they gave a glimpse into a sector of the economy which is growing, important, and currently untapped.



¹ Lopez , Lucinana. "Desperate for Taxes, Puerto Rico Tries to Get Grip on Underground Economy." Reuters, 9 Apr. 2014

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With little knowledge about economics and the intricacies of the informal sector, I sought out for help. Thanks to Andy Law (Head of the Industrial Design Graduate at the Rhode Island School of Design) I had the opportunity to consult with an expert in economic prosperity Efosa Ojomo head of the Global prosperity group at the Christensen Institute, interview follows.

Jonathan

How might one go about strategically aiding the Informal sector? What is the right approach?

11 Efosa

It's somewhat popular so say, Oh man, What's wrong with them? Why don't they like paying taxes? But I've never met a person who waits excitedly for April 15th, tax day in America or is so excited when they see their paycheck and the taxes being take out... The question we have to ask is fundamentally is not "What is wrong with all these people?" but rather "Is informality that what makes the most sense in the context in which they find themselves?". Formalization is as much about our humanity as it is about the regulations that govern our society. The minute we start to think about all the reasons why it makes no sense for the average Puerto Rican to formalize their business is the minute will understand that being in the informal sector is

an innovation in itself. These are people trying to make ends meet. Now let's start to think about how to incentivize them.

Jonathan

So how does one go by creating an economic intervention based on humanity? Do you know of an example where this type of thinking has been put into practice?

Efosa

There's this company called Iguanafix, and it's now operawting in Argentina and Brazil, Mexico, Uruguay started by a guy who graduated from Harvard business school about four or five years ago. He moves back to Argentina, and he can't find a plumber, he can't find a reliable electrician, he can't find

anything. [because they can't advertise due to their informal status]. He says, let's think about how much economic activity we're leaving on the table when the average Argentinian says, you know, I want to fix something in my house, but I don't know who to call. I can't find anybody. So he has created a platform where they vet people providers [service before joining] with these rigorous metrics, but one of the criteria is that you become formalized. Now he's got over 20,000 people who becoming formal are 20,000,000 plus dollars in revenue. He's servicing about 35,000 requests every month, and these tax dollars are

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THE PROCESS

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going into the economy. SO far they have raised about \$21,000,000 from venture capitalists in the past 20 months or so.

Now my hypothesis is many of those people who are coming into the platform and not coming in because they want to be formalized, to abide by the laws of Argentina, Brazil, and so on. It is because they are provided an immense value through this platform. He's now able to provide a larger client pool and insurance for the workers. These guys are happy to come out of the dark. 1

¹ Ojomo, Efosa. "On Informality and Economic Development: Christensen Institute." Dec. 2017.

REFINE

Realizing the potential impact of the informal sector for Puerto Rico's economy I had to act propositionally to develop a strategy which would aid not only the informal vendors but the economy at large. Knowing the scale of the project I was about the embark on I had to set realistic goals. These were to try to make whatever solution I would develop deployable and to engage other agents of change to move the idea forward.

I realized that "the informal sector" as a demographic was too large as it ranges from illicit drug trafficking to hand-carved toys1. It became clear I needed to filter the informal sector to develop a case study. I set my goal of aiding the economic crisis as a criterion for the selection. The selected businesses had to be able to seamlessly formalize, become job-creating opportunities, and to strengthen local markets.



COD FISH FRITTER_INFROMAL VENDOR_By Melendez Davidson_2018

¹ Enchautequi, Maria E. Por Debajo De La Mesa: Una Mirada a Los Trabajadores Informales De Puerto Rico. Center for the New Economy, 2008

Through this process, I selected streetside produce vendors, locally known as *fruteros*. They represent an important sector of the agriculture market in the island as they are the primary sales point of produce grown by small farms. They provide Puerto Ricans with local goods which are crucial to our culture such as batata and malanga (locally grown yams). And well their products are not illegal. Puerto Rico's economy could also benefit from agricultural growth as previous to Hurricane Maria 80-85% of all of the food which is consumed in Puerto Rico was imported.



¹ Charles, Dan. "How Puerto Rico Lost Its Home-Grown Food, But Might Find It Again.", NPR, 13 May 2017.

sector at large.

Business canvas¹ cards and prompts were devised to facilitate conversation with fruteros about their businesses. Fruteros were prompted to identify which of the canvas subsections did they struggle with/ needed help with the most. This exercise clarified the reason for why they conducted informal transactions; the fruteros identified their biggest struggles to be either the cost of their produce or attracting new customers. Through conversation, they also spoke of having to conduct informal transactions as clients asked for lower prices for their produce to which they only saw one answer, that of taking away the expense of tax away from the produce. One can still see the physical traces of informality by the lack of receipts or price markers on the produce, as well as the apparent

Once again I visited Puerto Rico to meet a select

group of informal produce vendors and conducted

ethnographic research. In a week's time, I visited

seven individual fruteros. These ranged from having

started their businesses right after Hurricane Maria

to fruteros who have had their businesses for the

past 15 years. The selection was intentionally broad

as my focus at this point was not just about post-

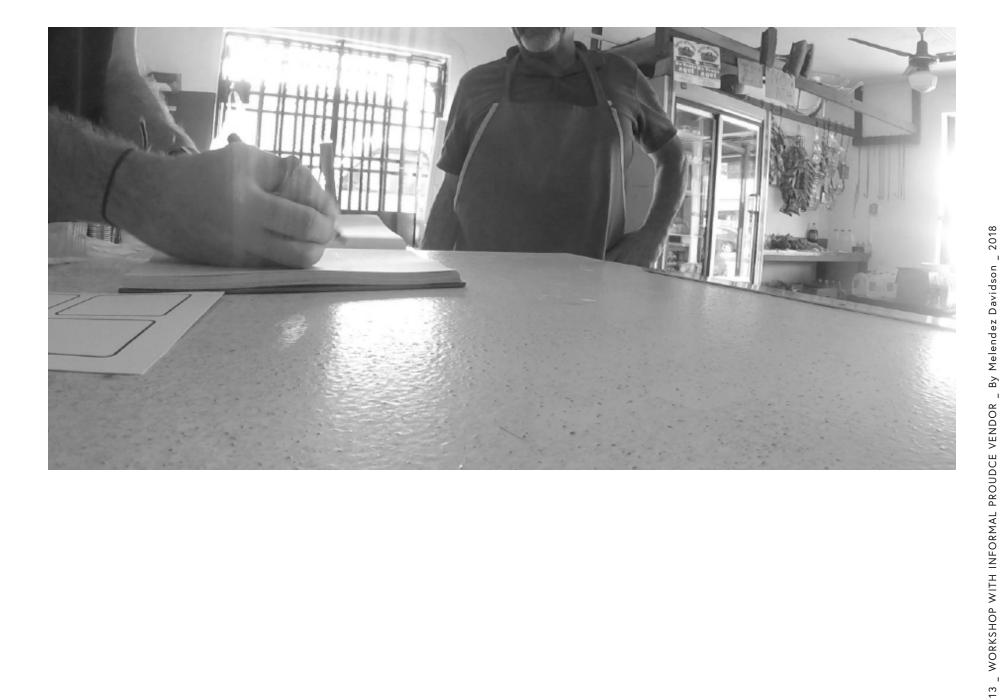
hurricane informal entrepreneurs but the informal

1 Osterwalder, Alexander, and Yves Pigneur. Business Model Generation a Handbook for Visionaries, Game Changers, and Challengers. Wiley&Sons, 2013.

signs hung up in shops saying "Cash only" or "No Debit or Credit."

There were a couple of factors which created the context which led to informality. But, the decision to conduct an illegal transaction came at the moment the vendor was asked to lower the price. Then how could vendors still make a living selling produce legally? One way to do it would be to reduce their expenses, specifically those of the cost of produce.

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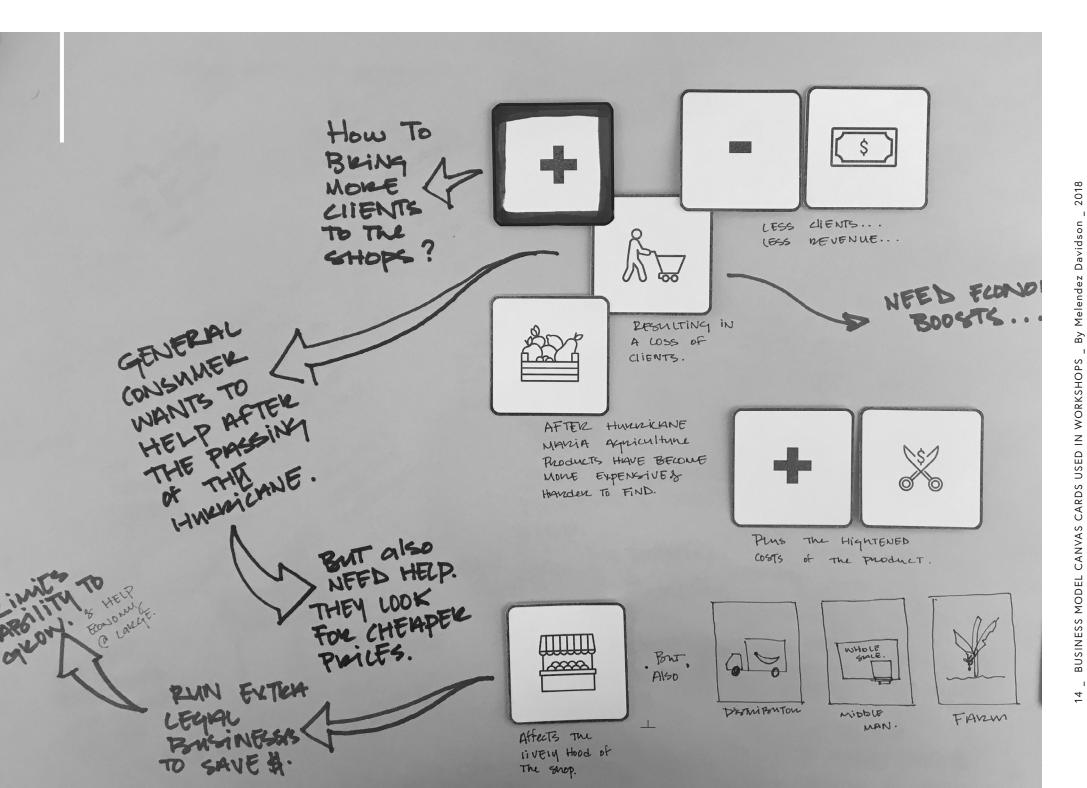


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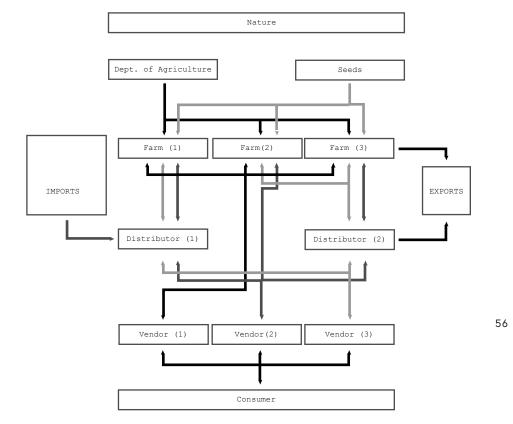
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Ethnographic research revealed the need to aid vendors lower the price at which they attain their produce while maintaining their profits. This would prevent the consumer from finding their prices expensive and expecting a "tax exemption." Enabling formalization and sustainability for the vendor.

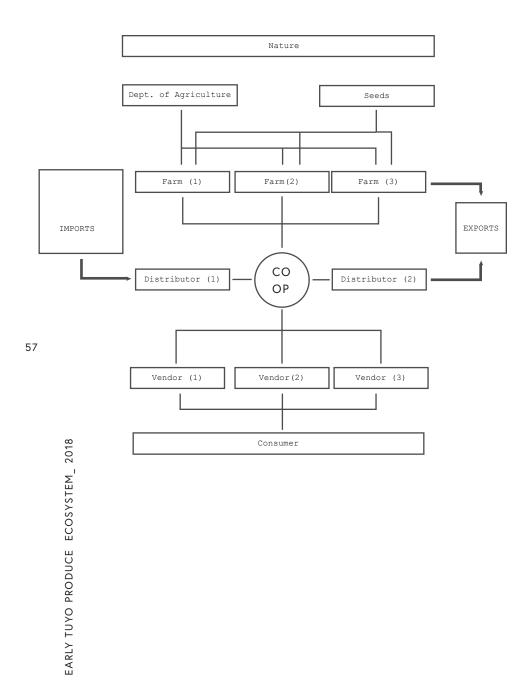
Thinking about how my previous test had shown an uprise in national pride and community and seeing how people came together to help each other after Hurricane Maria, I began to wonder if *fruteros* could benefit from a similar model. The solution seemed simple, a cooperative (coop) in the form of buyers club, where produce vendors could buy in bulk and get better prices for their produce. This model would allow them to formalize and grow their independent businesses.

This strategy offers the ability to envision a bestcase scenario in which vendors could potentially strengthen the cooperative, provide better prices for their customers and by doing so increase their volumes. This would also increase the demand of farmers to produce and by default the need for the suppliers to increase their supply (at this step the farmers would have to be included into the system and vision for them not to increase their prices as demand increases). Not only aiding the small informal vendors but other markets in the island.

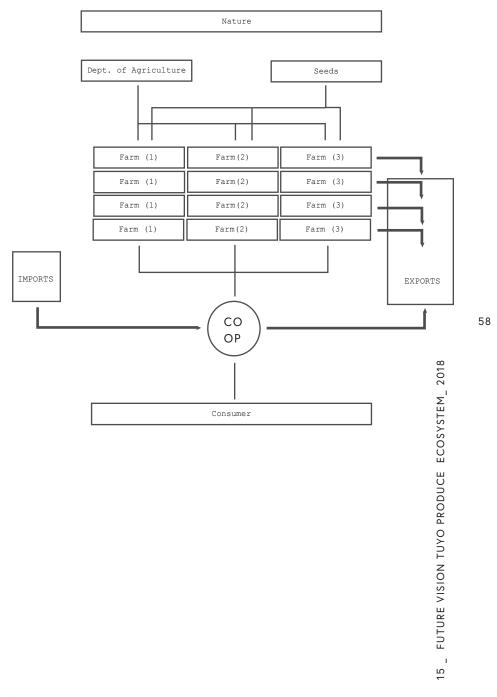


15 _ CURRENT PRODUCE ECOSYSTEM_ 2018

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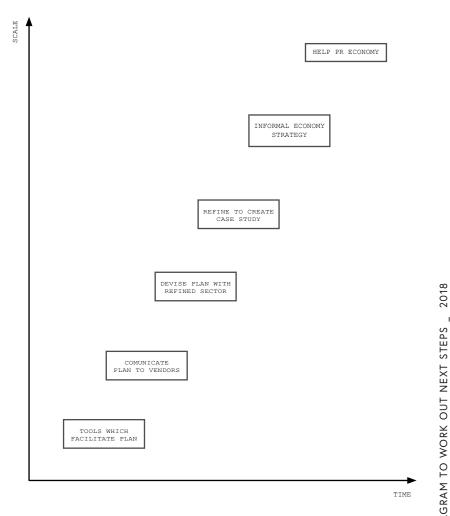
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I began to realize that the cooperative model strategy needed a seed. Going through a backcasting exercise helped me identify the actionable next step. This next step was to design a seed which could help communicate the rationale for the cooperative and provide vendors with the necessary tools and guides to create the cooperative. The seed could not just be directed towards the vendors but had to consider other audiences, as systems such as this one affect multiple stakeholders. These audiences include consumers as they need to become aware of the initiative to provide support and public sector agents of change as it is necessary for others to view the potential in aiding the informal sector.

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_ BACKCASTING MODEL DIAGRAM TO WORK OUT NEXT STEPS

Vendors

The seed takes the shape of a kit inspired by aid packages delivered in the aftermath of Hurricane Maria. It contains documents which explain what a cooperative is, how they work, and their benefits. It also includes a step by step roadmap of how to build the cooperative (including formalization) and a workshop sheet with activities and questions to kickstart the model. The kit also includes tools such as invoices and record keeping devices to create supply chain efficiency.



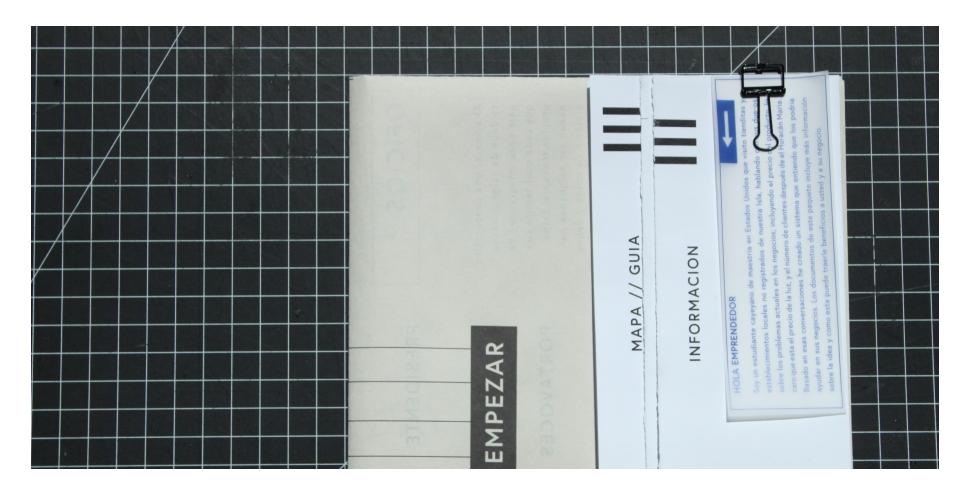
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By Melendez Davidson

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18 _ INFORMATIONAL MATERIAL INSIDE VENDOR TOOLKIT _ By Melendez Davidson _ 2018

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19 _ WORKSHOP SHEET WHICH FACILITATES THE STARTING OF A COOPERATIVE_ By Melendez Davidson _ 2018



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20 _ CUSTOMIZED INVOICE AND RECORD KEEPING CHART FOR PRODUCE VENDORS _ By Melendez Davidson _ 2018

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Consumers

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The kit also includes a branding system in the form of fruit stickers, price labels, grocery bags, a vinyl logo, stencil, and a flag so vendors can gain visibility and promote themselves as part of a bigger whole. The aesthetics and the branding are decidedly generic as the intention is not to overtake the shop's pre-existing character but rather supplement it.

The name TUYO was chosen because of the definition of the word in Spanish, meaning 'yours'. It hints at the agency which is given to the vendors through the kit, stating that the *fruteros* own the cooperative. It also comes from breaking the word into two parts TU and YO meaning you and I, indicative of the basic premise of a cooperative two or more people working together with a shared goal or mission.

These objects and graphics will potentially spark intrigue and get consumers to ask the vendors about the new images in their shop. The vendors will then proceed to chat about the system with their clients publishing the idea by word of mouth.



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THE PROCESS



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23 _ PRODUCE BRANDING STICKERS TO ENVISION THE GROWTH OF THE COOPERATIVE_ By Melendez Davidson _ 2018



24 _ TUYO BRANDING ON DELIVERY VEHICLE _ By Melendez Davidson _ 2018

Public Sector

Through the creation of this kit and strategy, I've been able to make the work and ideas accessible to agents of change in Puerto Rico. These are community leaders, heads of NGO's, and consultants who are working in the resilience of post-hurricane Puerto Rico, including the localy reknown Casa Pueblo. The concepts have begun to circulate via emails and conversations which will hopefully convert into an interest in aiding the informal sector. The reality is that the propagation of this theory will only reach a broader audience once it shifts from a hypothesis to factual evidence. This is to say, the success of the produce vendor case study will determine how much public sector engagement this proposal receives.

THE PROCESS



Jonathan Melendez Davidson <imelende@risd.edu>

Rhode Island School of Design _ Estudiante de Maestria _ Jonathan Melendez Davidson

4 messages

Jonathan Melendez Davidson < jmelende@risd.edu>

Mon, Apr 23, 2018 at 11:25 AM

To: jose.caraballo8@upr.edu

Hola José Caraballo

Soy un estudiante Cayeyano terminando su Maestría de Diseño Industrial en los E.U. Recientemente discutí mi proyecto de tesis con Arturo Massol, director de casa pueblo y profesor de Biología en Mayagüez y me dirigió a usted ya que me dijo "A Caraballo le interesaría esto". Me encantaría poder hablar con usted sobre este proyecto ya que estoy buscando mentes como usted, agentes de cambio para nuestro país.

Siguiente un poco de información sobre el proyecto:

Para mi tesis he estado diseñado un kit para vendedores de frutas y vegetales en el pueblo de Cayey. Este kit provee herramientas e información de como empezar un sistema cooperativo mejor conocido como un "buyers club". Este tiene dos objetivos primero Incrementar las ganancias de los vendedores informales, y como resultado se hacer la formalización más accesible.

Mas allá este kit trata de crea un caso o ejemplo para cómo se debería de repensar el sector informal en Puerto Rico. Este es basado en mi hipótesis cual sospecha que nuestros niveles actuales de desempleo y necesidad han creado un ecosistema para que más negocios informales surjan. Al pesar de ser negocios ilegales entiendo que estos si podrían formalizarse con los servicios y herramientas necesarios creando una inyección a la economía bastante necesaria. Poco a poco crear pequeñas empresas sustentables que puedan mover la economía

Gracias por tomar de su tiempo para leer esto, si el material o tesis es interesante para usted por favor contactarme a este e-mail o al 7873819209. Espero su respuesta.

Atentamente

-Jonathan.

Jonathan Meléndez-Davidson

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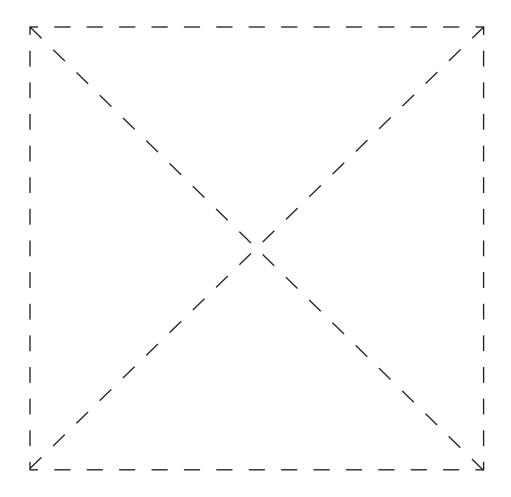
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The intent is to have the vendors start and take ownership of the cooperative as I wish not to interfere with the democratic decisions they will be taking of their future. I hope this project will provide these vendors with a better normal filled autonomy and agency.

The image placeholder on the right is intentionally left blank, becoming a placeholder for future development defined by the *fruteros*.



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00 MAGE NAME TAKEN BY REPRESENTATIVE OF NEXT

CONCLUSION

Puerto Rico's long road to recovery will not be easy. The changes brought to the Island by Hurricane Maria and the economic crisis are defining our generation. This small thesis proposition will not solve the whole economic crisis or the unemployment crisis, but I believe it is through a multitude of small interventions like these that we will begin to build a better normal.

It is now the time that as a nation we must take advantage of the opportunity to rebuild, and to consider what future we want for our country.

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Jonathan W. Melendez Davidson (b. 1992, San Juan, Puerto Rico.)

Trained as an architect, Jonathan developed an interest in systems thinking, critical design, futures planning, and social good. Realizing $_{
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