

Increasing Socio-economic Resilience of Utuado Farmers through Agritourism

Huda Khalife

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SARE Project Team & Utuado Farmers



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Abstract

Utuado, Puerto Rico, is a region that has witnessed many natural hazards, most notably Hurricane Maria that struck the island in 2017 and irrevocably altered its landscape to this day (Holladay et al., 2019; Ortiz, 2020; Benach et al., 2019). In combination with layers of pre-existing vulnerability, such as socio-economic vulnerability and food insecurity, this has made for a disaster situation (Klein, 2018; Benach et al., 2019; Garriga-López, 2019). However, this disaster has also opened up a window for citizens to rise up and self-organize for the revitalization of their shared communities and spaces; in the agricultural sector, this has manifested as a drive towards a stronger regional economy and the building of food sovereignty through agritourism (Holladay et al., 2019).

My Master of Sustainability Solutions (MSUS) Culminating Experience (CE) project supports this local movement through a collaboration with key local farmers to identify local farm assets through the reconstruction of solution strategies (Forrest & Wiek, 2014) and the designing of an educational program for the adaptation and scaling of identified sustainability solutions to other regional farms (Fraser & Galinsky, 2010). The intended outcomes for this project include (1) building of community resilience and livelihood opportunity; (2) increasing of awareness and knowledge of agritourism best practices; (3) dissemination of knowledge on practices to increase farm- and visitor-readiness; (4) and strengthening and interconnection of regional economy players. Based on the array of exemplary farms and enterprises that I have conducted research on and engaged with through this project, I have witnessed the potential that the widespread dissemination of agritourism best practices offers for the progressive building up of the regional economy in Utuado, Puerto Rico.

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Introduction and Background

The hurricane that struck the island of Puerto Rico in September of 2017 was one that would permanently alter the lives of many for years to come; loved ones were lost, basic needs were far out of reach, and many had become internally displaced (Garcia-Lopez, 2018). However, the impacts of this natural hazard were not felt equally by all: What came as a disaster to some, was easily recoverable from by a small minority of others (Garcia-Lopez, 2018). Directly contributing to the experiencing of natural hazards as disasters is the level of vulnerability of a group of people to major impacts (Wisner, et. al, 2012). In one of the hardest hit regions of Puerto Rico, the municipality of Utuado, this progression of vulnerability includes a range of dispersed effects including a lack of livelihood opportunity (Klein, 2018; Garriga-López, 2019), a large proportion of citizens living below the poverty line (U.S. Department of the Treasury), a lack of access to basic necessities and high quality food (Klein, 2018; Benach et al., 2019), increasing farm abandonment and outmigration (Garriga-Lopez, 2019; Klein, 2018), and a high level of dependence on imported food (Klein, 2018). This precarious situation to a certain segment of the population points to inter-regional justice issues and the fact that natural hazards, combined with compounding layers of vulnerability, pose a significant level of harm to ecosystem, human, and economic viability and integrity over the long term. The impending risk of additional hazard-related shock to the region also points to the urgency of the situation overall. To add to this is the contestation of this issue's existence and importance, as demonstrated in the "national and federal government's inept...responses...histories of unjust planning, and colonial-neoliberal institutions" (Garcia-Lopez, 2018). This includes a US-imposed shift away from agricultural production, subsequent food import dependence, and an overall lack of public infrastructure investment (Klein, 2018; Valentin Ortiz, 2020). The unaddressed destruction after Hurricane Maria across all sectors has had progressively exacerbating long-term and dispersed effects on the health, education, and economic situation of Puerto Rican citizens, many of which have opted to relocate to the US mainland or elsewhere in search of better quality of life and greater livelihood opportunity (Klein, 2018). While Puerto Rican farmers historically used traditional planting practices conducive to environmental integrity and biodiversity, the shift to industrialization and mono-cropping guidelines dictated to farmers caused much of the indigenous knowledge and practice to be lost (Klein, 2018). Adding to the urgency, COVID-19

has worsened the situation for many families that suffer from extreme food insecurity (Florida, 2020). While this complex web of deteriorating issues is a dire reality for communities like the ones in Utuado, the government continually fails to invest in basic infrastructure, underpinning much of the problem at hand (Holladay et al., 2019; Ortiz, 2020; Klein, 2018).

The sustainability problem that my project addresses is the lack of livelihood opportunity and economic development in the region, and I jointly address this issue with local farmers through agritourism educational programming. The problem of high socio-economic vulnerability in Utuado communities was analyzed using a systems perspective of the effects, immediate causes, and root causes of the sustainability issue at hand (see Background section of the CE SARE Full Project Report) which I use to design and develop a contextually-appropriate solution.

Literature Review

Given the range of issues stemming from high socio-economic vulnerability in Utuado, much research has been conducted that explores existing community-driven solutions. Research shows that self-organization can build community resilience, in turn supporting “sustainability, public health and risk reduction” (Holladay et al., 2019). In fact, the related concept known in Puerto Rico as *auto-gestión*, or autonomous organizing, refers to the same type of community-driven action that has been at the core of post-disaster recovery and rebuilding on the island (Garriga-López, 2019). In the context of survival needs and desire for decolonization, this type of community organizing has converged around building food sovereignty for its transformative potential in the ‘building back better’ of Puerto Rico communities (Garriga-López, 2019). In addition, food sovereignty is at the heart of addressing an urgent issue surrounding extreme food insecurity and a need for access to healthy and high-quality food (Florida, 2020).

Intricately tied to this vision of working towards food sovereignty are the concepts of agroecology and small-scale farming, which have also been shown to demonstrate resilience in the face of disaster risk, as in the case of recurring hurricanes (Garriga-López, 2019). In Utuado, a promising solution for socio-economic development that communities are mobilizing towards is agritourism (Holladay et al., 2019). Agritourism is an emerging economic activity that combines agroecological methods and tourism for diversified livelihood potential, sustainable practices, cultural preservation and appreciation, and smaller scale food sovereignty (UN, 2020;

Mendez-Toro, 2019; Holladay et al., 2019). While certain types of tourism have proven to demonstrate negative impacts on environmental and cultural integrity in the past, community-based tourism that draws on the individual assets of community members and is coupled with sustainable development goals has proven to foster social-ecological resilience (Holladay et al., 2019). Despite the wide range of long-term positive impacts of agritourism, the new push for agritourism among Utuado community organizers, and the presence of farms and farmland, many farms have been abandoned in a search for better livelihood opportunity (Holladay et al., 2019). Based on the transformative potential of agritourism for the Utuado community in terms of positive public health outcomes, social and environmental resilience, and disaster risk reduction (Holladay et al., 2019), local Utuado farmers would benefit from increased agritourism knowledge dissemination and practice for the building of a stronger regional economy.

Much research has been conducted on the impacts of sustainable farming in the past. Among the research yielded is the Framework for Assessing the Sustainability of Natural Resource Management Systems (MESMIS), an indicator-based sustainability assessment framework which was developed in the context of natural resource management systems throughout the Latin American context (Astier et al., 2010). This framework is a valuable context-sensitive tool for the evaluation and measurement of success in the pathway towards farmer success through agritourism practices. Additionally, given the existence of both agritourism pioneers in Utuado as well as a significant population of farmers still in development, the Forrest & Wiek (2014) solution pathway reconstruction framework is another valuable tool for the strengthening of the regional economy. This tool provides a connection between economy players at different stages in order to leverage existing local farm assets for the strengthening of other regional farms. Using these two well-established tools and others, the dissemination of agritourism knowledge and practices can be explored for the building of socio-economic resilience in Utuado.

Project Approach and Intervention Methods

In this project, I combined my work as a Graduate Student Assistant (GSA) on the main Southern Sustainable Agriculture Research and Education (SARE) project with my own research for my Culminating Experience (CE). The SARE project is a three-year project funded through the USDA's SARE grant program exploring the potential of agritourism as a means of increasing resilience and agricultural sustainability in partnership with farmers, local universities and

organizations in the Utuado region. As part of my GSA work, I supported the SARE project with joint community framing activities, such as community-wide current state analysis, visioning activity, and strategy building exercise based on the Wiek (2015) framework to set the foundation for the project implementation phase. For my CE, I focused in on an array of regional sustainable farms and enterprises, and delved deeper into the solution pathways of a few exemplary farm- and visitor-ready farming entities in the region in order to develop an agritourism intervention based on sustainability, resilience, and disaster management practices and principles to support other farms in preparation for the full operation and accommodation of visitors. My project consisted of three major parts:

Part I. Identifying regional sustainability solutions, which involved:

1. Developing surveys for preliminary data collection on key actions, tools, and resources for farm success;
2. Creating a list of criteria for the identification of sustainable farms and enterprises; and
3. Conducting background research on identified regional sustainable farms and enterprises.

Part II. Reconstructing pathways to success of regional sustainable farms and enterprises, which involved:

1. Developing and conducting interviews for a more detailed follow-up of a few exemplary farms;
2. Reconstructing transition pathways based on interviews; and
3. Creating a list of criteria for the successful transition or development of a farm or enterprise.

Part III. Developing an education and training program to support other farmers in learning from this experience, which involved:

1. Identifying pertinent theory of change, focal risk factors, as well as program scope and stakeholders; and
2. Developing a program addressing main elements and indicators, pilot program and measures, and training and implementation based on reconstructed pathways.

In order to achieve the project goals, my activities included attending monthly meetings with both the research team and stakeholder team; collaborating with student peers and local volunteers to contact and develop a working relationship with the farmers; assessing project progress through a weekly meeting with my project advisor; and subscribing to resources such as webinars and newsletters to gain insight on the agroecology and tourism scene in the region. Tools that allowed me to reach my goals are the project management tools gained in this course, as well as communication tools such as those gained in my regular Spanish courses.

Project Partners, Stakeholders & Subject Matter Experts. I have worked primarily with Dr. Katja Brundiers (co-Primary Investigator (PI) of SARE project), Dr. Patrick Holladay (PI of the SARE project) and Dr. Pablo Mendez-Lazaro (co-PI of SARE project), subject matter experts in disaster resilience, sustainable agritourism, and community building, respectively. Collaborating partners include Nilda Luhning from the Puerto Rico Tourism Company (PRTC), Dr. Javier Perez and a student team from The University of Puerto Rico – Utuado, and Veronica Dominguez from the OTOAO Primary Health Services and Socioeconomic Development Corporation (COSSAO).

I have also done work focused on a few key project participants including Sr. Max Pérez Padró and Sra. Evelyn Ortiz Avilés from the Permaculture Institute of Puerto Rico, and Sr. Jesus Martes and Sra. Marisol Villalobos from Finca Amasar. These successful entities are key to providing exemplary guidance for the expansion of sustainable agritourism throughout the region. Additionally, I have begun the process of developing an education and training program proposal for 15 identified farmers in the region seeking farm and visitor-readiness. The 2 main farming entities have a unique farmer profile in that they have the time, network and material assets that enable them to actively participate in this project. While the remainder of the 15 farmers may not share this same advantage, the process of developing an educational and training program can be informed by first piloting the developed program with one of our participating farmers.

Project Frameworks. Following are the supporting frameworks that were used, along with a short description of their role in this project:

1. The **Transformational Sustainability Research (TSR)** framework (Wiek & Lang, 2016) supported the building of a community-wide current state analysis, a sustainability vision, and led into the back-casting of sustainability solutions.
2. The **Framework for Analyzing, Assessing, and Improving Enterprises Towards Sustainability** (Wiek & Basile, 2020) provided the basis for which to comprehensively analyze the sustainability performance of an enterprise, and is here used as a tool to highlight exemplary farms and enterprises and their best practices.
3. The **Principles for a Sustainable Local Food Economy** (Wiek, 2020) supported in the regional economy framing of the identified solutions, and in doing so tied the smaller scale individual enterprise efforts to the larger goal of systemic change at hand.
4. The **Framework for Assessing the Sustainability of Natural Resource Management Systems (MESMIS)** is a method developed specifically in the context of small farms in Ibero-America, and was employed to evaluate the outcomes related to increased farm resilience, sustainability, and economic activity (Astier, et al., 2012).
5. The Forrest & Wiek (2014) **Transition Pathway Reconstruction framework**, representing the strategy development step of the TSR framework, supported in the reconstruction of sustainability solutions (identified agritourism solutions) implemented on the interviewed farms, which allowed us to identify evidence on what worked, where, how, and why, and added credibility to the proposals for new strategies.
6. The Fraser & Galinsky (2010) **Intervention Research Approach** supported in the adaptation and implementation of the proposed, evidence-supported strategy to other regional farms through program development best practices.

Outputs and Outcomes

Outputs. Each phase of the project yielded key project outputs, including a list of Criteria for Farm Sustainability, a portfolio of ten profiled regional sustainability enterprises, a set of reconstructed pathways to success of a few key regional farms and enterprises, a list of criteria for the successful transition or development of a farm or enterprise, and a place-specific sustainable agritourism educational program. These project outputs served the following purposes:

1. A **region-wide current state farmer survey** was collaboratively developed to help in creating a better big-picture understanding of the current strengths, resources, needs and challenges of agritourism in the regions of Utuado, Ciales, Florida and Jayuya in Puerto Rico.
2. The **Criteria for Farm Sustainability** (see *Appendix 1*) was employed to identify regional sustainability solutions and assess their features and offerings based on their level of sustainability, their role in the regional economy, and their level of agritourism integrity.
3. Using the Criteria for Farm Sustainability, a **portfolio of 10 identified exemplary enterprises** (see Part 1 of the CE SARE Full Project Report) was created in order to highlight their key place-relevant offerings (and acknowledge areas for improvement). Viewing the profiled enterprise strengths in conjunction yields a strong vision for a well-rounded exemplary farming enterprise.
4. A few excelling enterprises selected from the prior pool of identified exemplary enterprises were selected for a more in-depth analysis, including Finca Amasar, Instituto de Permacultura de Puerto Rico, and Plenitud PR, yielding **3 reconstructed transition pathways to sustainability** (see *Appendix 2* to view an example pathway). Not only does this tool enable us to identify exemplary enterprise outputs, but also it provides us with insight into the transferrable key actions, actors, and barriers from initiation to current state that contributed to their success.
5. A **place-specific agritourism educational program**, referred to as the Agritourism Farmer Learning Community or Agroturismo Agrocltorx Comunidad de Aprendizaje (A³), was developed and informed by all of the project outputs mentioned here and more (see Part 3 of the CE SARE Full Project Report). This program provides an engaging vehicle with which to transfer the existing regional sustainability solutions to a wider range of existing and aspiring farmers. The program is 12 weeks long, each week comprising of a participatory content module that provides participants the chance to visit a different exemplary agritourism farm or enterprise each week to experience first-hand farm best practices while simultaneously building their networks.

Outcomes. At each point of my project thus far, I've had the chance to collaborate with different project partners and stakeholders, which provided me with a range of feedback on key points and items for potential development. Outcomes of the project thus far include increased project partner awareness on the importance of holistic sustainability evaluations for farms and enterprises, providing an opening for potential operationalization of the Criteria for Farm Sustainability by community support organizations in the future, among others detailed below. Exploring further opportunities for project development and completing each project part in its entirety will allow for the generation of more outcomes moving forward.

In Part I of the project, I worked in close collaboration with our project partner from PRTC, Nilda Luhring Gonzalez, to identify, contact, and collect information from exemplary farms and enterprises throughout Puerto Rico. Ms. Gonzalez reviewed the Criteria for Farm Sustainability, and in doing so revealed that the list of criteria could be a powerful tool with which to gain a more holistic understanding of important information on enterprises that has not been previously considered. An example of this is whether or not an enterprise employs individuals with disabilities. This kind of information can help create connections and add support for sustainable enterprises as by professionals like Ms. Gonzalez in their networking roles.

In Part II of the project involving the reconstruction of transition pathways, Dr. Katja Brundiers provided valuable feedback on the utility of this tool for increasing the understanding of regional economy players, their interconnections, and functions among communities and farmers. Part II of the project will also be expanded upon once IRB approval is received and surveys and interviews can be delivered.

In Part III of the project involving the training program, Dr. Lisa Chase, professor at the University of Vermont and director of the Vermont Tourism Research Center who has extensive experience delivering agritourism workshops, commended the training program for its farmer-to-farmer learning approach, its place-based nature, and its strong sustainability framing. She also provided recommendations with regards to the mode of delivery of the program, and caution with regards to the potential impacts of tourism when left unchecked.

Discussion

Based on all of the data collected thus far on sustainable agritourism enterprises as pathways to increased resilience, livelihood opportunity, and food security, results of analyzed enterprises

and their interactions with local communities prove to reveal some gaps when analyzed through a sustainability lens, but are very promising when viewed in conjunction with one another as demonstrated in a wide array of key exemplary practices. Two major opportunity spaces that the proposed educational program seeks to address are ensuring sustainability and agritourism integrity across enterprises, as well as creating a better understanding of the local food economy in which each farming enterprise plays a part. As revealed through an assessment of profiled farms and enterprises, and confirmed by agritourism subject matter expert Dr. Lisa Chase, one key opportunity for growth in agritourism development involves taking a step back on the concerted push towards increased *tourism*, and taking a step forward with intentional *sustainability*-driven tourism that centers around agroecological conservation and practices. In creating this focus shift, not only are the dangers of unbridled touristic growth curbed, but also a beneficial offering to society, environment and economy are ensured. Additionally, while we present phenomenal examples of social collaboration between farming enterprises, creating a public awareness of the local food economy and the instrumental role of each player in it would enable increased success towards the desired community vision of food sovereignty. Only by using community visioning and strategy development, and thinking on a community scale, can an immense goal such as food sovereignty begin to be attained. It is in this sense that the place-based sustainable agritourism educational program has potential to offer subtle guidance in the creating of larger scale change towards the sought-out community visions.

However, in addition to identified opportunities for growth are many exemplary practices, assets and connections that can be powerful tools for farmers in the regional economy, once transferred. These include themes surrounding local conservation and education, the building back better of the community, and investment in the future generation of farmers. Excepting a few cases, a large range of farms and enterprises do not view or practice sustainability in its complete holistic sense, but rather excel at doing so in a siloed manner. By creating an educational program that capitalizes on the existing exemplary farm practices, and presenting these in conjunction with one another, a holistic practice of sustainability in agritourism enterprises can be attained.

Next Steps. While this project has provided a start on the development of an informed farmer educational and training program, there is much room for progress. Whether through my own continued project involvement past MSUS program graduation for a period of 3 months, or

through future MSUS student continuation on the project, both unavailable required project components as well as areas worthy of expansion provide for many opportunities to continue to develop this project. These opportunities for development include: (1) the operationalization and delivery of developed surveys and interviews upon receiving IRB approval (which had been initiated early in the semester, but experienced heavy delays in part due to the impact of COVID-19 on the UPR IRB team); (2) the expansion of the pool of exemplary enterprises for which to reconstruct transition pathways; (3) the deepening of the training program through reconstructed pathways of exemplary enterprises; and (4) the piloting of the developed training program upon completion to better inform the later program implementation phase.

Conclusion





The United States is a food superpower, the world's largest food exporter, and one of the world's four top food producing countries (Investopedia). Despite this, the people of the US territory Puerto Rico are dependent on importation for 85 percent of their food (NBC), all while being at high risk of a variety of natural hazards in addition to multiple layers of vulnerability (Holladay et al., 2019). This progression of vulnerability places the Puerto Rican population at high risk for the incidence of disasters (Wisner, et. al, 2012; Garriga-López, 2019). It is in this context that the growing movement for the building of food sovereignty by Utuado communities arose, and specifically the movement towards agritourism (Holladay et al., 2019; Garriga-López, 2019).

While agritourism possesses a great potential for the building back better of communities in Utuado and many rural areas of Puerto Rico, a deviation from the original sustainability and agroecological integrity focus that lies at the heart of agritourism can bring about the opposite results of unbridled tourism-related ecological and cultural destruction. A systemic educational program that provides a wholistic assessment of farming enterprises and utilizes existing cases to exemplify the proper benefit-generating agritourism form can support this original cause.

Food sovereignty is an empowering yet complex collective state to reach, and at it's heart is the building of a strong regional food economy as defined by Wiek (2020). Identifying sustainable and exemplary regional economy players in a wide array of roles along the food system, and creating accessible learning outputs rooted in their evidence-based practices allows for the strengthening of the regional food economy through increased awareness, understanding, resources, and tools among farmers and communities. It is in this context that the Farmer

Agritourism Learning Community poses a valuable offering to the growing agritourism opportunity space in Utuado, for the attaining of long-term socio-economic resilience and food sovereignty.

Appendix 1

Criteria for Farm Sustainability		
	Product/Service	<ul style="list-style-type: none"> • Fulfillment of a basic/sufficient human need (e.g. food, clothing, etc.) • Biodegradability/non-toxicity • High quality • Fair pricing (i.e. is the price reasonable based on the production cost and inputs?) • Fair accessibility (i.e. if the pricing is high, is there a flexible payment method or a sliding scale based on the ability a customer to pay?)
	Environmental Performance (Operations)	<ul style="list-style-type: none"> • Closed-loop Water, Material, Substances/Emissions systems (i.e. is pollution and waste avoided? Are materials reused?) • 100% Renewable energy use • Local sourcing • Positive contribution to local environment • Environmentally friendly workforce lifestyle & volunteerism
	Human/Social Performance (Operations)	<ul style="list-style-type: none"> • Meaningful employment & work activities • Employment of individuals with disabilities • Partnership/employment opportunities with local universities/colleges • Healthy (safe and happy) work environment • Healthy work-life balance (i.e. work hours at or below 40, overtime only rarely, provision of vacation and sick-leave time, etc.) • Health promotion program offering and participation (e.g. yoga sessions for employees) • Sustainability performance monitoring and improvement • Volunteerism for humanitarian/social causes • Capacity building program offering and involvement (e.g. skill building workshops provided to employees) • Positive contribution to community wellbeing
	Economic Performance (Operations)	<ul style="list-style-type: none"> • Sufficient revenue generated to cover costs • Fair/just wages to employees • Fair/just highest to lowest wage ratio • Redistribution of excess profit to employees/community/non-profit organizations




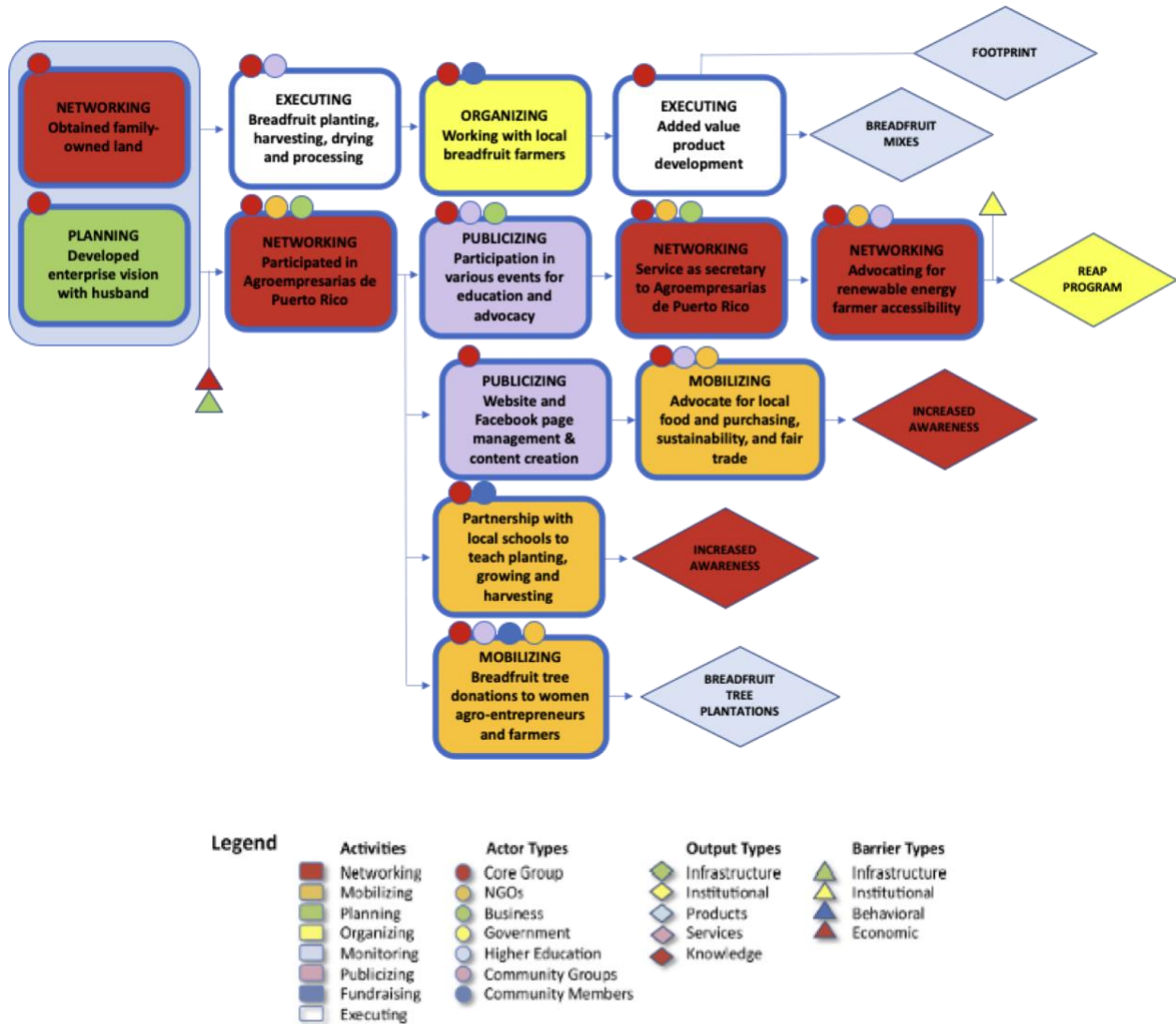
	Ownership & Decisions	<ul style="list-style-type: none"> ● Observation, listening, reflection and learning inform management and steering practices ● Collective ownership/steering; workforce and marginalized community participation (i.e. is the business co-owned, or do the employees or marginalized/minority groups of community members have a voice in decision making matters?) ● Qualitative growth strategy with limits to growth ● Enterprise size and structure complexity align with human capacity ● Sustainability planning ● Promotion of sustainability beyond enterprise boundaries leveraging power and influence
	Regional Economy Offerings	<p>Does this enterprise contribute to one or more the goals of the regional economy, as defined as follows:</p> <ul style="list-style-type: none"> ● Over 50% of food consumption and production in the regional economy is local ● Over 50% of food production is healthy ● There are sustainable local businesses in all sectors of the food economy ● The majority of local food businesses engage in sustainable practices ● Local support organizations provide all relevant support functions for sustainable food businesses ● Consumers recognize and support sustainable local food businesses ● There is justice (labor rights, wages, food access, etc) in the local food economy
	Agritourism Integrity	<p>Does this farm or enterprise align with the definition of agritourism, as defined as follows:</p> <ul style="list-style-type: none"> ● The host site is a farm or ranch, or any agricultural, horticultural, or agribusiness operation ● A destination for education, recreation, and the purchase of farm products ● An opportunity for visitors to connect with the natural or working landscape and farm experience ● Provides an additional source of revenue for the host farm

Table 1. Criteria for Farm Sustainability (Wiek & Basile, 2020; Wiek, 2020; Wiek & Forrest, 2020; University of Vermont; Virginia Cooperative Extension)

Appendix 2

Reconstructed Transition Pathway of Finca Amasar



(Forrest & Wiek, 2014)

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